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R. A. I. C. JOURNAL

APRIL 1947

WE have often thought that, if we lived near the British Museum, we would do a piece of research that would end in no Ph.D., but would produce some highly interesting and perhaps entertaining documents. Somewhere there must be correspondence in which one would get the views of 17th century English people toward the "modern" architecture of Inigo Jones. We know what another generation felt in regard to Gothic gee gaws in the Gothic revival, but that was a return to something known and visible. The Banqueting Hall, on the other hand, standing as it did in a city of mediaeval buildings in stone and half timbering must have been a spectacular and an astonishing thing. The shock cannot have been relieved by the knowledge that similar buildings existed in Italy, because only a handful of the population could have seen them. It is likely that a monarch enlightened in these matters, if not in others, was aware of the Renaissance in architecture, and was thus able to set in motion in England a movement that was not to be stopped for two hundred years.

TO compare this period with our own, we might argue that no great building would be commissioned in the contemporary manner because we have a populace that is aware of fine modern buildings here and abroad, but is afraid of what it calls modernistic. As a matter of fact, the people in Canada who know anything about good modern architecture is probably as small as the number of English people who, in Charles I time, had any real knowledge of contemporary Italian building. Nor did the English of that time escape their modernistic. Wollaton Hall is surely as juicy a piece of Jacobean modernistic as any 20th century modernistic in Canada.

THE situation today has many points of similarity with 17th century England, but there are some striking differences. The royal or noble patron has given place to the industrialist. He builds in the contemporary manner because, however sentimental he may be in his preference for domestic architecture, he sees nothing but efficiency and common sense in the use of modern techniques and materials for his factory. To be right up to date is also good advertising. In our democratic society, we have rural and urban schools and municipal libraries, and for them also there is no turning back. Rather is there a vision of the future in which the architect is required to build in a manner that will keep pace with scientific discovery over the next quarter century.

IF Inigo Jones were to appear, miraculously, in our midst, he would be most encouraged by the Schools of Architecture. There we have the phenomenon of several hundred students working enthusiastically on contemporary architecture in advance of general acceptance of it in Canada. Mr. Jones might ask them what they thought of his Banqueting Hall, and they would say that it stood out like a beacon as an expression of his time, and that they studied it as such in their reading of history. He would agree, we feel sure, that that was the proper place for it, and that they, in turn should endeavour to design buildings that equally truly expressed the machine age in which we live.

Editor

THEATRE DESIGN

By RAYMOND CARD

IN New York, I recently made a brief survey of the existing theatres and, on the whole, was appalled at the antiquity of their facades. No new theatres are in sight and current building restrictions may last a long time. The U.S. control of construction is very tight. There is a demand for modern playhouses, but no way to get them and the present houses have narrow lobbies, unattractive fronts and worn-out seats. Meanwhile, the show must go on in uninspiring surroundings, which tend to encourage the type of play such a stage can take.

I admit that the revival of Victor Herbert's "The Red Mill", suited the theatre in which it was played perfectly. Both were period pieces. But the audience! It was something like a steel-strikers holiday. Gone is the pomp and glitter of the good old Edwardian days. It is at such moments that I recoil from the "progress" of democracy.

In Canada, however, thanks to the splendid impetus given by British interests, this is theatre-building time. Recent press reports show that 86 theatres are at present under construction across Canada, at a cost of over \$60,000,000.00. Capacities will vary from 500 to 2,500 seats and the average cost will be \$66,000.00 per theatre. While some of the buildings will be small, there will be a \$2,000,000.00 one on Carlton Street, in Toronto and about ten others to cost around \$150,000.00 each; and since the latter will be 1,000 seat houses, their average cost will be \$150.00 per seat.

Since the next few years will see the erection of so many theatres and in view of the fact that they call for much technical knowledge in their planning and equipment, and so much taste in their design and decoration, and so much imagination in their layout and effect, it may be well to consider some of the problems and challenges they offer. Remembering always the admonition of Samuel Johnson that they who live to please must please to live.

The site will vary with every theatre. The choice of location, and the purchasing of the land will probably have been accomplished before the architect is asked for any advice. The size of the theatre, its nature; whether for films, stage presentations, or both, will likewise be decided by the client. The work of the architect therefore, will be, to make the most of the given opportunity.

Theatres vary tremendously in size, and this again affects the whole course of design. There is no comparison between the old-fashioned red-plush Edwardian theatre and the modern one, and therefore it will be well to forget preconceived ideas of treatment and endeavour to plan with a modern outlook. By that I do not mean

"modern for the sake of being modern", I mean, not "traditional for the sake of being traditional".

When completed, our theatre has only to fulfil one purpose: to look suitable and to form a pleasing background to audience and players (whether in person or on the screen).

Be careful not to be too modern. Do not be too austere. The audience has come to enjoy itself and it wishes above all else to feel at home. If the interior is too magnificent, or too frigid, it will not induce the patrons to return. They wish to feel, above all else, that the design and decoration are what they would expect. Do not expect me to describe what they will expect. That is the architect's own problem. The town, the neighbourhood, the size of the theatre, all affect it. Be sure of one thing: the audience will know if you have succeeded. They will not be hoodwinked. People who attend theatres know, more than any other group, the meaning of the word "atmosphere". You must provide it, or your design will have been a failure, for:

*"Deep as the thoughts of thinkers are,
Fancy sounds waters deeper far."*

Let us now commence the planning. The site may well be an awkward shape. Let us get at the actual size of it. This is a question of making use of every available foot of space to the best advantage. What about parking facilities. This is very necessary.

Fire and safety precautions are perhaps more important in a theatre than in any other building. The tenseness of the attention, the dim lighting, the capacity crowds, all make this the first consideration. Recall the many theatre disasters of the past and realize that the seemingly stringent municipal building codes of the larger cities are based on sad experiences. Exits, aisle-widths, fire doors, fireproof curtains, fire resisting construction, are all necessary; and lay a heavy hand on the would-be imaginative designer. But they are based on fact not fancy. The first step therefore, is to study them so that their application may fall naturally into the design and not appear as an afterthought, super-imposed on an otherwise good idea.

Aisle-widths, maximum lengths of rows of seats, slopes of ramps, layouts of stairways, must be mastered before the preliminary drawings are commenced.

A theatre is divided into three main parts. The public entrance, the auditorium and the stage. Each has its own function and each demands a varying share of the total space available, depending upon the requirements of the client.

I do not believe an audience likes too much originality. Not enough, that is, to detract attention from the stage. As Shakespeare said (in a freely mangled context), the play is the thing. On the other hand the theatre should be bright, comfortable and completely satisfying. How to obtain that end? That is where your sense of fitness comes in. The audience cannot tell you what it wants, but it will certainly know if you have not provided it. And if you do not provide it and the architect of your clients' competitor does, they will flock to his theatre and leave yours empty.

People have to go to public lavatories and railway stations, but they do not have to go to theatres unless they are attracted to them. Hence the importance of location, good parking facilities, attractive exteriors, satisfying interiors and all modern mechanical equipment.

The Plan

The size and relative proportion of the stage will depend on whether you are designing a movie house, a theatre, or a combination of both. If a theatre, then the stage will be of considerable size and may well be a third of the total ground floor area. If for films only, allow 4'-6" from face of screen to rear masonry wall, and at least 7' to 8' in front of screen to face of platform. The public entrance may be a sixth of the total area, leaving one half of the area as auditorium. The plan of the public entrance will provide: shops, entrance lobby, ticket office, lavatories, foyer, cloaks, lounge, tea-room, bar, manager's office, staff rest room, storeroom, and projection room. The auditorium area will include stairways, aisles, orchestra pit, seating and exit passageways. The stage will include as many of the following as may be called for by the use to which the theatre will be put: stage, dressing rooms, scenery docks, properties room, office, doorman's office, lavatories, workshop, stairways, storage rooms, screen.

The Section

The longitudinal section through your theatre will deal with two of the most important things on which the satisfaction of the audience will depend. The floor levels and gradients; and the sight-lines of both audience and projection booth. These call for the most careful study to obtain complete satisfaction. The inclusion of balcony seating greatly affects this.

The Exterior Elevation

The exterior elevation will depend very much upon the site, with the narrow lane-like entrance to a larger back-lane lot, the entrance may be little more than a facade flanked by other buildings of doubtful design. But if a corner lot is used, or if the frontage is as wide as the auditorium, then the usual possibilities of design will be present, and a smart attractive front, built of the more modern building materials will be the most probable choice. Choose materials that will look "new" in five years time. Avoid materials that will age with city dust

and soot. People like Ye Olde Tea Shoppe, but not Ye Olde Theater.

Lighting of the exterior, since it is most frequently seen by night, will be a chief consideration. We have advanced far from the days of electric-bulb-spotted outlines and marquees. Here, of all places, is the need for the art that conceals art.

Interior Elevation

Here lies the most difficult task. The shape of the auditorium must be as acoustically perfect as possible, and it must look well both in the subdued light of the performance and in the brighter light of the intermission. Nor must the bringing-up of the lights alter the character of the place too much. One must not be disillusioned when the lights come up.

It always seems to me that any design that is too impressive grows tiresome after many visits, and on the other hand too great an austerity gives a feeling of coldness. A dignified, large scale, warm design is what is needed. You remember: "not too little, not too much!" I cannot point to any perfect example of what I mean. That is where your opportunity lies. Unfortunately, I could point to the sort of thing I do not mean. It is almost universal. The interior of a theatre should not ape the Alhambra or Versailles. Nor, on the other hand, should it look like a monster juke box, with garish lights and primary colours. Of many things we can say, the old designs were more satisfactory. But theatres: we have not yet begun to design them. Take the average auditorium in your own town and ask yourself is it completely satisfying? I think I can truthfully say the design of auditoriums lags behind every other form of building design.

Seating

Seating is another important thing. I always admired the seating in the Stratford Memorial Theatre. Every seat is placed in line with the centre of the pair of seats in front. It makes the aisles a bit jagged but it gives a much more uninterrupted view of the stage. And then the spacing of the rows. In the Stratford theatre you can pass along a row without the seated patrons having to rise. And the seats are counterbalanced. As you rise to leave, the seat lifts itself up, leaving the passageway clear. And the seat itself is dunlopillow. Suitable for a two and a half hour session. At the new Toronto theatre at Carlton and Yonge Streets every seat will have double arms for added comfort.

Lighting

Of the lighting of the auditorium and entrance area the actual layout will depend naturally on the general design of the decoration. But the special emergency lighting will have to be separated from it and the subdued lighting which gives guidance down aisles and passages during the actual performance is again a separate circuit with its own controls.

The stage lighting is again on separate controls and whether it is handled from a special board at the side of the stage, or from a control in the orchestra pit, is a matter of choice. The former is the more usual. The entire lighting system must be more carefully designed. What you have to avoid is the possibility of the untimely use of auditorium switches spoiling the effect of the lighting on the stage. Orchestra pit lighting is often an offender in this regard. Next to the untimely switching-on of lights is the danger of certain "master" switches cutting-off needed power on other lines. The entire lighting of the whole theatre must be carefully planned for proper control. Do not overlook the large "load" that the many stage spots and other lights will build up. A theatre in full play uses a lot of electric power and needs very heavy services. For the stage lighting itself, the banks of dimmers, the borders, the rows of spotlights, the footlights with three or four alternating lamps on different circuits, for colour changes; the many stage plugs for standard spotlights and flood lights, will all be controlled from the master switches and individual switches of the stage switch board, each of which will have its own dimmer. The banks of dimmers and switches are formidable in cost and size. Leave ample space for them. Let specialists design them. Overhead lighting calls for special outlets, to plug in the many lights that will be suspended from the pipe battens.

Do not overlook special wiring to balcony spots or overhead spots in the ceiling of the auditorium, which, while located in the auditorium, must be controlled from behind stage.

The projection booth wiring is another item needing careful provision of sufficient outlets. A telephone between the projection booth and back-stage is desirable.

Summed up, provide sufficient well-located outlets, sufficient power and complete control.

Electronic Lighting Control

Electronic control of theatre lighting has great advantages. Instead of manually adjustable resistance elements in series with the bank of lamps to be controlled, thyration reaction dimmers control a saturable reactor in series with the lamps. The advantages are: No moving parts, hence small upkeep. Remote control: the heavy current circuit may be located below the stage. The operator's control board, which is small, may be placed in any suitable place in the theatre. Light-gauge wiring connects operator's board to remote power equipment. Scene-presetting is readily arranged; for example, the use of a thyration reactor dimmer providing a "one scene preset" does not call for duplication of the power machinery, but only of the operator's controls. While scene 1 is on the stage, the operator sets the scene 2 levers to the values given on the lighting cue sheet. At the required moment the operator pulls the master "scene-to-scene" fader and then proceeds to setup

scene 3, on the scene 1 levers. One London theatre has seventy circuits electronically controlled.

Stage Work Lights

Adequate provision should be made for stage work-lights so that work may be carried on efficiently without using the stage lighting. These should be on special circuits.

Novelty Equipment

Under this heading we may consider an orchestra lift, an organ lift, microphones that rise automatically by remote control, in the centre of the forestage; broadcasting equipment and sound amplifiers.

Air-Conditioning of Auditorium

The warming, cooling, ventilating, and air purifying equipment for the auditorium calls for specialist design and ample space for ducts and equipment. It must be provided for in the early stages of design. Theatres are generally heated, cooled and ventilated by the fan system; lobby, stage, etc., being heated by radiators. Air-conditioning is paramount, and cooling, rather than heating, is usually required, once a large audience has assembled.

Exterior Design

I recently checked on the exterior fronts of many theatres. For the most part they were appallingly dated. However, The Royal Alexandra Theatre, Toronto, designed by the late John M. Lyle in 1906 shows that a carefully designed front is much more likely to remain attractive through the years.

Electric Wiring

Adequate wiring is essential. The underwriters' code merely specifies wiring conditions with regard to fire hazard without giving consideration to the economy of operation. The size of wire for a lighting installation may conform strictly to a code and at the same time the circuits be of such length as to cause excessive voltage drop. Inadequate wiring is directly responsible for the avoidable waste of electrical energy in overloaded circuits and results in low efficiency of lamps and unsatisfactory lighting conditions. Wire sizes of all classes of lighting installations should be such that the voltage drop between the panel box and outlets will be minimized.

Standards of Foot-Candles of Illumination

Auditorium	7	Washrooms	6
Foyer	16	Passageways	3
Lobby	35	Parking spaces	.5

These standards vary with job conditions.

One cannot stress too much the need for a properly prepared lighting layout. We have progressed far since the days of the old music-hall ballad which described the man who ran the spotlight as "He followed the hero with each coloured hue, and lots of folks thought him the best of the two." To-day we take a dim view of "Fanny by Gaslight" illumination. The modern director likes plenty of "spots" on Shakespeare's Bottom.

Safety Requirements

Safety requirements in theatres and other places of public entertainment have been the subject of many municipal bylaws, and in many provinces of provincial regulations also, as is very proper, when one recalls the dreadful price that has been paid for their disregard. Few of those who seek to crowd into theatres and cinemas give more than a passing thought to their own safety; and public attention is only called to the matter, following disasters which result in great loss of life.

There are two types of precaution necessary, one structural, the other to guard against panic conditions. For example: an emergency fire door must be wide enough to take the flow of persons who may rush through it, but must also be fastened with an automatic panic bolt which will ensure that it will open without any action other than pressure of the crowd pushing against it. All emergency doors have to be at least 2'-6" wide if in pairs, and 3'-0" if single — all must be provided with panic bolts.

We are considering new buildings and therefore many pitfalls which are encountered in a conversion job may be completely avoided. In many of the worst disasters the actual fire was very minor. It was the panic that resulted from it that caused the tremendous loss of life.

Scenery

Where a stage and scenery is employed the most dangerous area will be on or about the stage and every precaution must be taken to provide a measure of fire separation between the audience and the stage, and a means of ventilation should be provided in the roof of the stage area to prevent smoke and hot gasses from being forced into the auditorium. If no such vents are provided the expansion of hot air on the stage can form a pressure which will cause the fireproof curtain to bulge into the auditorium. Stage scenery docks, property rooms, stores and such places behind the stage, are where fires may easily start.

Proscenium Arch

The proscenium wall is, of course, the great dividing line, and it cuts right through the theatre cutting it in half at every level. Every opening through it must be carefully guarded to prevent fire or smoke passing

through. It extends from the basement footings to the firewall above the roof.

No scenery or apparatus of any kind shall be so arranged as to interfere with the descent of the safety curtain. No opening through the proscenium wall, other than the stage opening shall have an opening more than three foot above the stage level. All such openings should be as small as possible, and have self-closing fireproof doors. There should be no valance curtain of any combustible material, whether or not rendered flame-resisting, above the proscenium opening. In buildings seating over 400 persons the scenery dock workshop and store room should be separated from the stage and from the auditorium with fire-resistive construction and fire-doors.

Consider these items also: emergency signalling arrangements to call the fire department, fire appliances to deal with small fires, emergency lighting systems for use when the ordinary lighting fails, protection of high voltage electrical supply lines and switches, guarding of dimmers so as not to endanger scenery. The flame-proofing of semi-permanent scenery or drapes should be arranged for.

Community Theatre

If one is called upon to design a larger community theatre no better model could be studied than the Stratford Memorial Theatre. While its design is entirely functional, it has about it a competence which is wholly satisfying. As Bernard Shaw said at the time, when its plan was chosen, it was the only one which showed any sense of theatre. It was selected from seventy-four competitors. The winner being, of course, Miss Elizabeth Scott.

Its stage is 120 feet wide from wall to wall, although the proscenium is only 30 feet wide and 20 feet high. The great width made possible a "rolling stage". A great time-saver where settings have to be changed. Nor is this all. For the visible stage is a two-deck stage which can be raised vertically. The layout and installation of equipment was based on the latest continental practice. Very much ahead of anything that was in use in England at the time it was built.

The stage has a first-class lighting installation, adequate scene-docks, property rooms, carpenter's shops, rehearsal rooms, and dressing rooms. Its unique site, on the bank of the Avon, has suggested a terrace facing the river, with a refreshment room opening onto it. The social amenities of the intervals between acts, and a meeting place before and after the performance is thus provided. Most better-class theatres promote this. The Malvern Festival would lose half its charm without its gardens where Bernard Shaw and other distinguished authors, actors, or producers are to be met. The Birmingham Repertory Theatre had an Art Exhibit in its foyer which always drew an interested audience, and tea or

supper facilities have a value far beyond the mere convenience of meal service on the premises.

The Stratford Plan

The plan of the Stratford Memorial Theatre shows a fine approach to design. The spacious entrance foyer is surrounded by the following: the box office, the men's cloaks, the lady's cloaks, the stairway to the upper seating, and a spacious restaurant with kitchen and service space complete. The auditorium contains the seating for 1,000 persons; and upstairs, a projection room. The forestage extends well into the auditorium so that it is possible to use the forestage, when the proscenium curtain is down, for acting a normal scene. The stage is wide and deep (nearly 45 feet), while the width, as previously stated, is 30 feet for the proscenium opening, and 150 feet if one includes the space at the sides. Based on this, if the width of the proscenium is 30 units, make the depth of the stage at least 30 and, if possible, 40 units, and the width of the stage including the wings at the side, a minimum of 60, and if possible, as much as 120 units. The scenery docks, the properties room, and the carpenters shop must be large enough to receive the larger pieces of scenery which will be made, painted and stored in them, and have large doors to the exterior. Offices will be required for the director, the manager, the secretary; also a library and a greenroom. The actors will require individual and group dressing rooms, with suitable lavatory accommodation and showers. Food service should be available to the greenroom. Special space should be provided for electrical equipment. Naturally all of these rooms need not be on the main floor. A recent critic has said the dressing rooms at Stratford are not conveniently arranged. The dressing room is too apt to be tucked in the last vacant corner. One should consider that point. There must be easy access to the stage.

Design Data

The larger opera houses of Europe seat 2,000 to 2,500 persons, while the average London theatre seats from 1,000 to 2,300. New York theatres seat from 2,500 to 6,000 persons. Among the cinemas at present being built in Canada are houses that will seat from 1,000 to 2,400 persons. Their cost will be around \$150.00 per seat for standard houses, and over two million dollars for the largest (2,400 seats) Toronto theatre. This latter price includes office space and many special features. In theatre design (as opposed to movies) more money should be spent behind the curtain than in front of it.

The average dimensions of a 20th century theatre are:
Auditorium: Width 60 ft., Depth 70 ft., Height 70 ft.
Proscenium Opening: Width 45 ft., Height 40 ft.
Stage: Width 85 ft., Depth 70 ft., Height 70 ft.
The stage level should be 3'-0" to 3'-6" above the orchestra floor for a theatrical stage. The stage grid should

be 2 to 3 times the height of the proscenium opening to let the fire-curtain be pulled up clear of the proscenium opening, and the stage ceiling should be 7 feet above the grid. An ideal theatre is 70 to 75 feet wide and 55 to 65 feet high.

Another rule is: if the auditorium width is W , then the proscenium width should be

$$\frac{W}{2}; \text{ the sidewings } \frac{W}{4} \text{ each; and the depth of the stage } \frac{W}{2}.$$

For seating: movie seats are usually 19" to 22" wide, 30" to 36" back to back, and with not more than 15 seats between aisles. Wider seats are used in the better sections, and chairs of varying widths can be used to line up the seats at the aisles.

Steps to balconies are 32" to 33" wide.

Club Theatres

In the future one may see more of the Club Theatre. All seats in this deluxe type of playhouse will be reserved for members who subscribe by the year.

Only the finest of motion pictures would be shown in them, of a type to suit the clientele, and comfort for patrons will be first consideration. Members would specify the days on which they would attend and their seats would be reserved accordingly.

The Drive-in Theatre

This type of theatre calls for little in the way of buildings, but sight lines and other technical problems require expert advice and experience.

The Projection Booth

All modern theatres are supplied with projection booths. Owing to the ease with which a fire may start from an overheated film which jams when running through the projection machine, and owing to the obvious inflammability of film, the greatest care must be taken in the design of projection rooms. The aim, of course, is to cut them off as completely as possible from the auditorium and to make sure that even though an intense fire may be burning in the projection room it will not communicate itself in any way to the auditorium; where panic may do more damage than fire.

The projection room shall be constructed of fireproof materials throughout. The minimum size for one machine is 16 feet wide, 10 feet high and 12 feet deep. Where two machines are used, up to 25 feet in width will be required. There shall be a separate fire proof re-wind room, with separate exit door, giving two ways out for projectionist. The doors shall open outwards and have check springs, but no locks. The projection booth openings shall have automatic, self-closing shutters, with fusible links. The booths must be properly ventilated to the outside air.

Minimum Safety Requirements

All exits must be marked with the word EXIT. All exit doors shall open outwards. All such doors shall have panic bolts as required. Firestairs shall be not less than 42 inches wide between handrails; with risers not more than 7½ inches, and treads not less than 10 inches. All stairways should have substantial handrails. The incline of an auditorium should not exceed 2 inches to 1 foot. Seats shall be not less than 30 inches, back to back, and no seat shall have more than 7 seats between it and an aisle. The proscenium firewall shall be brick. All stages shall have a 42" door opening to the outside, on either side of the stage. A skylight or vent shall be arranged over every stage.

Naturally every locality has its municipal and provincial bylaws dealing with the design of theatres and auditoriums, and these should be studied before plans are proceeded with beyond the sketch stage. See also the National Building Code.

The Larger Theatre

The architect about to design a larger theatre would do well to consider what sort of impression he wishes the building to create in the minds of the audience. The theatre must be for the comfort of the audience and, at the same time, the convenience of the play producer and actors. So many of our theatres are old. They are cramped and threadbare. They should be spacious in their foyers and approaches, and have a warm richness of design. The audience and players must not seem apart. The old boxes, awkward as they were (and the worst seats from which to see a play) never-the-less brought the actors and their audience together. The old opera houses of Europe, with their lavish display of statuary, paintings and general furnishings had a glamour to them, which, combined with the elegance of the audience, had a superbly satisfying effect. The greatest concert on earth, staged in an arena, is to me like being invited to a banquet in a barn. Everything has its place, and in its place is seen to the best advantage. That is one reason why religious drama is doubly effective when given in a church of cathedral-like proportions. The masque in honour of Queen Elizabeth's visit to Kenilworth made the most of the locality. The very fact that the Queen and her attendants became part of the very scene they were witnessing produced that oneness between actor and audience so essential to dramatic success. The Greek theatre had its orchestra in which the "crowd of suppliants" or "chorus" seemed to link the audience with the chief actors on the palace or temple steps. The audience must be kept in the right mood; and sight, sound and physical comfort must be catered to. Emotional warmth is no easy thing to capture but it must be provided. The decor has to provide a background for the audience, for when the lights are

up, between acts, the chief source of pleasure is the study of the crowd, and if they are well-dressed and "dressed-for-the-part" they will be interesting to one another. The choice, therefore, lies between the functional coldness of the very modern design and the emotional cordiality of the older type of design.

Arts Centre and Theatre

Those looking towards an ultramodern design could not do better than study the plans of a proposed English theatre, Kew Gardens. Sharply contrasting with Sir Edwin Lutyen's superb plush-and-gold restoration of Covent Garden, this combination playhouse and community centre materializes a dual-purpose conception of a playhouse and a focal-point for local art activities.

The plan shows a sheltered main entrance, flanked by shops, while a ramp leads to an upper floor with auditorium and club-rooms. The lobby includes a tea-room, a bar, a library, a dance floor, and a restaurant. Lounge, game and exhibition rooms are unusual features.

Well-illustrated in the June number of *The Architectural Forum*, it shows how the possibilities of stage production may be extended. An unusual "outer stage" surrounds the auditorium seating in a semi-circle, while a revolving inner stage makes the pre-setting of twelve scenes, thus eliminating scene-changing lag.

Theatre for Spectacle

Radio City Theatre in New York, is too well-known to need any commendation. Those contemplating the design of a larger theatre for film or spectacle cannot do better than study its design. For drama, of course, it is too large.

And so, farewell! I leave you with the words of Samuel Johnson, as they were spoken at the opening of the "new" theatre in Drury Lane in 1747:

"Ah, let not censure term our fate our choice,
The stage but echoes back the public voice.
The drama's laws, the drama's patrons give,
For we that live to please, must please to live."

☆

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The following note on the author, who is well-known in Canadian drama circles, appeared in *La Revue Moderne* (Paris): "Raymond Card appartient à la phalange d'artistes moderne qui fait évoluer l'esprit vers les harmonies de demain. Il a dessiné des décors pour The Canadian Drama League, en particulier pour 'Richard de Bordeaux', 'Romeo et Juliet', et 'Le Mystère de Meaux'.

"Respectueux des traditions, Raymond Card en a parfois appliqué la technique dans ses constructions, ce qui ne l'a pas empêché de se montrer, à l'occasion, extrêmement hardi et novateur."

AN APPROACH TO CANADIAN THEATRE DESIGN

By ERIC W. HOUNSOM

MUCH confusion in the past has resulted from inexact terms used in discussing "theatres". The word, itself, has previously been loosely applied to the combination of the play, the actors and the building. The word is still less specific now that we have another story telling medium. Such confusion has much to do with the creation of the impression among many, that the moving picture theatre is simply a building of less importance than the theatre with a "real stage", and that it substitutes talking pictures for the "real thing".

This is a very narrow view, for the creation of talking pictures is an art of the first magnitude; unfortunately, however, necessitating the use of so many skills and crafts, at such great cost, that to give a return on the investment it must be shown to tens of millions of patrons. One governing skill, ignoring this restriction, could possibly produce a thought provoking, beautiful and imaginative picture, far surpassing anything that the legitimate theatre has ever offered. Perhaps the nearest approach to this ideal, at present, is the productions of Walt Disney. Such productions are a new art and can hardly be classified as a substitute for the "real thing".

The legitimate theatre is a building to house the drama. In the past, all plays were written for the physical theatre that existed at the time that play was written. Each successive improvement in theatre design produced a new type of drama. We can now build a theatre with virtually no limitations, to produce all the plays of the past in their own setting and place no restrictions upon the imagination of modern dramatists. Such a theatre building is good for fifty years.

The moving picture, on the other hand, must constantly change; not only to present something fresh and stimulating to a younger audience, but it must be ready at short notice to conform to any changes in film or projection emanating from Hollywood.

The legitimate theatre is the artist's studio and workshop: the moving picture theatre, the picture gallery. If the analogy is correct, the movie theatre must be dressed up. By dressed up we mean it should be colourful, rather than a neutral background; it should be smart and fashionable, rather than merely correct; for there is nothing but a flat screen to compensate for the lost life and colour upon the stage. The moving picture theatre should offer some compensation for the lost colour by attempting to bring it into the auditorium, the public rooms — and out into the street.

I THE MOVING PICTURE THEATRE

The Patron

The moving picture made its first appearance in a vaudeville theatre in New York City in 1895 and, sandwiched between slack wire artists and comedians, its total effect was novelty and surprise. It could not have had any other effect at once upon an age whose social outlook was already moulded. The ideals of the age were reflected in "gambling hells", saloons, burlesque shows — chautauqua, church socials and "sacred concerts".

An age that saw good and evil clearly contrasted, divided all social life between "the world" and "the church". Because the moving picture was not a cultural, but rather a commercial enterprise, to be shown to the largest possible paying audience; it was first shown in vaudeville theatres. Because an age that read slow moving, sentimental love stories was a bit timid of the rapid melodramatic action of the new entertainment, and shocked at the reputed careless lives led by the players, the moving picture became of "the world" and was immediately condemned by millions.

A generation later, during the period immediately following World War I, we see the audience for the moving picture vastly increased. Prejudice was dying. People found that the moving picture was simply mechanized story telling. A story could be offensive, but story telling could not be. With the increased prestige secured by showing her films in every country, by the interest and sponsorship of womens' clubs, by the successful dramatization of world famous plays and novels, by scenes of exploration and travel, the moving picture purchased a semblance of respectability in even the narrowest mind. Also, during World War I, people had found that distraught nerves were relieved in the dark and quiet of the moving picture theatre. The ideal of frozen faced dignity on mens' countenances received its death blow during the period when millions of Americans choked with laughter at Harold Lloyd. We see the old saying that "every poison has an antidote" exemplified, for the moving picture was being accepted as the antidote for the poison of artificial living.

Cherished beliefs were now under suspicion and the doctrine of living apart from the world was losing its hold upon the American clergy as well as the churchs' adherents. The inspirational concert, the evenings at home around the piano, were losing their appeal, for the post war generation had developed a new conception of living, encouraged by the fact that millions had experienced a broader conception of life in Europe.

With the birth of radio broadcasting in the early thirties, the broadening influence of the moving picture was accelerated. By creating radio programmes and moving pictures to reach the greatest number, the taste and intelligence of the greatest number tended to become the norm.

Countless millions, previously limited by the horizon of their own thoughts and locality had been broadened by the screen. The scenes of luxury, the glimpses of far-away people and customs, the nearness and intimacy of the famous and great, all played their part in creating a more uniform patron who thought and felt as others.

Theatre attendance was encouraged, rather than set-back by the Depression, for expensive entertainment was suddenly denied a large number of people whose leisure hours had unfortunately increased. New theatres were built at this time and a new theatre was born which could truly be called a theatre for moving pictures. During this period, talking pictures were created and in the attempt to honestly and economically solve problems peculiar to moving picture theatres, and to cater to the patron they had created, the moving picture was housed in some of the first buildings of the "Modern Style".

The moving picture had created its own Frankenstein of luxury and unwittingly forced its exhibitors to bow before it. All the influences of screen, radio and motor car, which broke up the street corner loungers and eliminated the brass cuspidor era, tended to create a more discriminating patron who would feel out of his element in the store movie house of the previous generation.

The upheaval which followed World War I was moral: that following World War II, political. The last war has not diminished nor increased the patrons of the moving picture for any moral or religious reason. Patronage increased during the war and after, for the reason that long hours of toil called for quiet relaxation, and the fact that more people have surplus money. Our Canadian moving picture patron is practically everyone in this vast country of ours, and the architect's approach to satisfying this patron is to do what every great composer, novelist and artist has ever done to create their special art—their satisfied their own instinct for beauty.

The Economic Aspect

"Europe is far ahead of us in theatre design," we hear some Canadians say. "Why don't our Canadian architects take their inspiration from Europe and give us better moving picture theatres?" The European movie theatre, they explain, has spacious lounges, dancing floors, bars, better service and better seating. These same critics, if they are laymen, will take a business trip to New York and marvel at all the bronze shop fronts on Fifth Avenue. "New York is a wealthy city," they will shrug. "They can afford it."

If we do some investigating regarding these bronze store fronts, however, we will probably come to the conclusion that there is more bronze used for shop fronts in the United States than in Canada because the former country has a large depressed class—the fourteen million negroes. Bronze has about as much appeal as rusty iron if it is not polished. In normal times, practically every shop of any size had its handyman, a coloured gentleman, who worked for ten or fifteen dollars a week to perform such services as polishing the bronze.

Before World War II, we in America, were much impressed by the progress made in Europe in the design of reinforced concrete structures. Stairs were even cantilevered to the outside walls of factory buildings. Some of these slabs in European structures were as little in thickness as two or two and one-half inches. A well-known American engineer commenting upon this progress in concrete design remarked that labour in Europe was cheap; material costly, while in America the situation was reversed. Such construction involved the careful placing of a multiplicity of light rods and more careful forming, requiring less material but more hours of labour.

Each country and continent has its own economic standards and there can be no international formulas for planning buildings as long as there are tariffs, as long as there are different living standards, and as long as there are different people. For the past six years, moving picture theatre exhibitors have shown a consistent profit. They have been unable to spend money on new construction and very little on maintenance and repairs. They have money earmarked for new construction. It is reasonable to expect that they are now willing to provide more luxury, more space, more inches back to back in seating. Formerly the exhibitor asked his architect for the reasonable minimum; now he wants something better, for if he does not provide it his competitor has the money to do so.

Architects are now planning more spacious theatres, not because they are waking up to the superiority of European houses, or because they have seen some "light" or other, but simply because their clients are willing to spend more. Such luxury, however, has its limits, for the exhibitor is faced with a hiatus. Such improvements in theatre planning could be accelerated if not retarded by the present excessive cost of construction.

All the foregoing may be taken for granted by readers who ask the question: "If America is the wealthiest continent, why are you attempting to convince us that the economic factor is stronger here than in Europe?" The question is reasonable. If we concede that people control economic values, it is easily answered.

That distinguished Frenchman, Andre Maurois has said, we quote: "There was more comfort in France

before 1939 than in America. The amenities of life were more widely distributed. Food was cooked with more art. Houses and apartments, on the whole, were larger."

We may grant that such a condition as Maurois mentions existed throughout all Europe where the moving picture theatres, we compare with North American, existed. We must also add to this, however, that the North American has chosen a record playing radio in preference to food cooked with greater art. He has chosen membership in a golf club, an electric refrigerator, a summer cottage and a motor car in preference to larger rooms in his apartment or residence. The North American has also decided how much he will spend for admission to the movies and the theatre magnate unwittingly builds his theatre to suit that dictation.

It is also sometimes overlooked in comparing European theatres with our own, that most theatres over there have a much greater number of potential patrons within transportation and walking distance. Our own theatre architects are, in time, going to develop a type of theatre which is distinctly Canadian. It will resemble the American more than any other, for our character, being similar, has dictated the same economic conditions.

Theatre design is changing and will change still more. May we quote from an article we wrote a few years ago for the Modern Theatre section of Box-Office magazine, November 6th, 1943:

"The most important change coming in theatres is not, as some people suppose, in materials, but changes in design and planning."

The present day trends toward housing and town planning will in time make obsolete the "facade theatre".

Hitherto the theatre owner, with rugged individualism, so called, gambled on profits. He bought a lot fronting on a business street and then attempted to erect the most theatre for the least money. In the abstract the idea is commendable, but in actual practice the "most theatre" often meant the showiest theatre. The architect was often forced to cater to the whims of a client who only considered his theatre as a monument to himself.

More theatres are now being built to serve a community, as in the larger housing schemes or real estate developments where the architect may approach his problem free from bias. In such cases the problem of the architect is to design a theatre to serve a community in conjunction with school, church and shopping centre, where cost per foot frontage of land is not the deciding factor in planning.

Such a theatre can and will more fully serve the community by closer association with school, church and shopping centre. By increasing the hours of use for such a theatre, bringing about an increase in revenue, there is no doubt that a better type of building could be

erected than the speculative theatre of to-day. Such buildings will become a standard of comparison — a mark to shoot at — for all theatres of the conventional-use type and such buildings will help hasten the obsolescence of the "facade theatre."

Such changes will, of course, depend upon what our town planners do, for our theatre architect can do little more than use the property given to him.

The Building

In designing any structure, the architect first asks the question: "For what purpose is the building to be used?" A storage building is to store materials. Such a structure presents a simple planning and decorative problem, for only in a limited sense does it involve human beings. Going up the scale we have suggested, we reach the school or college building which presents a more complex problem because it involves people. Somewhere on this scale is the moving picture theatre, which not only involves people young and old, but also that subtle thing called entertainment which cannot be accurately defined.

We are attempting to entertain people in this building of ours and we cannot shift responsibility by claiming that the story told on the screen does all the entertaining. No restaurant owner would claim that diners patronize his establishment for the food only, and that they would come anyway if he served them in a well-heated barn. The patron may not notice the decoration; he may not be conscious of any planning, but we are sure that even the most inarticulate patron subconsciously receives a lift or stimulus from his surroundings which adds to his enjoyment of the evening. The moving picture theatre is akin to the modern night club which could not exist without the "decoration" which the patrons, the morning after, say they never noticed.

The planning and background to create an atmosphere or illusion to entertain the patron, is in our opinion, the *tour de force* of moving picture theatre design. The architect can easily learn or obtain expert opinion upon technical factors such as acoustics, sight lines, floor fall, etc., but no one can help him beyond certain limits with the treatment. This is particularly true in modern buildings, for design cannot be divorced from structure. A successful treatment can, over a period of years, result in a great difference in revenue.

In the United States, at the present time, there are several theatre specialists, who in their writings endeavour to discourage the use of any but plain and simple treatments. "Nothing," they say, "should distract the patrons' attention from the picture."

It is barely possible that some of these architects cannot design an interior such as we have suggested and that being so, it is quite understandable they should discredit such treatments as harmful and unnecessary. The Canadian theatre architect must make up his own mind on this important question.

In this brief discussion we cannot attempt to cover the design and planning of theatres. We will endeavour, however, to suggest an approach:

The whole building should front on the street, if possible. The facade may have revenue producing shops but such should be subordinate to the main design. The front of the moving picture theatre (not the legitimate theatre) should be "Visual". Patrons on the sidewalk should be able to see into the public rooms and see people milling around. This can now be accomplished with glass doors and large windows. Do not attempt to impress the patron with size. Make your theatre look spacious but not "big". Low ceiling may be better than high in public rooms. Mere size and giant scale becomes insipid after first shock of surprise.

The area of the public rooms should be made to look as large and intriguing as possible by breaking into smaller units. These units may be more suggested than actual. Patrons should have more or less clear vision across such area. So treated, the area appears larger and curiosity is never quite satisfied at a glance. Avoid any ultra-modern decorative trick which will tend to date the building, such as off-centre mantels in symmetrical rooms.

As the intensity of illumination is low, especially in the auditorium, the architect is advised to design features whose form is never clearly evident, so that curiosity is never quite satisfied. Much, in this way, can be accomplished with light.

It has been said that a windowless theatre auditorium is one of the hardest problems for the designer, and now with the modern style, it is increasingly difficult. It is suggested that the auditorium ceiling should appear higher nearer the platform and that anything resembling a proscenium, dividing screen and audience, should be avoided.

The general effect should be simple. Light and colour should increase toward the screen and some feature over, or near, the platform exits is permissible for interest and scale.

II THE LEGITIMATE THEATRE

The legitimate theatre of other days was always subject to the limitations of that period's skill in building. All living drama (as contrasted with "closet drama") is written for the physical theatre that exists at the time of writing. Improvements in building, equipment and illumination, produce a new dramatic form. These improvements, such as illuminations, come from without the theatre and are adapted by the contemporary Peter Clark to foster a new type of theatre building, which in turn develops a new crop of dramatists.

There was so much antagonism to the drama in Shakespeare's day that plays were performed in innyards. The

drama had little opportunity to build deep and solidly. The few properties must necessarily be something easily transported or improvised at each station. The actors, on a limited budget, could afford only their street clothes. The performance had to be given in daylight.

While it is idle to conjecture the type of play the great bard would have written for the memorial theatre at Stratford-On-Avon, it is fairly certain that the world would have missed some of its greatest poetry. Lacking an elaborate paraphernalia of illusion, the atmosphere had to be created with the spoken word. There was no drop curtain, so the dramatist had to detach the actors from the audience sitting all around them. There was no costume to fix the significance or importance of the characters. There was lacking the hushed and reverent audience of to-day so declamatory speeches were inevitable. Such limitations did not discourage the writing of great drama and such a theatre produced the greatest dramatist of all time.

Published plays of other periods are full of what to us appear to be artificialities, such as asides and declamatory speeches. We are always entertained, however, by play revivals produced in the spirit of the original. Congrieve is barely intelligible to modern readers but modern theatre goers enjoy revivals of his plays. These artificialities were accepted without question, as we still accept the three walls of a room. With the invention of the incandescent lamp, the drama retreated behind the proscenium wall and the modern theatre was born. A gossamer film of illusion divided the audience from the actors to usher in a new drama of realism which became possible when the expression on the face of the actor could be seen as in real life.

As the spoken word could carry a limited distance, theatres were built up instead of back. As actors needed rests and the story required a change of background, plays were divided into acts and scenes. Between such scene changes the audience were permitted to stretch their legs and go to the lounge for a chat or a "quick one". Cultivated people are usually articulate and wish to discuss with others what they have seen. They wish to meet the actors and the lounge and the green room became as important to the enjoyment of the drama as the auditorium and stage.

In such respects the theatre has not changed in centuries. Drama was never presented in an undiluted state in the sense that all theatre goers appreciated the drama. At the time of Mrs. Siddons and Kemble, London houses such as Covent Garden and the Haymarket Theatre presented as much variety as the local "Opera House" of to-day.

The greatest change in the theatre has come in our own day, for the moving picture has made tremendous inroads upon the vast audience for theatrical entertainment. The moving picture has slashed off the mass who, because of their drab lives, sought cheer and happiness in the theatre; it has diverted others who took their

theatre diluted with magicians and performing bears; enticed away others who are better satisfied with the feminine pulchritude displayed in coloured musicals.

The theatre can now offer drama in an undiluted state. Plays can now be written for a physical theatre with few, if any limitations, for possibly the most intelligent audience the theatre has ever known. We are now waiting for dramatists for this ideal theatre of to-day but before we have either we must have the building. We can now build the modern playhouse; the intelligent audience is waiting, the architect is hopeful—but who is to build it?

We might find the answer by tracing the history of the stage in North America. In the United States the theatre early got into the hands of big business, particularly in New York, where most of the theatres were built by speculators. With the aim of securing the largest possible return on the dollar, a vicious set of conditions were created whereby good plays were removed if they did not "take" at once. When the lessee finally got a "hit", he was forced to divide his profits with the theatre owner. It did not matter to them if the scenery had to be stored in the alley; or if patrons, during acts, were forced into the street because of an absence of lounge space; or that the green room disappeared because the actor became a commercial commodity.

To quote Mr. Lee Simonson: "The tenant, the producer of the play, agreed to pay forty per cent. of his gross receipts as rent and vacate the premises within two weeks whenever this forty per cent. fell below a stipulated figure, usually \$5,000 a week. This process of dispossessing tenants kept up until the theatre housed a 'hit'; and a hit could average anywhere from \$20,000 to \$30,000 a week or over, and run for a year or more. Any attempts to improve theatres either architecturally or mechanically was met by the invariable answer of a landlord profiting by urban congestion: If the tenant did not like it he could go elsewhere."

The play usually originated in New York or Chicago—sometimes Boston or Philadelphia. The rest of United States and Canada became "the road". Such interests, with their monopoly of professional drama, could charge anything for their product that the traffic could bear and appear to have had no interest in putting their fortunes, thus acquired, into new theatres, either in the United States or Canada.

At the present time in North America, indeed for the past thirty years, there have been few legitimate theatres built by private enterprise. We are not including, of course, the modern and well equipped houses built for the reigning king of "girl shows". A new impetus has been given to the commercial stage by the prosperity of the times, which has been reflected in the theatre as well as everywhere else. It is probable that many new theatres would be built if the sponsors could be reason-

ably sure that such prosperity would continue. Theatre owners remember, however, the weeks and months in the past when their theatres were closed. Moving picture theatres suffered a reduction in profit, but legitimate theatres had no profit at all. The legitimate theatre must necessarily last longer and cost more per seat than the picture theatre and present building costs mitigate against its erection.

We believe that few legitimate theatres will be built in the future and few, if any, adequately planned and properly equipped theatres can ever be built in Canada by private enterprise. Let us face it! Stage productions to-day demand a building and equipment far beyond the profit seeking control of private enterprise. To anticipate such theatre building is wishful thinking. Talking moving pictures doomed the private enterprise theatre. The mass is now entertained by movies and the remainder with an interest in drama can never form a large enough group to finance, through the Box-office, the building of a private enterprise theatre.

Such a condition is not to be regretted, for the system produced much purile as well as good American drama. It produced no commercial Canadian drama at all. We have never lacked dramatists but their work can hardly be called Canadian. To have their plays produced, such men wrote for the American commercial stage and more often than not, moved to that country to lose their identity as Canadians. Such playwrights, even if they remained, disguised their identity and point of view, and wrote about people who were, or could be, Americans. With such juggling, their possible contribution to Canadian culture was lost.

We accept the fact that the art gallery and public library are community owned and eyebrows would be raised if anyone demanded that they show a profit. We believe that the theatre in Canada has reached the position of the library, generations ago, and the art gallery of yesterday. We must accept the theatre as a cultural enterprise. The acting companies may be professional road companies, semi-professional, or professional residents, or both, but the building must be community owned. Perhaps half the cost could be borne by the community as taxes; the remainder by private subscription. The price for admission can then successfully compete with the screen if it is based upon operation and not upon amatorization and dividends.

Such a building should have an auditorium large enough for the visiting "Oklahoma" but not too large for the social drama. Under the same roof it should have a "Little Theatre", a testing theatre for Canadian plays which the existence of such a building would encourage. Let us stop waiting for the commercial theatre interests to build our theatres—let us do it ourselves. The time seems propitious, for every city now has a master plan under consideration and such building is allowed for in it.

LETTER TO THE EDITOR

The article by Cecil S. Burgess in the "*Journal of the Royal Architectural Institute of Canada*" No. 12, December 1946, which I read with very great interest, induces me to make the following remarks:

Where it is stated that, "low cost appears to have been achieved largely by a reduction in size to an extent that would not be permitted under the Canadian National Housing Act", the impression is quite wrongly created that in the period before the Second World War larger houses were built for the masses in the Netherlands than now. The reverse is the case: on the whole the post-war workers' dwellings are 10 per cent. larger than those of 1938-1940, while there is a period of 45 years behind us in which the Housing Law was in operation and in which the size as well as the quality of dwellings of this type was steadily improved.

The explanation of this phenomenon, viz., that the Netherlands workers' dwelling was always so much smaller than the Canadian must probably be sought partly in the fact that in previous centuries the Canadian pioneers built their houses themselves and thus encountered fewer economic obstacles than the Netherlands workman, who generally rents his house.

Another reason why in particular the living room is often somewhat smaller in the Netherlands plans than in the Canadian is that it is not tolerated in the Netherlands that access should be had to the house via the living room, so that the plans must always provide for an entrance porch (with clothes rack) or (and) a passage. This increases the privacy of the living room, through which the domestic traffic will be less intensive, so that the area of its floor can safely be some tens of square feet smaller with the same accommodation.

It is also doubted here whether the designs shown were quite recent. The Ministry of Public Works and Reconstruction issued last summer the "Provisional Guide for the Design of one-family houses (workers' dwellings)", in which the size, etc., of workers' dwellings and their component parts was laid down in detail.

For normal dwellings, destined for a family composed of husband, wife and from 2 to 4 children, the following applies: Cubic content of the dwelling (measured above the ground floor, after deducting the cubic content of the shed): 8,000-10,200 cub. ft., which with the customary height of a storey in the Netherlands amounts to a floor space of 800-1,020 sq. ft.

Minimum floor space and breadth of the living room: 172.2 sq. ft. and 11 ft. 4 ins. or 12 ft. 3 ins., dependant upon the position of the grate.

A second living room, if any, has an area of at least 75 sq. ft., and a width of at least 7 ft. 11 ins.

The bedrooms constitute a special case. It appears that in Canada and the United States the beds are never placed with a long side parallel to and along by the wall, but almost exclusively at right angles to the wall, with the head touching the wall. As a result, about twice as much floor space is required. With us, only the beds of the married couple are nearly always placed head to the wall. Consequently, we have single bedrooms with at least 48 to 53 sq. ft., double bedrooms with at least 81 sq. ft. and parents' bedrooms with at least 96 to 106 sq. ft. floor space.

Kitchen-living rooms must be at least 21.5 sq. ft., larger than the living rooms, while kitchens proper must be 48 sq. ft. or more in area. The wash is often done in fine weather in the open air, in wet weather in the shed. Meals in the kitchen are not so popular. Instead of bathrooms, shower baths are to be found.

As regards the width of frontage, 17 feet is laid down now-a-days. The frontage of 21.4 feet mentioned, probably refers to the "bayonet" type of one-family terraced houses. It is in front (left) 20 ft. 8 ins. and (right) 13 ft. 2 ins. broad, and at the back (garden side) 16 ft. 11 ins. broad, both right and left. Another type is 1½ ft. (in all) narrower.

I have confined my remarks to the correction of some inaccuracies in this otherwise excellent article. To what extent these inaccuracies were caused by the exhibits is a matter which I am unable to determine.

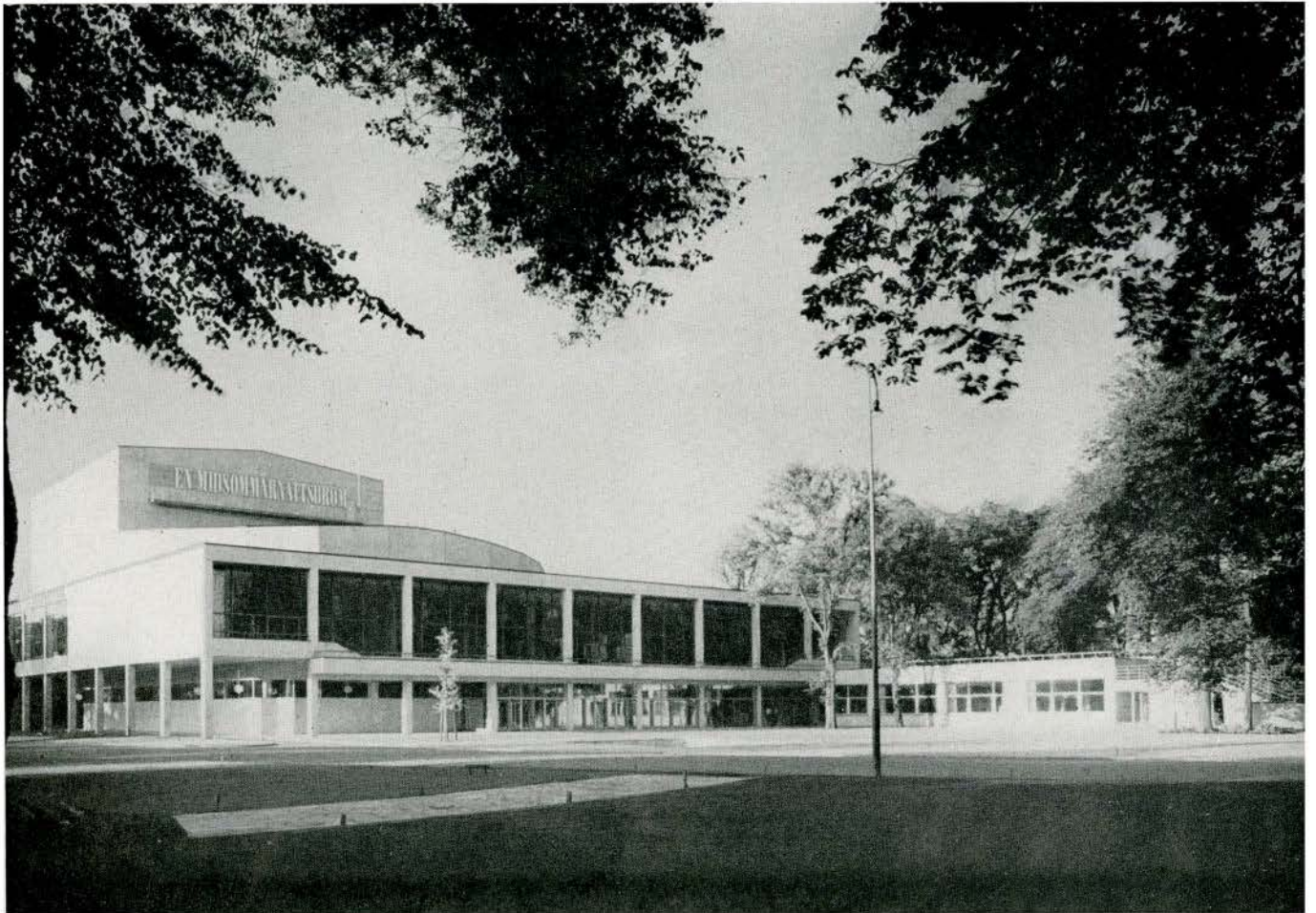
You may consider it of importance to bring these corrections to the notice of your readers.

The Minister of Public Works and Reconstruction, Holland.
For the Minister, The Head of the Publicity Department,

J. W. Rengeling

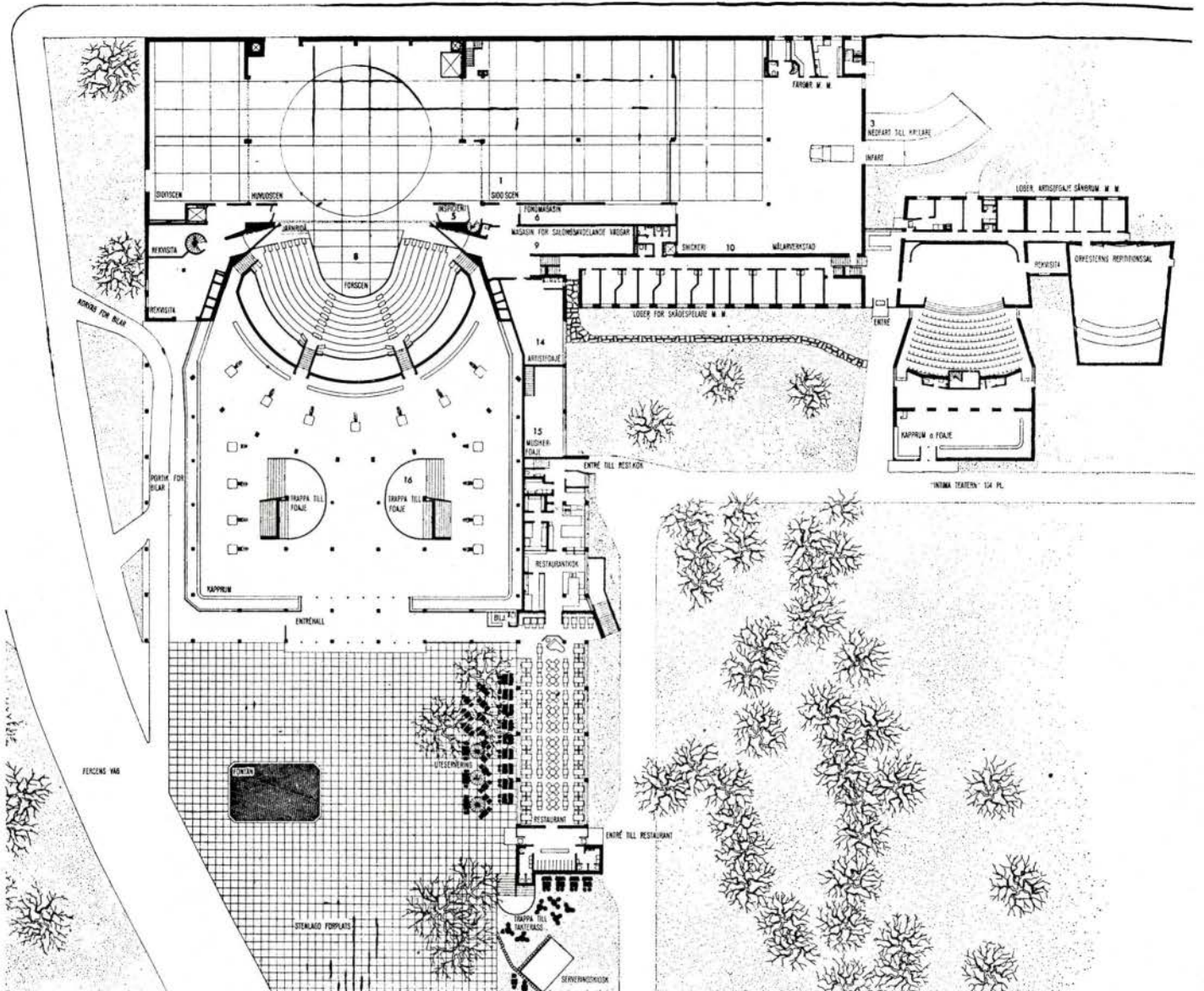
SCHOLARSHIP TO GREAT BRITAIN

The *Journal* is pleased to announce that Pilkington Glass Limited have very generously offered a Scholarship to the Schools of Architecture in Canada. The Scholarship will be fifteen hundred dollars in value, with the fare of the student paid to and from Great Britain. The Scholarship will be competitive, and each School will submit the work of the three fifth year students whom it considers eligible to a jury of architects appointed by the Schools with one additional professional assessor nominated by the donors. The successful student will select either Liverpool University School of Architecture or the Architectural Association, London, as the School which will supervise his studies and travel. It is obvious that the Scholarship will provide a stimulus to architectural education that will be reflected in the architecture of Canada in the years to come.

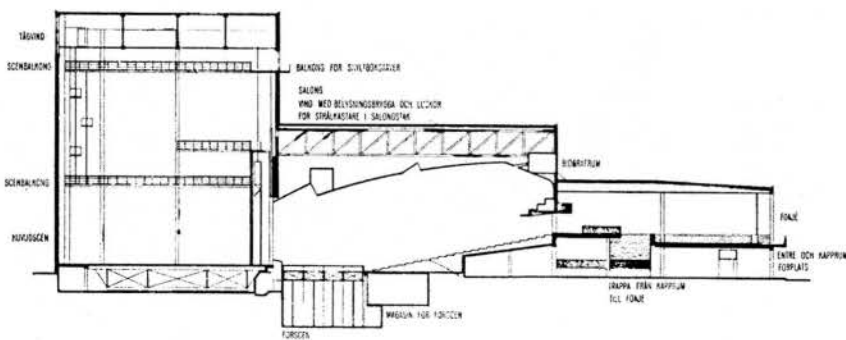


MALMO THEATRE AND CONCERT HALL, MALMO, SWEDEN

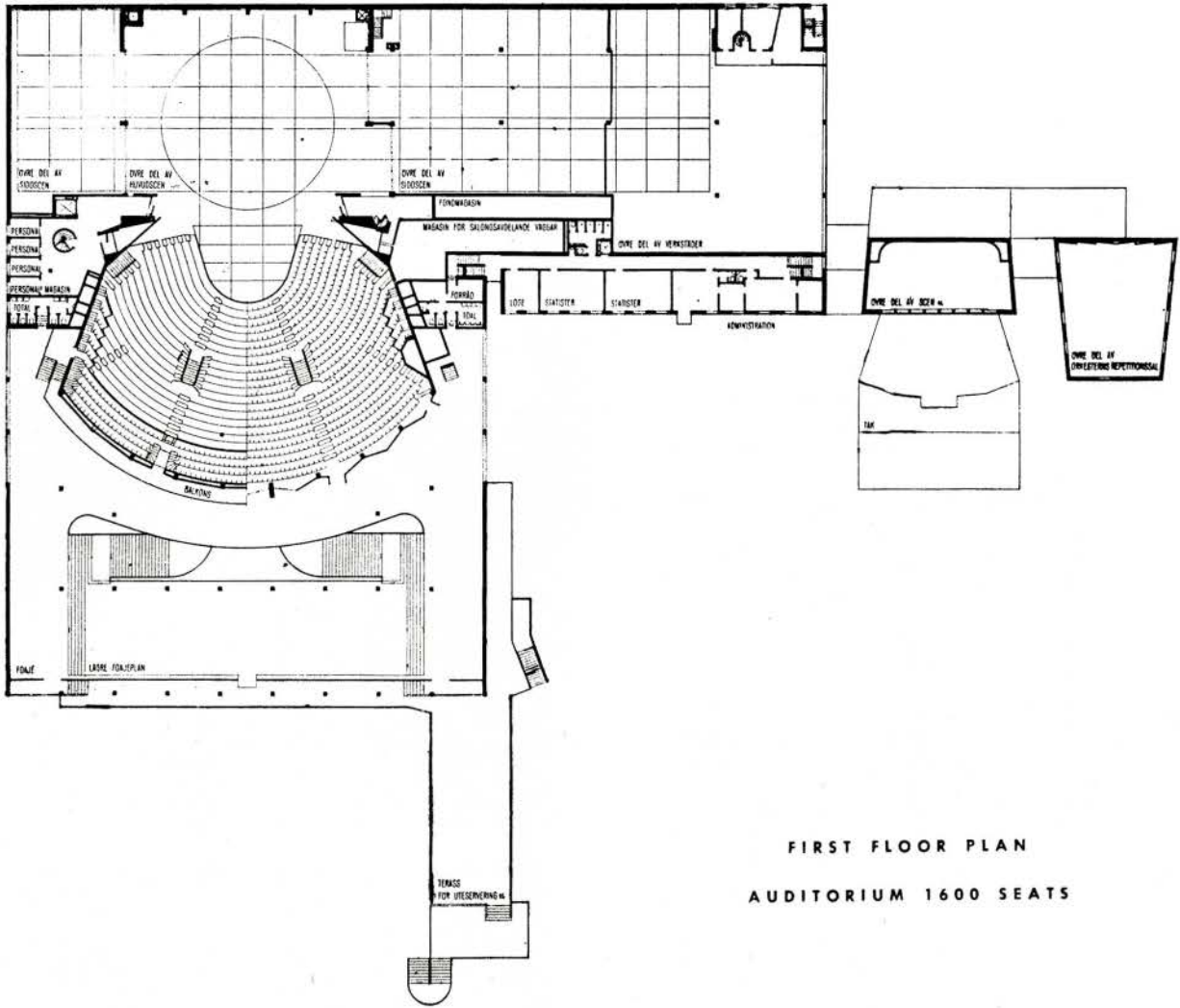
LALLERSTEDT, LEWERENTZ AND HELLDEN, ARCHITECTS



GROUND FLOOR PLAN

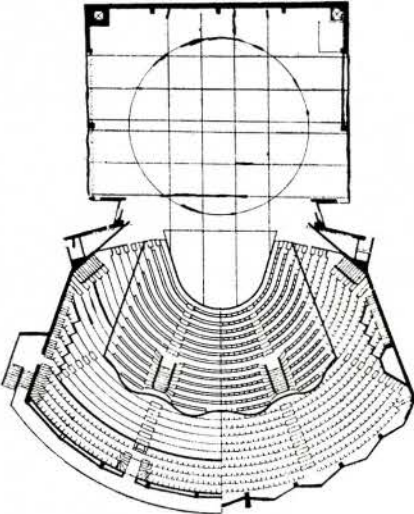


SECTION THROUGH STAGE, AUDITORIUM, FOYER AND COATROOM

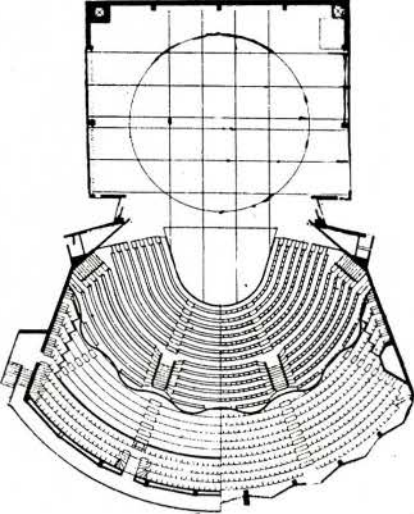


FIRST FLOOR PLAN
AUDITORIUM 1600 SEATS

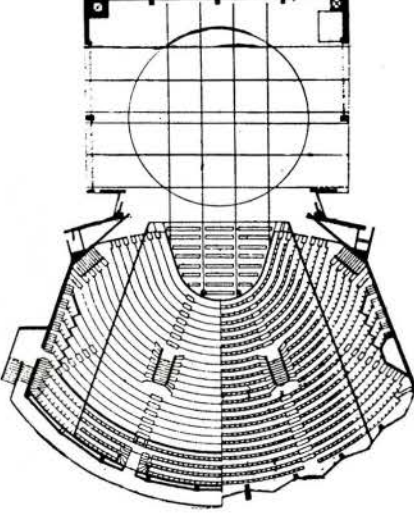
AUDITORIUM CAN BE REDUCED TO ACCOMMODATE SMALLER AUDIENCES



400 SEATS, ADDITIONAL 100 ON FRONT PORTION OF STAGE



600 SEATS, ADDITIONAL 100 ON FRONT PORTION OF STAGE



1100 SEATS, ADDITIONAL 100 ON FRONT PORTION OF STAGE



AUDITORIUM



FOYER



FOYER ON FIRST FLOOR

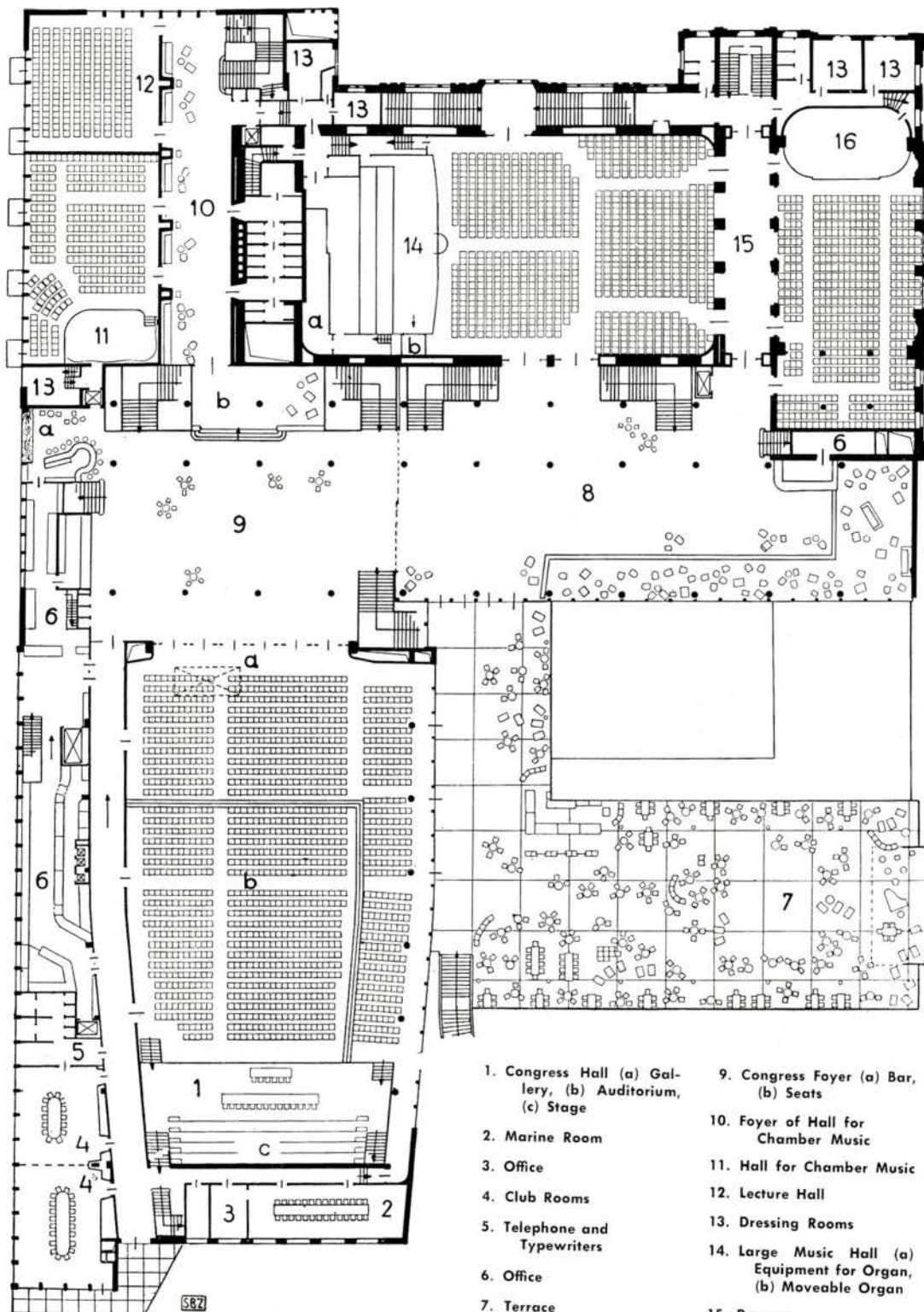


THE INTIMATE THEATRE



INNER COURT, CONGRESS HALL, ZURICH, SWITZERLAND

HAEFELI, MOSER, STEIGER, ARCHITECTS



- | | |
|---|--|
| 1. Congress Hall (a) Gallery, (b) Auditorium, (c) Stage | 9. Congress Foyer (a) Bar, (b) Seats |
| 2. Marine Room | 10. Foyer of Hall for Chamber Music |
| 3. Office | 11. Hall for Chamber Music |
| 4. Club Rooms | 12. Lecture Hall |
| 5. Telephone and Typewriters | 13. Dressing Rooms |
| 6. Office | 14. Large Music Hall (a) Equipment for Organ, (b) Moveable Organ |
| 7. Terrace | 15. Passage |
| 8. Concert Foyer | 16. Small Music Hall |

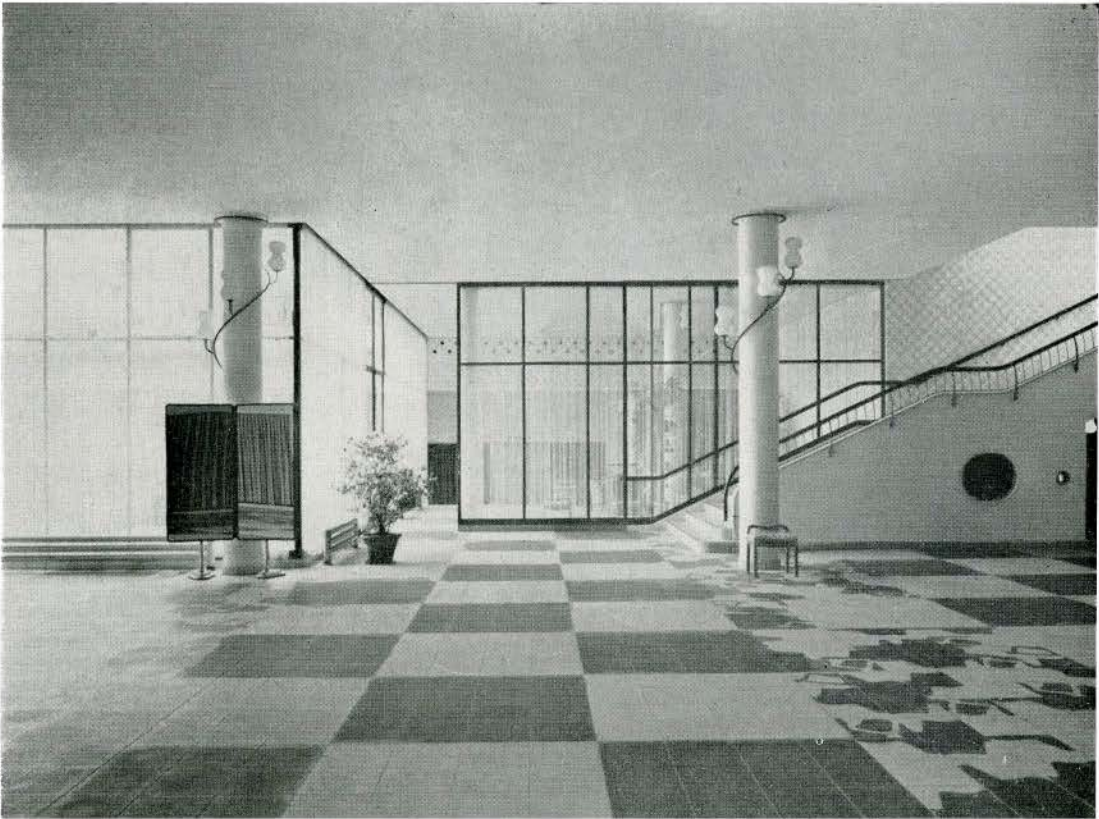
MAIN FLOOR PLAN



SOUTH SIDE OF GARDEN HALL WITH VIEW TOWARDS CONGRESS HALL



FRONT ELEVATION



VESTIBULE



VIEW INTO CONCERT FOYER



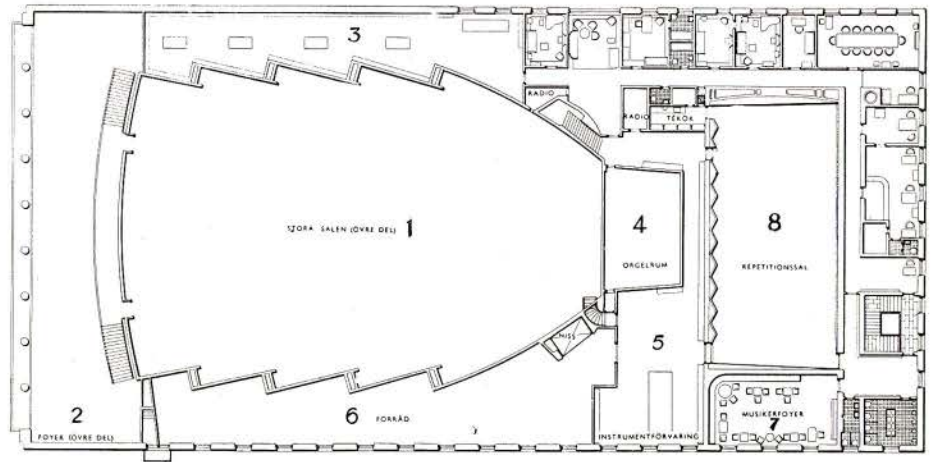
MAIN FRONT

GOTHENBURG CONCERT HALL, GOTHENBURG, SWEDEN

NILS ERIKSSON, ARCHITECT

SECOND FLOOR —

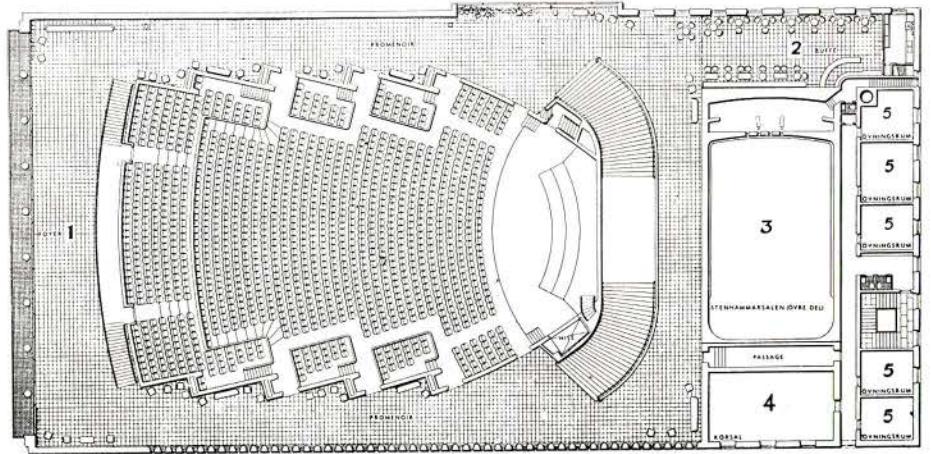
1. Upper part of large concert hall
2. Upper part of foyer
3. Library
4. Organ loft
5. Orchestra room
6. Store
7. Musician's foyer
8. Rehearsal room



SECOND FLOOR PLAN

FIRST FLOOR —

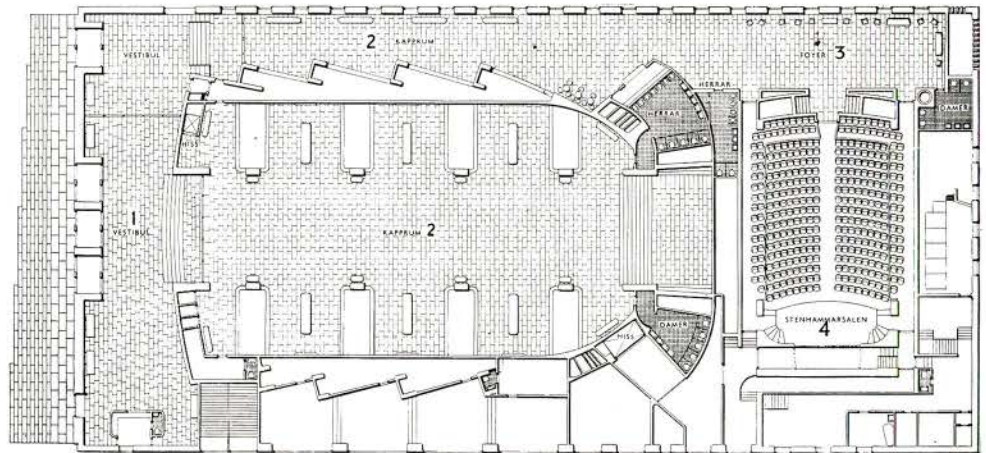
1. Foyer
2. Bar
3. Upper part of small concert hall
4. Green room
5. Dressing rooms



FIRST FLOOR PLAN

GROUND FLOOR —

1. Vestibule
2. Cloakroom
3. Foyer
4. Small concert hall



GROUND FLOOR PLAN



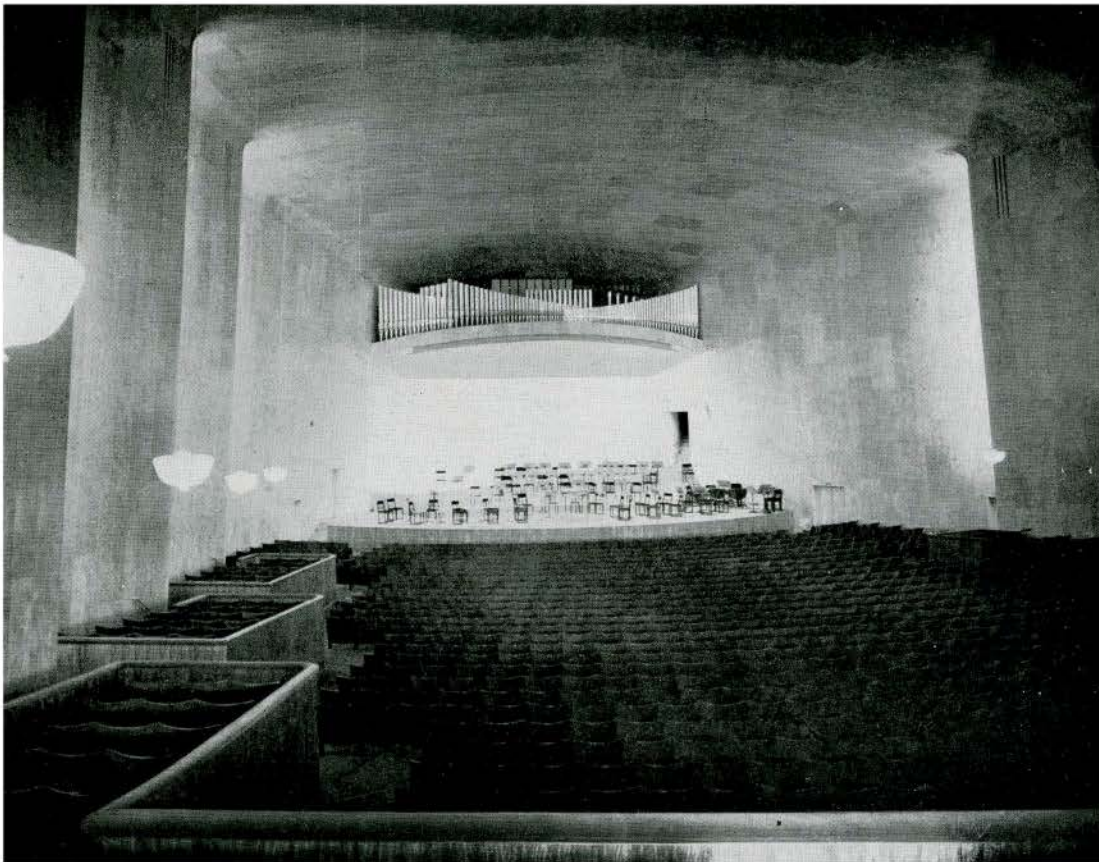
VIEW FROM FOYER



FOYER



FOYER



CONCERT HALL

THE CANADIAN ARTS COUNCIL AND UNESCO

By HERMAN VOADEN

Address at the 40th Annual Assembly of the Royal Architectural Institute of Canada, Montreal

IN the spring of 1944 the architects of Canada joined forces with their fellow artists — with writers, painters, sculptors, craftsmen, musicians and theatre workers — in action unique in our history and, I believe, unique in the history of culture. It was a march upon government to demand support for the arts — to demand that our cultural resources should be developed more effectively to give Canada increased prestige in the community of nations, and to provide greater security for our artists and a happier life for our people.

The Royal Architectural Institute, the Royal Canadian Academy of Arts, the Canadian Authors' Association, La Société des Écrivains Canadiens, the Dominion Drama Festival, the Federation of Canadian Artists, the Canadian Society of Landscape Architects and Town Planners, the Sculptors' Society of Canada, a representative music committee, and six other leading organizations — a total of fifteen in all — prepared briefs. A small committee, on which first Mr. Forsey Page, and then Mr. Somerville served, prepared a summary brief, and on the morning of June 21, 1944, eight of us faced the Reconstruction Committee of the House of Commons. Present were Mr. Ernest Cormier, Mr. Forsey Page, Mr. Ernest Fosbery, Miss Elizabeth Wyn Wood, Sir Ernest MacMillan, Mr. Marcus Adeney, Mr. John Coulter, Mr. H. Garnard Kettle and myself.

The committee room was crowded, that bright June morning. To the north the mountainous hills of the Laurentians stood out clear against the blue sky. John Coulter read the summary brief, and then for two and a half hours the debate ranged freely over the issues at stake.

"Rightly to be great," said the brooding Hamlet, "is not to stir without great argument." We had great argument there that day — a cause to be proud of. We sought a new way of life in Canada. We sought to enrich the fabric of a young, pioneer society with the civilizing and maturing pattern of the arts. We sought to initiate a change of attitude on the part of our people and our government. We asked our government to encourage the arts in the way they have been encouraged in Sweden, France, Denmark, Mexico, and, more recently, Britain. We said that such a policy would pay handsomely in material as well as cultural and spiritual dividends. We praised the government of the Province of Quebec for its generous support of the arts, particularly in training young artists.

The basic problem, we said, was one of cultural malnutrition. Millions of people in Canada lack opportunities for the creative use of their leisure time. Millions have

never seen a first-rate original work of art, nor attended a symphony concert or a professionally produced play. At the same time, thousands of professional artists, and others with creative ability, enjoy a field so limited that they are forced into activities unsuited to their talents.

We had many proposals to make. They fell into three groups. The first was for a government body to promote a national cultural program and to provide music, drama, art and film services for all our people. The second was for community centres, which would be focal points for neighbourhood activities in many fields, including the arts, and would receive these services. The third group included the strengthening of copyright protection for the artist, improvements in industrial design, housing and town planning, the establishment of national cultural institutions such as an orchestral training centre and a national library, and the promotion of Canadian art abroad.

These proposals for a wider distribution of cultural advantages were favourably received by the legislators of all parties, by the press and by the public. Almost immediately results were evident in the increasing interest taken in the arts by government departments, by many of the provinces, and by voluntary organizations interested in informal education and recreation. But we realized that continuing pressure was necessary, and on December 5, 1945, the goodly comradeship which had been so effective on that June day was confirmed in our permanent organization, the Canadian Arts Council.

We tried to persuade Mr. Forsey Page to accept the presidency of the new organization, but he was weary with his years of well-doing as president of your association, and declined the honour. As president, I have been fortunate in being associated with a strong executive. Mr. Fosbery, president of the Royal Canadian Academy and chairman of the loosely-knit organization which preceded the Council, is our honorary president. Mr. Arthur Phelps of the CBC's International Service is vice-president; Mr. Claude Lewis, secretary, and Miss Erma Sutcliffe, treasurer. We have a Community Centres Committee directed by the Executive Secretary of the Canadian Federation of Artists, Mr. H. G. Kettle. Dr. John Murray Gibbon has done an effective piece of work as chairman of the Copyright Committee. Mr. Paul Duval has headed our Promotion Committee, and Mr. D. M. Le Bourdais has prepared an excellent constitution which will be considered at our annual meeting in Toronto, March 28-29. The entire executive has been active in trying to secure a National Arts Board. There has been activity in the fields of publication, exhibitions and films.

But the Council's greatest success has been in the field of Foreign Relations, under the leadership of Miss Elizabeth Wyn Wood. We have been able to forge ahead here because of the appearance of a new star in the galaxy of the United Nations Organizations—UNESCO—the United Nations Educational, Scientific and Cultural Organization.

A word about the background of UNESCO. In the first World War, President Wilson proclaimed his fourteen points, and the League of Nations was formed. But the people of the world were not yet ready for world government. No sooner was the war over than the United States withdrew from the League of Nations. The peoples of England and France—yes, even of Canada—were not world-minded. Political and economic interests sabotaged the League of Nations. Sanctions were ineffective. The world resolved itself into two armed camps, the "haves" and the "have-nots", with the "have-not" nations accepting their strong men in order to gain a place in the sun.

And so the Second World War came upon us. It ended in the rocket bomb and the atomic bomb. The fate of the men and women of Hiroshima may be your fate and mine: to be snuffed out suddenly—as the flame of a candle in a breath of wind. It was an ominous and awful curtain to the second act of Armageddon. The thought of the third act—should it come—appals the imagination.

H. G. Wells said that we are in a race between education and catastrophe. In 10, 15, or 20 years, the nations will be ready for another war. This is how long UNESCO has, through education and enlightenment, to build a new one-world outlook in the minds and hearts of the peoples of the world—to train the world citizens of the future. Prime Minister Attlee's memorable words form part of the first sentence of the constitution: "Since wars begin in the minds of men, it is in the minds of men that the defences of peace must be constructed." UNESCO's task is to put an end to that ignorance of each other's ways and lives "which has been a common cause, throughout the history of mankind, of that suspicion and mistrust between the peoples of the world through which their differences have all too often broken into war."

We have a UNESCO problem in Canada, in the relations between the people of our two great cultures. Here I should like to quote from a newspaper report of a speech recently made by the Right Honourable Louis St. Laurent:

"Mr. St. Laurent said that what divided Canadians of different languages was most often 'lack of exact information regarding one another, stupid prejudices and practical misunderstanding, unfortunately very widespread, of the true principles of democracy.'

"'There is one way to reconcile Canadians definitely,' he said. 'That is to introduce them to each other. They will then discover enough resemblance and common interests not to quarrel any longer. As Canadians we

have every reason to be united and none to misjudge each other systematically.'"

UNESCO seeks to do more than combat the disruptive forces which produce war, and to teach the one-world outlook. It stands, as the constitution states, for "the intellectual and moral solidarity of mankind". It stresses the free flow of ideas, the interchange of information, persons, and activities, and the wide diffusion of culture. Thus the organization provides an arena in which the world forces of culture and enlightenment can meet to work—not only to secure the peace, but to enrich the peace as well. The other units of the United Nations are interested in the goals of political and economic democracy. UNESCO stands for cultural democracy—for the good life for all peoples. Athens was a slave state; its people were the most enlightened and cultured the world has known, yet they were able to live on a superior plane because they were supported by a slave population. From feudal times on down the centuries we have seen the amenities of life made available to increasing numbers of the population; at first to the aristocracy, then to the upper classes, then to intelligent sections of the middle classes. The genius of our age is to keep men free in mind and spirit, free from fear and want, and at the same time, through universal education and the use of mechanizing and reproducing instruments, to make the arts part of the lives of all people. Hence UNESCO finally envisages a great streaming of culture about the world: each nation stimulating its own best art, and sending it out to other countries to explain its life and ideals—at the same time receiving the incoming streams and making them available to its own people.

Because we saw, therefore, in UNESCO the great instrument not only to keep the peace but to make a more civilized and humane society, the executive of the Canadian Arts Council, led by Miss Wood, was interested in the new organization from its inception. At the preliminary conference in London in November, 1945, Canada was one of the signatories to the charter and accepted a place on the UNESCO Preparatory Commission. All last spring, summer and fall, working committees of the Preparatory Commission, in co-operation with newly formed sections of the secretariat, planned the programme for the first general conference. The Canadian Arts Council asked for and received copies of the programme as it was taking shape.

All last year our Foreign Relations Committee did an excellent job in arousing public opinion on behalf of UNESCO. Newspaper and magazine articles and editorials were "sparked". Singly, and in co-operation with other organizations, the Council urged the government to ratify the Charter after open debate in the House of Commons rather than by Order-in-Council; we urged the government to send an effective and representative delegation to the first conference and to set up a National Commission in Canada without delay.

The mention of a National Commission brings me to

the most interesting thing about the structure of UNESCO. The statesmen who drafted the Charter wisely urged each member state to secure the co-operation of its principle educational, scientific and cultural bodies in the work of the organization, preferably by setting up a National Commission on which these bodies would be represented. This explains the tremendous interest which organizations of teachers, artists, scientists, librarians and scholars have shown in UNESCO. Through the National Commission UNESCO becomes their organization — one through which they can co-operate with kindred organizations in other countries in the cause of a peaceful and enlightened world.

We saw our efforts crowned with success with the ratifying of the UNESCO Charter by the House of Commons after an intelligent debate early in August. Then, on October 7 and 8, the government called together a Temporary Advisory Committee on UNESCO, representing many of Canada's educational, scientific and cultural organizations. Miss Wood and I were present on behalf of the sixteen organizations of the Council. We pleaded for a delegation which would include not only delegates and alternate delegates, but competent advisers in the major fields of the arts. These efforts bore some fruit. The Canadian delegation of twelve was double the size of Canada's representation at the Preliminary Conference. Our societies had a delegate and alternate delegate. This was not as thorough representation as we should have liked in the arts. We had asked for a musician and an architect, for an author and a second representative of the visual arts. But at least the artists of Canada were represented.

When the conference convened, we found that not more than a quarter of those who attended the meetings of the Arts Sub-Commission were artists; the rest were museum and gallery directors, patrons of the arts, cultural experts, educationists and administrators. So it might have been with Canada, had we not made ourselves united and strong! With the recognition of the Arts Council in UNESCO matters the first chapter in the story that was begun on the June day in Ottawa was completed. What remains in the chapters ahead of us is for us to write. It will depend on our vision and courage, on our unity and strength.

Our position as cultural delegates at the UNESCO Conference was strengthened because, not only did we represent artists' organizations, but we had consulted these organizations about the programme. The consultation was done in too hurried a fashion. There was no time to allow our societies to discuss the programme in regional associations. We had to deal with delegates and representatives on the national level—all in the space of two or three weeks, before we left for Europe. But as a result of having discussed the programme with our member societies we were in a preferred position at the conference.

There were six Sub-Commissions in the programme

section. The programmes for Education, Libraries and Museums, and National Sciences were excellent. The programme for Mass Communication was perhaps vague, but on the whole satisfactory, as was also the programme in the Social Sciences. The poorest planning had been done in the field of the arts. It was divided planning. One committee had prepared the literature programme; another the programme for the visual arts and music. There was no uniformity. The theatre was almost neglected. In the visual arts and music the programme was largely the work of an American museum director; it emphasized extensive surveys: surveys, for example, of the conditions under which the visual arts and music are produced in various countries, of the economic condition of artists; of the effects of broadcasting on music and art; of methods of preserving the arts of the non-industrialized countries from debasement through contact with industrial civilization.

On our passage to Europe on the grey, swift old *Aquitania*, and in the preliminary days of general speech-making at Paris, we made a careful study of the comments on the arts programme prepared in consultation with our member societies. We came to a difficult decision: to rewrite the entire arts programme, stressing basic activities and services, rather than these surveys. Because we spoke with the support of 8,500 artists in Canada, and with the approval of the delegation and the government, we felt confident in doing this.

Our proposals were largely adopted. The result is that there are now four equal sections in the arts division of the UNESCO secretariat: sections for music, literature, theatre, and the visual arts (in which architecture is included).

Let me briefly review this programme in terms of what it may mean to each of you, if not this year, at least in the years to come. First of all, UNESCO should offer you information services. It should be the switchboard of the architectural community throughout the world. Through it you should be able to make contact with a fellow worker in any country. You should be able to secure information about designs, materials and construction in other lands. There may be an international news service dealing with architectural developments; perhaps only a mimeographed bulletin to begin with; later a world architectural journal, or year-book, or a pool of interesting articles available to architectural journals in every land, such as is planned in the field of literature. These things are for you and your international organization to fight for. UNESCO will be what you make it.

The instrument in each country for channeling and providing information should be a National Commission, with its own Secretariat. We have no commission as yet in Canada. I suggest that one way in which to secure a commission, in addition to petitioning directly for it, is to channel such requests now through the Department of External Affairs to UNESCO in Paris and thence to

other lands. If there is a veritable flood-tide of exchange of cultural information on a world-wide scale, the government will have to provide a staff to handle it.

The second basic activity for UNESCO is the exchange of personnel. UNESCO is to set up a bureau to encourage the exchange of students, teachers and professional workers. UNESCO's role here will be one of facilitation. If a country like Canada, or an organization like your own, should desire to embark on an exchange scheme, UNESCO should make the proper contacts and assist in the completion of the arrangements. International schools and conferences which bring workers together are to be encouraged.

The third major activity is in the circulation of exhibitions, along with theatrical and musical performances. Exhibitions of housing and town planning, as well as exhibits of pictures and sculpture, will be promoted.

On the diplomatic level, this exchange of information, personnel and activity will be assisted by efforts to have the barriers between states lowered: barriers of high customs, border and exchange difficulties, and overlapping taxes. An effort will be made to reduce postage rates on books and other cultural material, and to have transport charges and fares reduced.

Copyright is to be stressed; it is hoped that UNESCO may bring the two great copyright systems of the world together (Berne and Inter-American) in a single all-embracing world copyright convention. The role of the arts in education for international understanding is to be stressed. There will be a limited amount of central research in such fields as the reproduction of pictures.

Obviously one of UNESCO's most important activities is to co-operate with international organizations. You have such an organization in architecture. In the first year of UNESCO, at least, there will be no direct financial assistance to such organizations, but UNESCO will help them in carrying out many of their projects, such as holding international conferences and festivals, and undertaking research and publication, with the means at its disposal.

One of your interesting problems with regard to UNESCO is to know where you belong in the organization. In so far as architecture is related to engineering, you will be served by the Natural Science division of the organization. Predominantly, I should suppose that architecture is an art, and that you should look for assistance to the Visual Arts section of the Secretariat. But there is a third field in which you are interested. The Social Science section is to act as a clearing house for studies and information concerning home and community planning. I attended the meeting of the Social Science Sub-Commission when this project for a home and community planning institute was discussed. Professor W. G. Holford, British expert on town planning, made a general statement on the question and on the tasks for UNESCO in this field, urging assistance to existing technical organizations and the collection of

results. The Economic and Social Council of the United Nations is also interested in the subject, and the question of jurisdiction was discussed at length. It was finally agreed that in the coming year there will be consultation between the two United Nations organizations to decide which will give leadership in community planning. In the meantime UNESCO is to engage consultants, undertake research and make a report on the subject to the next general conference, meeting in Mexico City in November of this year. Most important of all, the different national organizations engaged in this work are invited to co-operate in a pooling of knowledge, working through their National Commissions. I should like to suggest that here is an important field in which your organization, perhaps in association with the Arts Council and the Community Planning Association, might interest itself in UNESCO.

The arts were inadequately provided for in the UNESCO program because the men who planned it were not artists and did not believe in their central importance in the programme. The budget for the arts was only 7.3%, compared with 20% for the Natural Sciences. I hope that when a National Commission is formed in Canada your organization will support the Arts Council in urging our country to make representations for a larger proportion of the UNESCO budget for the arts in coming years.

UNESCO provides a unique opportunity for organizations like your own—organizations of architects, teachers, artists, scholars, librarians and scientists—to do something about peace and about a better world. But UNESCO in Canada is held up by the fact that we have not a National Commission. Only eight months remain before the next general conference in Mexico City, and I am afraid that the first year of UNESCO's programme may be lost. Remember, it is a race between education and catastrophe.

Canada's share of UNESCO's first budget of \$6,000,000 is something over \$250,000. That money we are sending to Paris — to the central organization. Is it not unrealistic to make that contribution to an organization in France and be unwilling to spend money to launch the programme here in Canada? This is the common sense which we have to urge upon the Canadian government. Delay is disastrous. Our National Commission should be set up at once.

There are six sections in the programme division of UNESCO. To make a National Commission effective in Canada we believe that there should be six corresponding committees or panels in the Commission. One of these would be an arts panel. Once this arts panel is established we shall have the beginning of active, direct federal government interest in the arts in Canada.

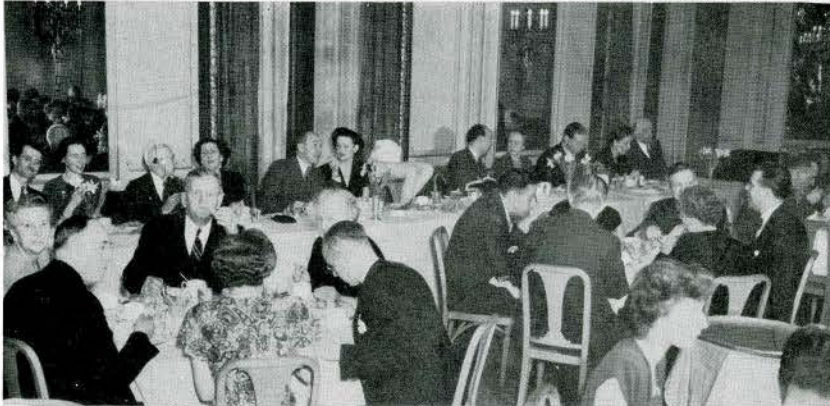
This will be a step in the right direction, but we feel it is not enough. If UNESCO is to realize its great potentialities in Canada there must be a National Arts

(Continued on Page 143)

"Times Have Changed" was the name of a skit produced during the evening. The Cast (left to right): A contractor, Tom Berry; Mr. and Mrs. Nouveau-Riche, Jean Taylor and J. I. Lawson; Miss Remington (steno.), Barbara Humphrys; A. T. Square (architect), Sam "Groucho" Gitterman.



The only serious moment of the evening — "Stowing victuals".



Some decorations including the Chapter's conception of Dali's conception of a small house, created by Allan Ackman.



Picture of girl losing her head over the guest of honour, Maj. Gen. H. A. Young.



Professor Archtrave (alias Bill Goulding) speaking on "Reconstrucktion in my Coun-tree", to the amusement of all including the Chairman, Gordon Hughes.

The Ottawa Chapter of the O.A.A. Annual Dinner when Salvador Dali was the theme for decorations and a background for a riotous evening.

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INSTITUTE NEWS

The 40th Annual Assembly of the Institute saw over one hundred members from all parts of Canada participating in the General Sessions, with registrations from Victoria, B.C., to St. John's, Newfoundland. The discussions covered many questions of significance and interest, and several important resolutions were framed which will serve as a guide to general policy during the coming year.

Collective Bargaining

One of the most important discussions held at the Assembly concerned the proposed Dominion Government legislation in connection with Collective Bargaining. The Canadian Council of Professional Engineers and Scientists had been requested by the Government to study the Draft Bill, and to submit their comments to the Minister of Labour. As a member of this Council, the Institute was asked for an opinion of the Act as it affected architects, and as a reply, forwarded the opinion contained in the Report of the Committee on Professional Practice and Usages. The C.C.P.E.S. prepared a Brief which was forwarded to the Minister, and this Brief was submitted to the Annual Assembly for endorsement or reference to the Incoming Executive Committee.

There was a very heated discussion in regard to this question, and it resulted in a division in the meeting concerning the action which should be taken by the Institute in regard to this legislation. Some members felt that the Institute should request the Government to exempt architects entirely from the provisions of the Act. Others expressed the opinion that, since this legislation would be presented to Parliament regardless of any action on our part, every effort should be made to ensure that the best possible terms were obtained for members of the architectural profession. After a thorough airing of the pros and cons, it was apparent that no decision could be reached without an intensive study of the Draft Bill and the C.C.P.E.S. Brief, and it was eventually decided, "That the matter of Collective Bargaining be referred to the Incoming Council, with the recommendation from this meeting that they duly consider the position of the employed architect".

Planning

The Chairman of the Planning Committee, Mr. P. Alan Deacon, explained to the Assembly that there was a great need for some organization on an international scale to collect and distribute information of interest to architects and town planners. There was a serious lack

of facilities for obtaining information from abroad, and such an agency could act as a clearing house for all kinds of general and technical material which would be of great interest and assistance to architects. The United Nations Economic and Social Council was meeting in New York at the same time as our Annual Assembly, and Mr. Deacon wished to have this suggestion placed before that Council. The following resolution was passed by the Assembly, and forwarded immediately to the Under-Secretary of State for External Affairs:

"We, the Royal Architectural Institute of Canada, in Annual Session, recommend that the Canadian delegation to the United Nations Economic and Social Council be instructed to request that that Council establish an International Planning and Housing Information Agency, with adequate resources; the Agency to work in close co-operation with the United Nations Educational, Scientific and Cultural Organization, the Food and Agricultural Organization, the International Labour Office and existing associations, such as the International Federation of Housing and Town Planning."

Modular System — "A62 Guide"

Mr. P. C. Amos, as Chairman of the Committee on Art, Science and Research, gave the meeting a summary of the Modular System of the System of the Co-ordination of Building Materials, as set forth in the "A62 Guide". This text was prepared under the direction of the American Standards Association Project A62 as a guide to assist architects and engineers in applying modular co-ordination to building plans and details. In connection with this matter of modular design, several members reported on the present situation in Canada, and it was pointed out that, since American brick and tile manufacturers are going to produce the modular size after September 1st, 1947, in all probability Canadian manufacturers will follow suit. At present, the Canadian Standards Association is studying Project A62, and it was the feeling of the meeting that, once the C.S.A. Report was available, the Institute should take further action to study the matter thoroughly and to co-operate with the C.S.A. in the adoption of a modular system for Canada.

National Film Board Agreement

It was announced to the Assembly that the final Agreement between the National Film Board and the Institute, with respect to the establishment of an Architectural Photographic Library, had been drawn up and signed. Organization of the Library was now under way, and it was expected that the necessary preparation would be completed shortly. The Agreement was read and explained to the meeting, together with an outline of the events which lead to the suggested establishment of this file. This Library will be the Canadian architectural archives, and will be used as a distributing centre for material for exhibitions, text books, educational books and pamphlets, research work and displays. Mr. Hazel-

grove, who represented the R.A.I.C. in the preparation of this Agreement, stressed the fact that the success of this Library would depend on the individual architect, who would be responsible for submitting photographs of his work for inclusion in the file, and he urged all architects to co-operate by forwarding prints of their photographs to the National Film Board. The full text of the Agreement, together with a sample copy of the questionnaire which is to be submitted with each set of photographs, will be published in an early issue of the *Journal*.

Guest Speakers

The Institute was most fortunate this year in their guest speakers at the various functions. Dr. Augustin Frigon, General Manager of the Canadian Broadcasting Corporation, gave a most informative talk on his organization at the luncheon on Friday. At the Saturday luncheon Mr. Herman Voaden, the President of the Canadian Arts Council, told the members about the organization and aims of UNESCO. Mr. Voaden was one of the Canadian delegates to the UNESCO Conference in Paris in November, 1946, and his outline of the scope and plans of that Organization was most interesting and enlightening.

The main speaker of the Assembly was Major-General H. A. Young, C.B.E., D.S.O., Vice-President of Central Mortgage and Housing Corporation, who addressed the 40th Annual Dinner of the Institute on the Saturday night. Major-General Young spoke on the housing problem in Canada, and made an appeal to the architects to co-operate with the Government in endeavouring to provide houses at a cost which the low income bracket can meet. He proposed that the Institute set up a central committee to which architects from all over the Dominion could submit plans for low cost houses. This committee would act as a clearing house for small house designs, and would select the most suitable plans for forwarding to Central Mortgage and Housing Corporation for examination and final selection. The Corporation would undertake to arrange for the publication of the sketch designs submitted and for any publicity and advertising required to promote the sale of working drawings. Major-General Young stressed the fact that not more than 5% of Canada's residential construction is planned by competent registered architects at present, and felt that one approach to the problem of housing for the medium and low bracket income might be to increase this percentage by securing designs and plans for low cost homes from architects across Canada.

Major-General Young's topic was most timely and interesting, and he was assured by the President that the Institute would take immediate steps to set up a committee to study this matter in conjunction with the Corporation, and to reach a decision as to the best method of handling his suggested procedure. The President pledged the co-operation of the Institute and of all its members in an endeavour to solve the acute problem of housing.

ALBERTA

The Community Planning Association of Canada is endeavouring to establish a dominion wide institution. The methods to be followed are at present admittedly vague, since they must depend on the nature of responses which may be met with in the different provinces. These must vary with the lines on which the provinces are already operating in the matter of planning. The object of the CPAC, as set forth in its bylaws, is simply "to foster public understanding of, and participation in, community planning in Canada." Public participation in community planning can only take place through the medium of an institution with definite authority to take or to propose action. Such authority is conferred by a Town Planning Act. In Alberta a practicable town planning act has been on the statutes and in active operation for sixteen years. It establishes a Town Planning Department and confers planning authority on such municipalities as adopt the Act and set up Town Planning Commissions. This has been done in a number of municipalities. Plans and regulations of these commissions are subject to the approval of the Provincial Town Planning Department. The Department itself does not make plans for the municipalities, but it reserves power to take such action in cases of flagrant neglect.

The proposed CPAC requires close relation with existing operating city commissions otherwise it cannot "participate" in town planning. These commissions have their various basic studies of existing conditions in the cities. Without reference to these any independent association would be working in the dark as regards the feasibility of any proposal for civic improvement. Action must be taken through and by the authority established for the purpose.

Town Planning Commissions are small bodies of generally not more than ten persons. They are appointed by the city councils as being citizens acquainted with the general situation and with the wishes and needs of the citizens. A committee to propose policies and action cannot well be a large one. Large committees are unwieldy and find it difficult to concentrate upon decisions. Nevertheless, it would be well if wider interest were taken in town planning. In the multitude of counsellors there is wisdom even if they have difficulty in making clear cut decisions, and too many cooks may spoil the broth. Here we come to the question as to how a CPAC may function. How can town planning commissions get the benefit of a wider range of opinions and experiences than is possible to a small body of men? There is, of course, one area on which they can and ought always to draw—the city officials. Co-operation with these is valuable and necessary. But this is also insufficient. It is the duty of these officials to carry on an established routine. It is the business of a town planning

commission to give leadership towards an improvement on that routine. It is because that routine has been found to allow cities to drift into evils of congestion of traffic and living conditions and many others, that such commissions have been found necessary.

Many enthusiastic individuals are only too willing to make irresponsible suggestions for civic improvements. Many more serious discussions take place in small associations and these are equally barren of practical results. Probably any town of ten or twenty thousand inhabitants has a score or more of associations which from time to time discuss planning matters with some intelligence but with totally inadequate knowledge of the underlying facts on which action must be based. Of many societies interested in such matters the Service Clubs, who can all readily co-operate with one another, and the Boards of Trade, who would have no difficulty in co-operating with the Service Clubs, would be the most capable of taking the lead in a branch of the CPAC. These would have some advantage in that they all have dominion wide organizations and that they comprise many persons accustomed to the management of practical business. These associations have creditable records for public spirit and action. By establishing close relationships with the city planning commissions they could be kept well informed with the basic facts of the situation. Their ideas would then stand good chance of interpretation into action.

The name "Community Planning Association" raises a fairly large question, although probably not intended to do so. We have come to associate the expression "Town Planning" with the arrangement of the physical features of a town. The word "Community" has a different set of associations. It suggests various institutions that distinguish civilized life, many of which imply no adjustment of plan. One may take the case of clinics for infants. In some cities these are concentrated in the middle of the city; in others, distributed at public schools in a manner more convenient to mothers of small children. It is not generally considered to be a matter of town planning to say how these shall be arranged. It is certainly a matter of community planning. In this case the functions of town planning and of community planning are not far apart but in others they are so. It is a matter of some consequence to know the limitations of town planning. Much useful "community" work has been accomplished by the Service Clubs, but they have not gone far into town planning. They have lacked the facilities for that purpose.

The advantage to a town planning commission in having a branch of the CPAC related to it would be that it would then have a larger body of interested citizens from whom to derive suggestions. It could then with more confidence make important recommendations with the feeling that they had a strong backing.

Cecil S. Burgess

ONTARIO

Whether it is the imminence of Spring, or the fact that a recently-completed income tax form indicates the possibility of looking the Minister of National Revenue squarely in the face this year without flinching, this scribe finds himself singularly incapable of striking a serious pose architecturally on behalf of our fair province. Having in mind those admirable Saskatchewan letters in Mr. E. J. Gilbert's lighter vein which have been brightening the Institute Page, we are emboldened to eschew the heavy hand and have fun.

A wholly delightful little book, which we commend to our brother architects, comes from the pen of Eric Hodgins, entitled "*Mr. Blandings Builds His Dream House*" (Simon and Schuster). If you have chuckled through it, stop here—that might be an excellent idea in any case. Author Hodgins, who trained in engineering at M.I.T., has had a successful journalistic career and is presently a member of *Fortune's* Board of Editors. The title suggests the plot, one that has been worked over before, to be sure, but never with more whimsical charm.

Mr. Blandings is one of that multitude to whom building a House is the Great Adventure, (how great he was ultimately to discover). Even at a miserable ten per centum, the profession might well rise in a body and pray for the increase of his kind; for no client who sets out to acquire a modest \$20,000 home and is finally brought to the point of parting with some \$56,000 in hard coin of the realm can do aught but hearten the tired practitioner, and confirm his belief in the fundamental importance of the Mother Art. How Mr. B. remains solvent in the midst of such rapidly rising costs may be partially explained by the fact that he belongs to that fabulous professional class, the advertising fraternity, having arrived at a position of eminence and affluence therein by virtue of his authorship of a three-word slogan for a laxative account, a triumph which has put his name in the mouths of the advertising cult, and the laxative in the mouths of the nation.

Being a lover of both Nature and Tradition, Mr. Blandings becomes interested in a run-down establishment of Revolutionary vintage, far from the madding crowd, an edifice whose principal claim to attention appears to lie in the fact that George Washington never slept there. The Real Estate Man, one of a number of engaging brigands who trip through the pages, succeeds, by various obvious (to anyone but Mr. B.) devices of sentiment, suspense, exaggeration and understatement, in saddling the Blandings family with the Old Hackett House atop Bald Mountain, a tipsy, termite-ridden antique. Of course it will do the reader no good to shout, "Don't buy it!" as the machinations of the vendor unfold, and a web of circumstance enmeshes the Blandings. How is Mr. B. to know that the Unholy Trinity of Law, Finance and the Daemons of Construction have agreed to make the Blandings' job their particular peeve for the duration of the project?

Mr. Blandings' first contact with the architectural profession comes through collaboration with Architect Funkhauser, who designs in a large way with a 6B pencil. It appears that Mr. Funkhauser has been retained by the Blandings at a cocktail party at which the two men met for the first time. There may be those among the readers who will suggest that these auspices are unfavourable for the selection of an architect, particularly in the light of the fact that Mr. Funkhauser was later summarily dismissed. Mrs. Blandings also contributes an upsetting thought which arises now and then among the laity to plague the architect: "I'd like to have some other sort of person take a look at the old house, just to make certain it's going to keep on standing up—an engineer, or somebody." What is it that these engineer fellows have that we haven't?"

However, rightness and sanity return to the job with the advent of Architect Simms, who offers no undue obsequiousness to the Past, and whose grasp of the current mode is without the "cheesebox" touch.

And so the Revolutionary gem is razed to the ground, and sketches for the new house get under way. The loss entailed in demolition is not enough; no sooner has the evil deed been accomplished than the local Historical Society, a female organization which combines the militancy of the D.A.R. with the fervour of an Architectural Conservancy, clamours for the Blandings' scalp. No greater outcry could have been raised had the ravishing of the ancient fabric been transferred to the Society itself.

Follows that interval of planning when the Blandings' immoderate wants are made to suffer the confining action of architect and pocketbook. Mrs. B. declares her family cannot possibly exist without five bathrooms and thirty-two closets, although she is willing to reduce the latter by one—Mr. Blandings' liquor closet. The Battle of Cubage, which wages alternately between Mr. B. and his spouse, and the Blandings and their architect, leads Mr. Simms to reflect on the desirability of his old architectural school offering a course in the handling of domestic crises arising in the planning of a house.

Comes also the day when the bids are opened, and the Blandings' morale reaches an all-time low. At this point Architect Simms is under the necessity of demonstrating the impossibility of reducing the contract price by 15% by the simple device of shrinking the room sizes by that amount, anymore than you could make a marmoset out of a zebra by a contraction of the latter. Mr. Blandings makes the sad and expensive discovery that the terrace, so dear to the family heart, which probably cost \$700 originally, now is worth \$172.50 as a deduction. When the slaughter of the plans has ceased, and the house lies hacked and bleeding, there still remain—five baths, thirty-two closets, and a terrace.

But construction is about to begin, and all the malevolent Gods of Mischance congregate on Bald Mountain. Why must it happen that in the ordering of the cosmos a ledge of granite must run across the exact site of the

new house? Why must it be that Mr. B. has a 300-foot deep-well drilled at a remote point, only to find later that there is water close at hand which turns the excavation into a swimming pool? Why do shingles arrive first on the job, to be followed by the painters, the telephone installer, three crates of lighting fixtures, and five W.C.'s when we need concrete form lumber most of all?

Extras. Mrs. Blandings' casual order to Contractor Retch to put "four little pieces of flagstone on the floor under the flower sink" will probably remain the ultimate in the application of the Laws of Contract. When the carpenter, plumber, electrician, lather, plasterer, mason, heating contractor, and millman have contributed their parts to the accomplishment of this minor detail, the bill stands at \$1,247. At which Mr. Simms sagely observes, "The trouble with the owner on his site is that he or his wife thinks that asking the contractor to do something they've just thought of is like asking the cook to put another potato in the pot now that she's got the water boiling." How right — and how wrong!

That motley company of actors who straggle across the Blandings' stage could be as readily drawn from Halifax, Montreal, Toronto, Winnipeg, Regina, Calgary or Vancouver. There is Mr. Tesander, well-driller, whose empericism in the selection of a well-site ("I sinks she might as good go here as anywheres") is faintly reminiscent of to-day's building canons; the foreman of the blasting gang ("When I say 'Fire', get the hell out of here!"); Mr. PeDelford, painter, whose delicate hues fashioned on Mrs. Blandings' minute directions look astonishingly like the paint company's standard samples; and young Hackett, the tinsmith, whose gyrations with the snips in the production of oblique frustums is the despair of Mr. Blandings, in whom the memory of descriptive geometry is as bitter aloes.

When Ruskin said, "there must be in this magnificently human art of architecture some equivalent expression for the trouble and wrath of life, for its sorrow and its mystery," he might have been looking forward to the Blandings' job. But Mr. B. was to provide the answer as he surveyed the situation from Bald Mountain: "There is nothing so — well, so aphrodisiac as a set of building plans!"

And the moral? Gentle reader, building a house can be an awful headache — and a lot of fun.

Gerald Raymore

QUEBEC

Many organizations on this continent, both public and private, carry on researches into one or more aspects of the science of building. Considering all of this research as a whole, its pattern is haphazard, and its emphasis often reflects the pride and prejudice of special interests. Perhaps worst of all, its results are not readily available — or, if they are, their gist may be buried in the formidable jargon of the learned researcher, too deep for the busy architect to exhume.

The British have recognized this haphazard *laissez-faire* as one of the hobbles on a nation's efficiency. And they have taken steps—not little steps, but big strides—to bring a new unity, coherence and thoroughness into the study of Building Science in its myriad aspects. Their well known Building Research Station remains the king-pin. But its resources and personnel have been increased steadily to deal with its ambitious programme, and, in addition, it has the collaboration of a variety of government departments and industrial research groups in its search for facts. All of the practical factors involved in building come within the scope of its meticulous investigations—the soil and the elements, materials, construction methods, planning principles, and even the elusive characteristics of the human beings who (unfortunate for the precise scientist) occupy the centre of the picture, complete with all their untidy whims and illogical ways. The thoroughness of the BRS approach is illustrated by the fact that, as a matter of routine, it despatches technical missions to whatever foreign countries are likely to yield useful data on a given research subject.

It appears that Canada is one of the few prominent nations that have failed to show an active curiosity regarding this impressive British activity. A number of other countries have judged it to be of such importance that they have sent technical observers to effect a liaison.

The BRS has three main research groups—the Chemists, the Physicists and the Engineers. Architects appear to have played only a somewhat minor role until quite recent times—due, it is said, "to the difficulty of finding the best way to use architects in cooperation with scientists". However, as interest in problems bearing directly on building design has increased, the corps of architects in the BRS has grown.

The most significant step in this direction has been a recent departure, whereby physicists and architects are to be formally associated "on equal terms" for the investigation of such problems as lighting, heating and acoustics. At the start of this year only two architects had been found, among those available, who appeared qualified for this teaming with the physicists. Canada might well ponder the fact that they are both Canadian-born. Their names are Richard Eve and William Allen.

The immediate product of such aggressive research is not, of course, architecture, whether spelt with a big or a little "a". Of the three parts of the old definition, the scientists deal with "commoditie" and "firmerness" and they leave the creation of the ultimate "delight" to those architects capable of mastering the tools they offer.

And it seems to me that modern architecture stands badly in need of this one foundation that can give it much meaning — the basis of an ever-growing reservoir of accurate, impartial knowledge concerning its practical components.

As things stand, the architect does his best to be a practical fellow, but he would require several lifetimes to assemble for himself, in a readily useful reference file,

all that might be learned about the science of building. So his practical knowledge, inevitably, is a kind of patchwork of moderately accurate facts, experience (sometimes painful) derived from the relatively small compass of his own practice, the self-satisfied data offered by the manufacturers of materials and equipment, and the easy "hand-me-down" techniques of "standard practice". However conscious he may be of the blind spots in his professional knowledge, the fact remains that his time must be spent on drawings and specifications, not on the theories behind them. "And time flows staunchlessly, like blood from a mortal wound".

It has not yet been demonstrated that the great quantity and variety of data that will be amassed by the BRS will be issued finally in a form of practical service to architects and builders. It is nice to dream of a uniform, indexed, ever-growing reference file, pithy in format and designed as a working tool. Such questions as the true life expectancy of a given roofing material under given conditions, the true balance between the cost of thermal insulation and the cost of heating in a given case—thousands of such practical questions should be answered for the architect and others in this modern world by impartial ready references. There are, it is true, pretty good answers available now for most of the day-to-day questions that arise. But they are scattered in fragments through trade literature, reference books, magazines and other hiding places.

If Canada were to have a lively and comprehensive building research centre of its own, it seems to me that it could usefully postpone the start of its own independent studies for a long time, and simply concentrate on the vast project of assembling existing data and editing it into the indexed and cross-indexed reference dreamed of above. Research is of limited use if its results cannot be applied widely and with ease.

Canada's individual architects must be interested in the promise of such ambitious undertakings as the British Research. It is unfortunate that there appears to be no resourceful agency that could make the necessary contact, and then go on, not only to fulfill the essential end of practical interpretation to Canadian professionals, but to make the amendments and fill the gaps that adaptation to Canadian conditions would entail. It would have to be a permanent institution, of course, a kind of living organism that would shed obsolete matter and replace with the new as a constant process. The British, with all their other nagging troubles are contriving to do it, and with a zest that almost makes Canada look old and tired in comparison.

Robert Montgomery

SASKATCHEWAN

Some days ago there came to this office a small pamphlet entitled, "Thrift, Industry and Enterprise". It was written by an Ontario Professor and deals with alleged injustices of the present income tax regulations. It

argues that the present high income tax rate destroys youth's incentive to study and man's incentive to work.

The article is comprehensive and points out, among other things, that self-employed persons, such as garage operators, cobblers and proprietors of similar businesses as well as professional men, must decide just how much work it pays them to do. Older men who have developed a professional conscience will continue to over-work, but younger men will argue if they earn three dollars and can only keep two, would they not be better advised to spend less time on work and more on recreation.

The pamphlet is worth reading and should appeal to the Canadian Architect, who with light purse and heavy heart has just celebrated April Fool's Day by paying the deficit on his 1946 income tax and the first installment on his guess for 1947.

Assuming that present rates are justified, it is doubtful if anyone can successfully sustain the argument that the professional man or small unincorporated business should be compelled to pay income tax on everything earned or collected in a fiscal year and to start each new year with nothing in the bank.

We would not have to go far to find the records of one office which did not make enough to pay the rent during the depression years. It must be typical of many offices across Canada where there was no staff and the Principals lived on hope and the income from investments made during the previous boom. Now those offices are busy and they have gradually built up a staff. Their income for fifteen years has been crowded into five and the income tax they are paying would go a long way toward retiring the national debt.

The Authorities at Ottawa cannot be fully aware of this condition but at least some realize that present regulations are far from equitable. Not long ago the Minister of Finance was reported as saying that Canada's high tax on middle bracket incomes is driving young Canadians to the United States where the income tax is lower.

The Canadian Professional man's lot would be easier, even under present rates, if he were allowed to draw a reasonable amount out of his practice yearly and build up a reserve for the lean years that lie ahead. Any person who thinks there are no lean years ahead just does not believe history. A reserve would enable him to maintain his organization over a period of one or two lean years at least. He obviously cannot afford to pay office salaries out of his private account, which already has been rooked to the tune of 50% or more.

So, if anyone reads this, which I sometimes doubt, and if he feels there is any weight to the Theory embodied herein, let him drop a line to the Secretary of his Provincial Association.

If Architects across Canada show some interest, the matter might be taken up by the R.A.I.C. with other professional bodies. By combined effort a brief of sufficient

volume might be assembled to make its weight felt in Ottawa.

A democratic government acts on public opinion. Farmers and Fishermen have already been granted the concession of paying tax on incomes averaged over a period of years. They did not gain that concession without effort on their own part.

E. J. Gilbert

THE CANADIAN ARTS COUNCIL AND UNESCO

(Continued from page 135)

Board, such as we asked for two years ago at Ottawa, a non-political body concerned with the distribution of cultural opportunities in Canada, and the export of Canadian art abroad under UNESCO auspices.

In conclusion I should like to return to the Canadian Arts Council. The problem of financing our organization is a difficult one. We have just managed to get along somehow on voluntary contributions. With so much to be done we need a much stronger organization. However, that is a problem for us to work out. The main thing is that the artists of Canada, to whose fellowship you belong, have, in the Arts Council, a unique organization which has already accomplished much. If we are strong and united we shall accomplish more in the future.

☆

☆

Herman Voaden. President, Canadian Arts Council and Delegate to the First General Conference of UNESCO. Dramatist, play producer and teacher. Author of "symphonic" plays combining drama with music, dance and orchestral light and colour. Editor of four collections of plays; author of the libretto of an opera, "The Prodigal Son", with music by the American composer Frederick Jacobi. Member of the Executive of the Arts Reconstruction Committee and of the delegation presenting the Ottawa Briefs.

NOTICE

The Institute has been advised by Lt.-Col. Medlen, Honorary Secretary of the Military Engineers' Association of Canada, that that Association is preparing a Memorial to honour the dead of the Corps of Engineers. This Memorial is to take the form of a "Book of Remembrance", commemorating the names of the Canadian Engineers who gave their lives in World War II, and it will be placed in the Kitchener Memorial Chapel of St. Paul's Cathedral on completion.

The estimated cost of this Memorial will be approximately \$3,500, and the Association is anxious to contact former members of the Corps, to advise them of the work which they are undertaking. Contributions will be welcomed from former Sappers or from the families of those who failed to return. All subscriptions should be forwarded to Lt.-Col. J. A. Warburton, Treasurer, Military Engineers' Association, P.O. Box 591, Ottawa.

OBITUARY

CHARLES COXALL

Charles Coxall died in Regina on February third.

All who knew Charlie Coxall must have been impressed by his quiet sincerity. He was proficient in all branches of his chosen profession, but was an exceptionally fine draftsman.

He received his early training in London, England, but spent most of his life in Canada. He went to the Provincial Architect's Branch at Regina in 1920, and was registered in Saskatchewan in 1921.

He engaged in private practice for short periods at Nelson, British Columbia, and at Moose Jaw and Regina, but most of his professional life was spent in the service of the Province. In this capacity he designed many of Saskatchewan's fine public buildings.

His passing is a decided loss to architecture in this Province.

F. J. Martin

HUGH VALLANCE

Hugh Vallance, one of Canada's most talented architects, died in Montreal on March 14th in his eighty-first year.

Leaving his native city, Hamilton, Ontario, as a young man, he worked in Boston for a number of years with leading architects, thereby obtaining a foundation for sound architectural design and practice.

Returning to Canada in 1905 he entered partnership with David R. Brown who was already established in Montreal. The firm of Brown and Vallance during the first decade of its existence enjoyed a wide practice. Among numerous commissions executed by the firm were the McGill University Medical Building, the Herald and Southam buildings in Montreal, the Calgary Herald Building, and work for the University of Saskatchewan and other educational institutions.

As one of his staff, I will never forget the charming little thumbnail perspectives which he drew with such facility to illustrate his desires in the development of a design. These sketches, so quickly made, revealed him, not only as an artist of rare taste and talent, but as an architect whose innate ability and force triumphed over technical and practical difficulties and welded all elements into a coherent design. I regret deeply that I never preserved any of these early sketches.

After the dissolution of the partnership with David Brown, Hugh Vallance carried on alone, his outstanding achievement during this period being the Crane Building on Phillips Square in Montreal, considered by many a veritable architectural gem.

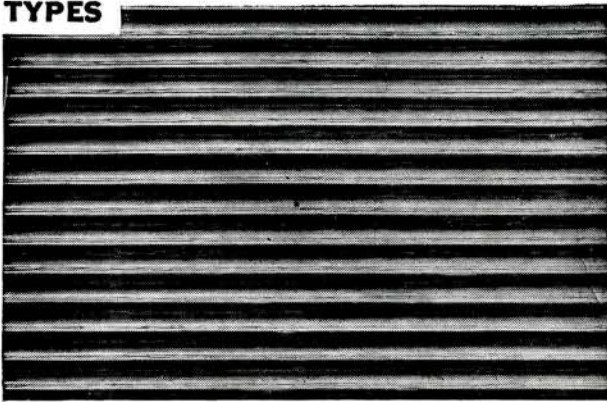
Hugh Vallance was a kindly, quiet spoken, modest gentleman. He worked unselfishly for many years in the interests of his confreres on the Council and as President of the Province of Quebec Association of Architects.

Facts about Glass by Pilkington FOR ARCHITECTURAL STUDENTS

NO. 8 PRISMATIC GLASS

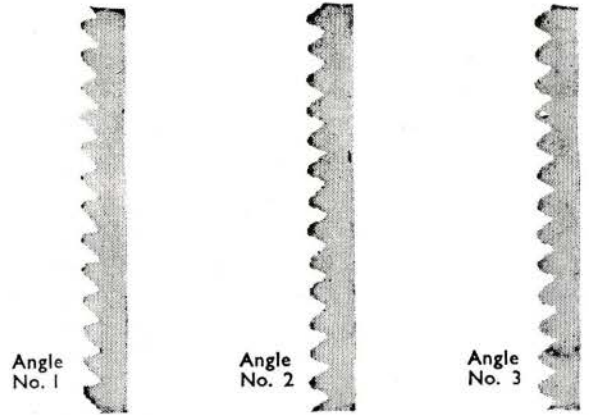
A translucent rolled glass, one surface of which consists of parallel prisms arranged in such a manner that light passing through the glass is refracted in a certain direction according to the incidence of the light and the angle of the prism; the other surface is smooth.

TYPES



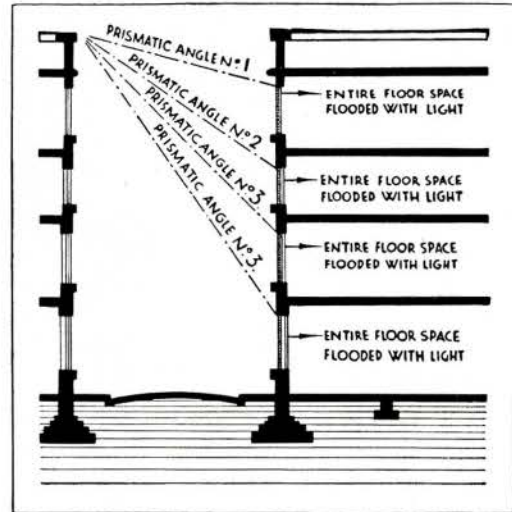
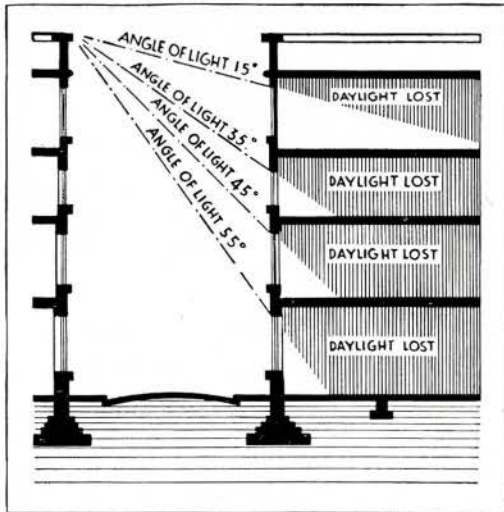
Quality: Made in one quality only.

Manufacturing Sizes: 48" high by 100" wide, the prisms running with the width of the sheet.



Thickness and Weight: Nominal thickness: $\frac{1}{4}$ " Approximate weight: 3 lbs. per sq. ft.

Light Transmission: 50% to 90% according to the direction in which the transmission is measured.



NOTE: The glass should always be fixed with the prisms running horizontally and on the inside of the window and may be protected from dirt by double glazing with clear glass.

USES: For glazing windows which are overshadowed by neighbouring buildings; to transmit light into dark places; and to ensure maximum use of available daylight. For use with fluorescent lighting fixtures, etc.

Angle No. 1: For situations where the angle of the light's incidence taken from the horizontal is up to 30°.

Angle No. 2: For situations where the angle of the light's incidence taken from the horizontal is between 30° and 40°.

Angle No. 3: For situations where the angle of the light's incidence taken from the horizontal is over 40°.

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