



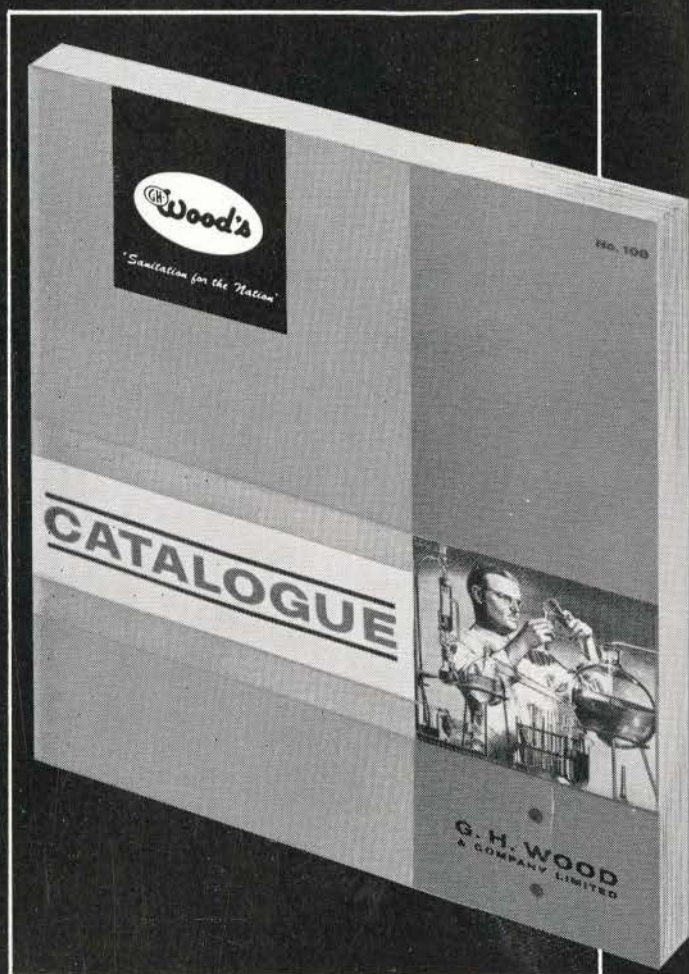
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RAIC - L'IRAC

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JOURNAL

RAIC - L'IRAC

December 1964 décembre 471 Vol 41 No. 12

Confederation Centre

Fathers of Confederation Memorial Centre, Charlottetown, Prince Edward Island.
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Photograph by Chris Payne.

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André Bloc, editor-in-chief of the famous Paris monthly review, "L'Architecture d'Aujourd'hui", will be the keynote speaker of the RAIC 1965 Annual Assembly, June 9-12, in Montreal.

His theme: "L'architecture fantastique", which may be translated as "the imagination in architecture". If you think this foreshadows considerable emphasis on EXPO 67 and other interesting structures planned for Montreal, you're entirely right.

PQAA President Peter Barott (*F*) and his Host Committee report that the best Assembly program in years is indicated. More details soon — but reserve the dates now.

* * *

In June and July this year, you'll be able to devote four or five fascinating weeks to big architectural gatherings, should you wish. Here's the lineup:

June 9-12 — RAIC Assembly, Montreal.
June 14-18 — AIA Convention and Pan-American Congress of Architects, Washington, D.C.

June 25-28 — Commonwealth Association of Architects (first biennial conference), Malta.

July 5-9 — International Union of Architects, Paris, France.

If Paris and Europe tempt you for the Summer, you can then attend the Congress and General Assembly of the International Council for Building Research Studies and Documentation (Conseil International du Bâtiment, or C.I.B.), August 23-31, in Copenhagen, Denmark. Canadian architects have been invited to attend all these events. RAIC Headquarters will be glad to provide information on request.

* * *

There will be close interest in the presentation of the first Design Awards for Architecture by the Minister of Public Works, Ottawa. These awards are being made "for distinguished accomplishment in federal government architecture by a registered Canadian architect".

The exhibition of winning designs will be circulated widely, in order to promote public interest in the design of government buildings.

* * *

Robert E. Briggs, of Toronto, is the new chairman of the RAIC Legal Documents committee. He has done considerable work in this field for the OAA, and is also a member of the Canadian Joint Committee on Construction Materials.

* * *

The RAIC has joined the Canadian Council of Professional Engineers and some other professional bodies in protesting a section of Bill C-126, The Canada Labor (Standards) Code. The proposed Code does not exclude architects and engineers from its application, as do the

present Industrial Relations and Disputes Investigations Act and the labour laws of all provinces except Quebec.

In our protest to the Prime Minister of Canada, we said: "The members of the architectural profession object to the principle of being classified as employees under the provisions of any labour legislation of this type, do not need nor wish to obtain this kind of legal protection which in their opinion is not consistent with their professional status and the professional relationship they wish to maintain with their employers, and are greatly disturbed at what appears to be a new trend in labour legislation which may eventually force them into the ranks of organized labour against their wish and against what they sincerely believe to be their best interest as well as the best interest of their employers."

* * *

D'Arcy Helmer, RAIC member of the Technical Advisory Committee, Emergency Measures Organization, reports that responsibility for the Committee has now been transferred to the Department of Public Works.

* * *

The United Church of Canada is compiling a list of architects specially interested in designing churches and Christian Education buildings.

Write to: Rev. Harold M. Bailey, Committee on Church Architecture, 85 St. Clair Ave. East, Toronto 7.

Give your name, firm name, business address, professional degree, age, experience in church building (including alterations and additions) and in other building, special interests in church architecture and a list of churches designed.

* * *

The 1965 Conference on Church Architecture will be held in Chicago, April 27-29 next.

For information, write to: Mr. S. T. Ritenour, Department of Church Building and Architecture, National Council of Churches of Christ, 475 Riverside Drive, New York, N.Y.

* * *

A current bulletin of the Department of

Labor, Ottawa, gives results of a survey of final-year university students in architecture, engineering and science courses. A growing tendency toward postgraduate work is indicated: 10% of the architectural students plan further studies.

We have received a letter of thanks from the President of the Japan Architects Association, co-signed by the Chairman of the International Exhibition on Sports and Recreational Facilities, for our participation in this architectural exhibition at the time of the Olympic Games in Tokyo.

Canadian architecture is represented as follows:

Burnaby Municipal Swimming Pool — McCarter, Nairne & Partners, Vancouver.
Ski Lodge, Grouse Mountain — Rand & Iredale, Vancouver.

Physical Education Centre — Joseph Pettick, Regina.

Beaches Olympic Swimming Pool — Wilson & Newton, Toronto.

Mississauga Curling Rink — Shore & Moffat and Partners, Toronto.

The letter says: "The success of the exhibition exceeded expectations and it was visited by more than 65,000 persons."

Twenty-two nations, members of the International Union of Architects, participated. Plans are being made to show the exhibition in Toronto shortly.

* * *

Colborne Powell Meredith, one of three survivors of the 130 charter members of the RAIC, was the subject of a recent interview in the Ottawa papers and carried by Canadian Press across the country.

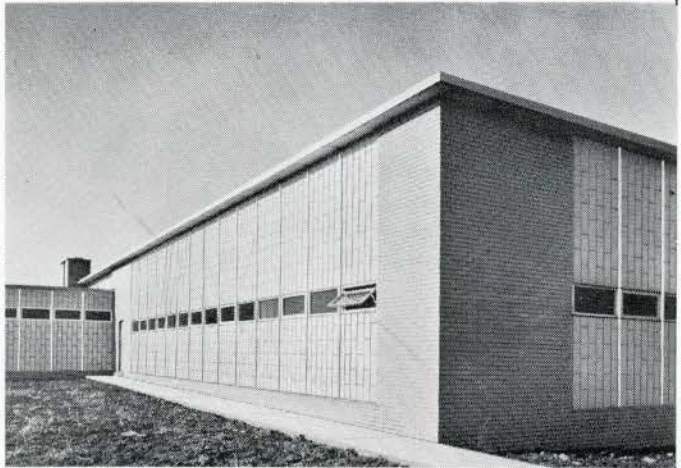
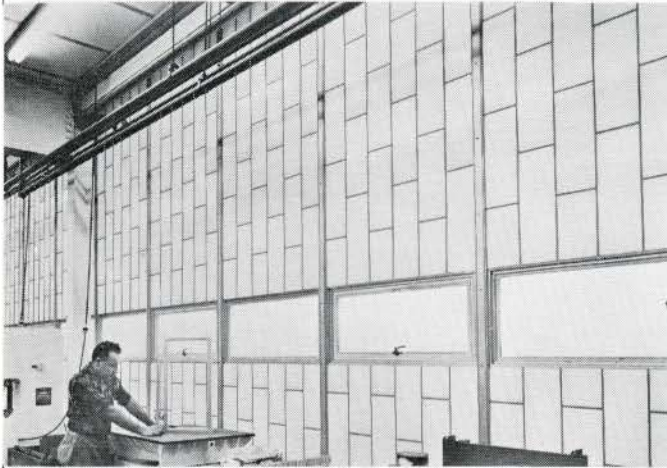
Mr Meredith, now 90, helped design Ottawa's Union Station and the Chateau Laurier, and was responsible for many other landmarks in the Capital.

* * *

Canada Week recently featured "The country's biggest, busiest firm" of architects — John B. Parkin Associates, of Don Mills, Ont. — with a salute to their three awards in the 1964 Massey Medals Competition.

John B. Parkin (*F*) addressed the AIA South Atlantic Regional Conference in November.

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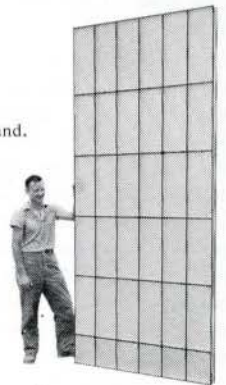


Edburgh Manufacturing Co. (1959), Newburgh, New York. Architect: Ian M. Horne.

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G. Everett Wilson (*F*), of Toronto, gave an illustrated address on the subject, "What Makes a City Enjoyable," to the Canadian Club of Barrie, Ontario.

* * *

D. W. Jonsson, New Brunswick Department of Public Works architect, spoke at the opening of the exhibition Historic Architecture of Canada in Saint John. Representatives of the architectural profession and other leading citizens attended.

Similar formal openings are planned for this display in other cities.

* * *

The director of the Building Research Division of NRC, Robert F. Legget, Hon. F.R.A.I.C., will participate in a C.I.B. symposium on "The problems involved in the influence of climate upon building".

An invitation is extended to Canadian architects who are specialists in this field, through RAIC Headquarters.

Dates and place: May 3-6, 1965, Vienna.

* * *

Ontario members will be interested in a Conference on Regional Development and Economic Change, sponsored by the provincial government, February 15-17, at the Royal York Hotel, Toronto.

Peter Dobush (*F*) is one of the speakers. For information, write to Box 280 Queen's Park, Toronto.

* * *

Two senior architects have recently retired after long service with the Federal Government. Edwin A. Gardner (*F*), former Chief Architect, Department of Public Works, received many tributes and was the subject of an excellent television interview in Ottawa. H. Gordon Hughes (*F*), head of the Hospital Design Division, Department of National Health and Welfare, was honoured at a reception by the Minister, Hon. Judy LaMarsh, Deputy Minister Dr G. D. W. Cameron, and many other colleagues.

* * *

An architectural competition for the West German pavilion at EXPO 67 is expected to attract entries from 300 architects. Construction is scheduled to start in October 1965.

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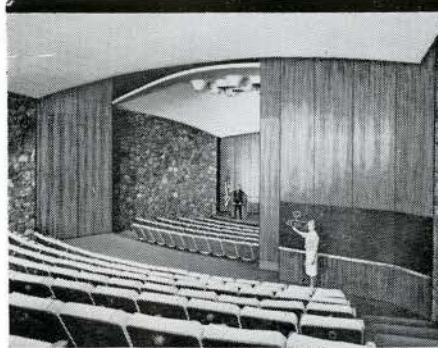
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GOVERNMENT OF NIGERIA

The Government of Nigeria requires an experienced graduate architect to act as building expert for a Building Advisory Service. Period of employment is 18 months from April 1, 1965. Address inquiries to Ian A. Hodson, External Aid Office, Government of Canada, Ottawa.

Réservez les dates —
du 9 au 12 juin, 1965
à l'hôtel Reine Elisabeth, Montreal
58ième Assemblée Annuelle
de
l'Institut royal d'architecture
du Canada
Le discours-thème par
André Bloc,
directeur de "L'Architecture
d'Aujourd'hui"

Mark this on your 1965 calendar now:
June 9 — 12
at the
Queen Elizabeth Hotel, Montreal
58th Annual Assembly
of
The Royal Architectural Institute
of Canada
Keynote speaker:
André Block
Director, "L'Architecture
d'Aujourd'hui"



I.B.M., Yorktown, N.Y.
Architect: Eero Saarinen & Associates



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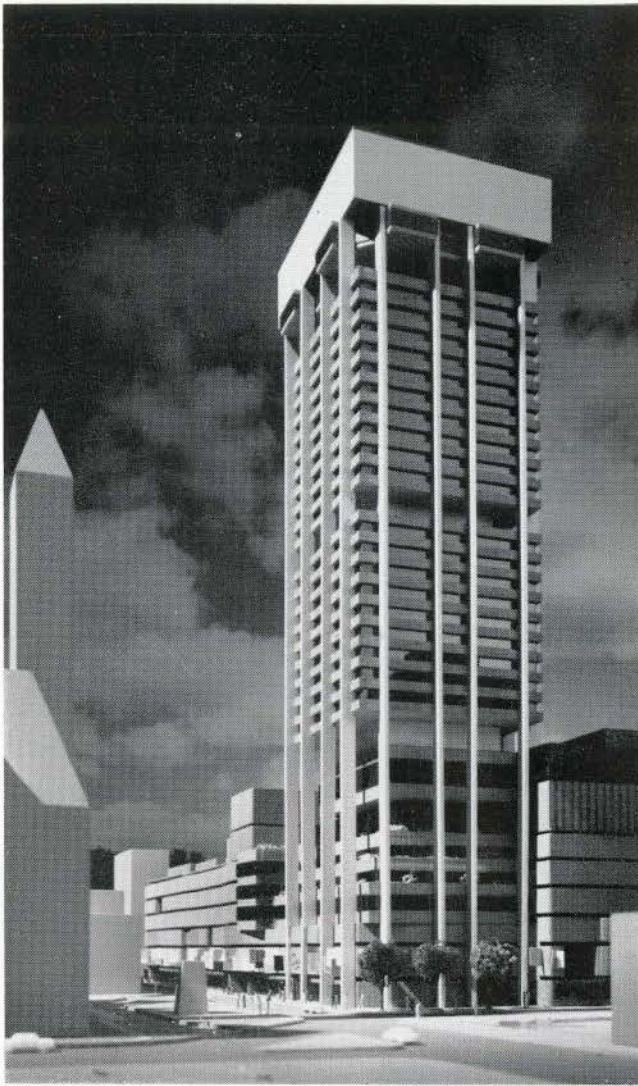
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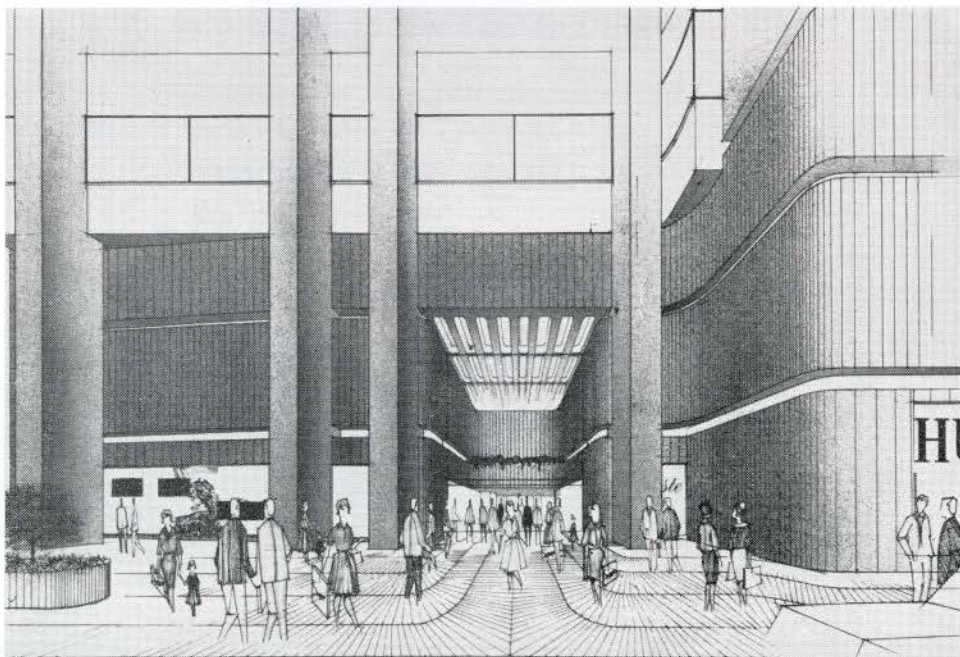
Features

The design of a department store is normally associated with the suburbs and giant parking lots. But this one, for the Robert Simpson Company, remains on its old location at Queen and Bay Streets in downtown Toronto. The new Simpson Tower, of over 400 feet, will afford an unprecedented view over the new Toronto City Hall and Square, out doing by proximity, the Toronto Dominion Centre, a couple of blocks away.

The model of the scheme, by the architects, John B. Parkin Associates and Bregman & Hamann, indicates a plasticity which may successfully relate the Tower to the masses about it.

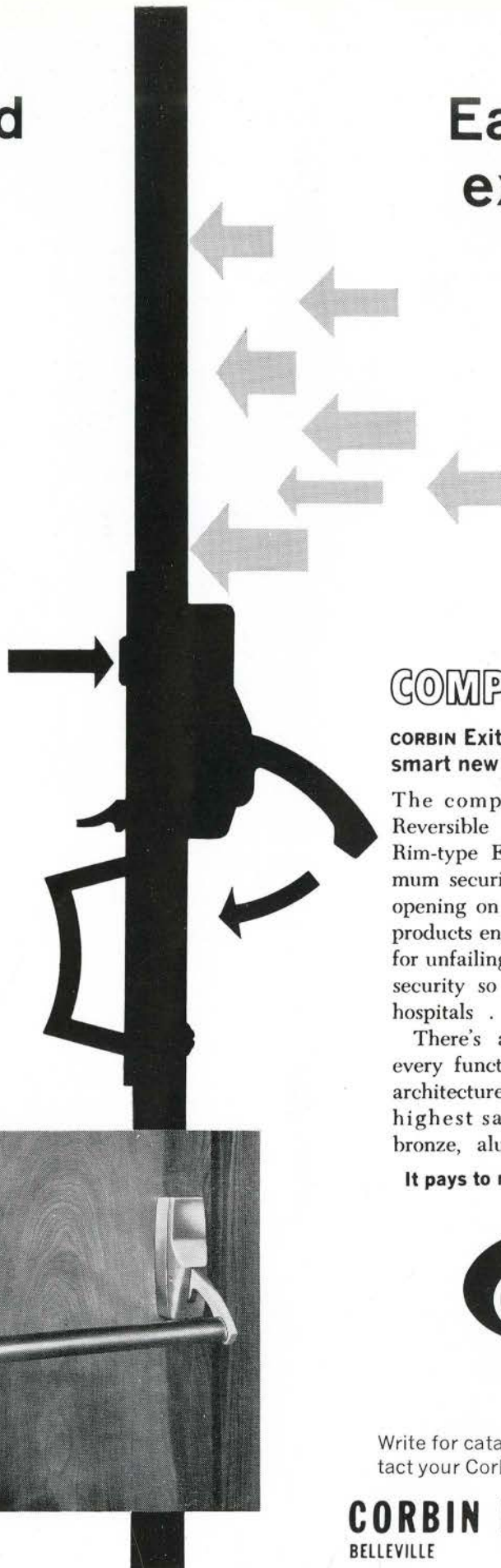
But the obvious reaction is that it will, by its size, dominate the city hall, exemplifying the economic fact that civic authorities cannot compete with the financial capacities of commerce. This building is the answer to a limited site; it suggests that some of the schemes for the city hall competition which were less striking in form and jury appeal gave a more logical solution to this inevitable problem. Commercial evolutions could never compete with this sheer generosity of open space.

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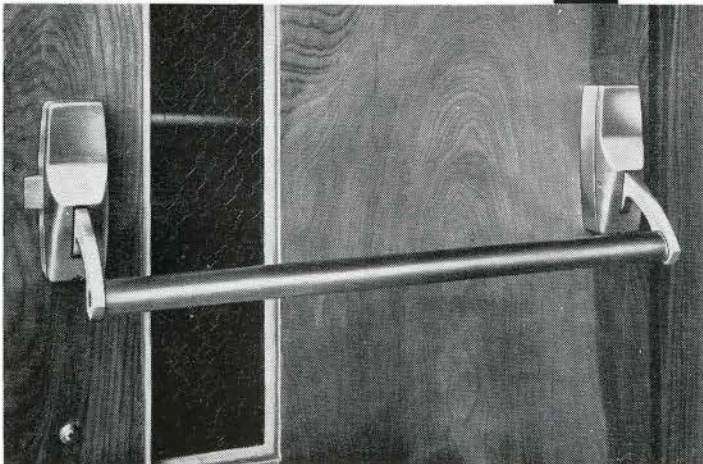
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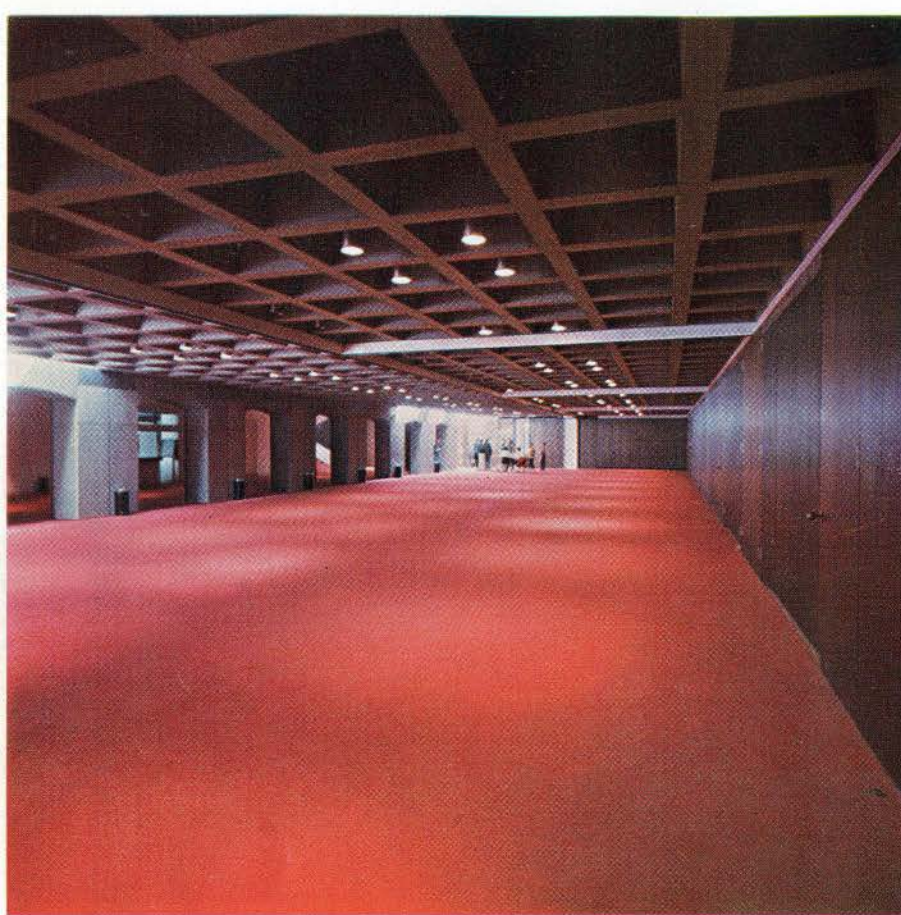
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The conditions of the competition imposed a duality of function: there was to be a shrine (Memorial Hall) to the Fathers of Confederation and there was to be a cultural centre. Moreover, the shrine should also function both as an "entrance hall" for the whole complex and as a connecting link between the main elements of the cultural centre: theatre, art gallery, museum and library. It was also essential to harmonize the new work with the strong personality of the Provincial Building, a charming Georgian survival of 1847, and to give it a worthier setting.

It quickly became evident that any attempt to compose the required spaces into a unitary building would produce a mass which would overwhelm the Provincial Building. Linear linkages, such as a hollow square to frame the Provincial Building on three sides, produced insoluble circulation problems. For the same reasons, it seemed unworkable to dispose the elements in such a way as to make the Provincial Building the central focus of the ensemble.

Since the West, or Queen Street, end of the site provided by far the largest free area, it was decided to group the new facilities there and to avoid offence to the Provincial Building by making each main element a separate building with the exception of the art gallery and the museum which, for obvious administrative reasons, became a bipartite structure with the two functions clearly articulated both in plan and elevation. For somewhat similar reasons, the library evolved into a tripartite form (central reading room rising to full building height flanked by two two-storey spaces, the upper level of one containing the open stack and the other containing the Legislative Library). The necessity of linking the main elements under cover suggested the idea of setting each of them on a terrace one storey high set into the grade to an average of one third of its height. This would also provide large sub-terrace areas for service rooms as well as covered circulation. The sub-terrace floor was slightly sunken into grade so as to minimize its bulk in the small-scale townscape of Charlottetown. Stepping its edges made the terrace even more unobtrusive.

By this time "scale" had become the dominant problem. The Provincial Building, though monumental in character, is really not very large and most of the buildings in the area preserve the delicate, almost miniature, townscape of the



early 19th Century. The three main elements: theatre, gallery/museum and library required masses comparable to the Provincial Building so it seemed advisable, for unity as well as scale, to have them rise to the exact height of the Provincial Building; certainly no higher. The idea of "shrine" also carries the connotations of "enfolded" and "protected" (or so it seemed to us). Therefore, it made sense to place the Memorial Hall on the longitudinal axis of the Provincial Building and in full view of it. Hence the other three masses would enfold the Hall on the other three sides. The resultant direct visual and pedestrian connection between these two symbolic elements suggested the idea of enhancing the Provincial Building by luring pedestrians (or parades of them) into the precinct from North and South on the axis of Great George Street, which is also the grand axis of the city, though now somewhat diminished in civic importance. Thus people would be encouraged to approach the Provincial Building on axis, then turn along a main façade on to its longitudinal axis to enter the Memorial Hall.

If the Memorial Hall were to rise above the rest, it would be too dominant. Hence the decision to feature it by keeping it lower than the other masses and giving it a very fancy, jewel-like, and above all a contrasting, architectural character. This could only be done by sinking it into the terrace on three sides, thus also fulfilling its function as an interconnecting circulation element by placing its floor on a level with the sub-terrace floor.

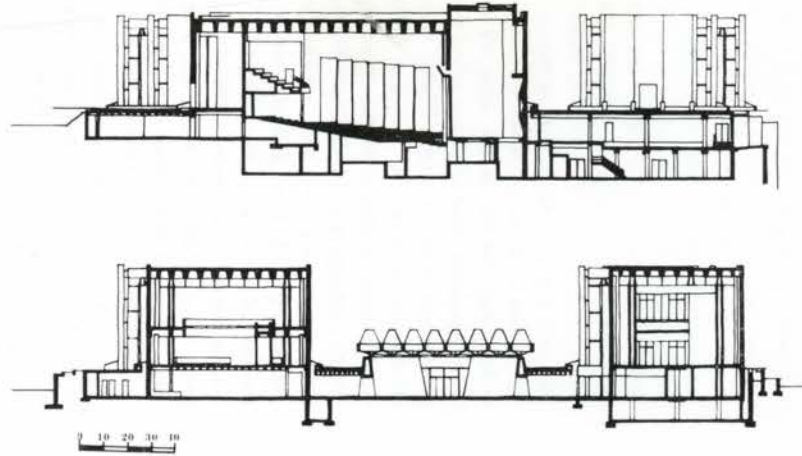
This vertical penetration of the terrace was carried further by provision of two sunken sculpture courts and by articulating the theatre, gallery/museum and library buildings with a glazed slot or gap running around their perimeters. These slots also let daylight into the sub-terrace level and provided a trough for up and down floodlighting which emphasizes the continuity of the exterior masonry walls from sub-terrace floor to coping. It was fortunately possible to enhance unity by cladding these walls in stone "placage" from the same quarry (Wallace stone) that supplied the Provincial Building more than a century ago.

The form of architectural expression that evolved for the theatre, gallery/museum and library (see photos) seemed justified on aesthetic grounds, particularly as a strongly contrasting background for the prismatic excitement of the Memorial Hall roof. But it also accorded with func-

tion reasonably well; the theatre block needed no windows and the gallery/museum required large, uninterrupted wall surfaces. Treatment of the exterior walls as vertical planes rigorously articulated from each other by thin vertical windows in recessed corners and at the articulation "necks" of the bipartite and tripartite buildings was also found suitable for the functional requirements of the library. These narrow vertical windows, always positioned to emphasize the integrity of adjacent wall planes, provide a wide variety of visual interpenetrations while reinforcing the rigorous geometry of each of the main building elements.

A word about the theatre. It was decided that future production trends in the performing arts could best be served by providing a traditional type of proscenium theatre which could be converted into a "thrust stage" theatre (e.g. Stratford). The latter form requires the seating rows to be "wrapped around" the thrust stage, at least to a certain extent. The resulting pattern of seating inevitably produces areas of forward seating to the right and left of the stage which have impossibly poor sightlines when the proscenium stage is used. These seats should not be sold, but to leave them visibly empty is almost as disconcerting for the performers as a half-empty house. The solution employed here, which was worked out with Prof. George Izenour, consists of vertical rectangular panels housed against the side walls during thrust stage productions. When the proscenium stage is used, these panels swing out on winch-driven booms to rest vertically on the floor along the outside edges of the side aisles, thus masking the blocks of unusable seats. In effect, these panels re-shape the hall to accord with either proscenium or thrust stage requirements, both visual and acoustic. Ganged, vertical louvres in the face of each panel produce the acoustic transformation. In the extended (proscenium) position the louvres are closed to produce a hard, reflective surface. In the retracted (thrust stage) position against the side walls, the louvres are open to provide an absorptive surface which will muffle echos between side walls often produced by performers on thrust stages.

Another innovation consists of enormous, mechanically-operated folding doors reaching to the ceiling between hall and lobby. In open position the hall and lobby spaces are unified by the continuity of the ceiling. *Affleck/Desbarats/Dimakopoulos/Lebensold/Sise*



LEGEND

- A. ENTRANCE TO MEMORIAL HALL & CONCOURSE
- B. ENTRANCES TO THEATRE
- C. THEATRE BOX OFFICE ENTRANCE
- D. LIBRARY ENTRANCE
- E. ART GALLERY & MUSEUM ENTRANCE
- F. SERVICE ENTRANCE, THEATRE & LIBRARY
- 1. PROVINCIAL BUILDING 1847
- 2. 1000-SEAT THEATRE
- 3. ART GALLERY
- 4. MUSEUM
- 5. SCULPTURE COURT
- 6. LECTURE THEATRE
- 7. RESTAURANT
- 8. SHIPPING, GALLERY & MUSEUM
- 9. SERVICES, GALLERY & MUSEUM
- 10. MEMORIAL HALL
- 11. FOUNTAIN, GIFT OF U.K. GOVT.
- 12. CONCOURSE CORRIDORS
- 13. LOWER THEATRE LOUNGE, CONVENTIONS
- 14. DRESSING ROOMS
- 15. LIBRARY SCULPTURE COURT
- 16. CHILDRENS LIBRARY
- 17. LEGISLATURE LIBRARY ABOVE
- 18. STACKS ABOVE
- 19. REHEARSAL ROOM
- 20. THEATRE WORKSHOP
- 21. SERVICE AREAS, LIBRARY
- 22. MAIN READING ROOM, LIBRARY
- 23. BOARD ROOM

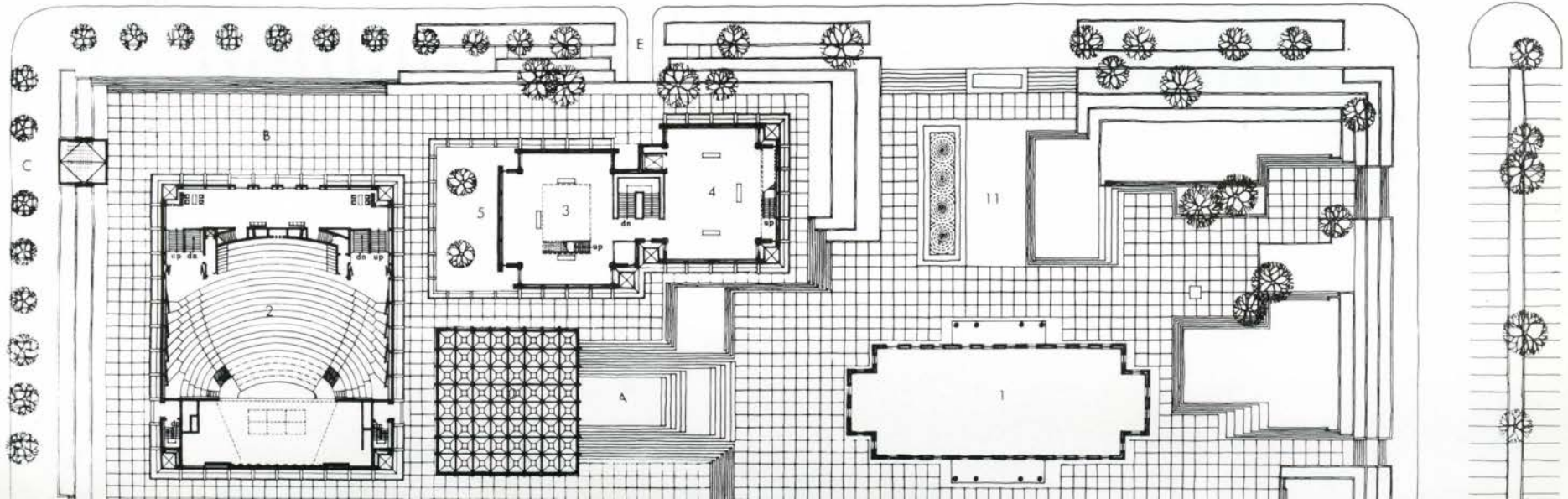
UPPER LEVEL

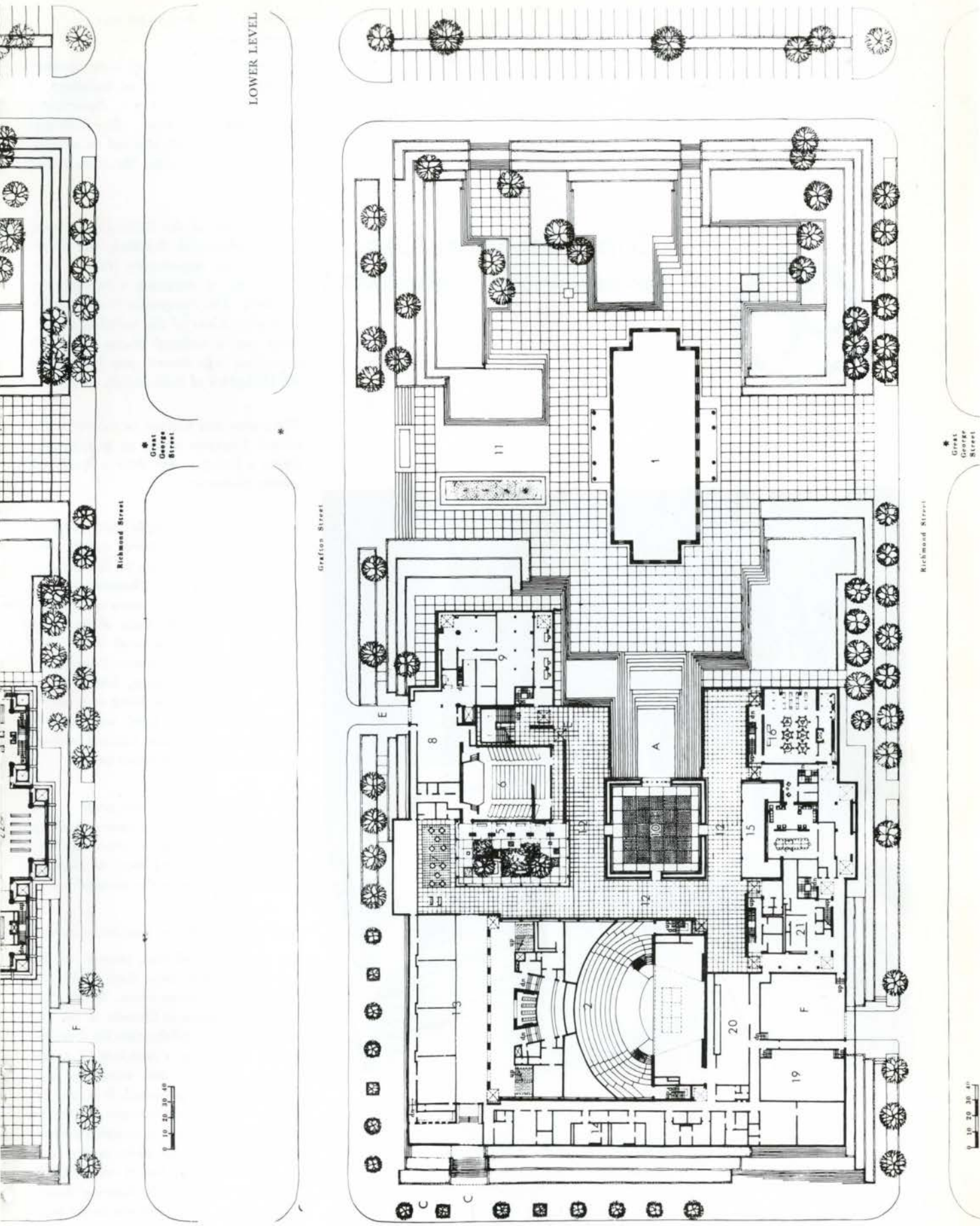


Grafton Street

Queen Street

Chapin Street





LOWER LEVEL

Richmond Street

Great George Street

Green Street

Church Street

Richmond Street

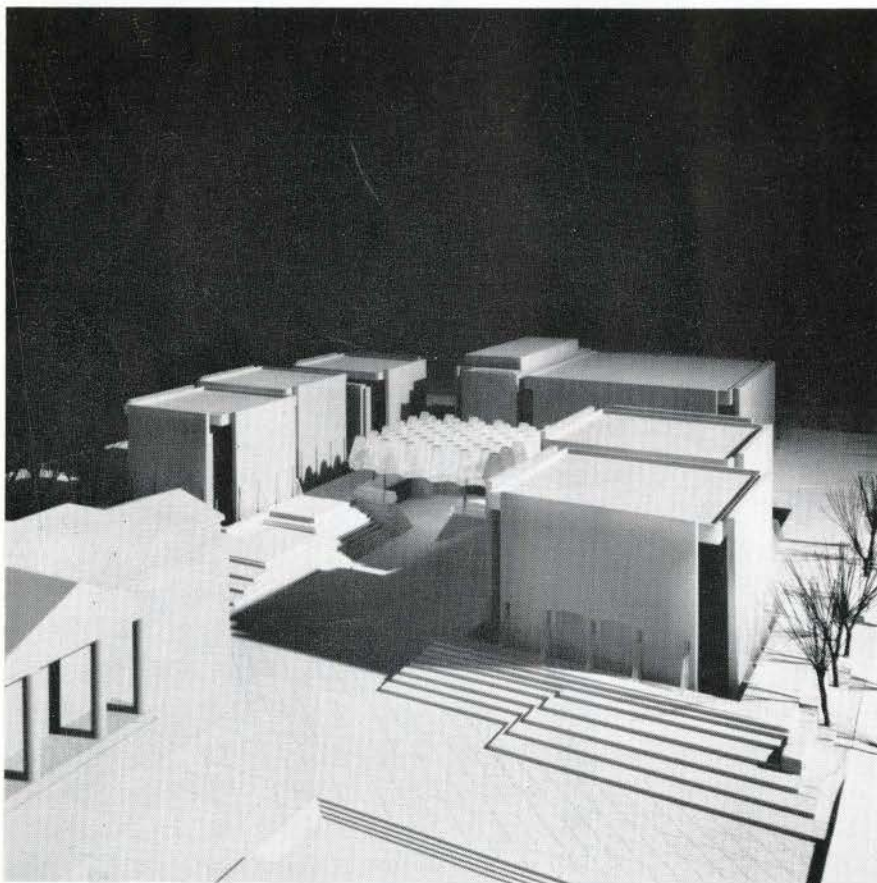
Great George Street

Green Street



Confederation Centre

An Appraisal by Douglas Shadbolt, MRAIC



*Photos: Page 24, Panda Photography
Pages 27, 31, 32, Chris Payne
Pages 20, 33 Canada Wide Feature Service Limited
Pages 19, 26, 28, 29, 30, 34, 35, 36, 37, Roger Jowett
Page 38 Photo/Story Canada Co.
Confederation Centre symbol: Art Director,
Paul Arthur/Designer, Fritz Gottschalk*

FROM THE CONDITIONS OF THE COMPETITION

The work of the architect in our modern society consists largely of buildings of an impermanent nature. Apartment houses, hotels, factories, office buildings and the like are all affected by obsolescence, and their useful life is short and predictable.

In the design of the Fathers of Confederation Memorial Building, the architect has an opportunity, rare in any generation, of designing a building for centuries. The competitor is wasting his time who thinks of this building as anything but a national shrine to which Canadians will forever pay homage as the birthplace of their nation.

The competitor will not be misled by the several functions which go to make the shrine a living rather than a dead and solemn monument.

In former times, people built columns to commemorate historic events, and Pantheons as memorials to the great of a nation. Times have changed, and, in our democratic society, even war memorials have taken the form of buildings for public use. It seemed even more appropriate for the Fathers of Confederation Memorial Building, honouring as it does the peaceful welding of a nation by negotiation and good will, that it should have a useful and cultural purpose as well as a commemorative one.

The combinations of these goals — the commemorative and permanent, housing the cultural and useful, represents the challenge to the architects of Canada who will take part in the competition.

FROM THE REPORT ON THE COMPETITION

The design placed first, seemed to the Jury of Award to more than justify the holding of the competition. As the first building to appear in Canada on the eve of the centenary celebration for Confederation, it will set a standard of architectural excellence and suitability that will not likely be surpassed. It is rare for the architect in our modern society to be set the problem of a complex permanent building on the town square of a city with a population of only 20,000. The chief charm of the winning design is its absolute appropriateness to the local scene and the city at large.

On September 1, 1964, just three years after the date the competition was announced, and one hundred years to the day from the historic meeting of the Fathers of Confederation at the Charlottetown Conference, the buildings which will commemorate that occasion were dedicated to these men. On October 6, 1964, the buildings were officially opened by Her Majesty, Queen Elizabeth II. Although the buildings are still not completed, the theatre and museum gallery have been in operation for some months, and a pattern of operation is emerging against which the accuracy of the jury of Award's Statements, the building and its program can be assessed. Confederation Centre is for me the most mature work of architecture in Canada in terms of the clarity of its concept and formal language, the sureness of its monumental composition and scale in relation to the town and the Provincial Building, the complete consistency and excellence of its detailing and the choice of materials, colors, texture, etc., and the superb craftsmanship of its execution for the most part (achieved only by relentless supervision and much blood, sweat, and tears).

The architects' solution meets the program which has been given to them with great clarity and precision, but that program itself did not and perhaps could not at the time anticipate the exact nature of the program that would in fact evolve, and hence the current and most serious criticism of the buildings lies in the fact that the formal concept of their design is not allowing enough flexibility in use. The "living" dynamic aspect of the real program is in rather strong conflict in some areas with the static monumental and finite architectural concept appropriate to the "national shrine".

1. The Organization

The Fathers of Confederation Memorial Citizens' Foundation was incorporated in 1960 under the Canadian Companies Act by sixteen eminent Canadians. After preliminary approaches to the Federal and Provincial Governments to assure themselves of support for the idea of the project, the Foundation obtained a grant from the Canada Council to launch the competition for the design of the buildings. The competition was staged in 1961 and the winners were the firm of Affleck, Desbarats, Dimakopoulos, Lebensold and Sise, Architects together with Norbert Schoenauer, planner. With a specific

project in hand, the Foundation then presented it to the Federal and Provincial Governments, who then agreed to contribute equally in the amount of 15 cents per capita each, which provided a capital fund of approximately \$5,600,000 to realize the buildings. The project has been built within this budget to its present stage.

In 1964 the Legislature of the Province of Prince Edward Island set up a Trust Company consisting of seventeen people, the Chairman and five members of which are always to be residents of Prince Edward Island. These five men form the executive of the Trust Company and the eleven others are appointed by the other provinces. The Trust Company has the specific responsibility for operating Confederation Centre. When the buildings are complete to the satisfaction of the Foundation, it was intended that the Foundation would dissolve, but it now appears that it will continue in existence in order to provide capital funds for the collections and an endowment to insure the operation of the Trust. The Trust will seek additional funds from many sources, including Provincial and Federal Governments, but the exact formula for continuing operation is not yet worked out. As 1964 was the Centennial year in Prince Edward Island, the first summer program to be staged in the Centre was financed by the Centennial Committee of the Federal Government. It is this program that has attracted national interest and which has put the first major test on the Centre's facilities. Most of this program has been accommodated in the theatre and convention facilities. The gallery museum was also involved but, in addition, it has started its independent operation in a minor way. The library is expected to open in the very near future. The crux of the problem of continuing operation seems to centre around just how much the small community of Charlottetown can absorb on the one hand, and just how much a nationally subsidized cultural program is justified in this rather remote area of Canada. The problem of operation again hinges on the essential conflict in the program between the demands of a civic centre for the city of Charlottetown, and the so-far undetermined requirements of a national shrine.

2. The Architects' Solution

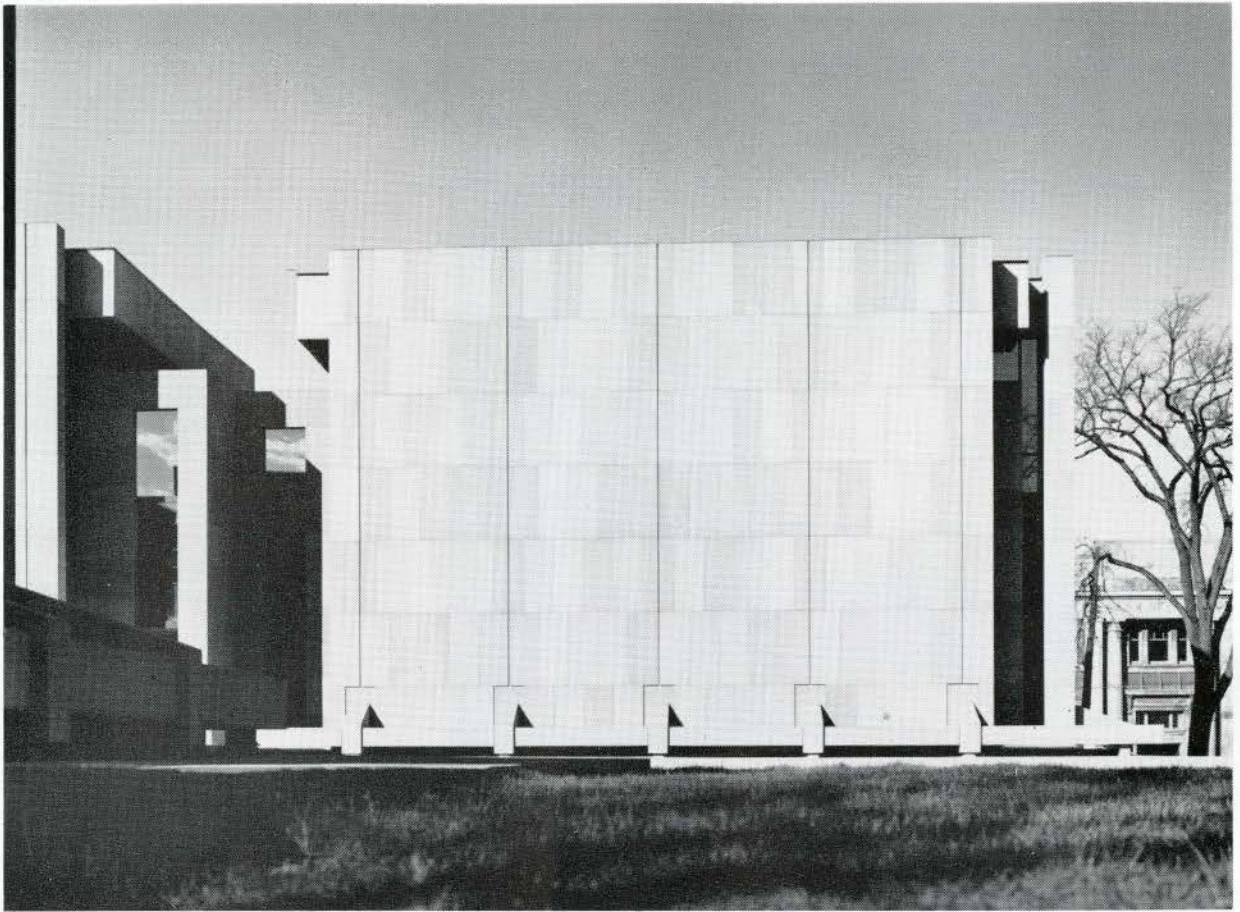
It is the exterior of these buildings that reveal at once the architects' clarity of concept and their mastery of monumen-



tal composition. The buildings are beautifully scaled to the existing Provincial Building so as not to dominate it. Except for Richmond Street to the South, and Church Street to the East, the surrounding buildings are irregular and will change over the years, while the new complex relates nicely to the adjacent buildings on these two streets. The stepped terraces that make a transition from the raised terrace level to the sidewalk around the building retain the pedestrian scale at the sidewalks and relieve the otherwise mausoleum-like quality of the whole composition with planting and carefully preserved large trees. The blank walls facing the streets, which could have been oppressive, are relieved by the very large windows in the corners of the cube-like buildings, and these reveal slot views completely through and into the rich interiors of the buildings.

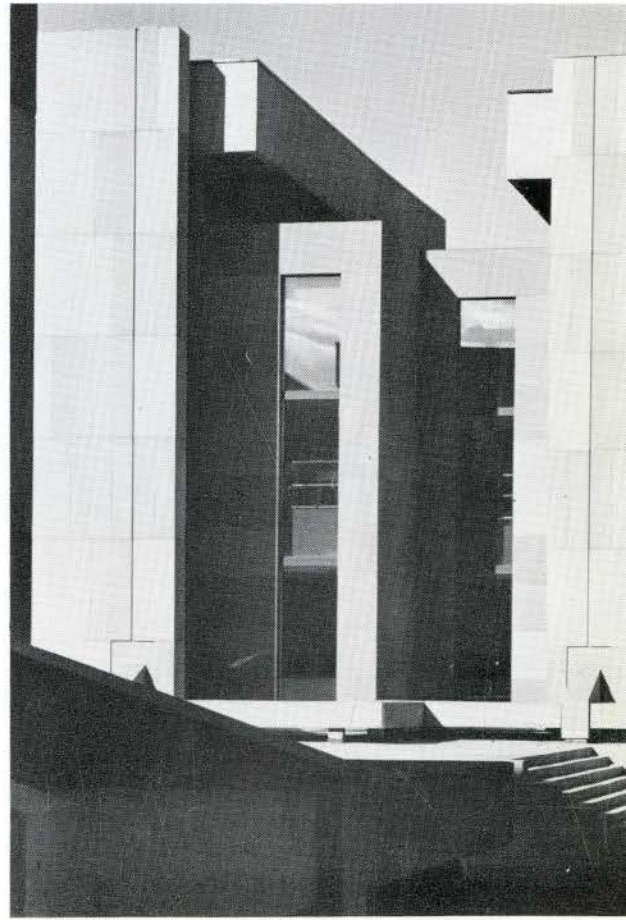
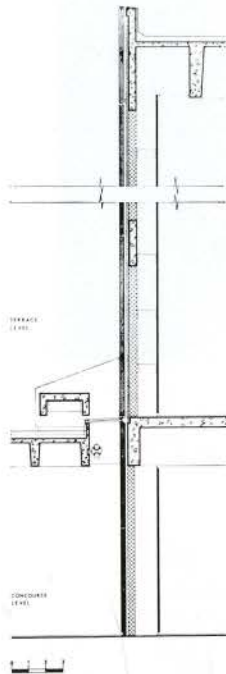
The result is that the rather solid forms dissolve and become completely planar elements as one moves around the complex, thus relieving the heaviness that would otherwise obtain. There is a great variety of sub-spaces within the U-shaped interior court as one moves around the upper level terrace. These culminate in the step terracing which forms a kind of amphitheatre in front of the Memorial Hall. The Memorial Hall's glass roof is glimpsed from all approaches and reads as a crystalline jewel in the middle of the powerfully formed grouping of buildings.

The buildings are faced in Wallace stone which is the same stone as is on the original Provincial Building. This, at present, has a greenish cast which will weather to the brown tones of the old building and afford a richer harmony with the warm buff-colored aggregate



of the concrete surfaces of the structural members which are exposed.

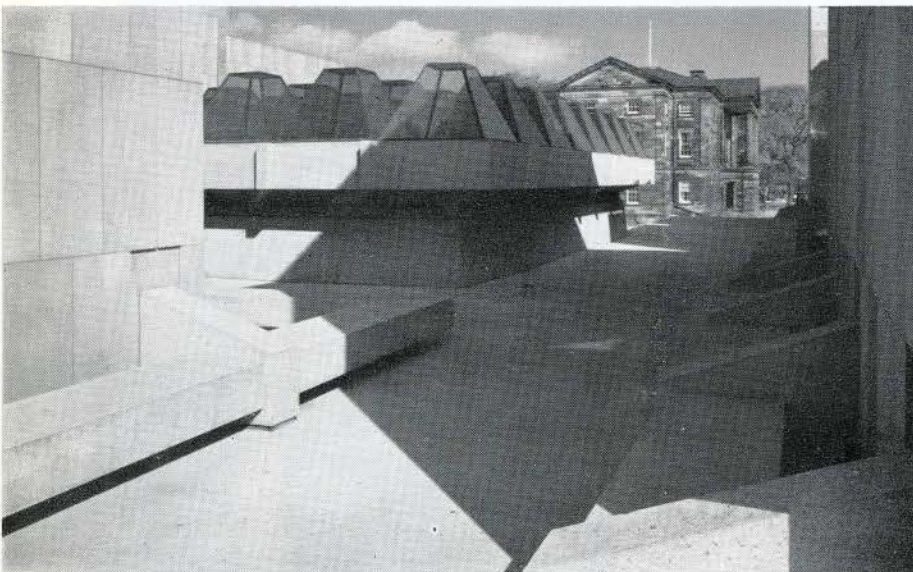
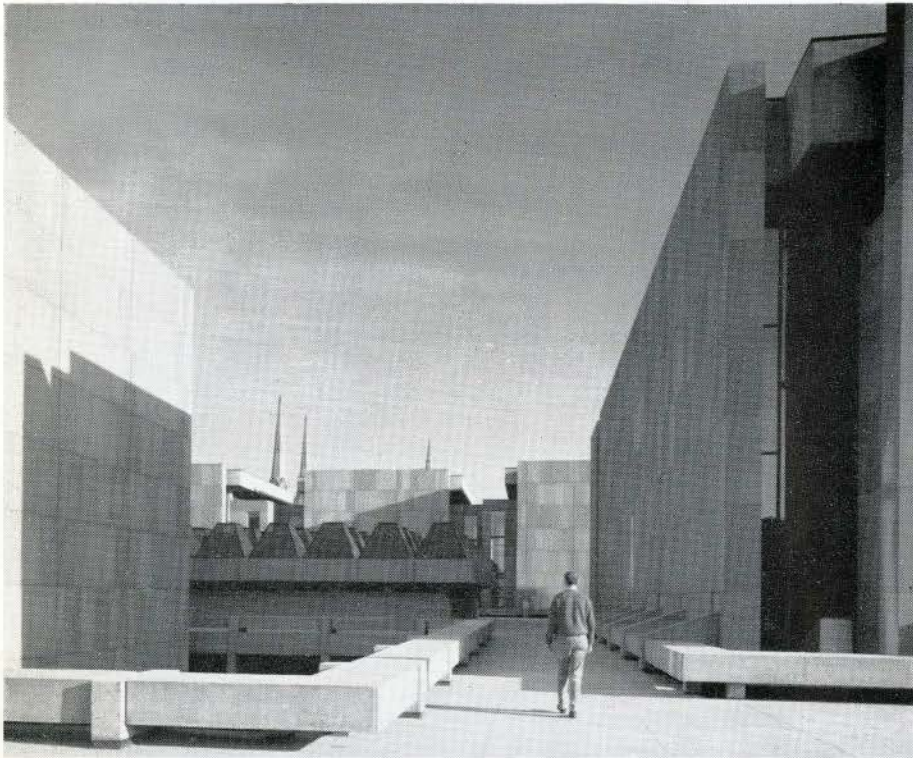
The clear cube-like box forms of the library, art gallery, and museum, and the rectangular block of the theatre have a great simplicity from the upper level. These forms read through the terrace and the limestone surfaces continue down to the lower level. To accomplish this, the upper-level terrace is never allowed to touch the sides of the cubical forms and the separation is closed by the insertion of a hidden glass strip skylight. This very ingenious detail is the key to the clarity and strength of the interior of the building in the lower level circulation area around the Memorial Hall, which connects to all the major components of the building complex. This corridor has an independent structure, the roof of which forms the terrace at the upper level. On its underside it



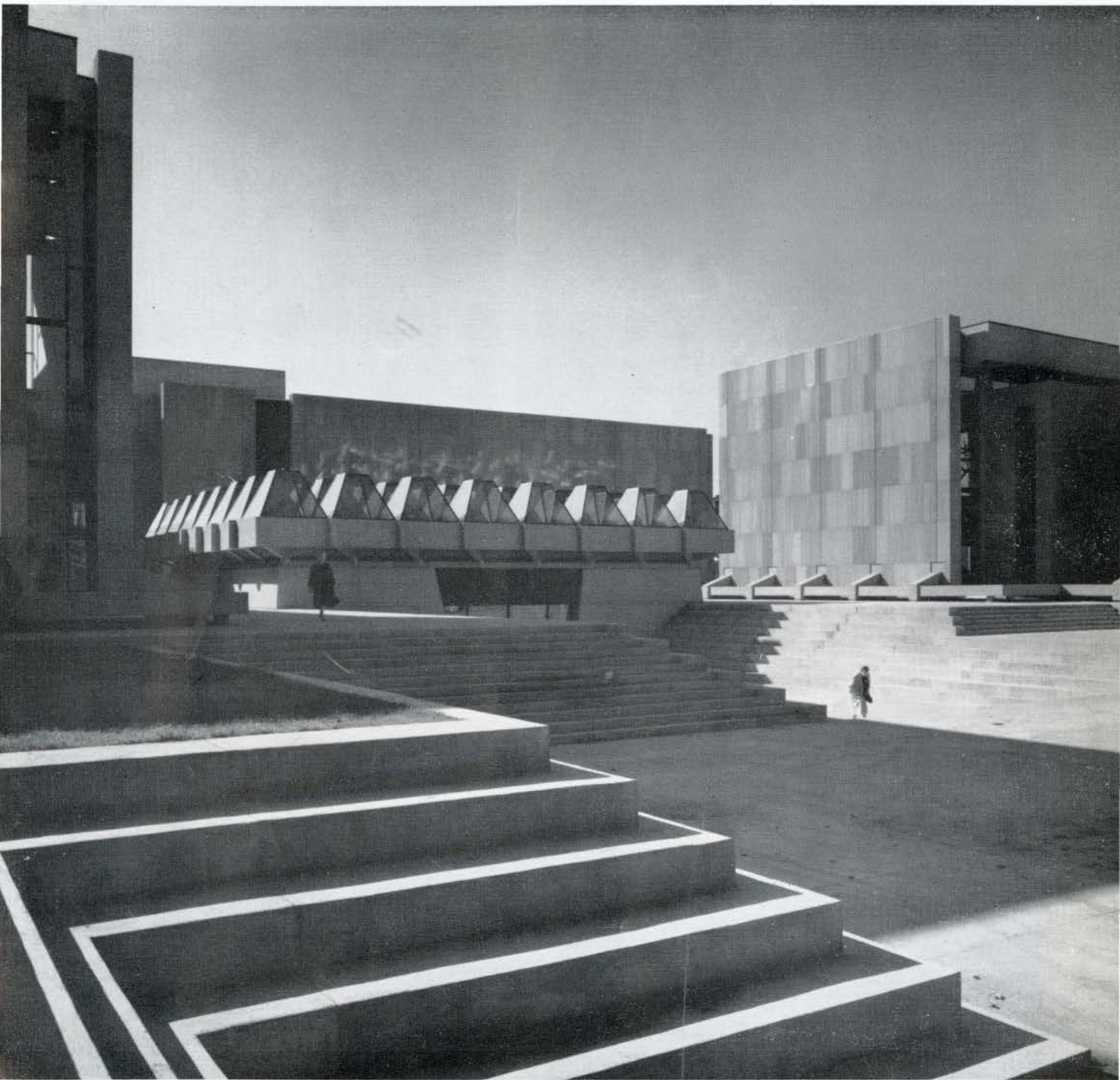
reveals a richly coffered concrete ceiling. Because it is separated from the walls, the skylight floods light against the limestone surfaces, and the ceiling appears to float. The effect is extremely rich in terms of both light and material and very dramatic. This corridor area passes two light courts which give interesting variations of view and light intensity and help to provide the points of orientation and identification in the circulation system. At the extreme points of each of the corridors, large murals have been commissioned which, when properly installed, will form additional points of identification at the entrances to the major components of the complexes. These are badly needed, as the layout of the circulation area always passes beside, but never towards or into the major buildings and hence one is never sure what is around the corner, or whether one is going in the right direction. This tendency suggests that signs will eventually appear which were never intended.

The Memorial Hall functions as the main entrance to the building and the character of it is completely different from the remainder of the complex. Its heavily battered walls are made of concrete which has been heavily incised to give pattern and scale. The glass roof floods the interior with an even warm light. The room, when complete, will be decorated with incised stone plaques bearing inscriptions of statements made by the Founding Fathers on the eve of Confederation. (The design and arrangement of these plaques is being undertaken by Paul Arthur). The only furniture in the room will be four large benches in each of the four corners. The room is bare and extremely monumental, exaggerated in particular by the effect of great mass formed by the return of the battered walls at the deep openings to the corridor circulation areas around. When one enters the glass door from the exterior amphitheatre, views are seen through these deep openings into the courtyards beyond. Glimpses of the rich color of the lower floor interior are seen from this point, together with planting and sculpture groups in the lower level courts. Once inside, looking back through the glass entrance doors, the steep terracing of the amphitheatre's sidewalls frames a view of the Provincial Building.

While the overall composition and scale of the exterior of this grouping is extremely successful, and the spaces between the buildings are rich in form, the



V







rather excessive concrete areas of the terracing suggest to me the need for some relief in the form of green planting, or a richer surfacing. While the design of this area is not yet complete and I know that there are a number of planting areas and large sculptures planned for this space, it seems to me that the area that needs particular attention is the floor of the amphitheatre area or pit in front of the entrance to the Memorial Hall. At the moment, this area is of the same surfacing as the remainder of the paving, that is, plain concrete with no pattern or scoring. One's attention is focussed entirely on two large floor drains. This area could stand to be extremely rich and continuous with the interior of the Memorial Hall which is seen through the glass wall. There is a certain heaviness to the scale of the terracing and the detail of the Memorial Hall complex itself, and one feels the need of finer detail at the human scale in this location. As it is, the building becomes rather formidable as you get down to the amphitheatre area.

While we are discussing this area, it would be well to examine the function of the Memorial Entrance Hall, particularly in relation to the primary purpose of the whole complex as a national shrine. It is intended that the old Provincial Building, which is currently used as the provincial Legislative Building will be vacated, for the most part, except for the Legislative Assembly itself. The artifacts of the actual event of Confederation will be moved into this building and the historical rooms which were called for in the original competition will be located here. This seems a most sensible arrangement, as this was the building in which the actual event took place, and one can foresee that this will become a rather important historical museum and certainly the "core" building of the "national shrine". The entrances to this building fall on the north-south axis and there is no entrance to the west end of the building which faces the new Memorial Hall. Any outside circulation between the two buildings must be made in a rather indirect way. The old building does not really share in the same plaza areas as the new building complex, and is related particularly to the north-south axis of the side streets.

It is because the artifacts of Confederation itself are so correctly located in the old building that I find it difficult to understand the function prescribed for

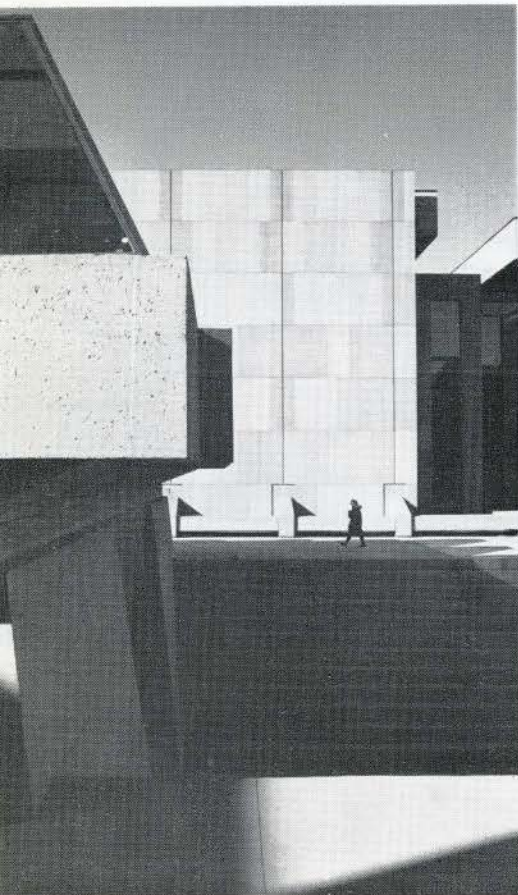
the Memorial Entrance Hall.

"as its name implies, the Memorial Entrance Hall is more than a circulation centre from which the visitor goes to various rooms. It is of the greatest importance that on entering a building, he be conscious at once of an atmosphere that suggests a great historical event in the life of Canada".

If it is to be an Entrance Hall is it an entrance to the cultural facilities which are primarily for the city of Charlottetown, or is it, on the other hand, to be an entrance to the national shrine? In my mind, there is a great ambiguity in the program on this point and one feels it on the site, although this may be a premature judgment because the room is not yet finished. To be complete, the Hall should also have somehow given access to the real "core" of the shrine, *ie.* the Provincial Building. As an entrance to the new complex, the architects have provided a grand and noble Hall. However, one wonders if it will really work. In the winter climate of PEI, there is a good possibility that the amphitheatre pit will become either a lake or a skating rink. On the other hand, unfortunately, as an entrance, it is not in the place where people want to get into the building complex.

This latter point brings into question the circulation system of the building complex as a whole. As the main shopping area of the town and the major hotels, restaurants, etc., are located in close proximity to the north-west corner of the site there is a strong tendency for foot traffic to generate from that quarter and an urge for diagonal movement through the complex in the daily life of the building. As a result, local people have discovered a convenient short circuit down through the entrance to the ticket lobby of the theatre, through the red-carpeted lower foyer and convention area to the main circulation *U* around the Memorial Hall, and hence out the "back" door into the amphitheatre pit and onto the plaza in front of the Provincial Building on Richmond Street. In the winter, the Queen Street basement theatre entrance will, very likely, be the only snow-free entrance to the building and hence is well on the way to becoming the main entrance.

As all the major building units operate off or open off the lower circulation level, it is therefore necessary to go down to go up, which makes for a lot of extra walking. Outside, having mounted the wide monumental stairs to the side plaza



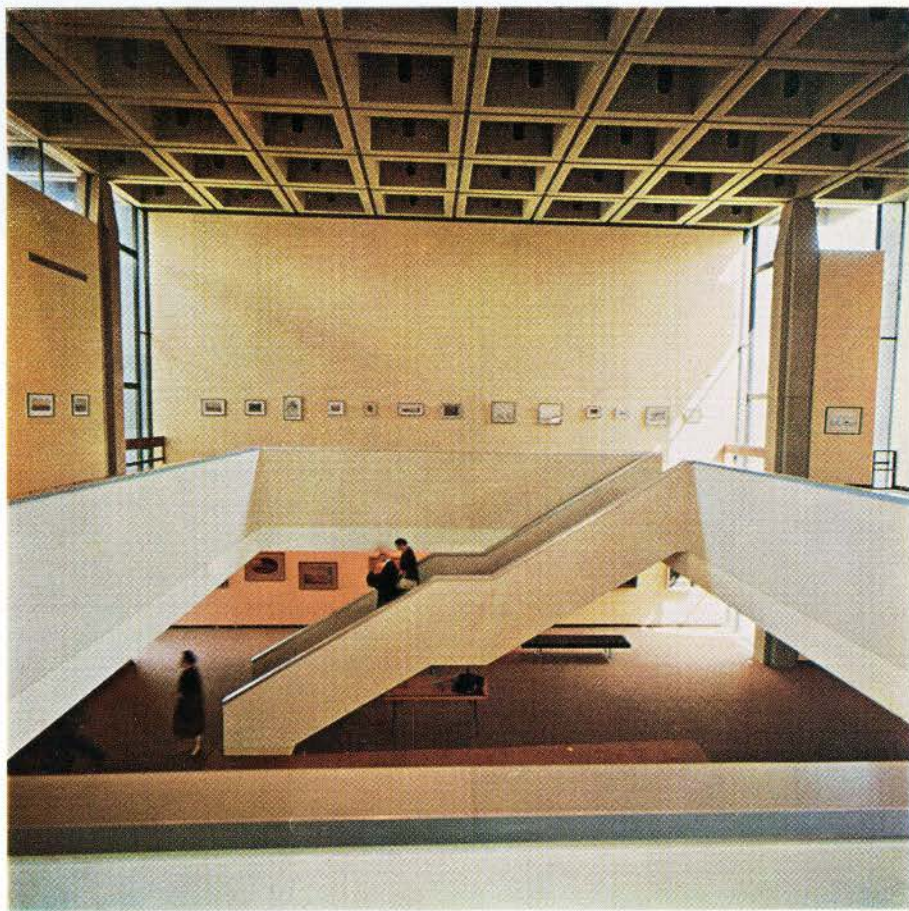
adjacent to the theatre, it is frustrating to discover that the battery of glass doors facing you on the end of the theatre are exits and not entrances (except perhaps during summer performances and that there is not another door in sight. A complete circuit of the upper level reveals only one further door—the entrance to the library on the other large plaza. This is the only direct upper level entrance to any of the buildings and it does not connect to the lower level circulation system.

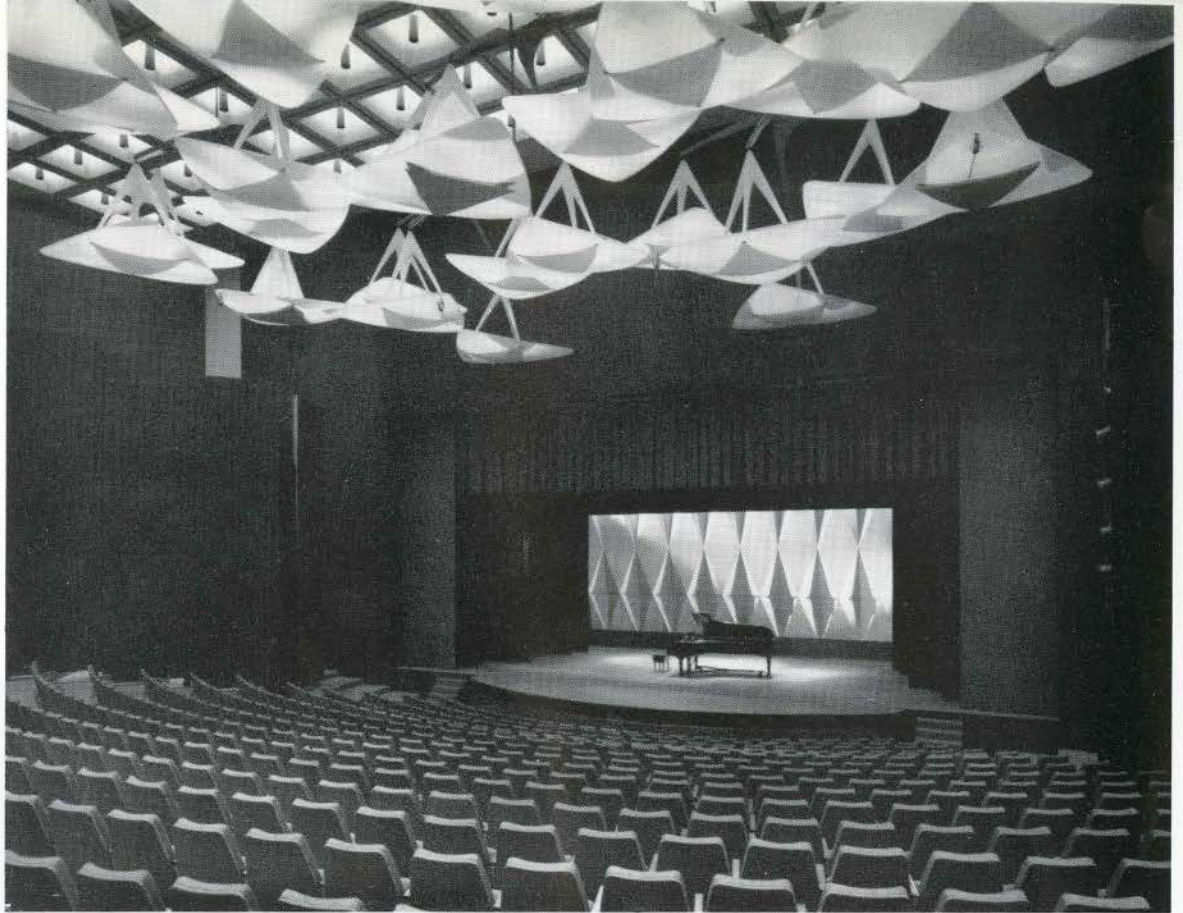
(see photograph, page 26)

The Memorial Entrance Hall will function very well as a ceremonial entrance in summer, but it is in a most unnatural place to enter the building under normal circumstances as it is at the lowest and most interior point on the site. One feels the need very strongly of a secondary entrance on Grafton Street at the upper or at an intermediate level which connects directly down into the northern extension of the underground circulation area. Certainly the interior u-shaped circulation is a sensible and natural development in an extreme climate, but surely it should be extended to the perimeter sidewalks of the building so that pedestrian access can be assured in all weather, particularly when these buildings are to be used in the daily life of the city of Charlottetown.

3. *The Art Gallery Museum*

The Art Gallery Museum is probably the most contentious part of the whole complex. The gallery is skillfully composed as a series of truly magnificent spaces with great variety and richness. The formal concept of the "universal space", with its great blank walls, provides uninterrupted hanging space on the exterior walls and these are clearly articulated by the glass corners of the building, which provide interesting views out into the court and into the surrounding areas. The composition is quiet and dignified and provides a fine background for the display of paintings. The surfaces and colours are natural and rich and the overall quality of the light is very pleasant indeed on a gray day. Sunlight may produce problems. However, one feels that the architectural concept requires that only very large paintings of great quality be hung here. Unfortunately, the large open spaces do not lend themselves easily to subdivision, and the moveable screens which have been provided are not up to the standard of detailing consistent with that of the main building. Apparently the artificial lighting is based





on the architects' concept of display and there are whole areas of the gallery which have no artificial light and no means of obtaining it. It is on this level that the evolving program comes into conflict with the architectural concept and solution.

It appears that an art program of the type required for Prince Edward Island involves a great deal of amateur promotion and particular concentration on the age group under thirty. Already, there are active children's art classes involving some one hundred and thirty children, a development not anticipated in the original program, and which is now operating from the basement store rooms. The museum program, as it is developing, seems to require an enormous number of small artifacts to be displayed together with a large quantity of mediocre quality but highly interesting historical objects and paintings, etc. These are as described in the competition conditions, but the operating budget so far has not allowed them to be collected, sorted, arranged and designed into an installation equal to the visual quality of the building. As a result, each is made to look ridiculous. The original program did not apparently allow enough office space, and this is already filled to bulg-

ing. The art program, under the direction of a very competent and energetic curator, will flourish despite budgetary and any other problems that confront it, and unless something drastic is done to restore order this very lively activity will prove to be a source of continual architectural embarrassment.

4. The Theatre

The universal space concept common to all the principal areas of the complex applies also in the theatre. A single roof covers the cubical space of the main hall, plus the upper level lobby, to form a simple unified room. The unity of space is accomplished by opening large, mechanically folding doors. These are at the sides of the theatre to the rear, at the approaches to the split level stair access from the hall to the upper level lobby. These doors are opened during intermissions and before or on conclusion of the performance, and provide a vast opening through which the crowds file out of the theatre.

The hall has a very simple quality, consistent with the other parts of the building complex. It is richly colored and textured, but very restrained, and the whole effect is one of quiet dignity. This restraint is somewhat interrupted by the



introduction of roughly triangular but free-shaped plastic hanging clouds which have been introduced for acoustical reasons. I find these, with their light color and complicated wish-bone supports, seen edge-on from the seating areas, to be a very disturbing feature of this otherwise beautiful room.

While we did not see or hear a performance here, we understand that the acoustics are excellent and that, in general, the hall is a success. One criticism I have heard from the production manager of one of the companies which have played the house, is that the stage proscenium is too wide and that the position of the balcony forces the actor to play either to the balcony or to the orchestra, but makes it impossible for him to play to the audience as a whole. However, I expect that the proportions of the stage derive from multi-use considerations which go beyond the requirements of a single theatrical company.

The lower level lobby is a rich and beautiful space serving not only the theatre but the convention area meeting rooms along the north side. This is a very successful solution to the program requirement and apparently functions well.

5. Library

The library consists of three large cubical spaces, two of which have mezzanines, leaving the third and central one open as a single, high ceilinged room. The offset massing of the cubical forms, the planar handling of the transition areas between these forms, and the corner columns and wall intersections, make for a very rich articulation of spaces and provide a series of very beautiful tall, narrow windows which offer wonderful views into the court area and out on to the street on the other side. These slots admit an enormous amount of light and the rich interior quality is enhanced by sunlight and the ensuing patterns. The open-stack system is located under and on the mezzanines, and the central high room is the reading room. This is a monumental and perhaps extravagant solution but a beautiful one.

The program requirement of a direct entry into the public library has induced the architects to place an entrance door on the plaza in the southwest corner of the complex, to provide entry directly through revolving doors onto the carpeted floor of the low-ceiling area next to the charging desk. With the vast circulation area provided on the lower level

and its terrazzo floors, cloak rooms, toilets, etc., again one feels that the entrance problem is not correctly resolved. This entrance will probably be used only in the summer and then only on the days it is not raining. The children's library, however, is located at the lower level although it is most difficult to find.

6. The Supporting Services

The clarity of the architectural concept in terms of the six major cube-like universal spaces has been made possible by the tucking away of all the supporting and minor services into the areas under the terrace. While this has been very neatly handled, one questions the effect of a subterranean existence on the people who have to work in these spaces, particularly where the operating staff are located. With the slope of the site and their location on an outside wall, the spaces are above grade and they could have had direct daylight. Working, as they do, with the incessant hiss of the air conditioning system and the hum of the fluorescent light ballasts, these people must feel the need for regular excursions upstairs to the vast open spaces of the library, museum, and art galleries. The circulation which results from this kind of planning must take weeks to master.

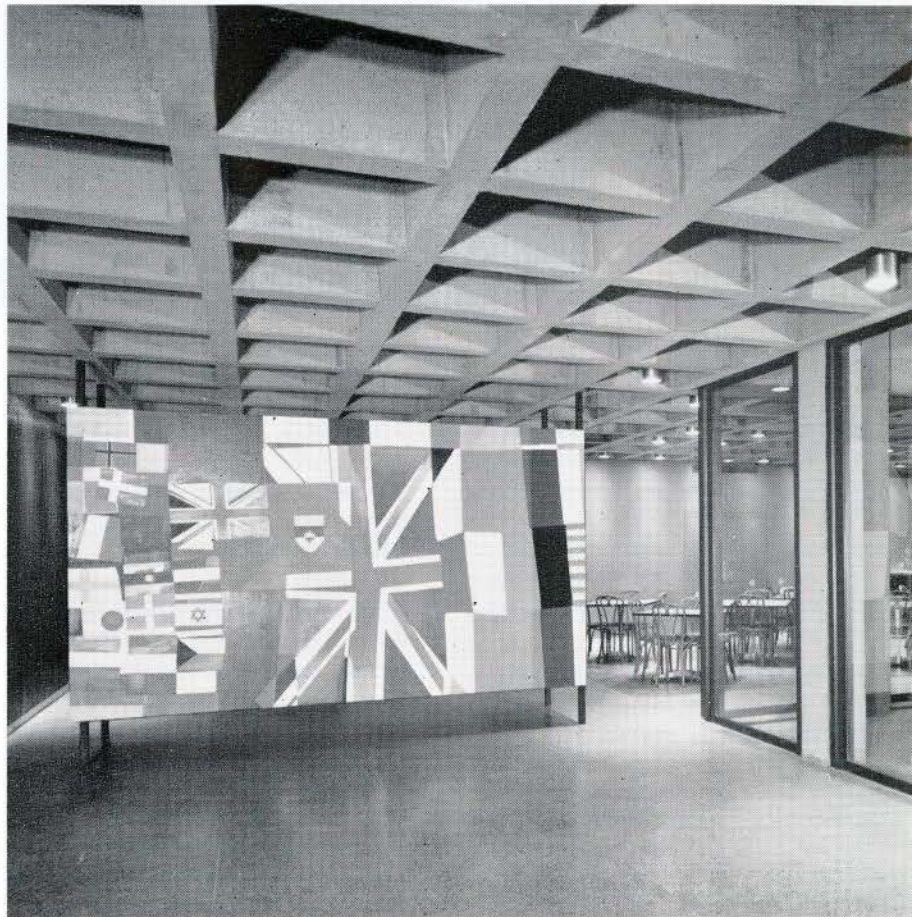
7. The Commissioned Art Works

Three major mural-paintings have so far been commissioned as works of art for this building. These have been executed by Jack Shadbolt, Jean Paul Lemieux, and John Fox. The most controversial one, based as it is on the theme of the Canadian flag, is that of Jack Shadbolt's. In my highly prejudiced opinion it is the most successful of the three because of its great strength of color and the boldness of its design. It is strong enough to match the architecture and, in its original setting where the colors of the surrounding walls of the cafeteria were matched to it, it was boldly impressive and exactly what was required to enliven the strong corridor spaces at the lower level. The other murals, so far, have not been installed properly and the lighting on them is inadequate. They are much softer in their color and more representational in their form and read more like large paintings than as indigenous parts of the architectural composition. The Shadbolt mural has been moved many times and is now located at the entrance to the children's gallery where it may help to establish a strong point of reference for the children to find their way to that facility.

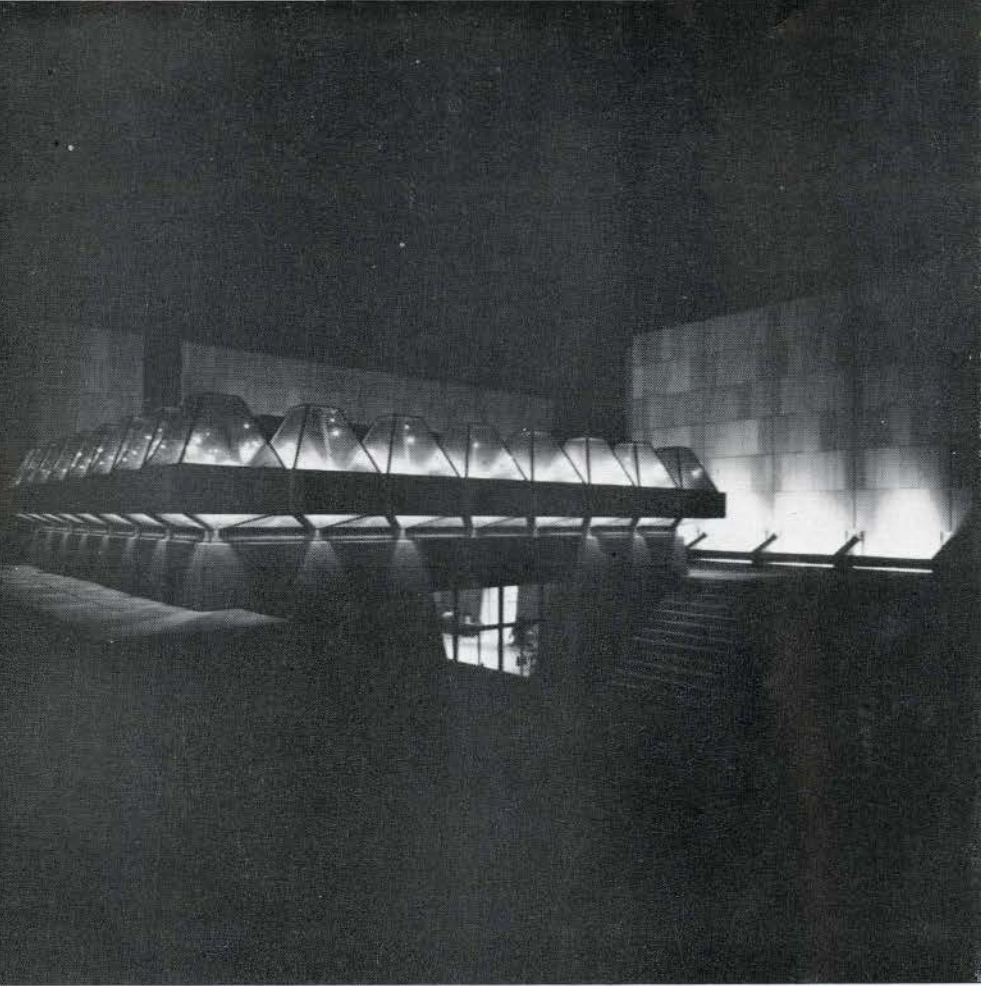
B. Summary

In the course of this criticism of the group of buildings, a large number of the complaints which I have raised stem from the discrepancy between the program that was given the architect in the first place and the program that is evolving as the building is put to use. Most of these could be alleviated now by liberal doses of money, both in terms of additional capital funds and appropriate operating budgets, that will facilitate the correction of what have become deficiencies that will provide the superb collections that the buildings warrant, and that will insure the maintenance of a very high level of design in all matters of operation consistent with that of the building. It is to be hoped that the Foundation and Trust will be able to find both the means to complete this fine complex, and the formula for its operation which will do just that.

Professor Douglas Shadbolt is Director of the School of Architecture at the Nova Scotia Technical College, Halifax, Nova Scotia.







Centre de Confédération

critique par Yvon LeBlanc

“Un diamant chatoyant dans un écrin de pierre”. C'est bien l'effet que doit donner de nuit la vue de cet ensemble d'édifices, aux pans de murs éclairés par le bas, et entourant le Hall d'Honneur dont le toit, composé de pyramides tronquées, laisse passer la lumière par de multiples facettes..

Ce complexe architectural en effet se présente comme une série de blocs cubiques aux rectangulaires, dont les coins brisés recèlent de grandes fenêtres en retrait, reposant sur une grande esplanade, qui devient un “podium”, surplombant la rue de trois côtés et descendant de l'autre en séries graduées de marches et de paliers vers le Palais Législatif Provincial. Cet édifice de style harmonieux du début du 19^e siècle est dans l'axe de la Salle Commémorative ou Hall d'Honneur et est le point de mire vers lequel se tourne tout l'ensemble: c'est là qu'en 1864 eut lieu la première conférence qui devait aboutir en 1867 à la Confédération Canadienne. Qu'il soit dit en passant que l'on ne peut que déplorer le fait que cet édifice n'ait pas été nettoyé à l'occasion des fêtes de cette année. Espérons que cela se fera pour 1967.



L'agencement intérieur de ce monument commémoratif est assez impressionnant par sa logique, sa simplicité, et sa commodité. Tous les éléments sont facilement accessibles en partant du Hall d'Honneur qui devient ainsi le foyer d'entrée de l'ensemble. Les trois éléments principaux du complexe, — la Galerie d'Exposition, la Salle de Spectacle et la Bibliothèque —, peuvent être au besoin isolés et ouverts au public indépendamment les uns des autres. Le théâtre et la Bibliothèque, sont aussi accessibles directement de l'extérieur.

Entourant le Hall d'Honneur sur trois de ses côtés un large passage s'ouvre sur les divers éléments de l'ensemble. A gauche ce passage, éclairé pour une petite cour intérieure, donne sur la Bibliothèque formée de trois cubes dont celui du milieu fait fonction de salle de Lecture. Cette Bibliothèque servira évidemment aux besoins du public mais contiendra aussi les Archives de la Province. A droite ce passage mène vers une petite salle de conférence et, au niveau supérieur, la Galerie d'Exposition formée par les deux cubes donnant sur la rue Grafton au nord.

Cette Galerie-Musée est de conception assez originale et permettra l'exposition d'une très grande variété d'objets. L'une des salles est de double hauteur avec mezzanine tout autour tandis que les deux autres salles sont superposées. Ce qui donne à ces salles leur originalité c'est que sur deux côtés les planchers n'aboutissent pas aux murs latéraux mais se terminent en balustrade à plusieurs pieds en déça; ceci permettra d'éclairer ces murs d'une façon directe mais discrète et aussi d'exposer de très très grandes toiles au besoin.

Les plafonds en caissons de béton sont d'une intérêt tout particulier: d'abord ils expriment franchement la structure et démontrent que le béton est en train de devenir un matériau aussi noble que la pierre. Plafonds et murs se continuent à l'extérieur et demeurent visibles de l'intérieur grâce aux bandes de fenêtres: horizontales sur deux côtés au plafond et verticales aux quatre coins. Ceci donne une impression de continuité de l'espace intérieur et extérieur, constituant ainsi un des aspects les plus intéressants de tout cet ensemble et contribuant énormément à ses qualités esthétiques. Ainsi les vides entre les volumes deviennent vivants et aussi importants que les bâtisses elles-mêmes.

En face de l'entrée le Hall d'Honneur s'ouvre sur un passage transversal qui, à gauche, conduit vers la Bibliothèque et l'arrière-scène et, à droite, vers le foyer du théâtre et le petit restaurant en longeant une autre cour intérieure destinée à recevoir des sculptures éventuellement; autre exemple d'interpénétration de l'espace intérieur et extérieur.

Le foyer de la Salle de Spectacle est très accueillant avec son épais tapis rouge-aztec et ses boiseries sombres. Ce qui frappe ici encore c'est la grande sobriété. Le plafond, ici encore en caissons de béton, ne fait qu'ajouter à la chaleur de l'ensemble. L'aménagement de ce foyer en vue de divers usages fait preuve d'intelligence. Une moitié de ce foyer peut être subdivisée, au moyen de cloisons coulissantes, en plusieurs salles de diverses grandeurs et relativement bien insonorisées; ceci en vue de réunions particulières à l'occasion de congrès, etc... L'avantage de cet arrangement fut évident un soir de gala lors du Festival d'art Dramatique, le premier événement à avoir lieu dans ce théâtre: le buffet put être complètement préparé et étalé à loisir à l'abri de ces cloisons alors que le foyer lui-même

était occupé par le public. Cette partie du foyer a aussi l'avantage de communiquer directement avec la cuisine du restaurant. Ce foyer est, comme il se doit, le point de repère du théâtre et du public qui y vient. Il donne évidemment sur la salle et sur les services destinés au public: guichets, vestiaires, toilettes, mais aussi sur un long passage menant à la scène et à l'arrière-scène, et au long duquel sont disposés toutes les pièces de service: bureaux, loges des artistes, toilettes, ateliers, loges de maquillage, etc. — toutes de plein-pied avec la scène, ce qui est très important.

Au-dessus de ce foyer du public se trouve le foyer d'apparat, au plafond haut, aux grandes fenêtres allant du plancher au plafond, où l'on retrouve cette continuité d'espace vers l'extérieur. C'est le "piano nobile" où, espérons le, viendront prendre place des oeuvres d'art de grande valeur. Ici encore le plafond en caissons de béton se continue vers l'extérieur aussi bien que dans la salle elle-même à laquelle on accède par les paliers intermédiaires des escaliers reliant les deux foyers.

Ce qui frappe tout d'abord dans cette enceinte de mille places c'est son peu de ressemblance avec une salle de théâtre conventionnelle: pas de cadre de scène bien défini, pas de lustre au plafond, pas de décorations aux murs, pas d'allée centrale, mais des rangées de sièges, s'étendant d'un côté à l'autre sans interruption pour déboucher sur de large allées latérales. Cet arrangement des sièges ne fait que faire son apparition en Amérique du Nord mais est en usage en Allemagne depuis bientôt un siècle: depuis le théâtre de Wagner à Bayreuth. Cette "détéâtralisation", si l'on peut dire, est assez logique puisque cette salle sera appelée à accueillir toutes sortes d'activités autres que le théâtre. Et pourtant l'aspect de la salle retient l'essentiel de l'intérêt exceptionnel que doit avoir une salle de spectacle: le rouge vif des tapis contraste vivement, mais sans heurt, avec le noir des murs et les boiseries sombres du mur de la scène. Les caissons de béton du plafond s'estompent discrètement au delà des "nuages" acoustiques qui flottent au-dessus d'une partie de la salle. Ces "nuages" en matière plastique et de forme triangulaire aux lignes arrondies ont été conçus comme élément décoratif aussi bien qu'utilitaire.

Cette salle est aussi remarquable par ses possibilités de transformation pour accommoder divers genres de spectacles. En

plus de son usage comme théâtre ordinaire, avec scène faisant face à la salle, elle pourra devenir un amphithéâtre comportant une profonde avant-scène s'avancant dans le public qui l'entoure de trois côtés: ceci au moyen de parois latérales en panneaux mobiles, et d'un ascenseur dans la fosse d'orchestre permettant d'escamoter les premiers rangs de sièges.

Les qualités acoustiques de la Salle semblent être très acceptables. L'on ne peut cependant, en juger d'une façon définitive avant d'y avoir entendu de la musique d'orchestre. D'ailleurs si des problèmes se présentent de ce côté il serait relativement facile d'y remédier, du moins en ce qui concerne la direction du son, puisque la position des panneaux latéraux et des nuages acoustiques est réglable.

La scène elle-même est de bonne grandeur et bien équipée avec gril au dessus et trappe au-dessous. L'équipement électrique est tout à fait suffisant. En plus des équipes de lumières sur la scène même, deux tours à l'arrière de la salle contiennent des batteries imposantes de projecteurs de même que des postes de contrôle pour la radio et la télévision. George Izenour, autorité reconnue en fait d'aménagement de théâtres, a dit de cette salle qu'elle était "le plus remarquable petit théâtre dans l'hémisphère occidental".

Sans aller aussi loin nous pouvons dire sans crainte que nous nous trouvons en présence d'une oeuvre architecturale de réelle valeur. Quelles en sont les qualités dominantes? Sûrement l'unité, la sobriété et l'intelligence. La répétition de certaines formes: le cube, les pans coupés, les fenêtres verticales en retrait aux coins des blocs, les plafonds en caissons, etc., ne font que resserrer la composition, et donnent un caractère particulier à tout l'ensemble même si l'aspect, quelque peu inattendu dans cette partie du monde, n'est pas particulièrement original. On y voit l'influence de l'architecte américain Rudolf qui fait de plus en plus école, parmi les architectes américains surtout. Mais ceci n'enlève rien à la valeur esthétique de cette oeuvre dont tout le Canada peut s'enorgueillir.

Structure

by John Adjeleian, P.Eng.

Adjeleian and Associates

Concrete was selected as the structural material for the project. Prince Edward Island aggregates are hard igneous beach gravels containing a wide range of particle colors but of predominately reddish hue. The warm tone of the concrete which results once the aggregate has been exposed by sandblasting is of great architectural advantage.

Concrete strengths of 3000, 4000, and 5000 p. s. i. were used, the 5000 p. s. i. concrete being required in the heavily loaded terrace diagrids and in the prestressed theatre roof. Water and air contents were carefully controlled for strength and durability with particular attention being given to concrete exposed to the weather.

The foundations of the project are spread footings bearing on dense silty red sand and partially consolidated red sandstone.

The lower floors in all buildings were flat slab construction where possible and beam and slab elsewhere, generally on an 18' by 18' bay size. The main floor of the theatre is a curved slab supported by poured concrete mechanical plenum walls and three deep beams that cantilever to the edge of the forestage elevator. Elimination of columns at the elevator allows the large movable seat frames to be pushed off the elevator for storage beneath the main floor. The underside of the slab is smooth and the top stepped to accommodate the seating. The Library and Art Gallery mezzanines are 36' by 36' and 48' by 48' respectively. In the former the floors are diagrid beam systems and in the latter 48' beams spanning to girders. Both mezzanines are carried by cruciform shaped columns at each corner.

The cruciform cross section was chosen to provide sufficient bending capacity to resist the large movements produced by the mezzanine girders, while maintaining a column face width which related to the widths of the mezzanine girders and the roof diagrid ribs above. It was necessary to use No. 14S bars of 75,000 p. s. i. yield and 5000 p. s. i. concrete in these

columns to maintain the correct proportions.

The theatre balcony consists of a folded plate seat slab supported at the ends by poured concrete light and sound control towers and spanning across two deep triangular concrete trusses cantilevered from vertical ribs in the rear wall. A slab at the lower horizontal chords of the triangular trusses provides a floor for the projection room contained inside the balcony.

The side walls of the buildings are generally 12" x 18" columns at 12' centres, with narrow beams and concrete block infill supporting the stone cladding. The entire outside surface is insulated, with brackets extending through the insulation to support the stone outside an airspace — on the "rain-screen" principal. The side walls of the theatre where the movable wall panels occur (most of the length of the main theatre space) are poured concrete. The interior face is broken up into vertical facets at varying angles in order to orient the wall mounted panel hoists. These lift the movable panels out into position on the aisle when the theatre is narrowed or hold them flat against the wall when the theatre is widened.

The face of the rear wall of the stage is also broken up into an arrangement of facets. The pattern was established by the acoustic consultants to disperse the sounds produced by an orchestra on stage throughout the body of the theatre.

The main roofs of the buildings are diagrids of 18" wide ribs at 6'-0" centres, spanning 36'-0" x 36'-0" in the Library, 48'-0" x 48'-0" in the Art Gallery, and 108' x 114' in the Theatre. The ribs are 40", 52", and 64" deep in Library, Art Gallery and Theatre respectively.

The Library and Art Gallery roof diagrids are reinforced concrete and are supported by the four cruciform columns extending up from the mezzanines below. The diagrid ribs are cantilevered 6'-0" each way beyond the columns. Connection to the walls is by 4" slabs doubly hinged to prevent application of uplift forces on the wall structure due to deflection of the main diagrid, and the result-

ing additional loads in the main columns and heavy negative bending in the ribs over the columns. The walls provide lateral stability to the structures.

The theatre roof is supported on three sides by the walls and on the fourth side by the proscenium arch over the stage. The roof is post-tensioned each way using Freyssinet cables. The cables are draped to form a parabolic bowl-like surface. The main ribs at the centre of the roof have two 12/.50 cables and three 12/.275 cables. This reduces to two 12/.275 cables in the lightly loaded ribs adjacent to the supporting walls. Considerable difficulty was experienced in placing the cables in the forms without damaging the sheathing. However, it is interesting to note that the cost per square foot of reinforcing and prestressing this roof was less than the cost of reinforcing either of the other roofs. The ribs have a groove formed in the bottom to present a coffered appearance. This was used to support the rib stirrups and prevented any reinforcement from accidentally dropping on the form.

The Memorial Hall, which forms the main entrance and focal point of the project, consists of four hollow slanting concrete walls supporting a 60' by 60' open reinforced concrete diagrid. The diagrid beams in turn support the tempered glass pyramids forming the roof. The hollow walls contain the ductwork which copes with the heat loss in this area. Surrounding the Memorial Hall, at a level below the roof diagrid, is the coffered terrace slab. Formed of two way ribs on 3'-0" centres, it spans from the tapered walls of the Memorial Hall across to the buttresses framing into and stiffening the main walls of the buildings. This diagrid is heavily loaded with the waterproofing and finish materials above. In order to maintain a uniform rib depth of 22", it was necessary to use 5000 p. s. i. concrete and 60,000 p. s. i. reinforcement in the design.

This unusual project presented several interesting structural problems. Its successful completion reflects the close architect-engineer co-operation required to produce quality exposed concrete structures.

Lighting

by William M. C. Lam, Consultant:
Coordinator of Lighting & Architecture

Composition, circulation, orientation as interpreted by lighting consultant.

The architectural concept: masses of library, museum and theater rise out of the ground from a concourse level which, in the local climate, is the major circulation path much of the year.

The daylight design: By daylight the above ground organization of masses is clear and powerful. What may not be apparent at first glance, is the superb daylight design at concourse level. The narrow skylights surrounding each block allow daylight to define the continuity of those massive walls from concourse floor to skyline . . . a relationship that can be best seen through the open course, but can always be sensed throughout the underground passages so that the underground and grade level orientation tends to be linked.

Supplementary daytime illumination fills out areas not sufficiently reached by daylight, without nullifying the dominance of the natural lit areas. The obvious nighttime design solution was simply to reverse the daylight effect.

The structural system and the individual spaces

The 6x6 waffle grid is dominant within each of the individual buildings. Even if it were not a visible common denominator on the exterior, consistent handling of the grid had to be the starting point for the lighting design . . . despite the direct conflict between a uniform solution and the varying requirements of theater, museum, library. The conflicting demands for unity and difference were resolved by using the same lighting fixture within each coffer, and controlling the appearance of the structure, spaces, and the lighting quality by utilizing variations in lamp sizes, and carefully developed switching and dim-

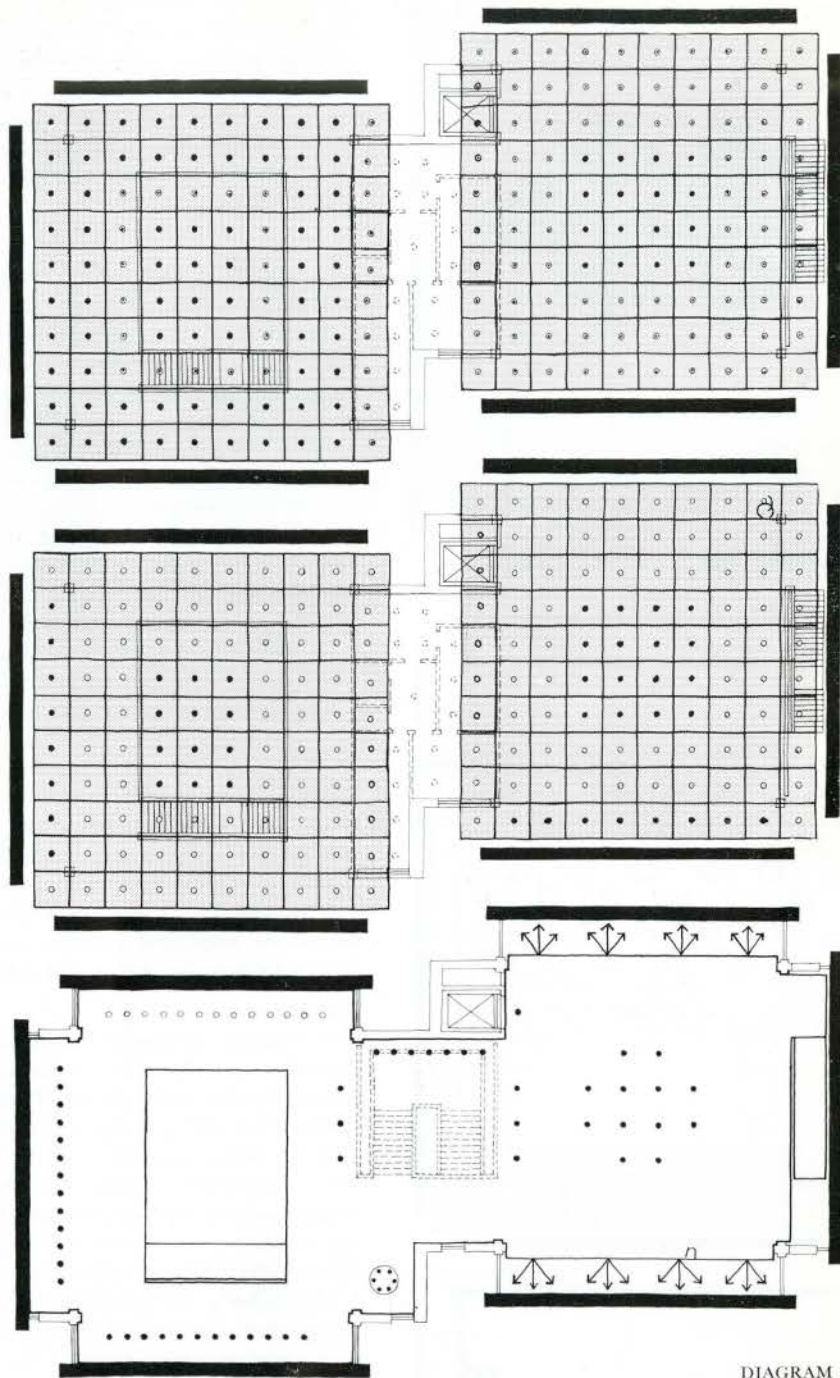
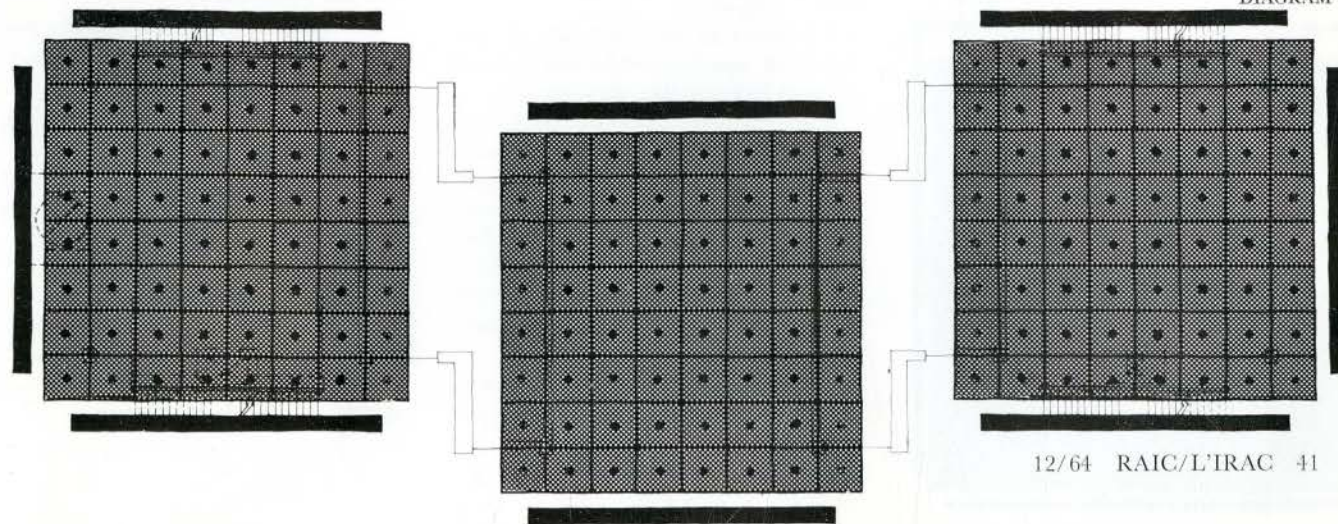


DIAGRAM 3

DIAGRAM 4

DIAGRAM 1



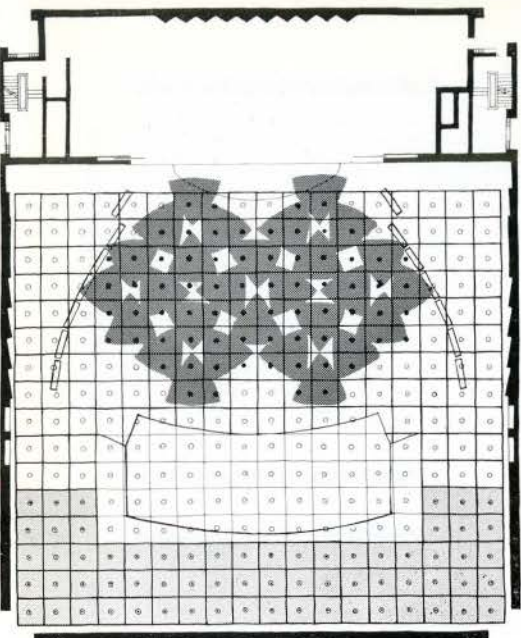


DIAGRAM 6

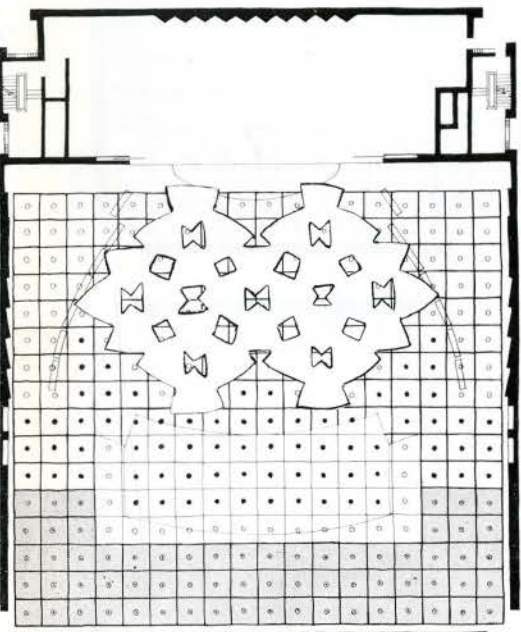
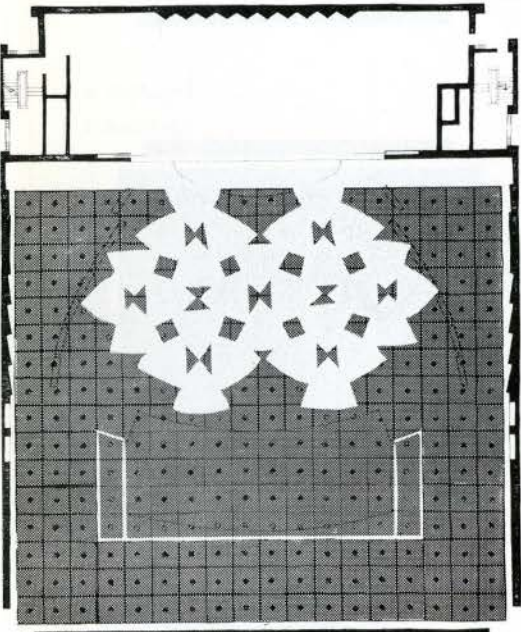


DIAGRAM 7



ming patterns. The universal fixture, a pendent "can" centered in and aligned with the bottom of each cell, was designed to illuminate the cell without bisecting shadows, and with separately controlled direct lighting which will appear as the same dark cone even though lamps vary from 50 to 300 watts.

The Library

Most simple of the lighting problems occurred in the library where the requirements are fixed and simply defined. Here diffused lighting is provided by maximum indirect illumination of every coffer, but, since the sand blasted concrete is not the most efficient reflector, this indirect lighting is supplemented by a direct component from every cell . . . 50 watt lamps are used to maintain the pattern in areas (such as at the overhanging soffit) when there is actually no necessity for the light. (diagram 1) One may question the relatively low "efficiency" of illuminating the coffers, but the dark color and shadow casting configuration are precisely the reasons for illuminating the structure . . . to relieve the daytime gloom of dark ceiling in contrast with bright window. Spaces not covered by the exposed ceiling grid are illuminated in a neutral manner, indirectly from book stacks or open-cove wall fixtures, by low brightness recessed fixtures in suspended ceilings, and by local lighting under shelves and cabinets.

The Museum

The museum demanded a disciplined flexibility . . . flexibility to create the proper focus for a wide variety of possible exhibits, but with a discipline consistent with the monumentality of the Fathers of Confederation complex. Casual arrangements of exposed adjustable lighting fixtures on tracks were thus avoided. Instead, flexibility was gained by:

1. Highlighting the most likely display planes by arrangement of reflector lamps in the ceiling coffer fixtures. (i.e. 300 watt lamps at perimeter and over central well) (diagram 2)
2. Circuiting so that each side of each concentric square could be switched and dimmed individually. (diagram 3)
3. Edge lighting concealed from view along the side of the balcony enclosure in one of the galleries allows the upper walls to be lit either uniformly from above or with dramatic effect from below. The actual location and structure of the balcony — originally intended for the outside wall — was changed to make these effects possible. (diagram 4)
4. Special recessed floor fittings to support and electrify posts for self-illumina-

ted mid-floor display panels and cases.

5. For most exhibits, indirect lighting of the ceiling coffers would probably be dimmed to a very low level for maximum focus on the exhibits. However, the level may be readily increased when a greater component of diffused lighting is helpful or for occasions, such as receptions, when the architectural space is to be emphasized.

The daylighting design (corner window) is a good compromise between providing contact with the outdoor environment and competing visually with exhibits.

The Theater

Here many different types of spaces are created by the lighting . . . again primarily by carefully planned switching and dimming patterns with the coffer fixtures. Basic architectural departures from the other buildings were the adjustable shape of the hall and the presence of acoustic clouds which were to be expressed in a positive sculptural manner.

To maximize the expression of the acoustic sculpture as a positive element (rather than a necessary evil) the panels were made translucent, so that when back-lighted they become the "chandelier." Some of the possible "spaces" to be created in the main hall:

1. Most dramatic: "chandelier" only, or plus illuminated back wall under balcony. (diagram 5)
2. Neutral: downlights illuminating floor area of complete hall but with walls and "chandelier" remaining unlighted.
3. Neutral: downlights illuminating floor area of contracted hall but with walls and "chandelier" unlighted. (diagram 6)
4. Architectural emphasis: ceiling coffers illuminated plus downlighting of floor ("chandelier" expressed as silhouette). This might be the condition for a lecture type program, or for daytime concerts when the hall lighting should relate to the daylight conditions outside, or at least provide a pleasant transition during intermissions. (diagram 7)

Some change of pace is provided by patterns of bare clear lamps in the lower foyer and refreshment areas.

Some general considerations pertaining to all buildings

1. Whenever the coffers are illuminated, every coffer in the space is. In this way the structure always remains as an uninterrupted plane.
2. Lighting of walls and floor is generally not uniform, but with selected emphasis for purposes of display, expression of structural rhythm, or defining nodes and axes in the circulation pattern.

Theatre Design

by George C. Izenour

Theatre Design & Engineering Consultant

The design of the theatre posed certain technical problems dealing with structural and mechanical flexibility that are, to say the least, somewhat unusual. The accompanying right and left half plans, in addition to showing the configuration and seating geometry for the proscenium form (Right B-B') and the extended apron or classical form (Left A-A'), also indicates by number those elements and systems that give the room its flexibility.

(1) The fixed seats in the orchestra are 39" back to back on a riser system of 7½" to provide second row vision in the apron form and terminate in either a single large tapering aisle Right and Left (Proscenium form) or two aisles Right and Left (Apron form).

(1') The fixed seats in the balcony are also 39" back to back on a riser system of 22½".

(2) The movable seat bank, which is power driven, provides flexibility of the seating system so that in the proscenium form all seats have good lateral as well as vertical sight lines. This bank is stored underneath the permanent orchestra seats and is handled vertically by means of lift (3).

(2') The permanently mounted banks Right and Left provide seats that compliment those of the movable bank (2) so that the total number of seats with good lateral sight lines for the apron form approximately equals (within 6 seats) that for the proscenium form.

(Note: It is possible on certain occasions to use both seat banks)

(3) The large lift provides both the fore portion of the apron stage and the platform for movable seat bank (2) in the proscenium form.

(3') The small lift provides (a) the rear portion of the apron stage that joins the fore portion (lift 3) to the proscenium stage (b) the orchestra pit floor (c) freight elevator from the traproom to the stage.

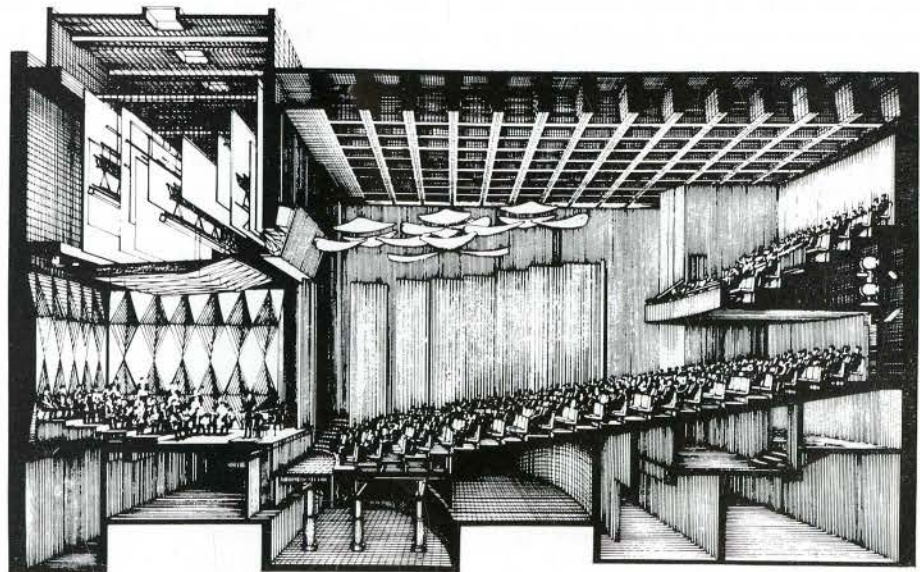
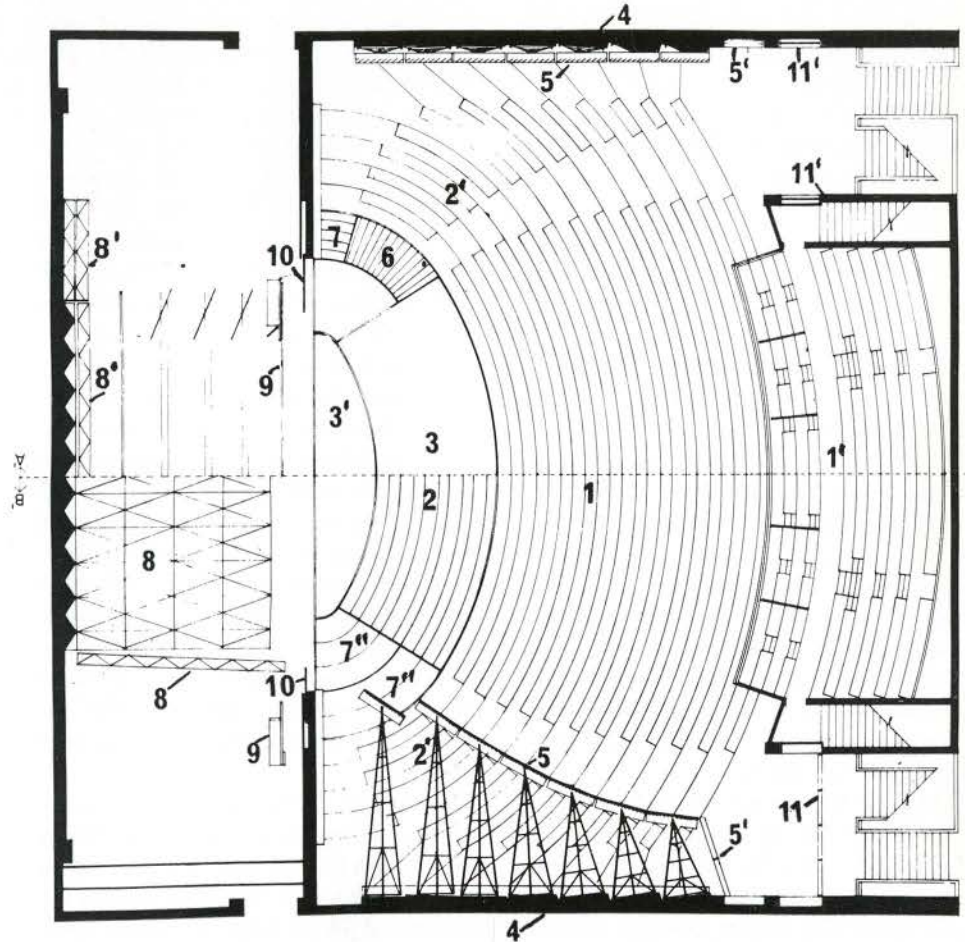
(4) Structural wall of the room.

(5) The movable auditorium wall system constitutes seven boom operated sections or panels per side and provide the means for reshaping of the room between the proscenium form and the extended apron form. Each panel has two electro-mechanical drives that (a) elevates or lowers the boom and its carriage along the structural wall (4) and (b) moves the boom either away from or against the structural walls (4). The two accom-

panying phantom section perspective drawings show two rear views of a single panel in these two working positions. The electric drives (winches) are in the basement and one of them (the vertical drive) is counterweighted. The vertical drive system is checked by means of cams in its raised position and the panel rests on the floor in both operating positions either on the structural wall for the apron form or in the tapered aisle for the proscenium form. The boom head is also provided with a swivel joint for proper orienting of the panel in its two

operating positions. The surface of each panel is a system of manually operated, ganged vertical louvres so that in the aisle position the total surface is rendered acoustically hard (louvres closed), but in the bearing wall position the surface is absorptive (louvres open). The vertical slot between the two panels closest to the stage (right and left) provides a house tormentor position for lighting equipment.

(5') The two double fold wall panels right & left block off access to the seat banks right and left when the panel sys-



(continued from page 47)

(6) These steps constitute manually handled plugs that provide underneath access to the apron stage.

(7) These steps (also manually handled) provide direct access to the forestage from the side aisles of the auditorium.

(7' & 7'') are manually handled plugs that join the two aisles in the proscenium form to provide egress from the front of the seat bank.

(8) The stage is provided with a concert shell for symphony concerts and other musical events that blocks off the volume of the wings and fly gallery so that the stage volume is acoustically coupled to the auditorium.

(8') Shows the position of the movable walls and ceiling of this shell when it is folded away and the stage used for scenery.

(Note: This shell is a dampened stressed steel space frame construction and is power operated. The rear wall of the stage has been formed so as to provide in the concrete structural wall identical modulations to that of the steel ceiling and side walls of the shell).

(9) Floor mounted manually operated tormentors (right and left) reduce the stage opening to a minimum of 36 feet.

(10) Manually operated proscenium portal panels right and left provide masking between the masonry or concert opening and the tormentors.

(Note: A power operated teaser is also provided to reduce the height of the concert opening from maximum to 14 feet for theatre operations.)

(11) The house and the lobby can be joined together or completely shut off from each other by the four pairs of doors (two right and two left), which are electrically driven through mechanical cam and cable drives. Each pair of doors, when closed, is provided with a manually operated inset door with panic hardware for emergency operation. The stage is also provided with a solid state multi-preset lighting system including a patch panel and company switch. The remote console is located in the front of the house in the left tower which supports the balcony. These towers (right) also house the sound control room and the front lighting fixtures.

The designers believe that this is the first attempt anywhere to structurally and mechanically alter the shape of an auditorium of this size to accommodate the two separate and distinct seating geometries required for proscenium and apron stages.

Acoustics

by David L. Klepper and Russell Johnson
Bolt Baranek and Newman Inc., Cambridge, Massachusetts

The theatre actually has three different acoustical characteristics, meeting the requirements imposed by the three basic forms: (1) concert hall, (2) proscenium theatre, and (3) projected-stage theatre. As a concert hall, the theatre is relatively "live", with a mid-frequency reverberation time slightly under 1.7 seconds with a full audience. The concert hall configuration usually employs only the seats used for the proscenium theatre, with the movable side wall panels in the proscenium position. However, the side seats may be added, with the movable panels retracted against the stationary side walls, and with some loss of acoustical quality (and sight lines) for the front corner seats. No electronic amplification is required or desirable for orchestra or chorus, although high-quality sound reinforcement can be provided for "pop" or folk singers desiring amplification.

The theatre should be somewhat less live in its proscenium theatre configuration, with a reverberation time approximately 1.4 seconds. Adjustable sound-absorbing material at the rear controls return of sound energy to the front of the hall. The theatre design has proven satisfactory for unamplified voice. Subtle electronic sound reinforcement can be provided for musical comedy or opera singers desiring an assist over the sound of the pit orchestra, if such reinforcement is ever required.

The major problem for any large projected-stage theatre is the fact that a sizeable portion of the audience often faces the back of actors. This reduces the amount of direct high frequency (consonant) sound energy received by the audience. The theatre compensates for this loss primarily by minimizing long-delayed reflections that interfere with speech intelligibility. In its extended stage configuration the theatre is very dead, the order of 1.2 seconds in reverberation time. Subtle electronic reinforcement of high-frequency sounds (consonants) can also be used to compensate for the fall-off in high-frequency sound energy behind the actor's back.

The baldachino is a work of abstract sculpture, serves a lighting purpose, and also serves several acoustical purposes. In the proscenium theatre, the sound energy reflected off the baldachino arrives at the ears of the audience with a sufficiently small time delay after the

direct sound to reinforce the direct sound energy, aiding speech intelligibility. In the concert hall, the same pattern of sound reflection assures clarity for music, maintains balance of orchestral sound for listeners at the side seats, while allowing the space above the baldachino to contribute to the reverberation time or "liveness" of the space. Finally, the baldachino provides the location for the loudspeakers and microphones that serve as the "behind the actor's back" sound reinforcement system for projecting stage uses.

The movable side-wall panels contain aluminum louvers that are sound-reflecting when closed, but may be opened to expose sound absorbing material. The louvers will always be shut for concerts, usually shut for proscenium plays, but always opened for projected-stage plays to insure the lowest possible reverberation time and avoid long-delayed reflections.

A large portion of the rear wall area and a small portion of the front wall area includes adjustable curtains behind a sound-transparent screen of spaced wood strips. These draperies can be retracted, exposing a hard, sound-reflective wall thus increasing the room reverberation time, or the draperies can be pulled in place to decrease the reverberation time and provide echo control.

The seats were carefully designed to minimize the change in the acoustical characteristics between full occupancy conditions and the empty theatre. This allows the performers to rehearse in a space that will not change, acoustically, during the actual performance. The expanded metal seat bottoms permit sound energy to travel through to the sound absorbing upholstery. Similarly, the upholstery and fabric covering absorb sound efficiently at all frequencies. This assures that the audience seating area presents an essentially uniform sound-absorbing surface regardless of whether or not the audience is present.

For maximum naturalness and intelligibility of reinforced or recorded speech in music, the main loudspeaker cluster is located behind sound-transparent screen directly over the center of the proscenium. This assures that, for most activities, sound will appear to originate from the person talking, not the ampli-

fication system, and both amplified and live sound will arrive at the listener's ear at approximately the same time, increasing speech intelligibility.

Although they have not been required to date, footlight or overhead microphones can be employed for reinforcement of proscenium stage productions. Microphones on stands are available for performers or lecturers who wish to use them.

Two special horn-type loudspeakers are integrated into the baldachino design for coverage of seating "behind the actor's back" during extended stage productions. Microphone pickup (when required) during such productions will be via the ultra-directional microphones seen suspended from the baldachino.

Control of the sound system is accomplished from a booth directly adjacent to the balcony, where the operator can both hear and see the action on the stage. This permits the operator to make optimum adjustments to levels, insuring naturalness and intelligibility for all operating conditions. The slide-attenuator control console, designed by the Northern Electric Company, assures the operator the most convenient operation of the system. He can actually operate the console by "feel", never lifting his eyes from the performance.

The complete sound amplification system permits pickup of activities within the theatre for broadcasting and recording without the introduction of additional equipment.

A quiet ambient noise condition is essential for good hearing in any theater, and the mechanical engineers successfully met a very demanding criterion for a low background noise level. Duct lining, sound attenuating traps, proper vibration isolation techniques, and low face velocities at diffusers and grilles all contribute to the quiet results achieved in this room.

We have touched on only a few of the significant details of the acoustical design of this theatre. We should add that almost every detail of the overall building design affects its acoustical performance, in one way or another. Therefore, the results achieved are due to collaboration through all phases of design and construction among the architects, the theater and acoustical consultants, the mechanical electrical and structural engineers, as well as the numerous contractors responsible for implementing the many unique aspects of this important building.



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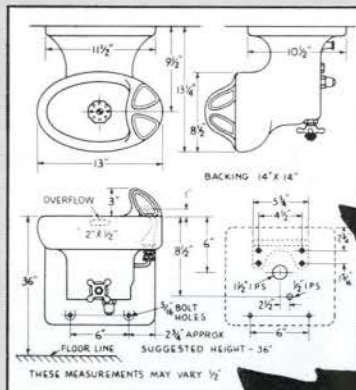
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Institute News

The 12,000 sq. ft. typical upper floor framing of the main building is supported on poured concrete service core and on sculptured precast bearing wall units, which provide a very effective sun screen and eliminate the use of columns above the second floor level. The high quality, low porosity concrete panels are coated with white Textite and windows are double glazed solar plate in aluminum frames. Total cost of the exterior precast wall including glazing, plaster and insulation was \$5.08 per sq. ft. not considering the saving by elimination of columns and beams on exterior wall.



U OF T SCHOOL OF ARCH INVESTIGATES ELECTRONIC AIDS TO BUILDING DESIGN

Few architects are aware that a highly sophisticated form of computer in an advanced stage of development is already being used as a near-miraculous aid to engineering design — in the field of aeronautics for example. From plans and elevations, or sections, drawn in light on a kind of television screen by a special “light pen”, it can produce any number of accurate perspectives instantaneously to a succession of viewpoints determined by the operator. The significance of this to the architect should be apparent at once — he will be able to make rapid adjustments in plan and elevation to assess three-dimensional variations in design; more important still, he will be able to simulate the movement of an observer through the interior of his building, or through the spaces between buildings in a city complex, while the project is still in the early sketch stages. The instrument will adjust the perspective instantaneously at each desired point in the progression, and by photographing the results, a series of three-dimensional representations of internal or external space and form can be obtained.

The same instrument can correct errors — for example it can make non-parallel lines parallel; describe circles; make perfect joints and intersections of lines and planes—all accurate to one ten-millionth of an inch.

These developments were demonstrated at a recent conference in Boston which will be reported more fully by Allen Bernholtz in the second part of this article.

It was emphasised by one research engineer that his objective was to make the computer a natural extension of the skill of man (for example, to design sophisticated machines that would be as easy to use as ordinary drawing instruments) in other words, to devise a computer that the human operator could communicate with directly.

At the moment the individual wishing to use a computer system has to learn one of several complicated computer languages before programming can be undertaken.

At the end of the Boston meeting I posed two questions: when will these instruments be available to the architectural firm of medium size? and when will they be available for teaching purposes in schools of architecture? The reply was precise and convincing: in two years a good working model of the “Sketchpad” system at a reasonable price should be on the market. In five years improved

forms should be in general use as a design tool. Installations of twenty or more in a classroom will be feasible in two or three years time.

The use of the computer for complicated and intricate calculations in the fields of aerophysics and nuclear research is well known, but architects have only just begun to appreciate its value as a tool for building design and city planning. It is already in use by progressive structural engineers for such complex studies as wind analysis on very tall buildings (one engineer speaks of a saving of \$300,000 on structural steel because of the possibility of precise rather than empiric methods of calculation); estimating differential settlement in large buildings; determining the effects on structure of different temperatures inside and outside tall buildings; finding the solution to complex heating and ventilation problems; comparing different types of mechanical equipment over long periods of projected use. (In one calculation 6,200 years of man time was encompassed in two hours of computer time, at \$600 per hour.) Integrated structural and mechanical systems can now be pre-tested and their effectiveness compared. *The computer enables us to have prior knowledge of the performance of a building or of a group of buildings, of a transportation system or a city plan.*

It would seem that specification writing, detailing, checking shop drawings — even the production of working drawings themselves—could, conceivably, become obsolete in the not-too-distant future.

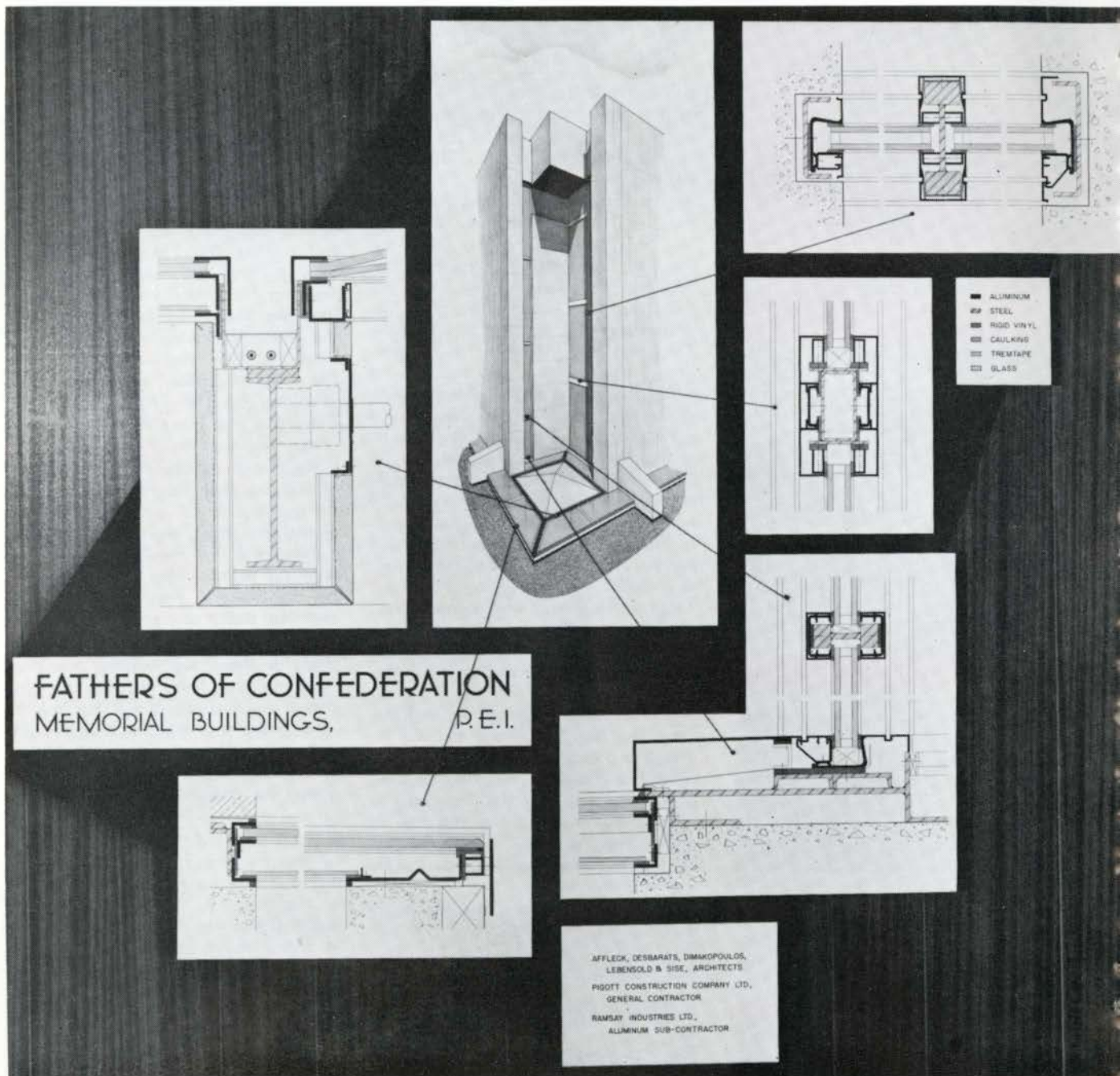
From the point of view of the educator and professional practitioner, several important points emerge:

(i) Since computer science is already highly developed and is being extended rapidly in many fields, the architect and planner must acquire a working knowledge of the principles, techniques and limitations of the new tool. This demands the establishment of intensive special courses for architects, planners and engineers, at centres across Canada.

(ii) Since scientific research and technical progress are so rapid, students now in their first year may expect to graduate in a substantially different professional world. Courses on computer science and its philosophical, economic and sociological implications should be established without delay in our schools of architecture and planning.

(iii) Since we claim, as a profession, to be concerned with the total environment of man, and the satisfaction of human needs at many levels, we should exploit the potential of computer science as a means of harnessing the knowledge and skills of many disciplines to this momentous task. We could set up several interdisciplinary study groups to advise us as

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Ontario Masons Relations Council/1964 Awards

The first Annual Awards by the Ontario Masons Relations Council for outstanding buildings in Ontario designed by architects in private practice, and constructed essentially of structural clay products manufactured in Canada, were inaugurated in November with the presentation of one Award of Excellence and six Awards of Merit. All building types were eligible except detached or attached dwellings or apartments under four storeys in height. The professional advisor for competition was George Gibson, FRAIC, and the assessors were A.P.C. Adamson, FRAIC, MTPIC, and Ray T. Affleck, MRAIC, ARC.

The Awards, a plaque for the winning entry and framed photographs with an embossed seal for awards of Merit, were presented to the winning architects by the President of the OAA, D'Arcy Helmer, on November 25.

A total of 169 photographs illustrating 37 buildings designed by 20 architectural firms were submitted. This response and the high calibre of the submissions was gratifying and made the task of the jury extremely difficult but rewarding.

All buildings in the second stage were visited. This proved to be well worthwhile.

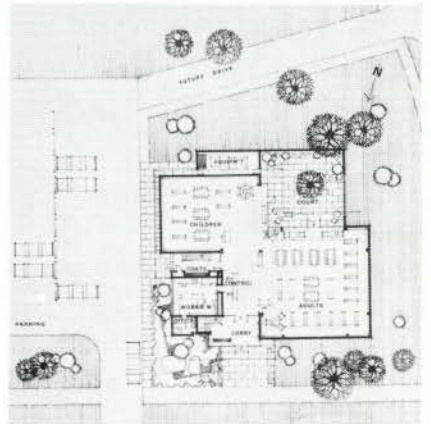
The awards were made as follows:

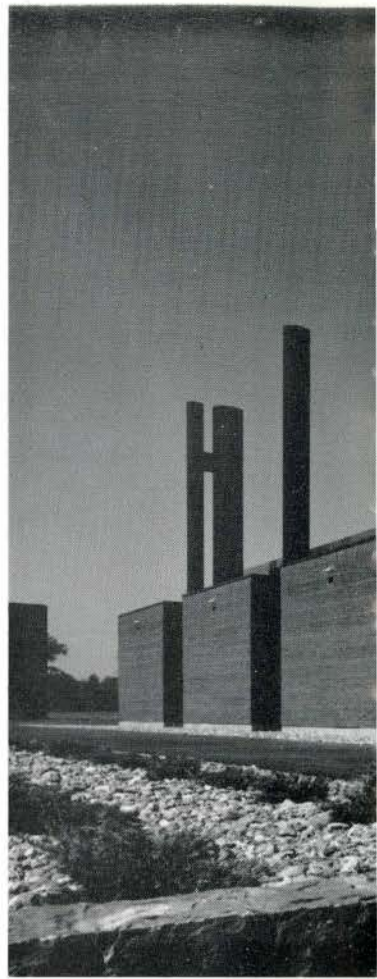
AWARD OF EXCELLENCE

EATONVILLE BRANCH LIBRARY, ETOBICOKE

ARCHITECTS: ELKENE & BECKSTED

A building of great charm and warmth, well-designed and well-built; virtually flawless. There is a very pleasant relationship between exterior and interior and the whole building is most functional and carefully studied. The delightful screened court is a great success, provides a pleasant reading area, a buffer against the highway and a visual joy. The landscaping is meticulously conceived and maintained. More care should have been taken to protect brickwork from mortar and plaster droppings. The brick air grille is marred by the exposure of the frog holes in the bricks. The jury is aware of the difficulty of obtaining solid bricks for such purposes and hereby records this complaint with the assurance that the manufacturers will be sympathetic to this design refinement and will take appropriate action.







AWARDS OF MERIT

BARRIE PUBLIC LIBRARY, BARRIE
ARCHITECTS: PENTLAND & BAKER

A fine solution to the problem of adding a modern wing to an existing building, handled with very great skill and giving a visual and functional sense of unity. The arched windows and cornice echo but do not copy the original, the relation of solids to voids is happy and the junction of new to old is carried out well, both inside and out. The interior is airy and gay with good separation of uses.

ST. MARK'S PRESBYTERIAN CHURCH, DON MILLS

ARCHITECTS: JOHN B. PARKIN ASSOCIATES

An exceptionally fine religious interior in terms of the total impact. Well-considered use of natural and artificial light and a meticulously articulated timber structure. The pews seem to be out of sympathy with the otherwise mellow, rich interior. It is hoped that the artificial berm will soon be planted to give a sense of enclosure and reduce the glimpses of suburbia seen from the interior.

B/A ENGINE TESTING LABORATORY,
ETOBICOKE

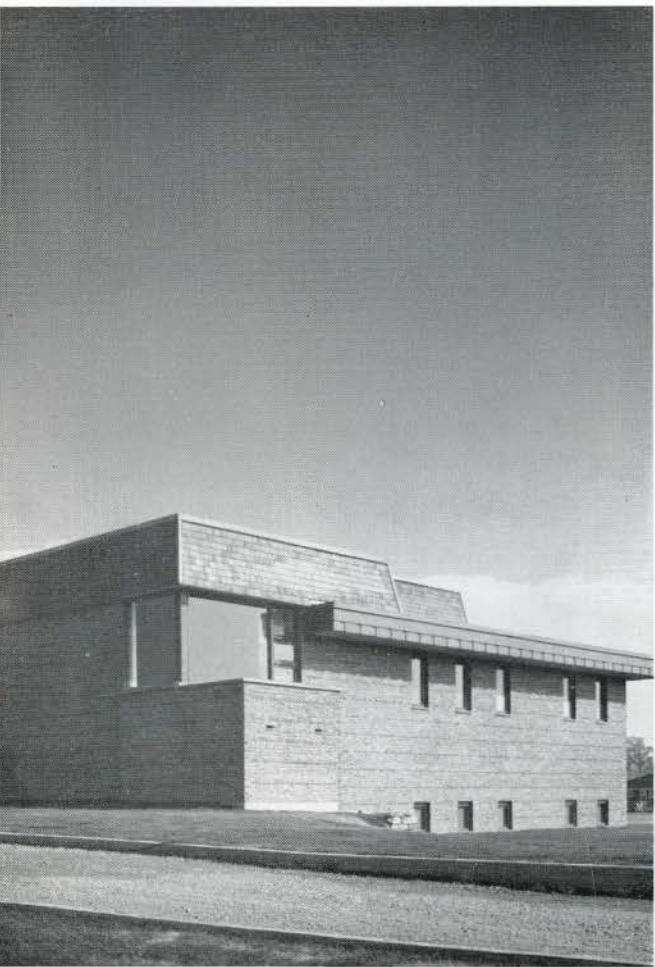
ARCHITECTS: SHORE & MOFFAT AND PARTNERS

The building was a very close contender for the Award of Excellence, having the clearest and strongest expression using brick to enclose a significant industrial research operation. This is markedly true inside and out. Noted were the strong play of volumes, the neat enclosure of penthouse machinery, the excellent central brick-paved observation corridor and the faultless workmanship throughout. The introduction of precast concrete in relation to the rest of the building seemed unfortunate. The large sign (not shown on photos and installed later by the Owners) points out the desirability of architectural control over such matters.

YMCA, BELLEVILLE

ARCHITECTS: CRAIG ZEIDLER AND STRONG

This building is well-sited and conveys an inviting and uninstitutional feeling. There is an appropriate use of rugged brick, well-studied and detailed. A particularly fine treatment of the pool. Unfortunately, the interior is not carried out with the same conviction as the exterior.





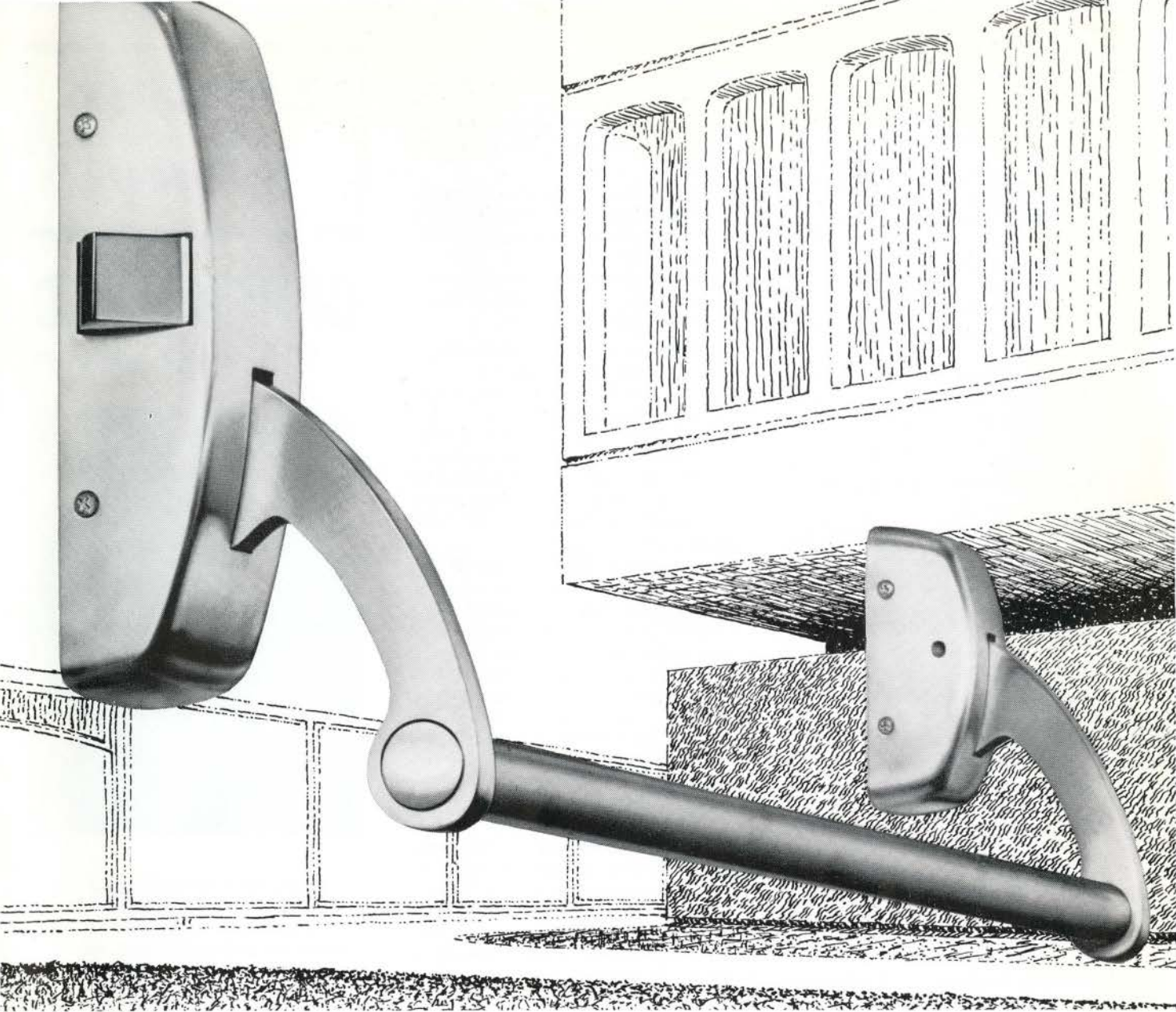
FOREST HILL VILLAGE MUNICIPAL
BUILDING AND LIBRARY
ARCHITECTS: MARANI, MORRIS AND ALLAN

This interesting building combination sits well on its site, relates well to the adjacent public buildings and is a notable addition to the streetscape. Both main entrances are different but well-conceived in relation to their respective functions. Imaginative landscaping and interesting approaches contribute to the satisfying exterior. Unfortunately, the interior is not carried out with the same sensitivity.

NURSES' RESIDENCE AND SCHOOL OF
NURSING FOR THE BRANTFORD GENERAL
HOSPITAL
ARCHITECTS: HERBERT AGNEW ASSOCIATES

An entirely successful solution of a difficult problem of siting. Tying the new structure to the old by means of successive steps produces a highly interesting grouping and a satisfying blend of the new with the old. Workmanship is of the highest quality. The carefully selected ceramic tile was most appropriately chosen to reflect the feminine use of the building but is held in strict control by the ordered lines of the disgrammatical and somewhat institutional facades.





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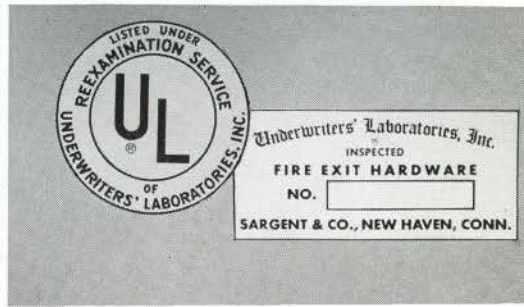
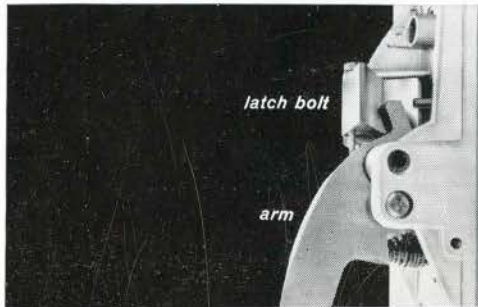
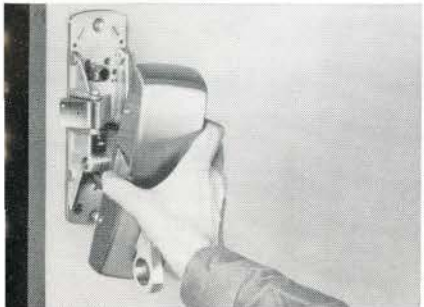
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(continued from page 50)

to the most productive use of the instruments now available, and to indicate possible areas for future development. It will be imperative soon to attempt an assessment of the long range effects of this kind of automation upon the professions.

Early in 1965 I hope it will be possible to bring together in Toronto some of our foremost scientists and engineers for a conference on the computer and the professions.

Mr. Allen Bernholtz, a member of staff of the School of Architecture, University of Toronto, who has made a special study of this subject over the past year, will add his own observations on the Boston Conference and its implications.

Thomas Howarth FRAIC

CONTINUED EFFORTS TO INCREASE WINTERTIME CONSTRUCTION URGED BY NATIONAL ORGANIZATIONS

A group of eight national organizations have urged increased efforts to expand further the level of wintertime construction and employment in Canada. Seasonal unemployment was still a serious problem and the increased demand for construction services meant that Canada could not afford the luxury of "Waiting till Spring".

The National Joint Committee on Wintertime Construction (representing business, architects, consulting engineers, trade unions, contractors and manufacturers) meeting in Ottawa, concluded that while the prospects this winter were for another rise in the volume of wintertime construction work, there was still considerable scope for better results. The RAIC was represented by Sidney Lithwick and Fred W. Price.

Moreover, the buoyancy of the construction market might well result in spot shortages of skilled men and materials next summer. This gave an extra good reason for making maximum use of the winter months to carry out more construction this winter. A more level volume of construction activity throughout the year was the most direct method available of increasing the industry's capacity to meet the increased demands for its services.

Specific Recommendations

Chairman Allan Turner Bone of Montreal listed the following specific areas for action recommended by the National Joint Committee:

1. Continued publicity concerning the practical feasibility of carrying out most types of construction work during the

winter months. This applied to projects large and small ranging from the commencement of major projects to small repair or renovation jobs around the home.

2. Distribution of literature concerning economical wintertime construction techniques in the field of municipal engineering construction work in order to stimulate more activity in this field under the provisions of the Municipal Winter Works Incentive Programme.

3. Inclusion of multiple unit housing in future winter-built housing bonus programmes. The Committee noted that the trend was towards this type of unit and felt that "town houses", terrace housing etc. would be especially appropriate for attention since the type of construction was comparable to the individual houses and doubles now covered by the bonus programme.

4. Inclusion in the Municipal Winter Works Incentive Programme of municipal services that are required to be installed by builders and developers in their projects and which later are incorporated as part of the municipal system. It was noted that this arrangement was becoming more prevalent and it was believed that builders could be relied on to respond to incentives with alacrity, thereby increasing the amount of winter work.

5. Stepped up research activities concerning wintertime construction techniques also were advocated. In the public sector, it was suggested that the National Research Council should give a high priority to concrete and masonry construction in the winter months because of the special problems in Canada arising out of our climate.

6. Periodic reviews should be made of the economic benefits of programmes designed to increase wintertime construction and employment. Similarly, it was concluded that improved statistical information should be developed for use in the formulation of policies in this field. It was noted in this regard that the benefits were often far-ranging. For example, for every additional construction worker employed in winter months there was not only a "saving" in terms of reduced unemployment insurance and possibly public welfare benefit payments, but the purchases of his wages in turn helped to stimulate employment elsewhere. "Employment begets employment".

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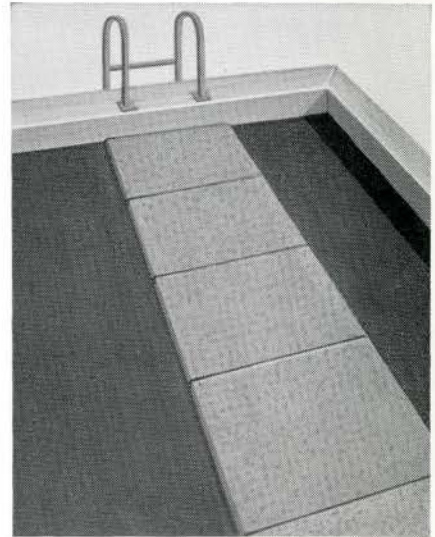
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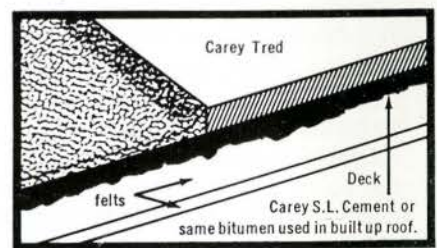
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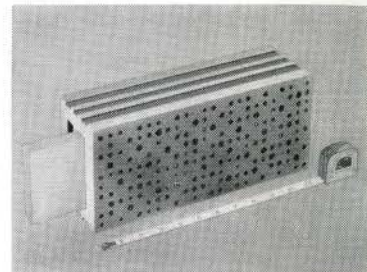
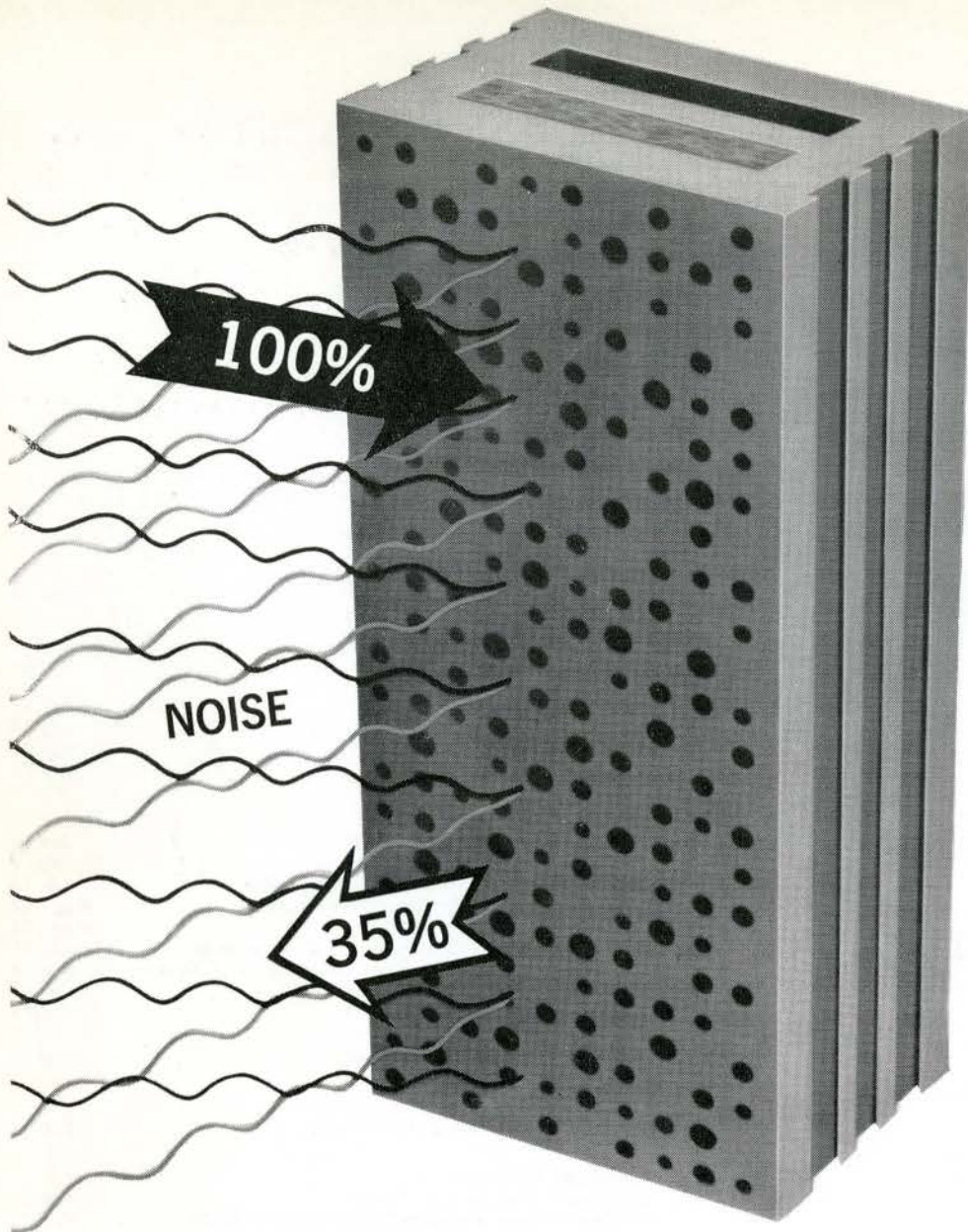
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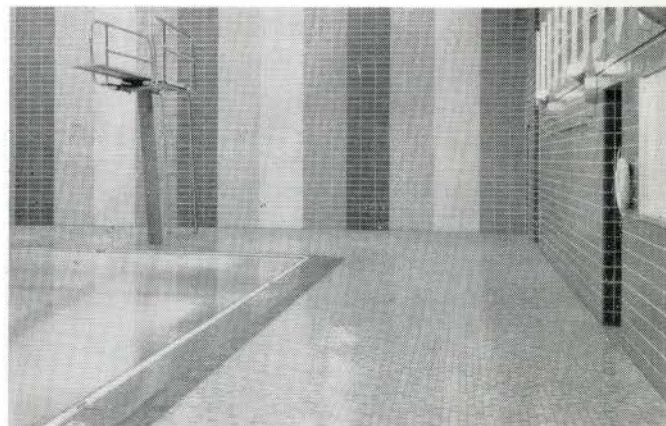
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