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Canada

MANAGING IN DIFFICULT TIMES



Government
of Canada

Regional Industrial
Expansion

Gouvernement
du Canada

Expansion industrielle
régionale

INDUSTRIAL
EXPANSION
ANNOUNCEMENT

1985-1986
1985-1986
1985-1986

1985, 1986

1985

Consulting Services Division
Service Industries Branch
Regional Industrial Expansion
135 Queen Street
Ottawa, Ontario
K1P 6S5

Dear Sirs:

With this letter we are pleased to submit our report on
Architectural Services in Canada. It is the result of
the work carried out by our firm over the past several
months and has been prepared for a
Committee represented by both the
Industrial Expansion and the Royal
Institute of Canada.

Before presenting our report we would first like to
review the background of the study
and the approach. Then we would like to
state the scope and format which we have chosen
and we will also present an outline of the

**BACKGROUND AND
STUDY APPROACH**

The Service Industries Division of the Department of
Regional Industrial Expansion periodically reviews
various service sectors to help the government
policy and program development.
an important component of the economy of the
Canadian economy, not only because of
their impact on many other parts of the

In 1985 our firm did a study
and we were invited to participate in a
Department of Industry Trade and Commerce

Canadian Architect's Services Association and
considerations for the future. The report was prepared by
Peter Barnard Associates.



Managing In Difficult Times

A REPORT ON THE
ARCHITECTURAL PROFESSION
IN CANADA

PREPARED FOR THE
DEPARTMENT OF REGIONAL
INDUSTRIAL EXPANSION
IN COOPERATION WITH THE
ROYAL ARCHITECTURAL
INSTITUTE OF CANADA

BY
**PETER
BARNARD
ASSOCIATES**

MARCH 1985

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March, 1985

8425

**Consulting Services Division
Service Industries Branch
Regional Industrial Expansion
235 Queen Street
Ottawa, Ontario
K1A 0H5**

Dear Sirs:

With this letter we are pleased to submit our report on Architectural Services in Canada. It is the result of the work carried out by our firm over the past several months and has been prepared for a joint Steering Committee represented by both the Department of Regional Industrial Expansion and the Royal Architectural Institute of Canada.

Before presenting our report we would first like to review the background of the study and our approach to the assignment. Then we would like to review briefly the style and format which we have chosen for the report as well as to present an outline of the document itself.

**BACKGROUND AND
STUDY APPROACH**

The Service Industries Division of the Department of Regional Industrial Expansion periodically reviews various service sectors as input to federal government policy and program development. Consulting services are an important component of the service sector of the Canadian economy, not by virtue of size but because of their impact on many other parts of the economy.

In 1978 our firm did a review of architectural services for a joint committee of the RAIC and the then Department of Industry Trade and Commerce*.

* Canadian Architect's Services: A Perspective and Considerations for the Future. Report prepared by Peter Barnard Associates, Toronto, May 1979.

That report was used by ITC and the RAIC as input to their activities concerned with the architectural profession in Canada. A copy of the report was also sent to every architectural firm in the country. With the availability of results of the recent Statistics Canada survey of architectural establishments, which covered the 1982 fiscal year, DRIE decided to initiate another review of the architectural services sector in Canada.

During the course of this study we met with over 50 individuals in the architectural community across Canada. We interviewed representatives of firms in 12 cities: including Vancouver, Edmonton, Calgary, Regina, Winnipeg, Toronto, Ottawa, Montreal, Fredericton, Moncton, Halifax and St. John's, Newfoundland. The firms interviewed ranged from some of the largest down to small one- and two-person firms. A key component of these interviews was to understand what had happened to the architectural business since 1982, the time of the Statistics Canada survey. We also met with some clients, association representatives and government officials.

As a result of this work, together with our experience from the earlier study, we believe we have obtained a good perspective on the architectural services business in Canada. While we focus on the industry as a whole, we have nevertheless attempted also to provide food for thought for individual practitioners.

REPORT STYLE AND FORMAT

Writing this report has been a real challenge for many reasons. We have deliberately changed style and format from that of the 1978 study. We have provided similar analyses of various statistical data, but we have adopted a more succinct style.

A Difficult Report-Writing Task

One of the complexities of this report is its need to be addressed to several audiences. DRIE needs the report for policy and program purposes and is particularly interested in data on the industry and relevant trends. While RAIC has similar interests, it also would like to see the report as a vehicle to focus

industry attention on key issues and to emphasize particular government relationships. Finally, individual firms will likely look to the report for understanding of both overall and local business trends as well as ideas for sustaining their practices and planning for the future.

To these audiences must be added a rather discouraging overall message: the performance of the architectural services business is decidedly down and the outlook for the future is not promising. Few people enjoy reading this type of report, and so it has been doubly difficult to write.

Need to Improve Communications

During our interviews with architectural firms we examined the impact of our past report on their practices and the overall usefulness with which our respondents viewed our earlier study. While the report was praised by many* and actively used by many of the "business-oriented" practitioners, its approach did not meet with the wholehearted support of the more traditional practitioners and those with a more artistic professional approach. We concluded that it would be desirable to change the formal analytical and perhaps overly long report style of the earlier document.

On the other hand, we believe our message is important. This study has permitted an objective review of the profession by knowledgeable outsiders. This is a rare opportunity which must not be missed. Also, we believe that the profession is in real danger and needs concerted action by its practitioners, its associations and the government department which has a mandate to support it. Communication of these facts is vital.

Readable Format Plus Challenging Style

The report itself is brief, without an executive summary, to convey our message quickly and succinctly. The extensive supporting appendices can then be examined by the inquisitive reader at his or her leisure.

* See for example the President's message, RAIC Bulletin April-May 1984.

Our report challenges the profession to act. We have pulled no punches and can offer no universal panaceas. The architectural industry should have an important place in the Canadian economy, but that place can only be assured by concerted action by the practitioners themselves, supported, where appropriate, by government and other concerned organizations.

Our perspective in writing the report is strategic. We are focusing on the industry as a whole and will present recommendations for government, RAIC and provincial associations to consider. We have also attempted to provide guidance for strategic planning at a company level, although in a nationwide study it is impossible to offer specific advice to individual local firms.

OUTLINE OF THE REPORT

The report contains three chapters plus supporting appendices.

1. An Alarming State of Business describes the current status of the architectural business in Canada and looks at the future expectations of the construction sectors it serves.
2. Can Anything Be Done considers the role of architectural services in the Canadian economy and looks at strategic options for the industry and for individual firms.
3. Some Specific Steps presents our conclusions and recommendations to associations and governments on ways of improving the architectural business in Canada. As well, this chapter contains ideas and recommendations for individual firms to consider.

The appendices contain more perspectives and information on the practice of architecture in Canada, including:

- A. A profile of the profession in terms of the numbers and types of firms, employment, and ownership patterns.

- B. An outline of the domestic business side of architecture including overall distribution of fee income, mix of business and outlook for specific sectors.
- C. A note on export of architectural services and the types of projects in the export market, as well as their location and other general trends.
- D. Trends in technology related to the architectural business with particular emphasis on the use of computers and computer aided design and drafting.
- E. A summary of the various Statistics Canada building classifications used in the report.

* * * *

We would like to thank members of the Steering Committee for their valuable comments during the course of our work. The Committee included Jack Hall, Chris Charette and John Wickes from DRIE, and Bill Shields, Michael Roberts, Rod Robbie and George Hamann from the RAIC. Their encouragement and constructive comments have been most helpful. In addition, we would like to thank the Merchandising and Services Division of Statistics Canada for their advice and assistance. Finally, we appreciate the enthusiastic cooperation of the architectural community in our interviews across the country.

This has been a most challenging and interesting assignment for us. We appreciate the opportunity to continue our close involvement with the architectural services industry in Canada, and we hope that our work will be of assistance in coming to grips with the needs of the future.

Respectfully submitted,

Peter Barnard Associates

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EXHIBIT 1.1

ARCHITECTS EXTENDING INTO NEW SERVICE AREAS

SERVICES PROVIDED BY SOME FIRMS

GOVERNMENT
REGULATION OF BUILT
ENVIRONMENT

Environmental Planning
Urban Planning and Design

BUILDING NEED
IDENTIFIED BY CLIENT

Market Research
Feasibility Studies
Advance Planning
- Functional Programming
- User Needs
Financing and Funding

TRADITIONAL SERVICES

- SCHEMATIC DESIGN AND DESIGN DEVELOPMENT
- CONSTRUCTION DOCUMENTS
- NEGOTIATIONS
- CONTRACT ADMINISTRATION

Construction Management and Scheduling
Project Management/
Developing Engineering
- Structural
- Electrical
- Mechanical
- Municipal
- Surveying
Interior Design
Landscape Architecture

BUILDING OCCUPIED
BY CLIENT

Building Evaluation
Maintenance Planning*
Facilities/Space Planning*
Ongoing Interior Design*
Maintenance of Building
Data Base for Inventory,
Alterations*

* New Service areas identified with an asterisk.

1. AN ALARMING STATE OF BUSINESS

The practice of architecture in Canada has always been cyclical. However, the overall trend has been a long-term decline in the architectural service business in Canada in real terms since the late 1960s. This decline has become more pronounced in the last few years. The economy is only partly to blame. Among other factors many architects have not adjusted sufficiently to the new realities of their business environment. The outlook for the future is not much better unless some important changes are made.

TRADITIONAL SERVICES ARE IN DECLINE

All architectural firms provide a set of "traditional" architectural services. The core of these services has always been in conceptual design, preparation of drawings and specifications, and contract administration. Although some firms provide a wide range of other services usually through separate companies or associated partnerships (see Exhibit 1.1), the traditional services account for the great majority of the activity of Canadian architectural firms. All the signs point to little growth and in fact overall decline in these services over time.

- Real fee income declining. Architectural fees go up and down with the economy, most particularly with investment in building construction and the share of that construction for which architects provide services. While fee income over the years has been highly cyclical, in 1984 real fee income to architectural firms in Canada was down 12 percent from 1977 and 20 percent from the most recent peak year of 1981. While data are imprecise, real income in 1984 is also probably about 20 percent lower than in the late 1960's, the high point of major institutional building in Canada (see Exhibit 1.2).
- Firms getting smaller. Over the 1977-1984 period, the number of firms has risen from 1,300 to approximately 1,800, but the average size has dropped from close to seven to four or five

EXHIBIT 1.2

LONG TERM DECLINE IN FEE INCOME

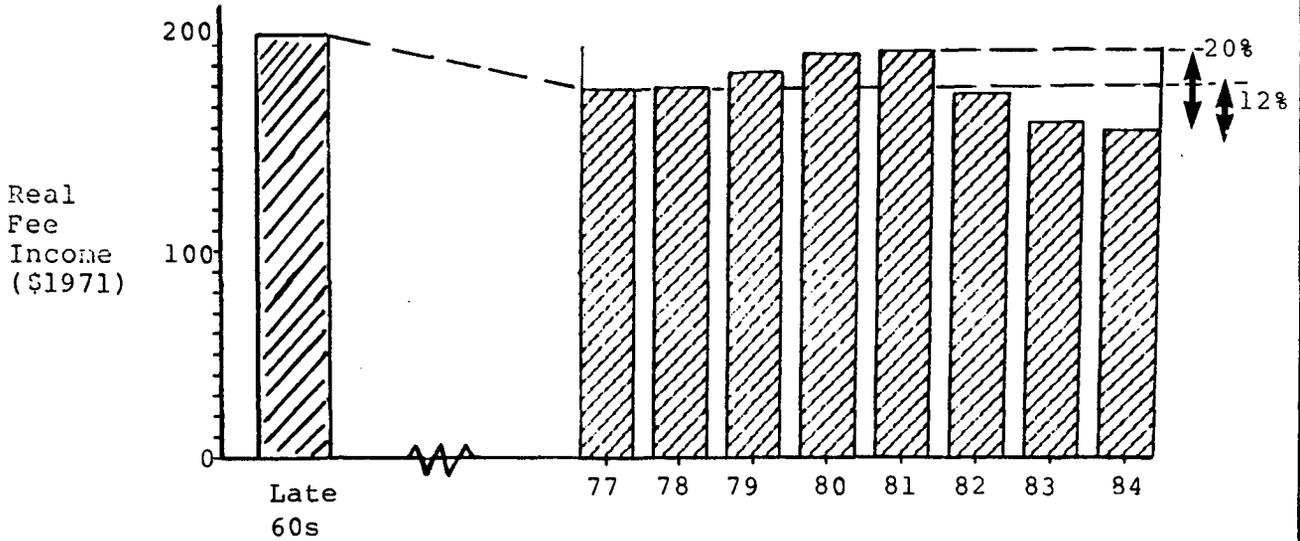
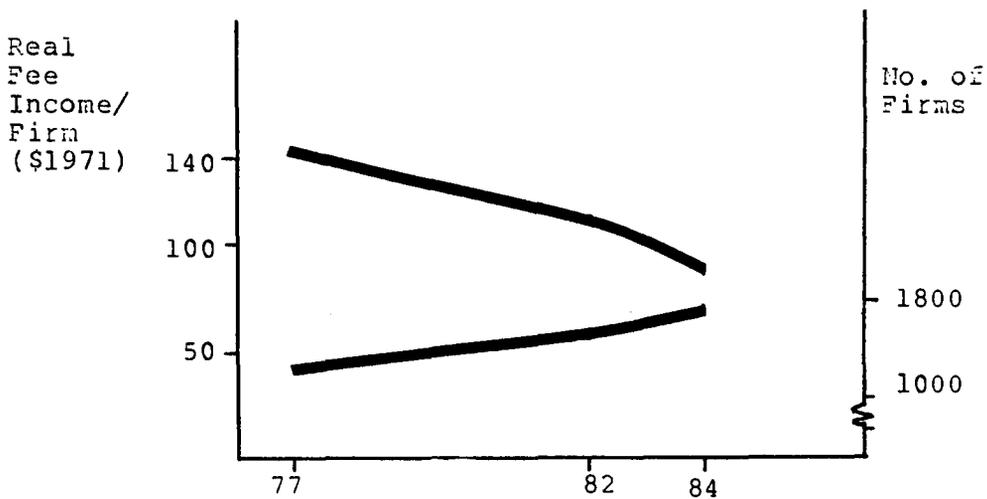


EXHIBIT 1.3

INCREASED NUMBER OF FIRMS HAS DROPPED AVERAGE INCOME



Source: Statistics Canada, Offices of Architects, 1977 and Survey of the Offices of Architects 1982; intervening years ahead estimated. For further information see Appendices A and B.

persons per firm. This drop is reflected in a 36 percent decline in the average real income per firm (see Exhibit 1.3). These averages mask the real situation in the industry:

- Only nine firms earn over \$5 million annually. They employ well under 100 employees each on average. These firms include the "international stars" (firms built around an internationally renowned designer skill), together with firms specializing in building types with reasonably constant demand such as major commercial, medical and institutional or government projects.
- There are only 80 firms in the \$1 million to \$5 million range with an average of 25 persons per firm. These work mainly in the institutional field.
- Over 90 percent of all architectural firms (about 1,600 out of 1,800) earn less than \$1 million a year, and of these almost 1,000 firms earn less than \$200,000 per year. These smaller firms are mainly sole practitioners who are particularly focussed on the residential and renovation fields.

Overall, there has been major downsizing in most firms. This is a continuation of a long-term trend since the institutional building boom of the late 1960s when educational and medical work was half of the total architectural billings (as compared to about a quarter now).

- Export still not significant. Real income from export is up slightly (about 8 percent) from 1977, and a few firms have established significant practices in the United States. However, export still accounts for only about 2.5 percent of the total architectural income in Canada.

For work in lesser developed countries, Canadian firms are not well-positioned in general. For the most part, Canadian firms are too small to finance and support significant export work, relative to their competitors from other countries. Canadians also lack the "package deal" capabilities which exist in other countries. Architecture is an early developing profession in lesser developed countries and

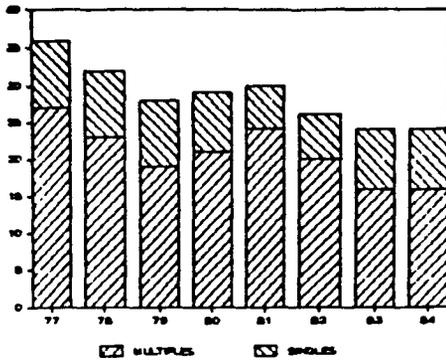
world funding agencies are increasingly encouraging the hiring of locals thus decreasing the demand for architectural services from the developed countries. In spite of these conditions, a few Canadian firms remain very competitive in special areas of expertise and building types honed in the domestic market.

- Many are desperate for work. While other industries have shown an upturn, the architectural business is still in the recession. As business has declined and the number of firms proliferated, it is only natural that many individuals and firms will be short of work.
- Particular problems in some regions. While all areas of the country, with the exception of the more remote areas, are well served by the architectural profession, certain regions have undergone particular difficulties in recent years. It has been particularly difficult for larger firms in the eastern and western provinces to weather the recent recession. In both those sections of the country as well as in central Canada there has been a significant trend to smaller firms.
- Unemployment amongst architects has soared: UIC rates are now three times higher than they were in the early 1980s. Technicians and other professionals in architectural firms have been particularly hard hit. Non-architectural professionals and technicians have been reduced as architects "go back to the boards", taking on technicians' work or, in some firms, converting to computer-aided operations requiring lower technician input.
- Pressure on associations. Both provincial and national associations have come under increasing pressure over the years but particularly in the last few. With resources down and problems up, there are greater demands for concerted action to help the profession. Not only are funds short but important volunteer support has been reduced as people focus on maintaining the viability of their businesses.

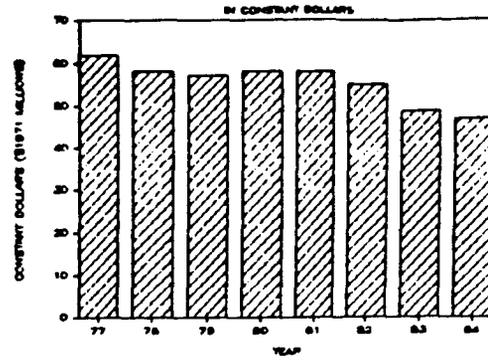
EXHIBIT 1.4

MIXED PERFORMANCE IN DIFFERENT SECTORS

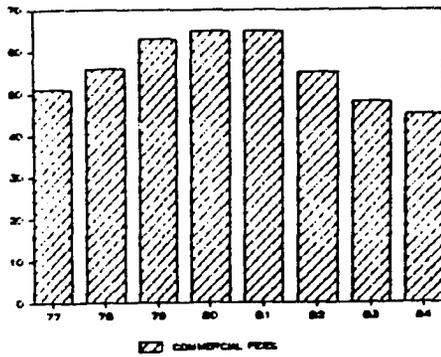
1. RESIDENTIAL FEE INCOME



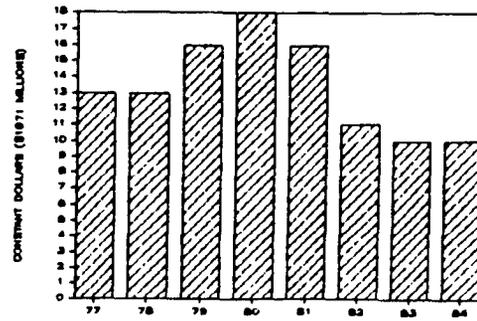
2. INSTITUTIONAL FEE INCOME



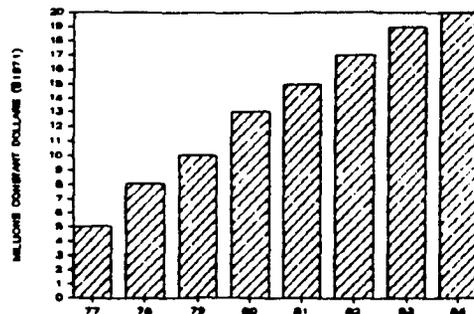
3. COMMERCIAL FEE INCOME



4. INDUSTRIAL FEE INCOME



5. RENOVATION FEE INCOME



In short, a beleaguered professional service. While a small number of firms are still thriving, and in fact growing, the majority are hurting, with consequent damaging effects for the long-term health of this service sector.

THE ECONOMY IS ONLY PARTLY TO BLAME

Construction expenditures are unquestionably down, but competition and architects' lack of flexibility have also been factors in the decline in business.

The Economy Drives Architects' Business

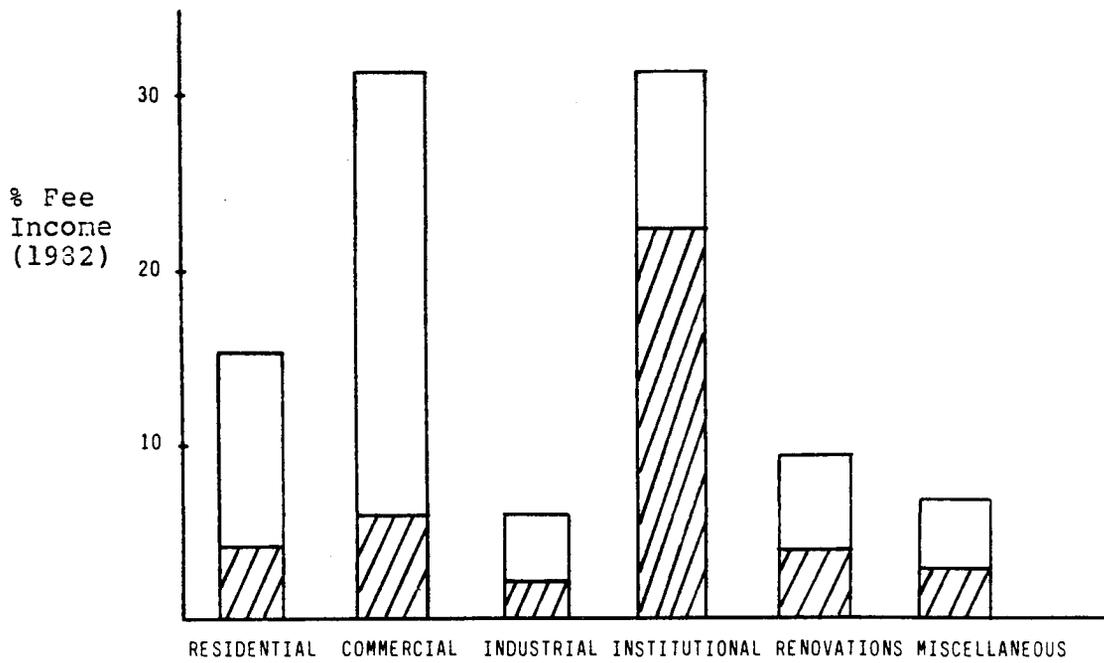
Architects' business is dependent largely, but not entirely, on investment in building construction. Cyclical boom times aside, the longer-term trends in building construction have been downwards as demographic and infrastructural factors have modified the demand for additional built space. Housing and institutional building have been in decline in real terms for some time. More cyclical commercial and industrial investment is also under pressure as the rate of economic expansion in the country slows. These trends have been particularly marked during and after the 1981-1982 recession highlighted by a reduction in investor confidence in the private sector and the move to reduce government deficits.

Apart from direct involvement in building construction, some architects do offer services which are not dependent on this sector directly. However in the broad sense, as the economy goes so goes the architects' traditional business. Thus in an economic decline, the only way for such a sector to grow or even sustain itself is to supplement traditional services by offering other services not directly tied to construction investment.

Since 1977, various components of architects' businesses have performed in different ways (see Exhibit 1.4). Generally residential and institutional income have been declining with commercial and industrial income peaking in the early 1980s and falling dramatically thereafter, with an encouraging sign of growth in renovation.

EXHIBIT 1.5

PUBLIC SECTOR IS A MAJOR CLIENT



Source: Statistics Canada Survey, 1982.

Other Factors Also Important

Apart from the economy, two other factors have had an effect on the architectural services business.

- Public sector has helped and hindered. Public sector work has sustained many firms, growing in importance for the industry as a whole from 40 percent of total fees in 1977 to an estimated 50 percent at present. Public sector investment is more important in certain building types (see Exhibit 1.5). Government has generally attempted to spread work around amongst architectural firms, in some provinces placing quotas on the number of projects a single firm can obtain. Also, public sector clients sometimes force joint ventures between architectural firms as another means of distributing work as well as increasing competence for specific projects.

Architectural firms across the country as well as architectural associations have indicated that their number one concern with governments is the way they do business. Public sector policies and practices have hurt the industry or made the practice of architecture more difficult. Problems have included:

- The oft-mentioned problems of the cyclicity of government spending on construction which although easy to identify are difficult to correct
- Although there are signs of real efforts by some departments to increase contracting-out, it is still an area of concern to the industry.
- Procurement practices in which procurement agencies encourage excessive competition, downward pressure on fees and unrealistic contract demands. A major concern is the continuing practice of political approval and often appointment of architectural firms for major contracts with government rather than allowing a proper competitive process to decide. Also government third-party agencies set up as contracting agents between the architect and the true client have caused many frustrations and excessive cost to firms. In

addition, crown retention of copyright and ensuing liability complications have caused problems for architectural firms. Too many meetings and the start/stop syndrome of many government projects have further exacerbated the problems.

- Government taxation procedures which have not recognized the nature of firms or have retroactively attempted to secure additional tax revenues from these businesses.
- Outside competitors having some effect. Architectural services are subject to competition from other professionals and non-professional businesses. While the number of integrated architectural/engineering firms is probably down, some still exist and compete with architectural firms. In general, over the past several years legislation in many provinces has separated effectively the engineers' and architects' jurisdictional disputes but there is undoubtedly still competition in some areas. Designers and technicians continue to provide lower-cost services to some clients.

While foreign (most notably U.S.) firms have clearly not made significant inroads into Canada, other professionals and service firms are competing with architects in some non-traditional service areas, such as construction and project management, space planning and interior design, landscaping, urban planning and management consulting. Finally, developers with a continuous building program have built up in-house design staffs, but there are indications that private firms are making inroads into this market and convincing developers of the value of contracting-out for service.

At the present time there are both tariff and non-tariff barriers for U.S. firms wishing to practice in Canada. These barriers discourage the entry of U.S. firms into Canada. In contrast, there do not appear to be as significant barriers for Canadian firms operating in the U.S. Clearly some firms are competitive, especially in areas where Canadians have unique expertise developed at home.

If in the future free trade was extended to the architectural profession in North America, Canadian firms could be hurt - particularly by U.S. firms who are very large and have extensive technological capabilities.

Overall, outside competition is not currently a major intrusion into the architectural services business. Competition is more keenly felt in peripheral services than in traditional, core architectural services. In fact, there are some signs of improved market share for architects in the private sector as design quality becomes a more important marketing tool for the private developer.

But Architects Must Take Some of the Blame

While the economy and other factors have contributed to the decline in architectural business, the architectural community must take responsibility too.

- Many have responded to changed conditions. Many firms have downsized and adjusted their work approach for smaller assignments and/or moved into new areas (for example renovation). These firms espouse the "small is beautiful" philosophy and many are providing effective services to clients not normally served by architects in the past. Other firms have broadened their services and expanded into new markets by bringing on new people or joint venturing with other firms. There is evidence that these non-traditional services are growing. Still other firms have become active in the export market. Some have managed their practices very well and many have introduced new technology such as computer-aided design and drafting and have developed world class technical expertise in certain building types.
- But many have not been responsive. Many firms have stuck to their old ways and not effectively pursued new opportunities for a variety of reasons: financial constraints, personal inflexibility, and in some cases stubbornness or the belief that society owes them a living. Many have been poor managers, not taking proper steps in cost control, in the improvement of productivity and use of new technology, or in

planning strategically for their businesses. There has also been a reluctance to explore new market areas. Finally, many of the older and larger firms have broken up into a number of smaller separate companies. In general, this trend reduces the continuity of service for clients and also splinters the experience and technological expertise that firms acquire over time.

- Cost competition occurring. In most industrial and service markets a decline in demand for services produces price reductions and cost competition. In spite of the existence of architectural fee schedules, there has been growing pressure for fee cutting in the architectural business. Some clients are demanding "more" for "less" and negotiating fees downward. At the same time some architects, desperate for work, are offering their services for lower fees.
- Profession has not marketed itself well. Architects continue to suffer from image problems in the eyes of the public in general and, more importantly, from the viewpoint of many clients. The profession has not communicated its services or their value effectively and has often projected an elitist image or one of being not responsive to clients' interests. Architects are viewed by some clients as a group which lacks cost-consciousness, gives poor client service, and attaches more importance to its own values and ideals than to the clients'. There has been a lack of effective programs to combat this image problem. The profession also has lacked a clarity in defining the services which it provides. There has been too great a tendency to blame "them" for the problems and not "us". Architects need to increase their focus on the quality and appropriateness of the service which they provide at the same time as working to overcome image problems.
- Profession also creates its own barriers. The plethora of professional regulations continues to inhibit firms from expanding or even maintaining their businesses in difficult times. Provincial regulations are significant barriers in several ways:

- The prohibition of anonymous names and the requirement that only living resident partners names can appear in the firm name reduces the continuity of firms, contributes to the public's image of instability within firms and generally encourages the splintering of firms into smaller entities.
- Restrictions against joint practices with other disciplines and the ability to offer services outside the traditional architectural fields within an architectural business also inhibit diversification.
- Rules on advertising also have reduced marketing flexibility and constrained an important vehicle for communicating with architects' many publics.
- Restrictions against interprovincial practices, including the lack of reciprocity in licensing provisions between provinces has further limited architects' flexibility.

In view of the significant changes which have occurred in other professions which do not have the concern about shrinking markets, the architectural profession appears behind the times in moving towards more flexible professional regulations.

FUTURE OUTLOOK NOT MUCH BRIGHTER

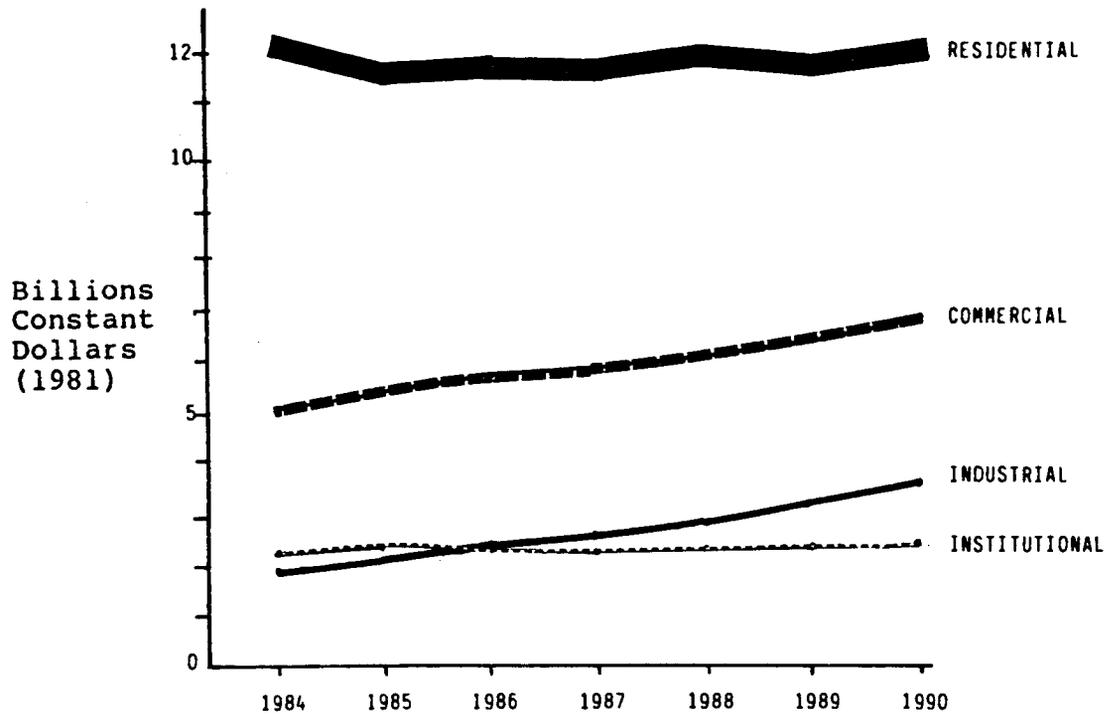
Going from an analysis of the past to a look at the future, there are few signs of a major turnaround in the traditional architectural business.

Overall Outlook: Slow Growth

The events of the last decade have made economic forecasting a hazardous profession. Nevertheless, all indications point to a significantly lower average annual real growth rate for Canada in the years ahead compared to the 1970s. Forecasts range from 2 to 4 percent in contrast to growth rates of 5 to 8 percent in the last decade.

EXHIBIT 1.6

LITTLE GROWTH FORECAST IN CONSTRUCTION INVESTMENT



Source: Canadian Construction Association (1984): Construction Outlook from Winter 1984.

The residential and institutional sectors will likely remain flat or perhaps even decline in real terms over the coming five to six years. In the residential sector there is a significant switch to low-rise compared to the demand for multiple dwellings where architects' services have been traditionally used most. The outlook for educational and other institutional buildings continues to be poor, although in some parts of the country there will be continuing demand for medical facilities. Commercial and industrial sectors show some prospects for growth but still at rates significantly below earlier times.

These overall trends are illustrated in Exhibit 1.6. On the other hand, there is every sign that some of the peripheral or other services of the architectural industry are growing under the influence of some architects' drive for continuing viability of their businesses and even expansion. Also, other forces such as the growth in technology are increasing the opportunities in the area of peripheral services.

More Difficulties Ahead, Unless Action Taken

With this outlook it is clearly time for architects to take both individual and collective action. Continuing decline in the traditional services will only lead to smaller practices, more difficulties in obtaining work and, unquestionably personal difficulties for many individuals. Slow or no growth in the market, improvement in operational efficiencies through technology, and the continued addition of new architects into the market will of necessity produce greater competition with work spread thinner. Firms will continue to decline in size and there will be no employment growth.

The implications are for the architectural services business to return to cottage industry status. While a few star firms and those with established markets will continue to prosper, there will be increasing pressures on smaller firms to provide more appropriate services to smaller clients and/or to explore new fields of service opportunity.

However, there are options. These require action not only by practising architects but also by those outside the profession. They require co-ordination and assistance from associations and governments that need the wholehearted support of the individual practitioner. Many options are open but not all will work. The next chapter looks at what could be done.

2. IS THERE ANY HOPE ?

During our interviews across Canada, architects frequently asked "Is the profession still going to exist in ten years time?". The decline in business coupled with the proliferation of new firms has pressed everyone to seek an answer to that question. Some offered a single panacea - more work - as if there was some untapped source of new investment in building construction which could be turned on to help sustain the practice of architecture.

There are no new, easy solutions. But the options are clear: the profession can be allowed to die, or someone (presumably government) can bail it out and sustain it, or new avenues of growth can be encouraged and pursued. Let us look at these options and consider the real alternatives both for the industry as a whole and for individual firms.

ARE ARCHITECTS REALLY NEEDED?

This is presumably a good starting point. Does Canada need a continuing architectural profession? Are architects a necessary component of the service sector of the economy? We think "yes" for several reasons.

Provide "An Environmental Conscience"

Architects play an important role in the quality of the built environment of the country. They have a major effect on the urban design of the external environment as well as the quality of interior space in which we all live, work, play and are cared for. Architects have a concern for the environment and have been key spokespersons for many needed improvements. As a profession, architects have traditionally espoused broader goals for building construction and the urban environment, providing viewpoints on longer-term considerations of society rather than the often shorter-term outlook of business and government clients.

Furthermore, architects are considered by many (including many architects) as both trend setters and guardians of the aesthetic values of the built environment. In this way they bring broader societal values to clients' decision making, an input which experience has proven to be of benefit to Canada.

Contribute to the Economy In Several Ways

Though small, the architectural industry is an important part of the service sector:

- Employment and Revenues. The approximately 1,800 architectural firms employ over 6,000 people with current sales of close to \$0.5 billion which includes \$12.5 million in export earnings. They clearly generate taxation revenue and spin-off multiplier effects on employment and purchasing throughout the economy.
- Technological Transfer. Architects provide an important link between manufacturers of building products and their sales and application in actual construction. Architects have always been an important element in the process of getting new products reviewed, approved and applied. They also participate in a variety of ways in product innovation. Although generally considered conservative in their willingness to try new products (in large measure due to their liability position), architects provide a valuable service in the complex process of developing and applying new products and improving old products.

While architects are seen as integral to the technology process, they lack an active role in research and development concerned with buildings, whether it be technical or social R & D. Architects have expressed an interest in being more involved in R & D, but they lack access to available sponsorship programs and they do not have sufficient resources to carry out own-account R & D.

- Economic Efficiency. Architects contribute to the efficient running of the economy in several ways. Firstly, it is generally considered that the provision of certain services on a contract basis is more efficient than provision in-house.

This is particularly the case when organizations deal infrequently with capital investments and lack internal staff with the needed expertise. Also, architects provide an important long-term outlook on the question of cost efficiency in design, particularly when dealing with clients with shorter-term views or ones not intending to retain ownership of the building.

"General Manage" the Building Process

Finally, architects provide a broad expertise on all aspects of the building process as well as, in many cases, specialist knowledge. This type of perspective is needed to co-ordinate the many other inputs required to complete complex building types. Thus as long as we need to build and renovate buildings, we will need architects.

But No Justification For a "Bail Out"

Many professions and other sectors of the service industry particularly those related to the construction business, have also experienced difficulties in recent years. Others have taken significant steps to alter their circumstances. Architects have been among the least flexible in adjusting to the circumstances both as individual firms and as an industry.

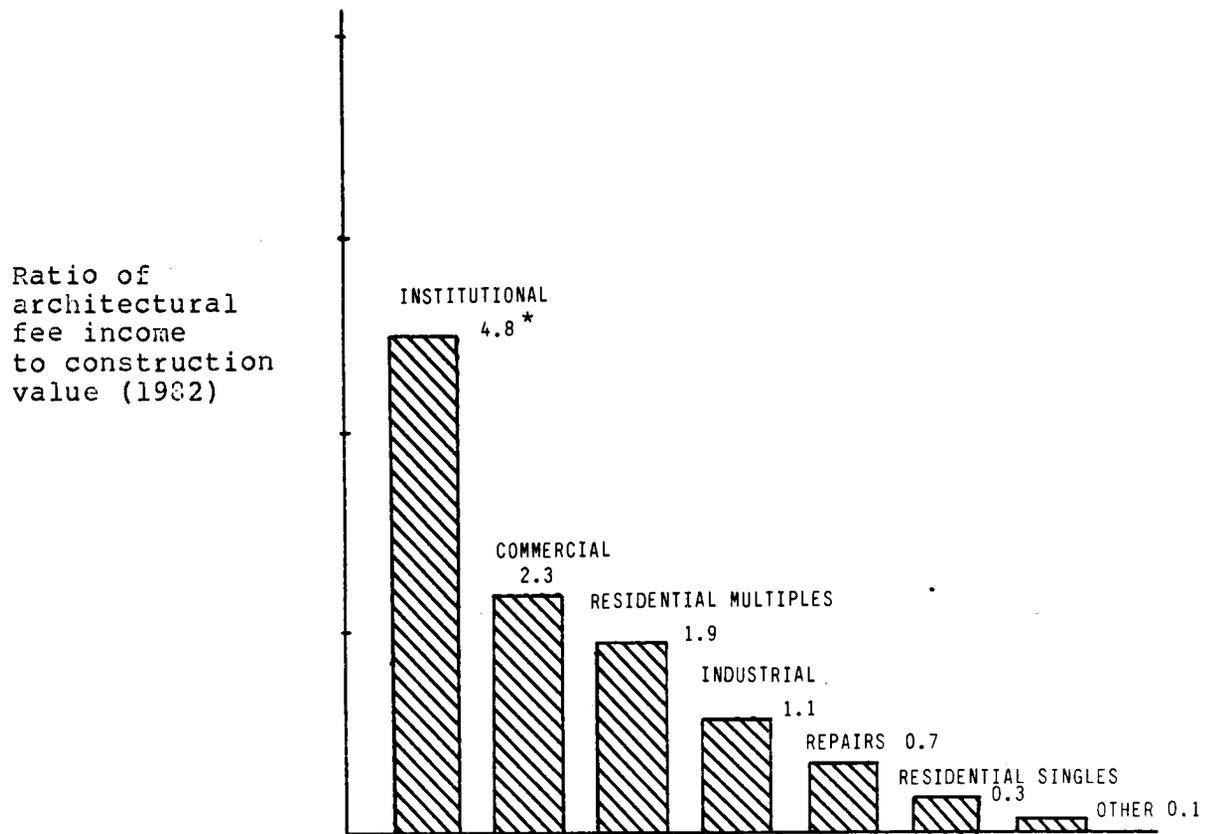
However, the architectural business has some justification for requests for help. It is an important and long-standing profession, but its small size and limited resources mean that there is justification for government to help the architectural services sector to help itself. "More work" may not be the title of this report, but it is clearly the objective if the profession is to be sustained and enjoy the possibility of some growth.

TWO REAL OPTIONS FOR THE INDUSTRY

In its attempts to reverse the long-term trend and stabilize or even grow, the architectural business in Canada, the industry and interested governments really have two possible strategies.

EXHIBIT 2.1

ARCHITECTS PARTICIPATE MORE HEAVILY
IN CERTAIN BUILDING SECTORS



Source: Statistics Canada Survey 1982 and Statistics Canada, Construction in Canada, Catalogue 64-201.

* ie. for each unit of construction value, architects earn 4.8 units of fee income.

1. Maximize Traditional Business

This approach involves doing what is necessary to get all the work there is in the building business; that is, concentrating on traditional services and providing those services to a level of quality and responsiveness that all clients with building needs turn to architects for their services. Statistics indicate that architects share a much higher proportion of work in some sectors than others (see Exhibit 2.1). Higher fees and a high share of market has always marked the architects' institutional business. Commercial, multiple residential and industrial markets also show reasonably high penetration, much higher than single-family residential. However, it is clear that architects could be participating more in some building types, particularly smaller-scale commercial and industrial as well as in single-family residential and particularly, the repair business.

This approach to increasing the volume of work involves a number of activities, including:

- Lobbying to ensure that architects get a chance at all of the building construction work available, including reduction of in-house work by the public and private sectors.
- Improving the quality of architects' services and deepening expertise so as to provide a more expert and responsive service to clients.
- Focusing on efficiency and cost reduction in practices to provide better quality services at lower cost.
- Achieving cost flexibility to bridge the bad times yet still be able to invest in keeping abreast of new technology and other developments with which clients expect architects to be knowledgeable.
- Working to increase architects' share of business in all building types.

However, while there can be some gains made in certain building types, this is not an option which will lead to significant real growth in the business of architecture. Architects already participate in a substantial proportion of building work. While this

proportion could be increased (and will undoubtedly grow as architects search for new business), significant change in the total volume of work done by architects is unlikely to result.

2. Participate In Other Markets

The second strategy is literally to broaden the services which architects provide in order to obtain business outside of traditional services. Referring to Exhibit 1.1, this approach implies significant growth in non-traditional service areas.

This strategy is already being adopted by some firms. The industry is now providing a wider variety of services than in the past. In fact, core services are shrinking as other services grow. The services of architectural firms can be thought of in three categories:

- Traditional Services, which include conceptual design, the preparation of drawings and specifications, assistance to the client in the approval process, and contract administration. These traditional or core services still account for the bulk of architectural revenues but as discussed earlier, present little growth opportunity.
- Diversified Services. These are the services which are related to the building process but which do not fall under the traditional definition of architectural services. These include planning (both urban and environmental), landscape architecture, interior design, construction management and even development itself. These services normally require association with other professionals or persons with different expertise.
- Emerging Services are those which are particularly related to the earlier stages of development of building projects and the services which can be provided once the building has been occupied. These include market research, financial and feasibility studies, space planning and furniture inventories, building monitoring and retrofit.

The movement away from traditional services into the diversified and emerging services carries with it several implications. More attention will have to be paid to the management of diverse services. More importantly, associations will have to consider reduction in the numerous barriers placed in regulations which discouraged this type of service provision.

In comparison with the earlier option this is likely to be a more fruitful approach for the industry in its attempt to sustain and increase the demand for architectural services in Canada. Improving the traditional services and deepening architects' share of the market in the various building types will lead to more work, but the most encouraging option is diversification and the addition of new types of services to the architects' repertoire.

INDIVIDUAL FIRMS HAVE MORE OPTIONS

If the industry has only two real options, individual firms within the industry have many more ways to stay in business or to grow. There are five basic choices, though the small-scale and limited resources of many firms pose a real constraint to pursuing some of them.

1. Just Keep On Going

This is the approach selected by default by many. They have no particular plan or strategy. They take opportunities as they arise; some firms are lucky and sustain themselves and others are not.

The act of planning or adopting a strategy as a firm is no guarantee that the strategy will be successful. On the other hand, a purposeful approach to the business can certainly help in focusing the limited resources of the architects' time for marketing, development of internal skills and resources and keeping abreast of new developments.

2. Decide to Specialize

Firms can decide (usually as a result of the past experience) to become "experts" in one, or a small number of building types. Alternatively, some firms have chosen

a particular sub-service area of practice and have become sub-contractors to other architectural and non-architectural firms by offering specialized but very narrow services in a wide range of building types.

Obviously the decision to specialize is dependent on the size and continuity of the markets for the chosen specialty. If the markets are large and not highly cyclical, then being a specialist can lead to a good, ongoing practice. However, the choice of a narrow market or one without long-term prospects is only a short-term help.

The decision to specialize is at best only a partial solution and is not as viable for architects as for many other service business because architects' markets are still geographically very focused. While engineering firms can develop a specialty and practice it worldwide, architects' practices rarely extend beyond a single region of the country. In general, such specialties are not as unique or differentiated as in other professional businesses. Thus architecture is more like law than engineering or even medicine in terms of the practicality of a strategy of specialization.

3. Open Elsewhere

For most this is only a theoretical alternative. A few firms have tried to establish geographically spread offices. Invariably these have worked for a project or two but in almost all instances firms have withdrawn and returned to the traditional location of their original offices. While this approach has worked successfully for many firms in the United States, in Canada because of the smallness of firms, architecture remains a very personal business, one not easily diversified geographically.

If geographical diversification is considered, a move to the United States (if the experience of some firms is to be duplicated) represents a more obvious opportunity than a move elsewhere in Canada.

4. Diversify Into Related Services

As argued for the industry as a whole, this is probably a good general strategy for many firms. Diversifying into related services broadens the firms' services to its clients and complements the generalist skills and training base of the architectural

practitioner. It often however involves bringing in non-architects to work in the business increasing the complexity of management. Many firms have adopted this approach with considerable success.

5. Bolster Practice With Non-Architectural Revenues

Some architects and firms have sought to overcome the cyclicity and uncertainty of architecture by also establishing parallel but different businesses. Some are closely allied, such as development or contracting. Other firms have set up totally separate businesses, for example retail establishments, in order to provide an ongoing source of revenue to offset the uncertainties of architectural practice. This type of diversification is made easier if the management of the other enterprise can be sub-contracted to others, leaving the architect to devote his or her main energies to the architectural practice.

* * * *

In conclusion, steps should be taken to bolster the architectural business in Canada using a combined strategy of maximizing architects' shares of their traditional services plus encouraging and facilitating the diversification of architects into other related service areas. Let us now look at some specific actions which can be taken.

3. SOME SPECIFIC STEPS

There are a number of steps which could be taken to help revive the architectural services business in Canada. These are divided into two groups: those which could be taken either by government or associations or both together, and those which individual firms should consider.

A. ASSOCIATIONS AND GOVERNMENTS

Before looking at what could be done to assist the industry, it would be appropriate to consider what the overall objectives should be. Together, architectural associations and concerned government agencies should:

- Support steps to improve the economy and investment in building construction. While, unfortunately, the first steps involve reduction of government deficits and thereby likely reduction in investment in building construction, in the long run a healthy economy is necessary for the investment on which the architectural services business is and will continue to be largely based.*
- Remove impediments blocking firms from pursuing new opportunities including expansion into non-traditional services. These impediments are mainly at the association level, but there are a number of things governments can do as well.
- Provide support and encouragement to help firms sustain themselves. As we have argued, there is no justification for a bail out. It is time, however, for architectural firms who want to sustain themselves and grow to be allowed to do so in a purposeful yet professional manner.

In looking at how some of the following steps can be implemented it must be remembered that the smallness of the architectural profession has led to associations with limited financial resources. Thus, there is a need for government financial help in implementing some of the

* Royal Architectural Institute of Canada, Brief to the Federal Government of Canada on the State of the Economy, October, 1982.

suggested steps. These suggestions are directed at both increasing the amount of architects' traditional business and helping firms to explore and expand into new markets.

MAXIMIZING ARCHITECTS' SHARE OF EXISTING MARKETS

There are six separate areas in which governments and associations can help to maximize architects traditional services business.

1. Work to Overcome Image Problems

Associations, with government assistance, should first understand the nature of the architects' image problems and then develop active programs for changing the image as appropriate. The first step is to recognize that these problems are the architect's fault and not due to some inadequacy on the part of the public and clients. From this point specific steps can be taken.

- Sponsor a national architectural image survey to explore the attitudes of both the public at large and architectural clients about the architectural profession. This survey should cover a sufficient number of respondents to be statistically significant so that regional differences can be identified. DRIE should financially assist the RAIC in sponsoring this survey. The results of the survey should be communicated broadly to the architectural profession. After sufficient dialogue on the results, corrective programs should be developed a) to encourage practising architects to undertake specific activities to correct public and client perceptions and b) through advertising or other means, to communicate the true nature of architectural services to both public and clients.
- Continue to develop community involvement and helping programs such as community improvement task forces, voluntary inspection services and input or other contributions to major community issues. Experience with these association-sponsored activities to date has had a positive effect on the public's image of the profession.

- Focus architectural award programs on the impact of high-quality architect-designed buildings on the public and client needs. Successful examples of architectural involvement should be publicized. Emphasis should be given to those aspects of the service which would be most valued by the client, including cost efficiency, quick sale or lease attributable to quality design and adherence to design and construction schedules. These competitions should also take into account user views.

2. Reduce Professional Regulatory Barriers

While there has been considerable movement since our last study on the industry in this regard, there is still a need to change regulations which inhibit interprovincial practices and more appropriate marketing by firms.

- Encourage more seminars for firms interested in improving marketing techniques, sponsored by associations, perhaps with government assistance. There should be more interchange with other professional service organizations on approaches used in their businesses. Liaison with U.S. associations regarding more aggressive marketing techniques should be continued.
- Work to reduce barriers to interprovincial practices to allow the development of larger or national firms. These barriers to out-of-province firms establishing branch offices have resulted in a limitation of the markets available to some firms. Associations should make changes to allow firms to retain their normal names for branch office operations and to remove residency requirements for those principals whose names appear on the letterhead. It is important that these arrangements be reciprocal to allow a freer movement of firms outside of their home provinces.
- Remove barriers against the continuation of firm names after the retirement of founding principals. Firms able to demonstrate sufficient continuity in the principal owners should be

permitted to retain their corporate identity even after the retirement or death of the principals whose names are attached to the firm. In addition, firms should be permitted to use names other than the surnames of principals. These measures should encourage the development of a stronger corporate identity for larger practices similar to those in most other professions and for architects in other countries.

3. Improve Procurement Procedures and Practices

Government should take steps to reduce the long-standing concerns on the part of architects about the ways in which governments retain architectural services. These should include:

- Reduce proposal costs by adopting a two-step system in all proposal calls. This should include a first step in which qualifications and experience are submitted by all firms with an interest in being considered, followed by the selection of a limited number of firms to prepare specific proposals. Such a system should be encouraged at all levels of government involved in contracting for architectural services.
- Ensure that architects are selected on the basis of ability, not for price or patronage reasons. Governments at all levels should institute a merit rather than a political system for awarding architectural commissions using jury systems to award commissions on a fair evaluation of the firms' competence and experience. Only recognized fee schedules should be used and price bids should not be a major factor in selection.
- Remove the frustrations of having to work through government contracting agencies by allowing architectural commissions to be awarded by the specific clients for the work, who could be advised on contracting procedures by special contracting agencies.
- Ensure that, in projects involving government subsidy to companies, appropriate architectural services are used.

- Review joint-venturing procedures and the encouragement of joint-venturing, whether explicit or implicit, in competitions for government projects. This review should also cover reported constraints on insurance and liability coverage under joint-venture arrangements.
- Ensure that Treasury Board and other government procedures treat architects fairly in comparison to other professionals such as accountants, lawyers and engineers.

4. Assist Firms In Their Drive To Increase Productivity

To better their quality of service, firms will be looking at ways to increase productivity in their practices. To help in this, associations and governments should:

- Facilitate broader access to CADD and computer-assisted administration and project control systems. The particular emphasis should be on access to these systems for medium-sized and smaller firms to permit them to continue to compete effectively. Methods should include broader seminars and educational programs on the use of CADD and other computer-aided techniques, working with manufacturers to introduce lower-cost systems and encouraging sharing or service bureau arrangements to provide access to firms that cannot afford individual systems.
- Do not mandate CADD use on government projects since the use of these techniques should be allowed to evolve naturally in a normal competitive environment. Also, mandated use will inhibit access to contracts by medium-sized and smaller firms.
- Ensure that the needs of architectural firms are represented at any review of the taxation system. Architectural firms are small businesses, and should receive treatment appropriately.

5. Reduce Government In-House Work

The profession still has concerns that more work currently done in-house by government could be contracted out with benefits both in terms of government cost reduction and increased work for private firms. To develop an appropriate approach, DRIE should assist associations in the following steps to develop a logical and defensible approach:

- Develop guidelines based on a clear economic and business rationale. It is not sufficient to argue that "free enterprise is better" in the argument for greater contracting-out. There must be a clear rationale. Studies should be encouraged to identify the broader economic benefits of contracting-out and to develop practical criteria and guidelines for determining how much of its work a particular government organization should contract out. These studies could well be carried out at one or more universities.
- Assess the real extent of excess in-house work. Using the results of the above studies, an assessment should be made of the in-house work being done by specific target government agencies. Such a review should be compatible with current government philosophies to emphasize the private sector wherever possible. Then organization-specific strategies should be developed to encourage an appropriate level of greater contracting-out.

6. Facilitate Coping Mechanisms

A wide range of steps could be taken to shore up certain aspects of architectural practice and help the profession as a whole cope with the competitive pressures. These steps include:

- Continue to support generally accepted fee schedules and not press for price competition within the industry. Firms are having a sufficiently difficult time coping at the established fee schedules and strong encouragement of fee cutting could have a devastating effect.

- Take steps to help firms reduce their cost exposure to weather cyclical and lean times. Government should seriously review the statute of limitations with a view to reducing the excessive, long-term liability architects shoulder for the buildings they design. Any reductions would have the effect of lowering liability insurance costs and removing a major psychological problem. Also, with many firms moving to employment of contract individuals, government should examine regulations and taxation procedures to facilitate this important coping mechanism.
- Ensure that there is continuity of normal benefits and fair tax treatment for individuals employed on contract. Due to the increased use of contracted employment there will continue to be a large number of practising architects regularly dislocated from their jobs. Placement assistance through UIC and Manpower should be increased. As well, the applicability of work sharing and other Manpower assistance programs for architectural firms should be reviewed.
- Review the size of architectural enrolment in the universities with a view to managing the flow of new graduates in a manner commensurate with the long-term expectations of the profession. This can be done by promoting realistic expectations among graduates concerning possible employment on graduation, and broadening their training to ensure opportunities outside the private practice of architecture. At the same time, there is a need to increase the key skills of students while at university to enhance their usefulness to architectural firms upon graduation.
- Sponsor seminars on strategic planning for architectural firms. These seminars should help firms to assess their own approaches to survival and growth.

ENCOURAGING EXPLORATION OF NEW MARKETS

Equally important for the future health of the architectural services business will be for government and associations to help architectural firms examine new opportunities.

1. Reduce Barriers to Broadening Practices

Regulations by provincial associations on multi-disciplinary practices and the general ability of architects to hold themselves out as offering other services need to be reduced. While there has been some movement in this regard (including the ability to incorporate) more can still be done.

- Allow firms to identify other specialties on their letterheads and other marketing materials, including, if necessary, permitting equal prominence to services other than those offered by traditional architectural practices.
- Permit multi-disciplinary corporations and partnerships in which architects hold a substantial but not necessarily a majority position.
- In association programs generally encourage broader practices by offering conference programs and seminars on advantages and approaches to development and management of such practices.

2. Continue Support For Export Effort

While we have argued that export of services is not a major opportunity, nevertheless there are firms who could expand in this area. In this respect we see the United States as the main export opportunity. Many Canadian firms have already secured a toehold through work for Canadian clients and developers active in the U.S. This has been the main growth area of export over the past decade and provides a more readily accessible market as well as one in which a small share can provide significant business to Canadian firms. There are, however, some opportunities in overseas markets as well.

- Continue to work to reduce barriers to Canadian firms practising in the United States. This is likely to require reciprocity in arrangements for firms working in Canada. However, complete free trade with the U.S. could be harmful to Canadian firms, if large, technologically advanced U.S. firms decide to go after the Canadian market.
- Support the development of greater capabilities in certain key service areas which are in demand in overseas markets. One is in the field of training. Training is now a top priority with most world agencies funding lesser developed countries. In these countries, architectural practices are among the first professional services to spring up. These practices, though, need training in practice management as well as help in the more sophisticated architectural projects. Canadian firms reportedly have excellent practice management techniques. These capabilities should be reviewed and specific efforts made to encourage Canadian firms to offer practice management training in overseas markets.

Individual firms should also be encouraged to offer consulting services to lesser developed countries who require help in planning their building programs and in the development of their architectural professions. For those firms diversifying their service areas at home, export in these areas is also a possibility once they have established a solid reputation in the domestic market.

- Reinforce expertise in building types in which Canadians already have a competitive edge. Canadian firms have developed some unique expertise through work done in the past in Canada. Many of these represent export opportunities. These include high Arctic construction, specialized institutional building and programming in health care, education and correctional facilities, and to a certain extent specialized exhibition and tourism/recreational facilities. Both governments and associations should support programs to further develop these specialties, through R & D sponsorship and general export support programs.

- Both associations and governments should continue to encourage dialogue with other associations to encourage joint-venturing between architects and other service exporters including consulting engineers, contractors and manufacturers interested in turnkey business and, in particular, public agencies interested in export work. The latter include educational organizations in Canada interested in providing educational facilities and services overseas as well as government organizations such as the Ontario International Corporation with a mandate to package services for major international projects.
- Recognize that export is an opportunity for only a select few firms. Export needs either funding for marketing activities or personal relationships with clients active in export markets. It is a business for larger firms or firms with specific building expertise honed on the Canadian market. Widespread programs to encourage smaller firms and one-man practices to export would be ill-advised.

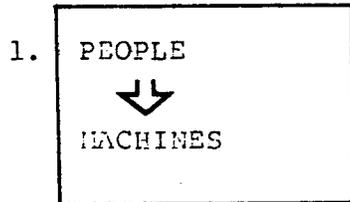
3. Improve Access To R & D Activities

An avenue of expansion of architects' services would be into research and development and technological transfer activities. Government agencies responsible for research and development programs should encourage architects' participation in those programs which involve development of new building technologies and processes, including those with high potential for export. Both associations and governments should:

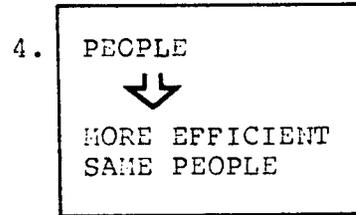
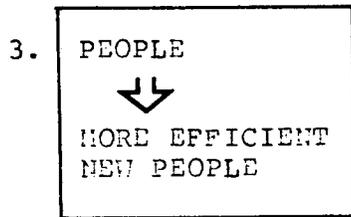
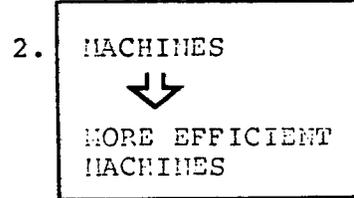
- Prepare a summary of available R & D funding programs and disseminate this information to architects.
- Encourage more appropriate funding for government research on building technology and actively seek to involve architectural firms in this work.
- Develop programs to encourage product manufacturers to work with architectural advice in the development of new building products.

EXHIBIT 3.1

FOUR WAYS TO INCREASE PRODUCTIVITY



e.g. CADD



B. INDIVIDUAL FIRMS

Individual architectural firms will be supported if government and associations carry out the specific steps outlined above. There are also a number of things which firms themselves could do, both to manage effectively during cyclical and uncertain times, and particularly to review the firms' strategy in an increasingly complex market.

COPING WITH CYCLICALITY AND UNCERTAINTY

For architectural firms, cyclical and uncertainty are facts of life. What is new is the expectation that the current low point in the cycle will be protracted, that is, that slower growth will continue for the remainder of the 1980s. For individual firms this means competing in a tougher market and finding ways to cope with the inevitable gaps and surges in work. It also means that to be competitive a firm must be more productive, have a lower cost base and be in the right market at the right time.

1. Reducing Cost Exposure

Firms should explore means to increase their flexibility by building in safety valves to protect themselves against cyclical demands, including:

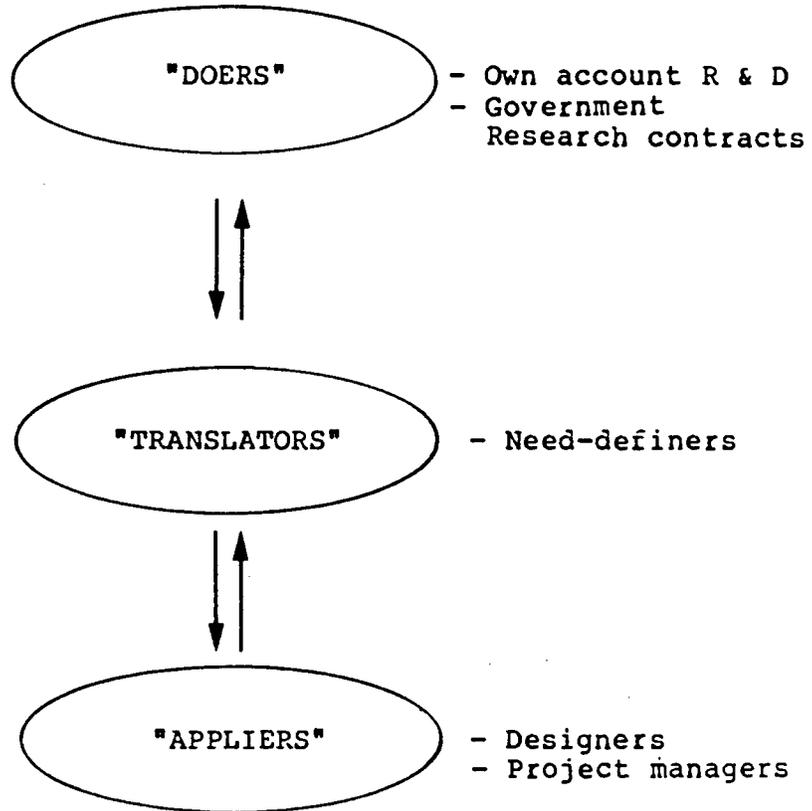
- Hiring people on contract to increase flexibility and staffing, and reduce the possibility of unlawful dismissal suits.
- Compensating employees through a low-base salary plus a profit-sharing scheme (thereby lowering payroll costs and exposure during rough times and creating incentives for employee productivity).
- Reducing overheads through sharing or renting facilities too costly for a single firm (e.g. CADD).

2. Improving Productivity

There are four ways to increase productivity (see Exhibit 3.1). The first two generally translate into coming to terms with the use of computers. The third and fourth involve a perhaps greater challenge.

EXHIBIT 3.2

A RANGE OF ROLES FOR ARCHITECTS IN R & D



- Individual firms need to decide on their direction concerning computerization, considering such questions as the types of computers required, their application and the implications for productivity and manpower. Applications include computerized administration, the use of mini and micro computers for data manipulation, and the most talked about use, computer-aided design and drafting. While the use of CADD is by no means universal, most firms who have tried it believe in its long-term usefulness. Clearly, smaller firms must find ways of accessing these systems or improving manual productivity.
- Firms must continue to work to improve people productivity. Increasing output per man-hour is important but so is improving the quality of each man-hour spent by employees of the firm. Given the difficult times and the real need to improve job satisfaction given the uncertainties, architectural firms need to pay increasing attention to what makes people productive. Key factors which affect employees' job satisfaction and productivity include: the use of technology, the physical environment, the development of increased skills and knowledge, social conditions such as leadership, personnel policies, organizational structures, etc., and the breaking down and structuring of work items. Each of these elements requires ongoing attention by individual firms if productivity is to be increased.

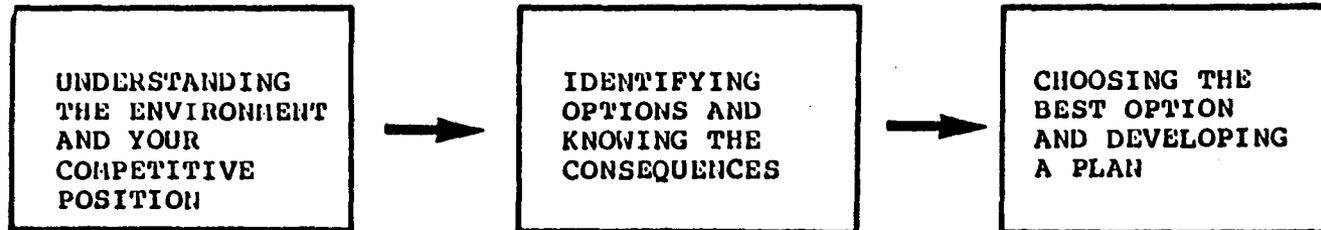
3. Participating In Technological Development

Architects can expand the scope of their services by becoming more active in research and development and other technology projects. But first, government and in associations need to press for more access for architects to this work. However, individual firms could become more active in a range of roles (see Exhibit 3.2).

- Architects should actively seek research contracts from government and private manufacturers to assist in the development of improved building products and processes. Those that can afford to, should undertake research and development work on their own account using whatever funding can be made available internally within the firm.

EXHIBIT 3.3

STRATEGIC PLANNING FOR
ARCHITECTURAL FIRMS



- Environment
- The three C's
 - Company
 - Customers
 - Competition

- What are the advantages/disadvantages of each option

- What option "fits" best
- Defining resource requirements
- Developing an action plan

- Architects could play a role in assisting manufacturers in defining needs and in carrying out market studies and application investigations for proposed or new building products. As the professionals most familiar with the application of products, architects are in a good position to offer this service.
- Architects can also assist in prototype and application research for building products under contract to both managers of projects or other clients.

It is important to point out that many firms have found that some participation in technological and research work improves skills and helps with the marketing of more traditional architectural services, particularly, on those building types related to the R & D effort.

INITIATING SERIOUS STRATEGIC PLANNING

Most architectural firms do not have a well-thought-out strategic plan. Strategic planning is not necessarily a laborious and time-consuming exercise, nor does it require extensive analysis and long documentation. It is more a way of thinking about the firm and its business which can lead to a more efficient use of scarce resources and a more promising future. The process is really quite simple and involves three basic steps (see Exhibit 3.3).

1. Understanding Your Competitive Position

This involves a realistic "taking stock" of both the market and the firm's competitive situation. There are four components.

1. Look at the market and the future business environment. While few firms have access to detailed market information, they can ask themselves about likely trends in the market which could affect their business. Generally, these trends fall under the headings of:
 - Developments in technology which will change buildings or the manner in which architects practice.

- Political or legislative changes which will alter the market in some way.
- Social and demographic developments in the firms' market area which will have an impact on building investment and design.
- Broader and more specific economic trends which will have an impact on the market for services.

Through a brainstorming session, a firm can identify what it knows about key trends as an input to its strategic planning process.

2. Realistically assess the firm's strengths and weaknesses. This includes a review of resources and expertise resident in the firm, and the unique skills or advantages which the firm possesses compared to other firms. Of particular importance is the identification of the problems or deficiencies that the firm needs to overcome or circumvent.
3. Assess who the firm's customers are, or could be. Decide what types of clients will be attracted to the firm using past experience as an important guide. Identify what those customers are particularly looking for (their needs) and what the firm will need to do to sell them successfully on its services.
4. Understand who the firm's main competition is and what their similarities/disimilarities are. Is the competition weak or strong and how do we stack up?

With an understanding of these basic elements, the firm can move on to identify the options available to it and to assess the consequences of those options.

2. Identifying the Options

The basic options for any firm were discussed earlier. The important step is to consider each carefully and decide what the advantages/disadvantages of the various options are for the specific firm. The options include:

- Being a generalist or a specialist firm. This can be largely dictated by the previous experience of a firm or it can be a conscious decision to develop in one of these two fundamental ways. Normally, firms trade-off the competitive advantages of specialization against the uncertainties in the markets for specific building types. Thus, the decision to offer services in a wide range of building types versus more narrow range has to be made against an assessment of the firm's competitive strengths and expectations of the broader market.
- Geographic expansion through new offices is an option for a few firms but it has generally not proven to be a successful tactic for most who have tried it. Both interprovincial practice barriers as well as the difficulties and cost of managing practices at the distances normally found in Canada pose particular barriers.
- Adding related services to the basic architectural practice is an important option that many firms should consider.

Firms in uncertain markets or in other circumstances may also want to consider branching into non-architectural businesses to alleviate the normal cyclical pattern of architectural revenues.

3. Developing A Strategic Plan

The advantages of a strategic plan are mainly in the discipline of the thinking process which a firm's partners must go through to produce one. The plan itself need not be elaborately documented, but it should focus on what directions have been decided upon (not how the decisions were made), and on what specific actions are going to be taken. Strategic plans are often modified yearly as experience and different circumstances require changes in a firm's approach but should initially have a two to three year horizon. Such plans are a tool, not a straitjacket.

The first step is to evaluate the options open to the firm in terms of ease of implementation, likely returns, risks involved, investment required and other criteria particular to the firm and its partners. Once a basic strategy is chosen, it should be expanded to answer, as specifically as possible, three important questions:

- Who will be our customers, and what are their particular needs that we will be serving?
- How will we compete, and what will make us successful?
- What resources will we need and how will we acquire them, both in-house and by association with others?

Once these can be answered, then the firm should articulate several action programs, indicate who will have primary responsibility and estimate time and financial resources required. Such programs should include:

- Marketing: What actions are going to be taken to maintain contact with past clients and establish relationships with potential new clients?
- Human Resources: How will we develop the skills of the people we have, how will we select and develop new people, what type of employment/compensation/shareholding system will we have, how will we joint venture, and with whom?
- Technology: What is to be done about office technology which could improve productivity, and about particular aspects of building technology which are critical to the building types or services the firm will be stressing?
- Financial: What will be the firm's financial objectives and policies (such as retaining of earnings and profit sharing proportions), what budgets are needed to support various actions in the plan, what annual business volumes are needed to sustain the firm and what would be done to sustain the firm if revenues fell below these levels?

Other action programs may be needed by firms wanting to initiate particular new activities associated with their strategy.

Strategy reviews are often best done during an intensive session away from the day-to-day demands of the office, perhaps over a weekend. Outside help from a friend of the firm, a consultant or other advisor is usually beneficial to bring objectivity, experience in other businesses and an ability to help reconcile differing opinions amongst the partners.

Clearly, the subject of strategic planning for architectural firms is a more complex process than can be covered here in a few pages. As recommended earlier, this should be a subject offered at professional conferences or by associations through seminars for their members.

* * * *

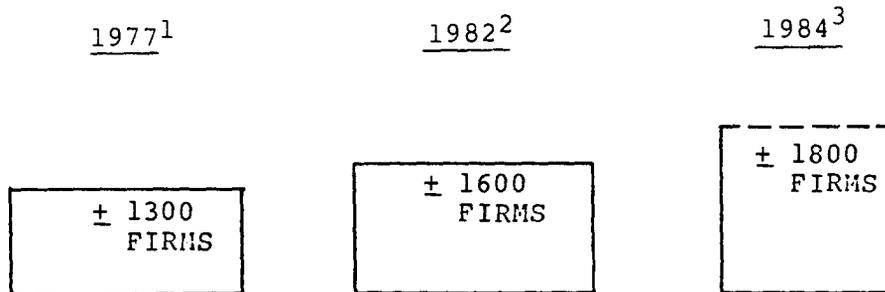
This concludes our thoughts on specific steps which various parties concerned about the future of the architectural services sector should consider. Associations need to take the lead, with the support and, where necessary, financial backing from governments. But ultimately both need the commitment of architectural practitioners across the country to support any new initiatives aimed at maintaining, even expanding, the architectural business in Canada.

APPENDICES

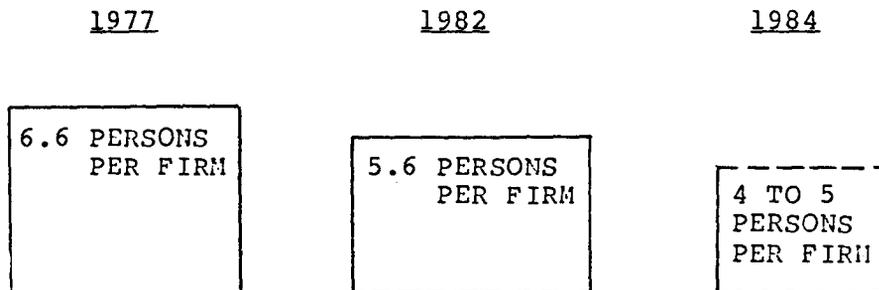
- A. Profile of the Profession
- B. The Domestic Business
- C. A Note On Export
- D. Architects And Technology - New Challenges
- E. Statistics Canada Building Classifications (1982)

EXHIBIT A.1

GROWTH IN NUMBER OF FIRMS



BUT AVERAGE SIZE SHRINKING



Source: 1. Statistics Canada, Offices of Architects, 1977.
Catalogue 63-534.

2. Figure derived from Statistics Canada, Survey of the Offices of Architects and Consulting Engineers, 1982. Includes estimate of non-respondents. See Explanatory Note #1 at end of this appendix.

3. Estimate based on industry interviews. See Explanatory Note #1 at end of this appendix.

APPENDIX A

PROFILE OF THE PROFESSION

The Canadian architectural profession has undergone a major transition since the late 1970's. The number of firms in the profession has grown at the same time as overall employment and average firm size has shrunk. These changes have been reflected in shifts in the overall structure of the profession and in the firms that comprise it. Firms struggling to cope with the recession and dwindling markets have made critical changes in their personnel structures and in the type of services they offer. In this appendix we summarize these major changes which have occurred in the "makeup" of the profession.

More Firms, But They Are Scaling Down

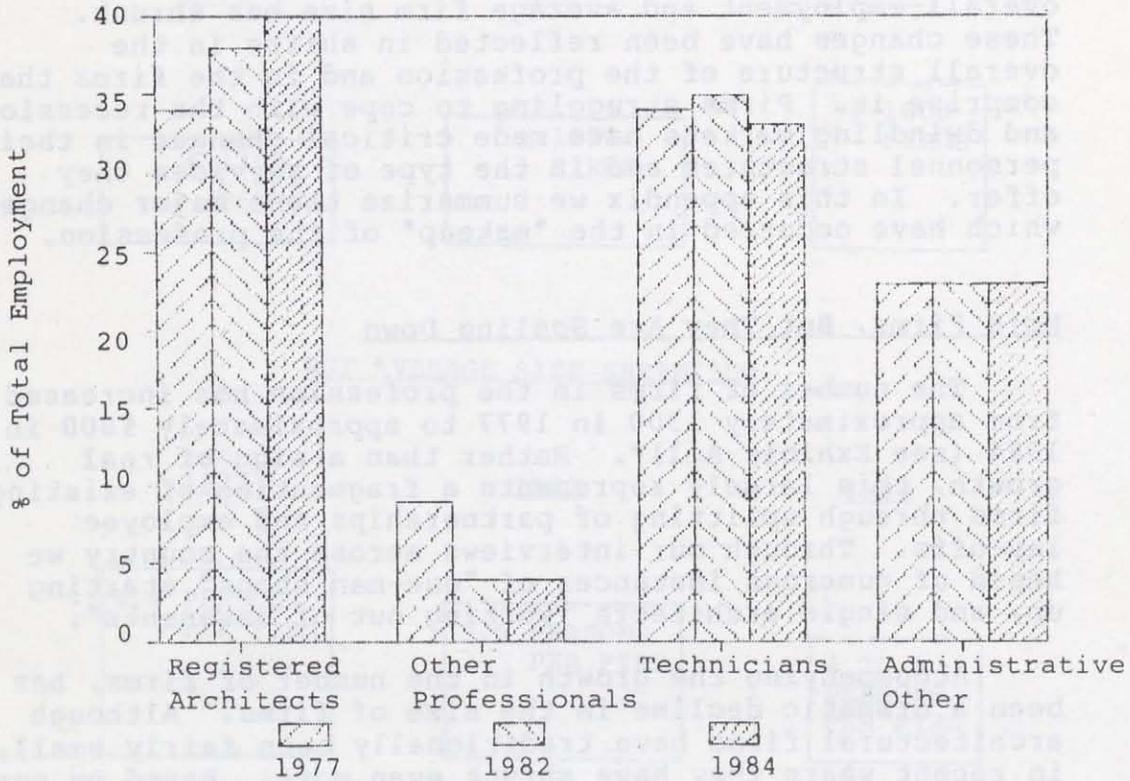
The number of firms in the profession has increased from approximately 1300 in 1977 to approximately 1800 in 1984 (see Exhibit A.1)*. Rather than a sign of real growth, this largely represents a fragmenting of existing firms through splitting of partnerships and employee lay-offs. Through our interviews across the country we heard of numerous instances of "one-man shops" starting up, and single architects "working out of basements".

Accompanying the growth in the number of firms, has been a dramatic decline in the size of firms. Although architectural firms have traditionally been fairly small, in recent years they have shrunk even more. Based on our industry interviews, we estimate that the average firm today consists of four or five persons, in contrast to approximately seven persons in 1977. (See Exhibit A.1.)

* Architectural firms are defined as firms having: at least one registered architect on staff; and earnings of \$5,000 or more from the provision of architectural services. In the case of mixed architectural/engineering firms the firm is designated according to which activity generated the most fee income in the year reported. See Explanatory Note #1 at end of Appendix.

EXHIBIT A.2

STAFF COMPOSITION CHANGING



Source: Statistics Canada Surveys, 1977 and 1982. 1984 estimate based on interviews.

Staff Composition Changing

One of the many effects of the troubled times in recent years has been a change in the staff composition of firms. As architectural firms have shrunk, their tendency has been to return to the architectural core of the firm and to let other professionals go. In some cases, mixed practices have no longer been found to be profitable as clients seek specialist firms, as opposed to integrated firms. This change is reflected in a comparative analysis of employment composition in 1977, 1982 and 1984 (see Exhibit A.2).

Based on our interviews with firms across the country, we believe that this trend has continued since 1982, with the result that architects and the use of technology have displaced technicians to a certain extent as well. Numerous firms recounted cases of reducing administrative and technical staff to a minimum. The end result of this phenomenon has been that many senior architects are now "back on the boards", and/or carrying out additional administrative responsibilities.

The firm of the future will likely see a further extension of these trends. Firms will likely be composed of proportionally more architects, fewer but highly skilled, computer-trained technicians, and minimum administrative staff. In Appendix D we discuss the influences of technology on architectural practices in greater depth.

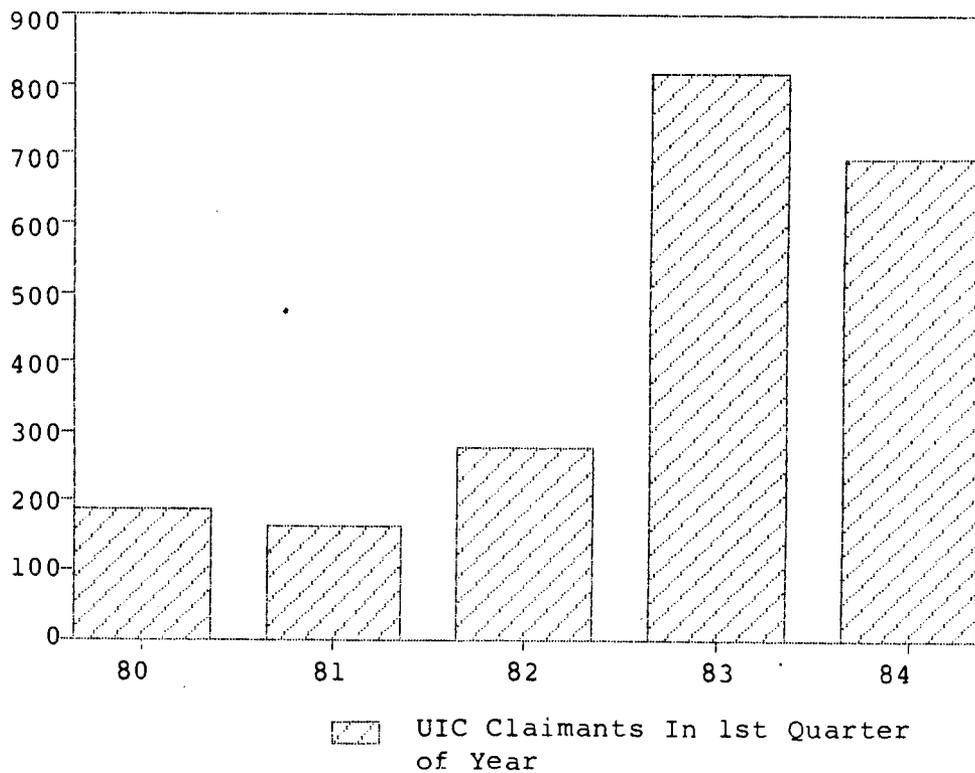
Many Architects Out of Work or Underemployed

Many architectural offices in Canada today are smaller than they were in the past. The challenging question is - where did the displaced employees go? As we have already noted, many architects have started up their own practices. From talking to members of the profession, it is evident that many of these architects are only partially employed - work is infrequent, sporadic and barely a means of survival.

Many architects today are also officially unemployed. Although it is impossible to calculate the exact number of architects, technical and support staff laid off from firms we do have a number of indicators:

EXHIBIT A.3

MANY ARCHITECTS OUT OF WORK



Source: Unemployment Insurance Commission Statistics:
Active Claimants by Occupational Code:
Architects, 1980-1984.

- Dramatic increase in architects claiming unemployment insurance. Exhibit A.3 illustrates the number of architects claiming unemployment insurance in the first quarter of each year from 1980 through 1984. Although this figure includes all architects (i.e. those previously employed in government or private industry), it is a good indicator of employment change.
- RAIC survey indicated major decreases in employment from 1982 to 1983. A survey of 580 firms by the RAIC in 1982 indicated that most firms expected to lay-off a considerable number of employees between January 1982 and January 1983. The projected decreases in the total numbers employed were as follows:
 - For architects: - 26.8%
 - For technical and support staff: - 43.4%
- A survey of "The Canadian Architect" reported staff reductions of approximately 20 percent. The Canadian Architect received results from 280 firms on staff changes from July 1982 to July 1983. The total staff reduction among these firms was -20%.

Internal Restructuring of the Profession

From 1977 to 1982, the very large and very small firms in the profession grew in importance - both in terms of fee income and employment. However, overall the medium-sized firms still dominate the profession. In this section, we examine the key characteristics of the firm groups in the profession and highlight key changes over time. (See Exhibits A.4 and A.5.)*.

- Growth in the "Majors". The nine largest firms in the profession have grown in importance in terms of employment and fee income:
 - In 1977, the eight largest firms earned 10 percent of the total fee income and employed seven percent of the total employees.
 - In 1982, the nine largest firms earned 15 percent of the total fee income and employed 10 percent of the total employees.

* See Explanatory Note #2 at end of this Appendix.

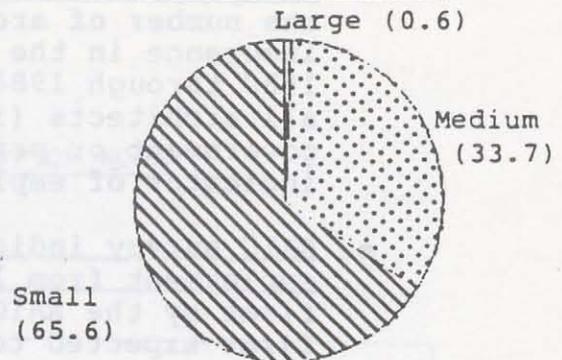
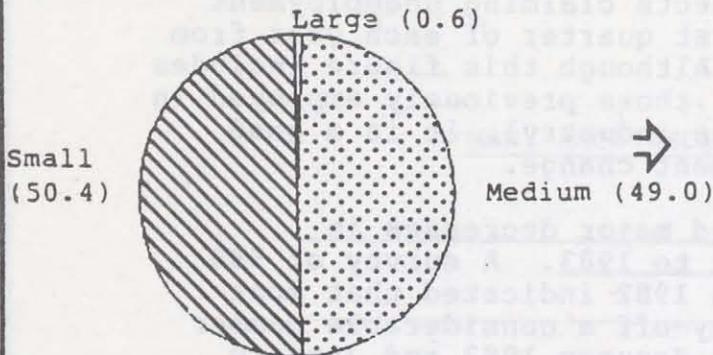
EXHIBIT A.4

PROFILE OF THE PROFESSION, 1977

PROFILE OF THE PROFESSION, 1982

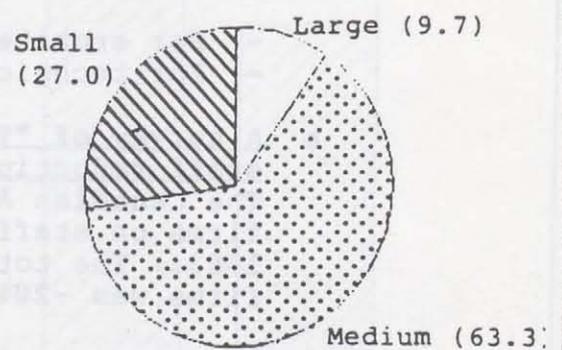
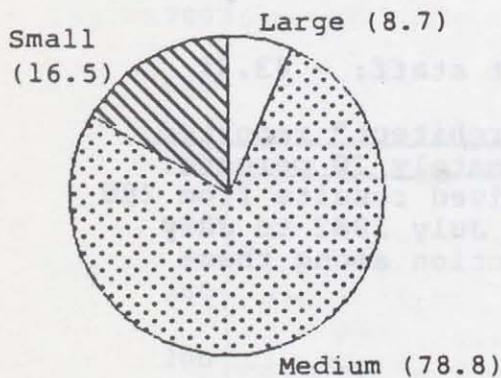
By Number of Firms (%)

By Number of Firms (%)



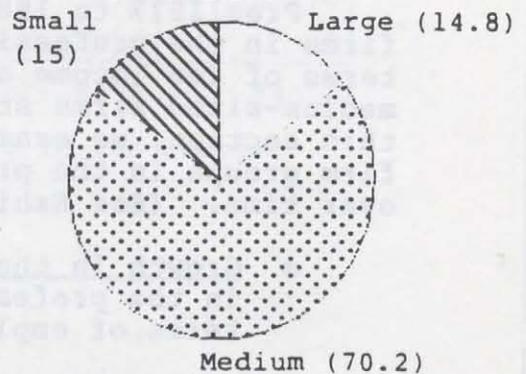
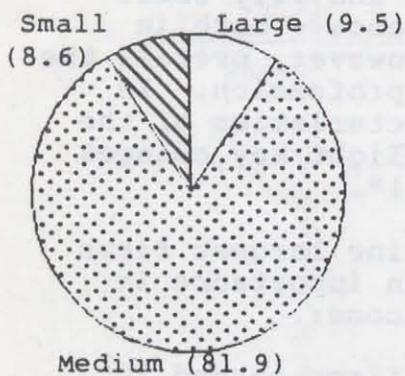
By Employment (%)

By Employment (%)



By Fee Income (%)

By Fee Income (%)



Source: Statistics Canada Surveys, 1977 and 1982.

The growth in the majors reflects a trend typical of most service sectors today - the strong get stronger.

A few of the salient characteristics of this group of firms are as follows:

- Over half of the largest are located in Ontario; the remainder predominantly in Alberta and British Columbia.
 - On average, the firms employ 88 persons, but some firms exceed 100 employees.
 - They tend to be involved in some export work - approximately four percent of their fee income is derived from export.
 - Approximately 50 percent of their fee income is derived from three building sectors - administrative, commercial and medical.
 - All of the nine largest firms are partnerships, as opposed to individual proprietorships or incorporated companies, although with recent changes in some provincial regulations, some are likely to incorporate.
- Medium-sized firms still predominate. The intermediates in the profession today account for about one-third of the total number of firms, almost two-thirds of the total employment, and just over 70 percent of the total fee income. Although they still predominate, they account for a smaller proportion of the profession as a whole today than they did in 1977:
- In 1977, the 629 medium-sized firms earned 82 percent of the total fee income and employed 77 percent of the total employees.
 - In 1982 the 496 medium-sized firms earned 71 percent of the total fee income and employed 63 percent of the total employees.

Some of the key characteristics of medium-sized firms are as follows:

EXHIBIT A.5

PROFILE OF THE PROFESSION IN 1977*

FIRM GROUPINGS	FEE INCOME RANGE	FIRMS IN GROUP		TOTAL EMPLOYMENT		TOTAL FEE INCOME (\$'000)		AVERAGE EMPLOYEE NO./ FIRM
		#	%	#	%	\$	%	
LARGE	\$ >2.5 million	8	1	568	7	29,977	10	71
MEDIUM	\$1-2.49 million	49	4	1,747	21	77,663	25	36
	\$500-999,000	94	7	1,499	18	66,596	21	16
	\$100-499,000	486	38	3,247	38	113,354	36	7
	(Total Medium):	629	49	6,493	77	257,613	82	10
SMALL	<\$100,000	646	50	1,392	16	26,940	9	2.2
TOTAL		1,283	100	8,453	100	314,530	100	6.6

PROFILE OF THE PROFESSION IN 1982*

FIRM GROUPINGS	FEE INCOME RANGE	FIRMS IN GROUP		TOTAL EMPLOYMENT		TOTAL FEE INCOME (\$'000)		AVERAGE NO. EMPLOYEES/ FIRM
		#	%	#	%	\$	%	
LARGE	\$ > 5 million	9	1	792	10	69,461	15	88
MEDIUM	\$1-49 million	81	6	2,066	25	153,015	33	26
	\$580,000-999,000	120	8	1,319	16	83,730	18	11
	\$200,000-499,800	295	20	1,786	22	92,774	20	6
	(Total Medium):	496	34	5,171	63	329,519	71	10
SMALL	<\$199,000	965	66	2,207	27	70,356	15	2.3
TOTAL		1,470	100	8,170	100	469,336	100	5.6

Sources: Statistics Canada Surveys, 1977, 1982.
* Based on reporting firms only.

- On average, medium-sized firms employ ten persons, but the number of employees per firm in this category likely ranges from three to eighty persons.
- About 60 percent of the firms in this category earned less than \$500,000 in fee income in 1982; only 16 percent earned in excess of \$1 million in 1982.
- Firms in the \$1 million plus group earned over four percent of their fee income from export in 1982; for the remainder in this category, less than one percent of their fee income was earned in export.
- Firms in this category work in all building sectors, but within the category certain sectors are more important for certain sizes.

<u>Fee Income Range</u>	<u>No. 1 Sector</u>	<u>No. 2 Sector</u>	<u>No. 3 Sector</u>
\$200-499,000	Residential	Alterations/ Renovations	Commercial
\$500-999,000	Residential	Commercial	Education
\$1-4.9 million	Medical	Administrative	Education

- Approximately half of the firms in this category are partnerships, one quarter are individual proprietorships, and one-quarter are incorporated.
- Proliferation of small firms. The increase in the number of small firms in the profession can be explained by many factors:
 - Medium-sized firms shrinking (and falling back into the lower revenue size groups)
 - Fragmentation of partnerships into smaller firms
 - The establishment of new firms by laid-off employees and young architects.

Today, two-thirds of the firms in the industry may be classified as small. Since 1977, their role in the profession has grown considerably.

EXHIBIT A.6

NATIONAL OWNERSHIP PATTERNS CHANGING

	<u>INDIVIDUAL PROPRIETORSHIP</u>		<u>PARTNERSHIP</u>		<u>INCORPORATED COMPANY</u>	
	<u>1977</u>	<u>1982</u>	<u>1977</u>	<u>1982</u>	<u>1977</u>	<u>1982</u>
Maritimes	33%	23%	10%	11%	57%	66%
Quebec	63%	65%	37%	35%	-	-
Ontario	66%	71%	34%	29%	-	-
Manitoba	51%	57%	49%	43%	-	-
Saskatchewan	20%	19%	7%	7%	73%	74%
Alberta	28%	12%	19%	7%	53%	76%
British Columbia	72%	71%	28%	29%	-	-
<hr/>						
Canada	59%	57%	31%	27%	10%	16%

Note: In 1977, incorporation was permitted in Nova Scotia, New Brunswick, Saskatchewan and Alberta. In 1982, incorporation was permitted in the same provinces plus Newfoundland. With the implementation of a new Architects Act in Ontario in 1984, Ontario architects will also be able to incorporate.

Source: Statistics Canada surveys 1977 and 1982, and special cross-tabulations for 1982.

- In 1977 the 646 small firms in the industry accounted for nine percent of the total fee income and employed 16 percent of the total employees.
- In 1982, the 965 smallest firms in the industry earned 15 percent of the fee income and employed 27 percent of the total employees.

Small firms have a number of important characteristics notably:

- On average, they employ two people but may range in size from one to as many as ten employees.
- Within this group, close to half of the firms earned less than \$50,000 in 1982 (the smallest revenue size group).
- A relatively small proportion of firms in this category work in export. Approximately one percent of their income is earned in foreign projects.
- The top three sectors for this group are: Residential, Alterations and Renovations, and Commercial.
- Three-quarters (74 percent) of the small firms are individual proprietorships, 14 percent are partnerships, and 12 percent are incorporated.

National Ownership Patterns Changing

The proportion of firms run by individual proprietors has remained relatively constant since 1977. However the split between partnerships and incorporated companies has changed. In the areas where architects can incorporate this appears to have been an increasingly attractive form of ownership. Of all firms in the industry, 57 percent are run by individual proprietors, 27 percent by partnerships and 16 percent by incorporated companies. See Exhibit A.6.

EXHIBIT A.7

ARCHITECTS EXTENDING INTO NEW SERVICE AREAS

GOVERNMENT
REGULATION OF BUILT
ENVIRONMENT

BUILDING NEED
IDENTIFIED BY CLIENT

TRADITIONAL SERVICES

- SCHEMATIC DESIGN AND DESIGN DEVELOPMENT
- CONSTRUCTION DOCUMENTS
- NEGOTIATIONS
- CONTRACT ADMINISTRATION

BUILDING OCCUPIED
BY CLIENT

SERVICES PROVIDED BY SOME FIRMS

Environmental Planning
Urban Planning and Design

Market Research
Feasibility Studies
Advance Planning
- Functional Programming
- User Needs
Financing and Funding

Construction Management and
Scheduling Project Management/
Developing Engineering
- Structural
- Electrical
- Mechanical
- Municipal
- Surveying
Interior Design
Landscape Architecture

Building Evaluation
Maintenance Planning*
Facilities/Space Planning*
Ongoing Interior Design*
Maintenance of Building
Data Base for Inventory,
Alterations*

* New Service areas identified with an asterisk.

Service Mix Changing

One of the critical questions which architects are asking themselves is "What business are we really in?". From our interviews across the country it is clear that architects are really in a lot of businesses not "a business". One of the basic changes in the profession has been the movement of architects into new service areas. By and large, this has been a mechanism to cope with poor market conditions. But for many it is a natural and satisfying extension of their existing service base.

In Exhibit A.7 we highlight the core services as well as other services provided by architects. The core services are those most directly related to the building design process:

- Schematic design and design development
- Preparation of construction documents
- Negotiations
- Contract administration.

In recent years, architects have increasingly extended their areas of practice into other services, primarily at the front end of projects and upon project completion.

- Services at the front end:
 - Environmental and urban planning
 - Market research
 - Feasibility studies
 - Functional programming
 - Financing and funding
- Upon project completion
 - Building evaluation, appraisals
 - Scheduled maintenance checks
 - Facilities/space planning
 - Interior design
 - Maintenance of data base (By CADD) for inventory, alterations, etc.

At the same time as architectural firms have moved into new areas they have also withdrawn from "old" areas. In particular, a number of firms have divested themselves of other professional specialties. A

combination of high overheads and increasing client preference to hire specialists separately has lessened the desirability of having other professionals in-house.

Computer Aided Drafting and Design has, in particular, opened up some new service areas for architects. CADD allows the architect to store considerable information on the drawings and to provide facilities management and space planning services.

* * * *

In summary, the "makeup" of the profession has changed considerably over the last few years. The large have grown larger and the small have grown more numerous. Although the total number of firms in the profession has grown, this is more an indicator of fragmentation than of real growth.

In the next appendix - "The Business End" - we look at key changes in the fee incomes, profitability, and performance of architectural firms. Included in this analysis is a closer look at the key building sectors.

EXPLANATORY NOTES

1. To estimate the number of firms in the profession in 1982 and 1984 the following method was used:

a) 1982

No. of firms responding to survey	= 1470
No. of firms classified as "Refusals and Others"	= <u>50</u>
	1520

It was assumed that one quarter of the remaining non-respondents to the survey were in fact architectural firms. Therefore an additional 75 firms were added on (298 non-respondents \div 4).

Therefore the total number of firms in the profession in 1982 = \pm 1600.

b) 1984

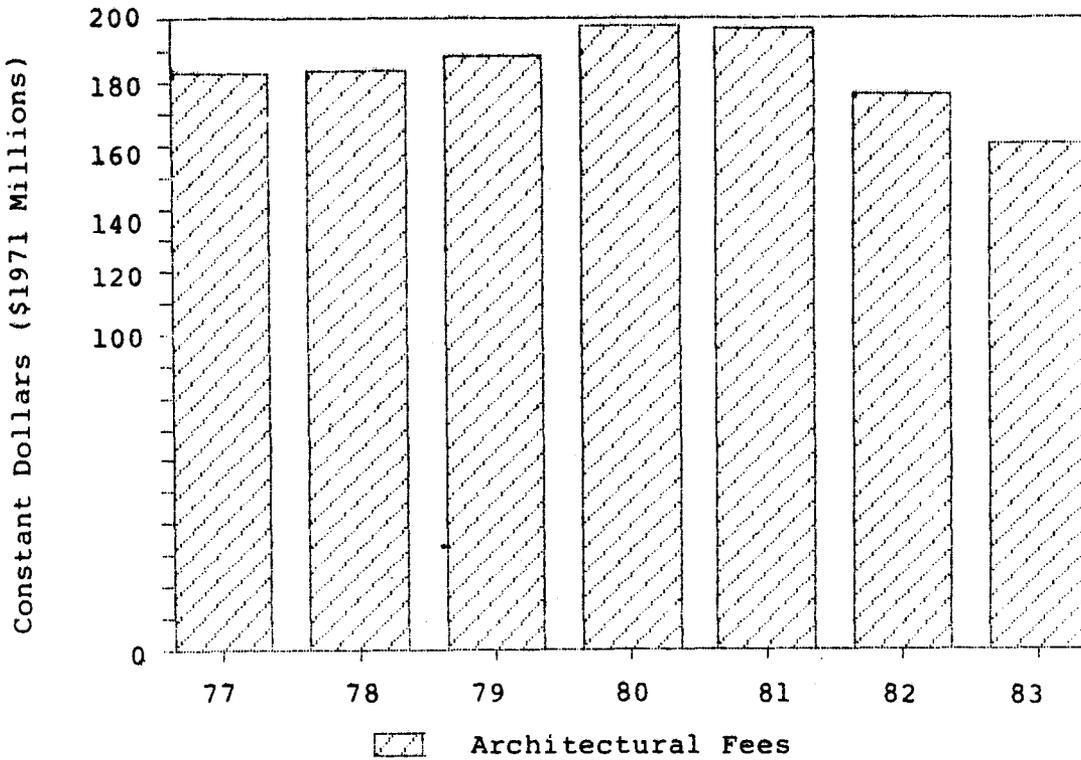
Our interviews with the architectural community pointed to a proliferation of small firms in the profession from 1982 to 1984. We estimate that from firm restructuring - layoffs and splitting up - as well as the addition of some new firms, approximately 200 firms have entered the profession since 1982.

2. The statistical information on restructuring of the profession is derived from the Statistics Canada surveys of offices of architects in 1977 and 1982. Some of the variation in characteristics between the firm groupings in 1977 and 1982 is explained by redistribution between the different revenue size groups.

Firms are grouped into revenue size groups based on current dollars. Therefore some firms are redistributed solely because of changes in the value of the dollar. To compensate for inflationary effects we used slightly different revenue size groups for 1977 and 1982.

EXHIBIT B.1

DOMESTIC ARCHITECTURAL FEE INCOME DOWN



Source: 1977 and 1982 figures obtained from Statistics Canada surveys; remaining figures derived - See Explanatory Note #1 at end of this appendix.

APPENDIX B

THE DOMESTIC BUSINESS

Many architects have told us that they do not need a report to tell them that business is bad - they know it is bad. That in itself is a fairly succinct statement on the performance of the profession in recent years. But in order to pin the problem down, understand its causes and point to potential solutions, the "problem" needs to be clearly defined. In this section we examine the business end of the profession, highlighting the performance across the country and the factors influencing the performance of individual firms. A key element of this analysis is an examination of the performance and prospects of the individual building sectors - Residential, Commercial, Industrial, Institutional, and Renovations. We conclude this appendix with a look to the future highlighting current trends which may influence future prospects.

POOR PERFORMANCE OVERALL

In spite of growth in the late 1970's, the total domestic fee income* for architects in 1984 is 12 percent less in real terms than it was in 1977, and 20 percent less in real terms than it was in 1981. Exhibit B.1 illustrates the approximate levels of total architectural fee income since 1977.

The reduction in architectural fee income for the profession is even more drastic when viewed in terms of the average fee income per firm. Stated simply, more firms are sharing less income. (See Exhibit B.2). The key question of course is why has this drastic reduction occurred. To a large extent, the architectural profession is a creature of the domestic construction market. Examining the relative performance of the principal building sectors goes a long way towards explaining the decline in fee income.

* See Explanatory Note #1 at end of this appendix.

EXHIBIT B.2

SIGNIFICANT REDUCTIONS IN AVERAGE
FEE INCOME PER FIRM¹

	1977	1982
AVERAGE FEE INCOME	\$140,000 PER FIRM ²	\$110,000 PER FIRM ²

1. Does not include export fee income
2. Constant dollars (\$1971)

Source: Figures derived from Statistics Canada Surveys, 1977 and 1982. See Explanatory Note #1 at end of this appendix.

Mix of Business Has Hurt Architects

. A key determinant of the relative growth or decline in architectural fee income is the mix of business. Since 1977 the mix of construction activity has changed considerably, to the detriment of architects. From Exhibit B.3 it can be seen that the residential, industrial and institutional sectors have declined as a proportion of total fee income. Only commercial and renovations have grown as a proportion of total activity. The fact that two of the three largest sectors for architects - residential and institutional - have dropped considerably, has contributed to the architects difficult times in the 1980's.

SECTORS SHOW VARYING PERFORMANCE

The period from 1977 to 1982 has been one of mixed performance for the individual building sectors. Residential building has experienced lows and highs but overall it has shown a continued decline in importance in architectural fee income. Industrial and commercial building showed strong growth up until 1981 when the recession hit. A lack of investor confidence as well as excess capacity in some areas has contributed to the shelving or postponement of many commercial and industrial building projects. The important institutional sector has sustained many architects through this period, but demographic changes as well as deficit budgeting by governments have contributed to a slow but steady decline for this sector.

Perhaps the most significant trend in the 1980's has been the emergence of the renovation/alterations sector as one of the main architectural building sectors. In 1982, this sector accounted for ten percent of total architectural fee income - more than twice the amount it accounted for in 1977. In the following sections we examine each of the major sectors in detail highlighting past performance and future prospects as well as critical trends to be watched over the coming years.

1. Residential: Continuing to Decline

The importance of the residential market to total architectural fee income has continued to weaken in

EXHIBIT B.3

MIX OF BUSINESS CHANGING

PERCENT OF TOTAL FEE INCOME
1977 1982

OTHER			
RENOVATIONS	7%		7%
	3%		
INSTITUTIONAL	35%		31%
INDUSTRIAL			
	7%		69%
COMMERCIAL	28%		31%
SINGLES			
RESIDENTIAL	15%		3%
MULTIPLES	15%		11%

Source: Statistics Canada Surveys, 1977 and 1982. For Building Classification groupings see Explanatory Note #2.

recent years. A number of important factors have contributed to the decline in residential fee income (see Exhibit B.4):

- Total residential construction has dropped off. Total housing starts peaked in 1976-1977 and have shown a fairly continuous decline ever since. This phenomena is likely to continue in the future due to an ongoing decline in household formation rates and therefore demand. Exhibit B.5 highlights the fall-off in total housing construction activity between 1974 and 1984.
- Housing mix favours singles. For many architects, the key residential market has traditionally been apartment construction. As a result, a change in the mix of construction away from multiples towards singles compounds the drop off in total construction for architects. The picture in recent years has been a slight movement towards singles, but government stimulation programs such as the Canada Rental Supply Plan encouraged a mini-boom in multiple construction in the early 1980's. (See Exhibit B.6).

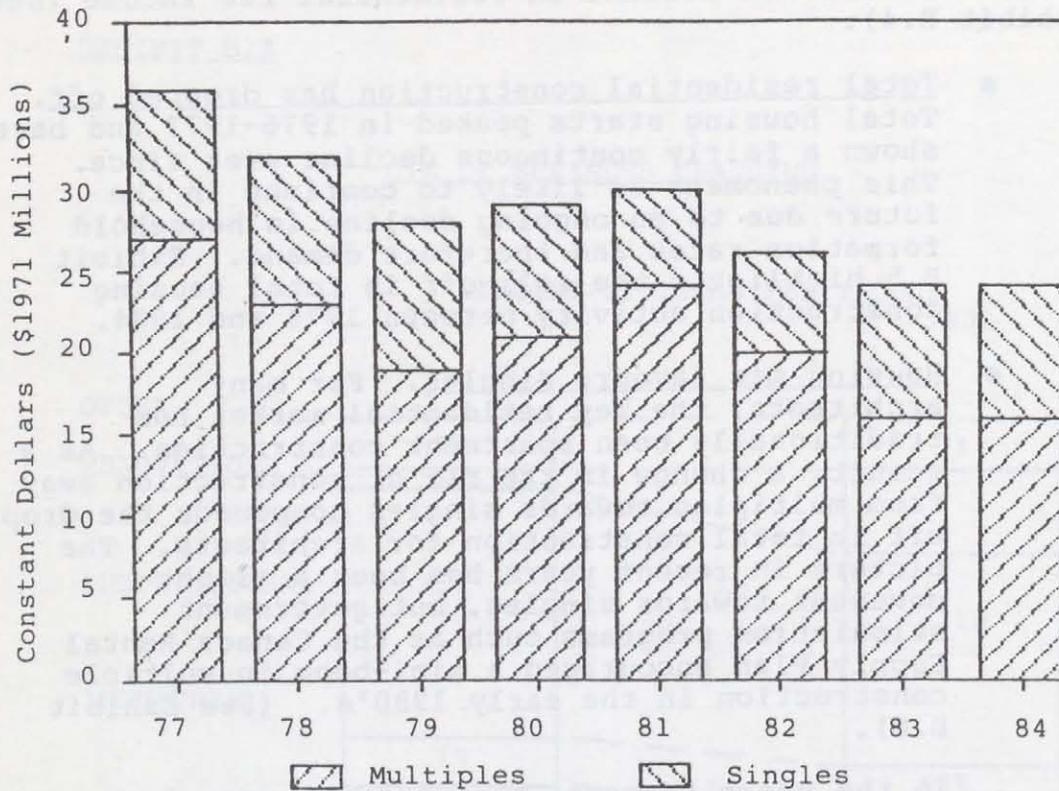
In the years to come, the movement away from multiples and towards singles is likely to continue. Estimates of average annual housing requirements through to 2001 illustrate the continual movement away from apartment construction towards singles (see Exhibit B.7).

The result of these trends has been a reduction in architectural fee income derived from the residential building sectors. Exhibit B.4 illustrates the overall decline in fee income from 1977 to 1984 and highlights the differences between fee income from multiples and fee income from singles.

A look to the future suggests that as long as architects' predominant focus of activity is in the multiples market, the fee income from the residential sector will continue to fall. In addition, architects can expect continued fierce competition in the singles market from other para-professions including major builders and professional project managers. Unless the participation of architects in the singles construction market changes, we expect continued decline of the

EXHIBIT B.4

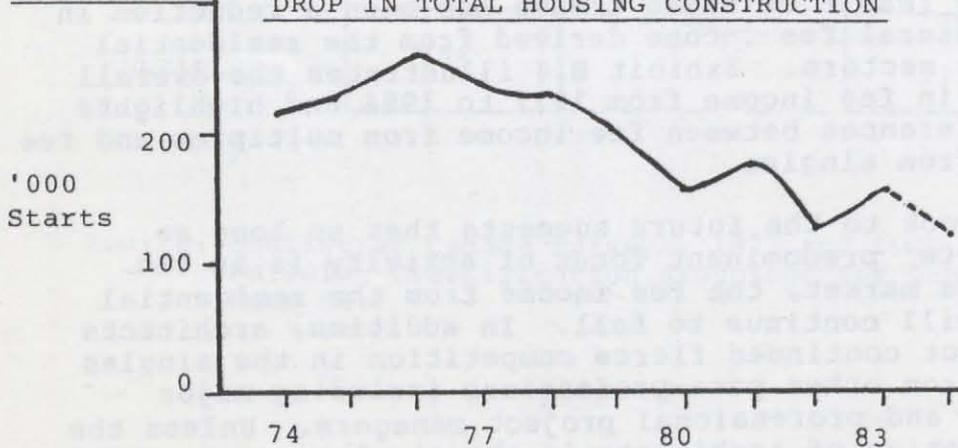
RESIDENTIAL FEE INCOME DECLINING



Source: Figures for 1977 and 1982 derived from Statistics Canada surveys. Figures for intervening years as well as 1983 and 1984 estimated - See Explanatory Note #3 at the end of this appendix.

EXHIBIT B.5

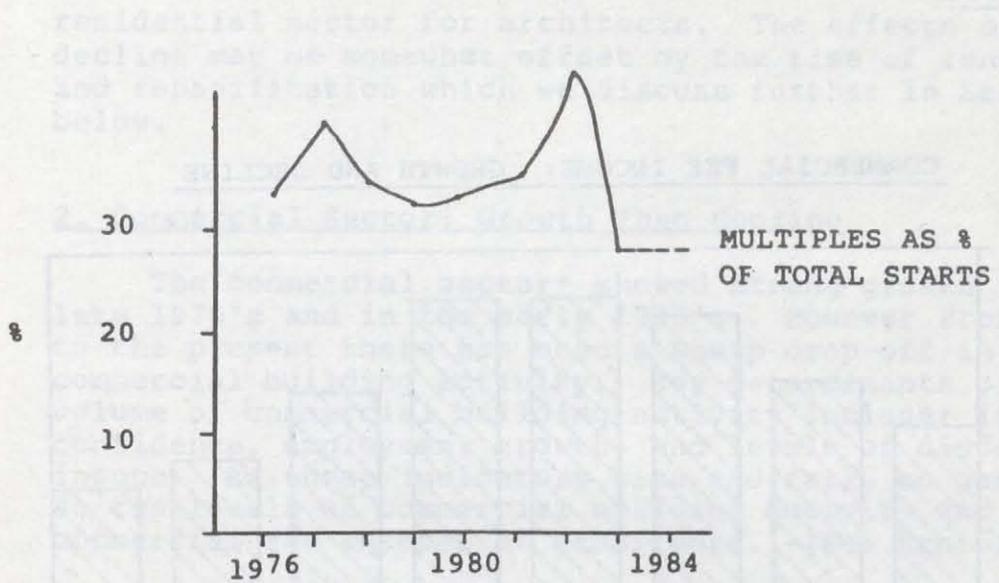
DROP IN TOTAL HOUSING CONSTRUCTION



Source: Canada Mortgage and Housing Corporation (1983) Canadian Housing Statistics supplemented by Monthly Housing Statistics for 1984.

EXHIBIT B.6

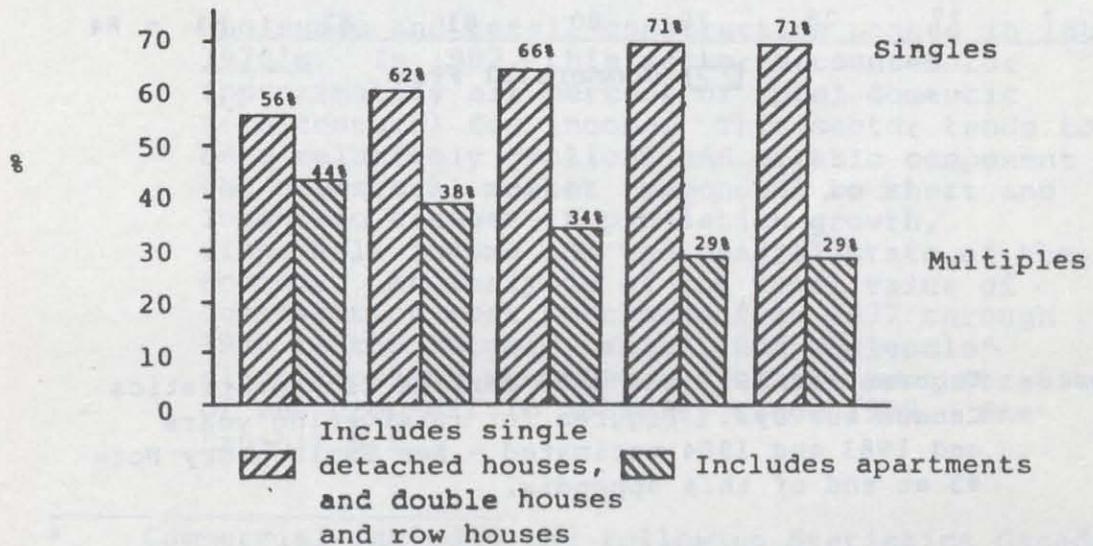
HOUSING MIX MOVING AWAY FROM MULTIPLES



Source: Canadian Mortgage and Housing Corporation (1983) Canadian Housing Statistics supplemented by Monthly Housing Statistics for 1984.

EXHIBIT B.7

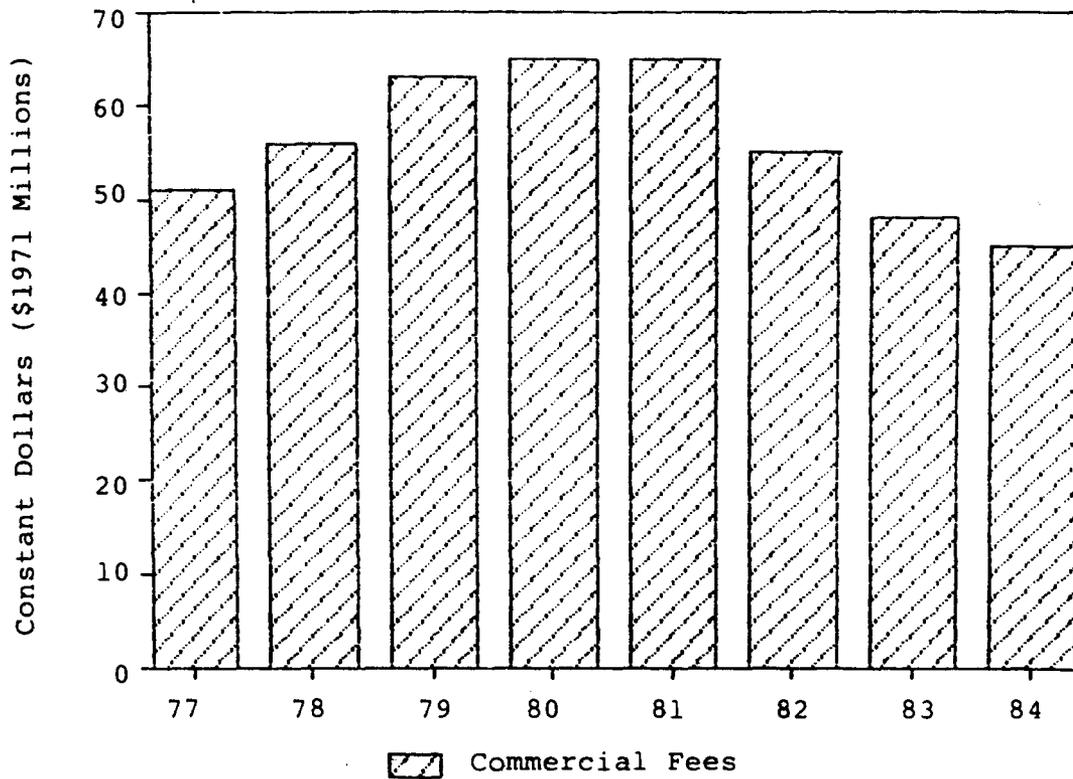
PROJECTION OF HOUSING REQUIREMENTS
POINTS TO SINGLES IN THE FUTURE



Source: CMHC (1981) Population Households and Housing Requirements Projections for Canada, The Provinces and the Census Metropolitan Areas 1976-2001.

EXHIBIT B.8

COMMERCIAL FEE INCOME: GROWTH AND DECLINE



Source: Figures for 1977 and 1982 derived from Statistics Canada surveys. Figures for intervening years and 1983 and 1984 estimated - See Explanatory Note #3 at end of this appendix.

residential sector for architects. The effects of this decline may be somewhat offset by the rise of renovation and rehabilitation which we discuss further in Section 5 below.

2. Commercial Sector: Growth Then Decline

The commercial sector* showed strong growth in the late 1970's and in the early 1980's. However from 1981 to the present there has been a sharp drop-off in commercial building activity. Key determinants of the volume of commercial building activity include: investor confidence, employment growth, and levels of disposable income. As these indicators rise and fall, so generally do the levels of commercial building activity and the commercial fee incomes of architects. (See Exhibit B.8).

In the late 1970's, there was considerable optimism in the commercial sector particularly in the West. Commercial building activity flourished in those areas linked to oil and gas-related development. The implementation of the National Energy Program along with changing world market conditions brought the enthusiasm to a halt in 1981. Since that time, the level of commercial building activity has slowed considerably. However the performance and prospects of the individual sub-sectors of commercial building vary considerably.

- Wholesale and retail construction peaked in late 1970's. In 1982, this sector accounted for approximately six percent of total domestic architectural fee income. This sector tends to be a relatively cyclical and erratic component of the commercial market responding to short and long-term changes in population growth, disposable income and the general state of the economy. An analysis of the total value of construction work purchased from 1977 through 1984 in the "Stores, retail and wholesale" classification provides a dramatic demonstration of the drop-off in activity since 1979. See Exhibit B.9.

* Commercial includes the following Statistics Canada building classifications: Commercial, Stores, Restaurants and Other; Administration; Exhibition and Entertainment. For more detailed breakdown see Appendix E.

EXHIBIT B.9

WHOLESALE AND RETAIL CONSTRUCTION PEAKED IN LATE 1970'S

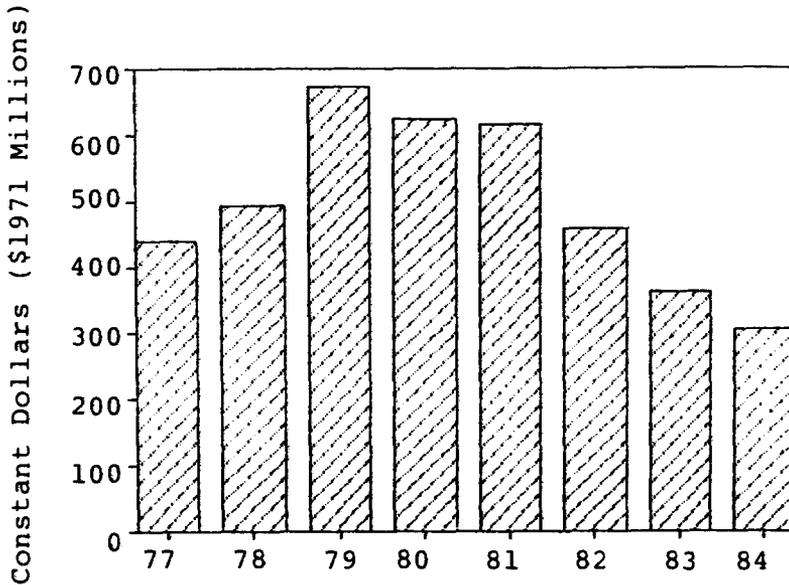
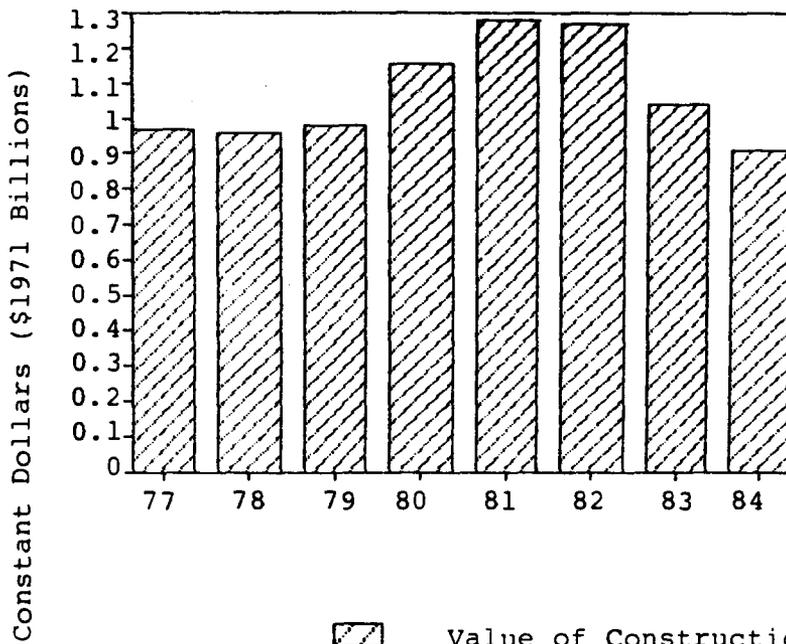


EXHIBIT B.10

DROP-OFF IN OFFICE BUILDING CONSTRUCTION SINCE 1982



Source: Statistics Canada, Construction in Canada, Catalogue 64-201.

Within this sector there has been a pronounced shift from new construction to upgrading and expansion of commercial facilities. A growing recognition that the retail market (and shopping centres in particular) is saturated in many areas of the country has led to an emphasis on maximizing existing properties by redevelopment. Increasingly, malls and centres are being upgraded not only to improve their aesthetics, but also to satisfy the increasingly eclectic tastes of consumers. Intense competition between shopping centres for consumer dollars has placed an increasing emphasis on design and ancillary facilities.

Looking to the future, the trade, retail and wholesale sector will continue to be largely influenced by overall economic conditions. The increased emphasis on creativity in commercial facility upgrading bodes well for those architects specialized in this area. But overall, we foresee continued slow growth unless there is a major economic turnaround.

- Office building strong until 1982. Fee income from this sector accounted for approximately 13 percent of total architectural fee income in 1982 as opposed to ten percent in 1977. This is one of the few sectors to experience real growth during this period. However since 1982 there has been a major drop-off. A combination of the following factors has contributed to this drop-off.

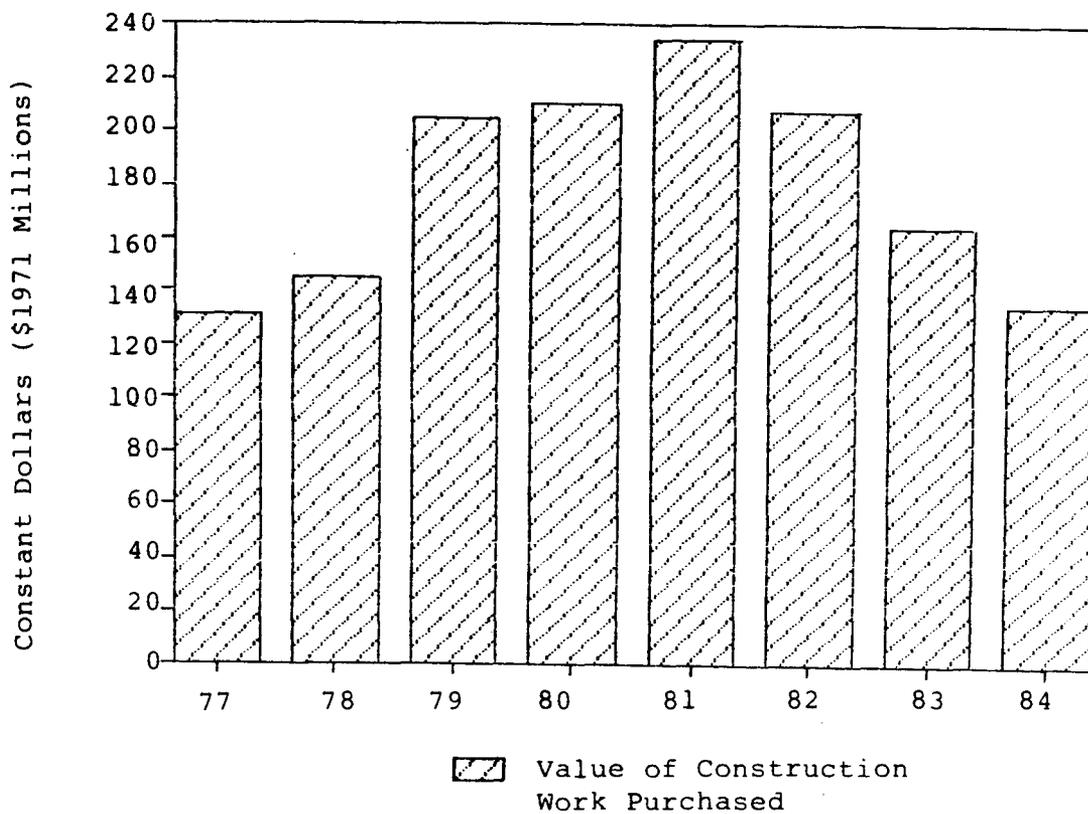
- General level of investor confidence down
- Certain urban areas overbuilt relative to demand, e.g. Calgary, Halifax, St. John's, Newfoundland.

Exhibit B.10 shows the drop-off in office-building construction since 1982.

In the coming years, office building construction will be dependent to a great extent upon the general state of the economy. With anticipated slower growth rates throughout the remainder of the 1980's and excess capacity in some areas, the office building market is likely to show little

EXHIBIT B.11

HOTELS, RESTAURANTS AN IMPORTANT SECTOR



Source: Statistics Canada, Construction in Canada, Catalogue 64-201.

or no growth. A key challenge for architects will be ensuring that they retain their existing share of the market regardless of its size. As buildings become increasingly "hi-tech", a growing proportion of total fee income may go to other professions such as engineers, or professional project managers, if architects do not demonstrate a capacity and ability to manage such projects.

- Hotels, Restaurants an important sector. This sector exhibited strong growth from 1977 through to 1981. In 1982 the "Other Commercial"* and "Restaurant Commercial"** sectors accounted for eight percent of total architectural fee income. This sector is also heavily influenced by the general state of the economy. The hotel sector in particular is affected by changes in business travel which in turn are affected by overall levels of business activity.

The combination of reduced investor confidence and high vacancy levels in existing hotels resulted in a drop-off in construction from 1981 to the present (See Exhibit B.11).

Looking to the future there are some signs of modest growth. Key areas are likely to be: economy lodgings, luxury hotels, renovation of existing facilities and mixed-use facilities such as convention centres.

- Exhibition and Entertainment Sector*** Growing in Importance. Although still relatively small, the proportion of architectural fee income from the exhibition and entertainment sector doubled

* Other Commercial includes: Hotels, Motels, Laundry, Dry Cleaning, Grain Elevator, Garage and Service Station.

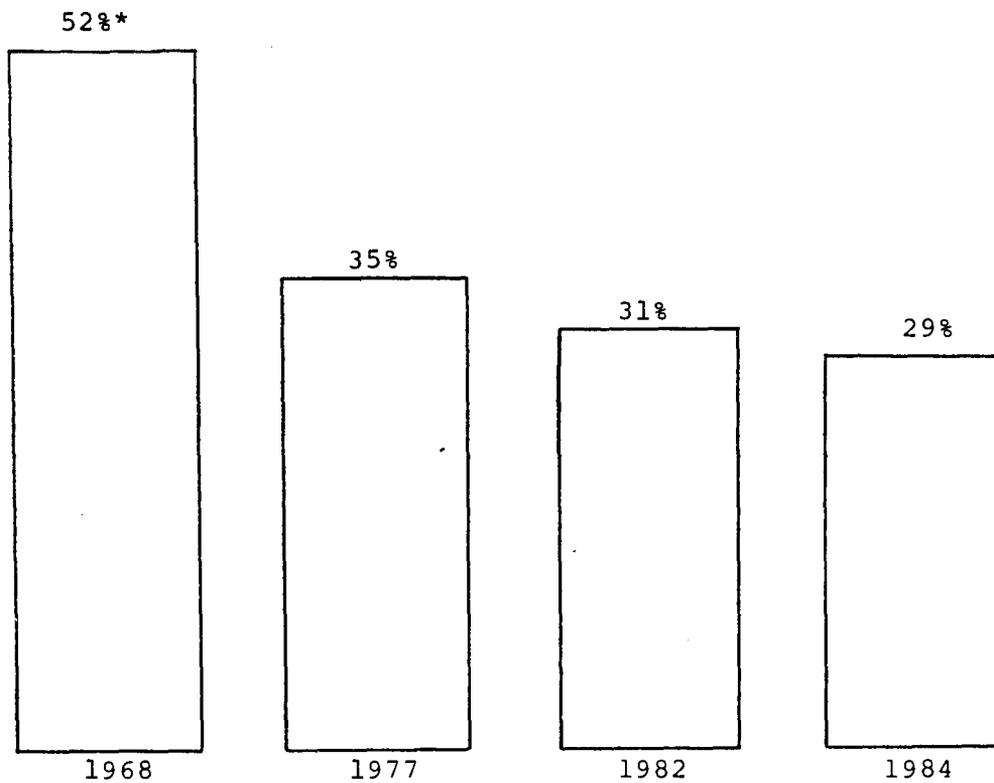
** Restaurant Commercial includes: Restaurant, Cafeteria, Cocktail Lounge, Bar etc.

*** Exhibition and Entertainment sector includes: Theatres, Cinemas, Arenas, Grandstands, Convention Halls, Museums, Exhibition Buildings etc.

EXHIBIT B.12

CONTINUED DECLINE IN IMPORTANCE OF
INSTITUTIONAL AND GOVERNMENT FEE INCOME

Proportion of Total Fee Income



* Based on proportion of billings. Remaining years based on proportion of fee income.

Source: 1977 and 1982 figures obtained from Statistics Canada Surveys, 1977 and 1982 - 1968 and 1984 estimated using construction value figures.

from two percent in 1977 to four percent in 1982. Growth in this sector is heavily influenced by large "one-off" projects. Key projects in recent years have included BC Place, the Metro Toronto Convention Centre, the Edmonton Space Sciences Centre, and Science North in Sudbury. Important projects currently underway include Expo 86 in Vancouver, the National Gallery of Canada and the National Museum of Man in Ottawa/Hull.

The long-term trends towards increased leisure time and the devotion of society towards sports and recreational pursuits will likely generate a continuing need for such facilities in the future. However, given the considerable development in the 1970's of basic recreational facilities, the demand will likely be sporadic and specialized.

3. Institutional - Continued Slow Decline

For architects, the volume of institutional building activity has been a critical determinant of the health of the profession. One of the principal contributing factors to the recent troubled times for architects has been the continual decline of the institutional sector in absolute and relative terms. Exhibit B.12 illustrates the decline in importance of the institutional sector to total architectural fee income. Exhibit B.13 illustrates the decline in institutional fee income from 1977 through 1984.

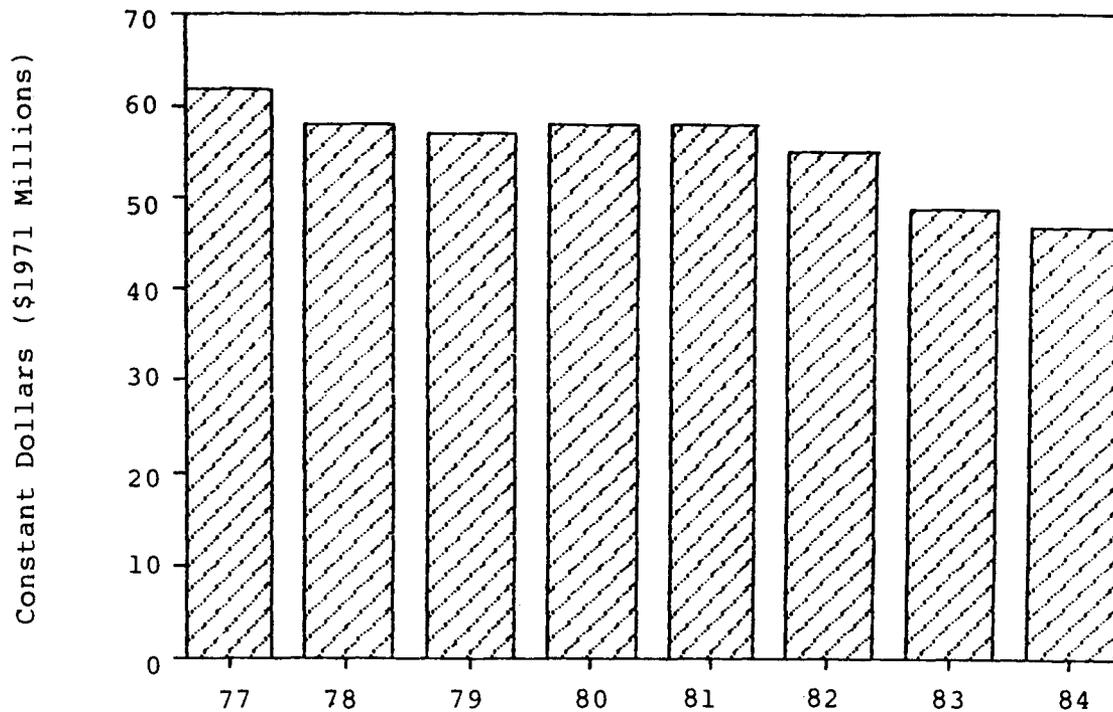
The decline in institutional building activity over this period is largely a result of three factors:

- Changing demands of the population
- Over supply in certain areas
- Government restraint and deficit budgeting.

However there are differences in performance and prospects among the sub-sectors which go together to form the Institutional sector - Education, Medical and Social/Recreational* as described below:

EXHIBIT B.13

INSTITUTIONAL FEE INCOME: CONTINUED SLOW DECLINE



Source: Figures for 1977 and 1982 derived from Statistics Canada surveys. Figures for intervening years, 1983 and 1984 estimated - See Explanatory Note #3 at end of this appendix.

- Education continues to fall. The "education" category comprises schools, universities and specialized educational facilities (music, art, vocational etc). Fee income for architects from educational facilities peaked in the 1960's when the real boom in school building ended. The driving force behind school construction is the size of the school-age population (ages 5-19). Since 1971, this group has declined in absolute terms in the country as a whole, and is expected to continue to decline.

AGE GROUP 5-9**

	<u>POPULATION</u> <u>(Million)</u>	<u>PROPORTION</u> <u>Total Population</u>
1971	6.7	31%
1976	6.4	28%
1981	6.0	25%
1986	5.7	22%
1991	5.6	21%

This decline in the school age population is reflected in the slow decline in the educational fee incomes for architects. In 1977 architects earned \$22 million (1971 constant dollars) or 12 percent of their total fee income from educational facilities. Although in 1982, fees from educational facilities still accounted for the same proportion of the total, they had declined in real terms by about five percent to \$21 million (\$ 1971 constant dollars).

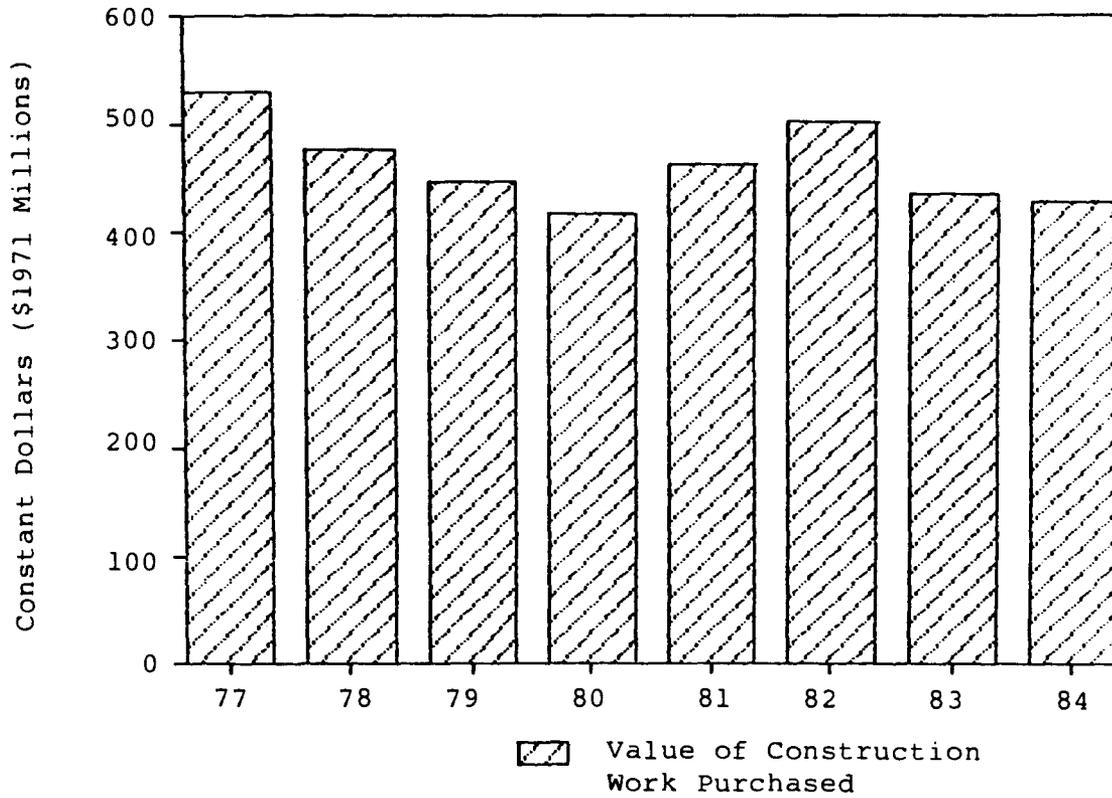
During the period from 1977 to 1984 there was a short-term boost in educational building activity (1981-1982). See Exhibit B.14. The reasons for the boost were twofold: rapid urban growth in western communities in the pre-recessionary

* The sector identified as "Government" in the 1977 survey was dropped in the 1982 survey. As a result, to make statistics comparable, we redistributed the government category in the 1977 survey to both the commercial and institutional sectors.

** 1971-1981 based on Census of Canada; 1986 and 1991 based on Population Forecasts to the Year 2001, (1983) Futuresearch Publishing Inc.

EXHIBIT B.14

EDUCATIONAL BUILDING ACTIVITY DROPPING OFF



Source: Statistics Canada, Construction in Canada,
Catalogue 64-201.

period stimulated the need for educational facilities, and during this period a number of governments increased their investment in new specialized educational facilities and upgrading. With the onset of the recession this activity dropped off.

Looking to the future, we foresee continued decline in educational building activity for a number of reasons:

- In most areas, capacity exceeds demand and the basic source of demand - the school age population - is declining.
- Government deficit budgeting at both the provincial and federal level will result in fewer dollars being available for capital investment.

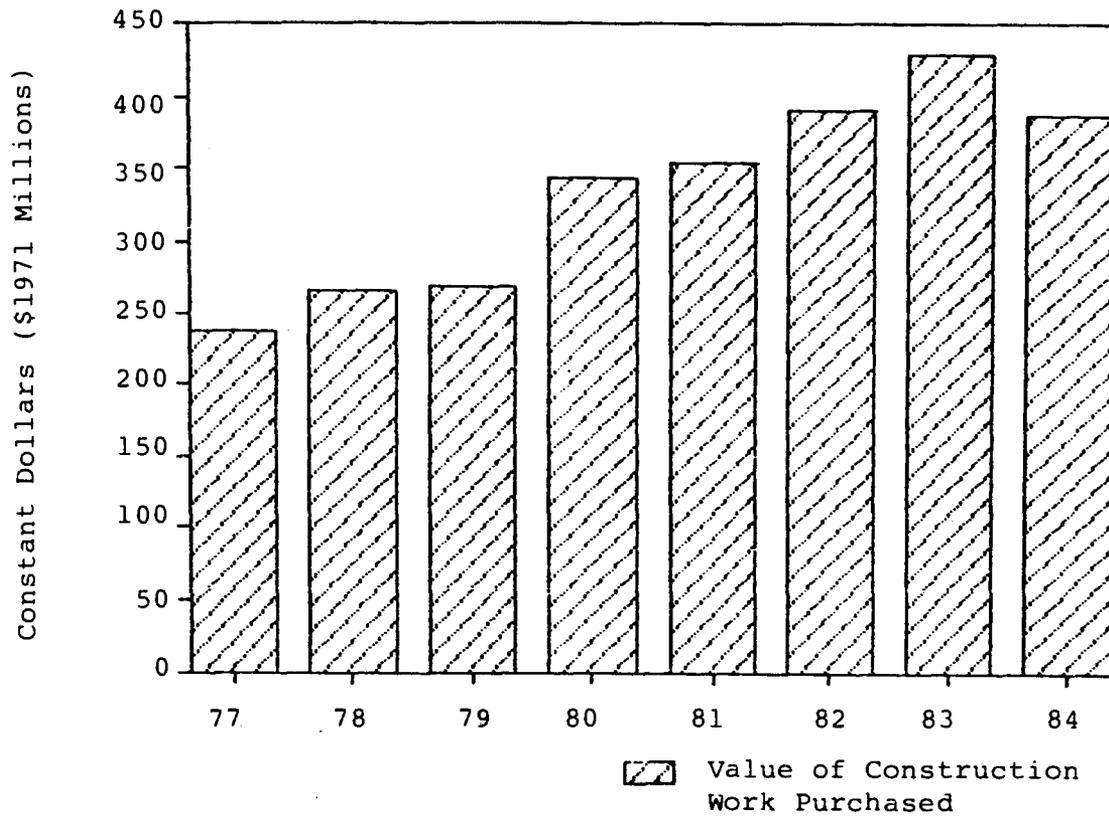
The only bright light in the educational building sector is in renovation and retrofit. As buildings age and/or become obsolete, there will likely be a continued demand for renovation and conversion services.

- Medical building activity relatively strong. The trends in medical building activity run counter to those in other institutional sectors. In 1977 fee income from the medical building sector accounted for \$19 million (\$1971 dollars) or 11 percent of total architectural fee income. By 1982, fee income from medical building had grown in real terms by approximately 20 percent to \$23 million or 13 percent of total architectural fee income.

Medical building construction activity peaked in 1983 as can be see in Exhibit B.15. It is worth noting that this activity was by no means widely distributed across the country. Over 50 percent of the activity was concentrated in Alberta and British Columbia in 1982 and 1983, and an additional 35 percent in Ontario and Quebec. The remaining 15 percent was distributed across the rest of the provinces. The reasons for the increase in investment in medical buildings include:

EXHIBIT B.15

MEDICAL BUILDING ACTIVITY PEAKED IN 1983



Source: Statistics Canada, Construction in Canada,
Catalogue 64-20.

- Rapid population growth in Western Canada in the late 1970's stimulated the need for new and expanded medical facilities.
- Increased utilization/occupancy rates in other areas resulted in pressures for expansion of existing medical facilities.
- Advancements in medical technology created a need for upgraded facilities to house new equipment.

Looking to the future, it is unlikely that the trend in medical building activity will continue. As can be seen in Exhibit B.15, construction has already fallen off from 1983 to 1984 and is likely to continue to fall as provincial government budgets become tighter. A number of provinces such as British Columbia have already implemented "moratoriums" or "holds" on major capital investment in medical facilities.

For architects, the challenge in the future will be coping with the increasingly "hi-tech" nature of medical facilities. In our interviews with clients of architects, it was suggested that some architects may be in danger of losing the overall perspective required to effectively manage increasingly complex hospital design and construction processes.

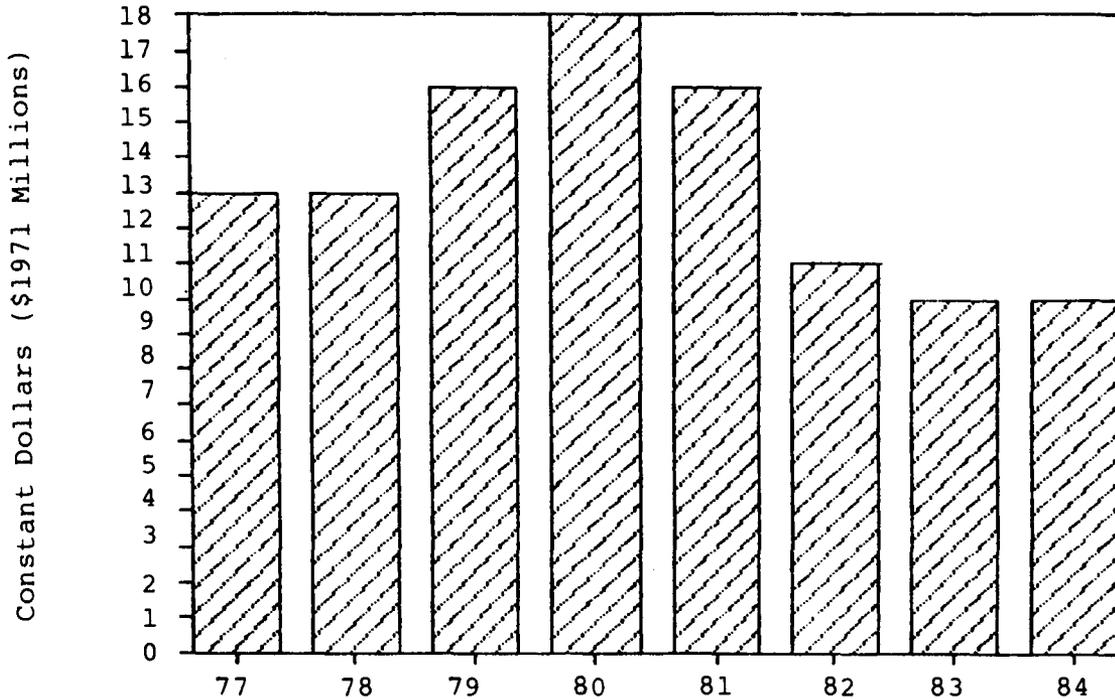
4. Industrial - Relatively Weak and Declining

The industrial building sector has traditionally accounted for a small proportion of architectural work. In recent years, the proportion of industrial fee income to total fee income has continued to decline. In 1977, fee income from the industrial sector amounted to seven percent of the industry total or \$13 million in constant dollar terms. By 1982, architectural fee income from the industrial sector had declined to six percent or \$11 million in constant dollar terms. (See Exhibit B.16).

The basic reasons for the decline in this sector are primarily economic:

EXHIBIT B.16

INDUSTRIAL FEE INCOME DECLINING SINCE 1980



Source: Figures for 1977 and 1982 derived from Statistics Canada surveys. Figures for intervening years as well as 1983 and 1984 estimated - See Explanatory Note #3 at the end of this appendix.

- The recession dealt a heavy blow to the manufacturing sector - reduced demand for products resulted in excess capacity and thus a reduction in capital investment in the industrial sector.
- There are indications that cost-conscious industrial clients may have preferred to reduce the architectural component of industrial building design.

From Exhibit B.17, it is evident that industrial building activity peaked in 1980-1981 and has declined since then. Figures for 1984 suggest a minor recovery, in keeping with the short-term improvement in the economy as a whole.

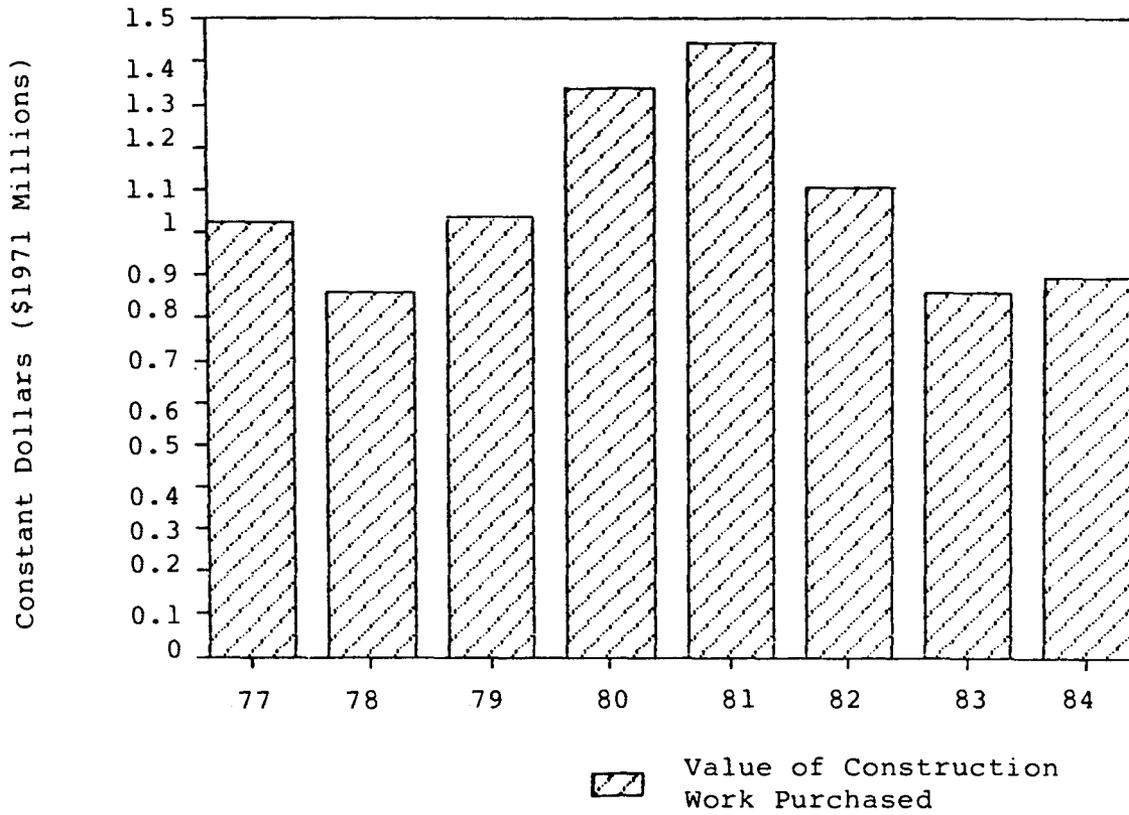
The immediate future in the industrial sector is one of continued decline due to low capacity utilization rates and limited investor confidence. One promising area for architects may be in high technology industrial facilities. "Hi-tech" manufacturing along with research and development facilities require a different workplace environment than the traditional manufacturing facility. The interior of such facilities is more sophisticated and generally incorporates a much higher ratio of office space to manufacturing space. The exterior of such buildings tends to be more design-conscious reflecting an important image both to clients and to highly-trained technical staff. The challenge for architects will be grasping a hold on this market. The competition from design-build firms, and the technical know-how required to design and manage construction of such buildings will likely be considerable.

5. Renovations - Significant Growth

One of the critical changes which has occurred in recent years is the emergence of the Renovations sector as a major building sector for architects. While expenditures on new construction have declined in recent years, expenditures on repairs and renovations have grown, and to some extent renovation work took up the slack during the recession. For architects, the Alterations and Renovations building sector has grown from three percent to ten percent of total architectural fee income between 1977 and 1982. In real dollars, this represents an average annual increase of 52 percent growing from \$5 million in 1977 (1971 dollars) to \$18 million (1971 dollars) in 1982 (see Exhibit B.18).

EXHIBIT B.17

INDUSTRIAL BUILDING ACTIVITY PEAKED IN 1981



Source: Statistics Canada, Construction in Canada,
Catalogue 64-201.

Renovation activity has been growing primarily in the residential and commercial sectors. As can be seen in Exhibits B.19 and B.20 renovation has grown continuously as a proportion of total construction activity in these two sectors. In contrast, renovation as a proportion of total construction activity in industrial and institutional has remained relatively more constant over time. See Exhibits B.21 and B.22.

For architects in the business, the boom in residential renovation activity has not been a guarantee for growth. A considerable proportion of the renovation activity has been carried out by specialized renovation firms. Many of these are one-man operations offering low cost services for minor alterations. The challenge in years to come will be maintaining a strong share of residential renovations.

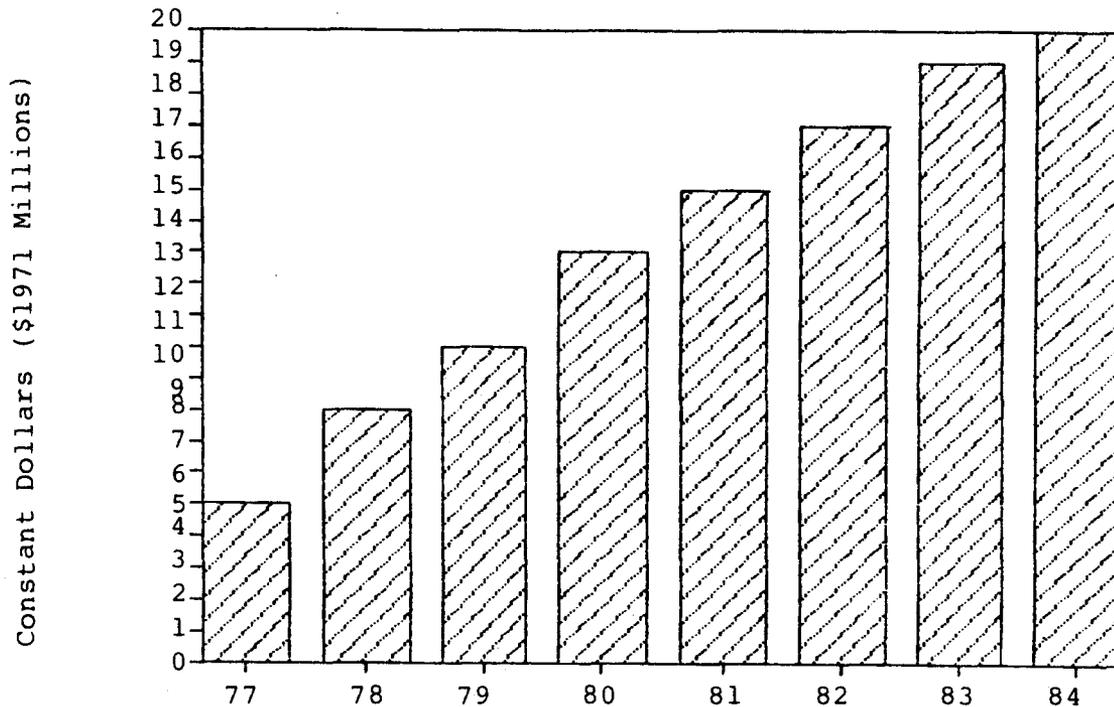
In the other basic building sectors - commercial, institutional, and industrial - the extent to which architects get a major share will depend, for the most part, on their cost competitiveness and technical know-how. Often the predominant areas of renovation are mechanical or electrical systems in a building. Through our interviews, a number of architects suggested that they were not getting a big share of the renovation market in these sectors.

Looking to the future, renovations will likely continue to grow as a proportion of total construction activity. In the residential sector, an aging housing stock along with changing consumer demands will continue to stimulate a need for renovation and alterations. In the commercial sector, key sources of growth are likely to be shopping centre upgrading and expansions as well as hotel and office building renovations. Renovation activity in the institutional building sector will be required for conversion of obsolete schools to alternative uses, and for upgrading of medical facilities to incorporate new technologies. In the industrial sector, demand for architectural renovation services is unlikely to be strong, with the possible exception of some high technology facilities who may prefer to renovate rather than build new facilities.

In the following section, we assess how the varying performance of different sectors has translated into regional strengths and weaknesses across the country.

EXHIBIT B.18

RENOVATION FEE INCOME SHOWING SIGNIFICANT GROWTH



Source: Figures for 1977 and 1982 derived from Statistics Canada surveys. Figures for intervening years as well as 1983 and 1984 estimated - See Explanatory Note #3 at the end of this appendix.

EXHIBIT B.19

RESIDENTIAL RENOVATION ACTIVITY

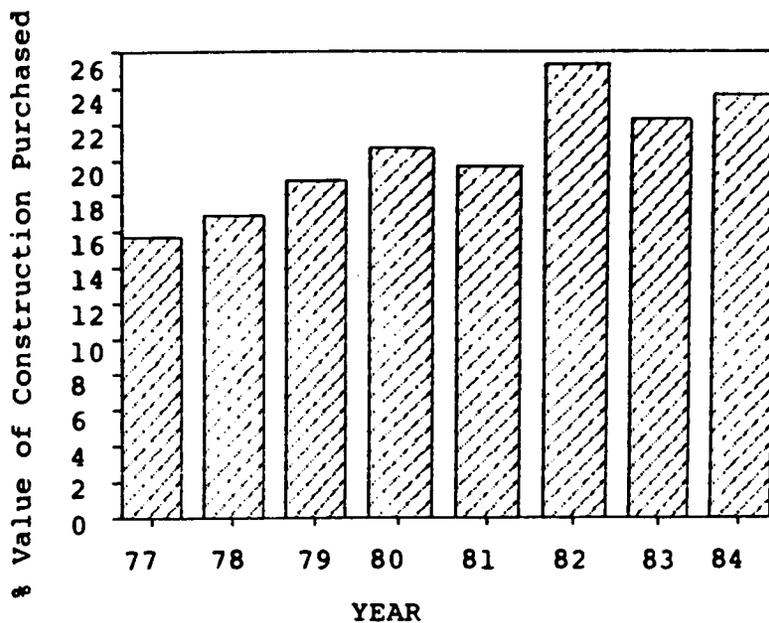
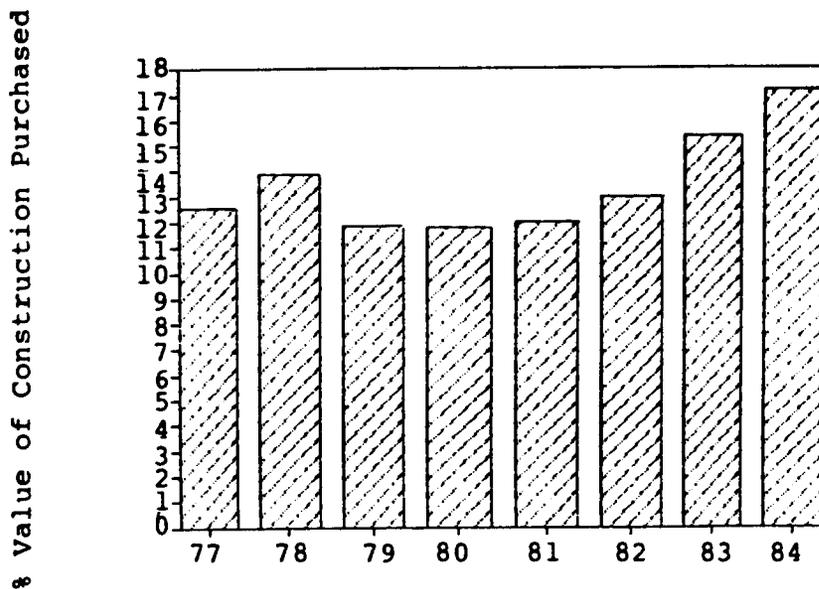


EXHIBIT B.20

COMMERCIAL RENOVATION ACTIVITY

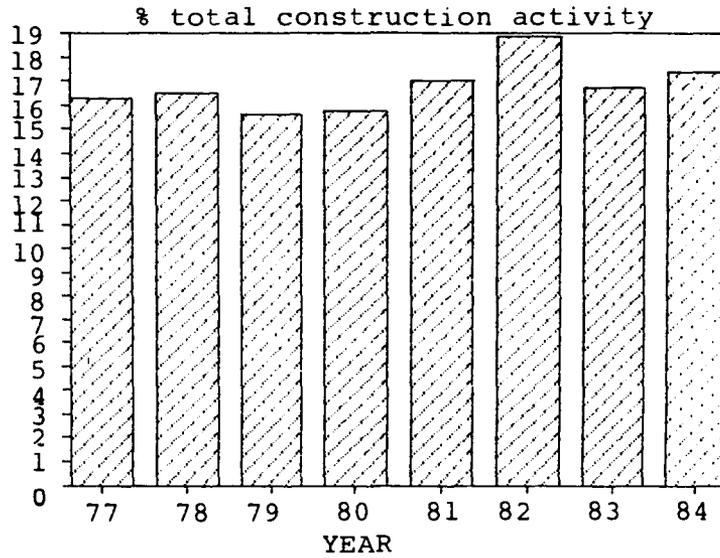


 Renovations as a percentage of total Commercial Construction Activity

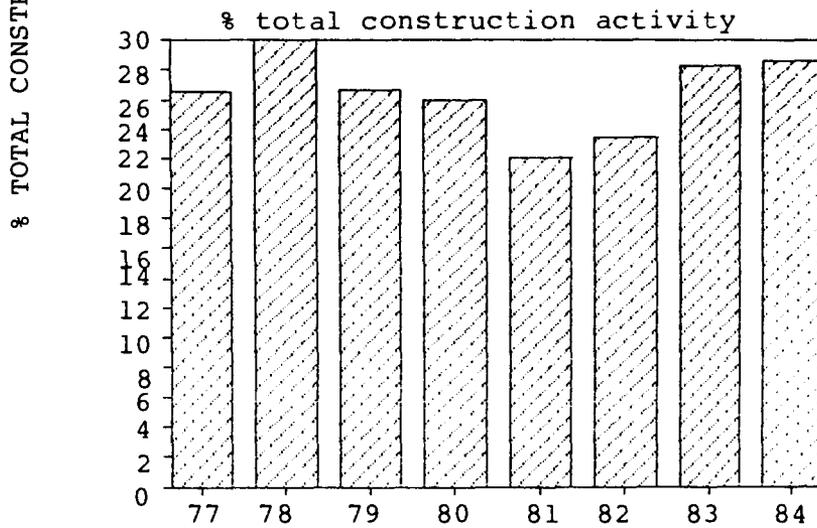
Source: Statistics Canada, Construction in Canada, Catalogue 64-201.

EXHIBIT B.21 & 22

INSTITUTIONAL RENOVATION ACTIVITY



INDUSTRIAL RENOVATION ACTIVITY



 Renovations as a percentage of Total Industrial Construction Activity

Source: Statistics Canada, Construction in Canada, Catalogue 64-201

REGIONAL STRENGTHS SHIFTING

Since the late 1970's, regional strengths have shifted back and forth across the country in concert with the general levels of building activity. From 1977 through to 1982, the Western provinces and, in particular, Alberta showed strong advances. Spurred by the positive investment environment associated with oil and gas-related development, existing Alberta-based firms experienced considerable growth and new firms appeared. Since 1982, the focus of activity has again shifted eastward to Central Canada. In the sections which follow, we focus on each of the basic regions, examining changes in the relative distributions of fees, income and employment across the country. Exhibit B.23 highlights the regional distribution of these indicators in 1977, 1982 and 1984.

Atlantic Firms Struggling to Hold Their Own

For Atlantic firms, the period from 1977 to 1984 has been a struggle. For most of these firms, the adjustment to smaller jobs and smaller fees has meant reducing staff. Increasingly, these firms have become dependent on injections of public sector investment to survive. For a few select firms, the commercial building booms in Halifax and to a lesser extent in St. John's, Newfoundland have meant strong growth. But overall it has been a period of decline.

From our interviews with firms in these areas, a number of important trends and issues have emerged:

- The large firms have generally had the hardest time and have had to implement major staff reductions.
- There are more smaller firms now than in the past, particularly in the outlying areas serving the "small markets" - such as small-scale residential renovations.
- Few Atlantic Canadian firms participate in export.

EXHIBIT B.23

REGIONAL STRENGTHS SHIFTING

	Firms (%)			Employees (%)			Fees (%)		
	<u>1977</u> ¹	<u>1982</u> ²	<u>1984</u> ³	<u>1977</u>	<u>1982</u>	<u>1984</u>	<u>1977</u>	<u>1982</u>	<u>1984</u>
Atlantic	6	6	6	7	6	6	6	5	5
Quebec	29	27	27	20	20	21	22	15	15
Ontario	34	33	33	36	37	38	33	37	39
Manitoba/ Saskatchewan	5	5	5	8	6	6	8	6	6
Alberta	9	13	13	16	16	15	17	20	18
British Columbia	17	16	16	12	15	14	14	17	17

1. Statistics Canada Survey, 1977.
2. Statistics Canada Survey, 1982.
3. Estimates based on interviews, 1984.

- Nova Scotian-based firms are more mobile than other Atlantic firms: earning 7.7 percent of their fee incomes in other provinces (as opposed to New Brunswick-based firms who earn one percent of their fee income outside of the province)*.

Central Canadian Firms Still Focus of Activity

Although the focus of attention shifted westward in the late 1970's with the oil and gas-related boom in investment, the primary focus of activity today is still Quebec and Ontario. Quebec and Ontario firms together account for over half of the firms, employment and fee income in Canada. But the recession-induced downswing still had its effects. Numerous firms reduced staff by a considerable amount, although many Quebec-firms had already undergone staff reductions in the late 1970's.

Key trends and issues for Ontario and Quebec-based firms are as follows:

- Some of the medium to large firms weathered the recession relatively well due to a backlog of large scale, long-term projects.
- The majority of firms reduced staff sizes from 1980-1984 but have now "turned the corner" and are either achieving greater utilization of core staff, or are hiring employees on contract.
- Overall the volume of work is lower, and jobs tend to be smaller.
- Quebec and Ontario-based firms obtain a higher percentage of their fees from export projects than firms in other provinces (3.5 percent and 4.9 percent respectively)*.
- Quebec and Ontario-based firms are quite mobile. In both cases, seven to eight percent of their fees are earned in other provinces*.

* Statistics Canada Survey, 1982.
Comparable figures for Prince Edward Island, and Newfoundland unavailable due to confidentiality.

Manitoba and Saskatchewan Firms Have Suffered, But to a Lesser Extent

Firms in Manitoba and Saskatchewan suffered during the recession, but to a lesser extent than their colleagues in Alberta. For most Manitoba and Saskatchewan firms, the recession aggravated a longer-term trend of no growth or decline.

Key issues and trends which have emerged in these provinces in recent years include:

- Many of the larger firms suffered considerably, and were forced to make significant staff cuts.
- The number of small and single-man firms has been increasing, largely due to employee layoffs. These firms often are located in the smaller towns and/or they specialize in small work such as residential renovations.
- Residential work in Manitoba, and institutional work in both provinces have been the major areas of activity in recent years.
- Manitoba-based firms do a considerable amount of work in other provinces, particularly in northern Ontario and other Prairie Provinces.

Alberta Firms - The Worst Case

For firms in Alberta, the last few years have been a time of extreme change. In the late 1970's and early 1980's, Alberta was one of the two major market areas for Canada - the other being Ontario. However, with the onset of the recession, the implementation of the National Energy Program and the virtual withdrawal of oil and gas-related investment, construction activity came to a fairly abrupt halt. Alberta-based firms have suffered the "worst case" of staff reductions. In addition, from our interviews it is evident that a number of firms have gone bankrupt or may simply have closed down.

Other key trends and issues which have emerged in Alberta include:

- Many firms have changed significantly in their personnel composition - the majority of the cuts have been in technical staff.

- The ratio of public to private sector work has shifted further to the public side. For 100 firms surveyed the client sector split in 1981-1982 was 59 percent private; 41 percent public. The expected client sector split in 1982-1983 was 43 percent private; 57 percent public*.
- Alberta firms do not appear to participate in export. In 1982, 100 percent of their fee income was from Canadian projects.
- Alberta firms are not very mobile - only three percent of their fee income was earned in other provinces in 1982**.

British Columbian Firms Have Suffered Too

For firms in British Columbia, the period from 1977 to 1982 was one of relatively strong growth. However, as in other provinces, the recession brought hard times to British Columbian firms. Since 1982 most firms have suffered considerably from reduced work volumes and have had to lay-off staff. The considerable cutbacks by the provincial government on capital expenditures have compounded the problem. Moratoriums on investment in institutional buildings - particularly in hospitals have had disastrous effects on some firms.

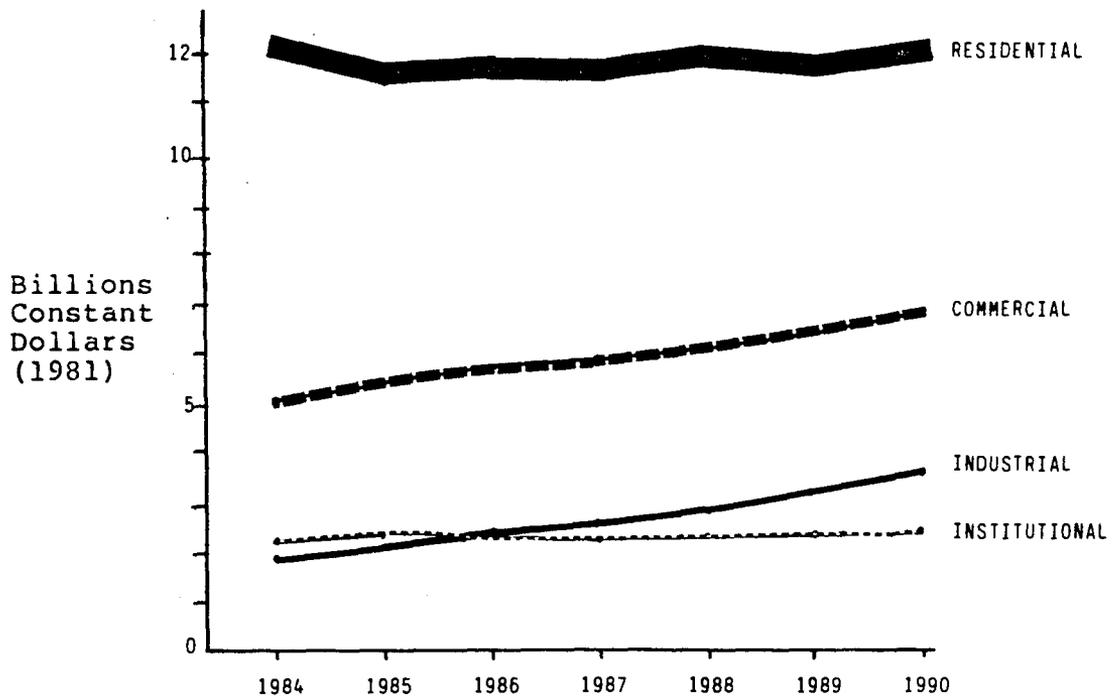
- Most firms have suffered staff cutbacks - particularly technical staff.
- The ratio of public to private sector work has shifted more towards the public side. Firms reported an expected change from 69 percent private: 31 percent public, to 64 percent private: 36 percent public*.
- B.C. firms do participate in export, earning 0.4 percent of their total fee income from export work in 1982
- B.C. firms tend to work close to home; only 1.2 percent of their fee income was earned in other provinces in 1982**.

* RAIC Survey, 1982.

** Statistics Canada Survey, 1982.

EXHIBIT B.24

LITTLE GROWTH FORECAST IN CONSTRUCTION INVESTMENT



Source: Canadian Construction Association (1984): Construction Outlook from Winter 1984.

LOOKING TO THE FUTURE

Looking to the future, we see a number of alarming trends regarding the overall volume of work and the way that it is carried out. In this final section we examine the overall prospects for the future in building construction activity and look at some of the trends which are influencing and will continue to influence the viability or profitability of architectural practices.

Outlook for Building Construction is Slow Growth

The remainder of the 1980's will be period of very slow growth for building construction activity, in keeping with growth estimates for the economy as a whole. Forecasts of average annual real growth for Canada in the coming years range from two to four percent, in contrast to growth rates of five to eight percent in the 1970's.*

The residential and institutional sectors will likely remain flat or perhaps even decline in real terms over the coming years (see Exhibit B.24). As noted earlier, the demand for single family dwellings will outweigh the demand for multiple dwellings. If architects are to retain some share of the residential market they will have to be competitive in the single family dwelling market. The institutional sector, particularly in education will continue to decline for architects. In some areas of the country there may be a demand for medical facilities but deficit budgeting by governments will continue to mean poor prospects for this sector.

The commercial and industrial sectors offer some limited potential for architects, but much will depend on investor confidence. Retail shopping centre upgrading, high technology industrial buildings, hotel and office building renovations are examples of possible growth areas. Certainly renovations will continue to take place in all sectors.

* Canadian Construction Association (1984): Construction Outlook from Winter 1984; Economic Council of Canada (1983): On the Mend.

Overall, the outlook in terms of the traditional architectural building sectors is poor. Unfortunately the declining volumes of work are only one element of the predicament which architects find themselves in.

A Number of Alarming Trends Lead to Reduced Profitability

Not only are architects having to cope with a reduced volume of work, they are also having to come to terms with a number of changes in client demands, project costs and the competition:

- Clients are more demanding. From our interviews across the country, there was a definite perception that clients are demanding more for the same or a smaller price. Architects cited examples of more meetings and more documentation being demanded by clients than in the past.
- Construction costs coming in under budget. For many architects, expected revenue from a given project has been much lower than budgeted due to construction costs coming in under budget at the time of tendering. Fierce competition among contractors has resulted in lower construction costs.
- Fierce competition. Architects must face up to increased competition among architectural firms as well as increased competition from other professions. In these "grey areas" where architects compete with para-professionals and other professions such as residential renovations (renovator firms) or industrial building design (engineers), the competition has been very tough.

* * * *

Having looked at "the business end" of the architectural profession in the domestic market, we turn in the following appendix to the performance of Canadian architects in the export market.

EXPLANATORY NOTES

1. Figures on domestic fee income were determined in the following manner:

1977 - Total fee income derived from Statistics Canada survey, 1977. Figure was converted to constant dollars and export fee income subtracted from total.

1982 - Derived from Statistics Canada survey, 1982 in the following manner:

Total Fee Income of 1470 firms responding: \$469,336,000

Assumed Fee Income of 125 non-respondents: 32,212,375

- Based on assumption that average fee income for non-respondents was equivalent to average fee income of respondents excluding the top group (\$5 million plus)

Total Fee Income: \$505,548,375

Rounded off to nearest ten million: \$500,000,000

Converted to constant dollars: \$181,000,000

Minus fee income from export: \$176,500,000

2. To obtain the six basic building sectors, the building classifications listed in the 1977 and 1982 Statistics Canada surveys were grouped in the following manner:

	<u>1977 Classification</u>	<u>1982 Classification</u>
<u>RESIDENTIAL</u>	Residential	Residential, Single & Semi-Detached, Residential, Multiple
<u>COMMERCIAL</u>	Mercantile Administrative Exhibition/ Entertainment Government (60% of)	Commercial, Stores Commercial, Restaurants Other Commercial Administrative Exhibition/ Entertainment
<u>INDUSTRIAL</u>	Industrial	Industrial Non-building Construction Oil and Gas Activity Power Generation
<u>INSTITUTIONAL</u>	Medical/Nursing Education Social/Recreation Transportation Communications Government (40% of)	Medical/Nursing Education Social/Recreation Transportation Communications
<u>MISCELLANEOUS/ OTHER</u>	Miscellaneous Funeral Military Penal Religious	Miscellaneous
<u>ALTERATIONS</u>	Alterations	Alterations/ Renovations

Note: The unspecified category was allocated to other sectors on a proportionate basis.

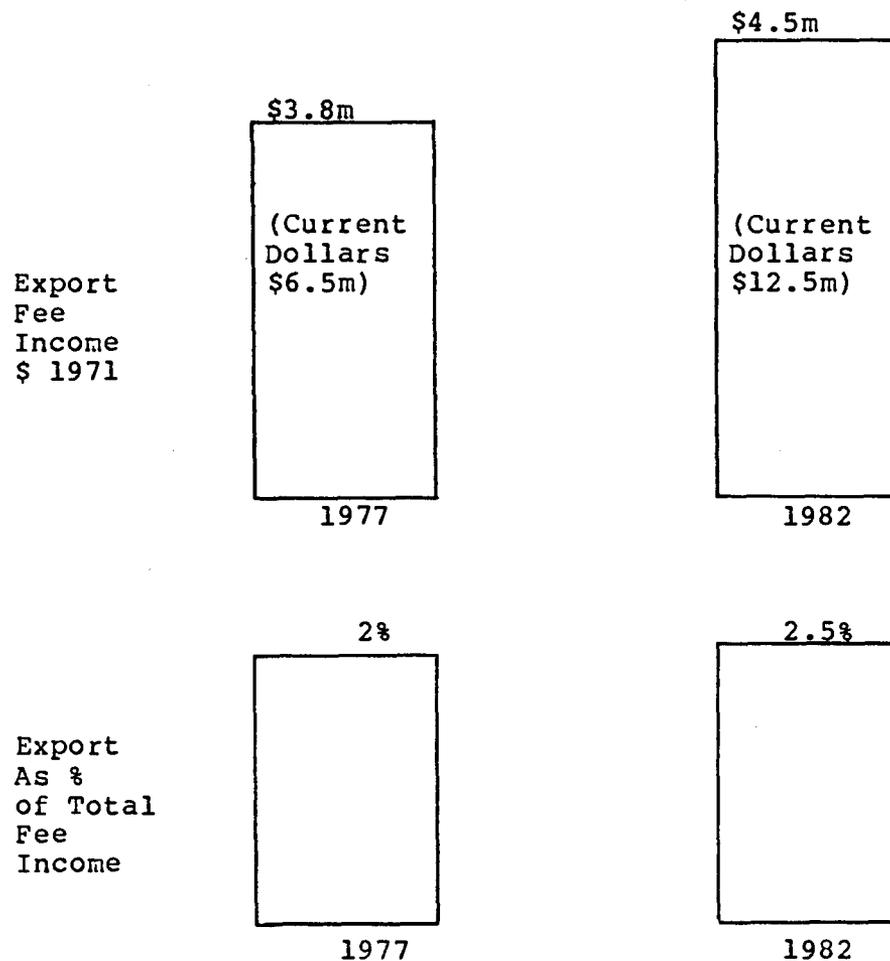
3. To estimate the fee income from the various building sectors, the following methodology was used. The ratios of architectural fee income* to value of construction work purchased** were calculated for 1977 and 1982. It was assumed that architectural fee income from a given year is obtained from construction in the same year and the following year. Ratios for the intervening years were interpolated. These ratios were then applied to the value of construction work purchased in a given sector to develop fee income figures for the intervening years.

* Obtained from Statistics Canada Surveys, 1977 and 1982.

** Obtained from Statistics Canada, Construction in Canada, Catalogue 64-201.

EXHIBIT C.1

EXPORT FEE INCOME UP IN REAL TERMS



Source: Statistics Canada Surveys, 1977, 1982.

APPENDIX C

A NOTE ON EXPORT

For the vast majority of architectural firms in Canada, the export of architectural services is seen as neither desirable, nor possible. Few firms actually work in export and, in total, export activity only accounts for 2.5 percent of total architectural fee income. But for those that do work in export, there are some encouraging signs. Since 1977, the fee income derived from export activity has grown in real terms. From our interviews it is evident that for some firms export has been a key to sustenance or success. In this section we take a closer look at the key changes which have occurred in the export market since 1977 and at the prospects for the coming years.

Fee Income Has Grown In Real Terms

Export fee income in 1982 amounted to approximately 4.5 million dollars* and 2.5 percent of total architectural fee income. As can be seen in Exhibit C.1 export has grown in real terms and relative to domestic fee income. Thus for those that do participate, export has been relatively strong. But from our interviews it is evident that export has only filled the gap left by the slump in the domestic market. It is unlikely that any firms have actually grown in size due to success in export. Our interviews suggest that export has remained relatively constant since 1982.

Geographical Focus of Activity Closer to Home

The dominant market area for Canadian architects in 1982 was the United States. This is a major change from 1977 when the Middle East and Africa were the top markets for Canadian architects. This shift is indicative of a number of trends in exports:

- As developing countries mature, their architectural capabilities develop rapidly thus lessening demand for foreign architects.

* Constant Dollars (1971).

EXHIBIT C.2

U.S. IS NOW THE DOMINANT MARKET

<u>GEOGRAPHICAL AREA</u>	<u>1977</u>		<u>1982</u>	
	<u>RANK</u>	<u>% OF FEE INCOME</u>	<u>RANK</u>	<u>% OF FEE INCOME</u>
United States	4	9	1	36
Latin America	6	7	2	18
Africa	2	26	3	12
Unspecified	-	-	4	10
Far East	5	8	5	10
Europe	7	2	6	7
Middle East	1	29	7	6
Caribbean	3	20	8	2
Australasia	-	-	-	-

Source: Statistics Canada Surveys 1977, 1982.

- The funding policies of international agencies increasingly favour the hiring of local services where they are available. In recent years, the amount of funding going to indigenous firms in developing countries has increased steadily while the funding going to firms in developed countries has decreased. In addition, funding priorities are in sectors aimed at import replacement and increasing self-sufficiency such as agricultural and industrial development - areas in which the architectural component is relatively low.
- Architects seem to prefer markets which they know and understand - thus making the United States a natural focus for marketing activities.

In Exhibit C.2 we identify the changes in geographical distribution of architectural fee income from 1977 to 1982. These numbers should be viewed with caution however. They represent two "snapshots" in time and, are not necessarily representative of the intervening years. In addition, these figures may fluctuate significantly from year to year due to the effects of one or two large projects. In spite of these cautions a number of general trends can be identified.

- Latin America and Africa are important markets. Almost one-third of total export architectural income came from these two regions in 1982. Latin America appears to have grown in importance since 1977, while Africa has declined. Key sectors in these two areas are education and administration.
- Middle East and Caribbean markets of lesser importance. In 1977 these two regions were the number one and number three market areas for Canadian architects. By 1982, they were the smallest markets for Canadian architects. Reduced demand for transportation and education facilities in these areas is the likely reason for decline. In addition, increased local capability and tougher international competition have contributed to reduced work for Canadian architects.
- Far East and European markets growing. Each of these regions contributed more to total architectural fee income in 1982 than they did in 1977. In the European market the administrative sector contributed almost half of the total

EXHIBIT C.3

BREAKDOWN OF EXPORT FEE INCOME, 1982
BY BUILDING CLASSIFICATION

<u>RANK</u>	<u>BUILDING CLASSIFICATION</u>	<u>% OF FEE INCOME</u>	
1	Administration	25	} 66%
2	Miscellaneous	17	
3	Education	14	
4	Other Commercial	11	
5	Unspecified	10	} 44%
6	Exhibition and Entertainment	6	
7	Residential, Multi-Unit	3	
8	Industrial	2	
9	Residential, Singles	0.5	
10	Transportation	0.4	
11	Other	12	

Source: Statistics Canada Survey, 1982.

export fee income. Key sectors in the Far East included commercial, transportation and recreation.

Key Building Sectors in Export: Administration, Education, Commercial

The top building sectors in 1982 were administration, miscellaneous*, education and "other commercial"**. Together these sectors accounted for two-thirds of total export fee income. In 1977 the key sectors were education, transportation and residential. The growth in importance of the administration and commercial building classifications is in part explained by the strong shift to the U.S. market. The types of projects for which Canadians are likely to win contracts in the U.S. are the specialized major office and commercial projects. Exhibit C.3 provides a breakdown of 1982 architectural export fee income by building classification. Unfortunately a similar breakdown was not available in 1977.

Sources of Funding Shifting to "Foreign"

One of the indications of maturity in the international marketplace is the extent to which projects are funded by foreign sources as opposed to Canadian sources. An examination of the funding sources for export projects suggests that Canadian architects are growing increasingly sophisticated in the export market and winning projects funded directly by foreign government and private sources. Exhibit C.4 illustrates the funding sources for projects in 1977 and 1982.

The Future - Not Too Promising

In spite of growth in export in recent years, we foresee a period of stagnation if not decline ahead. No doubt the superstars in Canadian architectural export

* Miscellaneous includes the following building types: Religious, Funeral, Military, Penal, Marine, Farm Building, Laboratory and Other.

** "Other Commercial" includes: Hotels, Motels, Laundry, Dry Cleaning, Grain Elevator, Garage and Service Station.

EXHIBIT C.4

FINANCING SOURCES SHIFTING

	<u>1977</u>		<u>1982</u>	
	\$	%	\$	%
CIDA	2.7 m	43	1.0m	9
Private Canadian Sources	0.8m	13	2.7m	24
Private Foreign Sources	0.5m	8	2.7m	25
Government Foreign Sources	1.9m	30	2.8m	26
Other*	0.4m	6	1.8m	17
	<u>6.3m</u>		<u>11.1m</u>	

Other*: includes Export Development Corporation and other international funding agencies, eg. World Bank, United Nations Development Program.

Source: Statistics Canada Surveys, 1977, 1982.

will continue to win prestige jobs, but overall the outlook is not promising. A number of key internal forces inhibit the ability of Canadian architects to establish large, sustained export practices:

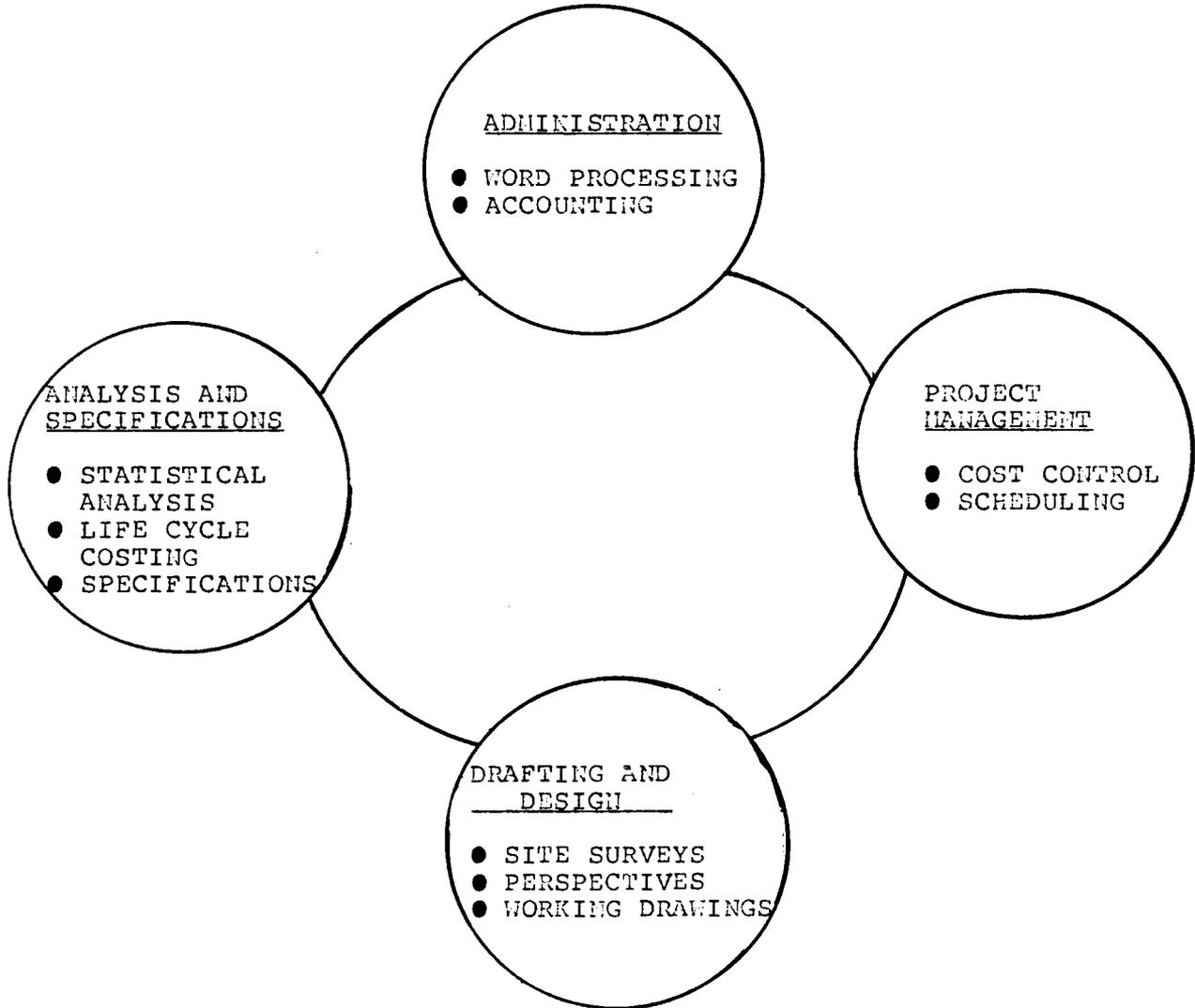
- Insufficient Scale: To compete effectively in the international market a firm has to be big enough to do without key personnel for protracted periods of time, and big enough to handle the financial risks, liability insurance, and marketing costs of international work. Relatively few Canadian firms have these requirements. In addition, more and more the export market demands a packaged turnkey approach run by a large team. Few Canadian firms are well-equipped to respond to these demands.
- Lack of Unique Architectural Expertise. Unlike some other Canadian export services, Canadian architects have few areas of expertise for which they can claim "unique ownership". To compete in the international market today architectural firms require an advantage in terms of skills or in some other area.
- Government Assistance Critical. A key requirement for success is government assistance in financing, marketing and market intelligence. While a number of firms indicated that they had successfully used PEMD - the Program for Export Market Development - there was a general feeling that in other countries government support was greater, particularly in terms of financing.

While internal forces do influence the success of Canadian firms in the export market - perhaps even more important in the future will be the changing demands from the export market.

We have already noted, that as lesser developed countries mature, their demands for traditional architectural services decline. This trend is reinforced by funding policies which favour the hiring of local architectural firms. One area therefore where Canadian architects may find further opportunities will be in hi-tech buildings. Realizing the potential of CADD, marketing it to other countries and being able to train others on its use and potential may be key areas in years to come.

EXHIBIT D.1

HOW COMPUTERS ARE USED IN ARCHITECTURAL PRACTICES



APPENDIX D

ARCHITECTS AND TECHNOLOGY - NEW CHALLENGES

One of the most significant changes for the architectural profession since the late 1970's has been the influence of technology. Reaction within the architectural profession to the onslaught of the computer age has ranged from complete disinterest to skepticism to intense enthusiasm. The extent to which architects have adopted various forms of computer hardware and software has varied considerably. In this appendix we take a closer look at architects and technology and more specifically at how computers are used; who uses them; in what form; for what use; and perhaps most importantly what effect computers are having on architectural practices. We also look at the current and potential role of architects in research and development.

Computers Exerting Major Influence

Few firms remain untouched by computers today. A large proportion of firms have incorporated computers into one or more areas of their practice:

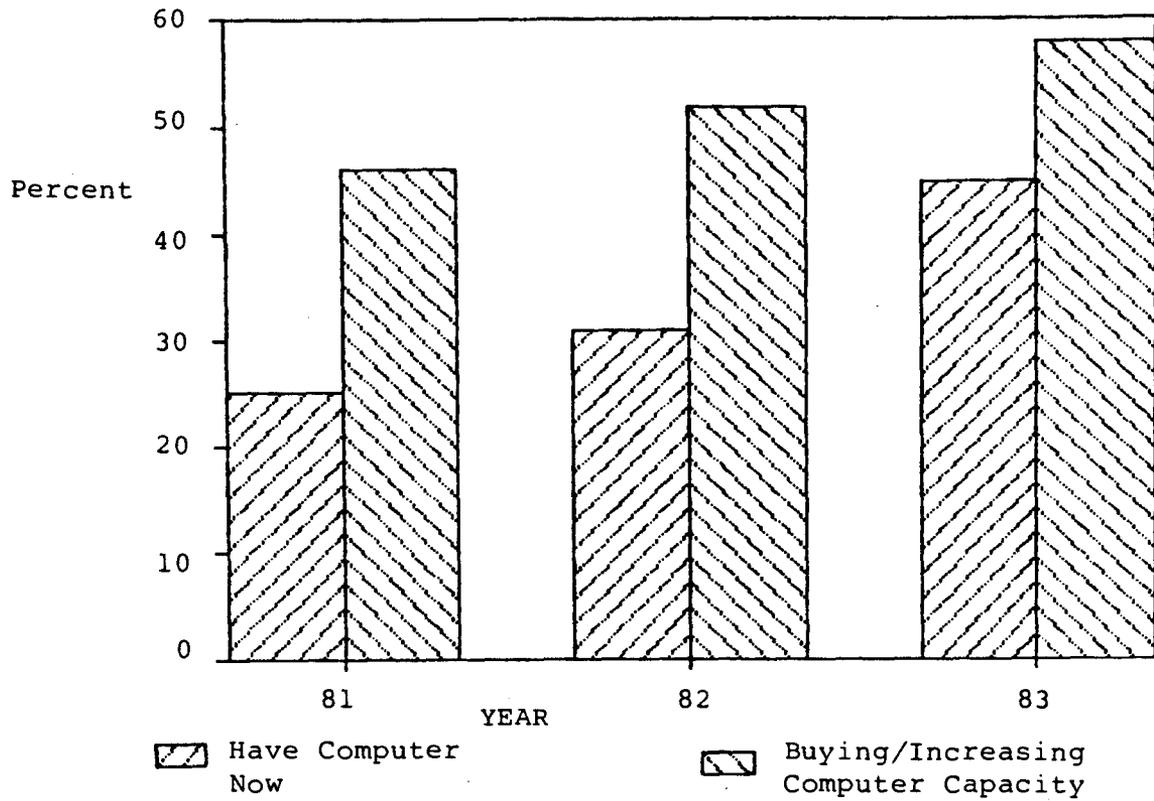
- Administration
- Project management
- Analysis and specifications
- Drafting and design (see Exhibit D.1)

Naturally, computer usage depends very much on the size of the firm and the size of their projects. But, computer usage is by no means limited to the very large firms in the profession.

Although we have no firm statistics of computer usage in Canada we do have an indication of the pace of adoption of computer technology from U.S. firms. The American Institute of Architects carried out a survey in 1981, 1982 and 1983 of computer usage by its firms. The results are indicated in Exhibit D.2. By 1983, approximately 45 percent of firms surveyed had computers, and 55 percent were planning on acquiring or increasing their computer capabilities in the next 12 months. The most common computer capabilities of U.S. firms are as follows:

EXHIBIT D.2

ADOPTION OF COMPUTERS



Source: The American Institute of Architects: Computer Use Survey, 1981, 1982 and 1983.

- Word processing (66 percent of firms with computers have it).
- Specification software (46 percent of firms with computers have it).
- Job cost accounting (43 percent of firms with computers have it).
- Financial management (40 percent of firms with computers have it).

Only 20 percent of firms with computers had computer graphics capabilities*.

For most Canadian firms, the adoption of major computer capabilities has been cautious and slow. Unfortunately many firms have not been healthy enough to invest in major computer hardware and software. But many have invested in word processing systems or personal computers. An alternative for some firms has been to share facilities with other firms or to use commercial services. The various applications are discussed in further detail below:

1. Administration - The Most Common Application. By far the most common area of application of computers in architectural practices is the administrative end of the business. Many firms reported improvements in their administrative matters due to the use of dedicated word processors and personal or mini-computers for the following administrative uses:

- Reports
- Correspondence
- Accounting

Faster turnaround and reductions in administrative staff requirements were cited as productivity improvements in this area.

2. Project Management. For architects one of the critical determinants of profitability is project management. As buildings and design teams become more complex, the tasks of cost control,

* The American Institute of Architects, Computer Use Survey, 1981, 1982 and 1983.

scheduling, and using staff in a productive manner can become exceedingly difficult. For some architects the use of computerized project management systems has been extremely effective. Among the advantages of the systems are:

- Up-to-date knowledge of profitability
- Optimum scheduling
- Productivity analysis of staff members
- Improving cash flow

3. Analysis and Specifications. Another area of computer applications is the general area of data manipulation, analysis and specifications. Some architects have found particular cost savings in using computers for specifications. Specification writers are now "hands on" the computers and can make changes quickly and efficiently. Some architects have also used computers for various types of analyses including statistical and engineering analyses.

4. Drafting and Design. The most controversial area of computer applications for architects has been the area of CADD - Computer-Aided Drafting and Design. While most firms believe that in the long run, CADD will improve architectural services, a relatively small number of firms has adopted it. CADD is seen to be too costly to implement due to the initial investment in equipment along with time-consuming and costly training. From our interviews it is evident that the range of approaches to CADD is considerable:

- Do not use it at all
- Use a CADD service bureau
- Use a single station rented from CADD service bureau
- Use a micro-CADD system
- Use a major CADD system (mini or mainframe)

For many firms, the decision of whether or not to "go CADD" has been contingent on the volume and type of workload. Firms bruised by the recession have been reluctant to make a move until business is better.

For those that have implemented CADD systems, (and have retained the work volume to sustain them) the reported advantages are many:

- Productivity improvements
- Better quality and more accurate drawings
- Ability to examine more options
- Improved marketability
- Faster turnaround
- Storage of cumulative experience (no need to reinvent the wheel each time).

The increasing availability of low-cost micro-computer CADD systems is opening up the use of CADD for the smaller firm. Specialized software for use with personal computers, is being developed at a rapid rate.

CADD is also opening up new service areas for architects. The creation of an electronic data base for building is a considerable resource which some have capitalized upon by offering space planning and facilities management services.

Minimal Involvement in R & D

One final area of challenge for architects vis-a-vis technology is the area of research and development. From our interviews it is evident that relatively few architects carry out sponsored or own account research and development. A relatively small group has devoted a good deal of time and effort to CADD software development but these are generally isolated cases.

From our interviews it appears that many architects wish to have a closer involvement in the research and development process, especially in building technology. However, to date architects have had relatively little influence on developments in this area.

* * * *

Looking to the future, it is evident that architects are at the threshold of a new era in architecture. A survey of Canadian architects in 1983 revealed that almost two-thirds (63 percent) believed that the adoption of computer techniques would have a major impact on the practice of architecture within the next five years. For many that impact is being felt today. What remains to be seen is the extent to which architects will seize the computer-aided design market and all of the potential follow-on services it offers as well as the extent to which architects will become involved in research and development. Other professions such as interior design consultants will be competitors in this market, but we believe architects are well-positioned to seize it if they wish.

APPENDIX E

STATISTICS CANADA BUILDING CLASSIFICATIONS (1982)

STATISTICS CANADA BUILDING CLASSIFICATIONS (1982)

1982 ARCHITECTS BUILDING CLASSIFICATION LIST 1982 ARCHITECTES - NATURE DES CONSTRUCTIONS

1. ADMINISTRATIVE - ADMINISTRATION
Office & Admin. Bldg. - Édifices à bureaux & administratifs
Bank & Trust Premises - Banques & sociétés de fiducie
Stock Exchange - Bourse
2. ALTERATIONS & RENOVATIONS - MODIFICATIONS & RÉNOVATIONS
3. COMMERCIAL STORES - COMMERCE, MAGASINS
Wholesale & Retail Store, Shopping Centre - Magasins de gros & de détail, centres commerciaux
4. COMMERCIAL RESTAURANTS - COMMERCE, RESTAURANTS
Restaurant, Cafeteria, Cocktail Lounge, Bar - Restaurants, cafétéria, salons-bars, bars
5. OTHER COMMERCIAL - AUTRES COMMERCE
Laundry, Dry Cleaning, Grain Elevator, Garage & Service Station, Hotel, Motel, etc. - Blanchisseries, nettoyage à sec, silos, garages & stations-service, hôtels, motels, etc.
6. COMMUNICATIONS - COMMUNICATIONS
Telephone & Telegraph - Téléphone & télégraphe
Radio - Radio
T.V. Building - Télévision
7. EDUCATION - ENSEIGNEMENT
Schools - Écoles
Elementary, Secondary - Primaires, secondaires
Post Secondary, University - Postsecondaires, universités
Trade, Vocational - Formation commerciale & professionnelle
College of Applied Arts & Technology - Collèges d'arts appliqués & de technologie
Drama - Théâtre
Music - Musique
Art - Arts
8. EXHIBITION & ENTERTAINMENT - EXPOSITIONS & DIVERTISSEMENTS
Theatre, Cinema - Théâtres, salles de cinéma
Arena, Covered Rink - Arènes, patinoires couvertes
Grandstand, Band Shell - Tribunes, kiosques à musique
Convention Hall - Palais de congrès
Exhibition Building - Salles d'exposition
Museum (Historical, Art, Scientific) - Musées (d'histoire, d'art, de sciences)
Auditorium, Stadium - Auditoriums, stades
Zoological & Botanical Gardens - Jardins zoologiques & botaniques
Aquarium, Planetarium - Aquariums, planétariums
9. INDUSTRIAL - INDUSTRIE
Manufacturing - Industries manufacturières
Mine Building - Bâtiments miniers
Smelter - Fonderies
10. MEDICAL & NURSING - SOINS MÉDICAUX & INFIRMIERS
Hospital Clinic - Cliniques d'hôpitaux
Medical Research & Scientific Buildings - Bâtiments de recherche médicale & scientifique
Staff Residence - Résidences de personnel hospitalier
Convalescent & Nursing Homes - Maisons de convalescence ou de repos
11. NON-BUILDING CONSTRUCTION - CONSTRUCTIONS AUTRES QUE DES BÂTIMENTS
Utilities - Services publics
Public Works - Travaux publics
Sewers & Water - Égouts & adduction d'eau
12. OIL & GAS FACILITY - PÉTROLE & GAZ
Well - Puits
Line, Main - Canalisations principales
Refinery, processing plant - Raffineries, usine de traitement
Pumping station - Stations de pompage
Storage - Stockage
13. POWER GENERATION - PRODUCTION D'ÉLECTRICITÉ
Generating plant - Centrales
Transformer station - Postes de transformation
14. RESIDENTIAL, SINGLE & SEMI-DETACHED - MAISONS INDIVIDUELLES OU JUMELÉES
Single, Semi-detached - Maisons individuelles ou jumelées
Double, Duplex - Maisons doubles, duplex
15. RESIDENTIAL, MULTI-UNIT - IMMEUBLES À LOGEMENTS MULTIPLES
Apartment - Immeubles à logements multiples
Row House - Maisons en rangée
16. SOCIAL & RECREATIONAL - ACTIVITÉS SOCIALES & CRÉATIVES
Community Recreation Bldg. - Centres récréatifs communautaires
Park & Resort Building - Parcs & stations de villégiature
Swimming Pool - Piscines
Day Nursery - Garderies
Club (Town, Country, Sports) - Clubs sociaux, champêtres, sportifs
Summer Camp - Colonies de vacances
YMCA - YWCA - YMCA - YWCA
Hostel - Refuges
Welfare Facilities - Établissements d'assistance sociale
Dance Hall - Salles de danse
Settlement House - Centres de secours communautaires
17. TRANSPORTATION - TRANSPORT
Terminal (Bus, Truck, Railroad, Airport) - Gares routières (voitures, marchandises), gares de chemins de fer, aéroports
Parking Lot, Garage - Terrains de stationnement, garages
Highway - Routes
Bridge - Ponts
18. MISCELLANEOUS - DIVERS
Religious - Édifices religieux
Funeral - Établissements funéraires
Military - Immeubles à vocation militaire
Penal - Immeubles à vocation pénale
Marine - Immeubles maritimes
Farm Building - Bâtiments de ferme
Laboratory - Laboratoires
Other - Autres

