habitat

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Volume 16, No. 4, 1973

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Inside Cover Photographs

Bill Cadzow took some straightforward photos of a fairly common household material, resulting in these rather unu-

sual pictures. Can you identify the ma- terial? The answer is on the back page.

Photographies de la couverture intérieure

Par pure curiosité professionelle, Bill Cadzow prit ces deux clichés, sans penser pour autant à un quelconque "effet spécial" ... À partir du résultat,

pouvez-vous identifier le matériau ainsi photographié ? La réponse se trouve à la page couverture arrière.

Design/Conception graphique

Gottschalk+Ash Ltd.

BELLEVIL

by Stuart Wilson

From Indian Encampment to Modern-day Ontario City

Although there is a natural desire to find a single, definite beginning for the City of Belleville and then trace its steady development, there were, so to speak, many beginnings.

A settlement first emerged in this location as an Indian encampment on a stream called, by them, Sagonaska. Chipped arrow-heads, on display in the County of Hastings Museum, formerly the County Registry Office, testify to the industry of the original inhabitants.

The next change was in the form of a few nearby settlers' huts and a fur-trader's shack on the banks of the same stream, known to the settlers as Singleton's Creek. A tavern serving thirsty and tired travellers was built in stages where the Upper Canada highway crossed the small river. A store or trading-post opened beside it.* This tiny development grew up just where the river widened before it broadened into a capacious bay, which in turn emptied into the extensive waters of an arm of the Bay of Quinte.

In 1790, a short time after the elementary nucleus had come to be, Captain John Walden Meyers, a Loyalist from Vermont, and a group of settlers reached the mouth of the Moira River. He built a dam on the river and a grist-mill, which ground the grain of pioneer settlers. The mill was located upstream past the first bend in the river, and still stands, though now in a sorry condition. Unhonoured it continues to perform a useful, if unpicturesque duty as a scrap-iron depot. One year after the

*Both of these original structures have disappeared, but an old inn of a slightly later vintage, which must have faced the original group, still stands. The unpainted exterior continues to display the trim lines of a reserved but classic carpentry, while a rent in the exterior clapboarding reveals brick-nogging infill between the widely spaced members of a braced frame. Unfortunately this relic of the past, which could be restored and brought back to its former elegance, may be destroyed.

LE BLISS

construction of the mill, 1791, Upper Canada was separated from Lower Canada and John Graves Simcoe became Lieutenant-Governor.

Before the eighteenth century was over Captain Meyers had founded a trading-post, a distillery and a brick kiln. In 1794, when most houses were constructed of logs, he built what is said to have been the first brick house in Upper Canada, known to the Indians as "Meyer's Castle". By now the little river which flowed into the sheltered bay in front of it was called "Meyer's Creek", and the settlement bore the same name.

At the beginning of the nineteenth century a wooden bridge carried the highway across the river. A road through a cedar swamp beside the river connected the mill and dam with the early settlements near the highway and river mouth.

In 1816, the government surveyor laid out three principal streets eastwards and parallel to the lower straight stretch of the river, traversed at right angles by five widely spaced cross-streets. The riverside street followed the line of the old mill-road and became the principal artery, Front Street, of the later city. One of the cross streets, Dundas Street, the second one up from the landing-place

near the river (Wharf Street), connected with the highway leading to Kingston.

The various lots of land created by the grid layout were granted by the government to owners who promised to build within two years. The civil authority also set aside land for a hospital, a jail, a schoolhouse and churches. In a certain sense Belleville was planned at an early stage. This pattern remains and forms the heart area of today's city.

The hamlet became a village. In 1816 a village council celebrated a visit of the Lieutenant-Governor of the Province by changing the place name to Belleville in honor of Lady Arabella Gore. The name acquired extra meaning when it became Belleville at a later date.

Belleville was incorporated as a village in 1836, but by 1834 it already possessed its own newspaper, "The Intelligencer". Now one of the oldest journals in Ontario, as its quaint but still pertinent name suggests, it continues to flourish. A later competitor was incorporated with it, while many other pioneer papers have disappeared.

In the early growth period of Bellevile lumber, its products, and farm produce were the principal sources of wealth. The back country

and Hastings County was still largely covered by forests, and logs were driven down river to the mouth of the Moira by red-sashed French-Canadian loggers. In the Bay, rafts were made up for the journey through the North Channel across the top of Lake Ontario and down the St. Lawrence.

By 1850 Belleville was a town with a council and mayor. Six years later the first railway train between Montreal and Toronto arrived. Because of its position between the two larger cities, Belleville, to this day has remained a railway sub-centre.

By the mid 70's the town became an active grain port. Produce poured in, not only from Hastings County but also from Prince Edward Island County across the bay. Front Street was now lined with busy shops and emporia.

In 1878 Belleville was established as a city. But in the subsequent period business delcined and growth slackened; nearby timber stands had been cut down; mills and workshops closed; the grain trade was hit by American competition; the handicraft industry faced industrial reorganization. The population remained constant for the remainder of the century.

Horse power ferries were replaced by a toll-bridge across the bay.

Industries based on the produce of the land such as cheddar-cheese making, or those with a more mechanical or electrical orientation, became numerous.

The Railways

Today Belleville is still centred around the Moira River, the same Sagonaska, re-named after the Earl of Moira. The stream flows down from the Highlands of Hastings and meanders lazily through Hastings County across low lying land, touching at smaller villages or towns. The Mac-Donald-Cartier Expressway cuts straight across the country, about two miles north of the Bay shore. Most of the city lies between the rights-of-way of two older means of transportation, the Canadian National Railway–about a mile back from the mouth of the river–and the Bay, while the Canadian Pacific skirts the shores of the Bay. The CNR still handles both passengers and freight, whereas the CPR only takes freight. The roomy old brick CPR station is now rented out to a fraternal lodge. At night train bells toll incessantly as endless lines of freight move over the rails.

The Moira River flows under the CNR tracks on a bias from the east. At about the central point between the two railway lines it makes a sharp bend and then flows in an almost straight line between man-made banks of rough squared limestone masonry of cyclopean proportions and empties into a large mouth or bay. West of the river mouth a large body of low lying, partially built-up land incorporates a former island, Zwick's Island, on which has been developed an extensive public park, Centennial Park. This recreational area contains a medley of things, such as capacious barbecue fireplaces under the sweeping roof of a park pavilion, playthings for kids, a swimming and wading-pool, as well as a large but outdated steam

locomotive and a fighter-plane mounted in banked position on a tall plinth. The steel Bay bridge which leads to Prince Edward Island and Picton takes off to one side of the Park.

A short distance to the west of the CPR steel-girder railway bridge at the mouth of the Moira, a new, six-storey, monolithic concrete "Four Seasons Motel" has been built. Part of the premises will be used to house a Bell Telephone Technicians School and serve as an employees vacation centre. The plan of the building is cambered or so angled that the axis is aligned on a sweeping view overlooking the Bay and the Moira river mouth. Swimming pools and a marina are to be developed.

Yacht Harbor and Boats

Just past the bridge, on the west bank, is a yacht harbor and several ancillary industries which specialize in yacht gear, sails and the manufacture of large, elegant fibre-glass yachts. Pristine hulls with classical lines fresh from the cocoons of fibre-glass molds stand waiting in the yard to be outfitted with aluminum masts and spars.

A long, oval-shaped peninsula, built-up from a former island, is connected to the east bank by a narrow causeway and juts out into the eastern side of the river mouth. This water-encircled and tree-girt flat, grassy platform serves as a park, Victoria Park, in which a cairn commemorates the founder Meyers, while another monument celebrates Sir MacKenzie-Bowell, K.C., M.G., in the following terms:

> "*For many years editor and proprietor of the Belleville Intelligencer, Lieutenant-Colonel 49th Battalion Hastings Militia. First elected to the House of Commons in 1867, he subsequently held the portfolios of Customs (1868-92), Militia (1892) and Trade and Commerce (1892-94). Prime Mi-*

nister of Canada from 21st December 1894 to 27th April 1896. Appointed to the Senate in 1893. He was Leader of the Opposition in that House 1896-1906. Born at Rickinghall, Suffolk, England, 27 December 1823. Died in Belleville, 10 December 1917."

The Bay of Quinte Yacht Club, a single-storey wooden clubhouse, rests on a large wind-swept lawn at the outer end of the peninsula, but remains protected by being set within the wide river mouth. A long narrow inlet of water on the east side of this spit of land shelters a small boat inner harbour, and contains docking facilities and a large collection of small boats and yachts interspersed with houseboats. Like squatting ducks the floating dwellings can roam the many protected bays and inlets of the Bay of Quinte, and find coves for safe anchorage.

On the east side of the harbour inlet a line of dark yawning mouths or doors draws attention to a chaotic collection of old battered boathouses sheathed in rusty corrugated iron or weathered wood siding. The haggard collection lines the waterway together with one or two better maintained and more flashily painted quarters which serve as private or commercial marinas.

Around Front Street

When approaching the waterfront

down Front Street past the stately City Hall, to the corner of Dundas, only a somewhat casual and indirect entrance is discovered to the park and yacht harbour through a passage under the steel girders of the railroad bridge. In this sequestered spot, where the grass under the trees grows long and silky and the wind is cut by an embankment, is a quiet resting place.

On the eastern side of the yacht harbour Front Street spills over a level crossing of the CP tracks, continues past yacht marinas and Skidoo sales-rooms and hesitates at the Wharf Street Debating Society's quarters, a long narrow white shed on the water's edge where some easy-going conversation may be heard floating into the air. To the left on low, flat land, is a kind of sleepy village of small wooden and brick houses in candy colours. Front Street moves on past the Sea-cadets' white clubhouse, flag-staff and whalers moored at the jetty. An agile cadet is perched on a yard-arm at the top of the swaying mast, gingerly holding outstretched a paint brush strapped to a broom stick. Every now and then a little paint passes from the brush to the mast. The street leaves the smaller activities of men and passes between mountains of coal and pale green oil tanks, terminating out in the Bay of Quinte at the end of a pier where there is a wharf and shed. This is the outer harbour for large lake boats, which unfortunately no longer call on regular schedule.

At the point where the river bends preliminary to running its last and straight course, the Upper Bridge, a double bow-string suspension arch bridge in poured concrete brings Front Street's extension to the Mac-Donald-Cartier Expressway over the river. The main street begins at the Upper Bridge and follows the east bank of the Moira. A similar structure (Lower Bridge) is located further down the river at Bridge Street.

In its lower reaches the stream does not live up to its romantic name. In later summer the water in the lower river is shallow and flows sluggishly. The river bed is filled with rank aquatic plants whose slimy trailers lie on the surface. Miscellaneous junk of civilization floats on top. A few years ago, in late summer, "The Intelligencer" raised a great cry: "The Moira ran blood-red yesterday...Raw Sewage Pours Into Moira River."

Although Front Street runs beside the river, it participates little in the street life. The street, a partially modernized commercial strip, actually backs on the river.

A pleasant park runs above the stone-built west bank near the mouth of the river. Sunning oneself on a park bench and carrying on a desultory conservation with a neighbour, the view of the untidy river is depressing. It is, however, enlivened somewhat by

the rear view of buildings on Front Street. New buildings stand out sharp and square, while the more picturesque clutter of older decaying buildings is dominated by the aspiring thrust of the large Gothic tower of the City Hall. In the sunlight the outline is filled in with plum and orange-red brick trimmed with limestone painted pale mushroom. It climbs into the sky beyond dark blues, browns and light rusts.

But Front Street itself touches the river only by means of wasteland parking lots in the rear of stores or through vacant lots where buildings have been dismantled and cars have taken over. About half-way up Front Street on the west side is a narrow passage between adjacent tall brick and old rubble stone walls. This slot widens slightly into a short pedestrian alley with small shops down one side and connects with a narrow concrete footbridge supported on a single lofty pier. The graceful elevated walk skips over the river between steep banks. The way leads to Catherine Street, which climbs up West Hill between trees and houses. This passage is much used by shoppers and offers the neatest bit of planning and intimate townscape which Belleville affords.

The Moira River flows at a lower elevation than the land on either bank, which rises up at an easy slope to form West Hill and East Hill on alternate sides. Neither is high enough to be a true hill and they both level off into a gently rolling plain.

West Hill and East Hill
In the past the West Hill district was generally considered to be a more humble dwelling area. Some important old houses may still be found there, including the former cottage of Susannah Moodie ("Roughing it in the Bush") now restored by private owners. The area also contains some old-time crofter cottages with limestone rubble walls.

But, by more recent tradition, the élite locality where most of the important folks lived was the East Hill. This district begins with Church Street, the third principal street parallel to the river, laid out by the surveyor in 1816. It continues back for a number of tree-shaded streets. A superb grouping of large and medium-sized brick villas exemplifies the large easy scale of prosperous living in the last century. Classical and squarish forms possess a strong vertical dimension due to high ceilings.

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The most characteristic villas, cottages and row-houses are reserved and dignified in appearance. They give off an aura of closely integrated self-possession. Large houses are set on deep lawns, dwarfed by tall trees. Prevailing colours are dark and sombre. They transmit a cool feeling on a hot day. Sometimes a large villa will be painted all over with modish pastel colours. But usually the exposed brick displays a soft red of various dark tones with wood trim and shutters painted a dark green. The earlier nineteenth century examples are either more purely classical in a Greek sense or of Tuscan form, while the later Victorian villas are more flamboyant, with Gothic towers or Mansard roofs capped with sprouting ornamental iron cresting.

Widely spaced windows have the well proportioned English sash, with single sheets of glass in the later Victorian work or with two or even six to eight panes per sash in the older work. Characteristic bay windows in neatly detailed classical wood panelling contrast the dark brick walls. In the midst of these houses over-arched by large trees is Corby Park, a garden of roses presented as a civic donation by the well-known distiller.

In contrast to individual houses whether small or large, Belleville now contains at least two impersonal high-rise city-type blocks containing small apartment dwellings. One is on East Hill and the other on West Hill. Some of the terraces of older buildings have been subdivided into smaller apartments.

While Front Street, Belleville, resembles in a general way the main streets of other Ontario river and lake-side towns developed in the nineteenth century, it possesses unique if somewhat unexploited qualities. Perhaps they stem primarily from geographic or micro-geographic features; the little valley, the river and

its mouth, and the wide bay. A sheltered and protected position gives a mild and almost bucolic feeling, which even the harsher marks of competitive commerce have not yet succeeded in eliminating.

Like other similar streets, the main street is straight and severe, treeless and bare. The treeless main street is a constant theme of smaller Ontario cities and towns, often noted and commented upon by previous observers. Conjecture has led to the suggestion that the pioneer, obliged to clear the land, saw trees as nuisances. Be that as it may, both sides of the street are lined with two, three or four-storey buildings. These vary from early vernacular cottage-like pioneer efforts with gently pitched roofs and shaly limestone rubble walls, now often stuccoed, to taller Italianate facades in brick or stone whose derivation from Renaissance prototypes, though distant and indirect, has endowed them with a certain proportion and human scale. Blended in with these, or encroaching

upon them, are the more recent new additions, mostly banks and the advertising signs of branches of chain stores and loan companies. Big city outlets tend to dominate much of Front Street. But the local merchant and shopkeeper is still active as butcher, baker, tailor, shoemaker, hardware dealer, pharmacist, tobacconist, newsvendor, stationer, pool room proprietor, radio and TV repairman, service station operator, or operating the ubiquitous trading-post for second hand goods, which might well

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include a near antique in its stock. The list is not large. Front Street restaurants are usually owned and operated by individuals or families of Chinese, Greek or Italian descent. The food veers less towards the exotic then towards a commercial Canadian standard.

Food and Architecture

A number of small hotels may be found in the central downtown area on Front. Their names are evocative, Hotel Belvedere, New Queen's Hotel, City Hotel, Crystal Hotel. Hotel Quinte, on Pinnacle Street near the City Hall, is an early twentieth century red brick block and is perhaps more big-city and middle-class. The entrance has been renovated in veneered marble and stainless steel by adopting a motif from Mies Van der Rohe's Barcelona Exposition Pavilion. Its basement provides both a bar and a night-club, while on the main floor an opulent dining room in Edwardian plaster Classical is available for diners. Here Sir Gilbert Parker, the Canadian writer of romances and later British statesman, is said to have dined when he resided in Belleville.

But the hotels on Front do provide an alleviating note since their character is more local. While not posh, they offer accommocation suited to various tastes and purses. Beverage rooms, both for males and females, usually go with the hotels. In one room, easygoing drinkers play darts in the bright light of a large high street window, while from the other rooms trail the nasal rhythms of a lonely or sequestered cowboy. Relaxed workers or easygoing loafers order a plate of food to go along with their beer, while business types eat full meals in discreet hotel dining-rooms.

Although the street shows some signs of regularity and rhythm, there is little doubt that the limestone trimmed red brick Victorian Gothic City Hall is the single most effective architectural element. Unfortunately the market-place in the rear, while still active and useful to shoppers as a source of country produce, now serves primarily as a car-park. The surroundings of the square are harsh and it is almost bare of atmosphere save for vendors and shoppers on market day.

The contrast between the venerable City Hall and the old market-turned car park is indicative of the problems facing Belleville today. Thus far the city has managed to combine growth and progress with an appreciation for the past. But the need for expanding public services and new industry has placed increasing pressure on the older areas of the city. Hopefully the desire for progress evident in most of our communities will not result in the thoughtless destruction of Belleville's architectural links with history.

Le Vaudreuil:

1973 a vu la naissance de la première ville expérimentale française...

Par Michel Oger
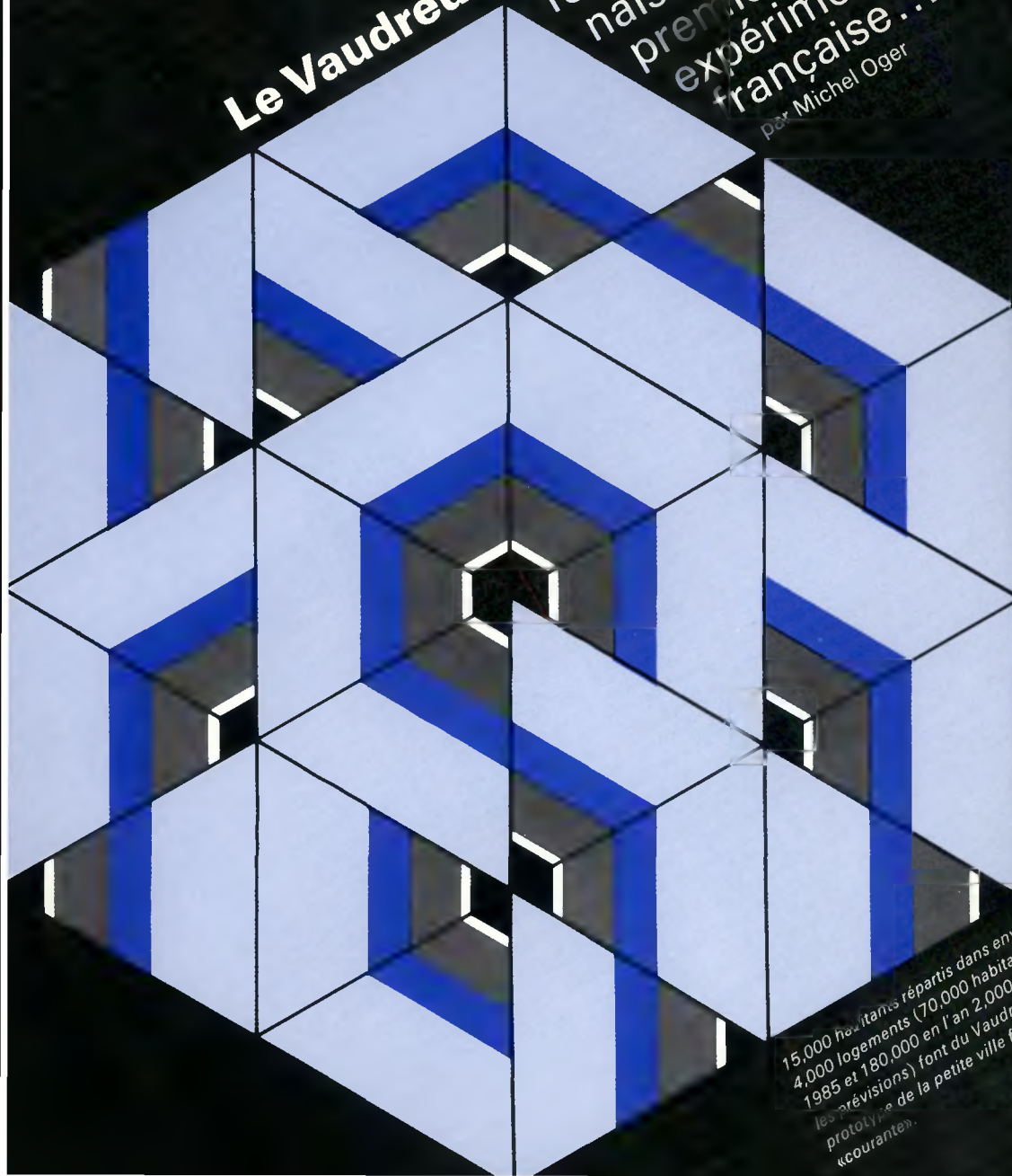
15.000 habitants répartis dans environ 4.000 logements (70.000 habitants en 1985 et 180.000 en l'an 2.000 selon les prévisions) font du Vaudreuil le prototype de la petite ville française «courante».

Le Vaudreuil possède cependant une particularité, celle de ne figurer sur aucune carte de France, bien qu'elle existe déjà sur le papier, si l'on ose dire. Sa construction, en effet, a commencé dans le courant de 1973 et l'on s'est appliqué à faire d'elle, seconde surprise, l'agglomération la plus «propre» de l'Hexagone. Voici les grandes lignes de cette expérience originale.

Approuvée par le Gouvernement français en 1969, la réalisation de la ville nouvelle du Vaudreuil avait fait l'objet d'une déclaration de principe du Comité Interministériel d'Aménagement du Territoire dès 1967.

L'engagement d'une ville nouvelle à proximité de Rouen apparaissait, en effet, comme un élément déterminant d'une politique globale d'aménagement et de développement de la Basse-Seine. De telles décisions ont été évidemment précédées par les travaux de longue haleine de diverses commissions d'études qui ont toutes confirmé l'intérêt de l'emplacement choisi.

Les années 1970 et 1971 ont été, pour l'opération du Vaudreuil, celles du lancement des procédures foncières et des acquisitions de terrains ; 1972 a été l'année des grands travaux d'infrastructures (routes, assainissement, etc.) alors que l'année 1973 a été celle du démarrage des travaux de construction du «germe de ville».

Une ville ne peut être considérée comme un objet fini dont il est possible de planifier, 20 ou 30 ans d'avance, son contenu et son mode d'organisation de l'espace. La ville est un organisme vivant, capable de s'étendre et de se transformer en conservant son unité et sa croissance future—qu'elle soit ancienne ou nouvelle—dépendra de l'évolution socio-politique, des modes de production, des préférences des habitants.

Les aménageurs d'une ville nouvelle sont responsables de donner à leur œuvre le haut degré d'organisation sans lequel il ne paraît pas possible qu'un ensemble de construction soit perçu par ses habitants comme une véritable ville. Pour tenter de dépasser la contradiction qui existe entre ce besoin de souplesse dans la planification et la nécessité d'une cohérence globale, l'équipe de la ville nouvelle a proposé de mettre en œuvre une méthode d'étude et de réalisation particulière.

Il s'agit d'une méthode en deux phases qui doit être menée simultanément à deux échelles de temps et d'espace :
a pour limiter le caractère nécessairement artificiel de la phase de départ, on réalisera une première opération limitée dans le temps—5 à 10 ans—et dans l'espace, mais portant sur le programme le plus complet possible de logements, d'équipements et de lieux d'emplois pour une population de 15,000 à 20,000 habitants : c'est le *germe de ville.*
b cette étude du germe ne prendra toute sa signification que si elle est confrontée à une étude globale des principales caractéristiques de la ville dans une perspective à long terme—20 à 30 ans, 90,000 à 140,000 habitants—et sur

l'ensemble du site en relation avec sa région. Cette étude globale n'a pas pour but de fixer toute l'organisation future de la ville : elle doit au contraire mettre en évidence des possibilités de croissance aussi variées que possibles après achèvement du germe, croissance qui sera prise en charge par les futurs habitants de la ville. Mais elle est indispensable pour fixer le tracé des principales infrastructures et définir la vocation générale des différentes parties du site.

La méthode comporte trois grandes directions d'études à approfondir parallèlement :
1 **le programme** Il s'agit de définir le contenu de la ville non seulement du point de vue quantitatif, à différents horizons de son développement et suivant différentes hypothèses, mais aussi en prenant en compte les aspects qualitatifs. C'est ainsi que l'on étudie non seulement le nombre mais les caractéristiques des logements, des emplois et des équipements, les types de relations qu'ils peuvent entretenir entre eux, les critères de leur localisation et leurs effets d'entraînement.
2 **le système d'organisation urbaine** Ce système doit constituer le support physique du développement de la ville dans un espace à trois dimensions. Il s'agit de substituer à la notion de «plan masse» traditionnelle le concept de *structure urbaine*, permettant une souplesse de composition et d'évolution, et définissant la personnalité et la cohérence de l'ensemble.
3 **le site** et son environnement régional, dont l'étude servira à déterminer le schéma général de référence à long terme, et permettra de choisir la localisation exacte du germe de ville.

Il a été plusieurs fois fait référence au terme de «germe de ville», qui résume l'essentiel de la méthode proposée. Le germe de ville est à la ville future ce que l'enfant est à l'adulte, et non ce qu'est un membre par rapport à un corps. Ce ne peut donc être un premier quartier, attendant pendant de nombreuses années la construction du centre-ville ou d'une de ses parties, mais bien l'embryon qui, quoique réduit, n'en est pas moins aussi complexe que la ville elle-même à son niveau de maturité. Ce germe devra donc posséder la quasi-totalité des fonctions de la ville, exprimant par là même qu'il est un organisme vivant. Sa taille d'environ 15,000 habitants a été choisie parce qu'elle est suffisamment petite pour permettre une étude approfondie et traduite en langage architectural, et suffisamment grande pour être représentative des principaux problèmes d'une ville en développement. La conception du germe devra correspondre aux possibilités techniques et économiques des prochaines années, mais

assurer dès sa croissance une mobilité et une souplesse d'adaptation lui permettant de s'adapter à l'évolution future de la ville.

Le site du Vaudreuil est une plaine parfaitement délimitée, de plus de 4,000 hectares* au confluent des vallées de la Seine, de l'Eure et de l'Andelle, traversée par la voie ferrée Paris-Rouen. L'unité du site et la grande qualité de son paysage ont conduit à y engager une opération globale d'aménagement dont la ville nouvelle proprement dite ne sera qu'un élément, à côté d'une importante base de plein air comportant de vastes plans d'eau, des zones vertes et des zones industrielles.

La mission d'études a été chargée de l'établissement du Schéma directeur d'aménagement et d'urbanisme dans la zone du Vaudreuil dont le territoire englobe une population de 40,000 habitants, devant croître selon les perspectives définies par le schéma d'aménagement de la Basse-Seine, jusqu'à atteindre 180,000 à 200,000 âmes d'ici l'an 2,000.

L'ensemble des volumes bâtis contient les éléments du programme tels que les logements, les équipements, les lieux d'emplois tertiaires ou artisanaux et forme le *réseau des volumes construits*, lequel crée, en liaison avec les espaces extérieurs, l'essentiel du paysage urbain qui doit avant tout être adapté à l'*échelle de l'homme.*

Le réseau doit offrir aux logements et aux équipements le plus grand choix possible de types et de dispositions (par leur orientation, leur taille, leur position par rapport au sol, etc...).

Le réseau doit être capable d'*évolution,* soit que des réserves d'espace («marges») permettent des additions ultérieures, soit que ses principes constructifs permettent de modifier les fonctions accueillies.

continu   maillé

Le réseau des volumes construits est *continu* et fortement *maillé* pour délimiter des espaces extérieurs différenciés.

Les volumes se croisent généralement à angle droit suivant une maille véritable. Le prospect minimum est de H = L avec un minimum de 12 mètres entre façades comportant des fenêtres ouvrant sur des pièces principales à usage d'habitation ou de bureaux.
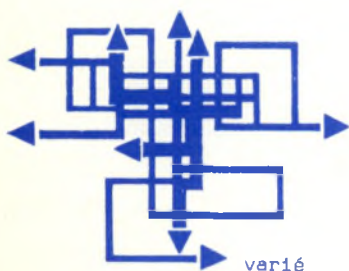
varié

Le réseau des volumes construit est *varié* :
- en densité : une forte occupation du sol accentue la densité le long des «rues» piétonnes qui constituent l'épine dorsale de ce réseau.
- en hauteur : le réseau comprend des volumes bas (de 1 à 2 niveaux) contenant la plupart des équipements, des habitations, ateliers ou bureaux et des volumes plus hauts (au-dessus de deux niveaux) contenant essentiellement des habitations ou des bureaux.
- par ses dispositions en plan, en orientation, et ses formes.

Les espaces extérieurs doivent être perçus de la manière la plus variée possible à partir des volumes construits en fonction de leurs niveaux respectifs.

transparences

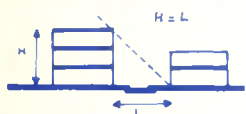Des *transparences* sous immeubles, permettant des communications visuelles entre espaces extérieurs, accroîtront la lisibilité de l'ensemble des réseaux, et offriront des espaces ouverts, à l'air libre, accessibles aux piétons.

Des décrochements de volumes pourront former des terrasses extérieures à usage privé ou collectif.

Les *équipements* de la ville (écoles, équipements sportifs, culturels, socio-sanitaires, administratifs, commerciaux) sont répartis dans l'ensemble du tissu urbain pour répondre à l'objectif d'*imbrication des fonctions*. Ils se situent le long des rues piétonnes pour créer des axes privilégiés d'échange et d'*animation* dans la ville.

Les équipements peuvent être classés en fonction de leur aire de service :
- des équipements résidentiels (ex. : groupes scolaires, commerces quotidiens)
- des équipements de secteurs (ex. : piscine couverte) qui peuvent être uniques dans le germe, mais multiples dans la ville.
- les équipements à vocation centrale – représentés dans le germe par le centre commercial et le centre administratif et culturel – dont l'attraction est régionale ou subrégionale. Ces équipements peuvent être uniques dans le germe, mais se dédoubler (ou se déplacer) au cours de la croissance de la ville.

Les équipements sont le plus souvent regroupés en «*nodules*».
Ces regroupements correspondent
- soit à une *complémentarité* de fonction de plusieurs équipements,
- soit à une densification favorisant l'*animation* en un point privilégié,
- soit à un besoin d'accroître la *fréquentation* de certains équipements.

Les nodules d'équipements peuvent être composés d'équipements intégrés, juxtaposés, ou à proximité les uns des autres.

Les relations de proximité vont de l'intégration (fusion d'équipements avec locaux polyvalents), à la juxtaposition (équipements pratiquement mitoyens) jusqu'au voisinage (distance de 10 à 50 mètres).

Cet ensemble de «nodules» d'équipements est organisé en un *réseau* de points : les nodules sont répartis de façon que la distance qui sépare deux nodules voisins n'excède pas celle qu'un piéton accepte de parcourir sans recours au transport en commun ni à la voiture individuelle.

Dans le réseau des équipements, la distance séparant les centres de 2 nodules sur le réseau de circulation des piétons est d'environ 400 mètres.

En outre, ce réseau possède une certaine *continuité* : cette continuité, rendue possible par la forte densité du tissu urbain le long des rues piétonnes, se traduit par la proximité des équipements et la forme des nodules.

Un nodule peut être concentré en un point privilégié ou étiré le long de la rue piétonne.

Ce réseau peut *évoluer* : des équipements futurs non réalisables actuellement ou des extensions d'équipements prendront place le long de ces rues dans des *marges* d'espaces à réserver.

Les choix de localisation des «nodules» dans le tissu urbain d'une part et les uns par rapport aux autres d'autre part traduisent leurs fonctions principales, les relations qu'ils nouent entre eux, leur aire de service et leur mode d'accès.

Les équipements sont intégrés au réseau des volumes et occupent dans la plupart des cas les niveaux bas (un à deux niveaux au-dessus du sol), le long des «rues piétonnes». Des immeubles de bureaux ou d'habitation peuvent se situer au-dessus d'espaces occupés par des équipements courants.

integrés

juxtaposés

max 50 m   voisins

400 m

marge

Certains équipements ont besoin de prolongements fonctionnels dans des espaces extérieurs qui leur sont directement liés (ex. : la cour d'une école, les terrains de sports d'un C.E.S.) ; mais certains espaces extérieurs, par leur affectation précise, constituent des équipements (ex. : un parc urbain, un ensemble de terrains de sports) qui doivent être localisés compte tenu de leur fonction, de leur place dans le réseau des espaces extérieurs et de leur relation avec d'autres équipements.

En dehors des zones industrielles prévues à l'extérieur de la ville, des implantations de cette nature seront localisées dans le tissu urbain afin d'offrir des emplois secondaires proches des habitations et des équipements.

On a prévu d'accueillir 1 /3 des emplois secondaires dans la ville pour accroître l'*animation*, en mélangeant étroitement les fonctions dans la ville, et favoriser la *vie collective* et la *vie privée* en facilitant l'*accessibilité* des lieux d'emploi à partir des logements.

Environ 15 à 20 pour cent de la surface urbanisable prévue pour la ville sera réservée à ces implantations industrielles. En règle générale, il ne pourra y avoir plus d'un groupe de locaux industriels dans chaque maille formée par le réseau des voies primaires.

Les activités admises dans ces zones ne pourront en aucun cas produire des nuisances ou risques de danger et feront l'objet de demandes d'agrément examinées cas par cas. La densité de l'emploi devra être supérieure à 50 emplois à l'hectare. Ces lieux d'emplois doivent être bien desservis par la voirie : ils seront donc situés en bordure des voies primaires.

Le réseau de circulation automobile doit permettre l'*accessibilité* de tous les éléments de la ville, tout en assurant le *bien-être* des habitants, c'est-à-dire :
• un fonctionnement satisfaisant de ce réseau,
• la sécurité des usagers,
• la réduction du niveau des nuisances.
Les principes qui ont guidé la conception de ce réseau sont les suivants :
• le réseau est le plus *neutre* possible, c'est-à-dire qu'il ne privilégie aucun point particulier de la ville et peut s'adapter à un large éventail de modes d'utilisation du sol, permettant la plus grande liberté d'évolution de la ville sur le site.
• le réseau est fortement *hiérarchisé :*
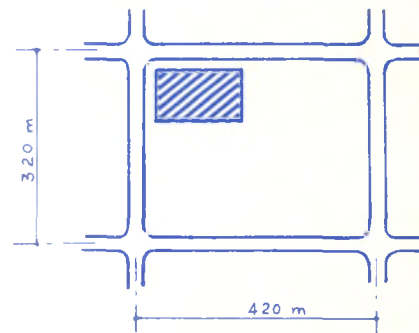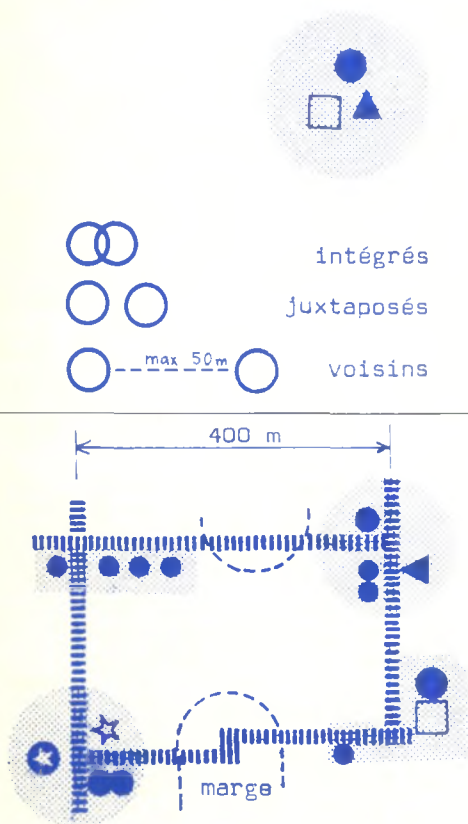
- **La circulation rapide** s'effectue sur un réseau de voies *primaires* **1**
- **La circulation de voisinage** s'effectue sur un réseau de *voies secondaires* **2** qui irrigue les éléments de la ville par l'intermédiaire des *voies tertiaires* et des *parkings* **3**.

Les transports en commun peuvent emprunter les voies primaires et secondaires, mais les cycles sont en principe exclus des voies primaires, ainsi que les piétons.

Les *voies primaires* se coupent grossièrement à angle droit pour former une maille rectangulaire dont les dimensions sont d'environ 420 mètres par 320 mètres.

L'orientation générale des voies est Nord-Sud pour les voies transversales et Est-Ouest pour les voies longitudinales, avec des possibilités de variations de plus ou moins 30 degrés pour s'adapter au site.

Le *réseau des voies secondaires*, dessiné pour une circulation lente, dessert les parkings, les lieux d'emplois, les habitations et les équipements. La plus grande partie de ce réseau est conçue pour une circulation à double sens, sans stationnement latéral, sauf sur des surlargeurs prévues à cet effet.
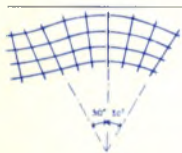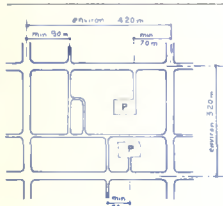
Lié aux voies primaires, ce réseau permet en outre de passer d'une maille à l'autre pour des liaisons de courtes distances en traversant la voirie primaire à l'abri des feux tricolores.

Les *parkings* du germe, caractérisés par deux modes d'occupation (longue ou courte durée), sont de deux types : à l'air libre et couverts. Les seconds sont généralement à un ou deux niveaux superposés. La dalle de couverture pourra être utilisée pour des cheminements-piétons, la construction de volumes ou la reconstitution de jardins-terrasses.

La *voirie tertiaire* est constituée par les accès aux parkings et par des voies en impasse ou à sens unique bouclées qui complètent le réseau secondaire pour desservir les pieds d'immeubles ou servir d'accès aux voitures de service ou de sécurité.

La circulation à pied est le mode d'accès privilégié aux équipements de la ville, le réseau des piétons devant desservir ces derniers en respectant les impératifs de sécurité et en offrant le plus large éventail dans le choix des itinéraires.

Les implantations industrielles seront desservies par le réseau-piéton, soit à niveau du sol, soit à niveau supérieur. Des passages pourront traverser ces micro-zones entre deux lots afin d'éviter de contourner des espaces trop importants.

Contrairement à ce qu'il a été parfois écrit, il ne s'agit pas de faire au Vaudreuil une «ville sans pollution». Une telle définition n'aurait pas de sens scientifique précis, car il n'est pas possible de définir de façon exacte un milieu «naturel» totalement dépourvu de nuisances. Ces dernières résultent en général d'une concentration trop importante d'un élément physique ou chimique, et la définition des seuils de tolérance pose des problèmes difficiles. D'autre part, il serait sans intérêt de réaliser au Vaudreuil une ville parfaitement protégée au prix de dépenses très élevées, si, en même temps, la situation devait s'aggraver dans les autres villes.

Les véritables objectifs de l'opération sont de deux ordres :
- d'une part la construction de la ville nouvelle sera l'occasion d'une réflexion synthétique sur toutes les questions relatives aux nuisances urbaines, notamment dans leurs rapports avec les formes d'urbanisation.
- d'autre part, Le Vaudreuil sera un banc d'essai où pourront être étudiées et expérimentées en vraie grandeur différentes mesures concrètes, techniques ou réglementaires, susceptibles d'être ensuite généralisées en France et même éventuellement dans d'autres pays.

Le problème majeur est de tenir compte de tous les aspects du problème, non seulement les aspects scientifiques, techniques et urbanistiques, mais aussi les contraintes économiques, financières, psychologiques et sociologiques qu'il faut respecter pour déboucher sur des solutions réalistes.

Les recommandations relatives à l'étude préalable du site ont été particulièrement déve-

loppées. Elles permettront de dresser un bilan complet du climat, de l'atmosphère, de la végétation, de l'état des cours d'eau, des plans d'eau et de la nappe phréatique avant le commencement des travaux.
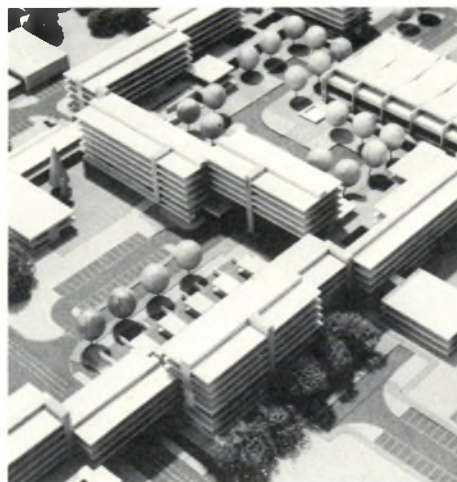
Un autre groupe de recommandations constituent surtout des orientations de principe qu'il reste à confronter aux autres aspects des problèmes. Elles concernent notamment:

- la mesure de la diffusion des bruits engendrés par les différents types d'engins de transport,
- le choix d'un type de réseau de transport permettant d'assurer une circulation continue et fluide des automobiles,
- le choix d'un mode de chauffage réduisant la pollution de l'air,
- la création d'écrans végétaux protecteurs, composés d'essences sélectionnées, entre les zones industrielles et les secteurs d'habitat et de loisirs,
- la nécessité d'associer les habitants à l'opération, notamment dans le cadre des activités d'enseignement.

La ville nouvelle du Vaudreuil présente donc plusieurs caractères expérimentaux simultanés:

- dans le domaine de l'urbanisme conceptuel, par l'élaboration d'une méthode d'étude et de réalisation mieux adaptée à l'évolution rapide des modes de vie,
- dans le domaine des techniques de construction, avec le programme expérimental de 4,000 logements,
- dans le domaine des nuisances urbaines.

Il est important de souligner que ces caractères ne se contredisent pas mais, tout au contraire, se renforcent et se valorisent les uns les autres. Il devient ainsi possible d'aborder une étude synthétique de tous les problèmes que pose l'environnement urbain, et cela dans une vue prospective.

La complémentarité de ces programmes d'études et de recherche est un exemple de la nécessité si souvent rencontrée à l'heure actuelle d'explorer les «interfaces» entre les domaines scientifiques ou techniques différents.

Une autre caractéristique générale des études en cours au Vaudreuil mérite d'être signalée. En renonçant délibérément à traiter la ville future comme un objet fini susceptible d'être étudié en détail 30 ans à l'avance, on est conduit à passer d'une procédure d'étude préalable de type classique à un processus beaucoup plus complexe, ouvrant délibérément des possibilités d'intégrer, au fil des ans, des objectifs, des résultats, des techniques et des préoccupations nouveaux. Cela rend plus difficile la tâche des responsables et conduit à l'élaboration de méthodes d'études plus complexes, laissant une place à l'aléatoire dans la planification urbaine.

Mais c'est à ce prix que l'urbanisme opérationnel pourra éviter de se figer sur des modèles trop rigides et trop vite dépassés par l'évolution des préférences et des besoins des habitants, et déboucher sur une prise en compte globale et synthétique de toutes les données d'environnement pour créer l'espace urbain de demain.

*La conversion au système métrique, étant non seulement officiellement envisagée mais «inévitable et désirable pour le Canada», selon les termes de M. Jean-Luc Pépin, alors ministre de l'Industrie et du Commerce (voir Habitat, vol. XIV, no 4/6, 1971), il nous paraît opportun de laisser parler d'eux-mêmes centimètres, mètres et kilomètres... Rappelons pour mémoire que:
le centimètre équivaut à 0,394 pouce
le mètre équivaut à 3,281 pieds
le kilomètre équivaut à 0,621 mille
un hectare équivaut à 10,000 m²

Riding away in all directions on a new frontier... is not the way of science.

by Trevor Denton

Although there has been a longstanding interest within the behavioural sciences in the relation between man and his environment, there has been a sudden burst of interest and activity in the field in the past five years.

With a few exceptions, it is difficult not to see this burst of interest as a response to the popular outcry over pollution and the natural environment. Across a wide range of academic disciplines there has been a tendency to legitimize environmental or ecological projects as being "relevant".

Unfortunately, enthusiasts of man-environmental studies have, like one of Stephen Leacock's characters, ridden madly off in all directions at once. The result has been an undeniable hodge-podge so that the field now lacks definition in the extreme. Use of the umbrella term "environment" implies a unity which does not yet exist, and obscures the fact that we are not all talking about the same environment.

We badly need advances on two fronts. The first is an interdisciplinary consolidation and assessment of what has been done to date in anthropology, architecture, geography, human factors engineering, social psychology and sociology. There now exist several bibliographies in the general area but no adequate consolidation of their contents.

The second advance needed is to give the field definition and direction. To that end I am setting out here some salient issues for consideration. Two broad classes of issues will be discussed — those concerning the definition of the boundaries of the field and those dealing with conceptualizing what falls within these boundaries.

Defining the boundaries of the "environment" field
1 Environment : social or physical
Recent activity in man-environmental studies has focused on the physical environment and, with the odd exception, has avoided the social environment. Given that the physical environment has been largely ignored until recently, it is reasonable to separate environments on the arbitrary basis of whether they are physical or social. However, as time goes on we shall have to ask whether we can increase our power to predict human behaviour by including both physical and social environmental influences. It is somewhat disconcerting to realize that the social environment includes all situations in which people interact, and might simply be a new label for the basic grist of all the various mills of social science.

2 Proximate versus distal environments
A proximate environment may de defined as one directly contributing sensory cues to a person in it, as with a room or an open playground. Many social psychologists approach the environment in this way.

Distal environments, on the other hand, are those outside the range of direct sensory awareness. Sociologists, for example, have been interested in factors such as neighbourhood type. In a classical work on cultural ecology, anthropologist Julian Steward examined the ways in which the social organization of the Great Basin Shoshone could be seen as a response to the limited range of food production activity possible in an arid area.

Whether a rigid distinction should be made between proximate and distal environments remains to be seen. What is clear is that the distinction has already been implicitly made, probably as a result of the biases of researchers' respective parent disciplines. The distinction is a reasonable one to make at this stage as a means of simplifying an understudied area of human behaviour. Whether the proximate-distal distinction lasts will depend on the degree to which it adequately reflects the complexities of the real world which more sophisticated research will detect.

3 Range of physical variables

In studying physical environments only a small number of variables have received extensive coverage—furniture arrangement, housing type, neighbourhood type and the like. An entire range of physical variables have barely been tapped—light intensity and colour, sound frequency and intensity, temperature, humidity, barometric pressure, tactile surface types, and enclosure dimensions—to cite only a few. Whether these items do influence social behaviour in significant ways remains to be seen. Nevertheless, the physical environment is considerably more complex than it has usually been conceived to date.

4 One discipline or many

Who are the "rightful" investigators of man-environmental studies? At present there is no unified discipline providing a professional identity. In fact, there is no single label agreed upon which immediately communicates the areas of concern to the field. Rather, the field is fragmented—parcelled out into existing academic disciplines under rubrics such as architectural psychology, human factors engineering, environmental anthropology, environmental-ecological psychology, environmental-urban sociology, proxemics, human ecology and the like. Some journals and university programs labelled "environmental" have appeared in the past few years. However, given the lack of agreement on the issues mentioned so far, and especially the immense range of relevant physical and behavioural variables, it would appear likely that the parcelling out into existing disciplines mentioned above will continue for some time to come.

Conceptualizing the contents of the "environment"

1 Advancing the field : by laundry list or logic

The field is a young one and should therefore not be criticized too harshly. However, it is difficult to avoid the conclusion that it has evolved helter-skelter in such a way that we now have little more than a laundry list of accumulated research projects intuitively classed as environmental. In order to make progress we need to pursue a strategy of establishing priorities. We need to emphasize projects which will help in establishing theory so that we may better conceptualize and integrate the vast range of variables involved. This might now proceed by carving up the field into a number of problems which seem of crucial importance at this time.

2 Cultural versus natural environmental processes

In conceptualizing the environment we must distinguish between invariant natural items and cultural matters which may vary from culture to culture. Items of the physical environment take on a symbolic meaning during human interaction, and it is this meaning, rather than the physical items themselves, to which people react. I would guess that the regulation of distance between persons during interaction is a natural process wherein distance is invariably an indicator of the intimacy level involved, although the precise distances appropriate may vary between cultures. On the other hand, I found that residents of a Canadian Indian reserve—where I did research work on the subject* —tended to position living rooms near the front of the house and kitchens near the back, so that important guests might enter directly from the road into the more prestigious living room area. What is at stake here is not the room, but a more fundamental process of prestige

*See Habitat Vol. 15, No. 6, 1972

allocation and presentation of self during interaction by means of the physical environment. The prestige accorded different rooms, and the types of room themselves, may be expected to vary from culture to culture. In short, the expressive quality of physical environments makes them particularly susceptible to cultural variation. We must therefore be on the lookout to distinguish cultural from natural processes.

3 Environment as direct or indirect cause

Should we conceive of the physical environment as directly or indirectly influencing social behaviour? Probably both relations exist. However, there is good reason to emphasize the view that the environment is an indirect, permissive variable, influencing the conditions under which more powerful social pressures will come into play. For example, furniture arrangements do not directly cause the details of social interaction, they merely bring people together (or keep them apart) so that interaction is possible (or highly unlikely, if not impossible). The nature of the interaction will depend largely on evolving social relationships among participants. Similarly, the arrangement of doors in a building may bring people together, allowing friendships to form, if the social conditions (similarity of interests, et cetera) are appropriate.

4 Descriptive versus explanatory research

For a new field, exploratory-descriptive studies are important strategies for generating theory, and much of the work done to date appropriately has been of this variety. While exploratory-descriptive studies will continue to be important, the time has come for a more concerted effort toward prediction and hypothesis testing. For example, the initial (and unwarranted) shock, of finding that concepts of animal ethology such as territoriality are applicable to humans, should really be over. We now know that human territories may sometimes exist, and we ought to go on to inquire under what conditions and in what forms they may be found.

A need for priorities

Man-environmental studies are in obvious disarray. There has been an intense interest in the field in the past several years, although behavioural studies grouped under the umbrella "environment" have been held together as much by the emotive content of that word as by any agreement on its definition and conceptualization.

Perhaps the most important step to take now is to eschew the shot-gun approach that has characterized the field in the past. Rather than blasting away in all directions, we need to establish priorities. We need to involve ourselves in research projects important to the formulation of theory. We need to frame these projects in theory which can be falsified, or accepted, by testing against data. This is the way of science.

Finally, I hope the questions raised in this article can soon begin to be resolved, for we are obviously dealing with a new frontier in the study of human behaviour. Pollution is real, but the current popular outcry over it may prove to be a fad. If this is so, interest in man-environmental studies will not diminish, for it is already apparent that such studies have a great deal to contribute to the well-being of human life in homes, in offices, in fact in all built environments.

Citizen Participation, Innovation, and the Municipal Planning Process

by Peter B. Loebel

The question as to how more opportunities can be provided for citizen participation in local government received major publicity at the conference of the Canadian Federation of Mayors and Municipalities in 1972. Very strong emotional reactions were provoked from representatives of some municipalities when citizens complained that they could not communicate their goals to elected officials. Some municipalities, such as Winnipeg, have been highly innovative in recognizing that local government has to be relevant and meaningful to more citizens, if citizen participation is to increase. Representatives of other municipalities saw few problems in the existing system and criticized interest groups who refused to communicate with councils through elected representatives.

Why do politicians and citizen groups differ so vehemently? One reason is that groups of citizens who have not traditionally spoken out on behalf of their own goals have become increasingly viable politically. They have, and are, succeeding in making themselves felt as a result of guidance gathered from professionals in various disciplines, the employment of full-time organizers paid for through various types of funding, as well as the interest of the news media in their activities. Indians, Eskimos, the elderly, youth, the working poor, tenants and welfare recipients have all, in recent years, begun to accumulate the leadership skills and organization membership necessary to articulate their goals in a way that has for decades been normal for other interest groups. Because many of them have not previously participated in public decision-making about goals that they feel are important and, because elected and appointed municipal officials have not by and large recognized them as groups with specific goals, the former are not at all confident that their interests are being effectively represented in the trade-offs that are part of political decision-making.

Further, while new citizen agitation is frequently directed to municipal officials, they usually reply that the municipality lacks the resources and the authority to remedy the situation. This reason, with all its constitutional ramifications, is now receiving serious attention from the municipalities, provincial governments and the new Federal Ministry of Urban Affairs.

Of the two, however, the first reason, the participation of new interest groups, is one that I see as solvable within the framework of existing legislation. The provincial planning statutes provide a promising avenue for achieving orderly citizen participation in municipal government. This aspect of municipal planning has received little consideration outside urban renewal. The municipal planning process is one alternative to the confrontation and polarization that disturbs politicians, and the lack of involvement in public decision-making claimed by the citizens. It is to this end that some fresh perspectives will be discussed with reference to the existing planning statutes.

Innovation

The Ontario Planning Act, for example, is explicit on both the range of problems that municipal planners are expected to direct their attention and the importance of citizen participation as a method of collecting data for researching problems. Section *10–1* reads as follows:

"Every planning board shall investigate and survey the physical, social and economic conditions in relation to the development of the planning area and may perform such other duties of a planning nature as may be referred to it by any council having jurisdiction in the planning area, and without limiting the generality of the foregoing it shall,

- prepare maps, drawings, texts, statistical information and all other material necessary for the study, explanation and solution of problems or matters affecting the development of the planning area;
- hold public meetings and publish information for the purpose of obtaining the participation and the co-operation of the inhabitants of the planning area in determining the solution of problems or matters affecting the development of the planning area."

The two variables which determine "how" these research and community consultation activities will be undertaken are the work contributions made by planning board members and staff in the course of the municipal planning process. The assumptions essential to this view are that while planning boards are expected to undertake specific tasks including the preparation of official plans, zoning bylaws, redevelopment plans and the processing of rezoning and subdivision applications, they are also expected to foster public policies which determine the criteria whereby decisions will be made that effect the administration of these tasks.

These criteria, which are essentially value judgements, account for many of the differences in the way the same activity is administered from one municipality to another. The context within

which these tasks are undertaken is also important. In some municipalities responsibility rests with planning boards appointed by the council while in others, responsibility is lodged directly with a committee of the municipal council. The merit in locating the planning function with a board is that this arrangement can encourage citizen participation and innovative approaches to problem-solving.

In accepting the fact that their recommendations are always subject to council approval, some planning boards have been reluctant to diverge greatly from traditional approaches for fear of being overruled. Board decisions thus tend to be conservative. However, I feel that in order to justify their existence, planning boards must demonstrate their ability to innovate and to involve citizens in the process of reaching sound recommendations.

What marks an innovative planning board? A board that takes clear positions on policies they believe are important both to the less powerful as well as the more powerful sections of the community, and can do so without seriously alienating its sources of financial support.

In achieving these objectives, some useful insights can be gained from the accumulated experience of voluntary welfare administration. A voluntary agency, concerned with social policy as well as the performance of tasks, continually treads the high wire between innovation and its susceptible sources of support. In the voluntary agency, it is up to the board and the executive director to see that sources of finances are not overly threatened and doing this occupies a major portion of their time. The semantics of social policy can become as important as the content.

While there are differences between the incentives that encourage municipal planning boards and voluntary agencies of the kind supported by united community funds to involve more citizens in policy development, there are also similarities.

The similarities have not figured as prominently as they should in the administration of planning boards. Voluntary agency board members, like planning board members, are nominated by an interested group who come together around a sense of civic duty, previously related experiences and a liking for the particular activities in which the board is engaged.

Municipal Planning
It is proposed here that citizens will participate in municipal planning if methods of citizen participation and research can be developed so that citizens come to believe they can significantly advance their own goals through participation. The involvement of more interest groups in the planning process relative to their own goals can, in turn, be expected to lead to a wider interpretation of environmental problems studied by the board. The result would have to be com-

mitments negotiated between the planning board and interest groups to deal with sets of goals that have not been directly dealt with before. This is simply an extension of the same kinds of expectations that exist between planning boards and such interests as the development industry and ratepayers' associations.

No other activity of government is more suited for citizen involvement and promoting an innovative approach to problem solving. Furthermore, the implementation of plans involves the private decisions of citizens as well as the public decisions of government. So it is in the political interest of municipal councils to ensure that planning on behalf of the larger more complex environmental issues is not contrary, in time and space, to the goals of those who are expected to make decisions consistent with the municipality's official plan.

Planning boards are employed in processing applications for subdivisions, rezoning and redevelopment. They must also be occupied in the even more essential and continuing activity that requires them to make the subtle distinction between the causes and symptoms of problems. The alleviation of causes should also be part of their commitment.

This is, in fact, to become engaged in policy formulation and social action; activities that are similar to the voluntary social welfare agency. In my view, these are desirable expectations of an appointed planning board whose political accountability is obscure in contrast to that carried by an elected municipal council.

The fact that planning boards lack the authority to make decisions of municipal policy, need not be a detriment to innovative leadership from its chairman and commissioner. History shows that an absence of leadership can be equally demonstrated in the case of decision-making bodies that possess authority. Indeed, research reveals that authority in urban communities is fragmented and dispersed. Accordingly, proponents of policy are almost always forced into strategies which result in informal arrangements for exercising power and influencing decisions. Initiative is only possible at certain times and places and only on behalf of carefully selected increments of that policy.

Assuming that the roles of planning board chairman and commissioner are major influences in how a board functions relative to citizen participation and an innovative approach to policy formulation, then skills in motivating citizens, building consensus around specific increments and extending the planning boards' long established practice of coordinating municipal departments around building and development activities are required.

Leaders in voluntary social welfare agencies have demonstrated expertise in motivating volunteers and in consensus-building, but lack the authority to do the coordinating. Most planning commissioners have expertise in the third, but have had relatively little practice in the first two. It is necessary to combine all three skills in the municipal planning process.

Inducing Motivation and Concensus-Building
The role ascribed to an executive director or planning commissioner provides

a unique opportunity to promote development of a particular kind of board awareness; one consistent with his professional standards, yet at the same time compatible with the bureaucratic requirements of the municipality which provides the planning board's budget.

In the case of voluntary welfare agencies, this opportunity is valued highly by professional social workers employed as executive directors. Board members of voluntary agencies usually expect this kind of orientation from their executive directors. At the same time, executive directors look to their boards to perform certain complementary functions:

1 Identify problems requiring service;
2 Initiate, make and approve policy to prevent, treat or control these problems;
3 Validate the services. By their participation in the work of the organization, board members commend its work to interest groups;
4 Help to secure funds;
5 Oversee the operation of the agency. They select and employ the executive director and approve the employment of other staff members. They authorize budgets and supervise expenditures;
6 Interpret the organization's purposes and its services to community leaders. They also help to interpret community attitudes and problems to staff members.

These functions are not limited to voluntary agencies. They are also applicable to municipal planning boards. The question of how much weight is placed on these functions is an outcome of how each is viewed by the executive director or planning commissioner and their boards. My experience is that the executive directors of voluntary agencies are by necessity more oriented to-

wards a greater involvement of their board members in these functions than planning commissioners.

Much of this voluntary board activity is directed toward creating and maintaining a constituency for the agency. The idea is based on accumulated evidence that a voluntary agency requires a constituency that is not only using its services, but is one that also cares about the board's objectives. Some of the functions served by this constituency are to :

1 Help the agency understand community needs which various interest groups feel are important ;
2 Suggest programs, services, regulations and nominations that are most likely to assist in meeting these needs ;
3 Provide a resource for interpreting the agency and soliciting budgetary support ;
4 Assist the agency in evaluating the quality of its work and suggest modifications and improvements ;
5 Assist politically at vital points of policy determination.

The idea of building and maintaining a constituency is central to the role of planning commissioner visualized here. If the job of planning boards is to advise and heighten the horizons of municipal councils, a position taken by the widely respected Chairman of the Ontario Municipal Board, Mr. J. A. Kennedy, Q.C., then it is important that the board have a constituency to support its positions.

Coordination of Facilities and Services

The important work done by planning boards in coordinating the planning of facilities between municipal departments in respect to public and private land development merits more attention. These coordinating activities, however,

should be extended to include many non-municipal agencies. These have demonstrated that they serve an essential role in helping citizens attain their goals and they comprise groups such as tenants' associations, hospitals, united community fund supported agencies, libraries, children's aid societies, boards of education and so forth. Moreover, in particular cases, coordination should be expanded to include program as well as facility planning. For example, in the case of board of education, concern needs to be registered around neighbourhood development as to how school space will be used, and who is going to pay for the cost of supervising its use when it is not serving academic purposes.

An extension of planning board activities in this direction involves communicating in an ongoing institutionalized manner with constituencies. Conversely, providing opportunities for the constituencies to communicate their goals and appraisals of planning situations is equally important. Sometimes certain constituencies, which will be seriously affected by planning proposals, are not aware of implications. Through community involvement activities, planning boards should be expected to seek out and encourage participation from interest groups that have not traditionally participated in the planning process.

To do this requires that the municipality utilize incentives that are meaningful to such constituencies. Such incentives are already available, but they are not always thought of in these terms. For example, licensing for voluntary fund-raising from the public, approving municipal grants and participating in joint municipal-voluntary schemes such as the use of school facilities by voluntary recreation agencies.

Summary

It is my view that the municipal planning process provides invaluable opportunities for the orderly involvement of interest groups. Particularly, it provides opportunities for groups who have not traditionally advanced their goals in an effective way through government. Under existing legislation, a much wider range of goals could be accommodated by planning boards ; a range that can be as wide as the board chooses to interpret "physical, social and economic conditions".

I have suggested that the field of voluntary social welfare administration provides some useful insights for planning boards in terms of citizen participation and innovative policy development.

In the majority of planning situations, the boards will not immediately influence municipal decisions. To expect otherwise is unrealistic in the light of the time span over which major policy changes occur in a democratic society.

However, research shows that major changes result from a series of incremental, that is short range, policy changes. Planning boards through elaborating upon their long established line positions relative to municipal departments, and through building and maintaining a constituency, could exercise more influence over the kind of development that results from a municipality's official plan. To do so, requires a somewhat new orientation to planning, particularly on the part of planning commissioners and politicians.

Lorsque de jeunes étudiants se mettent à l'oeuvre...

Entrevue avec M. Gilles Bureau,
professeur d'histoire au Petit Séminaire de Québec.
par François Lapointe

Le travail est souvent considéré, et à juste titre d'ailleurs, comme un moyen de valoriser la personne humaine. De jeunes élèves du secondaire IV ont certainement constaté le bien-fondé de cette affirmation lorsque sous l'habile direction de leur professeur d'histoire du Canada, M. Gilles Bureau, ils s'attaquèrent à la tâche difficile, mais combien intéressante, de construire des maquettes de maisons anciennes.

Cette expérience qui a été tentée au vieux Séminaire de Québec devait mettre durement à l'épreuve les talents de «constructeurs» de ces étudiants de 15 et 16 ans. Et pourtant, le jeu en valait la chandelle puisqu'en s'inspirant d'ouvrages encyclopédiques et de constructions existantes, ils réussirent à relever le défi et à produire un travail empreint d'originalité et dont la caractéristique principale est la précision dans les détails et les dimensions.

Dans le cas de ces jeunes «constructeurs», il n'est pas permis de croire que la conservation des édifices historiques est une notion qu'ils balaient du revers de la main. Au contraire, ces maquettes sont le témoignage d'une grande sensibilité et d'un désir profond de sauvegarder intactes ces magnifiques réalisations, témoignages de ceux qui nous ont précédés.

Lorsque de jeunes étudiants se mettent ainsi à l'oeuvre et nous offrent de semblables résultats, nous ne pouvons que féliciter les initiateurs d'un tel projet et espérer que la population saura, dans l'avenir, encourager et appuyer fortement ces nouvelles méthodes d'enseignement. Si, selon le dicton, une image vaut mille mots, il est certain qu'un tel travail produit par des étudiants vaut mille cours théoriques.

Q M. Bureau, vous êtes professeur d'histoire au Petit séminaire de Québec. Vous avez proposé à vos étudiants dans le cadre d'un de vos cours, de confectionner des maquettes de maisons québécoises. Pourriez-vous nous dire, de façon plus précise, quels sont les motifs qui vous ont incité à tenter cette expérience?

R Etant professeur d'histoire du Canada, j'ai pu constater, à de nombreuses reprises, la large part qu'occupe l'histoire politique dans le programme d'étude de secondaire IV. C'est pour cette raison que j'ai cru nécessaire de trouver des moyens de faire découvrir à mes étudiants d'autres valeurs historiques non moins importantes.

L'histoire naturelle intéresse désormais de plus en plus les jeunes Québécois et, par conséquent, les trésors du patrimoine leur paraissent des valeurs qu'il faut conserver à tout prix. C'est dans ce sens que la fabrication de maquettes de maisons québécoises nous est apparue comme étant un moyen susceptible de développer, chez nos jeunes étudiants, un esprit de création et de leur faire prendre conscience de la nécessité de conserver nos édifices historiques.

Q La confection de maquettes est un travail difficile qui demande une certaine connaissance à la fois du sujet et de la technique. Comment avez-vous procédé dans l'élaboration de ce travail et de quels outils vos étudiants disposaient-ils?

R Naturellement, la plupart de mes étudiants en étaient à leur première expérience dans la fabrication de maquettes. C'est pourquoi nous avons dû leur faciliter la tâche en résolvant, au préalable, certains problèmes techniques qui n'auraient certainement pas manqué de se poser.

Pour ce faire, nous avons apporté en classe la maquette d'une maison normande. Cette maquette n'était pas terminée et, par conséquent, laissait voir les principales étapes de la construction. Nous leur avons, de plus, inculqué quelques notions sur l'évolution de la maison québé-

coise. Enfin, l'étudiant avait la possibilité de se référer aux constructions déjà existantes ainsi qu'aux ouvrages encyclopédiques de Michel Lessard sur les antiquités et les maisons québécoises.

Jusqu'à tout récemment, il était difficile d'effectuer des travaux manuels de ce genre, faute de matériel didactique accumulé depuis des générations. Toutefois, la publication récente des livres de Michel Lessard nous a enfin fourni des instruments de travail économiques et parfaitement illustrés. Je devrais cependant ajouter que l'étudiant avait le choix entre trois hypothèses de travail, de sorte que s'il ne se sentait pas d'habileté manuelle, il pouvait toujours se lancer dans l'élaboration d'une recherche différente. Mais, que 70 élèves sur 140 choisissent de faire une maquette est, pour moi, extrêmement significatif de l'intérêt que ces jeunes portent à la restauration ainsi qu'à la conservation de nos monuments et édifices historiques.

Q Les parents se posent souvent en juges à propos de semblables initiatives. De quelle façon les parents de ces étudiants ont-ils réagi à cette nouvelle technique d'enseignement?

R De façon générale, les parents ont été enthousiasmés par la nature de ce travail. On sait que de nos jours, un grand nombre de parents se plaignent de ne plus être invités à travailler avec leurs enfants ou capables de le faire.

Les mathématiques modernes ou les sciences ne sont plus à la portée de tous les parents et le fossé entre ces deux groupes a tendance à s'élargir constamment. Par conséquent, la confection d'une maquette a été, pour eux, l'occasion rêvée de rétablir le contact avec leurs adolescents. Lorsque nous les avons rencontrés, ils nous ont parlé des longues heures de travail passées avec leurs jeunes ainsi que des nombreuses discussions que cette re-

cherche a suscitées. Je crois que pour les parents, comme pour les enfants, cette expérience aura été énormément enrichissante.

Q M. Bureau, vous semblez accorder beaucoup d'importance à la nécessité d'exposer les travaux de ces étudiants. Quels étaient les buts recherchés lors de la mise sur pied d'une telle exposition?

R Le fait d'exposer les oeuvres recueillies encourage énormément les étudiants ainsi que les parents qui ont participé, d'une façon ou d'une autre, à l'élaboration de ces maquettes. Un autre détail excessivement important est que l'appréciation du professeur s'est trouvée, par le fait même, corroborée par les commentaires faits lors de l'exposition.

De plus, une telle exposition avait comme fonction d'ouvrir la voie à un travail du même genre l'an prochain. En définitive, la nécessité d'exposer les oeuvres même s'il s'agit de travaux d'étudiants, ne peut être mise en doute. Je dirais même qu'il serait bon à l'avenir, si le budget de l'école le permet évidemment, de récompenser les oeuvres les plus méritantes en ayant soin toutefois de s'assurer qu'elles sont bien le produit des élèves. Cette exposition n'a créé aucune difficulté particulière et le tout a remporté beaucoup de succès.

Q Un travail de ce genre n'est guère fréquent dans nos milieux scolaires, particulièrement au niveau de secondaire IV. Il s'agissait d'une nouvelle technique d'enseignement et, à ce sujet, personne n'ignore qu'une initiative de ce genre n'est pas toujours bien reçue par la population. De quelle façon le public a-t-il réagi dans le cas de ces maquettes?

R A l'exception de quelques personnes peu sensibilisées à ces nouvelles méthodes de présenter la matière, je puis affirmer que la population a, en général, réagi favorablement à cette expérience. Ceux qui traitent ce genre de travail d'enfantillage connaissent bien peu ou bien mal la psychologie des jeunes. Tous mes étudiants connaissent maintenant au moins quelques termes d'architecture ainsi que les principales étapes de l'évolution de l'habitation au Québec. Grâce à ce travail, la population a pu se rendre compte que l'histoire n'est pas constituée uniquement de dates et de personnages et que l'élément culture peut très bien s'apprendre par l'examen attentif d'une oeuvre.

Je suis très satisfait des résultats de cette expérience et ne peux qu'espérer qu'elle aura une suite. Tous les éléments positifs qui ressortent jusqu'à maintenant justifient amplement l'usage de ces nouvelles formes d'apprentissage dont l'étudiant demeure le premier bénéficiaire. C'est sur l'étudiant que nous devons concentrer tous nos efforts et si nous réussissons à le passionner, à l'intéresser à un travail, si difficile soit-il, nous pouvons dire que nous avons accompli notre oeuvre.

"Controlling Urban Land Resources has become a Critical Problem"

The effective control of urban land resources has become critical as world urbanization continues, declares a recently-published United Nations study.

Entitled "Urban Land Policies and Land-Use Control Measures", the study comprises five volumes*, each surveying the conditions, problems and policies of a major world region : Africa, Asia and the Far East, Western Europe, Latin America and the Middle East.

According to the study the regional surveys show that land shortages caused by population growth and changes in land use are aggravated by the highly speculative nature of the land market. They also demonstrate that while the growth of demand for urban land in the face of limited supply is a phenomenon of global occurrence, problem dimensions differ throughout the world, between regions as well as between countries. "Local circumstances determine not only how a problem is defined", the study points out in this connection, "but also the appropriate course for corrective action."

The regional surveys vary according to a number of factors, including the approach of the researchers involved, the availability of data and the characteristics of the region. But each deals with at least the following topics : factors influencing urban land supply and demand ; patterns of urban form and structure ; systems of land ownership and tenure, (including expropriation procedures) ; and urban policy systems and

* *Volume I. Africa*. Sales No. E.73.IV.5 ; price $US 2.50 ; *Volume II. Asia and the Far East*. Sales No. E.73.IV.6 ; price $US 3.50, *Volume III. Western Europe*. Sales E.73.IV.7 ; price $US 5.00 ; *Volume IV. Latin America*. Sales No. E.73.IV.8 ; price $US 2.50 ; and *Volume V. Middle East*. Sales No. E.73.IV.9 ; price $US 1.50 (or, for each volume, the equivalent in other currencies).

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land control measures. Each regional survey also describes the obstacles preventing the development and implementation of more appropriate land control techniques and discusses the role and importance of comprehensive planning in controlling land development.

Central Tendencies

In its introductory observations, the study draws attention to certain central tendencies which emerge from the regional analyses:

... in every region examined, cities are experiencing and will experience acute problems in providing an adequate supply of land at the right place and at the right time.

... the diversity of circumstances from country to country means that each country must fashion its own response. The experience of others, although useful in suggesting alternatives, must always be evaluated in the light of local conditions.

... a theme which runs through the regional studies is the tension between the momentum of the past and the needs of the present and the future. Contemporary land policies must, as they are designed, be harmonized with inherited institutions, customs, mores and laws.

... changing, powerful historic forces require very sensitive strategies for change that are as deliberate and as thoroughly conceived as are decisions about goals and objectives. Perhaps, the study suggests, the most effective strategy for change is to modify the man-land relationship incrementally.

... the regional analyses point convincingly to the interdependence between the land question and a host of other considerations. There is need, therefore, for a comprehensive approach to land questions that embraces social, economic and physical sectors, linked together at national, regional and local levels.

... land control devices may be divided into two groups: negative measures, which are aimed at preventing or sanctioning behaviour, and positive measures, which encourage and reward behaviour. The effectiveness of any measure, however, depends upon the establishment of clear policies as the basis of control and implementation of strong enforcement procedures.

The Land Problem in Urban Canada

A shortage of urban residential serviced lots prevails across Canada. This shortage is more acute in some regions, particularly in the urban areas of Ontario. The major causes of the problem relate to the monopolistic elements on the supply side as well as to the requirements of municipal finance. The land developers contribute to the shortage of serviced lots by withholding land from development in order to maximize profits. On the other hand, the municipalities consider new developments in relation to their impact on revenues and expenditures. This behaviour, which tends to favour "profitable" developments, led to the shift of the financing of the services from the municipalities to the developers, thereby eliminating smaller firms and reducing the degree of market competition.

The federal government has introduced a number of programs in order to solve the problem of land shortage. These are 1 the Land Assembly Program, 2 the New Communities Program and 3 the Sewage Treatment Program. The "Land Assembly Program" provides funds for land banking which increases the supply of land and takes pressure off prices. The "New Communities Program", provides a broad range of federal assistance with the objective of removing pressures from existing urban centres. The "Sewage Treatment Program" assists local governments by providing loans for trunk sanitary sewers, interceptors and sewage treatment plants. These loans, which are partly forgivable, enable the municipalities to develop land at lower cost than otherwise would be the case. J. K.

BOOKS

Housing Crisis U.S.A.
by Joseph P. Fried,
with Foreword by John V. Lindsay,
Praeger Publishers,
New York, 250 pages.

Has the United States the "determination of spirit" to provide a decent home and a suitable living environment for all its citizens? Joseph P. Fried, author of Housing Crisis U.S.A. looks on the works, the resources and the pride of United States ingenuity, but despairs of seeing higher levels of accomplishment in housing. He sees housing as "one of the basic failures of American society".

As a reporter who covered real estate and housing news for two years for the New York Times, Mr. Fried became incensed at the incongruity of United States space age spending, which he claims resigns millions of earthlings to a deplorable living environment. He blames the Nixon administration for perpetuating this trend and for disregarding the findings of major national commissions, including the Douglas and Kaiser studies reporting on civil disorders and housing.

Mr. Fried describes the Detroit forays by George Romney, Secretary of Housing and Urban Development, and the tours of civil leaders through the abyss of the Brownsville slum in Brooklyn, New York. In both situations he captures the reactions of tenants and landlords to such ineffectual political posturing. The story is not new, but it evidently bears repeating since at least 11 million families, or one out of every six in the United States are badly housed. He finds that census-takers believe such figures seriously under-estimate the number of substandard units and fail to indicate the magnitude of urban blight. Furthermore, he notes that preoccupation with big-city slums has obscured the fact that at least half of the substandard units are in rural areas, and that substandard units are occupied more by whites than by blacks.

Rather deftly, Mr. Fried cuts through these aggregate measures to chronicle the performance of the various levels of government, business and labour tending the "urban crisis" and each giving the pot an erstwhile stir. His concern is with the administration of social legislation and with the distribution of the exiting housing stock in meeting the needs of low-income families. As he confronts this issue he relates his experiences of situational tensions between bureaucrats and citizen groups, tenants and landlords and between urban and suburban neighbourhood groups. In addition, he examines the pulse of racial animosity regarding the "open housing" issue and the consequence of Middle American determination to "preserve the quality" of their communities which has brought to a standstill much of the Great Society housing legislation.

Regretably, the term "crisis" employed by Mr. Fried becomes a dull clarion call from an otherwise perceptive work of practical interest to experts and housing alike. The crisis in housing appears to stem from the complacency and frustration so engulfing the subject as to relegate it the dangerously low status of a "non-crisis" issue amongst national priorities.

This is not an impassioned book, but one incisive in its well documented analysis and depressingly vivid in its despair of the United States ever finding comprehensive solutions to mounting social problems. Though written for an United States audience, its lessons are not lost on Canadians whose housing problems are different in kind but not in degree.
Morris Trevithick.

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BOOKS

Civilia *The End of Sub Urban Man*
edited by Ivor deWofle,
General Publishing Co. Ltd.,
Don Mills, Ontario, 1972.
$23.95

Who, at one time or another, has not wanted to lash out at the inefficiencies, the inconveniences, the neutered monotony, the intolerable, messy, congested, sleazy hell of modern city life? Who, on the other hand, has not had a sudden memory of some agreeably secluded corner, some sunlit piazza, some bustling street market, once seen as if in a dream and never forgotten? Ivor de Wofle (sic), the pseudonymous editor of Civilia, has taken these two common phenomena and, amid a welter of highly charged prose and brilliant photomontages whipped up a polemical extravaganza likely to fuel argument among the planning fraternity for years to come.

Nowadays it is fashionable to disparage the physical side of planning. The trendy image of the planner is a combination of sociologist and systems analyst whose interest in the actual appearance of our surroundings is marginal at best. 'Do-your-own-thingism' is the current nostrum in urban design and planning, hence the planner's role has become a hastening along in the wake of social trends, a rationalizing and tidying-up of the mess which invariably results from the conflict among a multiplicity of economic, political and social pressures.

Civilia brusquely disposes of the good grey bureaucratic approach to urban planning, along with the introspective jargon-spinning of the academic mods and the enthusiastic nihilism of the Los Angelophiles. In their place Ivor de Wofle unashamedly re-asserts the romantic vision, an exhilerating compendium of clichés espoused over the years by the Architectural Review. Underpinning this visual superstructure is a planning concept of considerable plausibility and force, once the hazards of Mr. de Wofle's prose style have been negotiated.

In brief, the philosophy of Civilia is that true urbanity can only be achieved by accentuating the contrast between a city and its region, by encouraging their polarity; not by diluting and compromising their respective characters, densities, social patterns. or scales.

This argument is possibly more telling in England and other European countries where subtopia is a disaster not only because of the limited availability of land but also because it blurs the distinctive and differentiated character of English cities. In North America, with one or two partial exceptions, cities have a relatively brief history, and their growth is unconstrained by land shortage or by the patterns set over centuries of slow development. In addition, the North American's urge to make his home in a detached house standing on its own land is a deeply embedded cultural heritage and, until recent times, it could be indulged on a virtually unlimitted scale. The logical (illogical?) outcome of these factors is symbolised by the 5,000 square mile sprawl which is Los Angeles, a shrine dedicated to automobility. Mr. de Wofle's strictures sound rather muted in a continent where Herbert Ganz is considered more of a Moses than a Cassandra. Venice and Perigeux and Cambridge (and Civilia) are all very well to visit on a 21-day charter trip; their dense urban vitality and their abrupt confrontation with the surrounding countryside can be savoured briefly before the return to safe, sane and sanitary suburbia, 20 miles from the centre of Toronto or Cleveland.

The publication of Civilia really stirred up the establishment, old and young. "An odious damned lie!" trumpeted Sir Frederic Osborn, (predictably). "A fourth-rate Disneyland", huffed Stephen Mullins, missing the whole point of the book in his effort to become the poor man's Reyner Banham. Peter Smithson, that aging guru of the architectural profession, was too disgusted to say more than it was the worst thing the Review had ever published. Most of the critics either were offended by Mr. de Wofle's idiosyncracies of style or resented the slick deception of the illustrations ("a paste-up job"). Perhaps the very realism of the pictures has further obscured Mr. de Wofle's obscurities; I hope not, since our cities and the way we think about them could do with a large dollop of Civilia. Thank heaven for the romantics, with all their arrogant impracticality.
Lionel Loshak

The Open Gate; Toronto Union Station
ed. by Richard Bebout; illustrated, Peter Martin Associates Ltd., Toronto, 1972. 125 pp. $12.95.

The "New Union Station" in Toronto was opened to the public at 12.01 a.m. on Thursday August, 11, 1927. Less than fifty years later all the associated structures around it are slated for demolition and replacement by a sprawling modern complex. Much of the great station building appears to be doomed and even the Great Hall–"the finest room in Canada"– is in danger. Such is the speed of development in the Canada of today, and in the Queen City in particular.

But there are many who may well be called "Friends of Union Station" for the Great Hall alone has an appeal to all who see it. The idea of this unique Canadian architectural gem being demolished has, therefore, aroused widespread public resentment. This volume is an eloquent and moving protest. Photographs, both old and new, show what the Station replaced, how busy a place it was for many years, and how attractive a public building it is still. Whatever the results of the protests may be, and it is to be hoped that the Great Hall can be saved and not vandalized, the volume will remain as a fine tribute and most useful historical record.

Anthony Adamson graces the volume with an excellent introductory statement, witty as one would expect, wise as the occasion demands, warning of the danger of inaction. There follow seven separate and very distinct contributions from writers of emnence and distinction with the delightful added touch of a running commentary throughout the book from Stationmaster McKellar. He began his career at the station in October 1927 and has spent his working life there, his initial wage being forty cents an hours!

Dedicated to the late John Caulfield Smith and Flavio Belli for their efforts, the book is a real treasure for 'railway buffs' as for all who have at heart the protection and preservation of one of the noblest halls in all of Canada. But its significance is not confined to Toronto. It should be seen, admired and taken as a warning throughout Canada in order to arouse residents of other cities to the possible dangers they may face. It can, and should, act as an antidote to elitist talk about the wonders of a computer-inventory of all historic buildings since, as Professor Adamson so truly remarks, "computers . . . retrieve punch cards, not buildings".
R. F. Legget

Answer : Frosted glass used in shower
screens.

Réponse : Du verre dépoli utilisé pour
isoler une douche.

habitat

habitat

Volume 16, Nos. 1 and 2, 1973

Canada Mortgage and Housing Corporation
Société cana...
Canadian Ho...
Centre canadien de do...
Centre canadien ... Centre ... sur ...

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IN
ACTION

by Al de Jourdan

Specialized Housing helps Mentally Retarded

With the publication of the provincial position paper "Community Living for the Mentally Retarded in Ontario" in March, 1973 housing for the retarded in Ontario has taken a new direction, away from the institutionalized approach of the previous decades and towards the provision of these same services in a community setting.

Basis of the policy changes spelled out in the provincial paper was the Williston Report, completed in August 1971.
A. de J

Photos: Betty Taylor/смнс

Defining The Mentally Retarded

The Williston Report describes the mentally retarded as "persons who are seriously lacking in intelligence and who, because of their subnormal functioning, require special training, education and social services".

While there are widely different levels of competence among persons who are mentally retarded, three classifications are generally made. The first level includes those who are mildly retarded are educable up to about the grade 6 level; roughly 90 per cent of this group are able to hold down jobs with low educational requirements and most can participate freely in the community. The second level includes moderately retarded persons — those who can assimilate some very basic elementary education, up to the grade 2 level, and can be employed in a highly structured setting. The third level includes those who are severely retarded and are uneducable beyond the acquisition of basic social skills, and can perform only simple assembly and packaging tasks. Among the profoundly retarded, some cannot be trained, and all require care and protection.

The Williston Report may well mark a watershed in the housing and care of retarded in Ontario. Until recent years most retarded children and adults in the province were cared for in large institutions such as Orillia, originally opened in 1876, or the mammoth four-acre building, built in Smith Falls in 1951. Gradually, in late years, and based mainly on the experience of European countries, most authorities have come to the view that "normalization," or community integration is not only possible but preferable for the majority of so-called "retarded" individuals.

Other than those severely retarded individuals who require permanent nursing care and supervision and whose only home can be the institution there are a great number mentally handicapped persons who are now considered capable of living in the community. As the Williston said ;

> If a mentally retarded child is to be provided with the assistance he needs to face the problems of adult life and is to be given the opportunity to develop to his ultimate potential, he must at all times be given the greatest possible degree of participation in life. Society must maintain for him the maximum degree of normalcy in all of his experiences to allow him a healthy and happy development as a total person.

To achieve this normalcy requires specialized housing facilities within the community. Since 1964 many local and provincial associations engaged in the care of the mentally handicapped have used the section 15 provisions of the National Housing Act to provide such housing. Under the present legislation 50-year mortgage loans of up to 95 per cent of the lending value are available to any chartered non-profit organization willing to offer suitable housing for the mentally handicapped. New amendments to the National Housing Act will raise this limit to 100 per cent plus planning grants of up to $10,000 and a further capital grant of 10 per cent. Alberta, Quebec, Saskatchewan and British Columbia have been among the provinces most active in this field. In these provinces the provincial legislation allows not only disability benefits to be paid to the individual residents but, as well, a per diem grant is often given to meet both operating costs and mortgage loan repayments. In most cases title to the property and its administration remains in the hands of the local groups. These loans have been used for new construction as well as the purchase and renovation of older homes. During 1971 and 1972 a total of 16 such loans were made, providing more than 350 hostel beds.

CMHC Research Study

It is interesting to compare the recommendations of the Williston Report with the conclusions reached by the McGill School of Architecture which undertook a study in 1970 on the optimum design of housing for the retarded. This study was financed, in part, by a grant made Part V. under the National Housing Act.

Throughout, the study emphasizes the benefits of smaller homes integrated as much as possible with normal community living in place of the remote institution. To quote the report on the needs of the retarded :

> "The first step in the design of residences for the retarded is to establish their basic needs. These needs are basically the same as those of anyone else – love and affection, security and a place of one's own, both privacy and companionship, a pleasant environment, self-expression and independence, a variety of activities, and experiences, a sense of belonging to a group, and a feeling of contribution to society."

The authors of the report also quote Professor Gunnar Dybwad of Brandeis University who believes one should not try to "normalize the retarded" but rather to normalize their environment and their daily living and working patterns. He attributes much abnormal behavior to living in abnormal conditions.

In discussing the difficulties of renovating existing housing facilities, the McGill report says :

> "Undoubtedly the most harmful barrier to residential programming and design are the building and zoning by-laws to which residences must conform if the government is to permit their operation. Tragically, in most cases, these codes and by-laws have been designed for *institutions* with bedridden populations of several hundred and not for residences housing no more than fifteen. These codes, and by-laws regard the group homes as institutions rather than large single family dwellings. Presently the fire regulations of most building codes require that group homes be equipped with fire doors, panic-barred exit doors, fire escapes from second floors, enclosed stairwells, detection and alarms systems and any number of other special measures. Obviously some precautions need to be taken to ensure the safety of the residents but the need not be

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as extensive. . . . The stringent safety precautions as they are now employed should only be applicable to residential facilities for infants and seriously retarded youngsters. . . . As mentioned previously, associations often find old houses very desirable as residences. Unfortunately there is little use of old buildings as residences because the cost of renovation to comply with the regulations is too high. However if residences required only detection and alarm systems, instead of all the other precautions, renovations would not usually be needed and the major financial roadblock would be removed. In order for the "group home" to be successful building codes and fire regulations must be adjusted to their unique character."

A recent example of a group-home financed under the National Housing Act is a residence opened in November 1972 by the Ottawa and District Association for the Mentally Retarded.

The House
Located in an older neighbourhood of central Ottawa, the house is a large three-storey converted residence which, during the 1940's and 50's, served as a student residence. It was operated as a boarding house for the years after the students moved and then the property came on the market late in 1971.

Assisted by the Ottawa West Rotary Club who provided a $5000 down payment and a guarantee of $7500 to cover any operating deficits over three years, the residence was purchased for $44,000 in May, 1972. Renovations to bring the residence to the building standards required by the Ontario government and local municipal authorities cost an additional $13,000 and took almost six months to complete. A complete electrical rewiring, new furnace room, stairwell enclosures, fire escapes and exits which had to be provided were finally completed by fall and the first residents moved in November 6. The home is occupied by ten young adults, men and women, and two house parents who have a private apartment.

In a new approach, the ODAMR are using the residence to see if it is possible to achieve financial stability by using part of the residence as a "half-way" house for five graduates from the Rideau Regional Hospital School at Smith Falls, and at the same time providing a long-term residence for five adults from the local programs of the ODAMR. All residents are considered capable of achieving a marked degree of independence ; the five residents from Smith Falls have the benefit of a two-year orientation course aimed at giving them sufficient skills to take employment and eventually living independently in the community.

After six months of operation the ten young adults have succeeded in making the house a home. Three are already employed in the community, the others either attend special schools or go each day to work at ARC Industries, the ODAMR sheltered workshop.

All of them would agree with the conclusion reached at a recent conference for the mentally handicapped in Great Britain, a conference where the participants and delegates were the handicapped people themselves.

"They wanted to be able to choose the people they lived with, instead of finding themselves with a group of people they sometimes neither liked or trusted. Above all, perhaps, they wanted to be asked about the way they lived and given a chance to make their own choices about it. They wanted to live in a situation that gave them the support they needed to become as independent as they could, instead of one which, was dominated by rules they had not drawn up and staff who gave orders instead of listening to their views."

Open House
Official opening of the home took place on February 11, 1973 when more than 200 people including neighbors, and parents were the guests of ODAMR. Highlight of the day was a buffet supper attended by Jean Vanier of L'Arche who inspected the premises, and spent an enjoyable two hour visit with the residents themselves.

1 *Situated on a residential street* the three storey-house has served as a student fraternity house, a boarding home and a private residence. As a group home it is ideally located on a bus route and is convenient to a neighborhood business community—the Glebe.
2 *The communal dining room*, except at lunch, seats ten. Oak panelling and the beamed ceiling add to the warmth of the room.
3 *A double bedroom* on the third floor which is shared by two girl residents. Besides the basic furniture residents are free to add their own, such as the portable television.
4 *Household chores are shared* including meal preparation. Here, one of the residents helps the house mother keep an eye on the supper roast.

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In recent years services for the mentally handicapped have begun to move rapidly towards new standards and patterns of care.

Although it is only in the last few years that general public interest in the problems of the mentally handicapped has been aroused, research workers and practitioners—in North America, Britain and other European countries—have been paying greater attention to the subject for at least a decade or so.

And most of the new ideas now being incorporated into the organisation of services are the result of outstanding researches.

A Small Risk

Mental handicap can very rarely be considered in any ordinary sense a condition which one acquires in one's lifetime. There is a small risk that healthy adults will produce mentally handicapped children but this is a hazard that concerns most people—if indeed at all—only during those relatively brief periods of anxiety that precede childbirth.

In addition, mental handicap does not yield to dramatic cures, is generally depressing to contemplate and, unlike mental illness, is never the subject of fascinating psychological or literary speculation. Longstanding public and professional indifference, however regrettable, is easy enough to understand.

In many countries, it has been necessary to overcome a legacy of custodial attitudes, based largely on genetic fantasies, before the idea could develop that mentally handicapped patients might often be cared for better and achieve a greater degree of social and economic independence if they lived in the community rather than in large institutions.

The newer approach is based initially on the results of more sophisticated genetic research. But studies of the effects of environment on intelligence and the success of training programmes in improving the social competence of the mentally handicapped have also led to more optimistic attitudes.

Wide Range Of Conditions

Mental handicap is not a very precise term. It covers a wide range of conditions and degrees of retardation ranging from the borderlines of "normal" intelligence to states of mental deficiency so extreme that the individual—who is likely also to suffer from major physical handicaps—needs more or less continuous care and attention.

The care of different types of mental handicap obviously requires different settings, different methods and different objectives. The view that the mentally handicapped should remain in the community has usually applied to those whose handicaps were not of the most severe kind.

However the British Royal Commission on the Law relating to Mental Illness and Mental Deficiency, whose report in 1957 gave major encouragement to an emerging trend

IN THE U.K... A New Deal for the Mentally Retarded

F. M. Martin

towards community care, took the view that even for the most handicapped and disturbed patients hospital accommodation should be provided only when medical, psychiatric or full nursing care was necessary and could not be provided elsewhere.

More Special Care Units
During the 1960's there was a growth in the amount of residential accommodation provided by Britain's public health services as an alternative to hospital residence and a much greater increase in the number of centres which provide education and training for very handicapped people who remain with their families.

These services originally expanded as an expression of the belief that community care was preferable to hospital care for those not needing hospital services. But the trend may to some extent have been strengthened by essentially practical considerations—such as the great difficulties experienced by overcrowded hospitals in coping with the growing demand generated by a growing population and the greatly increased expectation of life among the mentally handicapped, brought about by antibiotics and other medical advances.

Not So Clear Cut
The issue of "community versus institutional care" is less clear cut than it is sometimes made to appear. There is little to be said for a policy of retaining the mentally handicapped in the community, however humanitarian the underlying intention, if there is not at the same time an examination of the effects of this on the patients and on their families.

Careful study is needed to find out what kind and what level of services are needed to allow the mentally handicapped to live outside hospital without putting an undue burden on their families.

An important recent controversy has concerned the best way to organise residential care for all long stay patients who obviously need a different environment from the acutely ill. The case for providing surroundings of domestic type and scale is particularly strong in the case of the mentally handicapped, who in the main are not "sick" at all.

"Family Units"
This viewpoint has been developed in the work of Jack Tizard and Albert Kushlick, who in Britain have pioneered the idea that handicapped children who need residential care are best placed in small "family units" similar to those considered most suitable for normal children unable to live at home.

As a result the advantages are being explored of new approaches to the organisation of children's wards and of the development of small homes for mentally handicapped children within the community as an alternative to hospital admission.

A somewhat conflicting viewpoint has also been expressed in the concept of the district general hospital in which it is envisaged that the mentally handicapped and other long stay patients if they need hospital care will be housed under the same roof as acutely ill patients requiring medical or surgical care.

It has been necessary to overcome a legacy of custodial attitudes, based largely on genetic fantasies, before the idea could develop that mentally handicapped patients might often be cared for better and achieve a greater degree of social and economic independence if they lived in the community rather than in large institutions.

United Nations Activities in Rehabilitation of World's Mentally Disabled and Retarded

Without fanfare but with a record of accomplishment, the United Nations is developing a capability to assist one of the most ignored and least vocal minorities : the world's more than 300 million physically or mentally handicapped people who require re-

habilitation in order to become productive members of their communities.

To the ranks of this growing minority, it is estimated that several million are added each year, as a result of population growth, wars, greater longevity and an ever-increasing number of industrial, traffic and other accidents.

'Waiting List' of Handicapped
The former Secretary-General, U Thant, once said that there was "no area of assistance where the need for social action and solidarity is greater than in the field of services to the disabled". "Nor", he added, "is there a field in which assistance makes a deeper or more personal impact on the lives of those who are assisted."

Also, in an historic decision in 1971, the Assembly endorsed a "bill of rights" for the mentally retarded, specifying economic, community and family rights for this group of handicapped persons.

Size Controversy

Interest in the conditions under which handicapped in-patients live has caused a controversy about hospital size. Reformers have generally argued that large hospitals, however well intentioned their administration, inevitably produce a degree of standardisation in the treatment of patients and in the organisation of wards and staff which makes it difficult for patients to achieve the maximum freedom and independence.

On the other hand, defenders of the traditional large hospital have argued that only such a setting can provide the variety of services needed for comprehensive care ; but it has yet to be demonstrated that the problem of providing varied services and specialised personnel for relatively small units cannot be solved with administrative ingenuity.

Big Changes

The next few years will see far reaching changes in the pattern of services as new policies, deriving directly from research findings and reflecting also a sharpened national concern for the human rights of the handicapped, are implemented throughout the country.

As far as hospital provision is concerned the British Government has not committed itself to a general hospital or a specialist hospital solution. Instead, it proposes to encourage alternative lines of development so as to provide experience of different solutions.

This hesitation between alternatives will be justified if care is taken to monitor these developments on a comparative basis so that it becomes possible to make thoroughly informed judgments of relative advantages and drawbacks. But one thing is certain — no new *large* specialised hospitals for the handicapped will be built, nor will any existing big institutions be enlarged.

Moral Statement

In discussing plans for the future, physical accommodation inevitably takes an important place — but it would be naive to suppose that bricks and mortar alone can somehow "solve" the problems of mental handicap. Physical facilities constitute one element, albeit a vital one, in the complex process of development.

I believe this process must begin with a moral statement — a collective conviction that the lives of mentally handicapped people have an intrinsic worth and a collective decision that a share of resources should be allocated to helping them achieve their full potential, however modest that may be to providing the essentials of a tolerable existence and to minimising the burden of care that may fall upon their families.

In this context it must not be forgotten that a large majority even of the severely mentally handicapped live with and are wholly looked after by their families. After a moral commitment must come scientific knowledge, carefully tested, on the types of living environment and the types of learning situation most conductive to personal development.

> ...There is little to be said for a policy of retaining the mentally handicapped in the community, however humanitarian the underlying intention, if there is not at the same time an examination of the effects of this on the patients and on their families.
> ...The case for providing surroundings of domestic type

Mental retardation, United Nations experts have estimated, affects up to 1.5 per cent of the world's population — 15 persons in every thousand.

The treatment accorded to the disabled varies from country to country, ranging from acceptance, encouragement and kindness to apathy and neglect. Similarly, the rehabilitation services made available to the disabled vary, from specially equipped rehabilitation centres to the virtual absence of such facilities, owing either to lack of commitment or to the inadequacy of resources. At the extreme, the handicapped are forced to live under "medieval" conditions, to quote a term that Esko Kosunen, now United Nations Interregional Adviser for Rehabilitation of the Disabled, used in describing the plight of the mentally retarded in some countries.

Although the "environmental" conditions under which handicapped persons live did not come under consideration at the United Nations Conference on the Human Environment, held last June in Stockholm they did receive considerable attention at the Environment Forum, a two-week gathering of Non-Governmental Organizations convened concurrently with the Conference.

The diversity of the process of rehabilitation which includes medical treatment, the supply of prosthetic appliances, physical and occupational therapy, vocational guidance and training, placement, and ultimate social adjustment, and its financial and administrative requirements militate against the implementation of comprehensive national rehabilitation programmes.

Goals Defined

Britain has defined its goals in respect of the mentally handicapped, has a solid—though still incomplete—basis of experimentally derived knowledge and is now developing the instruments for achieving the required results. New homes and new training centres are essential instruments.

At least three other components, all somewhat less tangible, will be necessary. One of these is of course the provision of sufficient numbers of well trained personnel. Here a great deal of progress is being made in boosting the supply of special teachers and in expanding the numbers of social workers needed to provide support for parents and others closely involved. There are many other major developments taking place in Britain which justify much larger numbers of trained social workers.

We need also to provide special training for the staff of residential homes and to settle rapidly the argument about the most appropriate patterns of training for nurses caring for the mentally handicapped in hospital.

New Methods Needed

New methods of working are also going to be necessary in many of our institutions. There is much evidence that in the past different sectors of staff—medical, nursing, administrative—have gone their own narrow ways with little or no mutual consultation and exchange of ideas. Jointly agreed policies, objectives and practices have in many places never been developed.

The central departments are doing everything in their power to re-train and re-orient staff who grew up in an older tradition and to encourage new methods of coordinated management.

Finally, and perhaps least tangibly, there is an obligation on the public at large to follow through all the implications of the national decision radically to improve our services. For some people this may involve direct personal service in a voluntary capacity — and for this there is very great scope. More generally it means that growth of understanding and tolerance which is the hallmark of a civilised community.

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and scale is particularly strong in the case of the mentally handicapped, who in the main are not ''sick'' at all. ...this process must begin with a moral statement— a collective conviction that the lives of mentally handicapped people have an intrinsic worth and a collective decision that a share of resources...

Almost everywhere, such programmes remain a goal still to be attained. Moreover, as U Thant observed in a speech delivered on his behalf at an international conference organized by L'Institut de la Vie in Paris in December 1971, rehabilitation of the disabled appears to fall in a category of problems that, ''inherited from the past or emerging as an unwanted result of modern civilization and technical progress ...can remain outside accepted economic and social prioroties for quite a long time ...''

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The Alternative

In future, all new accommodation for in-patients will be provided either in units for the mentally handicapped within hospitals containing other departments as well or in separate small or medium sized hospitals or hospital units.

Each new hospital or unit will provide a comprehensive range of in-patient, out-patient and day facilities for the mentally handicapped for a defined district. The intention is that such districts will not have a population of more than about 250,000.

When they are not part of a general hospital the specialist units will have close operational links with the medical, surgical, neurological and paediatric services of the district. Two hundred hospital in-patient places are seen as the maximum likely to be needed for a population of a quarter of a million.

This figure includes places for children and for adults, with the children normally accommodated separately in small domestic units. Those who are cared for in hospital will not be kept segregated from the outside community—wherever possible arrangements will be made for patients to attend nearby training centres or sheltered workshops.

Dramatic Reduction

The planning target implies a substantial reduction in the proportion of the mentally handicapped looked after in hospitals; in England and Wales the number of hospital places relative to population may be reduced by about 50% within 15 years, though in Scotland the decrease may be somewhat less dramatic. Parallel with this rundown will be a highly significant development of the local authority (that is, community-based) social and educational services.

There will be a great expansion of adult training centres, sheltered workshops, residential homes for children and residential homes for adults. In England and Wales there are to be some 45,000 additional places in adult training centres. About one fifth of these places would be for hospital patients.

Some 24,000 new places will be provided in residential homes for mentally handicapped adults and 3,000 in residential homes for children. The education of these children, whether or not they live in their own homes, has now become the responsibility of the public education services rather than of the medical services—an important step which is bound to help the spread of new ideas and practices derived from the work of educational psychologists.

As a result of this transfer of responsibility the education services themselves are now going ahead with appropriate building programmes while arrangements are already in hand for substantial increases in the facilities for training teachers of mentally handicapped children.

should be allocated to helping them achieve their full potential, however modest that may be to providing the essentials of a tolerable existence and to minimising the burden of care that may fall upon their families. ...It means that growth of understanding and tolerance which is the hallmark of a civilised community.

Les aveugles face aux barrières architecturales

par François Lapointe
photographie
Betty Taylor SCHL
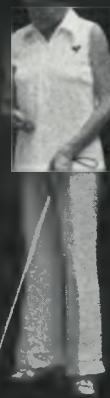
Au Canada, on se préoccupe de plus en plus d'offrir à toute la population un minimum vital au niveau de l'habitation. Les efforts déployés dans ce sens par les gouvernements et l'industrie privée sont significatifs d'un désir de bien faire et de bien administrer. On construit de nouveaux logements pour les personnes âgées ainsi que pour les personnes à faible et à moyen revenu; on restaure ceux qui nous semblent les plus délabrés, tout cela parce que l'on veut humaniser l'habitation.

Dans un même mouvement, on affirme que l'habitation devra, dans l'avenir, déborder son cadre rigide et traditionnel pour s'étendre à tout ce qui compose l'univers de l'homme, à son environnement. Malgré l'opposition de certaines personnes qui continuent, soit en théorie, soit en pratique – ce dernier groupe étant le plus nombreux – de dissocier ces deux réalités qui n'en forment pourtant qu'une seule, on se rend compte de la nécessité d'insister davantage sur les facteurs susceptibles de modifier la nature et la fonction de l'habitat. C'est à ce titre que les barrières architecturales qui con-ditionnent le déplacement des personnes handicapées doivent être éliminées.

Au cours des dernières années, la question des barrières architecturales et de leur effet néfaste sur une partie de la population fut soulevée à maintes reprises. Il faut entendre par barrière architecturale tout ce qui empêche les handicapés et, jusqu'à un certain point la population en général, de se déplacer normalement sur les voies d'accès sans risque d'accident. Il peut s'agir d'objets utilitaires qui, par leur conception ou leur disposition, deviennent de véritables obstacles ou encore des éléments inappropriés d'architecture interne – escalier à l'entrée d'un immeuble, cadre de porte trop étroit-qui rendent plus difficile, voire même impossible, l'accès à certains édifices.

Ce problème devait être en partie résolu par la publication des «Normes de construction pour les handicapés, 1970» préparées conjointement par le Comité associé sur le Code national du bâtiment et le Conseil national de recherches du Canada. Il nous faut pré-ciser en partie seulement, puisque

ce «Supplément No 5 du Code national du bâtiment du Canada» n'a aucune valeur légale à moins que les autorités gouvernementales intéressées ne légifèrent sur son contenu. Il s'agit, tout au plus, de recommandations susceptibles d'améliorer la situation des handicapés en général mais non des aveugles pour qui la difficulté de se mouvoir demeure présente, étant donné l'absence de semblables recommandations ayant trait à leur situation particulière. Pour eux, les barrières architecturales sont devenues pour ainsi dire des murs infranchissables par leurs propres moyens et le signe d'une dépendance totale.

Une personne légalement aveugle est, selon la définition juridique que l'on en donne, un individu dont «l'acuité visuelle dans les deux yeux, après correction par usage de lentilles réfractives appropriées, est d'au plus 20/200 (6/60) d'après l'échelle Snellen ou l'équivalent; ou si le champ de vision dans chaque œil est d'un diamètre inférieur à 20 degrés»[1]. De façon pratique, il nous faut distinguer entre les personnes qui sont atteintes de cécité et celles qui ont une vision partielle. Ces deux types d'individus sont quelque peu différents et les moyens qui s'offrent à nous pour remédier à leur situation sont également diversifiés. Ainsi, dans le cas des personnes atteintes de cécité, l'ouïe et le toucher vont jouer un rôle prédominant, alors que dans le cas de celles qui jouissent d'une vision partielle, l'intensité lumineuse sera déterminante.

Il est donc primordial de constater que l'ouïe, le toucher ou encore l'intensité lumineuse constituent autant de moyens de contact entre le monde extérieur et celui des aveugles. Cependant, le fait d'affirmer que la canne blanche est et doit être l'unique lien entre ces deux mondes est une aberration inacceptable qui, de plus, entre en contradiction avec l'univers technologique du vingtième siècle. La canne blanche n'est tout au plus qu'un outil visant à faciliter le déplacement des personnes aveugles. On peut donc facilement

concevoir que cette utilité soit très limitée et parfois même d'aucun secours lorsque la voie publique devient une véritable piste de course à obstacles. Trois pieds de gauche à droite, voilà à quoi se résume toute la portée de la canne blanche. Comment, dans de semblables conditions, un aveugle peut-il éviter, à titre d'exemple, une colonne qui se dresse sur son passage? Voilà autant de question, autant de problèmes qui accen-

tuent la nécessité d'introduire un code du bâtiment qui puisse tenir compte des personnes privées de vision et dont la mise en application ne soit pas laissée au bon vouloir de chacun.

Ainsi, il n'est pas tout d'affirmer que l'ouïe et le toucher doivent devenir les yeux des personnes aveugles. En effet, ces deux sens sont presque inutiles si rien n'indique, à l'oreille ni au pied, que devant elles se trouve un obstacle. De même en est-il de la lumière si, par suite d'une insuffisance ou d'un jeu de miroirs, elle prête à confusion.

Pour suppléer à ces lacunes, il serait possible et relativement peu coûteux d'utiliser, à la base et au sommet des escaliers, un produit antidérapant qui permettrait, uniquement par le toucher, de percevoir la proximité d'un tel obstacle. De la même manière, il serait préférable d'indiquer, au moyen d'un signal sonore, le nombre d'étages franchis par un ascenseur. Les commandes de cet ascenseur devraient d'ailleurs être formées de gros symboles en relief bien éclairés. Enfin, par un usage judicieux de couleurs contrastantes et l'utilisation d'une intensité lumineuse

suffisante, il deviendrait possible, aux personnes aveugles, de se déplacer seules et de jouir ainsi d'une certaine autonomie.

Architectes et financiers se retranchent trop souvent derrière les faux arguments que sont le coût de ces transformations et la nécessité d'une esthétique susceptible d'attirer la clientèle. Dans quelques cas, de simples modifications s'avéreraient suffisantes alors que pour les nouvelles constructions, il ne s'agirait que de remplacer la conception traditionnelle de l'espace par une autre conception plus appropriée. La simplicité remplaçant le luxe, l'application de ces simples normes se traduirait par une baisse du coût d'investissement.

Qui de la facilité d'accès ou de l'esthétique doit avoir la prédominance? Sans aucun doute la réponse est-elle dans la fusion de ces deux principes qui, loin d'être opposés, sont complémentaires. La beauté réside dans la simplicité de conception et non dans la surcharge et la mauvaise distribution d'un espace.

Il ne s'agit pas d'éliminer les objets utilitaires mais uniquement d'en modifier la disposition ou la

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conception de façon à faire disparaître les barrières architecturales qu'ils représentent. Si, à ces transformations, s'ajoute une signalisation efficace, il serait alors possible de libérer la voie publique des objets qui l'entravent et ainsi de lui rendre sa vocation première de voie d'accès. Ce n'est là, somme toute, que se conformer à la nature et à la fonction des choses qui, dans le cas présent, sont de permettre à une personne de se déplacer d'un point à un autre sans risquer de se blesser.

Un des moyens d'atteindre ce but est de centraliser, en certains endroits de la voie publique ou à l'intérieur des édifices, tous les services essentiels au bien-être des piétons. A l'intérieur des édifices, il serait également possible de prohiber tous les objets non encastrés tels les cendriers et les fontaines murales. Enfin, il faudrait que tous les systèmes utilitaires à l'extérieur des édifices comme les feux de circulation, les lampadaires et les bornes-fontaines soient placés à l'extérieur de la voie publique, que les endroits où des travaux sont effectués soient clôturés ou recouverts de plaques métalliques, que là où il n'y a pas

de trottoirs on installe des bordures le long des rues et que là où le trottoir est au niveau de la rue — entrées de magasin ou de poste d'essence — qu'un dénivellement d'un pouce au moins soit fait de manière à distinguer la rue du trottoir.

Ce ne sont là que quelques suggestions; il y en aurait encore beaucoup à faire. Cependant, on aurait tort de croire que ces quelques constatations s'adressent uniquement aux personnes aveugles. L'encombrement de la voie publique, ainsi que la mauvaise disposition des objets sur celle-ci, sont des états de fait qui nuisent à la sécurité et au bien-être de tous les piétons. Par une conception plus rationnelle, on prévient les risques de blessure advenant qu'un piéton, soit parce qu'il est aveugle, soit par inadvertance, entre à l'improviste en contact violent avec un de ces objets.

De nos jours, la construction d'un édifice moderne fait appel à une grande connaissance technique et à un esprit d'invention remarquable, mais la plus belle de toutes les réalisations est certainement celle qui permet à toute la population un libre accès et une

liberté de mouvement. On ferme les yeux au nom de la rentabilité sous prétexte que le coût d'application de ces simples normes serait trop élevé et pourtant on devrait, au nom de cette même rentabilité, les ouvrir au monde qui nous entoure. Donner à un aveugle la possibilité de se déplacer sans danger, c'est lui donner le moyen de vivre sa vie, c'est lui donner le droit à la dignité humaine en remplaçant d'inutiles barrières par un espace viable et fonctionnel.

(¹) On estime à environ 28,000 le nombre de personnes légalement aveugles au Canada.

Housing the Severely Handicapped: The Fokus Society

by Nils Larsson
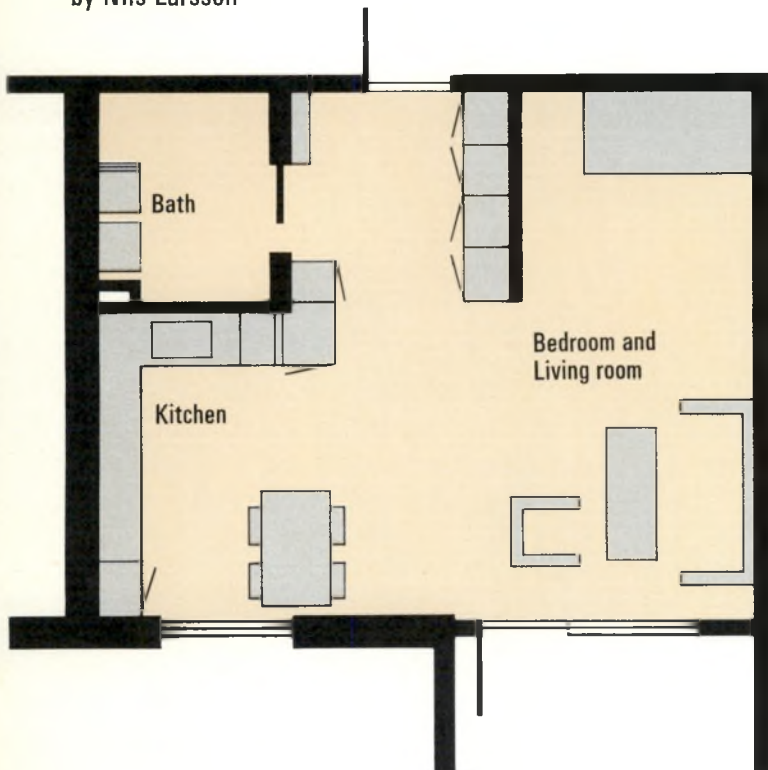
The Fokus Society is a Swedish group which provides special housing units and special services for physically handicapped persons. The work of the Society was outlined to me by Dr. Sven-Olof Brattgard, MD, who is president of the Society and Chairman of the Department of Handicap Research at the University of Göteborg.

The Social Setting

Social services in Sweden are highly advanced, and it is within this context and one of extremely high taxation that the Society functions. County Councils fund local authorities, which in turn can provide many services to a variety of users. These services include home help, pensions, grants for renovating homes, technical aids, health support, transportation, and assistance in obtaining employment. Dr. Brattgard explained that although he is confined to a wheelchair, he is not considered severely disabled. In other words, his problems can be overcome by the normal provisions of state assistance. The group which Fokus caters to are *the severely disabled,* those who would normally be confined to institutions. The Fokus program will shortly have housed 1000 out of the about 2000 persons in Sweden falling into this category. This situation is of course very dissimilar to Canada, where the multitude of support services needed for moderately disabled persons are only partially available.

In terms of new housing, the *moderately* disabled are well provided for. The draft Swedish guideline for all government-assisted housing, ''God Bostad,'' shows requirements for:
- flexibility in some unit designs to allow for conversion to suit a particular disabled user.
- most unit designs to allow for wheelchair visitors.

The Percentage of Users

In Sweden, the percentage of those suffering from various degrees of disability is as follows:
- 10.4% of the population in the age group 0 – 66 years.
- 29% of the population in the age group over 66 years.

In Fokus units the percentage of disability is broken down thus:
- 80% are wheelchair users.
- 52% need help for normal toilet and kitchen use.
- 20% need help for turning in bed.
- 25% come from nursing homes.

The Fokus Concept

Basically, the concept consists of groups of 12 – 20 units *scattered throughout family apartment buildings*. The buildings must, of course, be well located with respect to community facilities. These units are complemented by a "service unit," consisting of a staff room, laundry room, communications terminal, and provision for specialized bathing. These facilities are used by the handicapped only, but *normal* lounges and recreation rooms and so on, are shared by *all users*. In this way integration is achieved. As Dr. Brattgard put it, "dogs and kids are the best integrators." There is no resident staff; they come in to work on shifts, and thereby reduce the dangers of an institutional atmosphere.

The Fokus principles can be applied to existing housing, although a flexible approach is needed. One example mentioned to me was an old apartment unit without toilet facilities and with only rudimentary kitchen facilities. In this case, a chemical toilet was installed, and part of a Fokus kitchen.

Design of the Units

The areas of main concern (and research) are the kitchen and the bathroom. A system has been evolved which allows almost complete flexibility in access. Such flexibility results from several factors:

1 the wide range of disability types.

2 wide variation in wheelchair design (the unit allows 98% of all wheelchair users to operate easily).

3 wide range in personal preference.

This need has been confirmed in practice. Over ½ of the units were rearranged within the first 2 weeks of use. Fixed assemblies are apparently only successful if a considerable budget is set aside for renovations.

Some detailed design notes:

- motor drives are available for raising or lowering kitchen and bathroom assemblies ($400 premium).
- a smoke detector is provided in each unit.
- balconies are provided, reflecting the greater need for easily accessible outdoor space, and the need for easy escape in case of fire. Radiant heat is provided in balconies.
- full height pantry cupboards in kitchens were deleted. User studies showed it needed a greater number of wheelchair movements to get to the pantry, as compared to overhead cupboards.
- radiant heating is provided in the bathroom floor and the entry hall floor.

- bedroom space criteria are based on Swedish beds, with toe space under the bed.
- dishwashers were tried and discarded because handicapped users prefer the social stimulation of an attendant.
- an emergency cord is placed around the walls of each room. This overrides the attendant's other calls.
- dwelling units are *not* placed on the ground floor of buildings. It is felt that there is more noise and less privacy at this level.

Costs

These are only roughly comparable: for a Fokus unit, the annual amortization cost for the unit is $1300, plus $3300 for the service component. The total is therefore $4600 per year, which is one half the cost of care in a Swedish nursing home.

Steps to Normality

There has been a large demand for family units – disabled users want to marry in almost the same proportion as the able-bodied population.

In a sample of 48 persons, 36 were working after 2 years and discontinued their disability pensions.

The users appreciate symbols of independence – a front door key and a kitchen.

Even those users capable only of sucking and blowing motions can be housed. They are provided with radio transmitters which actuate motor controls for opening windows, locking doors, telephoning, and so on.
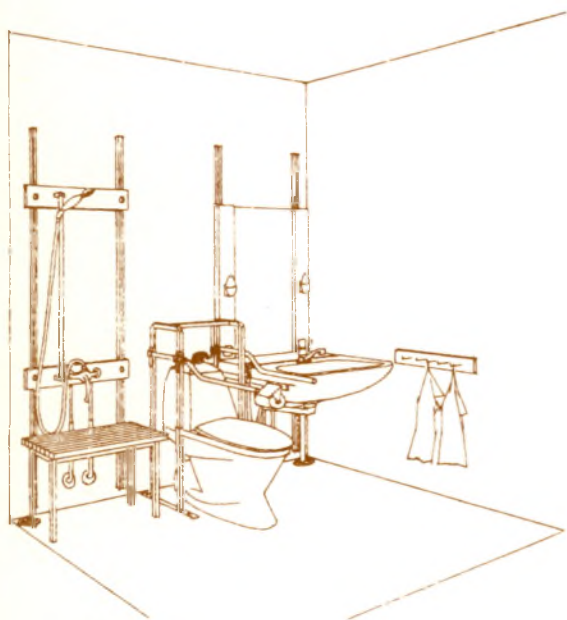
Research

The Fokus Society has access to extensive research facilities. The Department of Handicap Research at the University of Göteborg is one facility. Special research teams can be assembled for specialized topics, and paid for by the State. One example of the thoroughness of the research is a time and motion study of food preparation. A standard meal was prepared in a typical able-bodied kitchen and a Fokus kitchen. The meal in the normal kitchen required 152 wheelchair movements and 458 hand movements, compared with 12 and 158 respectively in the Fokus unit. The extent *and depth* of research is remarkable, and much of this will be directly applicable to Canada.[1]

Other Systems

Dr. Brattgard referred to the Dutch experiment, Het Dorp. This is a *separate* village of several hundred handicapped residents which has achieved extensive publicity. Although no systematic survey has been made, Dr. Brattgard spent a week there and found most residents favouring the Fokus concept. The West German government is now adopting the principles of Fokus Society.

[1]Research papers will be collected and translated by CMHC.
[2]Lethbridge Rehabilitation Institute
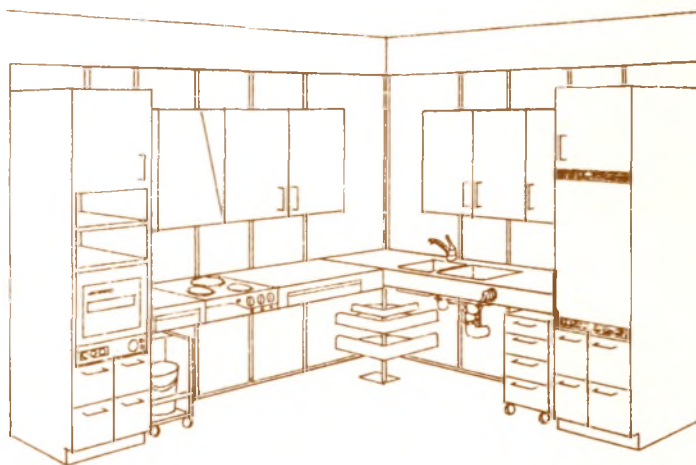
Implications for Canada

The work of the Fokus Society will be considered in the writing of "Housing the Handicapped," to be published by CMHC in 1974   Dr. Brattgard has agreed to send a complete Fokus kitchen to Canada, which will be on display in the winter.[2] CMHC has also designed a test kitchen for use by handicapped persons at the Royal Ottawa Hospital. This design will attempt to test an alternative of limited flexibility.

Editor's Note: Interested readers may get in touch with Dr. Brattgard at this address:
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"Since the bicycle makes little demand on material or energy resources, contributes little to pollution, makes a positive contribution to health and causes little death or injury, it can be regarded as the most benevolent of machines."
S. S. Wilson,
Lecturer in Engineering,
Oxford.

"The most benevolent of machines." I can think of no more accurate summary of the bicycle and its virtues than these concluding words of Wilson's hypothesis. His phrase comes to mind often in the course of riding my bicycle, and not necessarily in the few seconds after 3,800 pounds of automobile has thundered past in a wave of noise, disturbed air and oil fumes.

I am reminded of it as I skirt the shore of a pond and hear the plop of a frog or, surrounded by woods, I hear the drumming of a woodpecker. These are some of the rewards of the bicycle's virtues, but its appeal has to lie mainly in its size. Its proportions are human; they are to our scale. It is a manageable machine whose size and function is related to our size and configuration.

Riding a bicycle, we are not compulsorily integrated into a transportation system in which each unit is an anonymous cipher, and in which the flow of traffic is almost beyond our control. To be sure, we're on the road for a large part of the time, but we are free of most of its restrictions. Quite literally, with a bicycle we are back in the saddle and it's a good satisfying feeling.

Millions experienced the sensation in the first significant bike boom near the turn of the century when England and North America went bicycle mad, largely as a result of the introduction of the "safety" bicycle–the low framed, two-wheeled design which is pretty well standard now. Prior to its appearance, cycling was the recreation of the young and very nimble, since the high-wheeled "ordinary" or "penny-farthing" could not be conveniently managed by most women and a great many men. At last, people were free to cover comparatively great distances quick-

"The Most Benevolent of Machines"

by M. S. C. McCall

ly and cheaply. Thousands of clubs were formed, millions of bikes were sold. In fact, one of the vogue places in New York was a cycling palace, much like a posh dance hall, where the hoi polloi circulated in style, stepping down from their exertions to a cool sarsparilla served amid potted palms at the edge of the cycling floor.

We've come a long way since those innocent days. The automobile, to whose development the bicycle contributed so much, put the bike into eclipse and, oddly enough, it is partly in defiance of the gas burners and their insatiable demands on our health and resources, that we have returned to the bike. Like the middle aged husband who runs off to Rio with the fan dancer, it was great

while it lasted but a fellah can't keep it up forever so it's home to mum and apple pie and a world he can handle,

And it isn't just the bike's size which reassures us. Its 25 lbs. of weight, 40 inches of wheelbase and idiot-simple drive mechanism don't intimidate. Look; there's a pair of cranks and pedals; attached to one crank is a chainwheel. The chain runs back to a small sprocket on the back wheel. Turn cranks, wheel turns and zip–we're off! So simple. And, like a pet canary or Aunt Tillie's cat, give it minimum care and it will be a friend for years.

Those with a mechanical bent can take satisfaction in the bicycle as an extremely sophisticated piece of engineering. Professional cyclists ride three-week 3,000 mile races on 21 lb. bikes made of exotic tubing, light alloy components and paper-thin tubular tires over absolutely dreadful roads at speeds (down-hill) in the 60 m.p.h. range. The bicycle wheel, ounce for ounce, is one of the strongest structures ever engineered. The pneumatic tire, the ball bearing and the rear differential of the automobile owe much of their development to

their use in bicycles, as does the roller chain. And, last but not least, a man on a bicycle is the most efficient means of propulsion among travelling animals and machines in terms of energy consumed in moving a certain distance as a function of body weight. This is because a cyclist uses his largest muscles in the most effective motion at the ideal cadence: the result is propulsion efficiency which isn't even approached by the seagull, salmon or jet transport airplane.

It's likely that these things won't cross your mind the next time you throw a leg over a crossbar. Your reward will be less exotic. The feel of self-generated wind in your face, the honest sweat that's yours alone, a quickened pulse, a healthy glow and a surge of immense well-being are yours for the taking. And, if enough of us make this discovery, energy crises will be for other people. We will have found a better source; ourselves.
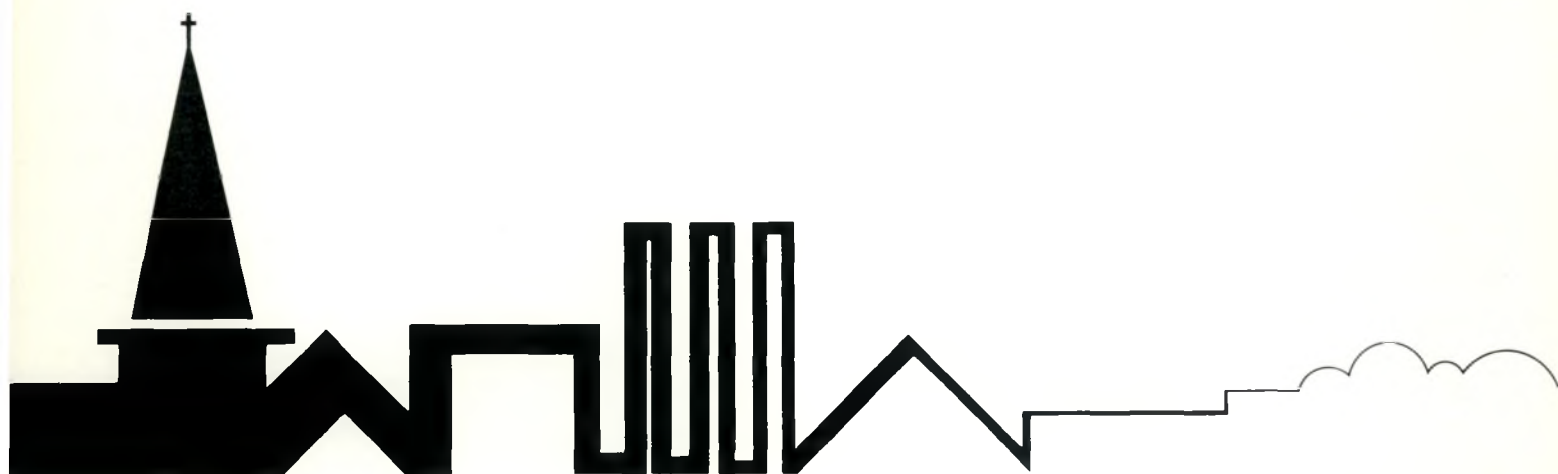
Escape
From
the City
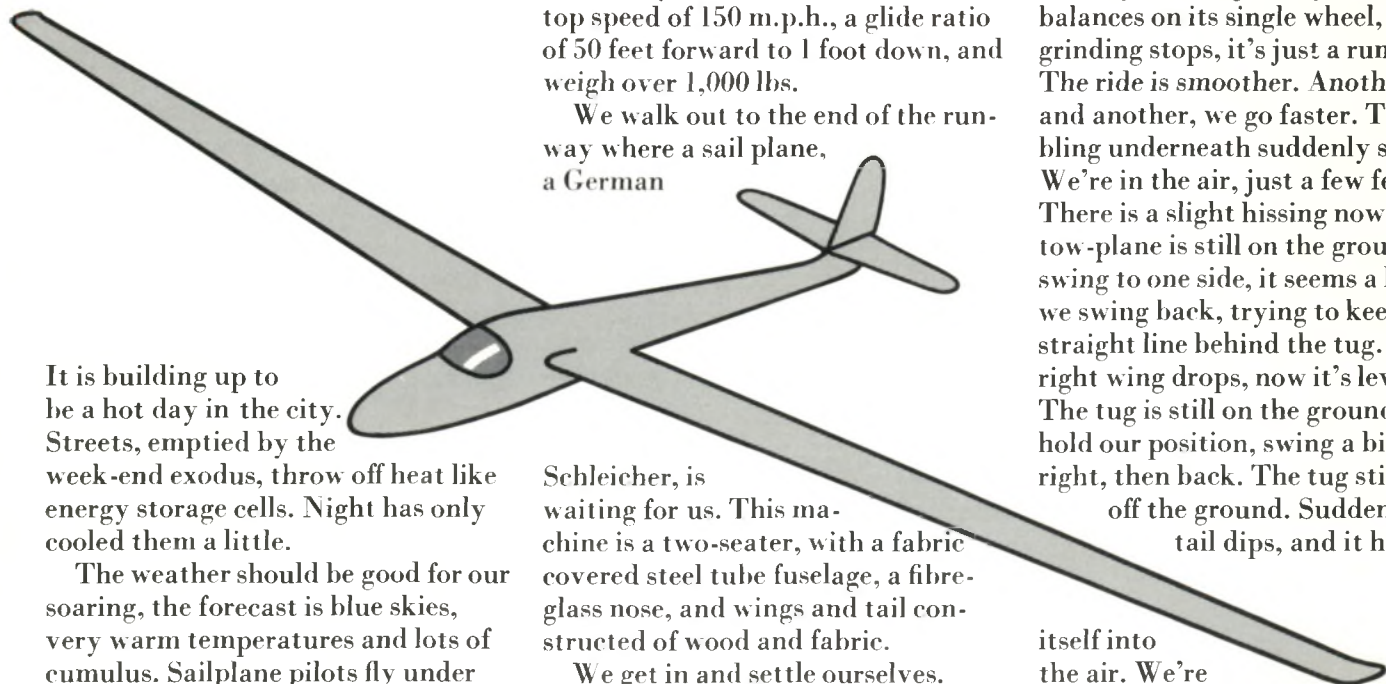
It is building up to
be a hot day in the city.
Streets, emptied by the
week-end exodus, throw off heat like
energy storage cells. Night has only
cooled them a little.

The weather should be good for our
soaring, the forecast is blue skies,
very warm temperatures and lots of
cumulus. Sailplane pilots fly under
visual rules and they depend on good
weather. These forecast conditions
will help produce thermals–spiraling
up-draughts of hot air that provide
lift to the sailplanes. The longer the
pilot can keep in the thermal, the
higher and further he goes. Birds use
exactly the same currents, especially
those that soar–seagulls, hawks,
eagles.

Thermals are capricious. They
start and stop without warning.
They are difficult to find and difficult
to stay in. They usually start around
mid-day after the sun has warmed
the ground. The rising hot air takes
up moisture from the ground to cool-
er levels where it forms a cloud. As
long as it continues to take moisture
up the cloud will grow, when it stops
the cloud stops growing and starts to
dissipate.

Sailplanes–the heavier than air
machines that use these updraughts–
are remarkable examples of design
and engineering. In concept and
structure they have progressed from
simple linen and wood structures to
modern fibreglass machines that may
even carry water as ballast, have a
top speed of 150 m.p.h., a glide ratio
of 50 feet forward to 1 foot down, and
weigh over 1,000 lbs.

We walk out to the end of the run-
way where a sail plane,
a German

Schleicher, is
waiting for us. This ma-
chine is a two-seater, with a fabric
covered steel tube fuselage, a fibre-
glass nose, and wings and tail con-
structed of wood and fabric.

We get in and settle ourselves.
"The straps go through there; and
the last one goes like that." The as-
sistant, standing on the runway,
moves back.

The pilot closes the cockpit cover
and locks it. Inside it is hot. We open
the small vents in the canopy. He
checks out the controls: the rudder
pedals move backward and forward,
the control column moves in a circle,
the ailerons and elevators respond,
he pulls the air brake and the spoilers
on the wings pop up and down.

"Comfortable?"

"Yes, thanks."

He gives the thumbs up sign. So
Roman customs prevail out here,
too. Someone tilts the glider, to a

horizontal position. The tow-pilot
gets the all clear, he revs up the en-
gine. The tow-plane, a Chimpmunk,
known as the 'tug,' trundles off. The
slack on our tow-line snaps out. We
move forward. There's grinding un-
derneath. A man running alongside,
holding the wing, lets go. The glider
balances on its single wheel, and the
grinding stops, it's just a rumble now.
The ride is smoother. Another bump,
and another, we go faster. The rum-
bling underneath suddenly stops.
We're in the air, just a few feet.
There is a slight hissing now. The
tow-plane is still on the ground. We
swing to one side, it seems a lot. Then
we swing back, trying to keep in a
straight line behind the tug. The
right wing drops, now it's level again.
The tug is still on the ground. We
hold our position, swing a bit to the
right, then back. The tug still isn't
off the ground. Suddenly its
tail dips, and it heaves

itself into
the air. We're
level with the tree tops, on our right.
The tug hanks left. We give a slight
lurch, then another. We go higher.
The trees are below us now.

"It may be a bit bumpy over these
trees." It is.

We climb in a series of lurches and
tugs. First forward, then up. We
continue in a gentle curve, banking
left, trying to keep behind the tug,
not to one side. We get to a thousand
feet. More lurching, though it is not
so obvious now. Every so often, as we
climb, the Schleicher gives a strange
sort of moan. These things are sup-
posed to like flying; perhaps it's the
tow line. We continue slowly up, going
left all the time. In front there is a
small instrument panel–a variometer
showing the rate of ascent and de-
scent, an airspeed indicator and an
altimeter which works like a clock
with a fast minute hand. It reads a
quarter-to-two. That must mean

19

1,750 feet. We should let go of the tow at 2,000 feet.

Suddenly the pilot asks, "How are you feeling?"

"Quite well."

"Don't mind the bumps?"

"No."

"We'll be letting go of the tow in just a moment."

The noise level is quite low and it is possible to talk in conversational tones.

He leans forward and jerks the release. There's a loud bang. Our nose goes up slightly and we bank over to the right. The tug swings away to the left. We are on our own. The hissing noise continues as the air slides over the cockpit and surfaces of the sailplane. Our air-speed is about 50 m.p.h.

"Did you feel that thermal back there? Let's see if we can get it again."

The right wing goes down hard. We almost seem to pivot on it. Round we go. The ground below is a mixture of tracks, back roads, highways on variegated green landscape interspersed with darker patches of water.

"There it is. We'll try and hold it."

The variometer shows a lift of 200 feet per minute. We go up. This thermal is very gentle. The altimeter shows 2,400 feet. We bank to the right again. A slight lift—up a hun-

dred feet. Level off again. The weather is beautiful. The optically perfect cockpit bubble permits almost limitless forward and side visibility; underneath the small South Nation River follows the classic meandering pattern of a tributary in decline. Away to the north, the powerful Ottawa River follows a direct course. Looking up, the small blobs of fair weather cumulus move onward, their bases sometimes darkened by condensation. The city is a hazy mass on the horizon. One thinks of it in the same way.

We start to drop, the variometer shows a sink of 200 feet per second. The altimeter reads 2,200. We bank left searching out a thermal. A tow plane is bringing up another glider, a Slingsby. Bump, suddenly we hit a good thermal. We bank right. The variometer jumps up to 200 feet per second. We climb steadily. Up we go, back toward those clouds, the altimeter reads 2,400. We are right underneath the cloud, looking up into the darkened surface, it seems to boil and swirl.

"The good thermals are near the cloud's edge, we'll move back."

We slide away. Suddenly there is another good shove. The variometer reads 300 it goes to 350 then jumps to 400. The altimeter climbs to 3,000 feet. This is great. We look at the Slingsby. It has cast off and is joining our thermal.

"He's a single-seater and can outperform us."

He does, and quickly gets above us. Round we go. The Slingsby is at the other side of the thermal about 100 yards away. More lift. The variometer jumps to 400 feet. The altimeter moves to 3,200. Another great moment, we are outclimbing the Slingsby and above it. We bank hard to the right, keeping in the thermal. The Slingsby gets back up to our level.

From the ground, sailplanes manoeuvering in thermals look like partners in a stately aerial minuet. In the air it is like a merry-go-round. Up, down and around and around we go. The Slingsby gets above us. Another bit of a lift then we get level. The altimeter reads 3,300. Up comes another sailplane, it's a Blanik, a beautiful all metal two-seater. The three of us go round together. We drop a bit. The variometer shows a decline of 400. Can't be. Yes, the altimeter shows we are back to 3,000.

Now both the Blanik and the Slingsby are above us. Where are those thermals? Down we go, the altimeter reads 2,800. Suddenly, another slight tremble, the variometer shows 300 feet per second and the altimeter 2,900. It doesn't last. Down we go again. The Blanik sails by. The Slingsby is now smaller and well above us. Where is another thermal?

We bank left, trying to get to the edge of a small bit of cloud. Another slight tremble. We steady out. The instruments read no drop. Well, that's better than nothing. We bank right and dash off to a better looking piece of cloud. It seems to foam in the middle as we look up at it. Now we are down to 2,600. Another good lift. Back to 3,000 feet. We both keep a sharp look out for the other two. There they are, the Blanik has dropped a bit too. He follows in behind us, probably having noticed our progress coming back up. We can't see him.

"Where is he?"

"Do you see that Blanik?"

"He was right behind us. All I can see is the Slingsby. The tug is bringing another up to join us."

"Yes, I can see him".

We lose height; the variometer shows 200 feet per minute sink, then goes down to 400. There seems to be something rather undignified about being sent down at this speed. The altimeter confirms things, by reading 2,200 feet.

"Any sign of the Blanik?"

"None."

"Well, I think we'll go down if we can't get anything else."

We move from cloud to cloud, slowly going down all the time. Still no lift.

"O.K. Let's head home."

The nose goes down. The wind noise increases. We hit 70 mph. The altimeter reads 1,800. The airfield gets bigger. A tug takes another up to join our vacancy. We continue down at 70 mph. Now the altimeter reads 1,500 feet and we are committed to land. We bank and go downwind along the edge of the field. This part is really like landing in a plane. We bank to the left on the final approach and line up the runway. At 500 feet the pilot checks the spoilers. There is a rumbling noise and the plane drops quickly. Spoilers in. We head down. The pine trees at the edge of the field are a reminder to keep a respectable altitude, there are no engines for a boost of power. Down we go, 300... 250... 200... 150... the pines are coming up, but we are comfortably above them. Suddenly we are past the edge of the field and settling down quite quickly. More spoilers—a rumbling—the ground comes up. We're down, a sound of grinding, then it stops. Everything stops. We tilt gently to the left and rest on one wing.

"Well, that's it."

We open the cockpit cover. There is silence, absolute silence. A bird is singing high up in the sky, up in the world we had just come down from. We look up into the blue sky; where are those elusive, powerful thermals, so challenging and in such a different world? Only the racing cumulus give us a clue.

E. H. Q. Smith
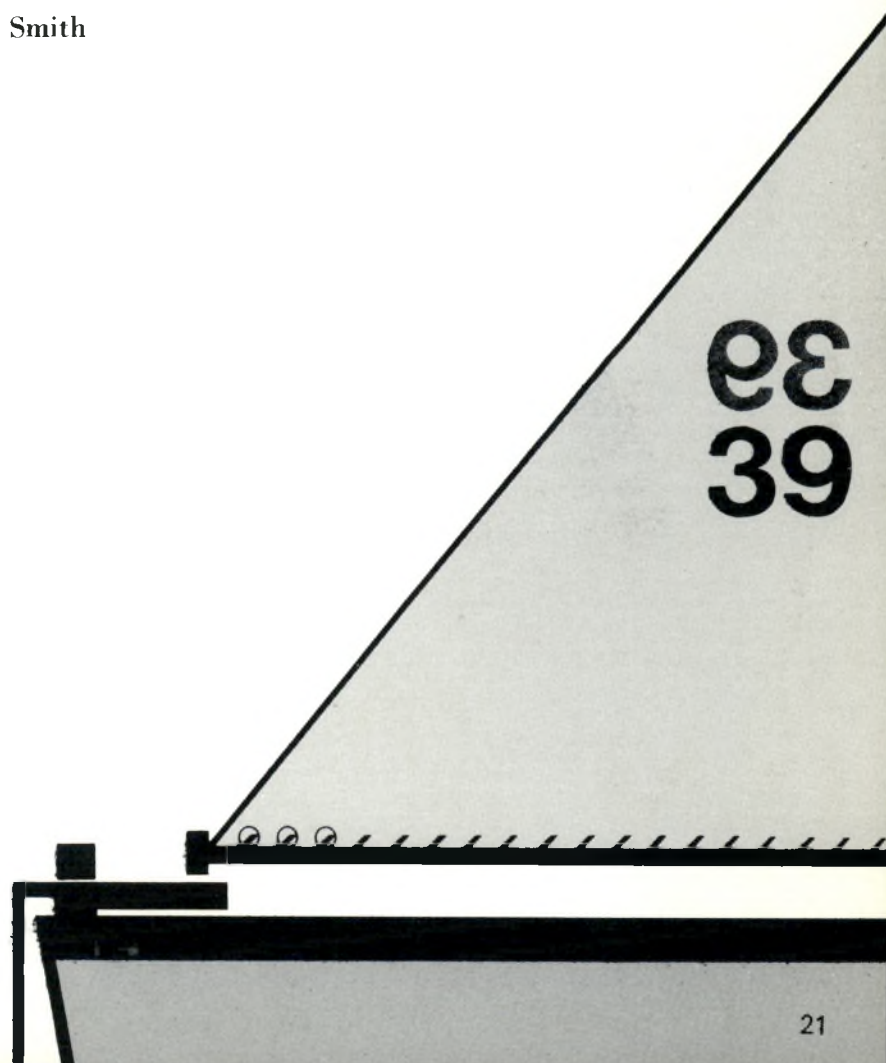
Christine Burke

Down to the Sea in Jachtschips

One million Canadians participate; 100,000 compete

Participation has increased 627% since 1959

The term "yachting" is derived from the Dutch hunting boat called a jacht (pronounced 'yacht') schip, and was imported into England by Charles II after his exile in Holland where the jachtschips had been transformed into pleasure boats for the wealthier Dutch society.

At least two of Canada's yacht clubs are over 100 years old; the Royal Nova Scotia Yacht Squadron, formed in 1837, and the Royal Canadian Yacht Club, Toronto. To-day there are two aspects of sailing ranging from the purely recreational to the highly competitive, from the lone cottage family with their little boat on the lake, through groups of cottage dwellers with perhaps some racing amongst themselves, through regional regattas, and national events up to international and olympic competition. Canada, itself, hosts an annual international regatta 'CORK' which has become one of the top four or five world events.

The types of boat, and the people sailing them, have changed radically over the last twenty years, and, while 'Yachting' was at one time a prerogative of the rich, 'sailing' is now for all income levels, with no age limit and no sex discrimination!

Interview recueillie par
Michel Oger

Habitat : La ville moderne est-elle de trop grande dimension et devrait-on limiter la taille des villes ?

André Wogenscky : C'est un peu en réalité la même question ! Je pense qu'il faut faire attention à la réponse, parce que le véritable problème de la ville, il n'est pas simplement quantitatif. Or, la question de la simple dimension ou de la taille et de la population de la ville, c'est un problème quantitatif. En réalité, je crois qu'il vaudrait mieux qu'il n'y ait pas de villes trop grandes et trop peuplées, mais le problème est moins dans la dimension et dans la population que dans la structuration même de la ville. Une ville doit être structurée com-

la manière dont elles se déstructurent ; en réalité, les villes s'agrandissent, la population augmente, le nombre de maisons augmente, on construit de nouveaux quartiers, on reconstruit plus ou moins à l'intérieur de la ville, mais, faisant cela, on tournoie, on déstructure la ville, on supprime les structures existantes.

Habitat : Est-ce que vous pensez spécialement à Paris en disant ceci . . . ou est-ce un point de vue général ?

André Wogenscky : Je pense à Paris, bien sûr, puisque je vis à Paris depuis

André Wogenscky :

" Je crois qu'une ville doit être structurée comme une sorte de gigantesque organisme vivant...

me une sorte de gigantesque organisme vivant et il faut que les habitations de cette ville, surtout en tant que logis, mais également dans leur lieu de travail et dans toutes les activités, ne soient pas simplement juxtaposées les unes à côté des autres, mais qu'elles soient intégrées dans des unités successives, qui se contiennent et s'intègrent les unes dans les autres. Je pense, par exemple, que le logis familial doit être intégré dans une unité collective d'habitations, de manière à ce que ces logis familiaux et, par conséquent, les familles qui y habitent, ne soient pas simplement juxtaposés et assemblés en addition arithmétique, mais forment des unités à caractère collectif, forment des unités sociologiques, comme, autrefois, une unité d'un tel type se créait parfaitement, naturellement dans un village. Un village était une unité qui ne se contentait pas d'additionner arithmétiquement des habitants, mais qui avait son esprit collectif, quelquefois même sa *culture ou sa microculture. Je crois que ça, c'est extrêmement important. Je crois que la grande critique que l'on peut faire à nos villes et à la manière dont nous bâtissons aujourd'hui de nouveaux quartiers pour répondre à l'accroissement démographique, c'est

très longtemps et c'est évidemment la ville qu'on habite qu'on connaît le mieux, mais je pense aussi que c'est un phénomène tout à fait général : mes nombreux voyages me permettent d'avoir une idée de différentes villes et surtout des très grandes villes du monde et je pense que c'est un phénomène général et je n'hésite pas à dire cela aussi, par exemple, de Montréal. En étendant une ville, on la déstructure, on l'étale, on la liquéfie et on répand les habitants sur le sol d'une manière qui fait que les liens entre eux se relâchent. Alors que, dans ces problèmes, il serait tout à fait fondamental, au lieu de diminuer l'intensité, de toujours réintensifier les rapports humains. Il faudrait qu'un certain nombre de logis familiaux soient groupés en unités qui correspondent, même à l'intérieur de la grande ville, au village. Il faudrait que ces villages soient intégrés eux-mêmes dans ce qui pourrait correspondre à l'intérieur de la grande ville, aux quar-

tiers avec des centres, avec des carrefours, avec des croisements, des grands courants d'échanges et de relations parce qu'en réalité, je crois qu'une ville, c'est avant tout un grand phénomène d'échanges et de relations. Alors, je dirais qu'étant donné leur structure, je pense que nos très grandes villes sont trop grandes, mais si on les structurait convenablement, si on faisait un véritable urbanisme qui conduirait à cette intégration successive dans des unités de plus en plus grandes, je pense qu'à ce moment-là, il n'y aurait pas à craindre la véritable dimension, la grande taille de la cité moderne.

Habitat : Existe-t-il déjà une ville de cette nature ?

André Wogenscky : Non, je n'en connais pas et je peux dire que je ne pourrais même pas citer une ville qui me paraisse . . .

les aspects des connaissances humaines devraient être impliqués, il faudrait étudier vraiment ce problème de structuration de la société de manière à en déduire les structures urbanistiques. Il faudrait que ce soit une vision de la structuration de la société qui conduise à une vision de la structure de l'urbanisme de la ville. Mais, je dirais tout de suite en contrecoup et c'est d'ailleurs un de mes dadas, une de mes rengaines, qu'il ne faut pas oublier que toute solution architecturale et urbanistique agit sur les hommes, leur comportement, leurs activités, leur manière de penser. J'ai appelé mon livre «architecture active» parce que c'est ça, justement, que j'essaie de dire, que l'architecture au sens large du terme englobant l'urbanisme est active parce qu'elle agit sur les hommes ; je pense qu'il ne faut pas oublier qu'à partir du moment où l'on aura repensé ce que devrait être la structuration même de la société, de notre organisation sociale, le meilleur moyen de réaliser cette structuration de la société, ce sera de réaliser les structures urbanistiques et architecturales qui la provoqueront parce que c'est à ce moment-là, par un bon urbanisme et une bonne architecture, que l'on agira et que l'on provoquera cette amélioration même dans la structure de la société.

. . . je crois qu'une ville, c'est avant tout un grand phénomène d'échanges et de relations.

Habitat : . . . en être le prototype ?

André Wogenscky : Non, je ne le crois pas. Vous me demandiez à quel nombre d'habitants il faudrait se limiter et si c'est faisable ? Je crois que c'est parfaitement faisable en fonction même de ce que je viens de dire, et c'est là d'ailleurs que nous touchons à la nécessité, pour nous architectes et urbanistes, de travailler en équipe ; il faudrait que d'un point de vue sociologique, d'un point de vue je dirais même plus que sociologique, parce que tous

Habitat : Aujourd'hui, on entend beaucoup parler du style «international», mais existe-t-il un style national ?

André Wogenscky : Oui, on entend beaucoup parler de style «international» et vous me demandez s'il existe ou peut exister un style «national» ? Je vous dirai franchement que, pour moi, ce qu'on appelle le «style», c'est quelque chose dont je ne m'occupe jamais. Et c'est une chose dont, pour ma part, je pense que les architectes et urbanistes ne devraient jamais s'occuper. Le «style», c'est quelque chose que constate après coup le critique ou l'his-

torien qui classifie, qui analyse, ce qui a été fait par des artistes. Et c'est ce que je viens de dire et je pense que c'est tout à fait vrai dans tous les arts. Le «style», c'est le résultat.

Habitat : A une certaine époque, n'avez-vous pas eu l'idée de travailler dans un «style» donné ?

André Wogenscky : Non ! Non !

Habitat : Alors, c'est après coup qu'on a découvert, décidé que Mansart avait un style ?

André Wogenscky : C'est une chose que l'on constate après coup et je vais même jusqu'à dire que peut-être Mansart en a eu quelquefois l'idée. C'est à ce moment-là qu'il a fait des choses mauvaises ! Parce qu'à ce moment-là, on se fait une image à priori comme aujourd'hui, par exemple, tous les architectes ayant une commande se disent : pour que j'aie l'air d'être à la page, il faut que je fasse du moderne, des murs-rideaux, de la structure métallique, il faut que ça ressemble à du Mies van der Rohe ou au contraire, en béton à du Le Corbusier. C'est la grande erreur de beaucoup de confrères qui, à l'avance, comme ça, se mettent une image dans les yeux, veulent faire de l'architecture de tel et tel style, et font des bêtises parce qu'ils font de l'architecture tout à fait arbitraire. Si vous avez comme préoccupation, en architecture, en urbanisme, uniquement ce qui sera le meilleur pour les hommes qui vont utiliser cette architecture et cet urbanisme alors, à ce moment-là, vous ne vous posez plus la question du «style». La question du «style», elle est la résultante. Alors, je n'emploie plus le mot «style» que je déteste. Il existe une sorte de caractère international à l'architecture de notre époque, mais comment s'en étonner ? Ceci est tout à fait logique, et je ne crois pas du tout que ce soit malsain dans la mesure où notre époque, par l'accélération considérable des possibilités d'échanges entre les pays tout autour de notre planète, produit une manière de vivre de plus en plus semblable entre les différents pays. Prenez un avion et faites escale, partant de Montréal, à New-York, à Paris, à Bruxelles, à Rome à Berlin, et continuons à New Delhi, à Hong Kong et puis à Tokyo, eh bien ! vous trouvez des gens qui vivent d'une manière qui se ressemble de plus en plus qui, de plus en plus, travaillent d'une manière qui se ressemble, ont les mêmes préoccupations, et acquièrent

une manière de penser qui devient internationale. A ce moment-là, je crois qu'il est parfaitement sain de penser que le style architectural est toujours la conséquence même, l'expression même, l'extériorisation même des manières de vivre et de penser ; je pense qu'il est tout à fait naturel qu'il y ait une certaine internationalisation de l'architecture et de l'urbanisme. Par contrecoup, je dirais qu'à l'intérieur même de cette

d'air qui chauffera les maisons et qu'à Beyrouth il y aura un conditionnement d'air qui les refroidira. Ce sont les différences de climat qui donc peuvent, et je crois même, doivent entraîner des différences dans l'architecture.

seulement à cause du climat mais à cause de ces aspects sociologiques et culturels, imprégnée d'une certaine différence.

. . .toute solution architecturale et urbanistique agit sur les hommes, leur comportement, leurs activités, leur manière de penser.

sorte d'internationalisation, il peut parfaitement subsister à ce moment-là, d'une manière très saine et très justifiée, des particularités. Vous avez d'abord des différences de climat. Il est bien évident que si l'on construit à Montréal

Encore beaucoup plus fortement que les différences de climat, je crois que les différences de caractère sociologique, les manières de vivre, les habitudes, la culture, la manière de penser doivent également intervenir. Je sais

André Wogenscky : Oui, bien sûr ! et je suis de ceux qui sont fermement partisans, avec naturellement tout le tact que cela nécessite, de reconstruire les villes sur les villes, de reconstruire les villes sur leur emplacement. Je prends le cas de Paris qui est, évidemment, celui que je connais le mieux ; je pense qu'on ne peut pas éviter d'étendre Paris quand même en surface, étant donné l'énorme accroissement de la population qui est prévu jusqu'aux environs de 1980, mais je pense que ce serait une très grande erreur de reconstruire à l'extérieur de Paris ces véritables villes qui vont augmenter l'agglomération parisienne ; je pense que ce serait une profonde erreur de pousser l'extension des nouveaux quartiers d'affaires de la Défense et de laisser le centre, le cœur de Paris, pourrir car on peut vraiment parler de pourriture, parce qu'il y a dans Paris des îlots insalubres qui sont épouvantables.

Le ''style'', c'est quelque chose que constate après coup le critique ou l'historien qui classifie, qui analyse, ce qui a été fait par des artistes.

ou à Rio de Janeiro, l'architecte a déjà à la base même de son travail, qui est de mettre des gens à l'abri des intempéries, dans des maisons, un problème fondamentalement différent. Ici, les architectes doivent attacher une énorme importance à l'isolation thermique, à Rio de Janeiro les architectes cherchent à faire traverser les bâtiments par des courants d'air de manière à ce qu'il n'y fasse pas trop chaud. Je connais bien moi-même ces différences ; ayant mon bureau à Paris et construisant en France et ayant également une collaboration étroite à Beyrouth avec un architecte libanais, j'ai déjà des différences de climat qui entraînent des différences dans les projets que je réalise. Je crois que là, ce serait une erreur d'en arriver systématiquement, sous prétexte qu'on a le conditionnement d'air qui va rétablir les conditions de chaleur ou de protection contre la chaleur, je crois que ça serait dommage, ça serait perdre un facteur de vitalité de l'architecture, de faire la même architecture à Montréal ou à Beyrouth, sous prétexte qu'à Montréal il y aura un conditionnement

très bien que lorsque je fais un projet pour le Liban, j'essaie, d'une manière qui est difficile d'expliquer d'ailleurs, d'être à ce moment-là tout à fait imprégné par la culture arabe, la culture du Moyen-Orient, chose que je n'essaie pas du tout quand je fais un projet pour Paris, où au contraire j'essaie d'être imprégné de certains aspects de la culture française et de les intégrer dans mon architecture. C'est pour cela que si je réussis mon travail, eh bien ! l'architecture que je fais au Liban est, non

André Wogenscky : Oui ! Je pense notamment au quartier des Halles et à la disparition des Halles. Je ne cache pas que, dans un sens, je déplore qu'on ait démoli les pavillons de Baltard qui, je

. . . il est parfaitement sain de penser que le style architectural est toujours la conséquence même, l'expression même, l'extériorisation même des manières de vivre et de penser; je pense qu'il est tout à fait naturel qu'il y ait une certaine internationalisation de l'architecture et de l'urbanisme.

Je crois qu'on a tout à fait tort de craindre le contraste d'esthétique et je crois que l'histoire de l'architecture nous montre maints exemples de contrastes entre des styles différents dont le résultat est beaucoup plus une sorte de revalorisation de ces styles les uns par rapport à l'autre, grâce justement à ce

contraire, parce que sans cela, ils vont mourir à petit feu, les revitaliser de cette manière.

Vous ajoutiez à votre question, la rénovation urbaine est-elle la réponse à la détérioration des villes ? Sinon, de quels autres moyens dispose-t-on ? Je crois qu'il faut faire la rénovation urbaine comme je viens de le dire et toujours, je le répète, en se préoccupant de cette structure dont je parlais au début de notre entretien, dans le sens dont l'architecture et l'urbanisme vont structurer et intensifier les rapports entre les hommes. Alors, les autres moyens, eh bien ! en réalité, ils se résument à deux, c'est restructuration, reconstruction de l'intérieur même des villes et extension des villes à l'extérieur par des nouveaux quartiers qui devraient, eux aussi, être pensés d'une manière futuriste.

...je suis de ceux qui sont fermement partisans, avec naturellement tout le tact que cela nécessite, de reconstruire les villes sur les villes, de reconstruire les villes sur leur emplacement.

Habitat : **Que peut-on faire pour civiliser et humaniser les villes ?**
André Wogenscky : Ceci m'amène à vous parler de mon idée de ce que j'appelle «architecture active». Je crois qu'aujourd'hui l'architecture et l'urbanisme (et encore une fois pour moi — l'urbanisme n'est qu'une part de l'architecture) c'est l'architecture des villes et des agglomérations, mais je pense que le problème, s'il y a des différences

crois, étaient vraiment très beaux et d'un grand intérêt, d'autant plus que je ne suis pas du tout de ceux qui sont partisans de conserver systématiquement tout ce qui est ancien, surtout lorsque ce qui est ancien ne correspond plus à des fonctions actuelles. Mais justement les pavillons de Baltard ont montré que, quand on en sortait la viande et les légumes, ils convenaient parfaitement à des activités culturelles et je crois que l'on aurait pu les conserver. Il y a eu là spontanément, aux Halles, dans cette période intermédiaire, après la disparition des légumes et avant la démolition des pavillons, des activités culturelles formidables, très spontanées, du théâtre, des manifestations, des expositions ; je crois qu'on aurait pu parfaitement rendre les pavillons de Baltard tout à fait «actuels» et c'est dans ce sens-là que je pense qu'on aurait dû les conserver. Enfin ! laissons les pavillons de Baltard qui sont un cas bien particulier ; je crois qu'il faut absolument démolir des vieux quartiers, lorsque ceux-ci n'ont pas d'intérêt artistique, ni historique ; je crois qu'il faut démolir d'anciens quartiers et reconstruire des quartiers neufs, modernes, à l'intérieur même des villes.

contraste, à cette juxtaposition ; c'est *comme si on mettait deux charges électriques en présence et que ça fasse des étincelles de l'une à l'autre . . .* Par exemple, les deux clochers de la cathédrale de Chartres, dont l'un est roman, l'autre gothique ; parce que la cathédrale de Chartres avait été construite d'abord en église romane, avec deux

...il faut absolument franchir un pas décisif, laisser dans le passé la conception de l'architecte comme étant une sorte de décorateur de la maison qui vient surajouter des décors à une construction pour qu'elle soit belle.

clochers romans dont l'un a brûlé, les *architectes de l'époque n'ont pas du tout songé à reconstruire et à réimiter le clocher roman ;* ils ont franchement, dans le bâtiment même, remplacé le clocher par un clocher gothique en le faisant même un peu plus haut que l'autre, par orgueil ! Eh bien ! ça donne aujourd'hui un dynamisme extraordinaire à la façade et c'est un des plus beaux monuments du monde. Je crois qu'il ne faudrait pas hésiter à reconstruire aujourd'hui des quartiers modernes et vivants, correspondant à l'expression même de la vie de notre époque, au cœur des villes ; il faudrait, au

d'échelle et de degré, le problème est le même. Moi, *personnellement,* j'ai pris l'habitude d'employer le mot «architecture» dans un sens très, très large qui englobe l'urbanisme, de même que ça englobe aussi à l'autre extrémité le «design» du mobilier et des équipements intérieurs. Pour moi, tout ça c'est de l'architecture. Or, je crois qu'aujourd'hui il faut absolument franchir un pas décisif, laisser dans le

passé la conception de l'architecte comme étant une sorte de décorateur de la maison qui vient surajouter des décors à une construction pour qu'elle soit belle. Je crois qu'il faut voir l'architecture comme l'organisation de notre milieu physique, qui doit absolument être envisagé et compris comme les biologistes nous montrent que tout milieu physique doit être envisagé pour tout être vivant, c'est-à-dire, comme agissant sur lui.

Si on prend un organisme, ses bactéries, ses petits organismes unicellulaires et qu'on les change de milieu, on agit considérablement sur eux, même lorsqu'ils sont formés d'*une seule* cellule vivante. Pourquoi nous, qui sommes formés de milliards et de milliards de cellules vivantes intégrées les unes dans les autres, formant des organes qui sont eux-mêmes intégrés dans des organismes, pourquoi ne serions-nous pas aussi, si ce n'est même plus, sensibles à cette action du milieu ?

...je suis persuadé que toute architecture et tout urbanisme agissent puissamment sur les comportements psychologiques...

En réalité, c'est bien parce que ce milieu agit sur nous que nous essayons de l'organiser et qu'existe l'architecture, cette perpétuelle tentative de l'organiser, de le transformer, de diminuer les mauvaises actions sur nous et d'augmenter les bénéfices . . . Lorsque nous éprouvons le besoin de mettre un toit au-dessus de notre tête et quatre murs autour de nous pour nous protéger de la pluie ou de la neige, c'est bien pour modifier une action grave, menaçante pour notre santé. Alors, comment humaniser les villes et les habitations, les lieux de travail, ce milieu physique de plus en plus artificiel dans lequel nous passons toute notre existence et qui est créé par les urbanistes et par les architectes, comment l'humaniser ? Ma réponse c'est d'envisager son organisation, toujours par rapport à toutes les actions, toutes les répercussions qu'il a sur nous et que je classe en trois très grands chapitres : action sur la santé et sur la vie de notre corps, action sur toutes nos activités depuis les plus simples et moindres gestes – s'asseoir à une table, manger un repas – jusqu'aux activités collectives les plus complexes de la société qui sont les grandes fonctions de la société qu'on

étudie en économie politique ; et enfin, le troisième chapitre, c'est toutes les actions sur la pensée, sur nos comportements psycho-physiologiques et là, c'est évidemment une chose terriblement vaste et importante, parce que je suis persuadé que toute architecture et tout urbanisme agissent puissamment sur les comportements psychologiques ; par conséquent, il y a gravité dans le choix des solutions architecturales et urbanistiques par rapport à la formation même de la pensée des futures générations.

Habitat : **La France joue-t-elle un rôle dans ce domaine ? Le Canada ?**
André Wogenscky : Je ne crois pas que la France joue un rôle particulier dans ce domaine. La France est un merveilleux pays, mais qui est actuellement assez vieux et qui traverse une crise, une sorte de lassitude, de déception, de découragement et je ne crois pas du tout que de ce point de vue-là nous puissions être pris en exemple. Je crois que, dans le monde entier, on n'a pas

encore assez compris ces problèmes et qu'on n'y attache pas assez d'importance. Je crois qu'il y a des pays (et je serais tenté de dire que notamment le continent nord-américain me donne plus d'espoir actuellement) pour aller de l'avant dans un sens qui serait assez proche des idées que je défends. Le Canada ? Oui, je pense à lui, juste-

ment, ainsi qu'aux États-Unis lorsque je parle du continent nord-américain, mais c'est encore loin de ce qu'il faudrait.

Habitat : **Quel est, selon vous, l'avenir de la maison unifamiliale ?**
André Wogenscky : Je pense qu'il faut faire des maisons unifamiliales et qu'il n'y a pas de raison que cette solution soit abandonnée ou doive être abandonnée dans l'avenir. Mais, là encore, il faut se défendre de voir le problème d'une manière étroite et un peu primaire, avec cette sorte d'alternative qui existerait entre maison familiale ou habitation collective, appartements groupés dans des grands bâtiments. Ça revient un peu à ce que je disais tout à l'heure : je pense que le problème est un problème de structuration de l'agglomération par rapport à ce qu'on croit que doit être la structuration de la société. Je pense qu'on peut faire des maisons familiales avec un jardin tout autour dans les cas où l'on peut se contenter d'une très faible densité ; mais il faut bien se rendre compte que cette très faible densité, elle est un énorme poids, un énorme handicap, une énorme dépense supplémentaire dans notre organisation collective. Par contre, je pense que beaucoup de gens souhaitent habiter la maison unifamiliale parce qu'évidemment, en général – les exceptions sont très rares – ce qu'on fait comme habitations collectives, c'est très mauvais et ça ne donne pas du tout envie à ces familles d'habiter dans l'habitation collective. Il ne faut pas demander aux gens d'imaginer ce qu'ils pourraient être, ils voient ce qui

...si le voisin n'est pas vu ni entendu, il est encore plus loin que le voisin qui habite dans une autre maison, à dix mètres de la maison que l'on habite.

est et ils choisissent en fonction de ce qui est, d'autant plus qu'ils sont très mal informés de ces problèmes. S'ils se rendaient compte que leur maison familiale coûte infiniment plus cher que l'habitation collective, surtout comme charge pour la collectivité, par les frais de voirie, de canalisation, de facteur ou d'enlèvement des ordures collectives, etc., et qu'en un sens la maison

familiale arrive à être vraiment, d'un point de vue économique, une solution de luxe, peut-être qu'ils seraient plus lucides et qu'ils penseraient qu'on est obligé d'envisager de l'habitat collectif. Si vous demandez à quelqu'un s'il préfère avoir comme voiture une 2 CV Citroën ou une belle Cadillac, il vous dira qu'il préfère une Cadillac, et il aura raison! Seulement, si on place le problème par rapport au budget familial, par rapport aux possibilités, par rapport au cadre économique dans lequel il se

quand l'architecture et l'urbanisme sont mauvais, comme ils le sont à 99 p. 100 dans les villes du monde entier, eh bien, à ce moment-là cette architecture et cet urbanisme exercent des actions néfastes sur les populations. Il y aurait de magnifiques études à faire sur la part de responsabilité qui se révélerait très grande, la part de responsabilité de l'urbanisme et de l'architecture sur tout

Il y aurait de magnifiques études à faire sur la part de responsabilité qui se révélerait très grande, la part de responsabilité de l'urbanisme et de l'architecture sur tout ce qu'on peut appeler ''les maladies de la société.''

situe, il faudra bien souvent qu'il puisse se résoudre à avoir la 2 CV Citroën. Alors, le problème est un petit peu le même. Par contre, je pense qu'on pourrait faire de l'habitat collectif magnifique, qu'on pourrait faire de l'habitat collectif qui donnerait des appartements et des logis familiaux et je refuse le dilemme entre habitation familiale et habitation collective. Dans l'habitat collectif, si l'appartement était une maison familiale, avec terrasse, du soleil, de l'air, de l'espace, l'éloignement du voisin, on résoudrait le problème. Simplement de la manière suivante : si le voisin n'est pas vu ni entendu, il est encore plus loin que le voisin qui habite dans une autre maison, à dix mètres de la maison que l'on habite. Je crois que l'on pourrait faire de l'habitation collective qui, en réalité, serait une nouvelle forme d'agglomérations les unes à côté des autres et les unes peut-être au-dessus des autres, mais deux maisons familiales et non pas des cellules formant appartements et ressemblant plus à des cellules de prison qu'à des appartements décents.

Habitat : **L'architecture devra-t-elle influencer les gens ?**
André Wogenscky : Certainement! et ce n'est pas seulement au futur ou au conditionnel qu'il faudrait dire cette phrase, c'est en mettant le verbe au présent : l'architecture influence les comportements humains et c'est ce que j'appelle «architecture active». Et

ce qu'on peut appeler «les maladies de la société». Je suis persuadé que la responsabilité du mauvais urbanisme et de la mauvaise architecture est très grande là-dedans. Il n'est pas possible que des populations vivent dans les taudis modernes dans lesquels on les fait habiter, dans tous les pays, sans que cela ait des répercussions sur leur manière de penser, sur leur manière de se considérer les uns par rapport aux autres, sans que cela ait des répercussions de caractère sociologique et psychologique qui soient absolument fondamentales. Je répète ma rengaine : je crois que l'architecture et l'urbanisme (l'architecture au sens large) devraient à notre époque, et pour demain, être essentiellement l'organisation et l'étude des actions que le milieu artificiel dans

lequel nous vivons exerce sur nous. Il faudrait que des équipes de sociologues, de psychologues, de spécialistes de toutes les sciences humaines, de toutes les sciences qui ont pour but de comprendre mieux les hommes, interviennent pour qu'on arrive à la connaissance des multiples actions du milieu dans lequel nous vivons et pour qu'on arrive à en déduire une architecture et un urbanisme qui seraient beaucoup plus scientifiques et beaucoup plus efficaces pour le bonheur des générations futures.

Habitat : **Pour nous résumer, l'âge d'or n'est pas encore arrivé ?**
André Wogenscky : Non! Mais je ne suis pas pessimiste, je pense qu'il faudra encore du temps ; je ne suis pas très optimiste à très brève échéance, mais je pense que tout de même le mouvement est en route et que pour un avenir un peu plus éloigné, il y aura de très grands progrès et, notamment, j'ai très grand espoir dans les nouvelles générations.

IN SUDBURY
THEY BUILD 'PEOPLE PLACES'

NHA in action

by
Charles H. Forsyth

In Sudbury they built a "People Place."
If you insist on precision and formality it is
St. Andrew's Place–a non-profit, church-sponsored,
CMHC-assisted, multi-purpose
building project in the heart of downtown
Sudbury.
St. Andrew's Place is what happened when the congregation
of St. Andrew's United Church
decided to regard their "problem" as
an "opportunity."
The problem?
Their turn-of-the century
stone church building had become structurally unsound.
For about five years efforts to replace
it with a "modern" church building piled up
difficulties and frustrations
like cordwood.
Does the scenario sound familiar?
It should–
since it is shared by many congregations
in cities across Canada,
and indeed, by
many other community institutions
with historic roots
in changing downtown urban
neighborhoods.
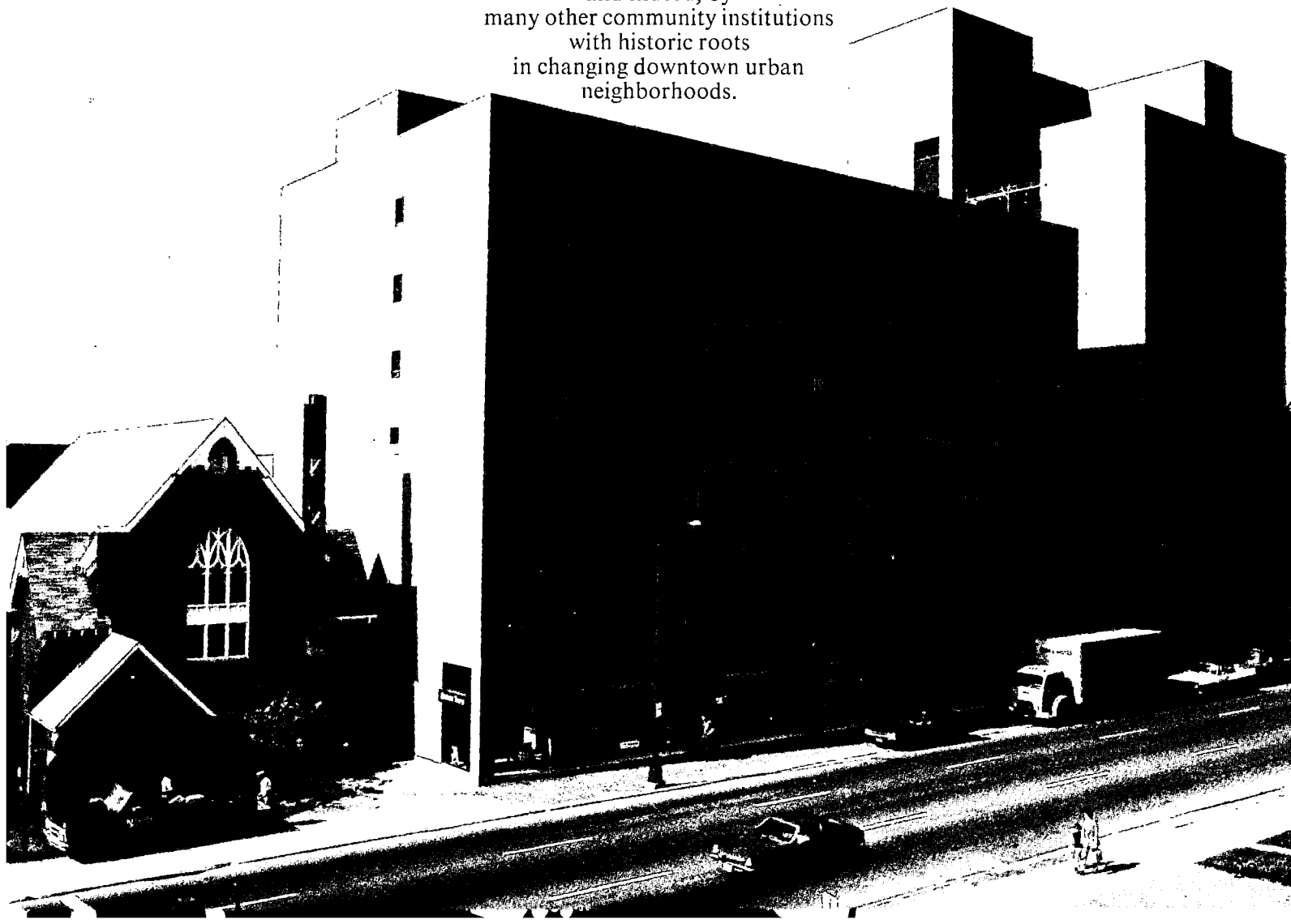
"THUS SAITH THE LORD...
REMEMBER YE NOT
THE FORMER THINGS,
NEITHER CONSIDER
THE THINGS OF OLD—
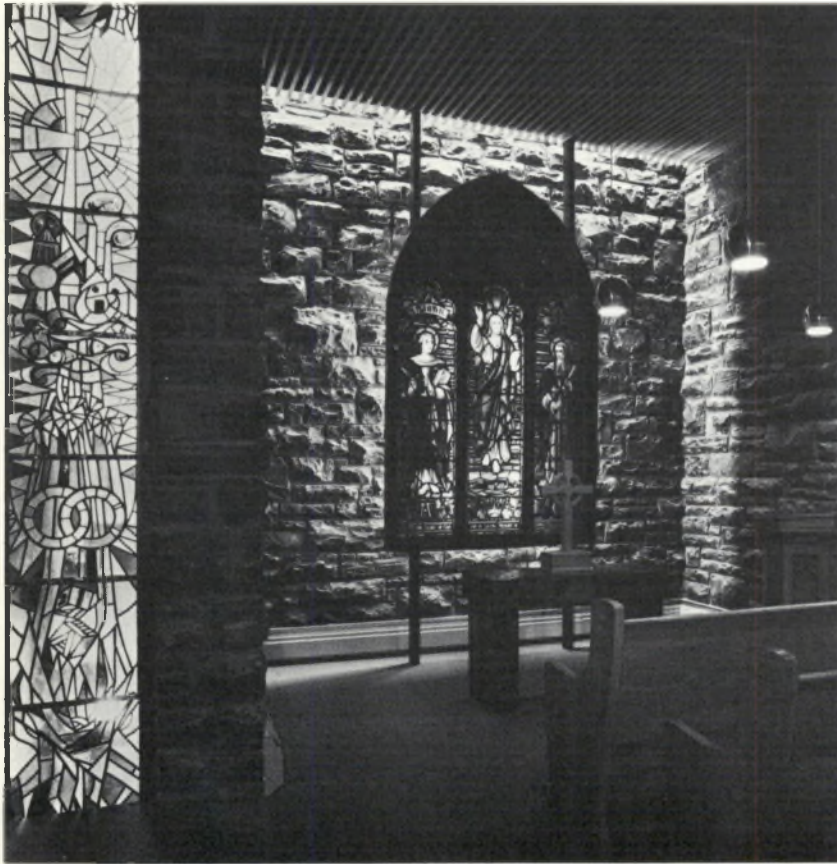
Photos: Karl Sommerer

Do you "pull out" or "stay"? If the decision is to stay, in what "form"? To do business as usual at the old stand?.. even though "the times (and people's needs) they are a-changin'"? Is the church's (or any other institution's role in 'staying' to be a "monument" or a "catalyst"? If you stay, what physical form is appropriate?.. one that says in architectural statement: "isolation," "a single-track place"... or a form that conveys the signal: "social partner."

What makes the St. Andrew's (Sudbury) story different – and hopeful in the context of the needs of our cities – is that the congregation made a deliberate decision in 1970 to use their situation as an opportunity, they did not attempt just to 'cope' with it as a problem.

From that decision, two others flowed:
- First, the congregation, through its small, hard-working Building Committee, would act "as its own developer," bringing together a mix of elements that would be "built in" the new structure and that would shift the church in new directions.
- Second, St. Andrew's proper role was as a "social partner" and the new building must not only "say" that; it must help the partnership happen.

(Perhaps it is important to insert here the observation that St. Andrew's was in a position to take such decisive and significant action because it *did not wait* to be overtaken by the fate that has come to many inner city institutions, including churches . . . declining membership, diminished financial strength, failure of nerve.)

By early 1972 the concept had assumed sufficient shape to make feasible an approach to Central Mortgage and Housing Corporation. J. C. Bischoff, President of the Board of Directors of St. Andrew's Place, recalls: "CMHC was critical to our venture. It was essential that they finance the housing parts of the development. What we never expected is what happened – CMHC were as excited as we were about the concept, and offered 'in principle' to finance all segments of the building, with the exception of formal church areas which we would finance with our own funds."

At St. Andrew's, everyone agrees that the prompt and extensive support of CMHC at that time provided the "lift off" thrust needed to move the project along at high speed.

Whatever the reason, there was certainly lots of forward motion, for by September 1971, construction was underway, and completion was secured by the Spring of this year.

A run-through of the component segments of St. Andrew's Place will give some idea of how the congregation sought to give expression to their concept of a "people place":

- 107 senior citizen apartments – mostly one-bedroom units, getting close to full occupancy just 6 weeks after opening. The rationale for including such housing was simple: "Seniors" want to be participants in community, not 'non-returnable shelved goods'! At St. Andrew's Place they have easy access to commercial services, banks, theatres, health services, and every city bus route in Sudbury terminates "one corner over" from the front door. Moreover they have "instant availability" of programs and services *in* the building.

- The Sudbury YWCA – with residential-hostel accommodation for 72 young women. In their greatly-expanded new facilities, the YWCA can provide excellent accomodation for lower income girls, emergency service for newcomers to the city, or transients, and on behalf of agencies working with young women. At the same time, they have access to all program spaces in the building without the cost of carrying such capital costs for their program needs.

- Shops and offices – the commercial areas provide street-level, pedestrian interaction with the site, "livening" the human mix . . . and at the same time, the "earnings" from the commercial rents are used by the non-profit corporation to stabilize the rent levels of the senior citizen apartments (a built-in insurance against the effects of inflation on fixed or lagging incomes).

- Children's nursery day-care space.
- A Senior Citizen's Day Centre – not only serving building residents, but opening out as a Program-Service centre for hundreds of "seniors" in the central zone of the City. (The Seniors themselves are operating a Convenience Store in the building... appropriately called The Pantry... and the VON and other agencies are committed the bringing their services to the residents, as is the Public Library).
- Program Floors – flexible program floors (including two roof garden areas) where various agencies, as well as the Church and YWCA, can base programs that will reach some of the 12,000 persons who work each day in downtown Sudbury.
- A Chapel – near the main entrance, lined with stone from the old church, available to citizens wanting a "patch of peace and quietness."
- The Church Sanctuary, that is at the same time a Concert Hall – where the seating (450-500) is in the form of chairs, not fixed pews; with a stage-like dais and splendid acoustics; a 20-foot motorized screen recessed in the ceiling, a recital organ, capabilities for audio-recording and VTR work, that is ideal for 'chamber recitals,' 'town meetings,' film and festivals. All this that is yet a Church – beautiful, intimate, reverent.

A very "different" church project! All on a site 200′ by 120′ and one that still permits traditional and important ministries of the Church to find expression – often with a new relevance – while at the same time bringing to the heart of Sudbury new capabilities for program co-operation, new cultural opportunities "handy" to the average citizen, and even 'works of art' that would otherwise not have been available in a city of Sudbury's size. For example, consider the following:

- "University at Noon" courses are being brought to the building, offering "credit course" service to 'working students' during their lunch-periods.

- For the first time the University and Community College faculties worked together to 'deliver' a new course, gathering in 197 students, combining formal instruction with 'studio groups' in the arts (choral, dance, ceramics, tapestry, painting, drama). This program was designed to make use of the unique capabilities of St. Andrew's Place.
- St. Andrew's Concerts will be a new "spin-off," and using the Church Sanctuary for formal concerts and recitals, and also experimeting with free Noon-Hour programs... a "Snack and Sound" Series!
- Non-structured "drop in" activities are emerging for youngsters, high school students, as well as formal program patterns for Senior Citizens, or "keep-fit" YMCA programs.
- The building has received gifts (from Church Members) of magnificent sculptured doors by Jordi Bonet, stained glass by David Morgan, tapestries by Don Barton, all of them Canadian artists. It also has the capabilities to present displays by local painters, potters and other craftsmen.

In short, it *is* a "people place." And it *bid* happen because a congregation decided to use money, land, and ideas in fresh combinations, with a "humane twist."

The latest changes to the National Housing Act make it clear that the Government of Canada, through its agency CMHC, believes in that kind of non-profit, creative "happening" in our communities.

Through long-term mortgage financing, and with the stimulus of "encouragement grants," the Federal Government is obviously anxious to encourage institutional creativity ... yes, institutional "self-renewal" ... because, in the process, good things will happen in our cities, and new services and opportunities will emerge for the citizens who live in them.

The Manager-Tenant Relationship

By E. C. Nesbitt
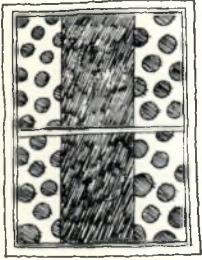
Because CMHC is well known as an insurer of mortgages, a direct lender, and a partner with all provinces in the funding of low-income housing, it is probably a fair question to ask why CMHC is in the real estate business.

The facts of life are such that any organization in the mortgage business is, sooner or later going to end up in the real estate business. This is particularly true in CMHC's case because of its residual lending activities. The Corporation's real estate portfolio ranges from assets acquired at the end of World War II – the residue of veterans rental housing – through to properties more recently acquired by the CMHC's Mortgage Insurance Fund or by the Corporation through NHA mortgage defaults. It is a varied portfolio as well–rentals range from $60.00 to over $600. monthly – so it deals with people in all walks of life. E.C.N.

The Manager's Responsibility

The property manager has two basic responsibilities. The first is to apply the Golden Rule in all his dealings with tenants. The second is to provide the owner with the highest possible financial return on his real estate, over the longest possible period of time. In order to do this the manager must have a variety of skills which cover human relationships, maintenance, construction and finance. These provide the foundation upon which all property managers must build, regardless of the type of housing.

It is a cliche to say that low-rental housing attracts low-income tenants; in fact I treat the two terms as one. But it is an important point nevertheless. In a high rent apartment complex, a tenant dissatisfied with his landlord's treatment can afford to move out. But the low-rental tenant is a captive. He is not free to seek other accommodation in the open market.

So, the manager of low-rental housing must constantly be open and sympathetic in all his dealings with his tenants. A manager of any development – regardless of the tenants' income range – has to be something of a philosopher. But the low-income housing manager must also have a very highly-developed social conscience. He must take into consideration both the economic constraints of his operation and the social goals of the housing for which he is responsible.

Co-operating with Tenants' Association
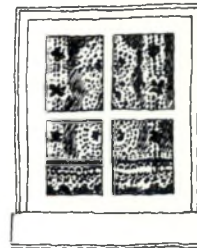
One very important area of managerial responsibility is tenant relations, in many instances involving Tenants' Association or unions.

If the property is perfectly managed there is theoretically no need for a Tenants' Association. But there is no perfectly managed property, just as there is no perfect group of tenants in any rental complex.

A Tenants' Association formed in times of stress can be a real trial to any manager. The best Association is one formed with the co-operation of Management in a relatively serene atmosphere.

The main problem facing any Association is apathy on the part of the members. Few tenants really want to participate. And, since there is no remuneration paid to these members, it must be a labour of love.

So, the strife-formed Association is often short-lived, collapsing when the objective of its formation has been achieved. The tenants' group formed in peace and reason is the longest lived and most effective Association, both from the tenants' and the manager's points of view.

How do you deal with a Tenants' Association? If the organization is representative of all tenants and has an elected executive and a good committee structure, the task is easier. It should also have a liaison officer – a contact point between the manager and the Association. Generally, he would be the President or the head of any committee with special grievances.

Managers should not fight Associations. A spirit of friendly co-operation is far more positive, and far easier in the long run. The tenants' group may require some clerical assistance and sound counsel from the Management Office. And quite conceivably it could cost the owner some money, in terms of providing space for the meetings and perhaps a small financial contribution for Association upkeep. But as a long-term investment in good will, the expense is minimal.

Why Tenants Organize

When tenants organize against a landlord, it's usually for one of two reasons: 1) they want improvement in the property, or 2) they don't want to pay more rent. So the best weapon is a clean operation. If your local operation is hopelessly behind on repairs and replacements now, think how tough it would be to catch up if your tenants suddenly cut off all your rental income. The time to keep up with maintenance is now. Make a point of doing the simple, inexpensive repairs instantly. The bigger ones always take a little longer anyway.

Tenants have a way of storing up complaints for a rainy day. Not until you announce a rent increase do you learn that your janitorial service skipped some apartment cleaning a year or two ago, or that some of your sound-proofing is not as good as it should be, or that you agent is a closet drinker. And at that point it's too late to make amends because the rent raise takes effect in 30 to 90 days while the complaints go back a year or more.

Service The Manager's Best Ally

So your greatest strength in dealing with organized tenants lies in service. But anybody can change faucet washers and mow grass. Only the manager himself is in a position to maintain good will. A good manager keeps tenants from brooding over occasional shortcomings, fends off the chronic malcontents and generally makes you look good even when you're not exactly perfect.

If a manager doesn't have the talent for pacifying hostile tenants at mass meetings, he shouldn't even bother trying. But he can take time to explain things to tenants under friendlier circumstances. He can organize and participate in periodic meetings of tenants to hear grievances. And most important, a good manager will head off organized protests by solving problems and offsetting friction well in advance of the crisis stage.

But whatever approach you take, the main objective is to be sensitive to tenant disenchantment. When tenants bypass your manager, for example, and send complaints directly to your office, don't instinctively put them down as cranks. If they have to come to you for satisfaction, that could be an indication your staff has less than total rapport with the tenants.

Low-Income Tenants Are Special
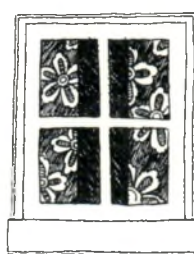
Low-income housing tenants have more problems, both social and economic, than the affluent in our society. Low-income tenants sometimes create problems. But in all fairness, some managers also create problems by their attitude to them. There is the tendency on the part of some managers to be more bureaucratic and less respectful to low-income people than they would ever be to high-income tenants. It is no surprise therefore that low-income tenants sometimes feel the need of a voice to protect them.

CMHC experience with unorganized groups of tenants with a common grievance, is that they tend to complain bitterly — and sometimes unreasonably — when they do so on an individual basis. However, if these complaints are funnelled through an Association, they are reviewed by an executive that is more truly representative of the majority of tenants. Any protests to the manager or the owner are then made in a more reasoned and acceptable fashion. Tenants' Associations frequently take a much more punitive attitude toward their members' claim than a manager would ever attempt to take.

Managers Should Be On The Move
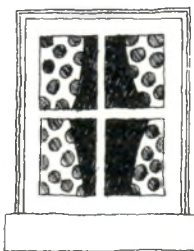
A good manager cannot manage his properties sitting at his desk. He must be constantly on the move, checking the maintenance, trying to identify problems before they arise. He must show his interest and sympathy talking to the tenants, both individually and collectively.

Uniform policies are the key to good management of any housing – low-income or otherwise. Every tenant must get equal

time and equal treatment. "No favorites" should be motto for any manager striving for rapport in his development.

These policies must cover general administration, how and when rent is to be paid, landlord and tenant maintenance responsibilities, possible restrictions on the use of public areas or playgrounds, etc. These policies should be reasonable. They must be in writing. They must be administered with sympathy and understanding, and most important, they must be communicated to all staff and all tenants.

Communication and Feedback Essential
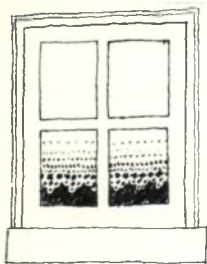
Good communication is critical to the success of the operation. The tenant must be aware of the policies, just as the manager must be aware of the tenants' reactions to those policies. And the feedback a manager gets from both on-site staff and tenants can be very helpful in identifying potential problem areas. If a manager has a good relationship with his staff and tenants, it is much easier to identify the weak spots in his operation. He can then move more quickly to take preventive rather than corrective action.

Any management decision on a tenant complaint should automatically carry a right of appeal. This appeal could be through the Tenants' Association to the manager and finally to the owner. So, in many cases the rapport you have established with your tenants through good communications will enable you to defuse protest actions in the very early stages, and the appeal to the owner may never materialize.

Think *homes*, not *project*.
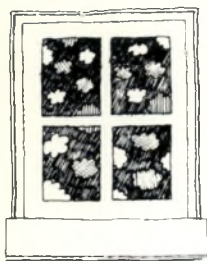
Incidentally, you may have noticed I have been trying to stay away from the word "project". To me, it has a connotation of institutionalism. Most people prefer to have thier place of residence referred to as their home, their house or their apartment, and we should encourage the use of a more positive term in referring to their dwellings.

The manager of low-rental accommodation should constantly remind himself he is dealing with people and their homes. Homes should be happy places, where people and their kids can live in peace, cleanliness and security. Perhaps we in this business could work by a manager's golden rule – "Do unto tenants as you would have them do unto you."

The manager of socially-oriented, government owned or financed housing must be particularly sensitive to tenants' problems and attitudes, for it is incumbent upon him to set an example in terms of good human relations with tenants also remember that any government activity, be it municipal, provincial or federal, is always of interest to the public.

Management vs Amenities
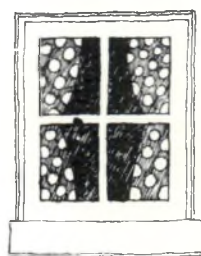
How many newspaper advertisements do you see extolling the virtues of apartment complexes with sauna baths, games rooms, swimming pools, tot lots? Virtually every ad makes prominent mention of the development's social and recreation facilities. But how many of these newspaper spreads mention responsive management, good landlord-tenant relationships, meaningful communications? Very, very few, I am sorry to say. And I think that's a real lack. All of us associated with low-rental housing management are now well aware that the day of the consumer has not just dawned, – it is at high noon.

Canadians are taking a hard look at their life styles, and the quality of their social environment. I'm not saying for a moment that recreation amenities are not critical to good housing. But good management is just as much a part of that housing as a well designed-unit and a broad range of social facilities. And the growth of low-rental Tenant Associations and community organizations clearly indicates that the consumer places a very high priority on good management.

We should be telling these Canadians about the management services we offer, what our policies are and how we administer them.

Communication is the essence here – the more people know, the more they understand. We can be proud of Canada's rental housing stock and of the constant efforts to upgrade its social and physical environment. Our managers are part of that thrust. And the consumer wants to know – let's make sure we tell him.

Climats et densités résidentielles

par Jean Alaurent
Institut d'urbanisme
Université de Montréal

La Nature offre à l'homme, constructeur de maisons, de villages et de villes, le sous-sol et le sol terrestres, sources de son existence, et l'atmosphère, qui en est la condition.

Ce vaste territoire (150 millions de kilomètres carrés) lui propose une infinité de sites dont les positions et les caractères propres ont longtemps commandé aux établissements humains progressivement mûris ou délibérément fondés.

Aujourd'hui, les plus nombreux et les plus importants de ces sites sont répartis dans des espaces définis par des climats favorables, entre les zones extrêmes de température où se raréfie, jusqu'au néant, toute vie végétale et animale.

Deux catégories d'humains y apparaissent cependant : des populations dites primitives, clairsemées, poursuivant une vie précaire et des colonisateurs récemment établis dans des avant-postes scientifiques, miniers, stratégiques et portuaires, atteignant rarement une masse vraiment urbaine (l'exception sibérienne confirme la règle).

A l'échelle du globe, le peuplement est donc commandé, dans une large mesure, par le climat, c'est-à-dire "la série des états de l'atmosphère au-dessus d'un lieu dans leur succession habituelle". (M. Sorre)

Nous devrons d'ailleurs le qualifier selon son étendue, en distinguant :
- Le climat zonal, généralement défini par des isothermes. Ses catégories classiques sont illustrées par les planisphères des atlas, parallèlement à la géographie de la végétation.
- Le climat régional, mieux connu, qui le subdivise et le nuance par l'altitude, le
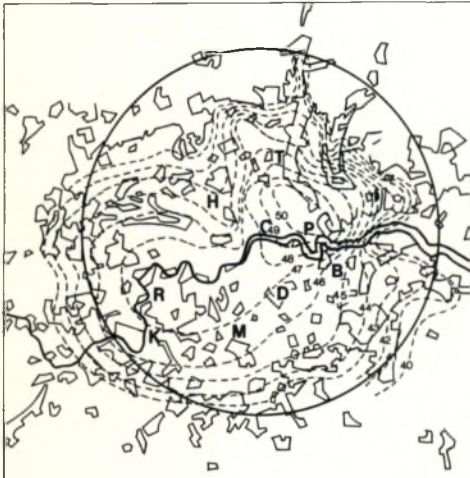
Nombre moyen des jours de gelée dans la région parisienne 1951-60 (D'après Christiane Lacaze)

Un exemple d'influence climatique urbaine : Londres (D'après le rapport du XXe Congrès de géographie) Le cercle a un rayon de huit milles.

cycle des vents, la proximité de la mer et des courants océaniques, etc.

● Le climat local, qui dépend du précédent, mais aussi de la situation et des grandes caractéristiques de la nature du sol (vallée, plaine, côte, etc.). C'est le plus important pour l'aménagement urbain et régional.

● Le topo-climat, introduit par les plans d'eau, etc., le relief du site, l'exposition des pentes. Son étude est essentielle, notamment pour la définition des secteurs de résidence et la nature des habitations.

● Le micro-climat, qui est celui d'espaces restreints, plus ou moins abrités, enclos, confinés, naturels ou créés.

• Les deux premières échelles sont celles du macro-climat alors que les deux suivantes constituent le méso-climat.

L'urbaniste doit tous les considérer[1] ; s'il ne peut agir sur le ''macro'' il en atténuera, tout au moins, les inconvénients tandis que le topo-climat peut être, à une certaine échelle, influencé et que la composition urbaine (évidemment en trois dimensions)[2], crée elle même des micro-climats (rues, places, jeu des niveaux, des rayonnements, etc.)

Nous savons bien que le méso-climat a séculairement contribué à façonner l'habitat rural : les maisons, dans la contingence des ressources matérielles et techniques ; leur groupement ou leur dispersion ; le choix des sites, souvent assimilable à celui d'un micro-climat. (J. Brunhes)

Les exemples les plus évocateurs sont souvent donnés par la construction traditionnelle, si l'un des facteurs de la «température résultante» : (degré, humidité, vent, radiation) impose des

formes, des matériaux, des orientations et des appuis mutuels.

La liste en est longue et diverse, de l'igloo esquimau, à la case perchée du Togo ou d'Indonésie, vannerie ouverte à toutes les brises. Des types intermédiaires, comme la maison bretonne ou alpestre, évoquent des normes locales, mais celles-ci ne sont pas toujours immuables.

Les techniques peuvent, en une ou deux générations, opérer une mutation. Ainsi en est-il au Québec où la maison rurale est passée de la «pierre du pays», héritée de France, à l'emploi presque exclusif du bois scié (Deffontaines)[3].

Les immeubles collectifs urbains ont suivi cet exemple et surtout la banlieue où pullule le bungalow plus ou moins californien, un placage de faux grès évoquant çà et là le passé.

On sait que ces excroissances de la petite et de la grande ville, en flaques de basse densité, soulèvent de nombreuses questions dans divers pays, riches ou pauvres ; la controverse économique et sociale demeure encore ouverte.

Dans notre province le climat ajoute aux charges habituelles de cet étalement résidentiel (voies et réseaux divers, équipements, transports, etc.), celle de l'entretien public et privé, imposé par la neige et le gel.

L'écart entre cette texture d'habitat et ce que l'on pourrait attendre d'idées plus avancées sur la vie dans la cité n'est jamais apparu plus évident qu'en économie globale. «Matrix of man» (Moholy-Nagy).

On peut évoquer ici le second sens du mot «climat» : il ne s'agit plus uniquement de la formation de micro-cli-

mats physiques, par la concentration des édifices et la minéralisation du site, mais de l'ambiance aussi, du milieu psychologique et des valeurs rattachées à la vie citadine malgré les tares connues des grandes agglomérations.

S'il est vrai que «rien n'éloigne comme la promiscuité» (Bardet) et que les ensembles massifs de logements collectifs mal insonorisés révèlent de pénibles désavantages aux économies de construction[4], il s'avère qu'un tissu urbain dense répond mieux à la vivacité des échanges caractéristiques de la ville, qui ne doit pas s'éteindre à la fermeture des bureaux[5].

Cette densité confère un sens particulier aux rapports des humains avec le climat : alors que les habitants de la campagne et de la banlieue, contraints à l'adaptation (maisons, vêtements, véhicules), subissent le climat, ceux de la ville agissent globalement sur l'atmosphère en créant des îlots de chaleur.

La métropole industrielle, notamment, se manifeste par ses disparités thermiques comme par ses pollutions.

Elle est, bien entendu, sans effet sur le climat zonal et régional, mais pourra influer sur les méso-climats et former de nombreux micro-climats.

Si, selon Le Corbusier, «les matériaux de l'urbanisme sont le soleil, l'espace, la verdure, l'acier et le ciment dans cet ordre et cette hiérarchie»[6] les considérations d'ensoleillement retiennent d'abord l'attention.

Essentiellement intéressés par le milieu climatique de la province, nous ne citerons, pour mémoire,que les zones où la lutte contre un excès de lumineuse chaleur prend le pas sur l'héliophilie : ce sont celles des déserts subtropicaux,

du palmier et des cactées, des terrasses et des murs épais, du resserrement, des rues étroites et parfois treillagées. (Maghreb)

L'urbaniste évitera donc les grandes places du type New-Delhi, les avenues ouvertes aux vents torrides, et cela vaut «mutatis mutandis» pour les pays de grands froids.

Aux latitudes subéquatoriales les faibles variations thermiques, annuelles et quotidiennes, feront préconiser la cloison mince, la véranda, l'espacement, les façades est-ouest ou orientées vers les brises.

L'altitude introduit, bien entendu, ses corrections régionales et locales tout en déterminant parfois le choix des capitales permanentes (Caracas, Quito, Yaoundé, Brazzaville) ou saisonnières (Simla, Dalat).

Dans tous les cas un urbanisme et une architecture soignés restent essentiels à l'approche du confort optimum que les climogrammes inscrivent entre 20° et 25° C (68-79° F) et 20 à 70% d'humidité.

Dans les régions tempérées, de nombreuses recherches sur l'ensoleillement maximal des habitations aux différentes latitudes, ont conduit à définir des axes héliothermiques, ceux dont l'orientation est la plus favorable pour l'éclairage, l'assainissement et l'économie de chauffage.

«Le dessin de l'orientation des bâtiments est un art ancien . . . mais aussi un art perdu que l'homme moderne ignore»[7] et l'on constate, en effet, que les calculs des spécialistes et même l'observation empirique sont rarement pris en considération dans nos villes où la trame des rues et la rentabilité des

terrains orientent toutes les actions. Même sous la forme la plus élémentaire, ces calculs sont visiblement absents de nos développements suburbains : la fameuse fenêtre panoramique est rarement orientée vers la direction que le calcul ou le simple bon sens, issu de l'expérience des saisons, pourrait dicter.

Ces quartiers de faible densité en maisons unifamiliales, individuelles ou jumelées, seraient pourtant les plus favorables à des implantations répondant au soleil, aux vents et à la neige. Mais, l'indifférence à ces considérations croît avec la propension au gaspillage : il suffit de chauffer plus, ou de climatiser . . .

On sait que ces dépenses de chauffage sont proportionnelles au nombre de degrés-jours, c'est-à-dire aux écarts négatifs des moyennes journalières avec une température de référence, soit 18° C ou 65° F (60° F en Angleterre)[8]. Cette donnée se combine notamment avec des coefficients d'humidité, de vent, de radiation, de rendement et d'isolation thermique sur lesquels on peut agir.

Les deux premiers sont d'ailleurs en étroite relation, qu'il s'agisse de la température ressentie par l'homme ou des déperditions calorifiques des bâtiments. L'ensoleillement constitue l'aspect le mieux perçu du processus d'échanges thermiques au niveau du sol car une partie de la radiation solaire est réfléchie ou diffusée par l'atmosphère (nébulosité). D'autres calories sont réfléchies ou absorbées par le sol ; l'évaporation entre enfin dans le cycle des restitutions nocturnes (Geiger).

Aussi, toutes choses égales d'ailleurs, la nature du sol va commander des

variations localisées de température et d'humidité : la «croûte» urbaine et la campagne réagiront différemment. Dans la première, l'ensemble des constructions a une conduction assez forte dont la densité augmente les effets tandis que l'écoulement rapide des eaux diminue les pertes par évaporation et que les vents moyens ou faibles sont freinés par les toits[9].

«L'albedo» ou pouvoir réfléchissant du sol varie entre ville et campagne et cette différence s'accroît encore la nuit si un couvercle d'air tranquille (et pollué) s'établit. Il est possible que la disparité change de sens dans la matinée. Elle aura tendance à s'annuler par grosse pluie ou grand vent.

Mais l'«îlot de chaleur» urbaine, constaté par temps calme, doit plus aux calories diffusées par la ville, donc à sa masse, sa densité, sa consommation privée et sa puissance industrielle.

Déjà pour de petites villes de l'ordre de 30,000 habitants, on signale des différences hivernales de 3° C (5° F) et une diminution de 0,1° C quand la densité diminue de 10% (Kawamura).

On doit dès lors s'attendre à ce qu'une grande métropole industrielle, dense comme Paris (34,000 H-Km^2), présente une différence moyenne des minima de 2.6°C(5°F) à cinq milles du centre[10].

A Londres, elle est de 6° C (10° F) entre Westminster et la campagne, entre le «smog» et l'air frais du Surrey.

A Los Angeles, métropole diluée, la disparité est moins nette, mais la circulation automobile ajoute ses calories et ses gaz aux fumées des habitations, des entreprises et parfois des vergers, pour former également un couvercle de pollution.

Montréal, avec une densité municipale de 25,000 au mille carré représente un moyen terme dans l'échelle des densités. Mais, les moyennes mensuelles extrêmes de −10° C à 21° C (14° −70° F) et un taux d'humidité généralement élevé, imposent l'idée de servitudes climatiques sévères, bien que tempérées – comparativement au cœur du Québec – par la latitude, l'altitude et l'influence des plans d'eau.

La disparité thermique entre centre-ville et banlieue s'accentue spécialement en hiver par temps calme : elle atteint, sur la distance de sept milles, entre McGill et Dorval, 6° à 9° C, soit 10° à 15° F (Longley)[11].

Au printemps et en automne cette différence moyenne est de 3° F ; c'est, pour une cité de cette masse, l'élévation de température due au chauffage des habitations, des bureaux et des usines – (Mesurée à Berlin, la chaleur dégagée était de 170,000 kilocalories par mille carré en 1939. Le total attendu dans un siècle, pour l'ensemble des villes, atteindrait ¼% de la chaleur reçue par le globe (Weinberg).

A l'intérieur de la très grande ville, des variations par quartiers sont également sensibles. Des relevés similaires effectués à Toronto et Montréal, allant du rivage vers l'intérieur (respectivement par Yonge et Bleury-Parc) ont montré l'influence des masses d'eau par temps calme, le jour et la nuit, ainsi que celle du relief dans la formation de «lacs d'air froid» : une chute de température de 20° F en hiver, la nuit.

Sous un tel climat, la fréquence de ce phénomène d'inversion[12] suggérerait de décourager le développement domiciliaire dans ces zones de dépres-

sions fermées où l'inconvénient opposé peut aussi se rencontrer l'été.

Enfin, pour l'urbaniste soucieux des relations optimales avec le milieu, le vent dont la direction dominante commande théoriquement le zonage des industries polluantes peut être un autre facteur décisif de localisation et d'implantation.

Recherché en climat chaud sous forme de brise, jusqu'à la force 4 de Beaufort (7 m. secondes – 16 milles-heure), et bénéfique comme dissipateur des pollutions, il devient destructeur au-dessus de l'indice 8 (42 milles-heure).

En climat froid il provoque une baisse de température ressentie comme un «wind chill» (Siple).

Directement proportionnel aux surfaces exposées et à l'écart de température avec la norme 33° C (90° F) il croît de façon exponentielle avec la vitesse du vent, selon une formule précise[13].

Deux exemples aident à mesurer l'importance du phénomène : un vent de 30 milles à 30° F équivaut à −40° F au calme ; un vent de 50 milles à −60° F.

La provenance des vents introduit une autre variable selon la température propre de la masse d'air, et c'est ainsi que l'on a pu noter à Montréal une variation de 18° centigrades (32° F) en 24 heures, le vent passant du Sud-Ouest (+29° F) au Nord-Ouest (−3° F) illustrant une fois de plus l'importance des facteurs climatiques dans la conception des plans.

.Si ces données n'interviennent pas avec la même rigueur dans les pays tempérés, elles s'imposent toutefois pour ce qui est de notre hiver canadien. L'organisation de micro-climats abrités y retrouve toute l'importance que lui

attribuait déjà Vitruvius, il y a deux mille ans, alors qu'il spécifiait : «Les directions des rues éviteront celles des vents pour que ceux-ci, en rencontrant les coins des bâtisses soient repoussés, divisés, dissipés» (cit. Aronin).

Marcus Vitruvius, ingénieur de Jules César avait en Gaule subi le mistral, vent froid et rude de la vallée du Rhône, jamais oublié des bâtisseurs et des horticulteurs locaux.

De nos jours encore, les quartiers anciens d'Aix-en-Provence avec leurs petites places publiques, leurs rues étroites et obliques, leurs toits aplatis, donnent un exemple significatif d'adaptation au vent (autant qu'au soleil de la canicule provençale).

On retrouve encore cette soumission au climat dans le Vieux Québec, mais le nouveau campus universitaire de Sainte-Foy confirme bien que «c'est un art perdu», au moins pour certains . . .

On notera d'ailleurs que l'orientation des vents les plus pénibles, si importante pour la conception du plan d'urbanisme, ne correspond pas nécessairement à celle des vents les plus fréquents[15].

Si le choix en est possible, l'urbaniste recherchera un site d'''adret'' protégé par le relief ; sur l'île de Montréal, Westmount en est une probante illustration ainsi que les pentes sud-est du Mont-Royal[16] et le campus de McGill (à comparer, un jour venteux d'hiver, avec celui de l'université de Montréal, face au nord-ouest).

Mais on sait que de nos jours la recherche de terrains sans problèmes et le maniement hâtif du bulldozer "à la californienne" font oublier ces raffinements.

Il demeure que des conditions climatiques plus sévères, celles du Grand Nord, nécessitent l'utilisation d'un écran protecteur artificiel, capable d'abriter dans sa concavité, une agglomération densifiée, aux voies tracées selon les principes vitruviens.

On pense naturellement aux villes minières, créées de toutes pièces, mais sans autres modèles que des lotissements de type banlieue. «Villes fermées», suivant l'expression courante, elles sont en réalité ouvertes à tous les vents et rien n'indique, sur le plan, qu'il ne s'agit pas de la Floride.

Quand la société des «Churchill Falls» (Labrador) présente «une agglomération conçue en fonction du climat nordique», on constate un progrès : c'est la réunion en un bloc central des locaux publics, écoles, hôtels, magasins, auditoriums et bureaux, mais la trame domiciliaire pour un millier d'habitants reste traditionnelle. A Fermont, enfin . . . (5,000 habitants à 15 milles à l'ouest de Labrador City) le projet de Desnoyer et Schoenauer pour la «Quebec Cartier Mining» propose de blottir l'essentiel de la ville à l'intérieur d'un angle de 120° formé, face au sud, par un «immeuble-muraille» de 350 logements répartis sur quatre étages.

Tous les espaces d'intérêt commun, hôtel de ville, piscine, stade, bibliothèque et magasins desservis par la voie de ceinture Nord, sont reliés à ce coupe-vent linéaire par des passages couverts.

Un tel écran n'exerce cependant qu'une protection limitée, surtout si l'on estime l'étendue du freinage utile à huit fois la hauteur de l'obstacle, avec un effet résiduaire portant sur une distance triple (Brooks).

La dimension de la zone ainsi abritée

Vitesse du vent (milles - h)
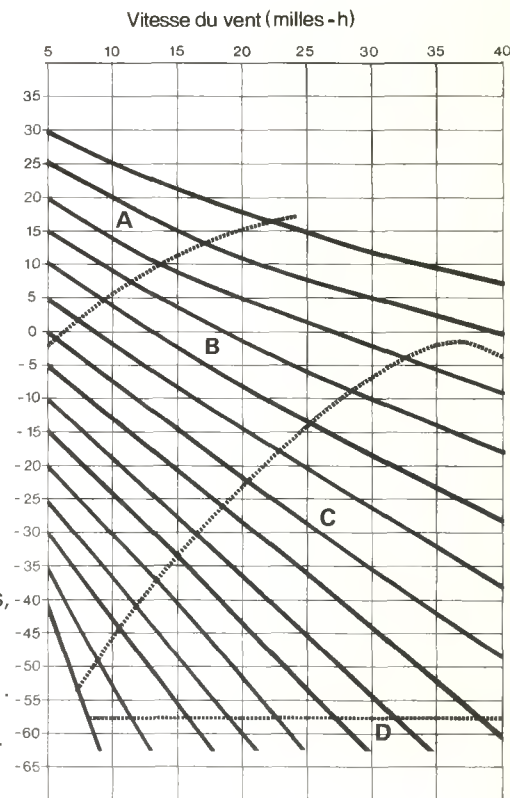
Vitesse du vent et température ressentie (D'après R. G. Steadman)
a. Habillement d'hiver normal
b. Nécessité de vêtements spéciaux
c. Nécessité d'un supplément de chaleur
d. Danger extrême, même pour courtes sorties

Plan partiel de la ville de Fermont
(Desnoyers et Schoenauer)
a. Immeuble "brise vent" de quatre étages
b. Habitations familiales. 18 à 24 à l'acre
c. Habitations familiales. 8 à 14 à l'acre
d. Zone commerce et stationnements

(vents réduits de 50 à 80%) est 10 acres, soit l'espace nécessaire à la résidence de 400 personnes[17], 1,200 autres vivant complètement en milieu collectivement chauffé. Le tiers de la population est donc placé dans des micro-climats de confort, mais il semble que cette proportion pourrait être largement augmentée si la zone protégée était traitée en quartier urbain, avec des densités quadruples, faciles à obtenir sans immeuble-tours.

En région forestière, des rangées d'arbres convenablement orientées devraient être sauvegardées comme écrans complémentaires : aussi efficaces qu'un mur elles provoquent moins de turbulences.

On peut donc concevoir que le quartier réservé aux bungalows soit subdivisé en bandes écartées de 200, parallèles à l'immeuble en coupe-vent et aux voies carrossables.

Mais, cette organisation systématique du freinage du vent au sol n'atténue qu'en partie le refroidissement subit que nous avons mentionné au début de cet article (wind chill) ; le desserrement de l'habitat, en petites maisons, conserve son caractère anti-économique, qu'il s'agisse de voirie, de déneigement[18], de réseaux de chauffage, de

l'entretien des logis et jardins, de l'auto, etc.

La nécessité d'augmenter la densité des agglomérations, en climats extrêmes, peut évidemment prendre plusieurs formes, relevant de cinq conceptions principales :
● L'agglomération abritée, comme nous l'avons vu, par écran naturel ou construit ; le site idéal est un amphithéâtre adossé au relief protecteur, face à l'axe héliothermique.
● La cité à tissu dense, homogène, essentiellement réservée aux piétons, du type Carcassonne ou vieux Québec (ou en climat chaud : Fez). Le resserrement, dans l'enceinte de défense, y a servi l'économie de terrain et la création de micro-climats.
● La ville semi-souterraine : un ou plusieurs niveaux de sous-sol desserviraient de grands édifices en dièdres d'orientation optimale : c'est l'extension du système prévu pour le Havre en 1947[19] et amorcé place Ville-Marie.
● La «communauté sous cloche» : construite selon l'usage, mais climatisée par coupoles ou tentes, énormes extrapolations des structures présentées à l'Exposition de 1967 par les États-Unis et l'Allemagne. La célèbre Galleria de Milan offre un exemple plus ancien et

plus limité de cette technique.
● La cité-bloc, sphérique, cubique, pyramidale, ou «organique» proposée par certains «visionnaires» pour enfermer, dans le moindre espace, toutes les fonctions de la «Charte d'Athènes», les isoler du milieu naturel et sauvegarder celui-ci[20].

Les sites répondant au premier type abondent, par exemple, sur les rivages méditerranéens. Ils sont plus rares dans le relief usé du Nouveau-Québec, mais il demeure important de profiter des moindres dénivellations du terrain pour le choix de sites habités et d'en accentuer les avantages par une urbanisation et une architecture pertinentes.

Il reste à savoir si le caractère urbain sera accentué selon la logique du climat, instaurant des habitudes nouvelles de «Wohnkultur», dont une population, encore proche de ses origines rurales, n'a pas l'expérience.

Si, aux États-Unis, la part des appartements dans les constructions neuves est passée, malgré les efforts publicitaires des promoteurs de banlieue, de 8 à 40% en 15 ans, au Canada, par contre, les chiffres comparables sont 19 et 48% ; ils atteignent 61% dans les régions métropolitaines, 65% pour celle de Montréal et 67% pour le Québec. En Ontario 37% des logements sont réunis en grands immeubles de 7 étages et plus.

La tendance est certaine, et il n'est pas évident que l'immeuble-tour doive être réservé aux locataires aisés et aux familles restreintes.

D'ailleurs, les gratte-ciel ne sont pas nécessaires pour profiter d'économies appréciables (chauffage urbain, par exemple) : 8 étages (9 niveaux) per-

mettent, avec 80% de terrain libre, une densité résidentielle nette de 300 personnes à l'acre, soit théoriquement 75,000 personnes au mille carré, dont 40% dans des secteurs résidentiels[21] ou encore 250 acres pour 30,000 habitants, seuil de la vie urbaine . . .

Si la construction en hauteur, visant à de grandes densités de population, n'est pas utilisée, un véritable tissu urbain, en trame hexagonale (avec arcades de circulation, couloirs, etc.) pourrait être la réponse la plus efficace aux contraintes du climat et de l'économie.

Toutefois, si la maison unifamiliale basse reste une donnée de principe, le type patio ou terrasse intérieure apportera une intimité très supérieure sur une superficie moindre.

Les pertes de calories sont réduites par la mitoyenneté ; le patio est fermé aux rafales comme aux regards, et l'on peut envisager, pour l'hiver, une couverture temporaire ou le chauffage du sol. Le chauffage de quartier devient à ce moment concevable.

Si une solution de cet ordre est applicable pour des zones sans grande étendue et au prix d'une composition particulièrement minutieuse, le recours à l'urbanisme souterrain, par contre, s'impose pour la grande ville.

Il est nécessaire non seulement pour contenir le secteur des bureaux et des magasins, mais aussi pour créer «a priori» un système piétonnier capable de desservir également la résidence à haute densité, les grands édifices publics tout en contenant les réseaux électriques, pneumatiques, calorifiques, etc.

De multiples études (Utudjian etc.) ont démontré la rentabilité de l'organisation souterraine préalable. Cette rentabilité diminue ou devient négative lorsqu'il s'agit de reprendre, en sous-œuvre, des quartiers existants.

La création d'un climat artificiel, sous enveloppe transparente, a également attiré architectes et ingénieurs : il est tentant d'imaginer des vols d'oiseaux tropicaux sous la coupole d'une ville subarctique . Mais il semble actuellement difficile de dépasser les dimensions des stades couverts (5,000'^{2}), même avec des plastiques gonflés en surpression. On n'est pas sans ignorer la précarité d'un tel système.

Le vitrage de petits ensembles demeure cependant possible et facile à réaliser particulièrement entre immeubles continus de quatre étages, à densité nette particulièrement avantageuse.

Enfin les cités-sculptures, à l'exemple de vastes termitières, sont actuellement plus nombreuses dans les livres et les expositions que dans les programmes réels.

Il reste que les idées de «ville-cratère», «ville oblique» etc., pourraient être méditées par des promoteurs (publics et privés) possédant suffisamment d'imagination pour courir les risques attachés à des prototypes de cette envergure.

L'état actuel des choses ne l'annonce pas ! La répétition est la règle, même quand des créations «en nihilo» offrent une chance d'échapper à des plans de routine.

Les «villes nouvelles» des États-Unis sont encore la preuve que nous pouvons faire mieux, les contraintes mêmes du climat pouvant nous y aider.

1 Comme le macro-économie et la micro-économie.

2 Sinon en quatre : le facteur «temps» impliquant l'évolution.

3 «L'Homme et l'Hiver au Canada», ouvrage fondamental.

4 Souvent aggravés par ceux que l'on croit faire en laissant à des hommes ou équipes non qualifiés en urbanisme le soin de réaliser les plans.

5 «The Heart of the City» C.I.A.M. 8, 1952.

6 Ingrat envers la pierre de Paris et la brique de Londres, Amsterdam et Venise ; et d'ailleurs «antiville» pendant une longue période.

7 J. W. Aronin : «Climate and Architecture», Rhemhold, New York, 1953, principal ouvrage de référence.

8 $Dj = n(18 \frac{Max — Min}{2})$

9 de 25% selon Landsberg à 50% selon Maurain.

10 L'inertie thermique de Paris, construit au gabarit de cent pieds, est considérable : par temps de brouillard les rues étroites, micro-climats privilégiés, restent claires. Le sous-sol à une profondeur de cent pieds, s'est réchauffé de 2°F en cent ans.

11 Le 13 octobre 1971 à 5 hres 30 : 44°F au centre-ville, 35° à Dorval, et 31° sur la Rive Sud (à 4 milles du centre).

12 Responsable de cas historiques de «smogs» meurtriers : Donora, Liège, Londres, etc. . . .

13 Selon P. A. Siple et C. F. Passell le refroidissement en kilocalories (Ko) par mètre carré, par heure, s'exprime ainsi :

Ko $[(100v)^{\frac{1}{2}} = 10.45 — v]$ $(33 — T)$
V : Vitesse du vent en mètre – seconde.
T : Température en centigrades.

14 Les 27-28 décembre 1933. Vents de 10 milles. (Aronin p. 169).

15 A Londres les brouillards pollués se forment par vent d'Est et non du secteur Ouest dominant.

16 Secteurs des plus hautes valeurs résidentielles, en «manoirs» comme en gratte-ciel.

17 A une minute de marche de l'immeuble en coupe-vent.

18 De l'ordre de $1,000 le mille à Baie d'Urfé (4,000 habitants) et 3,750 à Sherbrooke (80,000 habitants). L'estimation des dépenses municipales directes dues à l'hiver serait de $200,000,000 pour le Canada (Revue municipale, juillet 1971).

19 Projet Perret malheureusement non exécuté, par économie. Le plan méconnaissant les données du climat maritime, comporte un axe trop large qui a gravement compromis la vie sociale : tout architecte n'est pas urbaniste . . .

20 V. Ragon «Où vivrons-nous demain ?».

21 Pourcentage bas si l'on exclut l'industrie lourde, souvent à quelque distance, et les «grands espaces verts» plus nuisibles qu'utiles en climat rude.

Man|Habitat Dynamics

by Vladimir Matus

A fence, in a sloping position, is a protective device against the wind and the sun.

The roof is a first object of habitation. The roof protects against the weather, (diminishing or eliminating rain, sun, wind, it is actually an attempt at controlling the environment, or at least several environmental factors such as temperature, humidity, light, movement of air and so on.

There are many definitions of "habitation", the differences depending on their philosophical base. If we accept habitation as a process of inter-action between two basic components, man and habitat, in a system "man-habitat", then habitat does not appear as a simple tool for habitation but as an intricate system designed to meet human needs. Habitation becomes a system of activities rather than a conglomeration of fixed objects.

The dynamics of this system, which dif-ferentiate it from others, results from the diversity and changability of man's physiological and sociological needs, the former stemming from the will to survive, the latter to satisfy his gregarious nature. Unfortunately many contemporary the-ories of housing do not fully consider all the factors involved; their social and environmental implications and their evolutionary tendencies. So they are of little value in determining future trends. Only with full consideration can the direction of change be detected and the possi-bility of changing the human requirement or obtaining guidance in the design of future dwellings be achieved.

Housing form is determined by many factors – climate, adherance to tradition in construction, experience, social activities and many others. The resultant structure might be considered as the result of man's ability to survive by adapting his shelter, under any given set of circumstances, to meet his needs in the best possible way.

Several main factors might illustrate the dynamism and nature of habitat development and changes in human needs :

Variation in Climate.
Where there are relevant changes of climate during the year some tribes use two (or more) different types of houses at different periods of the year. The Semango of North Africa live in their caves during the rainy season and, build simple hutches during dry seasons. Others have permanent solid winter houses and portable houses (tents, teepees etc) for summertime. The Eskimo have summer and winter homes. On the east coast of Tasmania, where the weather is mild, the aborigines merely construct simple fences as a protection against wind ; but on the west part of the island where the weather is more severe, we can find houses of beehive-shape, which protect against rain, wind and cold.

Generally, in temperate and arctic zones the type of habitation is determined by the degree of protection required against wind, rain, snow and cold. In tropical and sub-tropical latitudes a form of protection against extremes such as heat and sunshine, has been developed. The Roman do-mestic house with its atrium full of shadows and a fountain, is the best example of this. In ancient Egypt, the house was exposed to the north (cold wind) and the flat roof with its different wooden shelters was used for sunbathing during the day and recreation and social activities after sunset.

The flames in northern fireplaces have their opposite in the bubbling fountain of the south.

The Socio-Economic Determinants.
Social and economic conditions relate to the way of living and form of habitat as well. East Tas-manians never stay longer than three days in the same place and their "habitat" is one of the simplest we know. Similarly, the Kazaks', of West Siberia, had summer houses that could be erected in half-an-hour. The Semango have half of the house reserved for man's work and discussion. The differences depend on the degree of devel-opment of society, and they are apparent between simple nomadic, or pastoral tribes and agrarian people. The Hopi of Arizona, in their "rocky-hill-towns", have different rooms for different kinds of work. The Ganda tribe from Uganda have a way of habitation very similar to the Europian feudal villages. They have special rooms for women, slaves, storerooms, workshops, and so on. Similarily, the Azteks' had a functional differenciation of rooms.

The influence of socio-economic determinats is not simple and direct ; it is a complex of factors. The most important is that the changes in the social and economical structure influenced the pattern of habitation.

Meeting the need.
When the Central Australian Arandas built "the protection" against rain, wind and cold, new needs originated. One was for illumination. Thus they did not cover the front and rear entrance of the shelter. The Kazaks have, in their permanent houses, windows provided with membrane, and in their summer houses, a hole in the roof.

Sometimes, fire improves light conditions (Eskimo winterhouse). But, when fire once enters the habitat there is a different situation. New problems have to be solved and new needs have to be met : maintaining the fire, gathering fuel, outlet of smoke, location of the fireplace, etc. The hole in the roof might let the rain penetrate the house, so some other way of letting the smoke go out has to be invented.

This is the endless chain of dependencies which continues throughout the whole human history. We can see that in some places and cultures this process has stopped. It is not yet quite understood why, under which circumstances, or at what point this phenomena of stagnation appears.

Standardization of Need.
In every life organism, there develop very complicated patterns of adaptation, which sometimes include independent mechanisms, separated from original needs.

The ways of meeting human needs in habitation are, in the early stages of development, standardized on the basis of the common content of a group, tribe or cultural area. So the Kazak builds his summer house literally following the standardized pattern. The Eskimo builds the house accepted by Eskimos, and so on. This standardization of need becomes a new requirement, so we can say that a member of the South American Witoto tribe wants a house of the Witoto type, the Iroquois needs the long-house, and under this secondary demand is concealed the primary or basic need for protection against the rain, sun, wind, etc.

Localization.
Originally, the most simple habitat served as a shelter against the extremes of weather and was not necessarily connected with the realization of other human needs.

The Arandas used their hutches exclusively as a protection against the elements. The fire is outside ; people live around it, and eat and sleep in it. The long periods of bad or inconvenient weather forced people to fulfil some of their needs inside, like sleeping, eating, social life, conferences, and the like. Thus a new situation creates new needs. The Arandas have simple kitchen utensils and stones for grinding. Among the Mexican Azteks we find not only pots and pans, but also fireplaces, chairs and tables for better position of body and comfort when they eat. The eating space is separated from other areas, and they have storerooms for food ; the same thing applies for the Iroquois and the Penwian Inccas. The Ganda tribe have a special house for their kitchen. The other necessities have come one by one, like sleeping, hygiene, manufacturing, social activity and we can see how each of them has been changing the habitat from a simple shelter up to the intricate system we now have to-day.

Conclusion.
It would be very exciting to analyze the whole story of habitation from this point of view and see how new functions entered the habitat and how some of them slip away. It would also be interesting to determine the hierarchy of the various needs in different eras and in different cultural and geographical locales. We could study the developments from the ancient Egyptian, Greek and Roman houses to the medieval house ; from the English house of the 17th century to the 19th and 20th century ideas of habitation. It would be fascinating to trace where, when, and how, the basic physiological and psychological needs were overwhelmed by petrified processes, such as social imperatives, conventional patterns and fashion, which sometimes could be active against original basic needs. Unfortunately, such a study would be beyond the scope of this article.

When the fire once enters the habitat there is a different situation, new problems have to be solved and new needs have to be resolved, these include maintaining the fire, gathering fuel, heating the fireplace and smoke outlet

Similarly, the introduction of the source of water and washing facilities inside the house caused a tremendous amount of technical problems, altered the general layout of a house and significantly modified the individual as well as social way of life. And those ways of satisfaction of primary needs become a need itself (such as usage of the flushing toilet, or regular use of shower, bath or tub.)

Some Fathers of Confederation

by Eric Minton

Lived in These Houses on the Cliff

A century ago, some of the "best" people in old Ottawa lived on Rear Street. It was short, but scenic, overlooking the Ottawa River and the changing seasons of the Gatineau Hills. Nearby was Vittoria Street an equally fashionable address. These old streets ran parallel to Wellington Street, but north of it, along the cliffs on the west side of Barrack Hill. The designation 'Parliament Hill' was only just coming into popular usage.

Today you can look in vain on any map of Ottawa for that corner of the city, in the shadow of the West Block, where the first civil servants arriving in the capital in 1867, originally lived.

Vittoria Street ran from Lyon to Bank Street and its ghostly outline can still be seen today in the roadway behind the Confederation Building. But no trace remains of Rear Street, which ran off Kent, back of the Supreme Court.

Wellington Street was the main axis in the part of the city (population 1871 – 21,541). Banks, big business, one theatre and the Presbyterian churches built there. A further measure of importance was the new horse-car line which ran along Wellington toward the Chaudiere over Pooley's Bridge. In that genteel age, ladies would have blenched if the conductor had hollered "all out for Rear

Street." They changed the name to Cliff Street at an early date.

In this enclave of the well-to-do, lived some of the Fathers of Confederation, George Etienne Cartier, Alexander Campbell, and J. C. Chapais. Vittoria Street, on the south side between Bank and Kent, boasted three of the finest homes in the city. The Anglican Bishop of Ontario lived at the corner. Alexander Mackenzie, Prime Minister 1873-1878, lived next door at number 22 in a handsome stone structure with wide veranda and spacious grounds. The third house was occupied by one of the pioneer lumber dealers of old Ottawa, Alan Gilmour.

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In that informal era, Mr. Gilmour kept his own cows in the adjoining field which promptly became known as Gilmour's pasture. The Gilmour property in all had a total frontage of 368', impressive acreage indeed! Later, the pasture became the Lawn Bowling Club according to city maps at the turn of the century.

The Ottawa Curling Club was further along Vittoria on the south side between Kent and Lyon. Nor were other amenities lacking in the neighbourhood. Ebenezer Evans of Cliff Street was a licenced water-carrier in an age when the supply system was still primitive. As custodian, this gentleman cut a figure of some importance. Miss Fannie Yielding also rendered a service from her Cliff Street home, one of four fine stone units on the south side. This lady controlled the issuing of marriage licenses and was much in demand in her official capacity.

On the north side of Cliff Street there were five lots. R. J. Devlin, the Sparks Street furrier, lived at number 41 in a large handsome house with a 120' frontage. On the bluff overlooking the Ottawa, the Devlin residence was most impressive. The view was memorable and on at least two occasions must have been quite unforgettable – in 1866 when, according to Ottawa historian Harry Walker, 'Farini crossed the Chaudiere on a high-wire', and later in 1900 when the great April fire of that year roared out of Hull completely out of control, jumped the river and consumed all in its path in LeBreton Flats and the adjacent lumber yards.

Wellington Street in the nineties was also judged an excellent address. Mrs. Georgina Perley's town house, number 415, reflected an age of stately living, complete with carriage house and stables at the rear. This mansion on the site of the new National Library and Archives Building, was still an outstanding landmark in the area long after the other original buildings had disappeared.

Being a major thoroughfare, the street offered a variety of commercial enterprises as well as housing. On the north side, west of Bay Street, stood the Perley Home as well as the Home for Friendless Women, a grim name as well as a stern reminder of the inflexible moral values of the period. A light touch was provided by the Capital Brewery at the corner of Wellington and Bay: two nearby hotels – the Vendome and the Almonte – kept the product on tap.

At the east end of Wellington Street, near Bank, where the Justice Building now stands, was the imposing Bank of British North America. The ornate front entrance of this building can still be seen at "Moorside", Mackenzie King's summer home in the Gatineau Park, where it offers the imagination a rococo link with the past.

A century ago Alexander Mackenzie walked to work to his office in the tower of the West Block, but even then expanding government services demanded more buildings. A workshop on the east side of Bank Street at Vittoria built in 1873, became the Supreme Court, and temporarily the National Art Gallery in 1881. It was an era of expansion.

The electric street car in 1891 suddenly opened up new suburbs in the Glebe, Rockliffe, and Hintonburg. From the election platform on Cartier Square, at Elgin and Lisgar, in 1896, Sir Wilfrid Laurier conjured up his vision of the "Washington of the North." In office, the Ottawa Improvement Commission, appointed in 1899, started work on the Driveway and a new enclave for the well-to-do on Monkland, Clemow and Powell Avenues on the south side of a fast growing city: (population 1901 – 60,689).

In 1913, the Conservative administration of Sir Borden appointed a Federal Plan Commission to look into the whole question of an expanding government as well as an expanding city (population 1911 – 90,520). The Commission's report was published in 1915.

"The land west of the Parliament Buildings to the neighbourhood of Bronson Avenue and the land on top of the cliff should be used for departments of government.

"Expansion along the Ottawa River west of Parliament Hill is the logical course, being out of the line of commercial development. Here there is offered splendid architectural opportunity. Expansion south is out of the question due to the high value of property and interference with long established businesses on Sparks Street. Expansion must, therefore, take place to the west. Here, in time, a second group of buildings to harmonize with those on Parliament Hill will spring up, as the scene of major governmental activities."

This report reflected the move to the new suburbs by streetcar and automobile, already taking place. R. J. Devlin left his house on the cliff for a new address at 196 Carling Avenue. The Ottawa Curling Club moved, in 1916, to new quarters on O'Connor Street. The Perley Hospital relocated near Aylmer Avenue in Ottawa South. The old area was fast changing.

After the First World War little demolition or new construction went on while the new Parliament Building was being completed. Indeed, in 1925 the whole matter of what to do with the land north of Wellington Street was again reviewed. The Ottawa Town Planning Commission released a series of recommendations. Highlights were a National
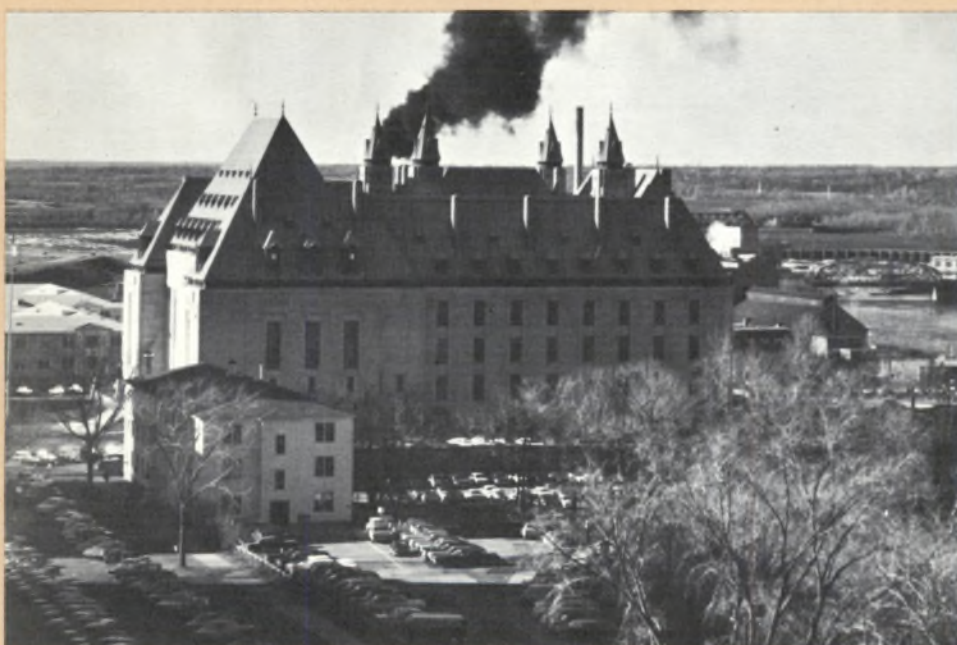
War Memorial and a new bridge across the river at Cliff Street.

By 1928 so much time had gone by that the land west of Parliament Hill, some of which had originally been purchased by the Crown before the War, had to be repurchased so that work could at last get underway on the first of the new government buildings slated for the area as recommended by the Federal Planning Commission in 1915.

Construction of the Confederation Building on Wellington Street at Bank, in 1928, and the Justice Building, in 1935, started a major transformation of the area that was greatly accelerated by the building of the Supreme Court Building in 1938. As this work progressed, the last vestiges of Cliff and Vittoria Streets were eliminated. One final re-

minder of other days was the substantial Devlin property, empty, but intact, even at that late date.

The War years after 1939 brought the 'temporary buildings' to Wellington Street. They 'temporary' still, linger on, west of Lyon Street.

Today nothing remains of Vittoria and Cliff Streets. Old Wellington Street has been transformed beyond recognition on the north side. But surveying the urban problems of the metropolis of 1971, including new plans, now on the drawing board for a bridge across the river in this historic area, a touch of nostalgia must remain for that era in the Ottawa story when a businessman could leave his house on Cliff Street and walk to work on Sparks Street or the new Langevin Block, and do it in just minutes!

1. The home of R. J. Devlin, prominent Ottawa businessman on Cliff Street, overlooking the Ottawa River.

2. The home of Mrs. Georgina Perley was a landmark on Wellington Street, Ottawa, for many years. It is now the site of the new National Library and Archives Building.

3. Vittoria Street, with Cliff Street, right center, as seen from the roof of the West Block of the Parliament Buildings, Ottawa, in 1878.

4. The Cliff Street area today, as seen from the same location atop the West Block, Ottawa. The Supreme Court Building occupies much of the land in this old residential neighbourhood. Note the 'temporary buildings' on the extreme left.

5. The Prime Minister of Canada, Alexander Mackenzie, (1873-1878) lived here at number 22 Vittoria Street.

Question:
What are
the world's most
commonly used building materials?

Answer:

Bamboos and reeds.

These two grasses are the oldest and chief building materials in rural areas and villages throughout tropical and sub-tropical regions of the world. Today, in the drive to improve the quality and quantity of housing in developing countries, specialists are seeking more effective ways of using these age-old materials.

While bamboo and reed housing is easily built, easily repaired, well ventilated, sturdy and earthquake resistant, it has a number of drawbacks. These include susceptibility to attacks by insects, fire and rot fungus.

Bamboo and reed construction is popular for good reason. The material is plentiful and cheap; the villagers can build their own houses with simple tools; and there is a tradition of skills and methods required for the construction.

Bamboos

Bamboos are perennial, grasslike, woody plants and their greatest concentration and most widespread use is on the southeastern borders of Asia and on adjacent islands – from India to China on the mainland and from Japan to Indonesia among the islands. The plants are also found in Africa, Australia and in Western Hemisphere from the Southern United States to Argentina and Chile.

Bamboo is divided into four families, an estimated 50 genera, and over 700 species. Each of the species has widely different characteristics affecting its usefulness as a building material. Sixty-five species of bamboo and seven species of reed are listed in the United Nations study* as particularly suitable for building construction.

The growth of the bamboo is rapid, about 7 centimetres (2¾ inches) per day, and up to 40 centimetres (15 inches) a day in ideal conditions.

Large-scale bamboo plantations have been established in Japan, India and other countries. The rapid deterioration of bamboo means that, traditionally, structures must be rebuilt every two or three years. With proper preservation treatment, however, the life of bamboo housing can be lengthened to 15 years or longer.

The possibility of extending the life of a bamboo structure by as much as five-fold means that larger, better-built and better-equipped houses can be available to the average villager. The protective treatment, which include water leaching, whitewash and other coatings, chemical spraying and dipping, are described in the study. Bamboo rods, suitably treated, can also be used as reinforcing in concrete, pipes or scaffolding.

Reeds

Reeds, like bamboo, are giant grasses. While they are found in almost all countries, with the densest thickets located in the tropics, one of the largest areas of reed coverage is the southern part of the Soviet Union. There, the reeds and canes are cultivated by controlling the water level in the reed thickets at different seasons. Reeds grow up to 25 feet in height and 1¼ inches in diameter. Five varieties are listed in the study as particularly useful for building.

Reeds can also be preserved against rot and insect attack and treated to increase fire-resistance. They have wide applications in buildings – from reinforcing to use as compressed slabs.

* The 95-page study, prepared by the United Nations Centre for Housing, Building and Planning, details many of these traditional construction methods and discusses the results of experiments carried out in many countries in recent years to develop new techniques for building. The study is amply illustrated and the appendices cover botanical and technical details.

BOOKS

**Planned Unit Development –
New Communities American
Style,**
by Robert W. Burchell with James
W. Hughes, Center for Urban
Policy Research, Rutgers Univer-
sity, New Brunswick, New Jersey,
1972.

Our neighbours south of the border
are developing a new tool for
converting primarily vacant and
agricultural land into urban uses.
They call it "Planned Unit Devel-
opment," or PUD.

PUD refers to a development
which is larger in area than the
average subdivision, although
smaller than a so-called new town.
PUD is more ambitious than a
subdivision. A good PUD not only
has residential, but industrial and
other uses as well, and its hous-
ing comprise single family, unity
town-houses and high-rises.

In contrast to a new town,
though, a PUD does not aspire
to be self-sufficient or compre-
hensive in terms of having em-
ployment for all its inhabitants
and providing a full-range of urban
services, including hospitals,
theatres, etc. PUD seems to be
an effort to improve on the some-
what sterile and homogeneous
subdivision pattern of today with-
out claiming to provide for an
alternative to our existing cities.
As with subdivisions, PUD's are
initiated by private developers
and are made legally through spe-
cially written zones incorporated
into municipal zoning codes.

Why would developers turn to
PUD ? First of all, it provides de-
velopers with a tool to increase
densities and cluster development,
thereby reducing unit land and
servicing costs. This does not
mean that overall densities need
be higher than with traditional
subdivisions. Rather, the devel-
oper can concentrate his con-
struction on the flat and buildable
parts of his site and leave the un-
buildable, usually much cheaper,
and more often than not environ-
mentally attractive parts of his
site (creeks, steep slopes, rock
outcroppings) in mandatory open
and recreation space.

Second, developers can con-
struct much more (dollar value)
on a given site in PUD than under
the traditional subdivision pat-
tern ; this situation leads to more
profits. And the reason it does is
because PUD's permit commercial
and industrial development, which
is more expensive in dollar terms
than a typical residential subdi-
vision on the same tract of land.

Third, developers have a greater
latitude in design and layout
work – they do not have to deal
with front yard and similar re-
quirements – and can potentially
create a much more interesting,
as well as saleable environment.

Fourth, a PUD usually provides
for speedy action in the processing
of approvals needed for develop-
ment. Traditionally, municipal
governments set down rigid zon-
ing and subdivision regulations,
and enforce them through a
drawn-out and bureaucratic
route. PUD does away with the
whole process. Instead of going
for various approvals to a great
number of agencies, as has been
the case in the past, the developer
using the PUD option usually
goes to one agency only for all
of his approvals.

PUD appears to be a flexible
development option, under which
the municipality does away with
rigid standards only to be replaced
by a kind of free-for-all between
the developer and a streamlined
municipal processing agency.
The negotiations between the
two are constrained by the de-
veloper's profit-motive and the
municipality's tax revenue picture
as well as its desire to "up" local
services and amenities.

Finally, "the tempo and se-
quence of development in the
PUD are controlled so that land
uses which provide only moderate
local revenues, but require large
municipal and school service

costs, are scheduled simultane-
ously with those that provide
some revenues, but are not as
costly to service." In other words,
housing is accompanied by shop-
ping and industry so that the
development "pays its way." This
feature makes PUD an attractive
form of development for munic-
ipalities.

The authors not only discuss
the meaning of PUD, but also
present a case study of a PUD in
New Jersey. One interesting as-
pect of their study relates to the
characteristics of the PUD in-
habitants. Of the inhabitants :
12% are blue collar workers or
retired people ; 65% have college
degrees ; 4% are non-white ; 95%
are previous renters, the mean
family income is $16,000, and the
mean age of the heads of house-
holds is 32. Most of the employed
work in the nearby New York,
Philadelphia metropolitan areas,
and most industries in the PUD
employ people who cannot afford
to live there. Doesn't all this re-
mind you of any typical new sub-
division on the outskirts of ex-
panding Canadian cities ?

PUD is basically a financial and
administrative technique con-
ducive to the creation of a certain
type of physical environment.
Whether this environment is good
or bad is open to question ; it is
certainly more antiseptic and
ordered, and has more open space
than can be found in a typical
city. It does not have the variety
and vitality of a city, although it
is an improvement over the tradi-
tional single-family home sub-
division. It follows, then that since
the preoccupation in PUD is with
the economic issues relative to a
physical environment, social issues
are left behind, de facto. This may
be the explanation for finding a
PUD socially quite similar to a
traditionally developed subdivi-
sion.

The authors conclude on a few cautious notes concerning PUD. Since PUD is a private endeavour, developers are attracted to growth areas with ready markets, which are large cities in the process of growing larger. In these areas there is already a movement of people out of the older parts of cities to the suburbs. This means that PUD's accelerate this urban-suburban migration pattern. What is important, however, is that the outmigrants are the young, educated, high-income families, whose outward move is a loss to the central city, resulting in a shrinking tax base and a concentration of the poor, and the elderly. In other words, the areal segregation of people by income and education is reinforced, or accelerated by PUD types of development.

Furthermore, large scale developments such as PUD's are possible on assembled tracts of land, or large chunks of vacant land in one hand; both situations occur usually at a considerable distance from existing urban development. So, while internally there is orderly development in a PUD the location of a number of PUD's contribute to haphazard metropolitan development, or to what is known as the "urban sprawl" phenomenon.

Finally, the authors point out each PUD requires some industries which pay substantial local tax. Since only a limited number of industries would be attracted into any given municipality, only a limited number of PUD's would be approved by the municipality. So a municipality could stop residential development in its jurisdiction by arguing that it could not afford to service such development unless high, tax-paying customers also locate in the jurisdiction. This argument leads up to an important and controversial possibility; the PUD philosophy could provide to municipalities to stop residential development which does not pay its way. This is translatable into not allowing low or even medium income housing in a community, which amounts to keeping an area "exclusive".

The PUD concept has been used in Canada under different names. Don Mills, in Toronto, or Kanata on the outskirts of Ottawa are efforts in which attempts have been made to provide for a mix of residential and other uses. Although one can argue about the relative success of these projects, it is fair to say that these efforts usually result in an improved physical environment when compared to the traditional subdivision pattern. It would certainly be desirable for various governments to give a careful look at our development methods and the environments we create, and come up with suggestions for improvements. One such suggestion may be an informal PUD process adapted to the Canadian environment.
A. Greiner

BOOKS

Image 10 Les Ouvriers

Par Pierre Gaudard
116 pages, 99 photos, 1971.
O.N.F.

Cet ouvrage est un recueil d'une centaine de photographies d'après une exposition réalisée par l'Office National du Film du Canada. Les images que Pierre Gaudard *nous présente expriment les* qualités du peuple ouvrier avec une éloquence qu'aucune parole ne saurait surpasser. Chaque photographie soulève à la fois plusieurs émotions en attrapant sur le vif une situation humaine dont le drame évoque plusieurs images. Les sujets sont choisis avec une telle finesse que toute description narrative semble superflue et ne peut que dénaturer la multiplicité des émotions que la photographie fait ressentir. Même la tonalité des tirages répétée avec persistance reflète le caractère grisâtre de cette force humaine noyée dans l'anonymat, ne sachant pas ou ne voulant pas s'extirper de l'emprisonnement d'un système. L'artiste nous fait voir un monde quasi-prolétarisé, qui accomplit sa tâche d'ouvrier malgré une ambiance qui prête à la mélancolie, l'abrutissement et l'insensibilisation; un monde, dans lequel l'individu reste anonyme et trouve sa force dans la collectivité sans perdre complètement ses qualités humaines. Très sensible à l'ambiance qui se perpétue dans le lieu de travail et le milieu familial de cette société ouvrière, Pierre Gaudard en démontre brillamment plusieurs aspects en omettant, *toutefois, l'expression d'a*bandonnement à la joie, typique de l'ouvrier dans ses réunions familiales, les foires, les fêtes et les sports.
J. R. Champagne

Word:
Sounds, printed or written,
conveying a meaning

Mot:
Son ou groupe de sons
servant à désigner
un être, une idée

a b c d e f

g h i j k l

m n o p q r

s t u v w x

y z

habitat

habitat

Volume 16, No. 3, 1973

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Design/Conception graphique   Gottschalk+Ash Ltd.

Conserving heat

Some suggestions on how to conserve heat in our houses

1 Put more insulation in the ceiling
With the present price of fuel it is economical to use about 7 inches of mineral wool type insulation in ceilings. Most houses have considerably less than this amount, but it is relatively easy to add extra insulation in houses that have attics.

2 Insulate basement walls
A large amount of heat is lost through the basement walls if they are not insulated. Concrete foundation walls can be insulated either by gluing foam plastic insulation directly to the inside surface of the concrete, or by installing wooden studs and placing mineral wool type insulation into the spaces between the studs and then covering it with some type of wall board.

3 Reduce the leakage of cold outside air into the house
Cold air leaks into a house at the same rate as warm air leaks out. The flow can be reduced by stopping either the inflow or the outflow. One obvious step is not to leave kitchen or bathroom exhaust fans running any longer than is absolutely necessary. Another way to reduce the outflow of warm air is to keep the chimney damper on a fireplace closed. The air leakage through windows can be reduced by taping the cracks around storm windows, and the air leakage through the cracks around doors can be reduced by installing good weatherstripping. Storm doors help to cut down air leakage and also reduce the heat loss through the door itself.

4 Turn the thermostat down at night and whenever the house is unoccupied
The heat loss from a house is directly proportional to the difference between the temperature inside and outside. Turning the thermostat down reduces this difference and consequently reduces the heat loss. The thermostat should be kept as low as is comfortable even when the house is occupied. Wearing warmer clothes makes it possible to keep the thermostat at a lower setting.

5 Close the warm air registers in any rooms that are not being used and keep the door shut so that unused spaces will be cooler than the rest of the house
D.G.S.

2

and saving money

by A. W. Pratt

The world's fuel resources are not unlimited, nor does it seem likely that the present distribution of the demand for energy between countries will continue for much longer without significant change. The time will probably come when buildings now under construction will be unable to function as originally intended because of changes in the present world pattern of fuel supply and demand.

Primarily, a building is a bulwark against the weather, transforming the vagaries and other unwanted features of the outdoor climate into an acceptable indoor environment. And the most important environment of all is the house in which a person lives.

Global variations in architectural style reflect the influence of climate on building design. In a hot, dry climate for example, thick walled structures of dried mud, painted white on the outside and closely huddled together to afford mutual protection against the extremes of day and night temperature, contrast with the airy, lightweight structures characteristic of the warm, humid regions of the world where plenty of air movement is needed for comfort.

Differences Disappearing
These differences in traditional styles are disappearing rapidly in modern construction and new buildings in the tropics, for example, are now quite similar in design to their counterparts in more temperate climates. This has come about largely through the advent of commercial air conditioning.

The impact of air conditioning may be gauged, in part, from the fact that during a heat wave last year in the eastern United States of America the electricity consumption in the populous north-east region rose between 22% and 28% compared with the corresponding period of the previous year. In Britain, likewise, the accelerating rate at which dwellings are now being equipped with central heating is adding substantially to the consumption of fuel for space heating in winter.

The demand on energy even in these middle latitudes now extends into summer with air conditioning, in an attempt to combat the architectural fashion for large windows which give rise to excessively high indoor temperatures and cause considerable discomfort to the occupants due to solar heat gain through glass.

Commercially Available

About six years ago the author designed and built for his own occupation a house incorporating the results of several years research on heat transmission in buildings for which he had been responsible at the Building Research Station in Britain's former Department of Scientific and Industrial Research. It was a requirement of the design that all the materials used in the construction are listed for information in Building Centres and are commercially available.

The house achieved high level of insulation unprecedented for dwellings in Britain for a sum which, when considered with the resulting simplified space heating system, would involve no additional expense in the capital cost of a house. Thereafter, the benefits soon became apparent with reduced fuel bills and a pleasant thermal environment at all times of the year.

The high level of insulation is obtained by lining the basic wall construction of brick-cavity-lightweight concrete internally with insulation in board form and facing this with plasterboard. The plasterboard represents the final finish and is decorated with either paint or paper according to taste ; no plaster has been used at all.

The insulating material is a rigid urethane foam. Very light in weight and easy to handle, it is nailed to timber battens which in turn are secured to the 4¼ inch (108 mm) blocks of lightweight concrete with suitable nails. The battens are 2 inch by 1 inch (50 mm by 25 mm) section spaced at 16 inch (406 mm) centres, through less frequent spacing at 24 inches (610 mm) would be sufficient.

Dry Lined

The lightweight concrete combines insulation with structural strength and has the further advantage that nails can be driven into it. Moreover, it is no more expensive than brick and has a much higher insulation value.

Plasterboard on battens also forms the finished lining to all the interior walls. These are of brick with occasional courses of lightweight concrete suitably spaced for fixing the timber battens. All walls in the house, therefore, are dry lined and no plaster is used, obviating the need in traditional construction of several weeks for the newly-built house to "dry out" and permitting immediate decoration.

So far as this house is concerned, the major advantage of dry linings is that the wall surfaces warm up much more quickly when heat is put into a room than the conventional wall of brick and plaster. Since the house was completed it has become possible to obtain the urethane foam insulation and plasterboard in the form of a composite laminate. Methods also have been developed for fixing it direct to the brick or concrete surface with suitable adhesives, so timber battens are no longer necessary.

The house is semi-bungalow in design with dormer type rooms on the first floor. The spaces in the timber framework of the external walls of these rooms are packed with quilted glasswool and dry lined. The first floor ceiling is similarly insulated with glasswool laid between the joists and in the ground floor the overall high level of insulation is maintained with more urethane board—which incidentally is trimmed easily to size with a sharp knife—wedged onto supporting nails between the joists.

Floor Decking

Further insulation is provided by leaving a 1 inch (25 mm) wide enclosed airspace between the insulation board and the floor deck which is constructed of multi-layer Finnish birch plywood specially designed as a flooring material. The plywood forms a smooth, flat surface with close fitting boards manufactured to be dimensionally stable and thereby eliminate the draughts through joints normally experienced with wood strip floors.

In the living room squares of high density cork are laid over the plywood and brushed with three coats of a clear satin wood finish. The non-slip surface requires only occasional wiping to maintain its attractive appearance. Cork, a heat insulating material combining warmth with hard wearing properties, is considerably cheaper than carpet as a floor covering and no less attractive.

Windows transfer heat at a much higher rate than any other part of the building fabric. The current fashion set by architects for large windows causes overheating due to excessive solar heat gain in summer and high heat loss from buildings in winter. In the present house none of the rooms has a window area greater than 15% of the floor area, a ratio calculated to achieve an economic balance of energy requirements for space heating and an adequate level of natural illumination.

All the windows are double and completely reversible for ease of cleaning. The 2½ inch (63 mm) wide airspace between the two sashes combines thermal insulation with a significant reduction in noise transmission. There are no curtains on the windows to conceal the attractive hardwood frames, but white venetian blinds suspended between the sashes afford privacy, protection from the sun and freedom from glare. Diffuse reflection of natural light from the white painted ceilings is possible by suitable adjustment of the louvres.

Incidental Sources

Insulation conserves heat, it cannot generate it. The several sources of heat in a house apart from that specifically designed for spaceheating include heat gained from solar radiation, artifical lighting and all domestic activities that consume fuel. Although these secondary sources add up to a small output of heat, they represent a significant proportion of the total needed for warming a house that is insulated to a very high standard.

This particular house is designed to obtain maximum benefit from these incidental heat gains. The principal space heater is a solid fuel stove, rated at 18,500 Btu's (19,518 kJ), in the living room. It has a back boiler supplying heat to radiators amounting to 100 ft² (9 m²) in rooms on the north-facing side of the building only. Other rooms are heated as required with thermostatically controlled portable electric convectors. As the rooms are designed to warm up quickly, it is not necessary to heat them continuously.

The stove burns continously throughout the winter, heating the large living room which has a floor area of about 450 ft² (42 m²), including a dining space. By locating the stove on the partition wall adjoining the hall it gives heat to this space also and to the first floor landing from the wall surfaces that enclose the brick flue. These surfaces are warmed by heat extracted from the flue gases and by conduction from the stove. The stove and flue together act as a storage heater placed centrally in the house to transfer as much heat as possible to the surrounding space.

Solid fuel is used also for cooking and domestic hot water with an Aga stove—a combined cooker/boiler, which is scientifically designed to burn solid fuel most efficiently. Like the stove in the living room, it is a storage heater. It gives continuous warmth to the kitchen, which faces due north, and warm air drifting from there into the hall rises by natural convective movement to warm the first floor rooms.

This simple heating arrangement is aided by not extending the intermediate floor into the hall so that the warm air is able to rise without restriction.

It may be claimed that the house offers a practical solution for conserving energy used for domestic purposes.

RCMP
The Red Tunic-
100 Years of Service

In August 1873 a small force of men was established to maintain law and order in the North West Territories. From this modest beginning grew the force that was to become one of the most famous police organizations in the world.

Some of the outposts established by the Mounted Police have grown into cities and towns like Calgary and Lethbridge. The RCMP continues to maintain law and order, not only in the northern and rural areas but in the urban communities as well. In retrospect, the early history of the Force seems adventurous and romantic, but a comparison of those days with the present show its activities to be no less attractive.

GRC
Les "Tuniques rouges":
cent ans de services...

C'est en août 1873 qu'une poignée d'hommes étaient cantonnés en divers points des Territoires du Nord-Ouest pour y assurer ce qu'il est convenu d'appeler "la loi et l'ordre"... Ces débuts modestes de la Gendarmerie royale du Canada allaient précéder la croissance, puis la célébrité, d'une force policière connue et estimée du monde entier. Certains avant-postes de la Police montée sont devenus de grands centres, tels que Calgary et Lethbridge et la GRC est toujours à la tâche, non seulement dans le Grand Nord, mais également dans les zones rurales et les agglomérations urbaines.

Rétrospectivement, les débuts des fameuses "Tuniques rouges" paraissent quelque peu romanesques, mais un examen de leurs activités présentes prouve que ces dernières demeurent à la mesure de leurs exploits aventureux du passé.

Fort Whoop-Up, located near present-day Lethbridge was occupied by American whiskey traders until the arrival of the North West Mounted Police in 1874.

Avant l'arrivée de la Police montée en 1874, Fort Whoop-up, localité située près de Lethbridge, était un centre d'activité pour les trafiquants d'alcool.

Jeremy Potts, a guide and interpreter for the force, led them through an unfamiliar landscape to Fort Whoop-Up in 1874.

Le guide et interprète Jeremy Potts aida les troupes à atteindre Fort Whoop-up, à travers un territoire encore fort peu connu.

The urban landscape is now too complex for a single guide on foot. Helicopters provide quick access and visibility to the compact urban streetscape.

La surveillance du territoire est renforcée par l'usage d'hélicoptères à grand rayon d'action.

Present day "forts" are more substantial and more urban. This Divisional Headquarters was recently opened in Toronto.

De nos jours, de tels "bastions" se sont grandement modernisés. Ce quartier général divisionnaire a récemment ouvert ses portes à Toronto.

During the opening up of the West, communication between Headquarters was no less important than today.

A l'époque héroïque de l'Ouest, les communications entre les divers quartiers généraux n'étaient pas moins importantes qu'aujourd'hui.

Col. J. F. McLeod was assistant-commissioner when he led the Great March West in 1874. He is shown here, with hand on saddle, at Fort Walsh in 1878.

Le Colonel J. F. McLeod était commissaire-adjoint lors de la Grande Marche vers l'Ouest de 1874. Il est photographié ici, la main sur la selle de son cheval, à Fort Walsh en 1878.

Today, motorcycles take members of the force from point to point and seem to attract as much attention as horses once did.

Les engins motorisés ont remplacé les chevaux, mais l'intérêt qu'ils suscitent ne demeure pas moins forte.

Main Street, Dawson City, at the height of the gold rush. The photo is by E. A. Hegg whose sign hangs at the left of this picture.

La rue principale, sinon la seule, de Dawson City, lors de la ruée vers l'or. La photographie a été prise par E. A. Hegg, dont on aperçoit l'enseigne à gauche du cliché.
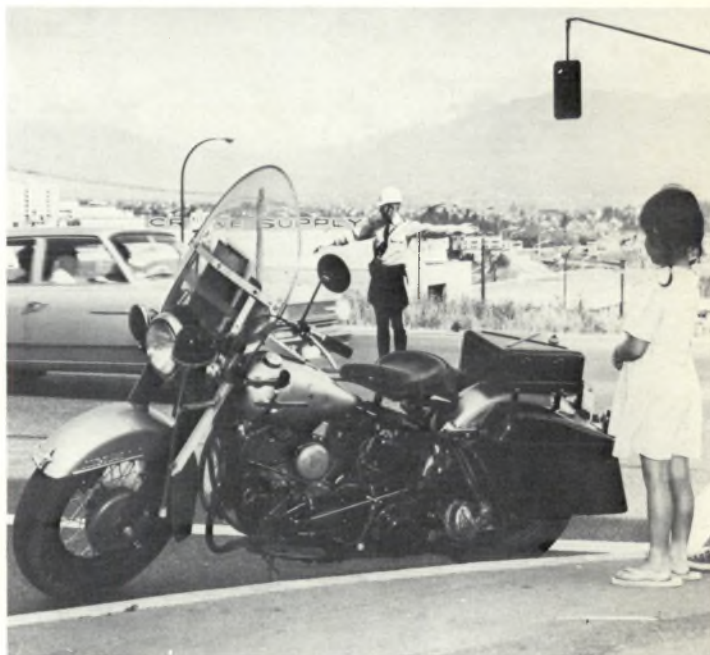
Nowadays communications within the force are virtually instantaneous even in the far north.

Les échanges d'informations se font désormais à une vitesse inconcevable, même dans le Grand Nord.

The RCMP St. Roch, built in 1928, was the first ship ever to pass through the Northwest passage in both directions. Captain of the 300 ton vessel was Staff Sgt. H. A. Larson.

La goélette Saint-Roch, construite en 1928, a été le premier navire à traverser le passage du Nord-Ouest dans les deux sens. Cette unité de la GRC, jaugeant 300 tonneaux, était commandée par le sergent d'Etat-major H. A. Larson.

Small, fast boats such as the RCMP Slideout are used to patrol inland waters and harbours.

De modernes embarcations, plus petites mais plus rapides – ici, le "Slideout" – sont utilisées en permanence par les forces policières.

Present-day Dawson City seen from Midnight-Dome. Panning for gold has now become a tourist attraction.

L'agglomération de Dawson City, telle qu'elle apparaît de Midnight-Dome. La recherche de l'or si longtemps populaire dans les parages, n'est plus qu'un souvenir du passé...

9

For The Armchair Economist

Interest Rates, Mortgage Payments and Inflation

D. J. Reynolds
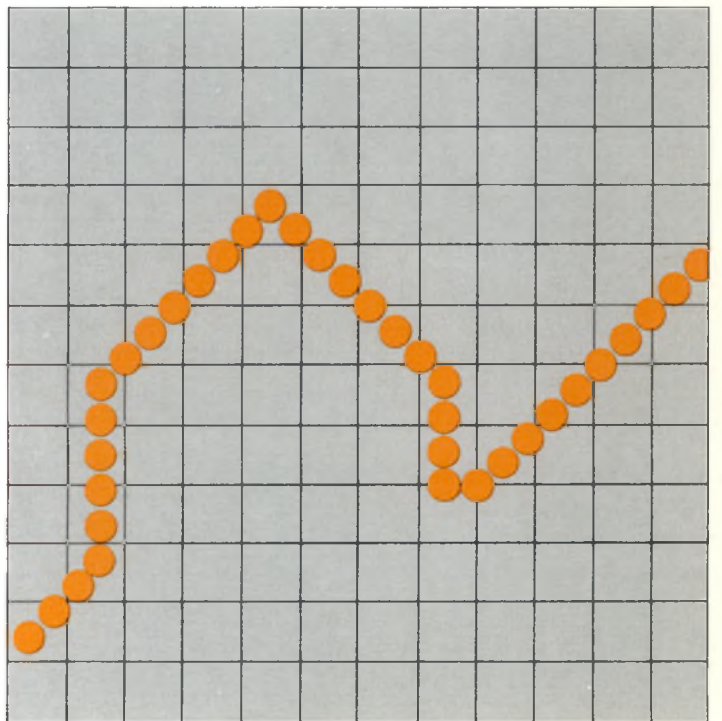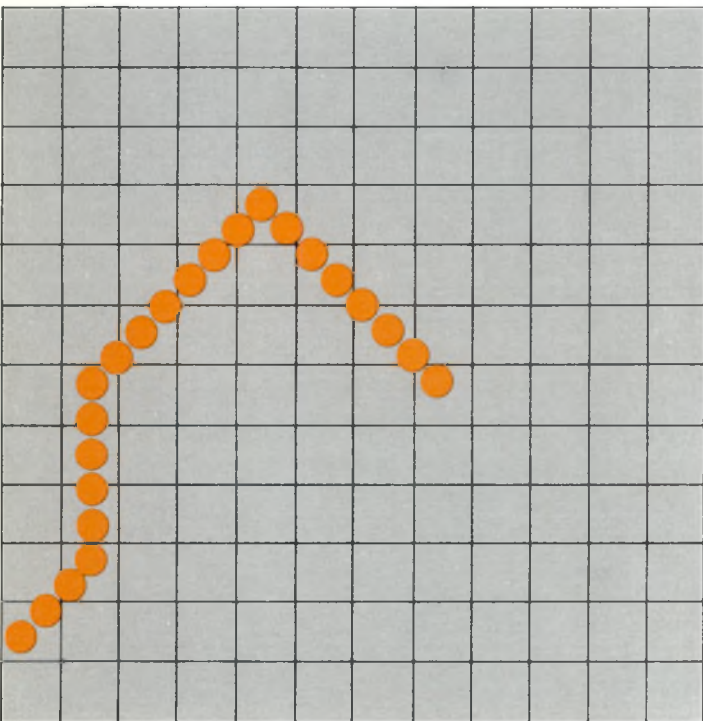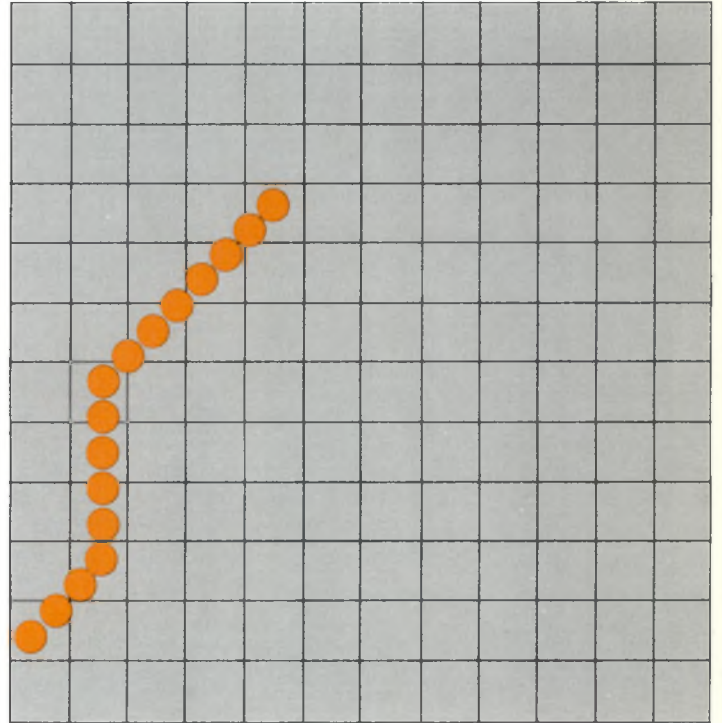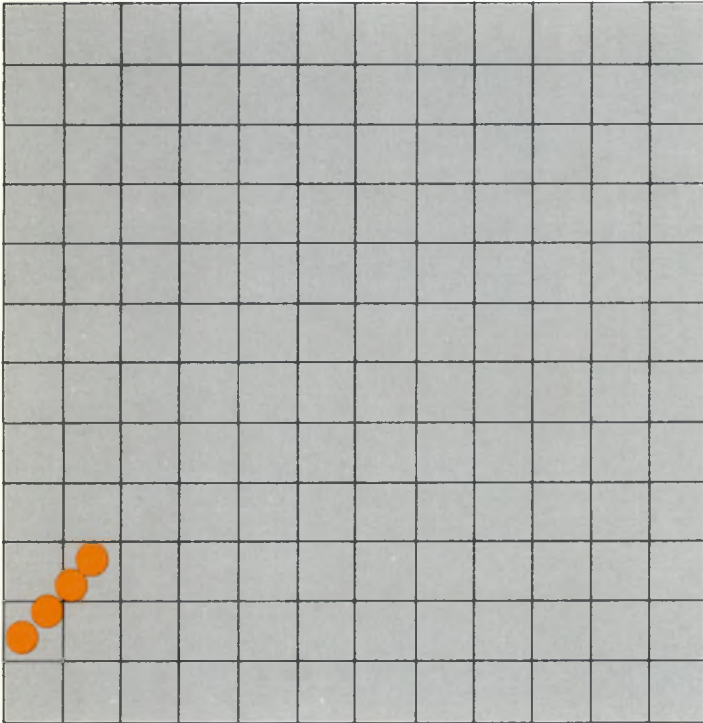
Although much information exists on specific payments for specific mortgages, there seems to have been little information on the effects of a range of interest rates and mortgage periods on payments from the viewpoint of the mortgagee. This attempts in simple terms to rectify this and take account of inflation in an inflationary age.

Effects of period and interest rates on monthly payments
For every $1000 borrowed for various periods the monthly payments are as shown on page 12.

It can be seen that taking the effects of interest rates first, for short period loans, interest rates have little effect on monthly payments while for longer period loans, the effect of interest rates is very substantial. For example, for a five year mortgage an interest rate of 10% only increases monthly payments to 30% above those with a zero interest rate, while a 40 year loan at 10% has four times the monthly payments required to amortize a 40 year loan at 0%. For most first mortgages, at present interest rates and periods, as a general rule a monthly payment of $8.50 to $9.00 per $1000 borrowed is a reasonable approximation.

Also it may be noted that while extending the period of a loan tends to reduce monthly payments, this reduction takes place at a diminishing rate, and the higher the rate of interest the smaller the reduction in payments to be obtained by extending the period of the loan. Paradoxically, therefore, it appears that the rational response to a rise in interest rates may be to *shorten* the period of a loan, not to extend it, although much will depend on households' expectations, anticipated income cycle, and their stage in that cycle.

The effects of period and interest rates on total payments
In addition to monthly payments it is also useful to give the effects of period and interest rates on the *total* payments over the period of the mortgage.

By combining both interest rate and period effects to give total payments, the cost of mortgages is brought out even more graphically as in this table. Up to an interest rate of 4% and up to a period of 40 years, total payments are less than twice principal, and interest payments are the smaller of the two elements of mortgage payments. Above a line which runs from about 40 years at 4%, 35 years at 5%, 30 years at 6%, 25 years at 7%, and 20 years at 9% total payments are more than twice principal, and interest becomes the largest element in mortgage payments. In an extreme case, e.g. a 40 year mortgage at 10%, interest accounts for 75% of total mortgage payments.

It is this large element of interest in mortgages which makes housing fairly unique as a consumer good, and makes housing sensitive to interest rates which are themselves, as one of the main controllers of the economy, somewhat volatile. An example comparing a house with the next most costly/durable consumer good, an automobile, should bring out the point. A household acquires, and keeps, a new dwelling with a $15,000 mortgage over 25 years at 9% and pays some $37,000 over the period, of which $22,000 is interest. Over the same period it acquires 5 cars with $3,000 loans, paying for each at an interest rate of 18% over 3 years, the total cost, however, being only some $21,000 of which only $6,000 is interest. However, inflation (affecting car costs only) could narrow the car/house gap considerably.

Effects of inflation
Thus, although the immediate impact of high interest rates on long period mortgage payments is very substantial, it must be admitted that general inflation (of prices and incomes to match) which is a factor leading to high interest rates in the first place, will tend to reduce the real impact of mortgage payments *over time*.

Further, and probably more important, under current conditions, unlike most other durable goods, the prices of dwellings for ownership in most growth areas seem to appreciate substantially with time, giving the home owner a rapidly increasing net equity in his dwelling. For example, if the market price of a dwelling appreciates by about 4% a year, its value when

Monthly Payments to Pay Off a $1000 Mortgage

Rate of Interest	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
Period Years											
5	$16.67	17.11	17.61	18.12	18.48	18.85	19.30	19.75	20.21	20.68	21.43
10	8.33	8.76	9.23	9.73	10.15	10.58	11.06	11.56	12.06	12.58	13.10
15	5.55	6.04	6.46	6.94	7.41	7.88	8.40	8.93	9.48	10.05	10.62
20	4.16	4.62	5.08	5.57	6.08	6.57	7.12	7.69	8.28	8.89	9.52
25	3.33	3.79	4.25	4.77	5.30	5.82	6.40	7.00	7.63	8.28	8.94
30	2.75	3.21	3.70	4.23	4.79	5.34	5.95	6.59	7.25	7.93	8.62
35	2.38	2.82	3.33	3.85	4.44	5.02	5.66	6.32	7.01	7.72	8.44
40	2.08	2.53	3.03	3.53	4.17	4.79	5.46	6.15	6.86	7.59	8.33

Total Payments Required to Pay Off $1000 Mortgage over
Various Periods and Interest Rates

Rate of Interest	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
Period Years											
5	$1000	1026	1056	1087	1108	1131	1158	1185	1213	1241	1286
10	1000	1051	1107	1067	1218	1269	1327	1387	1447	1510	1572
15	1000	1087	1162	1249	1333	1418	1512	1607	1706	1809	1911
20	1000	1108	1219	1337	1459	1577	1709	1845	1987	2133	2285
25	1000	1137	1275	1431	1590	1746	1920	2100	2289	2484	2682
30	1000	1155	1332	1522	1724	1922	2142	2372	2610	2854	3107
35	1000	1184	1400	1617	1865	2108	2377	2654	2944	3252	3545
40	1000	1214	1454	1694	2000	2300	2620	2952	3293	3643	4000

the mortgage is finally paid off will generally be equal to the whole of the payments on a 100% mortgage at 10% interest. The mortgage payments can then be regarded as forced saving to realise an equivalent capital gain (in depreciated $) with "free" use of the dwelling over the period apart from taxes. This capital gain, however, can only be finally realized if and when more owners "trade down" in their housing.

These hedges against general inflation are probably potent factors in home ownership and the further bidding up of house prices in growth areas, making entry to home ownership even more difficult. The remedy for this seems to be an increase in the supply of new dwellings for home ownership by the middle and upper income groups (who are increasing most rapidly) with mortgage funds and interest rates directed discriminately to that end as far as possible, rather than being used to unduly inflate the prices of existing dwellings for home ownership. Such operations however, would have to be highly skilled and specialised and well beyond the scope of this article.

Babysitters in the Home

(Just anyone isn't good enough)

Knowledge the Sitter should have:

Cuts

- Wash well.
- Use mild antiseptic (not iodine).
- Apply bandaid.
- To stop bleeding – apply pressure over cut. If you cannot stop bleeding, call parents.

Safety

Mealtime

- Place hot items near centre of table.
- Use place mats or short cloth – long cloth can be pulled off.
- Do not leave baby unguarded during or soon after feeding.
- Do not let children play near stove during preparation of meal.
- Turn handles of pots away from stove edge. Always use pot holder.
- If gas stove – make sure flame has not gone out.
- If bottle or jar chips when opening – throw it and contents away.
- Keep sharp utensils and opened tins away from children.

Child Care

Infant (Birth – 18 months)

- Pick up and hold securely, supporting head.
- Know how to change diapers.
- Heat bottle at low heat, test temperature.
- Hold baby in semi-reclining position – head well up. Rub back gently to burp.
- Know sleeping procedures.
- Crying – may be hungry, wet, colic, too hot, too cool. Give bottle, change diaper, hold baby over shoulder, rock or walk, lay on tummy. Warm, boiled water may help. If crying shrill – scream rather than cry – call parents.

The Baby Sitter

Health	Characteristics	General
Should be physically and mentally healthy. Should not have a cold or communicable disease.	Dependability Punctuality Honesty Good Manners Good Appearance Love of Children	Should be 14 years or over. Should have knowledge of safe habits in home. Should find out nature of child's health.

Information the Sitter should have:

Address and phone number where parents can be reached.
Emergency numbers — doctor, hospital, fire and police departments.
Phone number of relative or near neighbour.
Expected phone calls or door calls.
Location of child's clothes, bedclothes, etc.
Where child may play, favourite games.
Bedtime routine.
If child is to be fed, what, when, how much.
What treats child may have, if any.
How often should sleeping child be checked.
How often should child be changed.
Find out child's house and yard limits.
Find out child's habits — wanderer? climber? put things in his mouth? can he climb over crib side? reaction to falls and injury.
Get instructions about furnace, electrical appliances, outlets, gas equipment, windows.
Find out position of light switches, exits.

by Sheila Rockburne

Every parent's heart thumps when interrupted at a party by a phone call from the baby sitter. Immediate thoughts are of a disaster at home. But what can parents do? Unless they are willing to hibernate until the child is old enough to look after himself, they must rely on sitters.

The best way to avoid the phone call announcing some crisis at home is to determine and assess the kind of care the babysitter can provide. Both the parents and the sitter have certain responsibilities.

Parents should make the sitter aware of the idiosyncrasies of their household which he, or she, might have to cope with in the course of an evening. The door will lock only if the handle is held an inch to the right; the toilet will overflow unless the handle is jiggled twice; the dog needs to be let out every two hours, and his leash is kept in the broom closet.

Giving such explanations may prevent household disasters, leaving the sitter free to concentrate on child care. If the sitter is wiping up dog puddles or mopping up the bathroom floor, the children may be spreading jam on the table.

The care and cultivation of a babysitter is important, as any parent who has hired sitters can explain, (while carefully not revealing their favourite sitter's name). Yet too often parents pamper their sitters. Social and disciplinary situations often occur and parents should be prepared to say what their policies are, for example: the sitter is hired to do a job for a specific length of time; not to sit in front of the television while munching through pounds of chips, candy, fruit, cheese, cake and three large bottles of pop or milk.

Food

Parents have to set the edible limits for the sitter. At the refrigerator or food supply, indicate how much food you are willing to have consumed. Hiding a box of chocolates doesn't work; sitters have been known to sniff out the box in the spare room cupboard's top shelf. Leave the candy on the coffee table and comment, "You might like to have a couple of chocolates".

If you have some cold meat or fried chicken prepared for tomorrow's lunch, it's better to say, "Don't eat the chicken", than to end up eating peanut butter sandwiches at noon the next day.

Boy and Girl Friends

Most parents, when asked if the current boy-friend/girlfriend can come over, will agree. Yet, during the time they are out they wonder what is taking place in their living room. If this is a concern and parents think the babysitter's attention will be diverted then say the only company is to be the children.

Parents have arrived home to find sitter and unannounced friend in what can only be called a private moment, or to the sound of the back door being quietly closed. If you have stated before the policy is 'No Visitors' then you probably would not rehire the sitter. If you had assumed there would be no company you should discuss the rules and indicate you will call again.

The sitter may ask to have a friend of the same sex over. If parents prefer that the children receive all of the sitter's attention it can be suggested that the friend arrive after the children have gone to sleep.

Telephone conversations are another sitters' device for passing time. This can interfere with parents' calls to check on the children. One suggestion is a half-hour of phone time followed by a half-hour of clear air time.

Babysitting courses

Courses offering some fundamentals of child care are often held. Enquire if your sitter has taken such a course or suggest it as a useful addition to their skills. Sitters who have taken courses are often literally worth their weight in gold because it means a competent teenager is looking after your children.

Bernard Vachon

les problèmes urbains du québec et le modèle suédois

Le choix du modèle suédois

Le Québec, comme d'autres provinces canadiennes, est depuis quelques années engagé dans un long processus de réflexion urbaine qui devrait le conduire à une profonde réforme des structures municipales et à l'adoption de législations globales et intégrées de la planification du territoire.

A cause de la proximité des États-Unis et de l'accès facile à leur information, fonctionnaires et législateurs sont enclins à s'inspirer largement de l'expérience de nos voisins du Sud. L'Angleterre, perçue en maître de la planification urbaine, reçoit aussi passablement de considération, et à juste titre.

Un séjour de trois semaines en Scandinavie (Norvège, Suède, Danemark) nous a permis de constater combien poussées et sérieuses sont les recherches et les récentes réalisations de ces pays en matière d'urbanisme pour lesquelles nous aurions avantage à porter plus d'intérêt. Ce voyage d'études nous a fourni l'occasion de visiter, en compagnie de responsables de programmes de planification, villes satellites et projets d'habitation et de discuter des politiques et mesures législatives en vigueur en ces pays.

Bien que ces trois pays, ainsi que la Finlande, partagent sensiblement la même philosophie quant à l'administration des espaces urbains, la Suède nous a semblé être celui dont l'expérience, la recherche et les législations peuvent définir le modèle le plus intéressant pour le Québec. A ces considé-

Photos :
1 Vue du quartier résidentiel de Lorensberg, à Malmo, dans le sud de la Suède.
2 Vue aérienne de la capitale suédoise, avec le quartier de Skeppsbron au premier plan.

rations académiques s'ajoutent les conditions démographiques et géographiques qui présentent d'étonnantes similitudes avec celles du Québec. La population, de l'ordre de 8 millions, est groupée dans le Sud, laissant à l'exploitation minière et forestière les plateaux intérieurs et plus des 2/3 septentrionaux du pays. Trois grandes agglomérations dominent le réseau urbain, Stockholm, Göteborg et Malmö et regroupent près de la moitié de la population urbaine du pays. Ces trois centres, et particulièrement Stockholm, exercent une attraction très marquée sur l'interland et les zones marginales.

Confronté à des problèmes auxquels la Suède a déjà apporté des solutions, le Québec ne peut que tirer bénéfice d'une analyse critique de l'expérience suédoise dont certaines réformes sont actuellement en cours de réalisation.

C'est donc dans la perspective d'ajouter au cheminement de la réflexion urbaine québécoise que cet article d'information a été entrepris.

Les deux réformes de la structure municipale suédoise : à la recherche d'entités fonctionnelles.

C'est en 1862 que fut instaurée la structure municipale suédoise qui allait, jusqu'à nos jours, constituer la pierre angulaire du développement des espaces habités tant en milieu rural qu'urbain. 2,498 municipalités furent alors créées, chacune ayant pour limites les frontières administratives pré-industrielles basées sur l'extension des communautés regroupées autour d'une église.

De simples et limitées qu'elles étaient au début, les activités municipales se modifièrent et se multiplièrent au fur et à mesure de l'industrialisation. Pour confirmer les municipalités dans leur rôle d'entités locales d'administration, le gouvernement central leur confia de nouvelles responsabilités, telles la planification urbaine (la Loi de la planification urbaine et rurale adoptée en 1931 et modifiée en 1947 reposait presque entièrement sur le pouvoir local), l'éducation, les politiques de logement, l'hygiène publique... Bien que soumis au contrôle législatif du gouvernement central, chacun de ces champs d'activité incombait dorénavant aux municipalités dotées du droit de décision exercé par le conseil.

La division administrative, qui tirait ses origines d'une organisation sociale agricole, s'avéra bientôt inapte à supporter les activités des nouvelles communautés urbaines. Il fut donc proposé de refondre la carte municipale de telle sorte que chaque territoire jouisse de ressources économiques et démographiques suffisantes pour supporter les coûts des services publics à offrir. Le gouvernement central se rendit à l'évidence de ce besoin et amorça une première réforme du système municipal qui se traduisit, en 1952, par la réduction du nombre des municipalités, de 2,498 à 1,037. Au moment où cette réforme a été entreprise, la révolution des transports n'avait pas encore altéré l'expression spatiale des activités urbaines, c'est-à-dire que les rayons d'action de chaque fonction demeuraient relativement restreints, en raison de la mobilité limitée des travailleurs, des consommateurs et des marchandises. Toutefois, les effets généralisés de cette révolution devaient bientôt se manifester par la prolifération de l'automobile, l'essor du transport en commun et les diverses formes de la technologie des transports commerciaux. À partir de ce moment, les fonctions urbaines, qui jusqu'alors avaient évolué à l'intérieur du cadre municipal, prirent une extension nouvelle qui ébranla à nouveau la signification administrative d'un système municipal pourtant fraîchement remodelé.

Dès 1957, des études sont entreprises en vue de déterminer le seuil minimum de population qui permettrait à la municipalité de poursuivre efficacement ses activités. Mais l'on se rend vite compte que l'extension et la structure fonctionnelle du phénomène urbain des années '60 ne sauraient être résumées par un simple rapport revenus fiscaux/dépenses de fonctionnement. Il ne s'agissait plus simplement d'assurer les ressources nécessaires à une bonne administration, mais plutôt de consolider le rôle des municipalités comme responsables du développement social des "communautés locales". Ce rôle, qui avait été le sien pendant plusieurs siècles, était maintenant menacé par la dissociation de plus en plus marquée entre l'amplitude des activités économiques, sociales et culturelles, et le statisme du cadre administratif qui les supportait. La réalité fonctionnelle de la vie urbaine excédait démesurément les frontières juridiques. Sauvegarder le rôle de la municipalité comme cadre de l'épanouissement des communautés supposait une identification des activités à l'assiette territoriale. Il apparaissait donc nécessaire qu'une nouvelle réforme de la géographie municipale soit entreprise, axée cette fois sur l'identification et la délimitation de territoires fonctionnels.

Dans la poursuite de l'identification de ces territoires fonctionnels, la seconde réforme donna lieu à de sérieuses recherches multidisciplinaires où les sciences économiques, géographiques et sociologiques ont, dans un effort de dialogue honnête, réalisé des études remarquables, contribuant ainsi à une meilleure compréhension du phénomène urbain contemporain. Les nouveaux territoires municipaux proposés furent définis en fonction de leur organisation dynamique structurée autour de centres dominants et délimités par les ceintures d'influence minimale au contact des aires contiguës, suivant la théorie des lieux centraux.

Pour des raisons pratiques et administratives, il fut décidé de maintenir, dans la mesure du possible, les limites externes des municipalités périphériques comme frontières des nouvelles entités. D'autre part, dans le but d'éviter les inconvénients d'une action précipitée, il apparut souhaitable que le passage du système en vigueur au nouveau système s'accomplisse au cours d'une période de transition. Le processus consistait à regrouper les municipalités existantes en "blocs de municipalités" correspondant aux territoires envisagés et de doter chacun d'eux d'un conseil de coordination ayant pour tâche d'étudier les divers problèmes suscités par la fusion et d'élaborer les bases de l'administration nouvelle.

Cette deuxième réforme du système municipal est actuellement en voie de réalisation. Un premier geste déterminant a été posé en 1967 par le Gouvernement (Rikstag) lorsque, par force de loi, les municipalités ont été regroupées en blocs. Le nombre des municipalités a d'abord été réduit de 1,037 à 900 en-

viron puis partagé en 280 "blocs". Un second geste non moins déterminant a été posé en 1969 alors que par une nouvelle loi, le Rikstag obligeait les municipalités à compléter leur réforme avant le 1er janvier 1974, le système des 280 municipalités élargies entrant officiellement en vigueur à partir de cette date. En 1970, le nombre de "blocs" a été réduit à 275.

Tableau 1 :
Répartition de la population dans les nouveaux blocs de municipalités

Population	Nombre de blocs de municipalités	Pourcentage de la population totale	Pourcentage cumulatif
> 100,000	10	29	29
50,000 – 99,999	19	17	45
30,000 – 49,999	37	18	63
20,000 – 29,999	39	12	75
15,000 – 19,999	30	6	82
10,000 – 14,999	70	11	92
5,000 – 9,999	70	7	100
3,000 – 4,999	5	(0.2)	—
< 3,000	—	—	—
Total :	280	100	

Tableau 2 :
Répartition des municipalités et des "blocs de municipalités" suivant les dimensions de la population

Municipalités	Population	Blocs de municipalités
4	> – 100,000	10
17	50,000 – 100,000	19
20	30,000 – 50,000	37
22	20,000 – 30,000	36
27	15,000 – 20,000	33
47	10,000 – 15,000	70
161	5,000 – 10,000	69
260	3,000 – 5,000	6
342	< – 3,000	
Total : 900		Total : 280

Source : Odmann E. et Dahlberg G.B.; *Urbanisation in Sweden.*

Les trois niveaux de décision en matière de planification

Ce qui caractérise avant tout la législation suédoise en matière de planification, et en explique aussi son succès, est l'intégration et la cohésion des trois paliers d'autorité qui se partagent les diverses responsabilités. La structure municipale détient le rôle dominant de toute la politique de développement et d'organisation sociale de l'espace suédois. Propriétaires du sol urbain, tenues

de préparer les plans directeurs et d'estimer les besoins en logements, promoteurs des développements résidentiels, responsables des services publics, de l'enseignement primaire et des activités récréatives, chargées d'encourager la participation des citoyens dans le processus de prise de décision, les municipalités sont véritablement au cœur de l'organisation structurelle de la société.

Ce rôle prépondérant détenu par l'autorité locale rejoint les principes énoncés par Robert M. MacIver dans un remarquable ouvrage publié en 1947 : "Nous vivons dans des communautés ; nous ne vivons pas dans des états. (...) Le sens démocratique est dans le degré de liberté que l'état accorde aux communautés (...). La loi fondamentale de la démocratie est d'élever la communauté au-dessus de l'état (...). La démocratie est une forme de gouvernement ; elle ne doit pas s'imposer en façon de vivre."[1]

Résultat des élections parlementaires de 1970. Divisions établies le 1er janvier 1971.

B Stockholm	O Göteborg
C Uppsala	P Alvsborg
D Södermanland	R Skaraborg
E Ostergötland	S Värmland
F Jönköping	T Orebro
G Kronoberg	U Västmanland
H Kalmar	W Kopparberg
I Gotland	X Gävleborg
K Blekinge	Y Västernorrland
L Kristianstad	Z Jämtland
M Malmöhus	AC Västerbotten
N Halland	BD Norrbotten

Répartition géo-politique :

Blocs électoraux dans lesquels le parti social-démocrate seul ou avec la gauche communiste ont obtenu plus de 55 pour cent des voix.

Blocs électoraux dans lesquels le parti centriste et l'aile droite du parti modéré ont obtenu plus de 55 pour cent des voix.

Blocs électoraux dans lesquels la majorité est basée sur moins de 55 pour cent des voix.

19

Accorder aux municipalités le droit et les pouvoirs de s'autodéterminer, c'est reconnaître le caractère pluraliste de la société moderne et permettre à chaque groupe de s'individualiser et de s'exprimer à travers un environnement qui reflète une "personnalité communautaire".

Les récentes réformes municipales témoignent du souci du gouvernement central de maintenir les limites administratives à la mesure des organisations communautaires qui ont fait l'objet de plusieurs mutations au cours du présent siècle. Cette signification communautaire, que reconnaît à la municipalité la législation suédoise, explique la variété des facteurs sociaux et économiques perçus dans leur projection spatiale qui ont présidé à la deuxième réforme et ont conduit à la proposition des 280 territoires fonctionnels.

Tendre à l'équilibre, l'harmonie et la satisfaction des populations gouvernées est une utopie si l'on n'agit pas sur la structure dynamique et pluraliste qui caractérise les communautés modernes. Or, qui, mieux que la municipalité, est en mesure d'exercer cette tâche ? Il est vrai que l'assiette territoriale de ces communautés s'élargit avec l'extension des phénomènes d'échange et de circulation, requérant la délimitation de super-municipalités et la mise en place de gouvernements métropolitains, mais

rien n'empêche l'identification et la reconnaissance de sous-groupes qui, bien qu'appartenant à la structure globale, s'individualisent sous certains aspects et à ce titre demandent une attention particularisée. La structure démocratique de la municipalité est parfaitement apte à répondre à ce besoin par le processus des représentations locales. Finalement, il ne fait aucun doute que la participation des citoyens a plus de chances d'être effective dans un contexte d'appréhension communautaire.

Au-delà du système municipal, la Suède, comme le Québec, est dotée d'un système de comtés dont les responsabilités concernent certaines activités à influence régionale : santé, éducation secondaire, transport, emploi… D'autre part, chaque municipalité y délègue des représentants qui ont pour tâche d'assurer la préparation d'un plan directeur régional. Bien que ce plan n'ait pas force légale, il a pour but de guider l'élaboration des politiques et plans directeurs locaux. Selon la loi, des plans locaux qui seraient incompatibles avec les directives du plan régional auraient à démontrer leur validité avant d'être ratifiés par le Roi-en-Conseil. Mais l'autorité du Conseil de comté en matière de planification tient davantage dans le fait que tout plan directeur ou sectoriel local doit lui être soumis et recevoir son assentiment avant d'être ratifié par le gouvernement central.

Ce forum au niveau régional a pour principal objectif d'étendre au-delà des frontières municipales les perspectives et les options d'aménagement et de constituer un cadre officiel à l'intérieur duquel les forces structurelles et les ressources de la région sont étudiées suivant le principe démocratique de la re-

présentativité (locale). Cette procédure, qui est aussi appliquée en Angleterre, permet à chaque municipalité (local authority) concernée de définir et de défendre son rôle dans la préparation des plans régionaux de développement. La représentation effective des municipalités au niveau des politiques régionales assure une continuité et une intégration plus réaliste des objectifs respectifs et contribue à atténuer, sinon à faire disparaître, les rivalités entre municipalités voisines.

L'expansion économique accusée par les villes au cours des deux dernières décennies, et qui fut à l'origine de la redéfinition des territoires municipaux, a aussi rendu désuet le tracé de certaines limites de comtés. Les comtés étant perçus comme des entités fonctionnelles à un niveau supérieur, il devenait essentiel qu'ils correspondent à cette réalité dynamique engendrée par les fonctions urbaines en expansion. La distorsion apparut particulièrement évidente dans les régions métropolitaines de Stockholm, Malmö et Göteborg.

Bien que parties interdépendantes d'un vaste ensemble urbain, la Cité de Stockholm et ses municipalités voisines avaient des administrations séparées, ce qui constituait un obstacle sérieux à tout effort de développement harmonieux. À partir de 1964, on entreprit l'intégration des services en vue de la mise sur pied d'une autorité régionale unifiée. À la suite de plusieurs intégrations sectorielles, le nouveau Conseil du District de Stockholm entra finalement en vigueur le 1er janvier 1971. Les municipalités conservaient leur statut, mais

leurs activités étaient dorénavant passablement restreintes. Le nouveau Conseil du District de Stockholm prenait en charge la planification régionale, l'administration des transports publics, l'épuration et la distribution des eaux, la planification des services hospitaliers et de l'enseignement secondaire, la protection des espaces verts et pouvait aussi agir en tant qu'autorité du logement (à titre complémentaire toutefois des autorités municipales).

Parce que sur le plan financier le Conseil du District de Stockholm, avec ses 30,000 fonctionnaires, représente une opération économique d'envergure, le gouvernement central l'a doté d'un droit de perception de taxes sur les revenus (à l'intérieur de certaines "limites politiques").

Il existe présentement 24 comtés mais des études sont menées en vue d'une refonte de leur territoire. On estime que leur nombre sera réduit à 15 environ.

L'autorité du gouvernement central en matière de planification réside principalement dans son contrôle sur tout projet de développement. Le Rikstag exerce aussi un pouvoir régulateur sur la construction domiciliaire, puisqu'il attribue des prêts aux municipalités en accord avec ses propres programmes d'habitation et de construction qui sont définis selon ses politiques de décentralisation économiques et démographiques et de développement régional. À noter toutefois que les prêts accordés par le gouvernement central sont d'abord acheminés aux conseils de comtés qui en assument la répartition.

Il n'existe pas de Plan national de développement, mais les conflits qui ont surgi au cours des dernières années

opposant les intérêts industriels et récréatifs relatifs à l'usage de certains sites côtiers militent de plus en plus en faveur de la préparation d'un tel plan. En plus de fournir un guide aux administrations régionales et locales, l'élaboration de ce plan fournirait l'occasion de développer une banque d'information qui serait d'un précieux recours non seulement aux différents paliers de gouvernement concernés, mais aussi aux ministères, voire au secteur privé.

Ainsi, trois points majeurs caractérisent l'appareil législatif qui régit l'organisation et la planification des espaces habités en Suède :

les municipalités sont au cœur du processus de développement et de planification ;

les territoires municipaux sont définis d'après des critères de fonctionnalité (et aussi les comtés) ;

les pouvoir législatifs sont répartis suivant un système vertical et intégré des responsabilités.

Pour une philosophie du développement urbain

En quête d'une philosophie et d'une politique de développement urbain, le Québec n'a d'autres choix que celui que lui imposent les forces et les structures socio-économiques de la société qui l'habite. Or ces forces et ces structures sont à découvrir, à qualifier et à quantifier et pour cela il importe que les dimensions dynamiques et culturelles[2] soient incorporées aux cheminements d'études.

D'autre part, si l'approche théorique et les méthodes techniques constituent des facteurs indispensables au succès et à l'efficacité d'une politique globale et intégrée de l'aménagement du territoire, le levier de toute action déterminante demeure au niveau des pouvoirs politiques. Le gouvernement doit être convaincu de la nécessité, voire de l'urgence, des réformes à entreprendre et résolu à négocier fermement les différentes phases de réalisation auprès des institutions et des groupes concernés. Informer, éduquer, animer... et écouter, sont des tâches qu'il devra accomplir adroitement, car l'opposition ou la collaboration en dépendent.

[1]MacIver, Robert M., *The Web of Government*, New York, Macmillan 1947

[2]Le géographe Marcel Bélanger s'est particulièrement intéressé dans ses travaux à la dimension culturelle des communautés locales comme groupe de variables importantes dans la compréhension de leur organisation sociale et de leur répartition dans l'espace.

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Photos :

3 Un ensemble résidentiel en voie d'achèvement.

4-5 "Norrgården" offre à ses locataires–des personnes âgées–un confort étudié et toute l'intimité désirable.

6 Cette maison de convalescence, inaugurée en 1956, demeure l'une des plus modernes de la capitale suédoise et peut abriter 206 personnes âgées.

7 Maison de retraite pour personnes âgées construite à Stockholm.

Les documents photographiques utilisés dans cet article ont été aimablement communiqués par l'Ambassade Royale de Suède à Ottawa et le Service suédois d'information à New York.

A Farewell Tour of the Van Horne Mansion

by Michael Fish

Sir William Cornelius Van Horne was builder and second president of the Canadian Pacific Railway. He took the daring gamble which produced a railway line along the rough northern shore of Lake Superior.

In 1890, Sir William purchased a magnificent house on Sherbrooke Street in Montreal. He hired Edward Colonna, a young architect from Dayton, Ohio, to redesign the interior. Mr. Colonna later designed a pavilion for Samuel Bing at the Paris World's Fair, the building which is generally accepted as the first example of the Art Nouveau Style which swept Europe in the first decade of this century.

Sir William died in 1916. When his second wife died in 1967, the Sherbrooke Street mansion was put up for sale. The price was $1,000,000. Offered the house by the trustees, both the CPR and the Montreal Museum of Fine Arts, among others, declined to buy it. Despite the efforts of an enthusiastic preservation group, the house fell beneath the wrecker's ball last September.

One of the difficulties encountered by those who wanted to save the historic house was their inability to enter and make an assessment of the interior. Fortunately, Professor John Bland of McGill University did get inside the house before it was demolished. He presented the following report on it.

"This house was built some time before 1881, possibly in 1869. Lovell's Directory shows John Hamilton as the occupant of 917 Sherbrooke from 1869–1890. Its outline is shown in the Goad Survey of 1881 in which it appears as a squarish block with small rectangular projections on the centre front and on the centre east side. In the Goad plan, there appears to be something resembling a gallery on the back (north side), but on the west side there is a big shallow segmental projection identical with the present building.

It is known that when Van Horne purchased the house in 1890, he altered it. He altered it again in 1912. This last alteration was an extension at the rear which is relatively easy to detect on the outside.

Comparing an outline plan of the house today with the plan shown in the Goad Survey, it is clear that the semi-circular projection on the centre of the front is new, replacing a rectangular projection which may have been an entrance porch. The side entrance appears also to be post 1881, as well as the conservatory and the dining room wing which breaks the rectangular plan and extends to and includes the roof.

The interior central hall is consistent throughout the house; the entrance seems always to have occupied its present position. Neither the dining room nor the studio above it appear to have been altered in any way. There is on the other hand a slight difference in treatment between the drawing rooms and other rooms on the ground floor. In these, we find painted and gilded wood and some sort of embossed frieze, but the doors throughout the ground floor are exactly the same in all rooms. These doors are completely flat without projections. Their panels are clearly defined by a sunk bead and reel decoration which occurs in other parts of the house, notably the dining room.

One cannot avoid the conclusion that Van Horne probably refitted the whole of the ground floor, and possibly the first floor in 1890, when he extended the dining room and studio above it. He may also have changed the roof which is covered with copper sheets and would more likely have been slate and painted tin in 1869. The extension in 1912 is in the same spirit and is not easily detected in the interior. One feels there would have been a decidedly greater difference between the work of 1912 and 1869. Therefore the whole interior is probably 1890 and 1912.

The glazing of the windows is consistent throughout the house including both the original, 1890 and 1912 parts. This glazing seems not to be typical of 1869.

The decorative details do not ape any particular style. They are subdued and extremely refined as compared to usual 1870 - 1890 ornamental treatments in Montreal. The walls have a background quality. Many are plain velvet stretched smoothly to the ceiling above a simple dado and finished by a delicate cornice. The ceilings are flat and unornamented. The electrical fittings are handsomely fragmented, original in form and in no cases reproductions of earlier chandeliers. The hardware is also free of historic prototypes and is faintly art nouveau (particularly the entrance door hardware which is specially prominent). One notes decorative glazing in inner entrance doors which appears to be quite exceptional.

The spacious orderliness of the plan, the careful attention to major and minor axes, the good proportions of the rooms, the balanced arrangement of the doors, windows and fireplaces, and the generous walls for pictures are outstanding architectural features of the design of the building. The house seems clearly to have been designed for the display of works of

1 The drawing room in 1953
  with the present
  Mrs. William Van Horne.
  Paintings include an
  El Greco, 2 Hals,
  and 4 Rembrandts
  (photo Mayfair 1954)
2 Exterior
3 Ground floor Main Hall
4 Ground floor Sitting Room
5 Sitting Room
  (Photos 2–5
   Notman Photographic
   Archives)

art. It is, as Walter Baughan, biographer, reported, "itself a work of art".

Both the extensions of 1890 and 1912 have a loftiness which adds greatly to the spaciousness of the house and shows Van Horne's architectural imagination. The dining room is higher than the other ground floor rooms. This requires a short flight of steps up to the "Studio" which occurs on the floor above it. The studio is also a high room extending into the roof space and has an immense window (an extremely early modern architectural feature). In the extension of 1912 the centre hall was given a large high window reaching up to the ceiling of the upper floor central hall. Here there is also a big skylight which adds to the feeling of height. This space provides splendid well-lit walls for hanging pictures or tapestries which can be enjoyed from both floors. The billiards room in this extension also has very large windows to the north east. All Van Horne's additions have "window walls".

Edward Colonna's taste is apparent in the leaded glass throughout, particularly in the studio book cases and possibly the glazing of the inside front door, the door hardware, also the entrance doors, the newel post and balusters of the stairway. The miniature architectural orders in the mantelpieces, dining room cabinets and exterior balustrade around the semi-circular projecting terrace at the centre front also suggests the careful architectural training of the designer.

The symmetry of the plan, feeling for volume and respect for major and minor axes also suggest architectural competence of a high order. Colonna was a well trained architect. CPR records show he also designed several buildings for the railway".

There are few houses, anywhere, of this date (1890) that showed a more assured and original taste, were better preserved, potentially useful or more publicly accessible. Most big houses of this time were capricious, vulgar or imitative.

In its volumes, in the way it was set upon the street, and in its relation to its neighbours the Van Horne mansion was exemplary from the standpoint of modern civic design. It indicated an exceptionally pleasant combination of low bulk, with small garden (vegetation) in relation to a neighbouring high building. How such a happy distribution of urban bulk can be regularly achieved challenges contemporary urban designers.

BOOKS

The Dynamics of Housing Rehabilitation
by David Listokin,
Rutgers University, 1973. 233 pp.
$10.00.

Because it is impossible to replace the sub-median housing stock on any scale in any society in a reasonable time, housing rehabilitation as a cheaper and quicker alternative is assuming greater importance for the planning of housing improvement.

David Listokin's book somewhat rapidly analyses the recent experience on rehabilitation in major U.S. cities. Starting with the high hopes of the Kennedy era, the study analyses the major restraints to rehabilitation—financing, the problems of acquiring suitable properties, the problems of management and maintenance, rigid government and Federal Housing Association (FHA) rules and standards, the administrative difficulties, and a host of associated-problems such as vandalism, rent delinquency and landlord-tenant and racial problems, in which the tendency to abandonment by landlords plays a prominent part.

Additional constraints to rehabilitation were the problems of attracting contractors with the rare and specialised skills needed, insurance problems, community opposition to the evacuations required to rehabilitate successfully, difficulties in estimating costs, and rigid building codes. One extreme example of this was insistence on copper pipe, the value of which encouraged vandalism in the rehabilitated dwellings.

Strategies to enforce rehabilitation by code requirements are claimed to have failed, largely because of landlord abandonment, while strategies to encourage it by tax incentives, improved financing, and new rehabilitation technology receive a pessimistic appraisal, as do strategies to facilitate rehabilitation. Not surprisingly this macro section of the book reads like a horror story of difficulties and failures. An extreme case describes the rehabilitation of sound but sub-standard dwellings, the tenants being displaced by higher rents, and the building then being vandalised and abandoned.

After this tale of woe in section 1, a successful rehabilitation project in Camden, New Jersey is analysed in section 2. Camden showed all the familiar problems of most large U.S. cities in an extreme form; a shift in its racial and economic composition, a high proportion of sub-standard housing, (20% of 7,500 dwellings) increasing expenditures, declining tax base, a flight of industry, crime and other social problems, plus a declining population. In 1964 five local groups, Campbell Soup, RCA Corp., Bank of New Jersey, South Jersey National Bank and the Dorrance Foundation combined to form the Camden Housing Improvement Program (CHIP) and carry out rehabilitation for "moderate income" families (up to $6,500) with federal home ownership programs, chiefly those carrying a 1% rate of interest.

Even with such a large volume of sub-standard stock CHIP had considerable difficulties in finding and acquiring suitable properties, but finally decided on rehabilitation of vacant dwellings to "as new" standards. The average total cost of a house rehabilitated by these methods was some $13,000 with an average Principal, Interest and Taxes (PIT) of only about $60 a month, and a total occupancy cost of about $130 a month, including maintenance and utilities. Most of the 400 houses rehabilitated were sold to Black or Puerto Rican families on public assistance; and the "before and after" photos are impressive and revealing.

In assessing the relevance of the book to Canadian conditions there seems little doubt that, as usual, the problems in Canada are much less serious and polarised, and that our efforts should therefore be much more successful. It is a valuable reminder, however, of the difficulties of carrying out rehabilitation as compared with those of arranging for the construction of new dwellings. For example the need to develop special skills, experience and firms, the problems of retaining or displacing families while rehabilitation goes on, the questions of standards, techniques and building codes, and the difficulties of mounting successful programs of any size, must all, it appears, be resolved by sound but flexible guidelines, and learning by experience on a small but rapidly expanding scale.
D. J. Reynolds.

Heritage A Romantic Look at Early Canadian Furniture
By Scott Symons,
Photography
by John de Visser,
McClelland and Stewart,
Canada
108 pp. $22.50.

In taking a romantic look at early Canadian furniture in his book "Heritage," Scott Symons, assisted by photographer John de Visser, has succeeded in not having a pattern of comparison and at the same time being very satisfying. In achieving the latter, he has left us with a desire to know more of the subject.

To those interested in their national antecedents and in seeing how their forebears lived, the book is a real joy. Not only from those aspects, but from the view of period design, it contributes much in drawing together the correlated visual aspects of the way of life of an era.

It cannot be claimed as a definitive work on so vast a subject, since it confines itself to the Maritimes, Quebec and Ontario. But the author, a specialist in his field revealing a love of his subject, which John de Visser has visualized on film, succeeds in capturing for eye and imagination the broad spectrum of the Upper Canada way of life in those early days.

At the present point in Canadian national history, moreover, it portrays to some degree the difference of the two founding cultures in their tastes and backgrounds.

Although the emphasis is on furniture, there are sufficient other ancillary illustrations to justify the claim that the sub-title A Romantic Look at Early Canadian Furniture could be misleading, albeit, if it was intentional, it was both charming and subtle. The choice of illustrations has on the whole been a happy one, complemented by sensitive photographic treatment in highlighting and focusing. This treatment throughout the book shows great feeling for the subject and where, at times, the slightly unorthodox approach may disturb some, it quite obviously makes its point.

The texture of materials and detail are beautifully brought out in the superb colour reproduction. However, the black and white half tones are in many instances less than satisfying and often do not do justice to the subject.

It is interesting to learn the colour printing is the work of Italian craftsmen, thus invalidating any claim to complete Canadian production. While the publishers are to be commended for their good taste, it seems a pity Canadian printers were not permitted to do all the work.

Not the least appealing to this reader was the choice of captions which do much for the book's atmosphere. The detail, design, craftsmanship, texture and woodgrain in the furniture and the architecture and lighting, make it a valuable reference work for the collector and antiquarian, and of more than passing interest to the photographer.
E. R. F. Edelsten

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Scientific Methods of Urban Analysis
Anthony J. Catanese,
University of Illinois Press, 1972.

Designed as a basic introductory text to the theory and applications of scientific methods for students of urban systems, this book will be of considerable assistance to non-mathematically minded urbanists at all levels. Its main strength is in illustrating the application of techniques discussed from actual studies, suitably footnoted so that the reader may pursue those of particular interest in more depth. Description of the methods themselves is limited, avoiding the mathematical or statistical bases in most cases. Although the author alludes to specific limitations of some methods, the lack of a sound grounding in statistics would be a severe handicap to anyone attempting to apply techniques which are poorly understood. In leaning over backwards to accommodate the statistically ignorant, the author may leave some students with a reinforced "ignorance is bliss" attitude, which, when tools fail to produce desired results due to misuse, could lead to their abandonment in frustration.

The book is divided into five parts. The first introduces the student gently to mathematical notations and touches on the problem of non-quantifiable values in optimal solutions, concluding that scientific analysis must be tempered with an intuitive understanding of human and community values.

The second part deals with Predictive and Estimating models. Commencing with a short elementary review of the matrix method, its application to demographic projections (the age-cohort survival method and to the goals—achievement matrix for testing alternative solutions). Simple and multivariate linear models (correlation and regression) are discussed in more detail and well illustrated by reference to a migration model. Step wise regression is demonstrated with the S.E. Wisconsin Regional Planning Commission Model.

In conclusion, linear models are described as among the best scientific methods applicable to urban analysis, provided the user is aware of their limitations. Of these, only the fallacy of inferring causality is elucidated. The problem of independence of variables and errors due to collinearity are not mentioned, while the normalcy requirement is seen as "a mathematical problem which still merits attention." Granted the simplicity of the method, the reason for its popular overuse and misuse, a work aspiring to be a basic text should surely devote more than half a page to the pitfalls of linear models.

Non-linear models are considered as inherently linear (that is susceptible to transformation, e.g. exponential) or inherently non-linear, such as the polynomial, Gompertz and the Read-Pearl model. As far as the relative application of these models we are told, "The best that we can do for the present is to make a good guess about the type of non-linear model to use, and then we can compute correlation coefficients and error terms to see how well we did".

While linear and non-linear models are deterministic, another major group of predictive models are probablistic, intrinsically more appealing as they cope with a world of uncertainty. Poison, Gamma, and Normal Distributions are defined, but the treatment of Markov Chains is rather limited considering the popularity of the method. No studies using these techniques are discussed.

The third part of the book looks at optimizing models, beginning with the rudiments of calculus. Linear programming, an increasingly popular tool in urban administration, management and economic development, optimizes problems stated in linear terms, subjected to linear constraints. It is inappropriate for treatment of non-linear problems, a point which could have been made more emphatically. Isaard's use of the technique for assessing regional economic development potential is probably the best known application. That application of linear programming is still in its infancy vis-à-vis urban analysis, and is perhaps not stressed as much as it might be.

Other types of mathematical programming (non-linear, dynamic and stochastic) are touched upon but with less than encouragement to the potential user. They are not well tested in urban analysis, not always solvable for some problems, and their sheer mathematical complexity is sufficient to deter all but the painstaking. Consequently illustrations of their application are scanty. Perhaps it is too much to expect a basic text to explore these difficult areas more fully.

Simulation, the current Cinderella of analytical techniques, is an approach to modelling the urban system embodying three basic forms (analogue, iconic and symbolic) which may be deterministic, such as the gravity model developed by Zipf, or stochastic (random) of which the best known is the Monte Carlo method. Queueing or waiting line theory is a special type of simulation with both random and non-random components, hence optimisation is possible. As Catanese eloquently says: "Upon introduction, simulation has a tendency to blossom into love at first sight with many neophyte urban analysts . . . but we offer the fatherly advice of putting off the wedding until one has learned more about the family and background of the intended". However, the approach has been widely used in urban development modelling, as in the Pittsburgh urban renewal model, residential development modelling by Chapin et. al. at North Carolina, and in the San Francisco Housing Market by A. D. Little which developed into the broader Bay Area Simulation Study (BASS).

The other major type of simulation illustrated here is urban dynamics as developed by Jay W. Forrester. The main criticism of the method has been its assumption of a closed system, although this would appear to be an essential abstraction for most urban analysis. More serious is the problem of interpreting the results. The counter-intituitive basis generally yields criticism of past policies and can be used to prove just about anything the analyst wishes. In short this is a somewhat controversial technique.

Gaming, a special type of simulation, has the advantage that analysts can learn and understand more about urban problems, systems and dynamics, but Catanese criticises the use of gaming for predictive and estimating decisions based on the learning experience of the players. The general feeling is that if participants played with their own money the

outcomes would be very different. Among the numerous applications of gaming, New Town, Metropolis, and CLUM (Cornell Land Use Model) are given as examples of first generation games, while Region I and City I are second generation games used widely in teaching, and third generation games, Region II and City II, are still in experimental stages. However, operational gaming is, as the author points out, in the twilight zone of science and art and students should not have too many expectations of gaming as a scientific tool. The treatment of gaming and simulation is a thorough, comprehensive review.

The final section deals with the underlying data base required for any urban analysis, and the popular trend toward information systems for organizing large bodies of facts. Distinguishing management information, required for day to day operation from programming and planning information, he steers through the jargonese of hardware, software and "the man-machine interface" with great dexterity. He illustrates the strategic approach to I.S. from his own consulting experience (in Wisconsin, Hawaii and Georgia) as well as discussing three classic applications (in the Alexandria Georgia Databank 1964, the Metropolitan Centre Data Center Project in 1961–1966 and the California Statewide Integrated Information System completed in 1965). While advocating the potential of such systems the author neglects to discuss the dangers of developing systems that are too sophisticated for the needs of a particular organization, or more seriously the increased problem of protecting individual privacy, an issue being seriously debated in central data collecting agencies such as the U.S. Bureau of the Census and Statistics Canada. On the whole however, this is a good capsular review of the ins and outs of information systems.

An interesting book in its scope and dedication to simplicity, this is a praiseworthy effort in a field riddled with technical terminology. It certainly lives up to the author's claims as an introductory text for urban analysts, while some sections go far beyond that modest description. It should greatly enhance appreciation of the techniques discussed. If any one general criticism seems justified it is the lack of guidance offered in selecting appropriate techniques for a given problem, which might have been covered by way of general conclusion. Hopefully, however, the neophyte urban analyst will be encouraged to delve more deeply into the mathematical bases, strengths and limitations of the broad range of tools presented in this book.
Pat Streich

The Future of Canadian Cities
by Boyce Richardson,
New Press,
Toronto, 1972.
256 pp. $7.95.

A survey of the urban crisis "by the layman for the layman", this is a book primarily about politics, discussing the options open to us for shaping the urban future. Urban experts are criticized for failing to communicate the results of major studies to the "layman", where the knowledge is needed to make decisions via the political process.

The book falls into two main sections, the first, discussing the political context of urban development. From the FLQ crisis in Montreal, the demise of FRAP and its far-sighted political platform, the reader is lead through the foreign investment issue in Canada's struggle for an independent identity and international planning experiences (London, Greenbelt, New Towns, the Rim City), to a special look at the "Swedish case", demonstrating the feasibility of centralized planning, which, the author implies, extends from commitment to an egalitarian ethic. Hence,

"We need an increased commitment by the Canadian people to an egalitarian ethic. We will never be able to build the institutions needed to keep the pressures of urbanization under control if we do not accept that the basic problem is to redistribute wealth...we have to change our economic system in such a way that the public can decide the disposition of created wealth".

This central theme, that effective development controls are contingent on egalitarianism, seems at first sight to confuse two concepts. Intuitively, the reader might agree that controls are less likely to work where wealth and attendent power are highly concentrated. However, degrees of social planning are being attained in many nations without commitment to complete social, political and economic equality. While later chapters bring forward evidence to support the case for some planning (or regulation through development controls), there is little further discussion of the egalitarian ethic or how this relates to planning issues.

The chapter describing the spawning of the Ministry of State for Urban Affairs is entitled, "The Feds to the Rescue!" and is an excellent piece of journalism in its own right, concluding with the switch of Robert Andras to Consumer Affairs.

The second part of the book is essentially an attack on adherence to the free-enterprise profit-making system to the exclusion of the "public good". The author focusses first on the question of land and who should own it, as central to planned urban development. Other countries have achieved controlled urbanization only by public intervention in the land market. In Canada, a strange anomaly exists between the countryside, where most land is publically owned, and urban areas, where for some reason, individual land ownership is regarded as an inalienable right. He notes a further important point, the need for a whole range of complementary policies, "planning by itself actually inflates land prices". The basic issue is clear, should the public interfere with market forces in controlling land prices and, to what extent is a modification of laissez-faire politically tolerable? Further to this, where such public intervention is adopted who should benefit from the controlled prices and lower development costs? This is certainly a hotly debated issue at present, but so far no solution has been found to the tremendous cost of an effective public land ownership option. Richardson does not examine alternative forms of land control short of out-right public ownership, although these may be equally effective and much less costly.

On the emergence of regional government in Canada, the Montreal Urban Community, stunted in size and power, is seen as the unwilling foundling of the Bourassa administration, while the first action of the Victoria regional district was to control firecrackers. Ottawa he feels is the most mysteriously governed city in the country. However, Canadians are in the forefront of urban government innovations in North America with several variants on the regional theme, which the author feels lends hope for optimism.

Transportation is sometimes as emotional an issue as is land. If the right to own a plot of land is paramount in the North American tradition, it is followed closely by the freedom of all to use their automobiles. Public transit is seen as impinging on the rights of the individual, and implicitly, a sign of creeping socialism. The Toronto subway, is a success story, but even it has hit financial problems, raising the central issue of investment in public rather than private means of transportation. It is clear where Richardson stands on this issue as on others, but his approach of selective reporting anti-expressway battles is rather inadequate justification.

Major development projects in downtown areas have become an issue recently in Canada, another manifestation of profiteering in which poorer people tend to get squeezed out. Power and political clout is on the side of big money, so generally the little man loses (possibly a point to support the case for egalitarianism?) Supposedly cash-poor municipalities, are easy prey to developers promising higher tax revenues, so the author suggests that the provinces lift more costs from the city's shoulders especially education, social welfare and transport. He fails to develop the potential source of revenues from land control advocated earlier, when these two are potentially interrelated.

"The Poor Begin to Resist" alludes to the housing problems of Canada's poor, drawing on the Report of the Low-Income Housing Task Force. Public housing is criticized as falling short of the need and creating ghettos of the urban poor. The 1970 special $200 million program is criticized for its failure to make housing available to the poorest fifth in society. "That one fact", he feels, "is a measure of our failure in recent years". This conclusion seems unwarranted given that the program was targetted to people earning between $4,000 and $6,000, and the average income of house purchasers under the program was $5,600. With respect to citizen action groups in this field, the evident dilemma is that although government intervention is alien to their objectives of self-determination, in the end some such intervention is essential to help the poor. While advocating more local activity and participation in decision-making, the author offers no solution to the paradox he has identified vis-à-vis the future of citizen's participation, or the broader question of reconciling local action groups' interests with broader community objectives, a problem that emerged from John Sewell's experiences in his book "Up Against City Hall."

Recreation, a day in the country away from urban pressures, is another vital area of potential public intervention. No one would dispute with the author that access to outdoor recreation space becomes

increasingly essential as urban centres grow or that Canadian cities are among the world's most fortunate in having wonderful recreation potential right at their doorsteps. That Canada is not making the best use of such potential is more debatable. The author makes no reference to Canada's extensive network of national and provincial parks which provide millions of less affluent families with an annual camping vacation with fishing, boating, swimming, and many other amenities at nominal cost to the user. Nor does he consider the resources devoted to public arenas, pools, skating rinks and other sporting facilities provided by municipalities. As a result his argument on the recreation problem is weaker than some of his others. Surely there can be no objection to the middle-class paying for their skiing?

Pollution it seems is yet another in the seemingly endless evils attributable to free-enterprise. Moral indignation has taken the place of action in this, as in other problem areas, while the cost of dealing with pollution is comparatively small according to a U.S. budget office study quoted. While Sweden is moving to tertiary sewage treatment plants, Montreal has been talking about a primary treatment plant since 1930. The author seems rather more out of his depth in this area than in others, and the reader is left with the feeling that there must be more to pollution problems than money-grabbing businessmen.

No Canadian book is complete without reference to the mystic North, here designated the Wilderness. The imperialist metropolis sees the vast hinterland waiting for someone to come and plunder its riches with little thought to the rights of indigeneous peoples. The government is backing schemes like the Mackenzie Valley and James Bay Projects and not "representing the public interest adequately". This energy policy issue is certainly attracting increasing attention with evident energy shortage problems in the U.S. but Canadian public opinion seems less decided on the issue than Richardson's wishful thinking might indicate.

In conclusion, the author affirms that "our entire society is organized to serve capital and the owners of capital (just as is American Society), and unless we change that orientation fairly sharply, there is no chance that the quality of Canadian life can improve in the next twenty years".

Basically the book has an optimistic tone, that Canadians can control their future and affect the quality of their environment. That the author sees this stemming from dedication to an egalitarian ethic, a massive redistribution of wealth, is his own particular perspective and should not be allowed to invalidate the issues he raises which are germane to the quality of life. The central issue of defining the public good and ensuring that politicians enhance it, would seem to be of more pressing concern, given the existing capitalistic structure. There is no guarantee, for example, that special interest groups, such as neighborhood community groups or the native peoples will be any more predisposed to act for the general public good than the entrepreneur. Essentially, these lobbies are acting in their own interest first and foremost, and while they may be useful counterweights to the developers, the public good must still rest in the unwilling hands of our politicians whether city, provincial or federal. Despite its title, the book deals with the quality of Canadian life in all its aspects and does not tackle specific urban problems in any great detail. Some, such as the future of our present suburban sprawl are not dealt with at all. The book succeeds in articulating a large number of issues but in the words of the old axiom, any fool can see what's wrong, but to see what's right requires real insight. Since Mr. Richardson is certainly no fool, we might have expected more than a catalogue of problems, however eminently readable.

Pat Streich

habitat

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by D. J. Reynolds

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The Energy Problem and Housing

The energy problem, precipitated by the current energy "crisis," apparently has considerable short and long-term implications for housing, its heating and its insulation. A general outline of the energy problems facing Canada will be given, followed by an analysis concentrating on the implications for housing, both short and long term.

The general energy problems facing Canada

There is a minor difficulty in discussing the energy problem and that is the confusing multiplicity of units that have to be considered. To minimise this difficulty, I have decided to use the British Thermal Unit (BTU is the amount of heat required to raise the temperature of 1 lb of water 1°F) as much as possible.

The energy problems of Canada have been well discussed in *An Energy Policy for Canada Phase* 1.[1] They may be summarised by saying that from an economy which was, at the end of World War II, largely dependent on coal, wood and hydro-electricity based on inexpensive accessible supplies at stable or declining prices, a growing Canada has changed, in the main, to an oil and natural gas economy. Oil and natural gas now account for two-thirds of Canada's total energy supplies and consumption.

With the diminishing availability of conventional and accessible reserves (at least of oil) it is essential to raise prices to encourage exploration and economy in the case of oil, and to encourage exploration, development and market penetration of Central and Eastern Canada in the case of natural gas, which is under-priced in relation to other fuels.

With the necessary price rises, exploration, development and economy in use for nearly all forms of energy, *An Energy Policy for Canada* does not envisage any radical shift away from oil and gas to meet the quadrupling of energy requirements up to the year 2000, but after that it predicts a gradual switch to an "electric society," based largely on nuclear energy for which fuel (uranium, etc.) will be adequate up to the year 2050.

The recent history of primary energy consumption by transport, industry, and housing and commerce in about equal proportions and the tentative forecasts for the year 2000 are set out in Table I.

Table I

Primary Energy Consumption by Source of Energy. Canada 1945–1970–2000.

Trillion (10^{12}) BTU's

Source of Energy	Year, Number and Percentage of Total.					
	1945	%	1970	%	2000[2]	%
Oil	397	19	2,836	44	11,000	41
Gas	49	2	1,250	20	5,600	20
Coal	1,105	51	709	11	1,900	7
Hydro-electricity	369	18	1,560	24	3,400	13
Wood	225	10	80	1	0	0
Nuclear electricity	0	0	10	0	5,100	19
Total	2,415	100	6,445	100	28,000	100

In giving this overall picture for Canada it must be remembered that geography, transport costs and foreign trade are of great importance. Broadly speaking, the main centres of energy consumption are in Ontario and Quebec, while the main centres of energy production and reserves are in the Prairies (mainly Alberta), the Northwest Territories and the Arctic, with the possibility of reserves off the Atlantic Coast. Oil is exported in the west and imported into the Atlantic provinces and Quebec. This may be rectified by the extension of oil and gas pipelines and local discoveries. Coal is exported in the west and imported into Central Canada. Hydro is mainly produced and consumed in Ontario and Quebec. Gas is produced in the Prairies and is consumed as far east as the Ottawa valley. Nuclear power is potentially almost ubiquitous.

[1] *An Energy Policy for Canada* Vols. I and II.
Dept. of Energy, Mines and Resources.

[2] Consumption of oil and natural gas could vary complementarily by up to ± 2,600 trillion BTU's.

The historical trend and the future outlook for energy may be summed up as an increasing dependence on cheap and accessible oil and gas at stable prices, depleting conventional Canadian reserves to 15 years for oil and 25 years for gas at current rates of consumption.

Higher prices[3] (over and above the general rise in price levels), greater exploration and development, and greater economy in oil consumption, as well as increased development and market penetration for natural gas, and the development of nuclear energy on a rapidly expanding scale, are expected to rectify the problem of depleted reserves.

Housing and energy consumption 1971–2000–2050

In the analysis of housing and heating there is an immediate problem in dealing with the ambiguous nature of electricity consumption which, though not extensively used for heating, has a considerable heating effect. Following the practice in the energy policy study it has been decided to omit electricity used on non-heating account. Another problem is the apparent inclusion of fuel used for farm purposes with domestic consumption that may lead to over-estimating the domestic consumption in agricultural areas such as the Prairies.

With these reservations the residential fuel consumption of the households in Canada and the five regions for 1971 are shown in Table 2.

Despite the reservations that must be attached to these figures, the data show the domination of the home heating market by oil and natural gas. Oil accounts for about 71 percent and gas 27 percent of the market. Oil predominates in all regions except the Prairies where gas is dominant, although natural gas is close to achieving parity with oil in British Columbia and Ontario.

The consumption and expenditure per household in the regions are the result of many factors, principally the age, type and insulation of dwellings, the climates and the prices of fuels. Compared with the national average consumption of 152 million BTU's per household, the greatest average consumption (200 million BTU's) is in the Atlantic provinces and the lowest average consumption is in British Columbia (116 million BTU's).

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[3] The windfall profits (or economic rents) on accessible reserves will be absorbed by taxes, royalties, etc. as far as possible, without discouraging exploration and output, which are extremely costly and risky in "frontier" areas.

Table 2

1971 Domestic and Farm Energy Consumption for Heating.

Canada (6 million households)
Light Oil
Natural Gas
Kerosene
Heavy Diesel Oil
Liquid Petroleum Gas
Electricity
Coal and Coke
Total
Average consumption per household per annum
Average expenditure per household (1969)
Atlantic Region (480,000 households)
Light Oil
Kerosene
Coal
Other
Total
Average consumption per household
Average expenditure per household
Quebec Region (1,610,000 households)
Light Oil
Heavy Oil
Kerosene
Other
Total
Average consumption per household
Average expenditure per household
Ontario Region (2,230,000 households)
Light Oil
Natural Gas
Other
Total
Average consumption per household
Average expenditure per household
Prairie Region (1 million households)
Natural Gas
Liquid Gas
Diesel Fuel
Kerosene
Total
Average consumption per household
Average expenditure per household
British Columbia Region (680,000 households)
Light Oil
Natural Gas
Kerosene
Liquid Gas
Other
Total
Average consumption per household
Average expenditure per household

	434
	251
	79
	70
	52
	12
	11
	909

152 million BTU's
$130

	66
	23
	3
	5
	97

200 million BTU's
(1969) $180

	154
	29
	24
	26
	233

142 million BTU's
(1969) $120

	162
	105
	41
	308

136 million BTU's
(1969) $133

	103
	24
	24
	12
	171

171 million BTU's
(1969) $127

	32
	29
	7
	7
	6
	81

116 million BTU's
(1969) $137

Table 4

Implied Housing Stock and its Heating, 1969 and 2000

| Fuel | Date and Occupied Housing Stock (000's) | |
	1969	2000
Oil	3,900	2,700
Gas	1,500	6,100
Coal	100	0
Electricity	100	1,200
Totals	5,600	10,000

Table 4 implies not only that nearly all new buildings built in the future will be fired by natural gas or electricity, but that a minimum of 1.2 million oil-fired dwellings will convert to natural gas as it penetrates markets further with relatively low prices and adequate supplies. Given the national and local pipelines such a conversion would not be too difficult or costly.

Alternatively Table 3 may be interpreted to mean that all new dwellings will be heated by natural gas or electricity, but with a one-third saving in consumption per oil-heated dwelling resulting from higher prices, better insulation and so forth.

It is impossible to say how far the conversion or the oil-saving hypotheses will hold, but the evidence of the energy policy study is towards most new dwellings being heated by natural gas and electricity as soon as possible with virtually no growth in oil-heated dwellings and with increased economy in oil consumption.

If this evidence and forecast is at all accurate the switch towards natural gas and electricity is all the more urgent because, of the required increase in housing stock of 4.4 million from 1969 to the year 2000 (nearly all in Ontario, Quebec and British Columbia), no less than 3.75 million must be provided by 1986 and, with falling birth rates, little further housing stock may *ever* be required.

However, there must be reservations about this forecast switch towards natural gas, because the half-life of housing seems to be about 80 years (implying that half the houses built in 1970 will still be occupied in 2050) and with the long-term need to switch towards nuclear energy from 2000 to 2050, coupled with the costs of conversion to electricity later, a stronger trend towards electricity may be the better long-term policy.

Further implications for the consumer and housing

It has been stressed that to develop the necessary supplies and secure the necessary economies, substantial price rises will be required for home heating fuels—oil, gas and electricity. Although the energy policy study has some estimates of the responsiveness of supplies, it is not possible to accurately estimate what price rises will be necessary to establish an equilibrium between demands and supplies. It seems clear that, based on preliminary estimates, we must

For various reasons the average annual expenditure on heating is probably under-estimated, but it appears that the average expenditure in 1969–71 was about $130 per annum, ranging from an average of $180 in the Atlantic Region to about $120 in Quebec. Expenditure on home heating averaged approximately 1.6 percent of average household income before taxes, ranging from about 3 percent in the Atlantic provinces to about 1.4 percent in Ontario. This low average expenditure is the result of the comparative stability of fuel consumption per household (resulting from greater efficiency in fuel utilisation and insulation, and the growth of apartments) and the stability of oil and gas prices, giving an average expenditure of about $1 per million BTU's.

However, the low average expenditure is misleading because the impact of heating costs is comparatively heavy on the poor, and in 1969 the $0–3,000 income group spent approximately 6 percent of their incomes on heating. This group will be hard hit by the increases in fuel costs, particularly in the Atlantic provinces.

The future outlook for home heating

Consistent with its tentative overall forecasts, plans and policies, *An Energy Policy for Canada* contains some forecasts for residential energy use from 1969 to the year 2000 that have important implications. Essentially the method seems to be (assuming a constant average use of heating energy per household) to estimate the voluntary use of coal, electricity and gas and then regard oil as a residual to make up the balance of energy needs.

The estimates are given in Table 3.

Table 3

Estimated Residential Energy Use for Home Heating 1969 and 2000

| Fuel | Trillion BTU's per annum. | |
	1969	2000
Coal	19	2
Oil	602	408
Gas	231	906
Electricity	8	169
Totals	860	1,485

Table 4 translates these figures into occupied housing stock, with 5.6 million in 1969 and 10 million in 2000.

expect a doubling in the prices of these fuels over the decade 1971−81 in terms of constant dollars. Under the impetus of the present "crisis" and the rapid escalation in the prices of imported oil, these increases will take place sooner rather than later; indeed increases have already taken place on a substantial scale. This can be seen mainly as a catching up after a long period of somewhat unrealistic price stability. The implications for home heating of such a doubling in prices are given in Table 5.

Table 5

Implications for Home Heating of Doubling in Consumer Prices For Oil

	Gas and Electricity 1971−81 in terms of 1971 $.		
Fuel	Estimated Consumer Price 1971	Estimated Cost per million BTU's 1971	Estimated Cost per million BTU's 1981
Light Oil	18¢ gal.[1]	1.5	3.0
Natural Gas.	$1.2 per 000 cu. ft.[1]	1.2	2.4
Electricity	1¢ per kwh.[2] 2.9[3]		5.8[3]

[1] Average retail prices Ontario
[2] Estimated marginal consumer rate Ontario home heating
[3] Assuming same utilisation as oil and gas. In practice electricity more flexible, economical and competitive than this.

From Table 5 it is clear that for various reasons there was a considerable price spread between these fuels on a cost per million BTU's basis in 1971. If the plans for home heating envisaged in the energy policy study are to be achieved, natural gas prices could be doubled and still remain competitive, while the consumer price increase for electricity would have to be less than doubled if it is to be competitive and achieve the hoped for market penetration.

From the viewpoint of the average consumer and his expenditures it appears that the impact of a doubling of his heating expenditures would not be very great. As indicated, the average expenditure on home heating was only some 1½ percent of household income before the recent price rises, and a doubling of this percentage is hardly likely to make much impact with rising real incomes in the future.

The impact of a doubling of home heating costs on the poor, who already spend up to 6 percent of their incomes on heating in the days of cheap fuel, will be serious. These are precisely those people who cannot bear any further burdens of fuel economy, and special measures must be taken to ensure that they do not do so.

When we turn to the design and insulation of housing, the scope for economy seems to be somewhat greater. For new dwellings, a doubling in fuel costs implies an annual average heating cost of about $300, and the universal adoption of electrical standards of insulation to reduce that cost. Electrical standards of insulation, as compared with normal standards, would increase the average thermal resistance of a dwelling by up to 40 percent, reduce fuel consumption by up to 30 percent and would be worthwhile if it cost less than an additional $1,000.

As for existing dwellings, the main scope for additional insulation and economy will probably be in single family dwellings (particularly bungalows), additional insulation of ceilings (if feasible) probably being the most cost/effective. This probably could be afforded by most owners and landlords.

To sum up, it appears that apart from the poor who must be sheltered from its impacts, the costs of heating in Canada are so low, absolutely and in relation to incomes, that even a doubling in fuel costs would not have a large impact on budgets. However, electrical standards of insulation for new dwellings and additional insulation of ceilings of existing single family dwellings might be worthwhile.

In relation to the whole energy problem it seems that the scope for economy in housing (which will only account for some 5 to 7 percent of energy consumption in the year 2000) is limited, and the hope must be that supplies are more responsive than housing demand to the necessary price rises.

● Basically it appears that the energy problems of Canada, which have been precipitated by the present "crisis," have arisen because a growing nation has been consuming oil and natural gas at low and stable prices, based on cheap and accessible reserves that are being rapidly diminished.
● To rectify this problem it is essential that prices for all types of energy should rise to encourage exploration and development of further reserves, and economy in the use of fuel must be practised up to the year 2000, after which a change to an "electric" society based on nuclear energy is expected.
● The forecasts of *An Energy Policy for Canada* envisage a change from oil to natural gas for home heating up to the year 2000 with a longer term trend towards electricity.
● The durability of housing and the possibility that most of the future housing stock must be built by about 1986 raises a difficult, if latent, controversy as to whether to change to natural gas (with later conversion to electricity) or whether to go further towards electric heating as soon as possible.
● The impact of higher energy costs on the consumer, with the exception of the poor and the Atlantic provinces (who presumably will be protected by the appropriate agencies and methods), will be fairly small with little incentive to economise.
● Concerning the impact of higher energy costs on housing, electrical standards of insulation may be worthwhile for new dwellings, and the further insulation of the ceilings and roofs of existing single family dwellings.

by Richard Seaton

PSYCHOLOGICAL ASPECTS
OF THE URBAN REGION
Beauty, Noise and Crowding

Somewhat less than a hundred years ago, the irascible American painter, Whistler, strolled with a friend through the streets of Paris on a brilliant starry night. (It was a time, apparently, before smog diminished our opportunities for viewing the heavens.) They walked in silence, gazing up at the firmament. Finally the friend remarked, "Beautiful, isn't it?"

"Well, yes," replied Whistler, "but I would have done it differently."

It is not for a psychologist to speak with such assurance. Psychologists, insofar as they are scientists, are mired down in the world of evidence. We spend our lives proving what is obvious to the artist, with the hope that someday we can discover something that is not obvious. In such matters as beauty, nature, noise or congestion in the urban region, we've not come far.

However there are some things that a psychologist can say about such an extensive compendium as Beauty, Nature, Noise and Crowding in the urban region, for the terms are not as disparate as they first appear. To link them together, this article first considers aspects of familiarity and variety in aesthetics and then explores how nature, noise and crowding—and their opposites—may contribute to or detract from our well-being in the urban region.

Beauty and Familiarity

Let us agree that beauty is in the eye of the beholder. If this is accepted, we are in a central domain of psychology, that of perception and cognition. And also we are in the world of subjective values, where one opinion is as good as another.

Quite clearly, we tend to prefer or regard as beautiful those things with which we are familiar. Stravinsky and Shostakovitch compositions are accepted as beautiful now, even by the Soviets; perhaps someday Schoenberg will be. We are able to see more subtlety and richness in phenomena to which we are accustomed. I experienced this during a summer I spent in Greenland with geologists examining the gravel scree pushed out on the coastal plain

by the Icecap. Through time and social contact I came to see much beauty in gravel piles.

A. E. Parr has said, "To the ordinary city dweller a wild meadow in the early spring is only a pleasant, but flat and monotonous stretch of textured green. But to a lover of nature it may be an exciting vista of hundreds of plants and shrubs, buds and insects, individually perceived." It has been shown that familiar landscapes are preferred to those less familiar. Indeed, there is evidence that people cannot well judge their liking or preference for a stimulus event unless they know what it is.

The more familiar a person is with an environment, the more likely he is selectively to become unaware of its noxious qualities. Point Richmond occupies a lovely vista overlooking San Francisco Bay and the Golden Gate Bridge. It is, however, closely associated with a major Standard Oil refinery which usually casts a pervasive stink into the surrounds. One day when it seemed rather strong to me, I commented to a local businessman on the contrasting messages to the eyes and nose; but he contradicted me, saying, "Oh, Standard Oil are very careful, so most days are like today...no smell." This kind of adaptation leading to reduced sensitivity permits even the urban slum dweller to be reluctant to leave his present neighborhood when urban renewal strikes.

With the growth in familiarity, comes meaning...economic, political, physical, sociological, psychological. These perspectives lend meaning to physical events, concrete meanings, use meanings, symbolic meanings and emotional value meanings. By the same token, diminished familiarity with one's environment and the things in it can lead to their diminished meaning and increased unattractiveness. The phenomenon of "culture shock" on the part of CUSO returnees provides an example of this.

There appears to be concensus that distance will not always make the heart grow fonder and familiarity does not always breed contempt for one's surrounds. As R. Banham has pointed out: "Nothing could be more city-like, and more Chicago-like, than the great commercial palaces of the Loop, with the elevated railroad blundering against their multi-storey facades. Nothing could make both life and work more nearly impossible than the resultant noise and poor light. Yet, remove the Elevated and you remove Chicago."

People will learn to like anything —even the noise and dirt of Chicago, symbolizing a mixture of hustle and bustle coupled with a kind of romantic loneliness.

The beauty of an urban thing or place depends in part on what it connotes to the observer. The evidence shows that even noxious sounds and smells can be accommodated and acquire pleasantness and even beauty.

Variety and Preference

Studies using materials developed by D. E. Berlyne, however, suggest another ramification of the aesthetic. Berlyne used a tachistoscope to flash regular images momentarily on a screen. Subjects were permitted to view repeated flashes of any particular image *ad libidum*. Figures having more regularity of form elicited fewer responses than those having more incongruity or irregularity. When a series of images having a common theme were "surprisingly" interrupted by another series having a common theme, more repeated responses were elicited than when the second series was shown first (i.e. when it was not a "surprise").

The implications of Berlyne's studies were extended in another research project in which young children first got used to a set of eight toys and were then offered their choice of a second set from among five different sets varying from no similarity to complete congruence with the first set. Only the in-between sets were chosen.

A third study of aesthetic judgement by I. L. Child led to the conclusion that "…a good aesthetic judgement is in large measure an outcome of a general cognitive approach to the world, an approach involving a search for complex and novel experience." The implication of these and many similar studies are reflected in a statement by J. J. Gibson: "…we have come to think of nonchange of pattern as simply a special case. Stability, after all, is only definable as the absence of motion. Similarly, a form is definable as a non-transformation. In this conception, sequence is a dimension of stimulation whether or not change occurs."

If we can accept that there may be some relation between what is beautiful and what people choose, it appears that variation, surprise and unexpectedness may be qualities contributing to perception of aesthetic components in the environment. When people are deprived of variable stimuli they appear to generate a need or hunger that is reflected in discomfort and in a quest for stimulation once they are released from confining conditions.

Sophistication in symbol and form pattern can grow in man throughout his life. Thus man is a meaning-seeking animal. More and more we see formal education extending further into the life-span, spilling over into the established lives of businessmen attending expensive mountain-resort seminars and of middle-aged women attending college. No longer are these people accepting the stability of the "as is." With increased leisure and discretionary resources to grow on, they are trying to grow. Raw materials for their growth are those unexpected, unusual or surprising phenomena that not only provide diversity but also offer opportunity for new understandings and syntheses.

The point is well made in an article by J. R. Platt, where he argues that aesthetically valued events provide unexpectedness of a mild degree that is subsequently resolved by the emergence of a more complex regularity.

At the same time people are seeking new experiences, they also appear to be seeking to avoid stressful inputs of the urban environment. Let us be clear; while new experiences are generally desirable, and routine monotony is not, nonetheless highly unpredictable or random stimulation is unpleasant. The essence of humor and pleasure is *mild* shock. Too much happening in a short time, or too many different things happening for a long time, are stressful both because they lead to information overloads and because often they demand a high frequency of overt behaviorial responses from persons in the environment.

Psychologist J. Wolpert has observed that:
"the tensions of city life, the physical crowdedness, the emotional isolation, the breakneck speed, the tough and fierce competition act so as to force anxiety upon all life...The horizontal and the vertical suburbs compete with one another and in a parallel manner to assure prospective residents of relief from the blatant city core pressures." There is evidence that the American dream home is a single-family dwelling with some private open space where a man can shut out the high stimulation from the city.

This is not the place to discuss the theoretic implications of privacy. Of significance, however, is the fact that privacy relieves a man of the responsibility to respond in a socially-conformist way to social stimuli. Privacy also serves to reduce the input of any social or physical outside stimuli. Something of the same can be said of the anonymity of life in the metropolitan centre, where the people around one are indifferent strangers who neither make demands nor expect responses. But the central city does not provide the

quiet, non-social stimulation of the rural region, where the variations of nature place no strenuous demands for quick appropriate responses or for responses that demonstrate our moral worth.

Nature and Urbanism
If we accept that people have a need both for the mild stimulation of variation of complex familiar patterns, and that there is a corresponding propensity in man to continue evolving new syntheses, new roles and new understandings throughout his life, then a case can be made for man's placing a high premium on natural surrounds.

The beauty of the countryside, deriving as it does both from the relative absence of noise coupled with the highly complex forms of nature traditionally has been highly valued in English-speaking countries. There is little evidence suggesting that those who have the economic resources for mobility are willing to abandon the more natural quiet of their suburbs to come swarming back into the central city. Their open sites, trees and lawns represent not only a source of beauty but also symbolize status.

It should be acknowledged that more urbanites may head for the busy downtown on a Saturday than for the park or zoo. (In a sense going downtown is like going to a zoo, for the human animal too, can be fascinating and refreshing to watch.) People who do travel to parks and zoos seem contemptuous of nature's charms, if one is to judge by the accumulated trash and litter they distribute there. Similar evidence of contempt can be seen in the backyards and public ways of a number of architecturally prize-winning public housing developments in New York and San Francisco. The issue of littering seemingly may be associated with the idea of social worth. If a neighborhood or park is sensed by its users to be ugly, to be of little worth to others *or* is otherwise not regarded by its

users as "identified with" them, they express disdain by deliberate littering. In public housing sites, houses fronting the public way seem to have less litter in their yards than identical units less exposed to view.

Exposure to the public eye appears conducive to conventional public performances and standards. This is especially true downtown. Going with the crowds downtown provides a fascinating display of urbanites acting out their public selves. These crowds offer opportunities for intensification of nervous stimulation—for discovering others with similar interests, others who have services or things to trade, for discovering the latest fashions in life or dress, and for escaping the surveillance of our domestic neighborhoods. The crowds are fun, and where the crowds gather one can be anonymous and free. Just as a case can be made for the psychological merit of a tree, so too an urban region with physical convenience conducive to high density loitering or wandering may be said to have social merit. Pretty pictures and mock-ups showing graceful trees and elegant architecture are usually of dubious value as evidence reflecting social implications of plans for the urban region.

The word "pretty" in the preceding sentence has of course a negative loading: nobody intends to plan or design a pretty urban region. Yet the behavioral scientist as a simple citizen suspects that all too often economics and appearances, rather than psycho-social or aesthetic functions, govern choices among alternative plans or designs. For the politician at least, if not the architect and planner, qualities of rectilinear simplicity, neatness and economy can favor one plan or design over more complex alternatives.

Another worry of the human-oriented scientist is the opposite contention that with new technologies on the horizon, man can satisfactorily design his social environment down to a gnat's eyelash. He can even live underground if necessary. How near, indeed, are we to 1984 ? Consider these statements by Steen Rasmussen: "If a city is well organized the appearance shall just give a clear expression of the order, and those persons who have any sense for it...will find it beautiful. When we say that a thing is beautiful we express that we experience it in a certain way, it is a subjective judgement. Thus beauty is not an objective goal we can strive for, and it is dangerous to try to do so...Nothing can be left over to Nature but must be man-made and man-planned...All materials used must be strong and durable. The more dense the population the more smooth the materials."

A leading critic of this kind of thinking has been A. E. Parr, who comments on trends in the urban region: "The unending variety of God's creations...have been succeeded by a far smaller selection of much more rigorously repetitive forms, which has recently been reduced to even greater uniformity by explicit architectural doctrine."

Conclusion

The issue is joined. Either beauty and nature belong in the urban scene, or we might as well all go and live underground. I have argued that beauty can be conceived as deriving from variants of successively higher and more complex syntheses of form in space and time. We do not all have the same refinement of taste, so that a representation that seems elegant to the avant-garde esthete may seem messy to the lay observer. Yet the general evidence supports a conclusion that more complex and varied forms are preferred to simpler and more monotonous forms. Natural forms often have an elegance and variety which the artist is hard pressed to equal with his fabrications. Without the examples of nature, he would perhaps not even try.

Designers and planners have demonstrated high sophistication with the handling of complex systems and technologies to support them. However, we do not see in environmental research, nearly as much attention paid to the psychological, social and aesthetic aspects of the environment as is given, for example, in the hundreds of research stations concerned with food and clothing. Possibly as a result, our cities are packaged in grey and rectangular concrete forms, our playgrounds are flat instead of rolly, our through-ways lock the traveller away from the surrounding social environment, and little boxes bead hills formerly green, which once reminded us of a world outside the urban block system.

Concrete surrounds us, but concrete is not warm, pliable, soft or variable like nature or man, so we cannot identify warmly with it and treat it as "ours." Accordingly, we feel free to litter or otherwise deface it for our own private exploitative ends. If this trend continues, the city and the urban region can become a place simultaneously monotonous, impersonal and "noisy" rather than warm, complex, quiet and varied.

MY CABINS IN THE WOODS
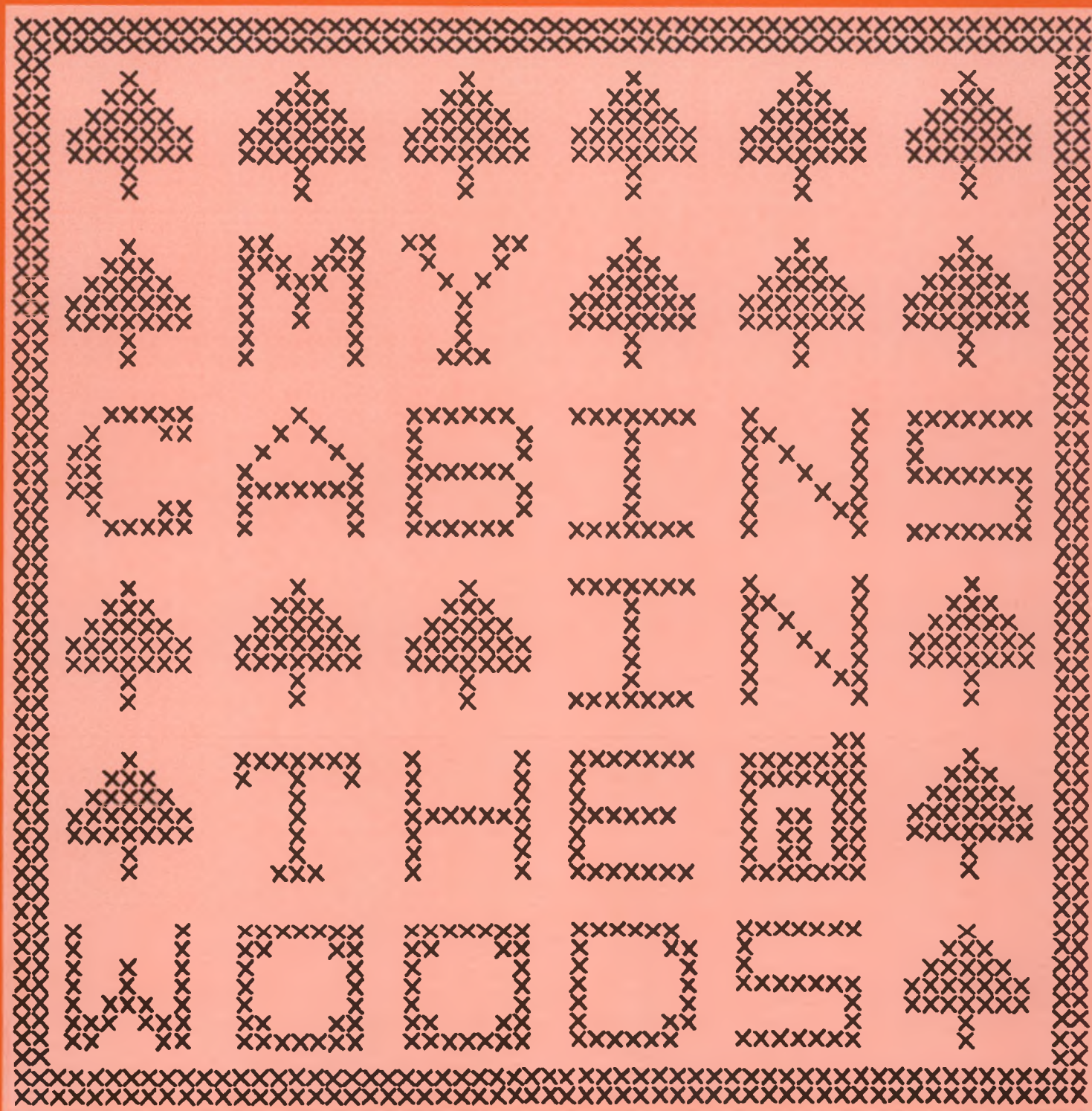
by J. D. Dunfield

My initial experience in building log cabins, stemmed from a desire to have a small clubhouse in the woods where "boys" could play cards and tell tall stories. In 1937, at the age of seventeen, I selected a site on a small island in the Ottawa River opposite the village of Davidson, Quebec. The island was owned by my grandmother and contained cedar trees which were suitable for cabin construction.

After a summer of blood, sweat, a few tears, millions of mosquitoes, but with the faithful help of a few friends, a small one-room log cabin was completed. However, it soon became apparent that the project was not working out as planned. Because of its isolated location in dense woods, very few people were able to find the place unless they were led in by the hand. The long distance by rowboat and the incessant insects discouraged all but the very determined from visiting the place more than once.

Consequently, the following summer the cabin was dismantled log by log, manually carried out to the river, floated to the Quebec mainland and erected on a new site. After that the Second World War curtailed further activity for six years.

During the late 1940's the cabin was enlarged to accommodate my growing family, visiting relatives and friends. Two tents were also added on occasion to take care of the overflow on the weekends. In 1954, a second cedar log cabin was completed on the west end of the 200-foot lot to house my wife's parents. As the facilities were still inadequate, an investigation was commenced to purchase a larger property.

In 1954, my brother-in-law, Jim Cory, secured an option on 180 acres of farm and forest land including 5,000 feet of sandy beach across the river in Ontario, about 25 miles northeast of the City of Pembroke. We were initially attracted to the property by the large sandy beach which we had visited on numerous occasions in our youth, and the adjoining extensive area of red and white pine forest. In 1955, the sale was completed and the land was purchased by four families who came to be known by the acronym of CADS, taken from the first letter in their surnames – Cory, Aitkens, Dunfield, and Sadlier-Browne. In 1959, the Quebec property was sold and the families moved over to an old frame and log house located on the newly acquired property. This small building, with only two bedrooms, housed three to four families during the summer months for five years until three more log cottages were built. In 1970 and 1973, the fourth and fifth cabins were completed and the foundation for a sixth building was started.

Hints on Building Your Own Cabin
If a person has sufficient time during the preceeding winter months, a small-scale model might be made which will give a good visual plan of the proposed cabin and be of assistance during construction and calculation of the building materials.

The use of wood for building purposes requires some knowledge of its appearance, stability, durability, strength, rigidity, fire resistance and weight. Appearance is usually an important factor in buildings and a log construction depicts a distinctive style. Log buildings usually blend with the environment, particularly if the area is tree covered. Many manufacturers have attempted to produce imitation log siding, but the imitation is usually quite noticeable as there is no diversity or character to the logs or building.

It is recommended that trees be marked prior to cutting and recorded by diameter, estimated usable height and species, to eliminate any unnecessary cutting and peeling. Approximately 10 percent additional trees should be cut to compensate for waste and errors in calculations. If the cabin is to be supported on wooden posts, cedar is the best material for this purpose.

Choice of Trees

A fairly wide choice of trees is available for log construction in eastern Canada and northeastern United States. The coniferous or softwood species of white cedar, red, jack or white pine and black and white spruce are suitable for building purposes because of their relatively straight stems, durability and workability. The deciduous or hardwood species of maple, oak, birch and elm are not recommended for building cabins because of their weight, hardness and susceptibility to decay if exposed to the weather. Straight-stemmed cedar is a preferred species because of its durability, light weight, good bark-peeling characteristics and pleasant odour. Unfortunately, cedar often has crooked stems, extreme taper and butt rot. The first two cottages that were built on the Quebec side of the Ottawa River were cedar, but CADS abandoned this species on future camps because of these problems. Excessive amounts of oakum, plaster and poplar saplings were used to fill the cracks between the cedar logs.

Need for Plans and Planning

If good planning is undertaken, a great deal of grief, work and cost can be eliminated. In many rural and wilderness areas, building plans must be sent to the local government authorities and a building permit is subsequently issued if the plans are approved. The regulations for private dwellings are not usually as comprehensive or restrictive as those for commercial establishments. The Department of Lands and Forests or its counterpart in any province or territory in Canada usually controls the type of construction on Public Lands. In townships that have a municipal structure, the local authorities should be consulted, particularly if roads, schools or other services are going to be required.

Log buildings have assets and liabilities. They can outlive many other types of construction if they are properly built and maintained and they are generally easier to heat than non-insulated buildings because of the thickness of the logs. A well-constructed cabin can also withstand most high velocity winds and falling limbs. Nevertheless, log buildings have liabilities, such as the time required to cut and peel the logs, the physical work involved and the purchase of special tools. In general, the quality of the finished product is proportional to the amount of planning, acquired skills, patience and the type of building materials used.

Foundations and Log Shapes

Log cabins, because of their weight, should have structurally strong foundations whether they are to be supported on posts, cement blocks, stone or concrete. Cement blocks are not usually analogous to the appearance of log buildings, but they may be the best material available as suitable sand and gravel for cement work can be costly items if they are not found near the site. If the building is to be used for the greater part of the year, I would recommend a complete foundation wall, provided that the cost is reasonable and a large portion of the work can be undertaken by the owner.
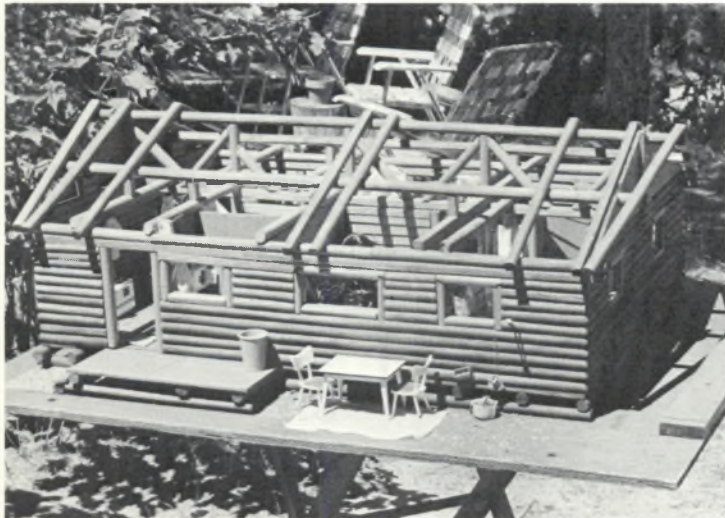
Our last four cabins were built with railway-tie shaped logs rather than round logs in order to secure a better bearing surface on each log and reduce the quantity of chinking material. Round or flattened logs should be matched with another log of similar size on each tier during the construction of the walls. The main concern in flattened logs is to have the log the same thickness at both ends. Our logs were supposed to be sawn to diameters of 4, 5, 6, 7 or 8 inches, although many of them are at least ¼ inch off the full inch. Round logs will usually have a taper and this can be overcome by alternating the top and butt during wall construction.

Cabin logs are usually placed horizontally, but they can be used vertically, particularly on the upper portion of the walls in order to use the short and crooked logs. We used various types of corner construction such as the butt, overlap, saddle, and so on. All corners and walls should be well within the eave or roof overhang to deter any moisture entering the log ends.

We have found that a good quality commercial caulking compound is the most convenient and reliable chinking material and it can be applied quickly with caulking guns. We built or used second hand wooden windows throughout to save on cost and to create a rustic and homemade appearance to the cabins.

It is better to carry out as much work as possible from ground level when constructing the roof purlins and rafters. All the notching and pre-cutting to length can be undertaken on a form built on the ground or cabin floor. Good scaffolding is a "must" to support the workers and building materials during construction. The walls go up rather quickly, but the roof seems to take "ages." However, the interior view of log beams, ridge pole and trusses is worth the effort.

We reviewed CMHC building standard booklets, and snowfall charts to determine roof construction and strength requirements. The snow can reach a considerable depth on an unused cabin during the winter months and there is not always an opportunity to shovel it off because of inaccessability and cabin isolation.

On two cabins of different dimensions, we kept detailed records of the linear feet of logs, the board feet of lumber, man-days to construct and total cost of all items.

During our thirty odd years of association, the CADS and their families have enjoyed many happy times together developing the property. The challenges and the results have certainly been worth the effort and even our children would not sell-out for a million dollars.

Photos by J. D. Dunfield from his illustrated booklet on log cabins.

1 A replica of the cottage built in 1962 to the scale of one inch to one foot. The model was made with ¾ inch dowels, plywood and glue.

2 A corner view showing a partially constructed cabin with horizontal wall logs and vertical corner logs.

3 The builders take a break inside the partially constructed cabin.

4 Some of the tools the prospective builder will need to construct his own log house.

5 The finished product – a more ambitious dwelling than the first one-room cabin completed by the author over thirty years earlier.

Densités de population dans les zones d'habitation des villes du Québec

par Denis Tremblay

Causes du malaise de nos villes

La cause principale du malaise de nos villes réside dans le fait que l'urbanisme, tel que conçu et pratiqué aujourd'hui, n'a pas accompagné l'urbanisation. L'urbanisme doit venir au secours des villes, en grande partie construites suivant des pratiques et pour satisfaire des besoins que les progrès ont rendus désuets. L'urbanisation rapide, conséquence de l'industrialisation de la fin du XIXe siècle et des débuts du XXe et qui se poursuit, a créé pour les villes une situation nouvelle sans précédent dans l'histoire. Les développements urbains ont été réalisés par bonds, par une suite d'improvisations et en l'absence de coordination et de prévisions à long terme. Il était d'ailleurs impossible d'anticiper ces progrès.

La subdivision des terrains en parcelles trop étroites et l'extrême morcellement de la propriété foncière sont une des causes de la congestion et de l'encombrement. Nous avons là l'origine des taudis, qui nécessitent aujourd'hui la rénovation urbaine à une grande échelle.

Le manque de législation et de réglementation de nature à déterminer le choix des aires d'activité dans le voisinage des habitations des ouvriers (qui devaient demeurer près de leur travail afin de pouvoir s'y rendre à pied) et l'encombrement du sol, sont à l'origine d'un grand nombre de quartiers insalubres de nos grandes villes. Cette promiscuité hétérogène d'industries, d'entrepôts, de cours de triage, etc., avec l'habitation, s'est établie sans égard à la fumée, à la poussière, aux gaz nocifs, aux bruits, aux odeurs et autres dangers et nuisances, sans parler des conditions peu sanitaires des logis eux-mêmes, toutes choses jugées aujourd'hui inacceptables bien qu'encore existantes dans de vastes secteurs de nos villes industrielles.

En un court laps de temps, la révolution industrielle et les transformations sociales vinrent bouleverser la vie des citadins d'une façon radicale, apportant bienfaits pour les uns, misère pour les autres, mais espoir pour tous en une société plus riche et plus libre. Lewis Mumford compare le désordre de cette époque d'expansion à celui d'un champ de bataille où les villes sont livrées aux banquiers, aux industriels et aux inventeurs techniques : «Ils furent, dit-il, responsables de la plupart de ce qui fut bénéfique et de presque tout ce qui fut mauvais et créèrent un nouveau type de ville à leur propre image : celle que Charles Dickens, dans *Hard Times*, baptisa du nom de Coketown.»[1]

Règlements de zonage

Pour tenter de mettre de l'ordre dans ce chaos, on a d'abord établi des règlements de zonage, ces règlements ayant pour

but de sélectionner et d'isoler les unes des autres les différentes activités : habitation, industrie, commerce, récréation, chacune divisée en différentes catégories.

Nous traiterons principalement du zonage de l'habitation et de ses caractéristiques actuelles, plus particulièrement des densités de population dans ces zones ; ensuite, du régime de la propriété foncière, enfin, de la nécessité d'une réglementation plus rationnelle et plus rigoureuse de l'utilisation du sol urbain pour mieux satisfaire aux fins de l'urbanisme considéré du point de vue économique et social.

Densités de population

Les densités de population dans les zones d'habitation des agglomérations urbaines sont un facteur ambigu qu'il est nécessaire d'analyser correctement si nous voulons avoir une idée juste de ce qu'il représente en réalité. A lui seul, ce facteur ne peut nous renseigner sur le confort, l'isolement et les agréments que ressentent les habitants d'un îlot, d'un grand ensemble, ou enfin de tout un quartier. Nous verrons que des facteurs plus importants que la seule densité doivent nous servir de critères pour établir la qualité des aménagements domiciliaires et conséquemment l'élaboration des règlements de zonage qui doivent les régir.

Le but principal de ces règlements, en effet, ne doit pas tant viser à restreindre les densités de population qu'à procurer aux particuliers et aux familles de ces zones des conditions d'habitation et de séjour plus favorables, dans le milieu immédiat et dans un milieu urbain aménagés pour réaliser les meilleurs rendements économiques et sociaux possibles.

Les règlements de zonage actuels ont un caractère plutôt restrictif. Ils devraient, tout en respectant des normes assez précises, offrir un plus vaste éventail de possibilités d'aménagement ayant pour effet d'obvier à l'uniformité et à la monotonie qui caractérisent les zones domiciliaires de nos villes et surtout de leurs banlieues.

L'uniformité actuelle du zonage domiciliaire en fonction de la seule densité de population, par la sélection arbitraire des catégories d'habitations et l'exclusion de certaines activités, favorise la ségrégation sociale et la monotonie, et s'apparente à une destruction systématique de la vie urbaine. Il y a évidemment des activités incompatibles avec le voisinage immédiat de l'habitation, et c'est là une des raisons principales du zonage. Mais il y aurait sûrement avantage à ce que certaines industries légères et certaines activités professionnelles, commerciales et communautaires, puissent s'intégrer aux zones d'habitation.[2]

Densités brutes et densités nettes

Il faut distinguer entre *densités brutes* et *densités nettes*. Les densités sont généralement indiquées par le nombre de logements (ou d'unités familiales) et le nombre de personnes à l'acre. La densité brute est le nombre de familles à l'acre d'une zone, comprenant les rues, allées, espaces publics et aires de stationnement, tandis que la densité nette ne comprend que la superficie des terrains à bâtir dans les aires délimitées par les rues qui les entourent.

Densités de population à l'acre
(équivalents des densités nettes et brutes)

	Familles par acre		Personnes par acre	
	nette	brute	nette	brute
Densités faibles	5	3	17	10
	10	6	35	21
	15	9	52	32
Densités moyennes	20	12	70	43
	25	15	87	53
	30	18	105	63
Grandes densités	35	21	122	74
	40	24	140	85
	45	27	157	96
Très grandes densités	50	31	175	107
	55	34	192	117
	60	37	210	128

Pour des besoins de comparaison, on relève quatre catégories de densités que l'on qualifie de *faibles, moyennes, grandes* et *très grandes*, à chacune desquelles doivent correspondre des types d'immeubles et des aménagements différents. (Voir tableau) Mais, comme il a été mentionné ci-dessus, ces chiffres ne nous permettent pas de nous représenter les genres d'aménagements correspondants. Disons que les *faibles* densités correspondent aux quartiers domiciliaires de maisons unifamiliales, qui donnent environ sept familles à l'acre net ; que les maisons en rangées ou en bandes donnent environ dix familles à l'acre net ; les maisons

Trois exemples significatifs de faibles densités de population : une vue générale de Chicoutimi prise de l'ouest . . .

. . . le quartier résidentiel "Terrasse Duvernay" à Trois-Rivières . . .

. . . et une vue aérienne de Terrebonne, où de vastes espaces verts prédominent encore.

bifamiliales isolées (duplex) 12, et enfin les immeubles collectifs d'appartements de quatre étages sur lots individuels, environ 20 logements à l'acre net. Une densité nette de 20 familles à l'acre correspond à une *densité moyenne* et donne environ 70 personnes (à 3.5 personnes en moyenne par unité pour les ménages familiaux et non familiaux). De telles densités sont recommandables dans un certain nombre de zones pour les villes de taille moyenne, disons de 50 à 60 mille habitants, mais il est évident que des densités plus fortes deviennent nécessaires pour les plus grandes villes, si l'on veut éviter qu'elles n'occupent des étendues démesurées, avec tous les problèmes qui en résulteront.

Le Corbusier propose une solution
Dans *Les trois établissements humains*, Le Corbusier analyse un plan de secteur urbain avec des rues en damier et des petits lots individuels sur chacun desquels est construit un pavillon privé, comprenant 1600 résidants d'habitations abritant cinq personnes chacune. Il faut quatre kilomètres (2.5 milles) de rues pavées, de canalisation de gaz, d'adduction d'eau, d'égouts, de distribution électrique et téléphonique pour desservir ces maisons, qui couvrent 32 hectares (soit 70 acres). Par contre, une seule habitation «conforme» de 1600 habitants se trouve à l'aise sur un terrain de quatre hectares, ou un peu plus de dix acres. La densité est de 20 habitants par acre dans le premier cas et de 160 dans le deuxième, ce qui est considéré comme une *grande densité*. Cependant, chaque logement est aussi bien ensoleillé et il y a amplement d'espace libre au sol pour les activités extérieures. En somme, les grands ensembles, la construction en hauteur et même les grandes densités de population ne sont pas, en soi, des facteurs d'inconfort si les appartements sont bien insonorisés et ensoleillés et si ces complexes sont aménagés de façon à satisfaire les besoins des familles, tant pour les appartements eux-mêmes que pour les espaces extérieurs qui deviennent, en quelque sorte, «les prolongements du logement», suivant l'expression de Le Corbusier[3].

La troisième dimension de l'espace
Pour obtenir de plus grandes densités de population tout en conservant assez d'espace libre au sol et des distances suffisantes entre les immeubles, il faut nécessairement recourir à la construction en hauteur, c'est-à-dire à la troisième dimension de l'espace.

On ne préconise pas ici de faire vivre des familles nombreuses comptant des enfants en bas âge, au dixième étage, avec l'obligation d'employer constamment l'ascenseur et l'impossibilité pour la mère de surveiller ses enfants pendant qu'ils jouent à l'extérieur, ou de les confiner sur un étroit balcon.

De plus grandes densités de population, obtenues par la construction en hauteur et la construction d'ensembles dimiciliaires planifiés de façon à dégager plus d'espace au sol sont aujourd'hui absolument nécessaires en raison de la rareté des terrains et de leur coût, du coût des services publics, et aussi pour diminuer les longueurs de parcours et aider ainsi à résoudre les problèmes de distance et de transport public et privé. D'autant plus que les familles habitant les banlieues éloignées doivent avoir deux voitures pour que l'épouse et les enfants ne soient pas prisonniers de la banlieue quand le père est parti avec la sienne pour son travail et ses affaires.

Il faut préconiser, dans la rénovation urbaine, une restauration de la ville et de la vie urbaine par des aménagements offrant la variété requise de types de logements pour répondre aux besoins des ménages familiaux et non familiaux dans le même milieu, soit par la création de grands ensembles répondant à ces exigences.

Les grands ensembles
Pour réaliser de grands ensembles cohérents et fonctionnels et obtenir de *grandes* et même de *très grandes* densités tout en procurant les commodités requises, il faut nécessairement d'assez grands terrains assujettis à la même réglementation. Il en est de même pour tout un quartier et pour l'ensemble d'une agglomération urbaine.

"It is commonly assumed that the need for higher density in the city is the by-product of the population explosion. A corallary is that countries with a lot of open space do not really need high urban densities. I think both assumptions are wrong", écrit Moshe Safdie dans *Beyond Habitat*. Et il poursuit : "Density is not related to population growth, nor to the availability of open space elsewhere. I do not think the density of Montreal or Toronto is substantially different from the density problem of, say, Tel-Aviv, even though Canada has more open space than Israel. Density is a by-product of the evolution of metropolitan cities, and metropolitan cities are a by-product of fundamental social and economic forces. "..."If we could plan in three dimensions, if we could think in terms of continuous buildings rather than individual buildings, of networks of movement rather than individual trans-

Le quartier résidentiel de Westmount, dans sa majorité, est typique des zones à densité moyenne.

L'Île-des-Sœurs, partiellement construite, offre l'exemple d'une zone à haute densité, qu'elle soit vue du ciel ou d'une manière beaucoup plus conventionnelle. L'Île-des-Sœurs deviendra une ville de 50,000 habitants et sa densité brute de secteurs résidentiels sera de 38 logements à l'acre.

portation facilities, if we could subdivide space instead of land, we could create a better environment notwithstanding the density''[4].

L'Île-des-Sœurs

Afin de satisfaire aux besoins de différents types de ménages, bien des solutions sont rendues possibles par la réalisation de grands ensembles offrant une variété suffisante d'immeubles et de logements. La réalisation du complexe de l'Île-des-Sœurs, dans la municipalité de Verdun, est sans doute l'un des grands ensembles les mieux réussis à ce point de vue au Canada, et peut-être en Amérique du Nord.

De tels ensembles ne peuvent être réalisés que par une planification globale et une même réglementation, ce qui n'est pas le cas pour les municipalités, en raison du morcellement extrême de la propriété foncière dont il nous faut maintenant parler.

Régime de la propriété foncière

Dans notre régime économique, le terrain est un bien privé au même titre que toute autre propriété, dont on a «le droit de jouir et de disposer de la manière la plus absolue, pourvu qu'on n'en fasse pas un usage prohibé par la loi ou les règlements», dit le Code Civil de la Province de Québec. (art. 406) Les lois et règlements définissent les différentes servitudes, réelles ou établies par la loi, qui affectent la propriété immobilière. (Voir à ce sujet le Code Civil, article 499 à 566 inclusivement).

Les servitudes qui nous intéressent ici plus particulièrement sont celles qui découlent des règlements municipaux ayant trait au zonage, conformément aux pouvoirs que possèdent les municipalités de déterminer les usages permis des terrains et des immeubles dans les limites de leur territoire et d'imposer des restrictions sur ces usages au point de vue de l'hygiène, de la sécurité et de la protection contre l'incendie. Chaque municipalité édicte ses propres règlements de construction et de zonage et possède toute la liberté d'agir conformément aux lois provinciales, qui ont toujours la priorité sur les règlements municipaux. Les municipalités du Québec ont donc tous les pouvoirs requis pour faire de l'urbanisme mais elles n'ont pas toujours la compétence et les moyens financiers requis pour bien exercer ces pouvoirs. Elles ont le plus souvent limité leur action à réglementer le zonage dans un sens restrictif favorisant l'uniformité et l'extension de leurs banlieues en construction domiciliaire de faible densité, d'où leur étendue démesurée et les coûts élevés des services qu'elles dispensent.

Le régime de la propriété foncière, l'extrême morcellement des terrains, les mauvaises subdivisions et les restrictions des règlements de zonage sont les principaux handicaps d'une planification rationnelle et la camisole de force de l'urbanisme. Pour réaliser de grands ensembles cohérents et fonctionnels et pour économiser l'espace urbain, il faut nécessairement remembrer les terrains pour obtenir un même contrôle sur de plus grandes étendues. Cela n'est possible que par des règlements répondant aux besoins ou par la propriété publique du sol. Il en résulte donc que la propriété du sol urbain ou en voie d'urbanisation ne peut être considérée comme celle des autres valeurs économiques.

Traiter le terrain urbain comme les autres biens privés est une erreur économique et sociale majeure puisque le sol urbain et périurbain concerne la communauté urbaine tout entière, dont les intérêts doivent primer, avant ceux des propriétaires légaux et des spéculateurs. Le terrain a une valeur sociale dont il faut absolument tenir compte puisque le problème de base de l'urbanisme est fondamentalement celui de l'utilisation du sol dans les meilleurs intérêts de la communauté urbaine tout entière.

Les méfaits de la spéculation

Ces considérations ont amené les économistes à traiter la propriété foncière et la spéculation sur les terrains comme un problème différent de celui des autres biens économiques. Les gros profits réalisés dans la spéculation foncière ne proviennent pas de services rendus à la communauté par l'amélioration des propriétés en cause mais uniquement des développements de la communauté qui leur confère cette plus-value.

La spéculation foncière n'est pas nouvelle. Elle a été dénoncée bien avant notre époque et l'idée de l'appropriation publique de la plus-value, ou même de la possession du sol par l'État, n'est pas exclusive aux socialistes. Le grand économiste libéral Adam Smith (1806-1876) fut l'un des premiers à préconiser l'appropriation par l'État, non de la terre elle-même, mais de la hausse de son loyer due à l'augmentation de la densité de population, et ce, au moyen d'une taxe spéciale proportionnellement établie en fonction de cette augmentation. Cependant Smith soutenait le droit du propriétaire de disposer de sa propriété comme il l'entendait.

Dans ses Principes d'Économie Politique (1848) Smith exposa une théorie qui devint ultérieurement la base des

principes avancés par le *Land Tenure Reform*, fondée en 1870 en Angleterre, et qui préconisait une nationalisation graduelle de la terre au moyen d'une taxe sur l'augmentation de sa valeur due aux développements économiques et sociaux. «Le propriétaire foncier, écrit Adam Smith, devient plus riche quand il s'endort sans travailler, sans courir de risques et sans économiser. L'augmentation de la valeur du terrain imputable à l'essor de toute la collectivité doit appartenir à la collectivité et non à l'individu qui peut en détenir la propriété légale''[5].

Nous retrouvons là comme un écho de Jean-Jacques Rousseau qui, dans son *Discours sur l'origine de l'inégalité parmi les hommes* (1775) dit que «le premier qui ayant enclos un terrain s'avisa de dire *ceci est à moi* et trouva des gens assez simples pour le croire, fut le vrai père de la société civile». On retrouve le même thème sous la plume de Henry George au sujet des gains réalisés sans travailler, en spéculant sur les terrains dans *Progress and Poverty*, publié en 1879[6].

Le *rapport de la commission d'étude sur le logement et l'aménagement urbain* (Rapport Hellyer, 1969) souligne également cette anomalie. «On voit nettement, écrivent les Commissaires, que l'augmentation de la valeur des terres est d'origine purement sociale, c'est-à-dire qu'elle ne découle aucunement du labeur des propriétaires fonciers, mais uniquement du contexte global de la société ou de la collectivité», et ils ajoutent : «La Commission est d'avis que le régime actuel favorise injustement les spéculateurs.»[7]

L'indice du prix des terrains à bâtir au Canada est actuellement le plus élevé de tous les prix qui concourent à la formation de l'indice général du coût de la vie. Un terrain qui, en 1949, valait 100, est aujourd'hui (1971) à l'indice 625, alors que l'indice général des coûts à la consommation est à l'indice 167.5 ; celui des matériaux de construction domiciliaire à 177.2 ; celui des loyers à 205.8 ; celui des salaires des ouvriers dans l'industrie du bâtiment à 362.5 et enfin le revenu *personnel disponible des emprunteurs de la SCHL* est à 362.5.

La spéculation sur les terrains favorise l'expansion des banlieues en maisons unifamiliales, la dispersion et les faibles densités, en même temps qu'elle constitue un gaspillage du précieux terrain agricole qui entoure nos villes[8].

Si l'on considère, en effet, que le faible peuplement des banlieues nécessite environ une acre brute pour 2.6 habitants et que dans certains secteurs de Montréal et de Québec, par exemple, on a des densités de 150 à 225 personnes à l'acre, on saisira toute l'importance de la différence entre ces deux extrêmes. «L'emprise plutôt légère du nouveau peuplement périurbain a conduit à parler de gaspillage absolu et relatif des terres. L'on est frappé par la faible densité de la «rive sud du fleuve» (Jacques-Cartier, Brossard) par rapport à celle du cœur et de l'Est de Montréal. Ce gaspillage est d'autant plus sérieux que l'expansion s'est faite au détriment des terres dont la production agricole était précieuse pour tout le Canada».[9]

Toutes les critiques sur les méfaits de la spéculation foncière et sur les profits parfois scandaleux réalisés ne doivent pas s'adresser aux spéculateurs, mais aux législateurs, responsables du bien commun. Il faut reconnaître, je crois, qu'une législation provinciale s'impose dans ce domaine, laquelle permettrait à nos villes de se développer d'une façon plus conforme aux besoins économiques et sociaux d'aujourd'hui et de demain.

La suburbanisation ou l'exode vers la banlieue

La spéculation foncière a favorisé la suburbanisation et en a largement profité. Cet exode a été facilité d'abord par l'avènement des chemins de fer, puis de l'automobile, et un nouveau «boom» d'expansion des banlieues, qui se poursuit encore aujourd'hui, se produisit après la dernière grande guerre.

L'idéal de notre société est devenu, pour chaque famille, l'occupation d'une résidence privée en banlieue. C'est en vertu de cette conception du confort et de la vie privée que la maison unifamiliale de banlieue avec son précieux terrain privé a proliféré autour de toutes les villes d'Amérique du Nord, grandes et petites, depuis l'après-guerre surtout, et que nos villes se sont étendues démesurément dans les campagnes environnantes.

Ce phénomène de suburbanisation a eu pour conséquence que le Canada, comme les États-Unis, n'est plus constitué de communautés de citadins mais de sociétés de banlieusards qui ont payé et qui paient très cher pour fuir la ville et qui n'ont pas trouvé, dans les banlieues, ce qu'ils y cherchaient. «Les gens ne vinrent pas vivre entassés dans les villes parce qu'ils aiment vivre les uns près des autres, mais parce qu'ils voulaient l'argent que les emplois urbains promettaient,»[10] et ils émigrèrent en banlieue dans l'espoir d'y retrouver l'espace, la vie au grand air, la tranquillité et le sain milieu de la campagne. Mais l'invasion de la campagne l'a fait reculer de plus en plus loin de la marée envahissante des bungalows. On n'y a trouvé finalement ni les avantages de la vie à la campagne, ni ceux de la vie citadine—cette

dernière s'étant anémiée par l'exode de ses citoyens les plus dynamiques—mais les inconvénients de l'une et de l'autre. L'exode de la ville principale lui a fait perdre, de plus, une source de revenus en faveur des municipalités limitrophes dont les habitants y travaillent, profitant de ses services sans avoir à en défrayer les charges.

La restauration et la renaissance des villes

L'environnement humain, selon les biologistes spécialisés dans l'écologie, doit être conçu comme un «écosystème artificiel» où les différentes forces d'agression sont minimisées et compensées par un ensemble de facteurs favorables, tant au point de vue psychologique que physique et hygiénique. De là, cette nouvelle discipline dénommée l'écologie humaine, ou science de l'environnement, qui doit tenir compte de tous les facteurs qui conditionnent le bien-être, dans le milieu artificiel aménagé par l'homme pour y vivre et s'y épanouir.

Plusieurs causes, comme nous l'avons vu, ont joué simultanément en faveur de l'exode vers la banlieue, de l'abandon des villes par tous ceux qui peuvent le faire, au sujet desquelles nous n'avons pas à revenir ici puisqu'elles appartiennent à l'histoire de leur évolution. Il faudrait aujourd'hui réaliser un mouvement inverse, ou, plus précisément, restaurer la ville et la vie urbaine. Par la rénovation de leurs quartiers vétustes et une meilleure utilisation de l'espace, la création d'espaces verts pour la récréation, de places publiques, de monuments utilitaires; par des activités artistiques et culturelles, par des attraits touristiques, etc., la ville pourrait reprendre vie et redevenir, comme autrefois, un pôle d'attraction et de vie communautaire intense et retrouver son charme et son dynamisme.

Le centre-ville a besoin de grands espaces ouverts et de petites places qui soient des lieux de rencontre comme l'étaient l'agora des villes grecques et le forum des villes romaines, ou encore le parvis des cathédrales, au Moyen-Âge. Il leur faut de larges avenues, des édifices prestigieux, de larges perspectives, et non seulement l'air, la verdure et le soleil, mais aussi la beauté et la splendeur.

Les grands espaces libres sont également indispensables à proximité de l'habitation, comme contrepartie de la densité nécessaire de l'espace bâti.

Ce n'est qu'à ce prix que chacune de nos villes pourra devenir ce qu'elle doit être: «une ville à vivre»[11], parce qu'elle sera une ville qui soit viable.

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Assumption
Place

by
Reginald
Aucoin
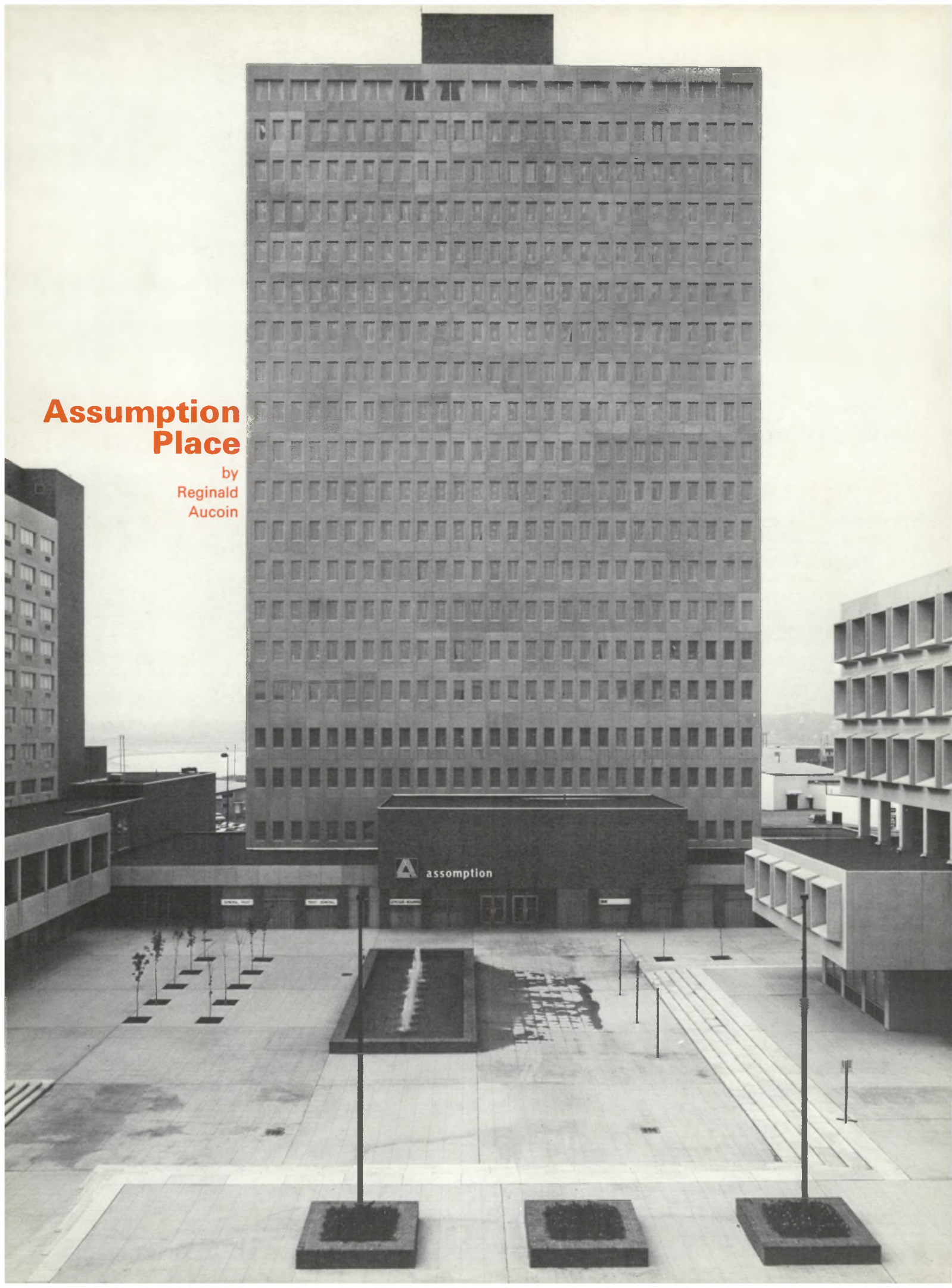
Local Incentive Spurs Renewal in Downtown Moncton

Moncton, the second largest city in New Brunswick, is experiencing an unprecedented building boom. While the influx of construction capital can be attributed to several factors, it is generally agreed that the main catalyst was Assumption Place complex, which was completed in 1973.

Assumption Place is an office-hotel-City Hall complex located in the heart of downtown Moncton. Before the project was begun in 1970, Main Street was losing its shoppers and offices were decentralizing and relocating outside the core area. Although city council had received a number of interesting propositions from outsiders aimed at revitalizing the core, they eventually decided to grant a permit to a local company.

The initiative for the $12.5 million project was supplied by the Assumption Mutual Life Insurance Company, the only insurance company of its kind which has its headquarters in New Brunswick. The recently completed project brings together capital from the municipal, provincial and federal governments, as well as from private investors.

When the agreement was signed between the City of Moncton and Assumption Mutual, it marked the coming of age for the company, which was started with the hard-earned pennies of Acadian emigrants to Massachusetts. The company began as a society with modest aims – to provide sickness benefits of $5 a week to the Acadian workers in the mills and factories of New England.

It is a long way from these modest beginnings to Moncton's new downtown complex, which includes a twenty-storey office tower, a ten-storey hotel and a new City Hall.

Assumption Place consists of three buildings grouped together to form an open-air square. The largest building, which houses the new Head Offices of Assumption Mutual is a twenty-storey, 260 foot tower offering 185,000 square feet of space. It includes several interesting features including an emergency diesel system which could maintain essential services throughout in the event of an electrical breakdown. Air for the building is circulated through the light fixtures, which are perforated to allow air in and out of the room.

Hotel Beausejour, operated by Canadian National, occupies the ten-storey building which forms the second side of the square. The six-storey City Hall completes the complex. An attractive fountain in the centre of the square provides a focal point for pedestrian traffic.

Assumption Place brings nearly 1,200 people into the core every day. The effects of this influx of people are already beginning to show. A new Co-op Insurance Services building has opened close to Assumption Place; the Central Trust Company of Canada is erecting a new, eight-storey office building, and the Bank of Montreal recently announced it will replace its sixty-six year old Main Street branch. The result is a new air of optimism in the business district as well as increased sales in downtown stores. There is a feeling of vitality about the inner city that has laid to rest fears it might be headed the way of other inner-cities in North America. Moncton has begun to see itself as a growth city, and there is an upsurge in confidence among its citizens that things are going well – and that they will get even better.

Moncton fait cœur neuf

Comme un peu partout ailleurs au Canada, on construit beaucoup à Moncton, seconde ville du Nouveau-Brunswick et la dernière réalisation spectaculaire dans ce domaine est le complexe Place de l'Assomption. Cet ensemble, terminé en 1973 dans le centre de la ville, consiste en une tour à bureaux de vingt étages, un hôtel de dix étages et le nouvel Hôtel de ville.

Les fonds nécessaires – soit 12 millions et demi de dollars – proviennent des trois gouvernements et d'investisseurs privés, par le truchement de l'Assomption Mutuelle-Vie, seul organisme de ce genre possédant son siège social dans la province.

L'immeuble le plus imposant du complexe est une tour de 260 pieds de hauteur qui abrite notamment, dans ses 185,000 pieds carrés d'espace, les nouveaux bureaux de l'Assomption Mutuelle-Vie, à l'initiative de laquelle on doit la mise en œuvre de l'ensemble. Viennent ensuite l'Hôtel Beauséjour, administré par le Canadien National et le nouvel Hôtel de ville, ce dernier occupant le troisième édifice du complexe.

L'implantation de Place de l'Assomption au coeur de Moncton a déjà d'heureuses répercussions commerciales et constitue une réalisation majeure dans le vaste mouvement qui se dessine en faveur de la croissance planifiée de cette agglomération.

The Resurgence of the Pedestrian

by Robert Collier and Jonas Lehrman

The past few years have marked an upsurge of interest in pedestrian systems – walkways, routes, paths. The bewildering maze of automobile traffic, trucks, buses and trains, has added to the noise and confusion of the city. In fact, there was no major scholarly study of pedestrians until 1969.* The previously forgotten pedestrian amenities are now being viewed not only with sympathy, but more importantly as an opportunity to improve the urban environment.

The pedestrian provides exciting opportunities because meeting his needs allows the planners to dovetail social and physical policies and plans. Previous planning recommendations have often been criticised for being cosmetics – merely covering up problems with a dash of colour or a slight degree of re-orientation. Now by asserting a major social objective – meeting the needs of people as they walk in the urban environment – we have a focus for these plans.

Historical Context

Covered streets for pedestrian use date back to the Roman Empire and have survived in European cities to the present day. From the early plans of

*Rudofsky, Bernard, Streets for People, A Primer For Americans, New York: Doubleday, 1969, p. 15.

European cities, through to the Radburn plans of the 1920's and 1930's, and on to the contemporary plans of professionals (like Victor Gruen and his plans for Fort Worth, Rochester and other American cities), certain basic themes have been represented. Pedestrian segregation was designed for safety reasons, as a basis for design, and as a means of facilitating transportation needs.

Seldom has it been looked at as a means of achieving the integration of social and physical planning.

Recent Trends

A rather significant shift has occurred in research into the pedestrian environment in the past decade. Literature emanating from authors and designers like Lawrence Halprin (who has claimed the grid pattern was transportation oriented, not pedestrian oriented), Donald Applyard, and Kevin Lynch have alerted people concerned with the environment to the possibilities of using the environment to meet social goals. To be sure, much of the research has been "ex-post" in the context of asking people what they experience in their environment. An interesting example of attemps at projecting people's experience in their environment is "pattern language," developed by Christopher Alexander at the Centre for Environmental Structure (Berkeley). Pattern language is a design method which attempts to rationalize choice through breaking down the overall design into units or groupings. It is the order-

ing of elements of the environment into groupings in a way which will allow them to be incorporated into the total design decision.

Mr. Alexander has been one of the major leaders in this attempt to outline patterns in pedestrian behavior and how this can be designed into the environment – particularly at the pedestrian scale.* Others might argue that many of the existing studies are highly subjective and therefore of little value in other settings. However, it should be possible to project these findings into a wider application.

For example, the previously mentioned goal of promoting pedestrian safety can be broadened to provide a range of experiences – or diversity. One way of promoting diversity would be through alteration of the contours of the walking path. This in turn meets another social objective, the need for recreation. When walking becomes more varied and pleasurable such an objective would appear to be met. Other objectives such as convenience and accessibility can also be met.

More recently, a special conference was conducted in New York City dealing with the Urban Pedestrian exclusively. While this conference discussed topics like walkways, queuing spaces and guidelines for improved programs, another

*Alexander, Christopher, "The Environmental Pattern Language," Ekistics, Vol. 25, No. 150, May 1968.

agency, the United States Department of Transportation, was calling for proposals to study "Pedestrian Needs and Pedestrian Accommodations." This study proposal was circulated because an earlier study by the Department of Transport had indicated that walking could be a strongly negative experience and tended to be threatening to those who were most dependent upon it for mobility. Canadian cities have also been experimenting with walking spaces and have enjoyed some success in this area. Four varied examples follow.

High Density: Downtown Montreal

Perhaps one of the most outstanding examples of a successful pedestrian precinct is Place Ville Marie – Place Bonaventure in Montreal. Originally, the planners and architects of these projects had anticipated that the outdoor plazas would be the major pedestrian attraction in the development. But much to their surprise and eventual delight, the pedestrian concourse or pedestrian circuit as it is known in Montreal, serves as an exciting walking experience for thousands of Montrealers every day.

Many people mistakenly conclude that the pedestrian circuit is simply an underground walkway. In fact, it is a complex multi-level system, bisecting a hillside and served by a wide range of transportation systems, as well as shops, theatres and restaurants. Other Canadian cities have mistakenly believed that they could simply dig a tunnel underground and enjoy the same success as the pedestrian circuit in downtown Montreal. But few sites enjoy the favourable features of a transportation interchange, a hillside site owned by one owner, major shopping nodes surrounding them and the penchant of the local populace to regard their shopping streets as a piece of living theatre.

Medium Density: Downtown Calgary

While Montreal has long been admired and held up as an example to emulate, Calgary has also been innovating with a pedestrian system known as "Plus-15." While this name may appear obscure to the layman, it is in fact simply a recognition that a clearance of 15 feet over any typical street is sufficient to allow the normal flow of traffic.

Plus-15 is significant in that it is the largest and most complex above-ground system attempted in a North American city to date. Since the downtown core was not blessed with a widely varying terrain and since there was still a lot of
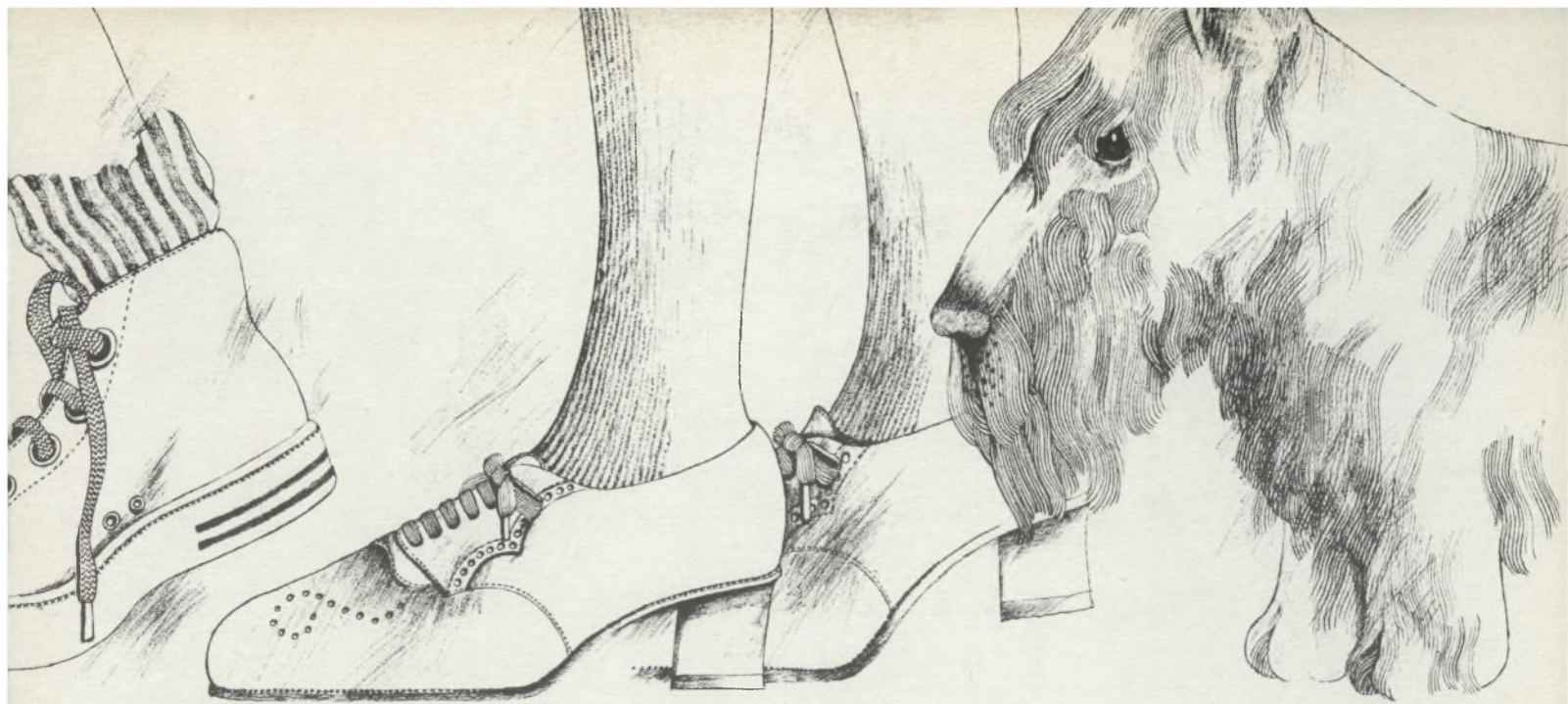
building to be done in the core area, it was possible for the city to adopt policies that incorporated pedestrian walkways right into the major new downtown developments.

This network allows the pedestrian to move throughout practically all of the core area without being interfered with by automobiles or trucks. More importantly, it has become an interesting leisure time activity for visitors to the city. Thus the social objectives of safety and personal security are being met, as well as other social objectives like recreational and leisure time needs.

The one disadvantage to an open air system like this is unfavourable weather conditions – particularly in the winter months. It should be possible in time to cover portions of the walkways during these more uncomfortable months and then remove the cover for fuller enjoyment of the pleasant spring and summer months.

High Density – Residential: West End, Vancouver
One of the most densely settled portions of real estate in all of Canada is the West End of Vancouver. This square mile of land accommodates some 35,000 people and is noted for its high rise apartments and surrounding beaches and Stanley Park. While many people attempt to type the West End as being composed of the elderly or the swingers or some other group, it is in fact composed

of many groups. All of them indicate an overwhelming preference for walking as their major leisure time activity.

At the present time, the fabric of the West End does not include pedestrian walkways. There are open plaza spaces at the base of the typical apartment tower, but they do not tie together or allow the pedestrian to circumnavigate the area. The walkways along the streets are typical of suburban subdivisions – rather medium size and narrowly set back from the pavement. They do not reflect the completely different environment of the West End.

A pedestrian network has been proposed for the West End – a network which would take social objectives as the primary reason for existence. Such a network could alleviate part of the difficulty of walking up and down hills by bisecting the hill as the network does in Montreal. It could also be designed to provide access to the social facilities of the West End, including not only the community centre but also the schools, doctors' offices and other medical facilities, major shopping nodes, and of course the recreational areas of the beaches and Stanley Park. These social, recreational and economic goals all serve to add dynamic purpose to the plans for pedestrian walkways in the West End.

Low Density – Residential: Suburbia

In almost any new subdivision in any Canadian city today, a sidewalk stands as one of community planning's great achievements. Many can recall when the community fought very hard to get the developer to include such a service. Now, along with paved roads and a few street lights, urban Canadians are living in a superimposed pedestrian environment. But many studies have suggested that in fact these residential areas are largely dependent on the private automobile. To create pedestrian environments in this setting seems to be highly questionable.

In some cases, it has now become a status symbol to not have sidewalks or curbs. The country atmosphere that this creates serves not only the social needs of status but also provides a variety in the landscape which is more pleasing than some of the similarities of standard subdivisions.

Recent studies have indicated residents in the suburban area do not use the sidewalks and perhaps their only function is to provide a place for Johnny to learn to ride his bike. Once having learned, Johnny rides on the residential street and the sidewalk is once again useless.

Conclusions

Much less is known about walking than is needed for successful introduction of pedestrian considerations into environmental planning. The successful case of the pedestrian circuit in Montreal was largely by accident, and other examples such as the typical subdivision have been less successful than they might be.

Planners need to know more about public acceptance of pedestrian overpasses, underpasses and street closures for malls. While communities collect data showing the number of accidents involving pedestrians, there are no indicators of how pedestrian accommodation has added to the quality of life in the city.

Canadian cities have pioneered in some useful areas, but much still remains to be done. The important point is that after years of over-attention to the automobile we are finally re-asserting the need to service the pedestrian in our cities.

Are **housing prices higher** or **lower** in **Montreal** or **Toronto?**

by Frank Clayton

This article examines how the costs of new houses, existing owner-occupied and rental housing, and the housing of low-income families and individuals vary between Montreal and Toronto. In particular it focuses on the apparently anomalous situation in which the average price of new houses in Montreal is considerably below the Toronto level, while the average shelter cost/income ratios are almost identical.

Many Canadians are probably conscious of the wide variations in housing costs that prevail between cities across the country. Housing is the one major item among goods and services purchased by consumers that can differ markedly depending upon the city in which a person resides.

To many, the difference in housing costs is most noticeable between our two largest metropolitan areas—Montreal and Toronto. A comparison of the average price of new houses financed under the National Housing Act supports the widely-held view that costs are substantially higher in Toronto than in Montreal.

However, comparisons such as this are indicative of housing cost differences for only a small segment of the population – those purchasing a new house. Neglected are owners of existing houses and tenants. Such comparisons also suffer from other limitations which restrict their usefulness to housing policy-makers.

Firstly, differences in the purchase price of new houses need not be reflected completely in comparable differences in annual shelter costs, which include annual cash outlays for mortgage interest, property taxes, insurance premiums, repairs, and water, light and fuel. Secondly, it is the relationship of shelter costs to incomes which is the most meaningful basis for comparing housing cost differences. If, for example, both housing costs and incomes are higher in City A than in City B it seems unreasonable to conclude that in terms of what they pay for housing the population in City A is worse off—it could be a direct consequence of the higher income. Interestingly enough, shelter cost to income ratios for the average household[1] in Montreal and Toronto are virtually identical.

Cost of New NHA Houses

In 1972 the average price of a new single-detached house financed under the National Housing Act constructed in Montreal was only $18,596 compared with $32,035 in Toronto (Table 1). (The average Montreal house was 42 percent cheaper). The differential is actually even greater since more expensive homes in Toronto are not financed under the National Housing Act.

The lower price in Montreal was due mainly to lower land costs ($2,171 compared to $11,505) although smaller sized houses were also important (1,077 square feet compared to 1,268 square feet). Roughly 70 percent of the difference in the average price of new NHA houses between the two centres in 1972 was accounted for by land costs, with smaller houses accounting for most of the remainder.

Table 1

Estimated Average Costs and Average Gross Debt Service of New Single-Detached Dwellings Financed Under the National Housing Act, Montreal and Toronto, 1972

Average House Cost (Dollars)	Montreal	Toronto	Montreal as a Percent of Toronto
Total Cost	18,596	32,035	58.0
Land Cost	2,171	11,507	18.9
Construction Cost Per Sq. Ft.	14.83	15.29	97.0
Finished Floor Area (Sq. Ft.)	1,077	1,268	84.9
Average Gross Debt Service (Dollars)			
Total	2,146	3,006	71.4
Principal and Interest	1,485	2,350	63.2
Property Taxes	656	564	116.3
Down Payment	2,436	8,851	27.5

Source : Central Mortgage and Housing Corporation, *1972 Canadian Housing Statistics*, Tables 86 and 104.

Table 2

Average Shelter Cost/Income Ratios, All Families and Individuals, Montreal and Toronto, 1969

	Montreal	Toronto	Montreal as a Percent of Toronto
Average Money Income (Dollars)	8,416.0	10,419.8	80.8
Average Shelter Expenditure (Dollars)	1,394.2	1,721.8	81.0
Average Shelter Cost/Income Ratio (Percent)	16.6	16.5	

Source : Statistics Canada, 1969 Family Expenditure Survey.

When we turn to the average gross debt service payments of purchasers of new homes in the two cities the differential is narrower (Montreal was about 29 percent below Toronto in 1972). Two factors account for this. First, property taxes are much higher in Montreal ; in fact property taxes for the average new NHA home in Montreal in 1972 exceeded Toronto property taxes by 16 percent in spite of the substantially lower house prices. A major reason for the higher taxes in Montreal is that services such as roads, sewer and water are financed through local improvement levies, whereas in Toronto such services are prepaid by the land developer and ultimately reflected in the price of new houses.

The second factor is that down payments are higher in Toronto, leaving a smaller proportion of the total cost of a new house to be financed with borrowed funds. The difference in average down payments ($2,436 compared with $8,851 in 1972) is probably not as marked as the figures in Table 1 suggest since many purchasers in Toronto make use of second mortgages.

It seems clear, however, whether we use the average price of a new NHA house or the concomitant average gross debt service payment, that the cost of new houses is significantly higher in Toronto than in Montreal.

Shelter Cost/Income Ratios — All Families and Individuals

Family expenditure surveys conducted by Statistics Canada provide a wealth of information on expenditure patterns and other characteristics of families and individuals (family units) in Canada. The most recent comprehensive survey provides information for the year 1969.[2] While these statistics are now five years old they are still reliable as rough indicators of differences in shelter costs between larger cities.

The average shelter expenditure of families and individuals in Montreal in 1969 was $1,394, some 19 percent lower than the comparable Toronto figure (Table 2). Moving from a comparison of the average price of a new NHA house to the average shelter expenditure of a household reduces the apparent differential in housing costs between Montreal and Toronto by over half.

However, the comparison of shelter expenditure in terms of dollars between the two centres is not the most valid measure of differences in housing costs. A more appropriate comparison is the ratio of shelter expenditure to income. If incomes are higher in Toronto people could probably afford to pay higher housing costs.

In these terms housing costs in Montreal and Toronto appear to be about the same — shelter expenditure as a percent of income for all households stood at 16.6 percent in Montreal in 1969 compared to 16.5 percent in Toronto. Thus, while average shelter expenditure is lower in Montreal than in Toronto, incomes are also correspondingly lower. Average income for families and individuals in Montreal in 1969 was $8,416 compared with $10,420 in Toronto.

Shelter Cost/Income Ratios by Type of Tenure

The above findings are based on information for all families and individuals regardless of whether they own or rent accommodation. Such an aggregation may hide significant differences in housing costs according to tenure type between the two centres. To allow for this possibility Table 3 shows average shelter expenditure and shelter cost/income ratios for all households and for families of two or more persons are quite similar. Consequently, our discussion is presented in terms of all households only.

The average homeowner in Montreal, regardless of whether or not he has a mortgage outstanding on his house, pays only slightly less for shelter than his counterpart in Toronto. The average shelter expenditure of all homeowners in Montreal in 1969 amounted to 95.8 percent of the comparable figure in Toronto. In both centres the homeowner with a mortgage on his house pays significantly more for housing than those fortunate enough to have paid off their mortgages. The shelter cost/income ratios for homeowners, both with and without mortgages, are roughly the same in the two centres.

For tenants average shelter expenditure is significantly less in Montreal. For renters of self-contained dwelling units (called regular tenants in the Expenditure Surveys), it was about 24 percent lower in Montreal than in Toronto in 1969. It was about 33 percent less in Montreal for roomers. In spite of sharply lower shelter expenditures in Montreal, the shelter cost/income ratios for all tenants and roomers were about the same in Montreal and Toronto. The ratio for regular tenants in Toronto was only slightly above the Montreal figure.

The closeness of average shelter expenditure in dollar terms for homeowners in Montreal and Toronto is very surprising. It may be because, until recently, homeownership in Montreal was the preserve of higher-income English-speaking Montrealers.

Shelter Cost/Income Ratios by Income Group

While the shelter cost/income ratios for all households are very similar in Montreal and Toronto, it remains to be seen whether this conclusion holds for families and individuals at various levels of income.

Table 4 indicates Montreal has a significantly higher proportion of its households in the lower income groups. In 1969, slightly more than 32 percent of families of two or more persons in Montreal had incomes of less than $7,000. The comparable figure in Toronto was less than 17 percent. This difference in the distribution of families according to income may in part account for the closeness of the overall shelter cost/income ratios between Montreal and Toronto since lower income groups typically spend a greater proportion of their income on shelter.

For each income group in Toronto both families and individuals spend a larger proportion of their incomes on shelter than their counterparts in Montreal. The difference is particularly pronounced in the lower income groups. Households having incomes of less than $3,000 in Toronto in 1969 on average spent 51.1 percent of their income on shelter. The comparable percentage for Montreal was 41.7 percent. To put it another way the shelter cost/income ratio for households in the lowest income group in Toronto was 22.5 percent higher than in Montreal. For families of two or more persons the difference was even larger — 30.0 percent. This compares with only a 9 percent differential for families with incomes of $15,000 or over.

Table 3

Average Shelter Expenditure and Shelter Cost/Income Ratios, by Type of Tenure, Montreal and Toronto, 1969

Homeowners	With Mortgage	Without Mortgage	All Homeowners			
Tenants				Regular	Roomers	All Tenants
All Families and Individuals						
Average Shelter Expenditure (Dollars)						
Montreal	1,980.7	1,367.3	1,791.8	1,284.3	467.4	1,192.6
Toronto	2,139.8	1,437.3	1,870.7	1,686.3	702.1	1,480.4
Montreal as a Percent of Toronto	92.6	95.1	95.8	76.2	66.6	80.6
Average Shelter Cost/Income Ratio (Percent)						
Montreal	16.9	12.9	15.8	17.2	14.2	17.0
Toronto	16.6	13.0	15.4	18.1	14.8	17.5
Families of Two or More Persons						
Average Shelter Expenditure (Dollars)						
Montreal	2,012.0	1,407.6	1,845.1	1,356.0		1,336.3
Toronto	2,137.4	1,516.2	1,917.8	1,824.6		1,762.0
Montreal as a Percent of Toronto	94.1	92.8	96.2	74.3		75.8
Average Shelter Cost/Income Ratio (Percent)						
Montreal	16.8	11.7	15.4	16.1		16.1
Toronto	16.6	12.4	15.1	17.1		16.8

Source: Statistics Canada, 1969 Family Expenditure Survey.

It appears that for households in each income group housing is more expensive relative to incomes in Toronto than in Montreal. The difference is particularly large for households with incomes below $3,000 in 1969. On the other hand, Montreal has a greater proportion of its population in the lower income groups who are faced with unreasonably high shelter cost/income ratios.

Conclusion

The comparison of the average price of new NHA-financed houses is not an adequate measure of differences in housing costs between Montreal and Toronto. A more valid measure can be made by comparing shelter cost/income ratios for households.

For all households the shelter cost/income ratios in 1969 were very similar in Montreal and Toronto. This finding holds regardless of the type of tenure; *i.e.* homeowner with mortgage, homeowner without a mortgage, regular tenants and roomers. While average shelter expenditure is typically lower in Montreal, average income is also correspondingly less.

By level of income it appears the shelter cost/income ratios are higher in Toronto for each income group of households. The differential is particularly large for those in the bottom income group. However, a greater proportion of Montreal families are in the lower income groups and consequently are paying out an unreasonably large part of their incomes for housing. In terms of shelter cost/income ratios the low-income housing problem involves many more households in Montreal, but for those in the bottom income group in Toronto the problem is more severe.

Higher shelter cost/income ratios for *each* income group in Toronto are not inconsistent with the earlier finding that the average shelter cost/income ratios for *all* households in the two centres are approximately the same. The relatively greater proportion of Montrealers in the lower income groups appears to account for this difference.

In conclusion then, it appears that in terms of shelter cost/income ratios for households at *comparable* income levels in Toronto and Montreal, housing costs are lower in Montreal. The difference is most marked for lower income families and individuals.

Table 4

Average Shelter Cost/Income Ratios, by Income Group,
Montreal and Toronto, 1969

Income Groups	All Families and Individuals				Families of Two or More Persons			
	Distribution of Families and Individuals		Shelter Cost/ Income Ratio		Distribution of Families		Shelter Cost/ Income Ratio	
	Montreal	Toronto	Montreal	Toronto	Montreal	Toronto	Montreal	Toronto
Under $3,000	14.4	8.8	41.7	51.1	6.0	3.2	37.9	49.3
$3,000–3,999	6.0	4.9	29.7	31.4	3.3	2.4	30.5	33.0
$4,000–4,999	6.9	3.4	24.8	24.9	5.6	2.3	27.9	29.3
$5,000–5,999	8.1	6.8	20.0	19.8	7.0	3.5	21.4	25.1
$6,000–6,999	9.4	5.9	18.3	22.0	10.2	5.3	19.0	21.9
$7,000–7,999	8.3	7.3	18.3	20.5	9.0	7.7	18.7	21.2
$8,000–8,999	8.6	8.1	17.6	18.5	10.4	9.2	17.6	18.8
$9,000–9,999	7.7	9.5	16.2	17.7	9.9	10.4	16.2	18.1
$10,000–10,999	5.1	6.8	16.2	17.6	6.3	8.4	16.4	17.7
$11,000–11,999	5.8	5.8	14.6	15.3	7.5	6.8	14.6	15.3
$12,000-14,999	9.9	15.7	12.6	14.6	12.4	19.7	12.6	14.6
$15,000 and over	9.8	16.9	11.9	12.9	12.3	20.9	11.9	13.0
All Groups	100.0	100.0	16.6	16.5	100.0	100.0	15.9	16.0

Source : Statistics Canada, 1969 Family Expenditure Survey.

1 Households include both families of two or more persons and unattached individuals.

2 A family expenditure survey which was conducted in the Spring of 1972 provided information for the year 1971. As the 1969 survey incorporated a much larger sample than the 1971 survey, results from the 1969 are used in this article.

"Perspectives d'utilisation des déchets industriels et naturels en génie"

Entrevue avec
MM. Aïtcin et Casiez
de l'Université
de Sherbrooke
par : François Lapointe

Projet Pudding

Q. MM. Aïtcin et Casiez, vous êtes les principaux instigateurs du projet *Pudding*? Plus précisément, en quoi consiste ce projet et quels en sont les principaux objectifs?

M. Aïtcin. Le projet *Pudding* rassemble un certain nombre de professeurs de l'Université de Sherbrooke qui appartiennent surtout au département de Génie civil. Notre objectif principal est d'examiner la possibilité d'utiliser des déchets industriels dans la construction de routes, de barrages, de remblais, de maisons, etc... L'avantage d'une telle initiative n'est pas tant dans la valorisation commerciale des déchets eux-mêmes, que dans les volumes qui sont mis en jeu.

Q. Dans la mesure où le projet *Pudding* consiste à recycler des déchets industriels, peut-on parler de projet antipollution?

M. Casiez. Là, je vous arrête! Le projet *Pudding* n'est pas à proprement parler un projet antipollution, mais un complément à ce type de projet. En d'autres termes, de nombreux processus de dépollution conduisent à l'obtention de déchets solides, tels que laitiers, cendres et boues, en somme des déchets qu'il faut éliminer ou stocker de façon quelconque. C'est alors que le projet *Pudding* entre en jeu.

Q. Dans ce cas, pourriez-vous nous expliquer, à l'aide d'exemples, ce qui a été fait jusqu'à maintenant dans le cadre de votre projet?

M. Aïtcin. Jusqu'à ce jour, nous avons travaillé essentiellement sur quatre types de déchets. Premièrement, des déchets de mines d'amiante avec lesquels nous avons fabriqué de l'amiante-ciment et des agrégats légers qui peuvent être utilisés dans l'industrie du béton. L'avantage des agrégats légers réside en la possibilité d'obtenir la même résistance de béton mais avec un poids unitaire beaucoup plus faible, ce qui est très intéressant, particulièrement pour les structures élevées. Il s'agit d'un marché qui se développe énormément puisque ce genre d'agrégat se vend à peu près $10 la tonne,

alors que l'agrégat normal, la pierre, se vend à peu près de $1.50 à $3.00 la tonne suivant les lieux. Ensuite, nous avons travaillé sur des laitiers de silico-manganèse, produits dans la région de Montréal, qui pourraient être utilisés comme additifs dans le ciment. Enfin, nous nous sommes intéressés à deux types de laitiers noirs avec lesquels nous avons fabriqué du granit artificiel ainsi qu'aux nombreuses utilisations de la tourbe comme matériau de construction.

Q. Puisqu'il est question de déchets industriels, j'en conclus que l'industrie est intéressée directement par votre projet. Quel est le rôle de l'industrie dans tout ce processus et quel avantage en retire-t-elle en définitive?
M. Aïtcin. Naturellement, nous obtenons nos déchets industriels des industries. Il leur suffit de nous faire parvenir quelques échantillons de leurs déchets et, par un examen systématique de leurs propriétés physiques et mécaniques, nous tentons alors de trouver un

certain nombre de possibilités d'utilisation que l'industrie, dans son ensemble, pourrait adopter ou rejeter. L'avantage pour les industries consiste en la possibilité de ne plus avoir à accumuler et à manipuler des quantités considérables de déchets pour lesquels elles paient des taxes qui augmentent continuellement jusqu'à devenir une partie non négligeable de leur budget d'exploitation.

Q. Donc, vous avez besoin de l'industrie dans la mesure où elle vous fournit des déchets industriels qui peuvent être recyclés. Mais si vous trouvez un moyen d'utiliser les déchets industriels, ceux-ci ne seront plus considérés comme tels et, par conséquent, leur coût sera peut-être aussi élevé que celui des autres matières premières que l'on retrouve communément sur le marché?
M. Casiez. Evidemment, s'il n'y a aucun profit à faire, il n'y aura aucune industrie qui va s'intéresser à notre projet. Voilà l'aspect économique. Mais c'est également un problème politique, dans ce sens que l'on pourrait créer des industries typiquement québécoises. On aurait en définitive, des produits fabriqués au Canada. C'est le cas, par exemple, de certains produits en amiante-ciment que l'on importe actuellement des États-Unis … De plus, en ce faisant, nous créerions des emplois.

Q. Tout ceci est très intéressant mais est-ce que tous les déchets industriels sont utilisables et dans quelle proportion?
M. Aïtcin. Avec un peu d'imagination et beaucoup de recherches, on réussira à utiliser tous les déchets industriels dans une proportion de 100 pour cent. Actuellement, nous avons entamé la deuxième phase de notre projet, phase qui consiste à trouver des utilisateurs possibles. Notre but ultime est d'effectuer un inventaire de tous les déchets industriels disponibles ainsi que de tous les utilisateurs disponibles afin de les faire se rencontrer et trouver, ensemble, des solutions au gaspillage dont nous sommes actuellement les témoins.

Q. Lorsque vous avez résumé, au début de cette entrevue, ce qui a été fait jusqu'à maintenant dans le cadre de votre projet, vous avez parlé, M. Aïtcin, des nombreuses utilisations possibles de la tourbe comme matériau de construction. Comment peut-on parler de recyclage de la tourbe puisqu'elle n'est pas un déchet industriel?
M. Aïtcin. C'est exact! La tourbe n'est pas véritablement un déchet industriel mais plutôt un déchet naturel, un produit laissé pour compte. Bien que je n'aie pas les statistiques en main, je puis affirmer que le Québec est le principal réservoir de tourbe au monde. Prenez, par exemple, la région de Manicouagan où les tourbières ont jusqu'à 300 pieds d'épaisseur. C'est une véritable richesse naturelle et de plus, ce genre d'exploitation est facile, contrairement à celle du bois, puisque des millions de tonnes de tourbe sont rassemblées en un même lieu.
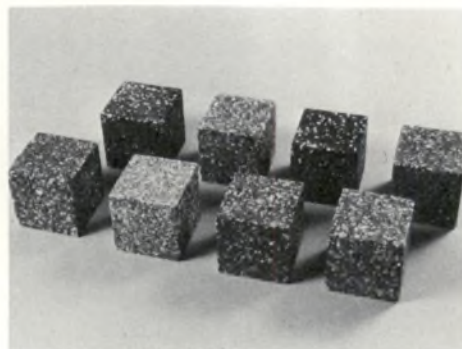
Produits à base de tourbe

PEATWOOD | PEATCRETE | PEATCORK

PEATFOAM

Cubes de granit artificiel coloré

Q. Sans doute, mais encore faut-il traiter cette tourbe, la transformer ! A votre connaissance, M. Aïtcin, une technologie de la tourbe a-t-elle été développée au Canada ou à l'étranger et quelles sont les propriétés de ce "nouveau" matériau?

M. Aïtcin. D'abord, avant de traiter la tourbe il faut l'extraire. Actuellement, c'est un problème puisque le coût d'extraction de la tourbe est assez élevé ici au Québec. On peut expliquer cela par le fait que l'extraction est encore faite de façon artisanale, étant donné l'absence de demande industrielle. En fait, la tourbe est très chère parce qu'elle est extraite en petite quantité. Une fois extraite, nous la tamisons grossièrement pour en sortir les racines. Puis, nous la faisons sécher avant d'y ajouter des résines, au besoin. Plus nous ajoutons de résines, plus la polymérisation est rapide et plus le matériau obtenu est solide. A proprement parler, il n'existe pas, au Canada et à l'étranger, une véritable technologie de la tourbe en tant que matière première pour l'industrie de la construction. En U.R.S.S. toutefois, la tourbe est utilisée pour l'isolation des maisons dans la région de Moscou ; les Russes ne font que faire passer la tourbe entre deux courroies tout en la pressant et en la chauffant un peu. Ils réussissent ainsi à produire un matériau qui pèse 30 livres au pied cube alors que nous arrivons à descendre à 18 livres au pied cube et à obtenir une plus grande rigidité et probablement des qualités isolantes meilleures.

Q. Jusqu'à maintenant, vous avez réussi à fabriquer, avec la tourbe, quatre matériaux synthétiques qui sont le "peat cork", le "peat foam", le "peat crete" et le "peat wood". Ces quatre matériaux sont-ils tous destinés à l'isolation thermique et phonique ou est-ce qu'il y a d'autres applications possibles?

M. Aïtcin. Le "peat foam" est un matériau isolant ; léger et rigide, il peut avantageusement concurrencer le "styrofoam". Le "peat wood" est un matériau aux propriétés variées puisque nous pouvons en faire des planches, des panneaux et des madriers ; mais, ce qui semble plus intéressant, c'est que le "peat wood" se moule. Ainsi, en incorporant des nervures aux panneaux de revêtement, une personne pourrait finir son intérieur sans recourir à de la main-d'œuvre spécialisée. Une telle initiative pourrait être rentable en réduisant sensiblement le coût de la main-d'œuvre qui est, vous le savez, extrêmement élevé de nos jours. De plus, il serait possible de mouler des portes d'armoires ou des cadres de fenêtres ; il suffit d'avoir un moule avec, incorporés à ce moule, les ornements désirés…
En réalité, nous pouvons fabriquer un produit au choix ; nous pouvons le faire dur ou mou, fin ou épais, flexible ou rigide, le tout est de savoir ce que nous voulons.

Q. Tous ces matériaux à base de tourbe, si je comprends bien, sont employés essentiellement à l'intérieur. Au point de vue de la résistance au feu, peuvent-ils se comparer avantageusement aux autres matériaux utilisés actuellement?

M. Aïtcin. Au point de vue de la résistance au feu, nous n'avons pas encore procédé à des tests mais disons qu'en ajoutant, à ces matériaux, des produits ignifuges comme cela se pratique déjà pour les panneaux à particules de bois, on obtient un produit plus résistant au feu. De la même manière, il suffit de les traiter avec des produits hydrofuges pour obtenir un matériau résistant à l'eau. Malheureusement, toutes ces additions essentiellement techniques, n'ont pas encore été effectuées…

Q. M. Aïtcin, est-ce que vous avez une idée approximative du pourcentage de réduction du coût de construction que la mise sur le marché de tous ces nouveaux matériaux pourrait occasionner?

M. Aïtcin. Nous ne pouvons, pour le moment, avancer un chiffre précis. Pour ce faire, nous devrions procéder à une série de tests. Ces tests sont généralement effectués au stade du projet type. Nous sommes rendus à ce stade mais avant de procéder, il va falloir trouver quelqu'un qui va s'intéresser à notre projet, il va falloir obtenir des subventions nécessaires à la poursuite de notre recherche. En définitive, le projet *Pudding* a sa raison d'être, nous en sommes convaincus. Il reste à convaincre les personnes et les industries intéressées.

Canada's Emerging Northern Metropolis

by R. G. Bucksar

Not since the days of the winning of the Canadian and American Wests has North America been made aware of such a vast new country crouching, silent and largely ignored on its very doorstep.

Now with territorial roads criss-crossing the Yukon and with improvements continuously being made to the Alaska Highways another industry, second only in size to mining, has grown up – tourism.

With the discovery, development and operation of mines the economy has become more stabilized and the planning of a more permanent and long range nature included the possibility of large petroleum discoveries, the development of smelters and pulp mills and increased hydro-electric development.

The pioneering spirit of North America is alive and well and living in the Yukon and offering promise of a new and modern 'golden future.'[1]

Historical Aspects

At the turn of the present century, Canada was recovering from a severe depression. Increased unrest and a desire for expansion, for mobility and for unity necessitated a period of railway building, a western expansion and a political union of all Canadians. Unfortunately, too few Canadians had much faith in a western empire or the newly acquired northern lands.

For two hundred years, the Hudson's Bay Company had been the principal authority in the Canadian Northland. In 1869, the Company's territories were surrendered to Great Britain, and Canada accepted these rights the following year, with all other British territorial rights in the Arctic being handed over in 1880.

The discovery of gold somewhere in the great unknown of northern Canada captured the imagination of people all over the world. In spite of the depression, or perhaps because of it, and the numerous wars being waged at that time (Cuba, Turkey, South Africa, and China) some

[1] Office of the Commissioner of the Yukon Territory.

ten million people (est.) considered seeking this instant wealth. Few realized enormous distance involved or the possible difficulties ahead. Once the comforts of home were left behind, they faced the uncertainties and dangers of the trail and the unknown.

There were seven major trails utilized during the brief ten-year period of the gold rush. Each trail had its own blessings or dangers for the novice gold seekers, who for the most part wandered blindly in their quest.

Two of the routes are important in the development of Whitehorse. They are the *White Pass Route* and the *Chilkoot Pass Route*. They were probably the most important and certainly those that are best remembered in both fact and fiction, for they crossed the formidable St. Elias Range and led to lakes Lindeman and Bennett. For men in a hurry, these routes provided the quickest and most expedient way to the gold fields. Many authors have written of the hardships and terrors of these passes with such detail that we, some seventy-five years later, can vividly picture that human ladder of flesh and bone attacking the mighty mountains.

It is no wonder that the shores of Lake Bennett were lined with the tents of those who had given up or those who were resting and preparing to go on. Lake Bennett also became the staging area for boat construction, as an all-water route lay ahead. A number of small steamers were constructed there in 1898 to provide transport downstream as far as Canyon City just above White Horse Rapids.

The thirty-eight mile stretch of water immediately above the Rapids was the most dangerous part of the journey. For the novice this part of the trip was a nightmare. The conditions were so bad at White Horse Rapids that pilots charged twenty-five dollars for the wild three minute run. Refusal to hire a pilot usually meant disaster. By the spring of 1898, nearly one hundred and fifty had died attempting to pass the rapids without pilot. Scavengers had a field-day recovering and looting the

wrecked boats and often robbing the river's victims. It was no wonder that with the coming of the Yukon Field Force, it was required that boats be numbered, carry a pilot, and discharge all passengers before attempting to pass the rapids. In spite of the ominous nature of the rapids, nearly 25,000 made the passage in 1898.

The First Developments

On the flat plains below the rapids, the weary travellers found a temporary haven from the torment of the river. Here they pitched their tents and rested while they repaired their outfits, or perhaps decided to abandon their boats in favour of dog travel over the ice after the freeze. Many turned back here or stayed in the rapidly developing tent-city as workers or entrepreneurs of all types. As a logical break-in-bulk point from overland to continuous river travel, the small community gained substance and grew quite rapidly.

With the completion of the first stage of the White Pass and Yukon Railway over the mountains, travel became relatively simple. The railway carried the men and their outfits over the mountains to Lake Bennett, transferred them to steamer which carried them as far as Canyon City, transferred them again to a horse-drawn tram for the four mile trip around the White Horse Rapids and deposited them at the shore of the Yukon River. At this point they could again transfer to other shallow-draught steamers and make the final part of the journey to Dawson. By 1900 they could ride the White Pass and Yukon Railway the entire distance from the sea to the Yukon River.

As these developments in transportation occurred, the settlement generally referred to as the WhiteHorse Flats gained a degree of substance and a name... Closeleigh. The name did not stick, however, as federal officials gave preference to the name White Horse (changed to Whitehorse in 1938). By 1900, the town could boast a semi-permanent population of over 250 and a considerable degree of optimism towards the future.

Yukon Dept. of Travel and Information

Being located at the head of navigation on the Yukon's main artery and only 110 miles from the ice-free port of Skagway made the community logically oriented to serve as a trans-shipping point and regional centre for virtually all of the interior Yukon. Unfortunately, the gold payed out in a few year's time and the interior settlements of the Yukon dwindled both in size and number. Geographic position combined with a will-to-live instilled by the pioneers of Whitehorse certainly helped her to survive while many other settlements of similar origins and tenuous economic condition perished.

The key connection to the outside, the White Pass and Yukon Railway, also fell victim to the economic decline of the turn of the century. Freight and passengers managed to keep the company in operation for a few years, but by 1910 the Yukon economy had lagged and the need for a railway had diminished. This was the beginning of a long period of financial misery for the White Pass.

During the lean years, any activity which might produce a few dollars was considered fair game. The result was that the company managed to maintain a reasonable level of business during the summer months, but sank to an extremely low level during the winter. Dividends were not paid and bond interest due had

accumulated over the years to some $2,458,000. Financial difficulties became so great at one time that the president of the company had to mortgage his home to meet the current payroll.[2]

In 1913, a stimulus for both the town and the railway came in the form of a mining development at Keno Hill. This silver-lead mine not only aided the local economy by providing additional employment, but it helped facilitate the development of large-scale mining operations in the Yukon, which have since become a major and stabilizing feature of the total economy.

In total perspective, the economy of the Yukon remained principally extractive and subsistence until the outbreak of World War II. Although the rich placers had been exhausted, many families still earned a meagre living panning gold and supplementing their income by hunting, fishing and trapping. Whitehorse remained important as a regional centre, but the lack of diversity in the economy predicated that the total settlement pattern of the Yukon be remote and rural.

[2] It is interesting to note that in spite of all the difficulties experienced by the railway in its seventy years of operation, at no time has government aid been given either in land or subsidy.

Mineral exploration continued during this period and resulted in the construction of a number of short roads to serve these properties. A primitive, but passable, trail from Whitehorse to Dawson City was also developed to link the two main centres of the Yukon. Occasionally a cry was heard for extending a road to the south and the outside. Although serious consideration was given to such a highway, little was done until it became a wartime expedient. It simply was not economically practical until that time.

By 1935, the desire for faster communications with Arctic Canada had grown stronger in the Canadian government. This feeling prompted a survey by by the Department of Transport for the most practical flying route to the Yukon. The construction of an airfield newtork began in the winter of 1940-41, but it was not until the invasion of the Aleutians by the Japanese that a highway to the south seemed necessary.

The coming of the war had the general effect of another gold rush on both Whitehorse and the Yukon. All the facilities of Whitehorse and of the railway were heavily taxed during the construction of the Alaska Highway. Virtually all existing warehouse facilities, as well as vacant land in the townsite were taken by the military. Available housing was virtually non-existent. For a town accustomed to handling a few hundred transients at any one time, the surge of temporary new residents, which may have numbered 40,000 (est.), was a severe strain.

The war helped to cause a shift from the subsistence type of economy experienced in most of the Yukon since the gold rush. As the Highway developed the rivers fell into disuse as a major transport arteries. People began to move in from the bush and the smaller settlements to the larger and developing urban centre of Whitehorse. Even with a wartime economy Whitehorse had the magical aura of a semi-industrial service centre and this led to major social problems in the emerging community.

Perhaps one of the greatest social problems to face the city fathers was the development of squatter settlements within the townsite. Due to a lack of housing, building materials, and land for homesites, many of the newcomers were forced to squat on private and public lands. Although squatters were first noted in the community as early as 1939, they did not become a severe problem until the building of the Highway.

Although there were many attempts to control squatting, the general result was relocation rather than a numerical reduction of the problem. If individuals were too severely harassed, they simply towed their housing to another part of town. As a result, Whitehorse had the look of a large sprawling shacktown for which it appeared there could be no hope.

The Post War Period

After the end of the war, the area settled down somewhat and Whitehorse boasted a population of 3,680. However, its appearance had not changed, and its future was quite uncertain. Schools were overcrowded, water and sewer facilities were inadequate, and in spite of all the road building that had occurred, the roads were in poor condition.

In spite of its poor condition, the Highway gave the local resident a degree of mobility not experienced before and reduced his personal transportation costs to the outside. A salient feature of the new mobility, discussed by many writers of northern transportation, was that with the end of personal isolation, the citizen was more satisfied with his lot and thereby helped to create a better and more stable community.

The Highway also had some detrimental effects. Native peoples and Euro-Canadians began to drift into the community in increasing numbers and added to the growing squatter problem. The native peoples for the most part were not readily adaptable to steady employment practices or even day-wages, nor were they emotionally prepared to make the

White Pass and Yukon Route

radical social adjustments necessary for their survival. In this condition of incipient urbanization, they became trapped in a confusing cross-cultural transition. They had strong personal anxieties about remaining in town, but there were no other paths open to them, so at best they had an undesirable situation.

It may seem paradoxical that people who move into an empty land like the Yukon Territory should settle in and around the towns and villages, but this is where the opportunities can be found. The problems experienced in this period in Whitehorse illustrate what can happen in a region with a tenuous economic base, where attractive land and housing is scarce near the townsites.

Problems of a political nature also developed during this period and a spirit of pessimism seemed to prevail everywhere. In a plebiscite held in the summer of 1946 regarding the incorporation of Whitehorse as a city, the measure was defeated by a five to one margin. It was not until 1950, when continued growth and a generally improved economic situation had instilled a new faith in Whitehorse that city status was achieved.

This marked the beginning of a gradual upward trend which has continued to the present day. The 1951-61 Yukon census showed a forty-seven percent gain in total population (1951 – 9,906: 1961 –

14,628). Most of this growth took place in the Whitehorse area, which resulted in the movement of the Capital from Dawson City to Whitehorse in 1953.

The urbanization process which has followed since 1953 has been phenomenal. In addition to the new facilities such as schools, medical facilities, paved roads, excellent police and fire protection, and water and sewer development, the town has changed in character. It has assumed the appearance of permanence. At nearly seventy-five years of age, it is no longer the ramshackle, bustling boom town of the gold rush or the war years.

The squatters, a problem for nearly thirty years, were eliminated from the townsite in 1969, but all the social problems that they helped to create have not been eliminated. The problems of the old frontier-type town have given way to the problems that can be found in most urban areas across Canada today.

A Subjective Analysis of Contemporary Problems

As in the past, Whitehorse is still the barometer of economic activity for the Yukon. Although trade and industry reach out to many points of the Yukon, Whitehorse stands out as the single most important settlement.

Two industries stand out today in the Territory – mining and tourism. Unfort-

This three-storey log skyscraper was built by Martin Berrigan in the early 1940's to ease the housing shortage which arose when 30,000 workers arrived to build the Alaska Highway.

Tourists are usually surprised to learn that suburbia is a phenomenon found in the far north too. Riverdale is a rapidly growing suburb of Whitehorse.

unately, rather than being mutually beneficial to each other they are presently becoming conflicting interests.

Mining is the base industry and chief contributor to the present economy of the Yukon. This will probably continue to be true for many years and will be the stimulus for any future economic growth. However, it must be remembered that although the mining industry has been developing rapidly, mineral production in the Yukon represents a small portion of the total national output.

Unfortunately two forces seem to be working against the mining interests of the Yukon – tourism and the instant-ecology syndrome. Although tourism is definitely important to the economy, it should also be remembered that it relies upon the historical past and the economic present, both of which deal with mining. It is ridiculous to assume that the two cannot be compatible. Much of northern Ontario, Manitoba, and Quebec was developed with a dual-purpose, multi-use plan in mind.

The cries of the ecologist for the full preservation and maintenance of the world in its present state is selfish and unrealistic. The demands of our present highly technical society for resources are too great to turn the whole north into a national park, unless every citizen is willing to give up a great deal, including his economic status.

Developments can occur in a rational and sensible way, but the pure self-interest groups and individuals must be carefully monitored in order to achieve this goal. We must work towards achieving the most good for the most people within present parameters.

Many changes in Whitehorse and the Yukon are occurring due to the tourist influx into the area. During 1972, approximately 225,000 people visited the Yukon and spent some $15 million in the process. They perhaps have a right to make some moderate requests.

Unlike the early travellers to the area, tourists today have numerous alternative methods and ways of travel. They can

drive the Alaska Highway; they can come via the Marine Highway as far as Skagway where they can place their vehicles on White Pass flatcars for the journey to Whitehorse, or Marine Highway to Haines from which they can drive the Haines Highway to the Alaska Highway; they can journey by bus; or they can travel by air. Whichever route they choose, they can still enjoy the frontier setting and magnificent grandeur about them. However, I am sure that many may be disappointed when they discover the modern suburbia around Whitehorse; northerners are just not expected to live like *that*.

The massive influx of tourists into the territory has created new transportation problems. Demands for paving the Highway are becoming more frequent. Paving the Alaska Highway in its entirety without considering the extractive industries and their subsequent development would be illogical. The latest development in terms of paving proposals calls for the paving of the Haines Highway, which will have the effect of linking the Marine Highway with the Alaska Highway, a heavily used portion of road. Schemes such as this make greater economic sense when they serve primarily the people and industries of the region rather than the seasonal passer-through.

The number of tourists visiting any area should not be the major factor determining road improvements. Whatever changes planners consider, they must remember that these accomplishments should be oriented to serve the needs of the communities and the people first.

Whitehorse can and will flourish. There are many plans for extensive developments in the very near future. In time, social ills will be overcome, the economy will be stabilized, and many northern decisions will be made by northern people. Whitehorse, which has lived in the aura of the past for nearly 75 years, is turning with dignity and purpose, towards the future.

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The Imperial City

and its Alternatives

by George Banz

There was a time when civic elections had the sole function of giving voters the opportunity to indicate their preference of individual candidates for office. They have become rather more than that, increasingly serving the people as a means to choose among alternative urban futures and in particular, to express their unhappiness with the present direction and pace of urban development. The obvious antagonism towards highrise buildings and expressways and their promoters, however, may obscure a more profound dissatisfaction with the emerging new urban environment ; a dissatisfaction that has more to do with the very essence of urbanisation than with specific projects or with the height and shape of individual buildings.

What has happened is that most cities have been planned for too long on an ad hoc, incremental basis. In accommodating growth from day to day and from year to year planners, politicians and citizens alike all too easily lose sight of the fact that a modern city can grow from small-town status into a world metropolis with problems of an entirely different order in a very short time. There are no known effective strategies to deal with the result-

ing situation. The argument centres on whether certain development proposals are appropriate for certain locations, while no one dares to question the appropriateness of the basic physical structure of our large cities.

This lack of vision is inherent in incrementalism and is perhaps inevitable when the urban future is shaped inadvertently by administrators trained and conditioned to accommodate change originating outside their sphere of influence, but not trained to predict or to guide the future direction of change. Under these circumstances, someone will obviously have to go beyond mere planning, and study the long-term implications of current trends. Someone will have to produce viable alternatives to what current trends hold in store for us. We have to be made fully aware that inventions in the fields of transportation and communications have superseded both the concept of the traditional city and the patchwork of adaptations designed to adjust that concept to modern technology.

The realization that clear alternatives are needed is not new. Two of the most original serious proposals for a radical restructuring of our cities in response to technological advances date back to the early nineteen-thirties, a time when it first became obvious technology was going to emerge as a dominant force in the shaping of cities. The proposals were by Frank Lloyd Wright and Le Corbusier, two architects who were to become world famous in later years.

They expressed their dissatisfaction with big-city living in projects and writings which emphasized the need to bring city dwellers into contact with nature through the creative use of technology. Wright conceived the idea

of "Broadacre City" in which every family would live in an individual home on its own several acres of ground. Le Corbusier boldly proposed that Paris be razed and replaced by a "Ville radieuse"—a Radiant City—consisting entirely of huge skyscrapers and meandering multi-storey apartment blocks in a park-like setting, housing people at higher densities than before. Needless to say, both proposals were destined to remain utopias.

The reason the two concepts deserve renewed interest is because they identify two alternatives open to us in redirecting the evolution of our cities. In being presented with those alternatives we are reminded that our willingness to compromise in the past may have resulted in an urban environment featuring the least desirable characteristics of all possible options. Having abandoned traditional values for accelerated technological progress, we have built urban centres at densities causing crowding and congestion, but not compact enough to bring about the technological breakthroughs that could free us from conventional chores. Suburban densities, meanwhile, are low enough to ensure everybody's enslavement to the automobile but too high to allow the occupants of suburban dwellings to free themselves from the urbanite's characteristic dependence on elaborate and expensive central supplies and services.

What we have created may well be fundamentally unsound. It does not allow us to take advantage of a highly efficient arrangement of living, service and work spaces of minimum size tightly clustered for maximum economy. It does not permit us to derive such benefits as increased social and economic stability combined with individual independence, resulting from a decentralized urban environment emphasizing the self-sufficiency of individuals, families and groups. Much more

serious, however, is the utter lack of relevance of urban patterns to basic human aspirations.

By contrast, Broadacre City was conceived as a response to an *archetypal dream, that of a return* to the Garden of Eden. It recognizes the basic motivation of great numbers of people who are drawn to the city not because they want to live there but because they have to make a living. Most of them are not in search of urbanity, of numerous and varied contacts, nor of cultural enrichment. On the contrary, their aim is the ownership of a single detached home in a pseudo-rural community conveniently isolated from the city. Their vision, compromised by economic necessity, is life in the country. Frank Lloyd Wright's Broadacre City questioned the need for that compromise. He proposed a new way of integrating urban with rural life, based on modern technology and an environmental design approach that seeks to fuse built form with that of the cultivated landscape.

Wright proposed to solve all *problems of crowding and pol*lution by spreading urbanisation over the countryside at very low densities. Broadacre City assigns an average of one acre of land to every man, woman, and child. In planners' terms this is equivalent to a gross population density of some five hundred persons per square mile, compared with about ten thousand in Metropolitan Toronto and ten times that on Manhattan Island.

Because of the very low concentration of people and activities on the land and its intense cultivation, Broadacre City would resemble a park more than a contemporary city or suburb. Its population density would be one-fifth that of Los Angeles and compare favorably with many traditional resort and recreation areas. Frank Lloyd Wright was concerned as much with the reintegration of the many elements of urbanization as with their decentralization.

Broadacre City's urban character would be maintained through innovative uses of electronic media and of modern transportation technology. Road, rail, and *air travel would be an integral* part of life in Broadacre City, as would local industrial employment, cooperative markets, full medical services, and a wide range of cultural facilities and contact centres. Buildings would be largely self-contained and independent of central water supply and waste disposal systems. Builtform, terrain and vegetation would be seen together as essential elements of a new architecture, with architectural form becoming an integral aspect of the urban landscape.

Wright was aware that Broadacre City was merely a partial answer to emerging problems of urbanization. It is only one alternative to familiar patterns. At the present time, the predominant urge of urbanites is less likely to be for more intense communion with nature, than for life in closer communion with others. Unfortunately, *no architectural genius* has devised a contemporary equivalent to Broadacre City in response to the archetypal dream of the universal brotherhood of man. The search for a prototypical urban form appropriate to the concept of urban communities and communes therefore has focused on the adaptation of those parts of the urban habitat surviving from earlier days. The resulting "conservation approach" to urban development has the attraction of enhancing and extending the usefulness of individual buildings and the existing infrastructure, while, psychologically, it satisfies a widespread urge for stability in a world rocked by rapid and continuous change. Moreover, by filling in the obvious gaps in the existing urban fabric, a larger population can be accommodated with equal ease

and at less cost than is possible in sprawling suburbs that have to be served by increasingly elaborate transportation networks.

The viability of the conservation *approach has been demonstrated* in inner cities. The same kind of thinking can be applied to the rehabilitation of many decaying suburbs. Unfortunately, the limitation to the conservation approach is that, like recycling, it is only possible when there are assets worth conserving or recycling. Unless or until a region's economy has reached a steady state, and an ample stock of housing is available for recycling, the conservation approach to urban development cannot satisfy a broad enough range of housing needs.

For the great majority of people seeking life in an urban community, no basic solution to the housing problem is in sight. Conventional wisdom imposes frozen concepts of the life-styles to be accommodated. It prescribes the percentage of gross income to be allocated to housing by individuals, and fixes the ways in which *home ownership can be financed.* In doing all this, conventional wisdom also freezes housing types and layouts, and embodies the restrictions in rules, regulations and codes. The results are the conventional apartment building, the conventional rowhouse, and the conventional suburb. None of them allow for any significant deviation from established norms—norms that seem designed to isolate the individual, the nuclear family and the socio-economic class to the detriment of the overall community.

While deplorable from the standpoint of the local community, the present patterns of urban development make sense when seen from a motivational engineering point of view. They prevent human roots from getting entangled in the machinery of industry and commerce, thus reducing its efficiency. High levels of productivity require large, complex production

plants and a global distribution apparatus, served by a highly mobile labour force and executive corps. Corporations therefore seek to pre-empt the loyalty of their employees, aiming to draw them away from the lure of a fulfilling community life. They have little interest in the development of attractive settlements. This is apparent from the manner in which new suburbs are arranged around shopping centres that are inane in any but a commercial sense. It shows in the bulldozer approach to historic buildings favoured by financial interests, and in the expressways pushed through residential neighborhoods by technocrats—tendencies that increasingly characterize urban development everywhere in the western world. The oppressive forces they reflect are related to, but not synonymous with capitalism. In one form or another, oppression has been an everpresent threat throughout history, to the extent that the history of urbanization, with shortlived local exceptions, may be said to have been a continuous history of organized oppression.

What made tyranny bearable most of the time, what for many makes it acceptable in its present guise, is the hold of the archetypal hero-myth on human imagination, which allows ordinary people to identify with and share *in the glory of leaders who suc*ceed in living off the wealth created by others.

Theirs is the "Imperial City," the embodiment of the hero-myth, just as the conservation approach to urbanization has been described as based on a vision of the brotherhood of man, and Broadacre City as an attempt to realize the archetypal dream of a return to the to the Garden of Eden. But while

the latter are essentially protective – conservative in the best sense – the motivating power of imperial city development is the quest for glory : the archetypal hero figure assumes superhuman power and in the process transcends death. In practice, the "heroic" individual extends his control over men, territory, and time – the latter through the erection of monuments to his glory. Whether he does this in his own name or that of a mythical deity, the concrete results are essentially the same : ancient Babylon, Imperial Rome, the Vatican, London, Peking, Paris, Washington D.C. The prototypes of the imperial city have retained the same dominant characteristics through the ages.

It was Le Corbusier who first saw the need for a new prototype for the imperial centre of the future. His Radiant City proposal was to rebuild the Paris of the 1930's according to new principles. As the centre of imperial administration, the new Paris was to have no industry. Except for a few historic landmarks preserved as isolated monuments, the existing city was to be razed. All administrative functions were to be centralised in fourteen huge, anonymous skyscrapers arranged on a grid pattern on a new main axis dominating the metropolis.

The Radiant City was conceived in a spirit of enthusiastic acceptance of technology and of the idea of empire. Unfortunately this naive glorification of forces we have come to fear in many of their manifestations reduces the credibility of the plan's author and makes it easy to overlook one highly positive aspect of the proposal, namely the isolation of the "central business district" from

the rest of the city. Le Corbusier revived an idea last realized in early medieval times : the removal of the imperial centre from the focus of daily urban activity.

When newly founded cities in the Middle Ages kept castles and monastic establishments outside their protective walls, their citizens, clearly were aware of the potentially oppressive nature of imperial power then exercised by nobility and the clergy. Regardless of the nature of such power, whether ecclesiastic, military or economic, there is an inherent conflict between the aims to establish and preserve stable communities, and to maintain a natural environment conducive to their survival on the one hand, and the pursuit of adventure, power and glory on the other. What distinguishes the mature cities of the past from today's sprawling conurbations is only superficially their form. More significant is the fact that the organization underlying that form used to impose a universally acceptable balance between community concerns and the pursuit of imperial adventure. This balance is lacking in our cities today.

Instead, we have permitted imperial powers to pervade every facet of urban life. The visual dominance over the city of skyscrapers accommodating the headquarters and facilities of international corporations is symbolic but of no immediate significance when compared to the extent these corporations have secured strangleholds on urban development outside the central business districts. Thus, new suburbs are not arranged for livability but to guarantee maximum profits for the owners and operators of shopping centres ; subway stops have been taken over by the merchandisers of real estate and consumer life-styles ; the countryside along roads that could be parkways is despoiled

by corporate billboards disguised as buildings ; viable neighborhoods serve as prime targets for block-busting tactics, softening them up for "redevelopment" in the international spirit. In all these cases, the development industry, backed by financial institutions and abetted by apologists in and out of government, aims to channel local growth into an internationally accepted mold, that of the consumer society.

To achieve this aim, urbanisation is reduced to a limited number of separate but interdependent elements such as the conventional residential subdivision, apartment blocks and towers, office towers, shopping centres, industrial parks, amusement parks and resorts. Being in many ways uneconomical from society's point of view does not prevent this pattern from being highly profitable for enterpreneurs and investors. The government's role is seen as that of linking up and servicing the various elements, to keep private development profitable. In the absence of alternatives, Canadian governments at all levels have let themselves be maneuvred into a position where many hesitancy to support such development tends to be pubicly interpreted as an unwillingness to provide housing for families and job opportunities for workers.

Clearly, the future form of our cities is being shaped increasingly in the boardrooms of international corporations. Whatever the economic advantages Canada derives from their operations, it is difficult to see their effect on the urban environment as being in any significant way beneficial. The most obvious effect of the present open-door policy *vis-a-vis* international capital is to invite international competition for land. This land is destined to be cut up into

saleable pieces and packaged for effective merchandising. Housing units will be standardized to suit mobile, nuclear families, accustomed to cut local ties whenever the considerations of empire demand relocation. They will be designed and located to tie their occupants securely into an imperial manufacturing and supply system for consumer goods that encourages the display of mass-produced status symbols, reinforces the occupants' dependence on standardized transportation equipment and services, and prevents any competition between established manufacturing interests and distributors and home-based production and service activities.

There is no justification, however, to view urban planning and development activity as a conspiracy. The unfortunate fact is that even when they disagree, both planners and developers proceed according to obsolete ground rules established long before it occurred to anyone to distinguish between beneficial and cancerous urban growth. Hindsight, if not common sense, should have taught us that free enterprise is by definition anathema to social justice, and that the blind imposition of social justice is equally dangerous since it results in a proliferation of bureaucracy that ultimately kills all freedom. Doctrinaire solutions to urban problems must be viewed with grave suspicion. Our first goal should be the gradual but permanent liberation of our cities from the stranglehold of commercial interests, and of urban development from the stranglehold of doctrinaire thinking. Neither has proved responsive to the changing aspirations of people.

The radical decentralization of urban activity, through the break-up of cities and regional conurbations into semi-autonomous neighborhoods and communities providing indigenous work-opportunities or through regional

urbanization based on the maintenance of rural life-styles, tends to be seen less as a viable alternative to conventional patterns of urbanization than as a menace to the established interests of corporations and the conventional wisdom of planners.

With suburban development threatened by an energy shortage that will gradually inflate the cost of commuting and of deliveries to and from the central cities, and by inner-city residents increasingly determined to block attempts to channel more suburban traffic through their neighborhoods, every alternative to the continuing centralization of our cities and the concomitant suburbanization of the surrounding regions deserves examination.

Newly emerging life-styles favour a return to community life and to the land and the prospect of changing lifetime work patterns will hasten that trend. As the traditional sequence of study, career and retirement gives way to more varied alternatives, the option of a return to the land need no longer be restricted to the wealthy few. Instead of displacing food-producing farmers and adding to inflationary pressures, food production could be maintained by part-time farmers on small properties selling their surplus production directly to consumers at local community markets.

Admittedly, the appearance of the landscape around our cities would change. Smaller properties and more intensive cultivation would result in a different visual scale. Even if the country estates maintained by wealth urbanites for their personal enjoyment provide a park setting and a recreational asset for the people choosing or forced to live in the cities or suburbs, it is hard to see why the privilege of country living should be restricted if more beneficial results could be derived from a wider distribution of the land to people willing and able to cultivate it. Thanks to modern farm machinery, work on the land no longer demands an excessive amount of manpower, and thanks to the increasing productivity of labour and management, jobs are less demanding and should allow workers to combine life in the country with industrial and clerical employment.

If the appearance of the landscape surrounding our cities would change, so would the image of the city itself. With Broadacre City extending along urban corridors up to a hundred miles wide and spanning the continent, towns, cities and suburbs could be revitalized to become the focal points of traditional urban community life, redesigned to make car ownership a luxury rather than a necessity. Like Broadcare City, they would be provided with non-commercial contact centres at the neighborhood level, and their cores would be formed, not by parking lots and shopping centres, but by year-round indoor-parks connecting new kinds of housing complexes with a wide range of social amenities, cooperative stores, work-shops and so forth.

All this is possible only if the imperial centres of our major cities are contained in space and in the way they function. Unfortunately, it is impossible to change the patterns of urbanization except at the expense of the power now concentrated in the imperial city. But automobile manufacturers, their suppliers and financial backers will not be won over to policies that aim to make car ownership superfluous ; builders and real estate investors can be expected to fight measures that encourage cooperative ventures in large-scale housing development ; agribusiness and the corporate giants in the fields of food processing and distribution will not voluntarily release their stranglehold on the country's food supply system.

Of course, the imperial city is more than a centre of brute economic power. Like the Roman church in medieval times it functions as a magnet stimulating and attracting local creativity and as a distribution point radiating the values of a global civilization. While office buildings, warehouses, plants, air terminals, ports and expressways are the most obvious aspects of the imperial city, its values also permeate art movements, the publishing industry, medical science, the major universities, research institutes, international aid organizations, the entertainment field and communications. Any containment policy must be carefully instituted lest the positive aspects of internationalism should be harmed along with corporate excesses.

The advantages of a successful containment of the imperial city, and of the internationalistic values it symbolizes, would be primarily political and economic. A strengthening of governments at all levels *vis-a-vis* the forces of economic and cultural internationalism would be accompanied by a partial protection of local resources such as housing, residential land and food from international competition. The alternative is a continuation of present patterns of mammoth redevelopment schemes, "new towns," and exurban sprawl. It would mean shrinking local autonomy as our major cities remain immersed in the process of international homogenization, accompanied by relentless inflation, more crime, and ultimately increased feelings of deracination, loneliness, anomie and despair.

HOUSING IN NEW ZEALAND CITIES
A Pictorial Tour
by W. D. Paterson

New Zealand presents a rather interesting combination of old and new approaches to urban housing. The cities are small and, until now, attempts at comprehensive urban renewal schemes have been tentative. As a result the cities display the older architecture of the early colonial days—British Victorian style buildings adapted to suit available materials—as well as modern high rise apartments, and the popular townhouse dwellings.

Urban planning is nothing new in New Zealand. Early settlers, dissatisfied with the overcrowded cities from which they came, planned to construct ideal communities in the new land. Often plans for towns were drawn up before the colonists even arrived at their destination.

Today the planning continues in the form of attempts to control commercial development in the suburbs, to provide individual home ownership financed by low interest government loans, and by government construction of low-income housing and selective urban renewal.

1 An early colonial adaption of a Scottish cottage to the materials readily available in the New Zealand environment. Note the verandah and the corrugated iron roof. This material remains to the present time the most common for roofing of New Zealand houses.

2 A more expensive and elaborate dwelling. Australian influence is apparent, particularly in the intricate cast ironwork. This is one of the most beautiful Victorian houses in New Zealand.

3 A group of terrace houses exhibiting the full exuberance of high Victorian style. Examples of this form of building are rare in New Zealand.

4 Public housing in New Zealand, with exceptions such as pensioner housing and urban renewal schemes, is the responsibility of the central government. The individual houses are not uncomfortable or unpleasant but the overall impression is of drabness. The waste land in the foreground awaits the community centre.

5 A more mellow and mature area of older public housing. The effect is marred by the number of cars parked in the street, a reflection of archaic government thinking that tenants of state houses will not have enough money to buy cars. Therefore there are no garages or driveways.

6 In recent years government policy has tended toward individual house building and ownership (financed by low interest government loans) on land subdivided and provided with services by the state. This is a typical visual result.

7 Multi-storey apartment buildings, public and private, are not yet common in New Zealand and are at present mainly confined to Auckland and Wellington. Illustrated is a good example recently constructed in Christchurch.

8 9 These are examples of multiple unit or "town house" redevelopment, constructed on fairly small sites in inner suburban areas. The illustrations are all from Christchurch where several architects have evolved what has virtually become a local vernacular style in white-painted or bare concrete block construction. These are among the most successful solutions to the problem of modern urban living.

Photographs by W. D. Paterson

BOOKS

City Planning and Aerial Information
Melville C. Branch
Harvard University Press, Cambridge
283 pages, $12.50 U.S.

Branch's book divides into three parts. In the first chapter, which is general introduction, the author argues that aerial photography is an essential municipal tool in continuous master city planning, which is itself the only valid form of physical planning. The next several chapters, which form the body of the book, deal with various technical aspects of photography itself. Finally, there are text references and what is modestly called a selective bibliography. This is in fact the result of very extensive research and alone runs to some fifty pages. Entries are annotated and conveniently arranged with tables of contents or quotations from abstracts under various headings.

If aerial photography is little used in municipal planning then the state of the art of planning and the costs of aerial photography are usually the reasons given. Branch argues the long term benefits of this tool in continuous and long range city planning. He introduces the reader to other sensing methods although he admits that these have, as yet, little direct value in city planning. The outstanding value of aerial photography is the amount and variety of information which it provides and the three dimensional reality with which this information is portrayed. Municipal housekeeping, development control, code enforcement, public works inventories are among the many municipal responsibilities where aerial photography can be indispensible.

On another plane, Branch speculates that growth theories might be tested by regular aerial photography taken over a period of time. He deals briefly with fields where aerial photography and other sensing methods are used as a planning tool; these include military and defence needs, certain natural resources such as fisheries and forestry, pollution control, seismology and archeology.

The chapters dealing with interpretation and background knowledge are detailed and technical, but lucid. The book is well illustrated not only with a variety of photographs but also with explanatory charts, tables and diagrams. It is a well organized basic book for the student or practitioner and it is also well indexed, clearly printed, attractively presented with several excellent colorplates. The paper and binding are of modest quality so the resulting price is by no means excessive for a text book of this calibre.
B. Graham-Smith

Québec
Recueil Iconographique
A Pictorial Record
1608-1875
Charles P. DeVolpi
Longman Canada Ltd.
Canada, 190 pages

Books containing pictures, especially those with reproductions of hand-drawn documentary or representational work, are not as popular as they once were. Prior to photography the works of many artists reached the public as prints, engravings, aquatints or lithographs. While photography did not quite wipe out this form of expression, the role of the representational artist gradually was diminished and changed in character.

It is no accident that those who love the past, or part of the past, and its evocative productions, also have a taste for pictorial productions. Such pictures are bearers of news, telling about things which were either not previously well known or had been forgotten. When they are good, or successful, they contain plenty of meaningful gatherings by sharp-eyed and skillful observers. As the means of expression is limited, the graphical art has to be rich in range of subject matter but succinct and well-composed.

This big book is chock-full of this kind of material. As the subtitle says, it is a veritable pictorial record containing hundreds of plates with a few well-chosen words. Moreover, the pictures delineate a formidable city full of form because of its history and also because of the constantly varying sub-strata of land and water and the changing points of view. This urban vantage point is renowned for its visual richness or plasticity.

But there were always other reasons why the city was well-known prior to the popularity of tourism. Quebec City was a hub of imperial power, first for France and then Great Britain. The latter period comes over very strongly in the plates. Marching or idling soldiers, waving flags and warships spouting gunfire, are favourite subjects amongst ruined fortifications, palaces and convents.

The collection emphasizes this view perhaps too strongly. The city was established, its main physical lines developed, and its mood engendered by its French founders. More material from the period prior to the conquest could have illustrated its early growth. The inclusion of early maps or buildings from this period in this work would not only have been most informative but would have helped to right an imbalance.

For those who know it, Quebec City has other qualities. Not only its Frenchness, its character of being "Canadien" or even "Québecois," but its atmosphere of sweetness and light—"la douceur et la bonhomie." By contrast, one could also mention the feelings of poignancy which are evoked by certain parts of the city.

Many of these pictures give an inkling into this side of things but perhaps a further search could have brought to light views of the people themselves in their daily life at work and play. The inclusion of more works by Lt. Col. James Cockburn as well as drawings, now missing, by Henri Julien would have helped to fill this gap.

One great merit of this work is that it not only illustrates old Quebec but also its surrounding landscape.
Stuart Wilson

The Language of Cities: A Glossary of Terms.
by Charles Abrams. The Viking Press, Inc.,625 Madison Avenue, New York, N.Y.10022.365 pp. $10.

Charles Abrams—that rare combination of scholar, lawyer, planner, educator, administrator, houser, humanitarian, and "practical idealist" as Averell Harriman described him—left an exceptional legacy when he died. His housing and planning studies are prodigious. Everyone who met or heard him was indelibly impressed by his warmth, wit, and incisive intelligence. He was an extremely articulate speaker, a compassionate and sensitive housing expert, and an unconventional professor who brought first-hand knowledge to his courses—the textbooks caught up much later. Most of his work was seminal; and even when covering familiar ground (like his crusading efforts against discrimination and injustice) he added original insights. Charlie Abrams spent much of his life "finagling for society," as he liked to say. Lucky for society.

Unlike much professional literature, it is a joy to read Abrams. In his books, myriad articles and reports the writing is eloquent, often elegant and lyrical: material boring and heavy in other hands danced and sparkled in his. And his last book completes his study of cities true to form, in a unique way that is to be expected from this unique man.

The Language of Cities is subtitled "A Glossary of Terms." But it is much more. This is a treasury of Abramsiana as his students, colleagues, and friends will instantly recognize. While compiling it, he called it a "glommentary" (a typical Abrams neologism), combining glossary and commentary—an accurate description. Yes, the terms of the trade are defined and explained, i.e. the terms of Abrams' trade: housing city planning, law, real-estate, politics, sociology, economics, architecture, public administra-tion, race relations, *inter alia*. These are sometimes succinct, like, "*gray area*—A blighted area or one the city designates as blighted." More often the terms are expanded from mere definition to include insights based on Abrams lifetime love affair with cities, in their splendor and even their squalor. Take, for instance, Experimental City: One of many conceptualizations of the ideal city, with a tentative location in Minnesota or the Great Plains. The prime mover of the project has been Athelstan Spil-haus, financed by substantial federal research money. He envisioned a self-contained city with a population not to exceed 250,000 that would employ all the technological advances and innovations, such as computer-controlled transport pods, un-derground services, "symbiosis of industries," and reuse of wastes including derelict auto-mobiles. Spilhaus viewed present cities as obsolete ("we need urban dispersal, not urban renewal"), and hoped his ex-periment would be the pro-genitor of a new kind of livable environment free of congestion, fumes, dirty water, and noise. A Comsat-type (but non-profit) corporation would build and operate the City. "Experimental City would be far enough from urban areas so that it can dev-elop self-sufficiency and not be hampered by the restrictive practices of a dominant neigh-boring community."

Existing experience suggests difficulties in the self-contain-ment theory and in population limitations. Planned cities seem to function best when near larger cities. People living in planned cities seem to like them provided there is an unplan-ned city nearby. If there is none close at hand, an unplanned one will probably be created on its periphery. This casts some doubt on the practicality of an isolated city in an isolated environment. There is also considerable doubt about the prospects of limiting growth if and when growth asserts its demands. As with all such ideas, modifications will have to be made when the ideal is trans-lated into brick and mortar. The Experimental City, if ever built, will not be an exception. Here is definition and opinion; and homily.

Look at another term, some-what more technical: *house*—A building for human habitation. The term is usually applied to a single-family dwelling.

"House," "home," "hearth," "roof," "floor," "oven" are all of Germanic origin. "House" is related to the verb "to hide." "Home" is linked to the "ham" in Birmingham and Gotham. "Roof" comes from the Anglo-Saxon *hrof*, or "top." A shingled roof derives from the Latin *scindo*, meaning "split" or "cleave." "Wall" comes from the Latin *vallus*, meaning "stake" or "palisade," while "chimney" is derived from the French *chemi-née* and the Late Latin *caminata*, or fireplace, and further back from the Greek *kaminos*, or furnace. "Pantry" has its ulti-mate source in *panis*, "bread," and until the seventeenth cen-tury was the closet in which bread was kept. "Parlor" comes for the French *parler*, "to speak," and was the room set aside for conversation. The "drawing room," popular during the six-teenth and seventeenth cen-turies, was actually the "with-drawing room," to which the ladies retired while the men sipped, smoked, and told stories tall or trifling. "Window" comes from the Scandinavian *vindauge*, formed from *vindr*, meaning "wind," and *auga*, meaning "eye," or the eye for the wind, or wind-eye, and ultimately "window."

A detached house is one standing by itself on its own plot.

A semi-detached house is one of a pair of houses joined together and forming a unit by themselves.

A frame house is one con-structed with a wooden frame-work covered with boards.

A row house is one of a continuous row of houses built according to the same or nearly the same plans and with similar fenestration and architectural treatment; also, a house sharing party walls with its neighbors in a row of similar houses. Row houses are sometimes called "terrace houses."

A boarding or rooming house is a place, often originally a one-family house, in which furnished rooms or apartments are let by the day, week, or month to lodgers. The boarding house is distinguished from the rooming house by serving meals.

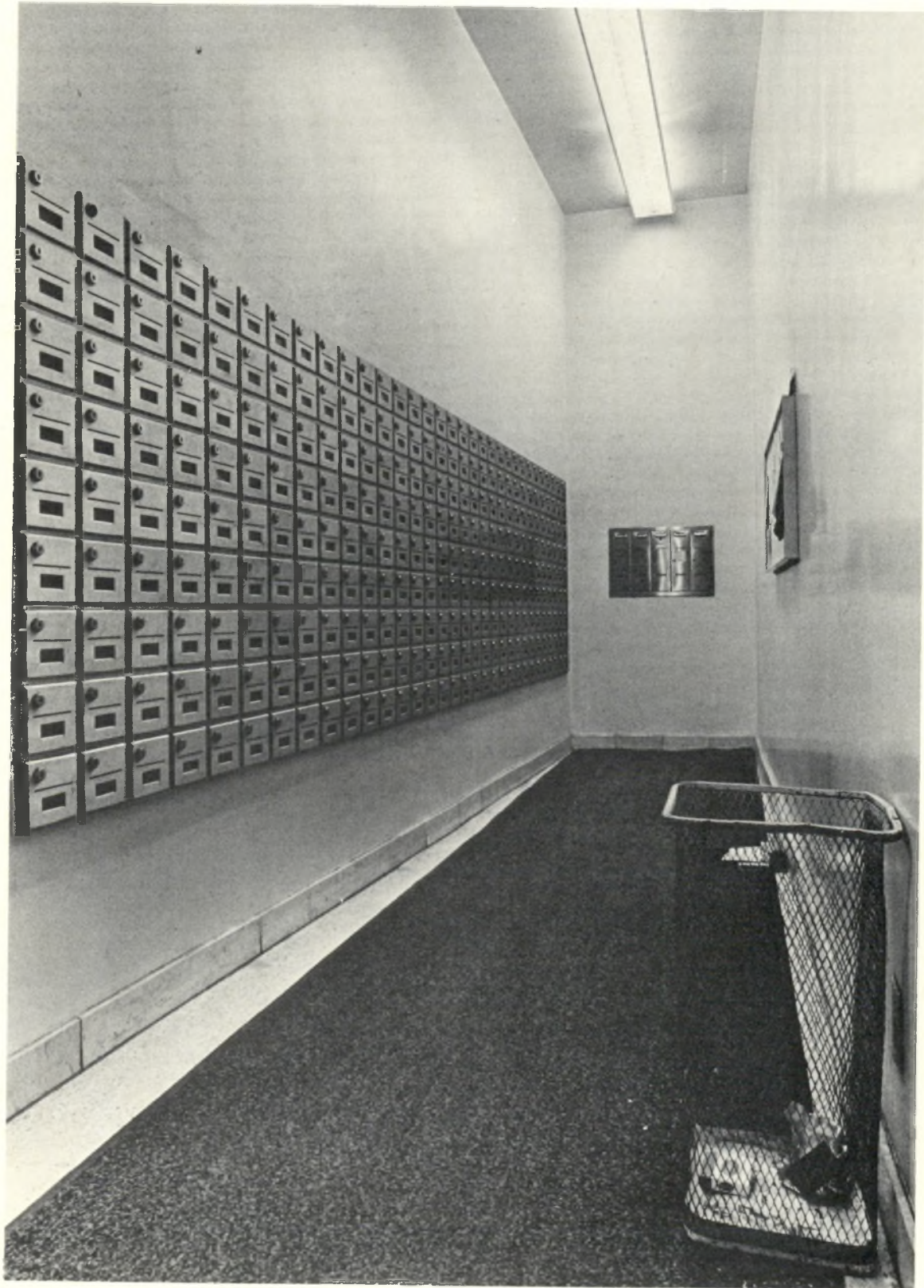A bordello was a "little house" in its earlier usage but now designates a house of prostitution.
To the point and beyond. Tech-nical and accurate but with the added aspects of Abrams' pro-found humanism. One could go on and on picking out pearls. Every reader will discover his own favorites.

The book is a tour de force: what Henry Fowler did for mod-ern English, Charlie Abrams has done for the city. Unfortunately this is his last book.
Aryeh Cooperstock

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