

Canadian designers approach is flexible Office planning — a new science



Open yet nestlike is this station in office designed by Forrest/Bodrug and Associates of Ottawa and Toronto.

by Margot Martin
Assistant Editor, Canada Courier

Office Landscape is the popular name, but it's somewhat misleading and doesn't adequately describe the in-depth services offered by the companies in this field. Some call it office systems planning, which is closer. It could be called working environment — an environment to work in, efficiently understood, and an environment that works, functionally and aesthetically. None of these conveys the refreshing concern that the practitioners of this concept of office arrangement show for all the people involved.

To put it simply, the purpose of office planning is to improve and simplify the flow of work from one unit to another in an organization, and to increase and make easier the communication between the people in the organization. It's an obvious aim and one every organization continually works to achieve. Then why does office landscape often frighten people? Because, it seems, they interpret it as a disruptive idea, involving an across-the-board, rather ruthless physical re-organization that will disorient them — take away their established place in the scheme of things and drop them into a wide open office setup with only a potted palm to mark their place.

Not so, say Canadian systems planners, firmly. The Canadian approach is flexible: Canadian planners work for and with a company. They do not try to forcefeed a systems principle for its own sake, rather the principle is a tool they use to achieve the client's objectives. Above all, they recognize that people are the office, the organization, and they respect them. (In fact, the people's salaries represent 92 per cent of total costs during a thirty-year write-off period; maintenance makes up six per cent, building and furnishings two per cent.)

As for the open office concept — yes, if necessary, but not neces-

sarily. The systems planners are not seduced by wide open space and the prospect of decorating it with colour and new furnishings. And they don't think their clients should be either.

Office planning brings to the office the logic that industrial engineers naturally use to lay out a plant or factory. The criterion is efficiency, cost savings, and all the things that together create good working conditions. This means, of course, that the systems planners must have a thorough knowledge of a company's operation, and its plans for the future to the extent possible. It can't be done overnight; the planners must understand the work functions of and the relationships between each section and each person. They analyze the volume and direction of paper and information flow, the number and frequency of verbal and written contacts made by people, the time involved in the various operations, the use of furniture, equipment, files, etc. They talk to employees (at all levels) about their work — the problems they may have in getting it done, their feelings about the present office set up, how they would react to the possibility of a quite different layout and environment. The planners try to obtain a forecast of future expansion and re-organization in both work output and staff so that extra space and easy low-cost re-arrangement can be built into the new office design. Canadian office landscapers expect to work closely with a company's own systems planners who have an intimate knowledge of the operations and who will be responsible for carrying out future re-organization according to the approved design.

All of that comes first. New furniture and equipment, carpeting, decoration, acoustic adjustments, air conditioning, if they are needed, are easily dealt with once the systems and space design has been determined and approved. Canadian office planning firms can co-

ordinate this final stage through their own organization or through associates.

Basic to the systems planning method is an untraditional way of looking at organization structure. It could be called a horizontal approach, compared with the traditional vertical which is based on the organization chart — big bosses on the top, lesser bosses in the middle and lowlier workers on the bottom. The vertical lineup gives an accurate picture of authority and responsibility, but if it is used as a guide to the deployment of the work force in a building it can mean that the departments and sections that must work directly with one another are separated by several floors. The necessary communication takes too much time and effort, and because of a psychological barrier, may be too infrequent. As well, it may mean that the departments that deal most frequently with the public are

not placed as close to the ground floor and building entrance as possible, where they should be.

Some degree of the open office concept will usually be recommended by the systems planners because, where the nature of the work justifies it, money is saved over the long term. It saves by providing more useable floor space. It saves by increasing the employees' production because the people and the materials they need are close at hand. It saves because it reduces the cost of adding to or re-organizing sections: furniture, screens, filing cabinets, telephones, etc., can be moved quickly and easily without major disruption of the work. It saves because the attractive, cheerful, things-going-on atmosphere it creates reduces the absenteeism that can result from boredom, isolation, the feeling of not counting.

What about privacy? The open office retains the nest feeling, although it is achieved in a different way. Each individual has his own place, marked and screened by the furniture he uses and the things he works with, and by sound-proofed movable panels and plants. The free flow corridors between the work stations are arranged to go around, not through, his work area. And he gains a refreshing long vista, the length and width of the floor and to the windows.

What about noise? Sound and acoustic control is a profession and expert advice is available. The desirable decibel level is built into the plans. The systems planners know that excessive quiet can be depressing and enervating; the right level of sound is stimulating. They design a floor layout so that the "quiet" sound of typewriters and similar equipment blends with the sound of human voices to an unobtrusive background. Conversations remain private and are not distracting because only the odd word can be distinguished. The decibel level can be raised when necessary by piping in "white" sound, a blur of natural office sounds muted to the subconscious level.

What about status? The Canadian designers understand the importance of the symbols of rank to people who have worked to advance themselves. Traditionally, advancement means a larger office,

especially at the executive level. Officers who have been integrated into an open office can be given a larger floor area, better and more furniture (couch, coffee table), a different colour scheme, more screens and plants. While no one need lose status, everyone can feel that they have gained some in the open office concept because several levels of workers sit side by side in effect, in easy communication.

The systems planners often recommend that a company set up a test area in which the reorganization and rearrangement can be tried out for six months or more.

Who is office planning for? Any management that feels its organization needs a new approach to working methods. The decision may be the result of expansion, a move to a new building, the need to redecorate and refurnish present quarters, or simply because the time has come to reassess operations. Whatever the reason, whatever the extent of the change needed, the systems planners should be called in at the earliest possible stage if their services are to be fully effective. They appreciate the opportunity to work from the beginning with architects and decorators when these are involved. The Canadian companies are willing, of course, to accept assignments offered at a later stage in the plans or when the original systems plans need to be revised. As problem solvers, the Canadians keep an open mind — flexible is the word.

"The dominating reality today is change. It is the new natural state of affairs. The flexibility inherent in office landscaping makes it an ideal environment for the growing changing organization," says Gordon Forrest, president, Forrest/Bodrug & Associates of Ottawa and Toronto, Ontario (Code No. 1-1). This 11-year-old firm is one of the pioneering Canadian firms in systems and space planning, with its own methods that have grown out of earlier experience as consultants in commercial interiors. The company's approach not only provides a realistic base on which the designers can plan the function requirements of the office, it also assures the participation of the organization's personnel in the planning process, resulting in a more per-

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Information displays from Toronto's Ferranti-Packard Limited range far and wide. Chicago Mercantile Exchange, seen here, uses F-P systems. Tokyo Stock Exchange will install F-P equipment later this year

see page 6.



canada courier

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sonal design solution. Forrest/Bodrug takes a personal approach to equipment and furnishings also and with the client decides whether needs can be satisfied by standards already being manufactured, by modifying standards, or by specially designed components.

The company's more recent assignments include such diverse organizations as a large insurance company that was moving its entire staff to occupy all of a new building, and a publishing company which wanted one of its office groups re-organized. The group was composed of nine separate sections producing nine different publications lead by a group publisher and served by a common production unit, all housed in 7,200 square feet (670m²). Other systems design projects executed by Forrest/Bodrug are offices for a new company with an interesting mix of scientists, mathematicians, aerospace engineers and administrative and financial personnel; three floors of office space for a newly created metro government where both client and designers were starting from scratch; a large private club, from the architectural designs up; interiors for a newspaper and provincial and federal government departments.

Common sense is another way to describe the Canadian approach. As one company puts it . . . "(We) combine the creative aspects of interior planning with sound business procedures. Meaning that we are as interested in budget programs, time schedules, specifications and maintenance procedures as we are in materials, textures, carpets, and the colour your desk should be." This Western Canada firm, Environmental Space Planning Ltd. (E.S.P.) (Code No. 2-1), lists the comprehensive services provided by its design professionals as interior design, research and development of facilities, corporate visual image development, and architectural interior co-ordination. When required, it will co-ordinate specialists through a co-operative arrangement with an architectural firm.

E.S.P., located in Winnipeg, Manitoba, works with business, institutions and government. It will help the school or hospital planning a furnishings and equipment program, a store wanting to upgrade merchandising facilities, a developer who wants to offer his clients more than just four walls. And it will continue to work with a client as his organization grows, giving direction to his developing environmental needs. Environmental Space Planning believes that too many offices are still being planned to foster levels of subordination instead of lines of communication, and that not enough attention is paid to the human environment of offices, stores and public buildings. The company's design assignments have included offices, reception areas, boardrooms, conference rooms and lounges for a food company, an advertising agency, a photo company, a teachers' society, a college; a special merchandising area for children's glasses for an optical company; a church.



The open office concept at Manufacturers Life in Toronto, designed by Integra Planning Limited. More than 1,200 employees were involved.



Light, airy private offices combine with areas of open space in the office designed by Environmental Space Planning Ltd. for Westfair Foods Ltd.

"Given the many variables associated with space planning, our firm has acquired the necessary skills to offer clients solutions best suited to their specific needs." A quiet statement by a design firm that is an excellent example of the versatility of the Canadian companies in this field, Jacques Guillon/Designers Inc. of Montreal, Quebec (Code No. 2-2).

In addition to its expertise in space planning and interior design, the firm has a broad working experience in teams formed by disciplines as varied as city planners, architects, engineers, management and marketing consultants. The Guillon Designers team has worked with airlines, banks, insurance companies, manufacturing companies of many kinds, architects; for theatres, hotels, museums, universities, libraries, retail stores, governments, apartment complexes, shopping centers, exhibitions. The company also specializes in product development and design — from boats to furniture to consumer products; transportation design (subway cars, diesel locomotives); and visual communication which includes corporate identity, signs, promotional graphics, packaging.

Every project taken on by Jacques Guillon/Design Associates is under a partner's jurisdiction, and an over-all administrative system unifies the specialized disciplines. This ensures better project control and releases the creative ability from administrative problems. In office space/systems design this company offers its clients a comprehensive service. Besides the usual analysis of the organization and its work, work flow and space layouts, interior design, etc., it provides working drawings and specifications covering all interior work, furniture and furnishings. It will prepare bid documents, call for bids, evaluate them and negotiate and recommend when required. It will verify shop drawings, supervise in-shop work fabrication and site work installations. And it will prepare moving-in schedules and co-ordinate and supervise the move.

"IPL's people purposely look at many more aspects than they are initially hired for, knowing that a corporation is a complex system, knowing that problems presently felt in one area may originate in another area, unsuspected by management," says Hans Niewerth. "We question many things in order to make management fully aware of the consequences involved in each step of the plan." IPL is Integra Planning Limited of To-



Public and office areas blend in this Jacques Guillon/Designers plan for a branch of the Bank of Montreal.

ronto, Ontario (Code No. 2-3), and Mr. Niewerth, its president, was one of the original members of the Quickborner Team in Germany, a group of management consultants that was a pathfinder in the office landscape concept. While IPL emphasized the thoroughness of its study of an organization, it is equally emphatic in denying that it will only tackle a job when the client totally commits himself to an analysis of all aspects of his business. Nor does it insist on doing it all by itself. Integra believes that the people in an organization should be brought into the planning early enough to influence the decisions that they will have to live with. The future users often

can contribute good ideas because they see their environment from an angle different to the planners'.

Basically, Integra Planning offers its clients four planning services: flexible use of office buildings and facilities; systems and information-processes; organization planning; and methodology and training. The latter relatively new service is the result of the company's belief that management at all levels needs to improve its ability to learn and to teach the skills of management and planning, in the face of the increasingly complex decisions it must make. IPL's clients have included power and oil companies; the headquarters of a major retail store company; a large insurance

company with 1,500 employees which went for the total landscape concept; the London, England, headquarters of an insurance company; and, most recently, the total office planning for a large American truck manufacturer — a one-year job.

Further general information on office space planning and design in Canada is available from the Office of Design, Department of Industry, Trade and Commerce by filling in the trade enquiry form on page 7, using the code at the end of this story. For further information about individual companies, use the code numbers given after each company name.

Code 2-4

Compact unit treats cyanide wastes aids control of water pollution

Free cyanide wastes generated by heat treating operations now are being treated by the CCL-1200 Unit developed by B & W Heat Treating Limited and marketed by their newly formed Cyanil Company Limited, Kitchener, Ontario. The CCL-1200 unit, an asset in water pollution control, can treat 1,200 (544.8kg) pounds of cyanide a year, reducing such wastes to 1 ppm to meet discharge regulations.

Developed by the largest heat treating operations company in Canada, the CCL-1200 consists of three basic components: the power supply, the reactor core and the effluent circulation system. The

dimensions of the unit, excluding the reservoir for effluents, are 6 feet (1.8m) long, 4 feet (1.2m) wide and 5 feet (1.5m) high.

The unit's small size enables it to be platform mounted or suspended to save space. Its operation requires no special skills as wastes are simply recirculated through the reactor core until the treatment is complete. There is no handling of hazardous chemicals, no metering of chemicals and no solutions to make up.

Capital and operating costs are low compared to alkaline chlorination units — less than 10 per cent of the chemical cost of alkaline chlorination and as little as 4

per cent of the chemical cost of hypochlorite treatment. Maintenance costs are reduced to a minimum because components are designed to provide trouble-free service.

B & W Heat Treating Limited also produces the standard CCL-700 and CCL-2000 units which respectively treat 700 and 2,000 pounds (317.8kg and 908kg) of cyanide a year. To treat higher cyanide loadings, standard units can be operated in parallel. Custom units for non-standard operating conditions are also available.

Code 2-5



Come to the fair where Canada is

From chain saws to children's clothing . . . from telecommunications equipment to transport by STOL (short takeoff and landing) aircraft, Canada is there with expertise and technical know-how. During the next few months a variety of Canadian products will be shown in exhibits co-ordinated by Canada's Department of Industry, Trade and Commerce at the following international fairs:

June 3-8: World Gas Exhibition, Nice, France. Canada will exhibit a wide range of products related to the gas industry. (Code 3-1)

August 31-September 30: Izmir International Trade Fair will feature chain saws, sawing equipment, electrical and telecommunications equipment. (Code 3-2)

August 31-September 16: International Trade Fair, Algiers, displaying drilling and other machinery for the exploration and exploitation of gas and mineral re-

sources. (Code 3-3)

September 5-19: International Exhibition of Machinery, Equipment and Instruments for the Timber and Woodworking Industry, Moscow. (Code 3-4)

October 1-4: National Children's Wear Association Junior Fashion Fair, London. A complete display of infants' and children's wear. (Code 3-5)

October 5-11: Japanese International Aerospace Show, Tokyo. The Canadian-made STOL (short takeoff and landing) aircraft will be the feature exhibit. (Code 3-6)

October 23-31: Tel Aviv International Aerospace Show, where Canada will display electrical, hydraulic and other manufacturing machinery. (Code 3-7)

November 20-23: 30th Interstoff Trade Fair, Frankfurt, featuring Canadian outerwear fabrics and clothing. (Code 3-8)

See you at the fairs!



Albums make neat photo, sound library

Retrieval of audio and visual memories is only fingertips away when stored in photo, slide, movie and tape cassette albums manufactured by Desmarais & Frère Limited, Montreal.

The movie and tape cassette albums are an addition to the company's photo products which meet every need of the amateur photographer, the professional photographer, the photo retailer or the photofinisher.

The D & F Wedding Albums are ideal for the professional photographer. They come in several models with a variety of features. When opened, the albums always lie flat regardless of the number of leaves. Their metal hinge construction makes them easy to assemble and their reversible leaves are made of extra strong optically clear acetate.

Available in a variety of colorful cover finishes and insert types, the D & F Wedding Albums also come in special format pages and multiple-print pages. Standard sizes of the albums are: 8 by 10 inches (203mm by 254mm), 5 by 7 inches (127mm by 178mm), 4 by 5 inches

(102mm by 127mm) and 3½ by 5 inches (88.9mm by 127mm).

Useful for photofinishing, retail merchandising, promotions, mail-order and catalogue sales, products range from pocket albums to the versatile "Snap-In" three-ring binder albums. The "Snap-In" pages are made with a "honeycomb" center-core material and a specially formulated clear PVC plastic which prevents prints from sticking to it.

Desmarais & Frère Limited describes its Fotovision System as a complete line of albums for prints, slides, movies and tape cassettes. The system provides a library of albums for pictures and sound. Available in eight series, they range from the "Flip page" and the "Snap-In" to the "De Luxe" and the "Magneto". The "Magneto" albums have self-adhesive leaves that are less subject to wrinkling and warping and have improved adhesive and preservation qualities. Some models have post-binder with fold-out pages; others have post-binder with expandable book-back for any number of extra leaves. The Deluxe Magneto album, self-adhesive type, contains 8 by 10 inch (203mm

by 254mm) prints. Other albums in the Fotovision System can contain 72 prints in sizes of either 3½ by 3½ inches (88.9mm by 88.9mm) or 3½ by 5 inches (88.9mm by 127mm).

Like many of the albums manufactured by Desmarais & Frère, the movie and tape cassette albums resemble books and can be stored ideally in a library-type setting. The movie albums will hold 12 50-foot (15m) reels of 8mm or super 8 film and have an individual reel index. The cassette albums, also with individual index, hold 12 cassettes.

Desmarais & Frère also manufactures slide mounts with rounded corners for automatic or semi-automatic slide mounting machines. The rounded corners avoid the "dog-eared" effect and reduce or eliminate jamming in the mounting and projecting equipment.

In business for a quarter of a century, Desmarais & Frère Limited markets products successfully in European, African and American countries. Last year it staged a successful display at PHOTOKINA '72, the Photography Fair of Cologne. Code 3-9



Omicron Data Systems SWAP '70 wide area radio paging system.

Versatile wide area paging system

A new concept in radio paging facilities has been developed by Omicron Data Systems Limited of Montreal, Quebec. SWAP '70 (System Wide Area Paging for the 70s) exploits the versatility, efficiency and speed of computer techniques to selectively signal over a single radio channel from 100 up to 100,000 personal radio pagers. It is capable of controlling up to 600 widely scattered radio transmitters and can reach paging subscribers anywhere in an area as large as, for instance, the Province of Quebec — 594,860 square miles (1,546,636 km²). SWAP '70 systems have been installed in three Canadian cities by Bell Canada, and in Los Angeles (giving county-wide coverage) by Pacific Telephone and Telegraph Company, and Illinois Bell has ordered a system.

The advantage of SWAP is that it can be integrated into any existing telephone network and can be used with any of the common types of personal paging receivers. To call any paging subscriber, it is only necessary to dial the subscriber's individual number and hang up. The call is routed through the normal telephone network to the SWAP terminal, located in the central office. The terminal consists of two mini-computers connected in parallel-redundant mode for high reliability (one is on standby). The operational computer verifies the pager number, determines the zone or zones to which it is to be directed, and the call is again relayed over the regu-

lar telephone network to the appropriate transmitter controller and encoder. Converted into the pager's unique code, the call is then automatically sent to one or more radio transmitters from which it is to be broadcast. Either sequential tone (36 MHz) or digital signals at 150 MHz can be used. The digital transmissions require dedicated medium-speed (440 bps) lines between the various transmitter sites and the controller, but can relay 4 to 5 calls per second as against the 1½ seconds required for each tone transmission. The digital system requires a pocket receiver capable of accepting digital signals.

In addition to paging, the computers also accumulate and print out paging traffic statistics, and provide automatic accounting and directory management.

SWAP '70 is flexible. It provides: a choice of grades of services — single computer system, redundant computer system with manual switchover or redundant with automatic switchover; a choice of input trunks — rotary, touch tone, and rotary plus touch tones; unattended operation of tone, tone plus voice, and two-way voice services over the same channel. Capacity can be expanded without service interruptions, and multiple-city operation is possible from a single terminal. Call acknowledgement includes voice or tone, no such number, or call accepted. Remote transmitters can be dialed via the telephone network. Code 3-10



Products by Desmarais & Frère Limited, Montreal, produce a library of albums for storage of photos, slides, movies and tape cassettes.



High fashion for the well dressed office

Soundscape, the silent screen from Nightingale Industries Limited, Toronto, Ontario, provides privacy wherever it is needed for individuals and groups. Tested in accordance with ASTM C423-66, these screens have a noise reduction co-efficient (n.r.c.) of 1.00. Dramatic and colorful, they are also well engineered, flexible and practical. Frames are steel throughout, suitably braced and reinforced with tubular and roll formed sections, and welded together. Nightingale screens are mounted on chrome plated bases that sit firmly on the floor without fastening, and are adjustable to uneven floors. Curved or straight, they have a nominal thickness of 2 5/8 inches (67mm), are 5 or 6 feet wide (1.5 or 1.8m), and 4 1/2 feet, 5 1/2 feet or 6 1/2 feet high (1.3, 1.7, or 2m). The company will make special sizes on request. Fire retardant materials are used throughout. The interior consists of layers of varying thickness and density of fibreglass with a central diaphragm retained in place to prevent sagging or shifting. Covering fabrics are woven from mod-acrylic fibres in a choice of 12 tones ranging from a vivid azalea to a gentle gray mix. Different colors can be ordered for each side of a screen. A family firm since 1928, Nightingale Industries also makes a wide range of chairs for office, commercial and institutional use — from executive luxury to posture contoured steno to economical stacking side or armchairs.

Code 4-1

Components combine to meet variety of needs



A simple system of free-standing work surfaces located at varying heights and accommodating a variety of storage components is the way Office Specialty Limited of Newmarket, Ontario, describes its System 70 office equipment. This comprehensive adaptable line, designed for production in steel and plastic, fits comfortably into small or large office spaces and is equally at home with traditional or contemporary decor. A basic element of the system is the case table which provides a writing surface in three sizes at the working height of 29 inches (736.6mm). Finished in textured laminate, the surfaces have rounded corners with a protective plastic binding

edge. Panels are enamelled steel, double-walled construction. A series of storage elements can be mounted on the table in either right or left positions. Companion pieces are the work table with varying lengths and surface depths, and the typing table at a keyboard height of 25 1/2 inches (647.7mm). A unique stationery basket that mounts on the structural leg and a shallow drawer that has an integrally molded pencil tray can be used with both tables. When equipped with the service top, these tables may be fitted with an electrical service package that provides two serviced 110 volt power outlets at surface height. System 70 also includes a flip top storage

table, providing both a filing area and a writing surface; circular conference tables in two heights and three diameters; suspension filing on fully extendible drawers; a deep file and storage bin and a mobile storage cart; integrated panel systems, standard or acoustic, in five widths and two heights with optional front storage units that can be attached at any height, and — shelves, tackboard, chalkboard, electrical power raceway, fluorescent lamp, full height wardrobe locker. Office Specialty's brochure illustrates graphically the many ways these components can be combined and interchanged to suit varied and changing office needs.

Code 4-2

Canadian furniture gets down



The undulating profile of the Cobra series by Artena.



Decisions, Decisions! Impressive desk and credenza for discerning executives are produced by Opus.

It's a triple winning score

Three in one — Artena, Opus, Bonnex equals Artopex, a Montreal, Quebec, company formed by these designers and manufacturers of office and institutional furniture to assist their expansion and to strengthen their services. This union has permitted the three companies to centralize their planning, research, promotion, marketing and sales services — all to the customer's benefit. Artena concentrates on chairs, beautiful in the simplicity of their striking designs, engineering and comfort. Other than the Cobra series, Artena's many lines include Suspensionline for which thick foam layers have been abolished and the suspended technique applied — all surfaces

flexible, support without restraint, weight abolished. The Bucket seat series recalls the comfort of a superjet; the lower priced Multipurposes series is easily stackable; the Sculptural line is the look of the future; the luxury Manik for the executive has seats of molded wood in a choice of grains; the Medic line, meeting the rigid standards of the medical profession, is recommended for hospitals and convalescent homes but is equally at home in the office.

Opus produced Decision, the V.I.P. desk with accompanying credenza and circular conference table in natural walnut, teak or rosewood base with tops the same or of walnut grain plastilam. The

niture to business



Fine Concept for functional design

A panel, a desk, a case unit — with these three basic elements Module 360 tailors work stations to accommodate an almost limitless variety of office functions and work habits without sacrificing personal needs. Conceived by Concept Furniture International Ltd. of Toronto, Ontario, to reflect the frequency of growth and change in contemporary organizations, the system is adaptable to both large and small office areas. The basic units function with and independent of each other and combined with the design-integrated components and a wide range of fabrics, colors, textures and rich-grained oak or walnut, they provide a total solution to interior planning problems. The panels, based on a modular width of 18 inches (457.2mm) provide visual and acoustical control. Available up to 90 inches (2,286mm) wide in heights of 54, 66 and 78 inches (1,371.6, 1,676.4, 1,981.2mm) they can be free-standing or join with others. Module 360 accessories and components can be suspended from the panel sections. The classically simple desk is available in lengths of 48 to 71 inches (1,219.2 to 1,803.4mm) and pedestals, returns, filing units and drawers can be added to it. The case unit functions as a free-standing divider or integral-wall and may be arranged to open from one side or can be divided into two bays opening on opposite sides. With the addition of various drawers, shelves, files and door configurations it can be tailored to specific uses. Concept Furniture has designed a comprehensive list of components for its Module 360 system — shelves, work surfaces, fixed and mobile storage units, vertical and lateral files, tambour top desks and storage units, drafting tables and tabourets, pedestals, typist returns and accessories.

Code 5-1

Great Performance earns plaudits



"Design your own custom office," invites Steel Equipment of Pembroke, Ontario, as it celebrates its Diamond Jubilee with the introduction of the Performance group. The company, a division of Eddy Match Company Limited, has been manufacturing steel office furniture for 60 years. This new line provides a simple work station system based on four components — desks-tables, carrels, storage units and screens. Each unit is functional and flexible and can be fitted into any office situation. The desk can be a simple table, or drawers can be added as needed. The storage units feature multi-purpose dividers and slide-out work surfaces. The screens in various colors have double-insulated walls for quiet and a hinge system for privacy. The Performance group includes a desk/storage unit that incorporates

a pull-down hinged work surface with directory binder insert, a sliding door cupboard section below, a telephone communications block, and a fluorescent light. The carrels are designed with combinations of sliding door binder storage with fixed slotted shelf, telephone insert, work shelf package, storage cupboards and fixed front drawer with hanging folder interior or legal/letter converter. Steel Equipment is known for its Stor/Wal, a simple lateral filing system that is a combination of modular filing drawers, storage cupboards and binder cases. These space savers are available in a range of colors; custom finishes can be arranged. The company also produces two lines of desks in clean modern design — the elegant 6900 line and the moderately priced 4900 line.

Code 5-3

Art of better living

The Quebec Office & Contract Furniture Group Ltd. has its head office in Montreal. Six companies concerned with the art of better living in the office have formed this export consortium which will co-ordinate creation of designs, market research, publicity, participation in fairs and exhibitions, sales agencies, orders, shipments, invoicing and collection.

The companies are: Ste-Marie & Laurent Inc., Precision Mfg. Inc., E. Bouthillier Inc., Deko Industries Ltd., G. W. Furniture Ltd., all of Montreal, and Willis & Co. of Canada Ltd. in Ste-Thérèse, Quebec. As a group they have exhibited at the National Office Products Association Show in Chicago last October, at specially arranged shows at six Canadian Consulates in the United States in January, and at the Library Show (A.A.S.A.) at Atlantic City in February.

The Group's designs range from the ultra modern to the classic and traditional, from executive luxury to moderately-priced versatility, all incorporating top quality materials (fine woods, veneers and chrome-plated steel) and meticulous workmanship. Their products include a variety of office desks with matching credenzas, work tables, conference tables, library stacks, filing and storage units; a full range of chairs from reception lounge to secretarial; planters and synthetic plants; straight, shallow or deep curve acoustical screens in a variety of sizes. Customers can choose upholstery and desk materials from a many coloured selection of woven fabrics, velours and vinyl leatherette.

Code 5-4



Lateral filing cabinets in the Comprehensive series come from Bonnex, the storage experts.

when three companies combine

drawers are solid oak inside. The company's Option 'L' and 'L'+ series combines beauty and practicality: the desk and the credenzas, shelves, storage and library units are solid, blend with any decor and are reasonably priced. They can be combined in an infinite variety of ways to suit specific needs. The Opus I is a classic desk in the grand tradition tailored to the conservative executive's taste. The company also makes conference tables and other accessories to match its desk series, and will accept special orders.

Bonnex, one of the leading manufacturers of clothing lockers used in schools and institutions, is the storage expert, making lateral

filing cabinets in its Comprehensive series; standard filing cabinets in its Gibraltar series; one, two and six-door single tier Versa lockers, and also a metal desk. The Comprehensive lateral cabinets can file computer printouts as well as standard size material. The drawers, available in different sizes, can be adapted to card trays and stationery storage and have pull out or fixed doors. First quality materials are used in these storage units which have a welded rigid construction, noiseless ball bearings, and locking and safety devices. Bonnex equipment can be ordered in a variety of baked enamel colours and there is no extra charge for two-tones.

Code 5-2

Fun craft swift selling

The speed of motorcycling, the excitement of drag racing, the thrill of snowmobiling — Tamco fun boats put it all together. Tamco Limited, Windsor, Ontario, produces the Aqua Lark Sport, the Aqua Lark Tandem, the Electra Lark and the Jet Lark. The company has sold 76 Aqua Lark Sport models to Disney World, which is also trying out the noise and pollution-free Electra Lark. Recently a shipment of mini craft fun boats went to France.

The inboard Aqua Lark Sport and the Tandem weigh 300 pounds (136.2kg) and, depending on the 20 or 9½hp engine, have speeds of 15 and 30mph (24 and 48km/hr). The same models with outboard weigh 190 pounds (86.3kg), and the choice of engine provides speeds varying from 10 to 35mph (16 to 56km/hr).

The noise and pollution-free Electra Lark weighs 200 pounds (90.8kg) and can be equipped with a single 12-volt electric engine giving speeds of 3 to 4mph (4.8 to 6.4km/hr), or with a twin 12-volt electric engine capable of speeds from 7 to 8mph (11 to 13 km/hr).

The safe and manoeuvrable water cooled Jet Lark with a 30hp engine and a speed of 30mph (48km/hr) weighs 330 pounds (149.8kg). The air cooled model with a 36hp engine and a speed of

35mph (56km/hr) weighs 380 pounds (172.5kg).

All Tamco mini craft are 8 feet, 2 inches long (2.4m, 50.8mm) with a 4 foot, 3 inch (1.2m, 50.8mm) beam. The reinforced polyester/fiberglass hulls and decks are hand lay-up and joined by stainless steel rivets. The hulls in all models are white; decks come in a choice of white, red, blue or yellow. Metals used for controls or other mountings are rustproof stainless steel, aluminum, steel that is chrome-plated on nickel, or parkerized. Bumpers are made of super-duty vinyl.

Other features of the Tamco mini craft include a balanced "deadman type" hand throttle assembly whose lock-action ensures that it cannot move in or out of gear except at engine idle. The poured-in-place urethane provides 50 per cent more buoyancy than the normal safety standard requires.

Tamco Limited, an automotive parts manufacturing company, first entered the marine field with the development of a jet propulsion pump for general use in boats. A special adaptation enabled it to propel a boat through weed infested waters and up to 80 per cent dry matter. Tamco also produces the standard type of jet pump.

Code 6-1



Aluminum dump truck bodies used in Canada, the United States, the Caribbean and Switzerland are designed and engineered by Atlas Hoist & Body Incorporated, Montreal.

Dump truck bodies rugged, lightweight

Designed and engineered to suit all makes of trucks, the aluminum "U" dump truck bodies by Atlas Hoist & Body Incorporated, Montreal, are used in Canada and at present exported to the United States, the Caribbean and Switzerland.

Rugged, lightweight and economical, the units consist primarily of the body itself and the "U" sills which act as levers for the body. The all aluminum body, able to do the roughest jobs, is practically maintenance free and can carry such corrosives as fly ash and salt. It has a standard inside width of 87 inches (2,210mm), optional 93 inches (2,362mm) with 102-inch (2,591-mm) overall. However, the bodies can be produced from 10 cubic yards (8m³) capacity to unlimited capacity, depending on their application. The standard

body, available with single front lift or twin cylinder saddle mount hoist, has a double acting aluminum gate. It also has a special extruded top rail — available in three sizes — and bevelled corner sections which, in conjunction with the sills, act as exhaust heat passages and avoid dead weight.

The "U" sill is available in two sizes to suit the type of operation. For sand, asphalt and aggregates, the light "U" is used. The heavy "U" is used for excavation. Measurements of both Us are the same except for the thickness of their sides: each side of the light "U" is ¼-inch (13mm) thick. The sill base in both is 3 inches (76.2mm) long and the top is 15⅜ inches (384.2mm) long. The mounting height is a low 10½ inches (266.7mm).

That Atlas Hoist & Body can

meet customer specifications is indicated by units recently shipped to Switzerland. These units featured the Atlas telescopic hoist with all aluminum dump body. The bodies also incorporated Atlas's patented exhaust heating system which prevents moisture-containing material from freezing to the sides of the bodies. Normally the exhaust would enter the muffler, but in the Atlas design the exhaust enters a special valve which allows the heated exhaust to enter the body at the front. It is then channelled through the longitudinal sills and the triangular ducts which join and reinforce the sides to the floor. This design also eliminates the need for crossmembers — which tend to washboard the floor — and avoids the use of multiple side posts because the body is self-supporting.

Code 6-2

they were with the 12-inch (304.8mm) high character display board installed at the Norfolk (Virginia) Cultural and Convention Centre in 1971.

Since designing and manufacturing these display modules in 1959, Ferranti-Packard has installed them in numerous financial, airport and outdoor locations in North and South America and recently penetrated the European market with the installation of a railway passenger information bureau in Paris.

A Ferranti-Packard system in South America is the Sao Paulo Stock Exchange. There the display system includes the large main board 12 feet high by 60 feet wide (3.7m by 18.3m), six single-line displays, twin minicomputers, a 24-channel digital-to-video converter and more than 40 video monitors. The main board presents "last sale" data for 304 stocks and can easily be expanded to handle up to 576 stocks by removing blank sections in the modular framework and inserting active panels.

The central section displays statistical data of the Sao Paulo and Rio de Janeiro exchanges and shows "insider" trading data which is repeated on the six single-line displays located at the six trading posts. It can be expanded by up to 300 per cent without major reorganization.

The programmable controller comprises dual, minicomputer, 24-channel digital-to-video converters, associated switching and computer interfaces. The converter receives data from the exchange computer via the minicomputer and converts it to video signals for dis-

play of alphanumeric data on standard video monitors. The monitors display 64 characters per stock to record opening, high and low prices, volume, etc. One channel handles 16 stocks on a sequential basis. Fifteen of the monitors are switchable to show any one of 24 channels. Ferranti-Packard also provided the complete software package and installation supervision.

Another Brazil city, Belo Hori-

zonte, is currently being supplied with a Ferranti-Packard system, to serve the Minas Gerais (mining exchange). This "packaged" trading data system is designed around 1 inch (25.4mm) numerical indicators and is complete with programmable controller and software. The trading data system will be data linked to display last selling price and volume for stocks that are also trading at the Rio de Janeiro and Sao Paulo exchanges.

Code 6-3



Ideal for fun on the water is the Aqua Lark Sport mini craft fun boat manufactured by Tamco Limited, Windsor, Ontario. The company produces three other mini craft, one of which, the Electra Lark, is noise and pollution-free.

Canadian display systems with far-reaching effect

They are miles apart but the Sao Paulo Stock Exchange, Brazil, the Chicago Board of Trade and the Toronto International Airport have one thing in common: all use programmable or variable format information displays designed and manufactured by the Electronics Division of Ferranti-Packard Limited, Toronto, Ontario. Now comes the news that the company will install a display system at the Tokyo Stock Exchange later this year to record instantly price changes in the millions of shares traded there daily.

Ferranti-Packard's modular displays can be tailored to the customer's requirements whether he needs a simple switch-operated one for airport baggage claims or a computer-programmed one with large alphanumeric panels. Display features include the unique electromagnetic light-reflecting modules that are ideally suited to the operation of displays under high ambient light conditions, have excel-

lent viewing characteristics over a wide angle, and inherent memory. The remnant magnetism maintains selected character, eliminating costly bulk, minimizing heat dissipation and power consumption. The displays have proven component reliability, long life and exclusive easily expanded modular design.

All Ferranti-Packard displays use rows of display modules. Each module usually consists of a five by seven array of patented F/P light-reflecting electromagnetic indicators on which programmed messages of alphanumeric and other characters are sequentially "written" row by row at a very high speed. The numeric and alphabetic characters, in a variety of formats, are available in heights of 1.9, 2.7 and 4.1 inches (48.3mm, 68.6mm, 104.1mm). Numerical characters in 7-bar format are also available in 1 inch (25.4mm) height. Being flexible, the size of the characters can be altered as



The Chicago Mercantile Exchange, the world's largest perishable commodity exchange, was installed in 1972 by the Electronics Division of Ferranti-Packard Limited, Toronto, Ontario. The complete system with two display boards each 74.5 feet long by 11 feet wide (22.7m by 3.4m) has 5,080 4.1-inch (104.1mm) high characters. Another exchange system recently installed by Ferranti-Packard is at the Sao Paulo Stock Exchange, Brazil.

Public served well by flight information displays

Designed by RCA Limited, Montreal, Quebec, the DIVCON DG4 flight information television display system is in use at airports in Canada, the United States and Britain.

Mainly intended for public display of aircraft arrival and departure information, the DG4 requires only three basic modular components for its operation: generator, keyboard and display monitors. The keyboard, with a layout similar to a standard typewriter, controls the input, giving direct access to the displayed information. The display generator converts digital information to video signals. The displays, in their selected locations, convert the video signals to alphanumeric characters and can be edited or updated, from the keyboard or a prepared tape program, to show current flight and other pertinent information.

The DG4, which features highly readable characters, has a display format of 20 lines with up to 50

characters a line. This permits one display to be presented with both arrivals and departures shown on the same screen, each using 10 lines. The displays can be single-channel or easily expanded to four separate display groups. The entire four channels can function from a single input, either an operator's keyboard or a computer, or it can accept two inputs. The DG4 display symbols can be shown — on a colour monitor — in any of seven selectable colours.

The DG4 is versatile in other ways. For instance, edit and computer functions can be added to any DG4 system. The computer functions facilitate easier information transfer and link the system with computerized control operations. Edit functions are insert line, close line and data transfer.

The insert line permits a new line of information to be added within the display. For example, if a new line is to be inserted between lines four and five, all the lines

below line four are dropped one line, opening up a space for new information to be inserted. Close line reverses the insert procedure, removing undesired information and then moving all succeeding lines upward, closing the space. Data transfer is used to move a complete display from one channel to another.

Optional features of the DG4 system include formats of 16 lines of 64 characters per line, 20 lines of 32 characters per line and 24 lines of 32 characters per line. In addition to the symbols being displayed in any of seven colours, a word or sentence can be blinked on and off at the rate of one cycle per second.

Long a leader in the Canadian communications industry, RCA Limited introduced the world's first digital-to-video converter (DIVCON) flight information display system in 1963. The DG4 is the latest DIVCON system offered by RCA. Code 7-1



An operator feeds input into the keyboard to display flight arrival and departure information on the television monitors. The DIVCON DG4 flight information television display system, consisting of three basic modular components, is produced by RCA Limited, Montreal, Quebec.



Forging forks for heavy duty

Forks designed and engineered by Allis-Chalmers Rumely Limited, Guelph, Ontario weigh between 80 and 960 pounds (36kg and 436kg). The forks are a major component for all industrial lift trucks that meet the standard Truck Industrial Association (Hanger) Dimensions regulations and that are in capacities up to 25,000 pounds (11,350kg). There are 552 active part members on the forks which range in size from 1¾ by 4-inch (44.4mm by 102mm) cross section to 3 by 8-inch (76.2mm by 203.2 mm) cross section. The largest volume produced are in sizes between these two extremes. Made of 4140 chrome moly steel, the forks have a very long life and, in the forging and upsetting process, they develop a full cross section in the heel — the critical section in the fork. The forks are available for export in three types of surfaces: as-forged, polished, and fully tapered and polished. The addition to the Guelph plant, opened in late 1972, is the world-wide source for the forks which are required by the Allis-Chalmers Corporation, Milwaukee, Wisconsin, and for plants in Mattoon, Illinois; Dieppe, France and Topeka, Kansas. Code 7-2

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The world's first production Voyager heavy haul air-cushion vehicle (ACV), with an all-up weight of 40 tons, is scheduled to float off the production line this year. Here, she shows great style in trials on Lake Ontario, in Toronto Harbour and at Toronto Island airport. Potential world-wide applications include coast guard and military assignments, container redistribution, ferry boat service and oil industry logistic support. The amphibious craft's speed exceeds 50 miles (80km) per hour.



Residents in Toronto, Ontario — one of the busiest ports on the Great Lakes shipping route — were recently amazed to see a self-propelled, rectangular barge half the size of a tennis court zooming around the harbour with the alacrity of a speedboat.

In another part of Canada, a 160-ton barge towed by a light vehicle put on an equally unusual performance. Inching across level terrain at seven miles an hour, (11km/hr), the hulk left hardly a mark on the terrain.

And in yet another demonstration a 650-pound (295kg) vehicle resembling a flying saucer streaked across a lake at 55 mph (88.5km/hr), challenging similar craft anywhere to better its speed.

The three craft are examples of new generation air-cushion vehicles (ACVs) that Canadians have

Air-cushion vehicles: the future is now

developed during the last four years. Although still in the testing and limited production stages, the vehicles aroused considerable world-wide interest. They promise new applications for ACVs and could inject greater cost savings and mobility into the transport field.

The new craft fall into small, medium and large categories. The medium-size Voyager, tested on Lake Ontario and on land since the spring of 1972, is for military, transportation and mining personnel. First production models are expected to appear in the summer of 1973.

Jointly developed by Bell Aerospace Canada, Division of Textron Canada Ltd., Grand Bend, On-

tario, and the federal Department of Industry, Trade and Commerce, Voyager has a flatbed configuration that can be fitted with various superstructures.

Voyageur can carry a 25-ton cargo in the form of an oil drilling platform, passenger ferry accommodation for 144 persons or equipment for coast-guard buoy tending, and search and rescue operations. An economic evaluation study showed that on buoy duties in the Canadian Arctic, it could do the work of two conventional ships.

The craft travels at more than 50 mph (80km/hr) over water, solid and broken ice and almost any kind of ground. It moves forward and backwards, can clear three-foot (.9-m) obstacles and is operable in six-foot (1.8-m) waves and 50 mph (80km/hr) winds. Knock-down construction permits delivery by conventional road, rail and air transportation for assembly in the operational area.

A model with a 5½-ton payload, to be used for personnel transport and in seismic and mining surveys, is under development.

The ACT-100, a 160-ton barge built by Arctic Systems Ltd., Calgary, Alberta, is currently the world's heaviest air-cushion cargo vehicle. The ACT-100 is a prototype of a 2,000-ton, self-contained off-shore drilling rig that includes crew accommodation.

The smaller of these giants is designed primarily for land-based oil drilling and portage in Canada's ecologically sensitive Arctic, but there are plans to use it also on water. When the proposed Mackenzie highway into Canada's north is built, the ACT-100, on a cable tow, will provide ferry service dur-

ing ice-forming and break-up seasons.

Several lighter hover trailers, to be towed by wide-wheeled or belted tractors, are also under development. Designed primarily for Arctic and logging operations, some of the trailers will have conventional wheels but their air cushions will lighten the pressure on the terrain.

The smallest, or sports ACVs are expected to give snowmobiles competition in the pleasure market as they are operable the year round. But they are also used in geological and construction surveys; wildlife and forestry law enforcement, hydro and pipeline patrols and in resort management.

Produced by MHV Industries Ltd., Ottawa, Ontario in one and two-seater models (a five-passenger

unit is in development) the runabouts are as agile in three feet (.9 m) of snow and below zero temperature as over land and water in tropical temperatures.

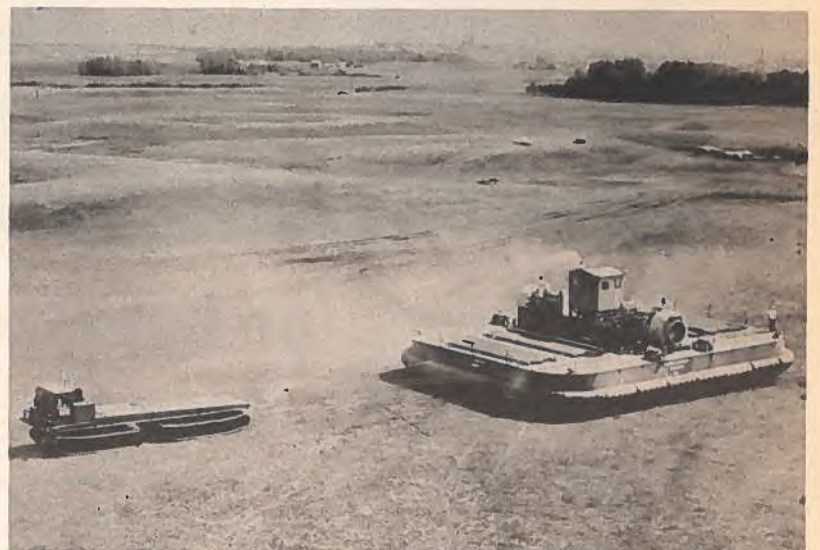
They spin, hover on one spot, go forward but not backward, and skim over almost any kind of obstacle — including logging booms, rapids and hummocks. Speeds range from 65 mph (105km/hr) on ice to 35 or 40 mph (56 or 64 km/hr) on land, depending on the terrain.

The most advanced models are considerably quieter than the average snowmobile and exert approximately one-third psi., which does not harm vegetation. But they are several times larger — and more expensive — than a snowmobile.

Three-quarters of the sports model production has been exported. Code 8-1



Anticipating that the next boom in the recreational market will involve air-cushion vehicles, MHV Industries Ltd., Ottawa, has produced the Spectra II, which travels from 35 to 65 mph (56 to 105 km/hr). The vehicle spins, hovers on one spot, can change direction instantly.



The new ACT-100, the world's heaviest air-cushion cargo transporter, is expected to see service in many countries. Towed by a light vehicle, the ACT-100's all-up weight of 260 tons causes no damage to ecologically sensitive terrain.