JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

Serial No. 270 TORONTO, FEBRUARY, 1948 Vol. 25, No. 2

PRESIDENT . . . . . CHARLES DAVID (F)

CONTENTS

EDITORIAL - - - - - - - - - - - - - - - 38

ADDRESS BY THE RT. HON. VINCENT MASSEY, C.H., AT THE UNIVERSITY OF TORONTO - - - - - - - - - 39

HEATING AND AIR CONDITIONING OF THEATRES, Karel R. Rybka - - - - - - - - - - - - - - - 43

FAIRLAWN THEATRE, TORONTO, ONTARIO, Jay I. English, Architect - - - - - - - - - - - - - - 47

McGAVIN LIMITED, ADMINISTRATION BUILDING, VANCOUVER, B.C., Robert R. McKee, Architect - - - - - - - - 50

LODGE, BAYVIEW, NORTH YORK TOWNSHIP, ONTARIO, Earle C. Morgan, Architect - - - - - - - - - - - 52

COCKTAIL LOUNGE, PLAZA HOTEL, OTTAWA, ONTARIO, Harry Lindsay M.Quire, Architect - - - - - - - - - - 54

POLICE STATION AND COURT HOUSE, LETHBRIDGE, ALBERTA, Meech, Mitchell and Meech, Architects and Engineers - 57

IMPROVED TECHNIQUES IN ARCHITECTURAL MODELLING, Steven H. Waring - - - - - - - - - - - - - 58

THE INSTITUTE PAGE - - - - - - - - - - - - 62

J. F. SULLIVAN, PUBLISHER

Editorial and Advertising Offices - - - - - - 57 Queen Street West, Toronto 1

SUBSCRIPTION RATES

Canada and Newfoundland—Three Dollars per year. Great Britain, British Possessions, United States and Mexico—Five Dollars per year. All Other Countries—Six Dollars per year. Single Copies—Canada 50 Cents; Other Countries 75 Cents.

R.A.I.C.
JOURNAL
FEBRUARY 1948

A CERTAIN subject will be discussed at the R.A.I.C., but it is one that eventually calls for action by the Provincial Associations. We refer to the summer employment of students in the Schools of Architecture. When enrolment was small in the period between wars, the business of seeing students properly placed was a casual one, and could be done by telephone or letter. Today, the onus falls on the schools to set themselves up as employee centres with complete information as to the qualifications and wage requirements of the students requiring work. That, we presume, will be done well, but it does not, of itself, place a single applicant. For several years, if they are to fulfill their responsibility, the Provincial Association must set themselves up as *employment* centres. In Ontario last year, a committee of the O.A.A. was formed with a student and two professional representatives. This group did an excellent job which the O.A.A. will have to repeat for several years, each one presenting a more difficult problem. It must be remembered that the fifth year, today, is, in Toronto, for example, only nine students while the first, second and third average 80. Another large first year in '48 may be anticipated.

ON the whole, the response by architects has been good. We know of one case where an architect took 22 students; not from need but from a feeling of professional responsibility. The mere fact that he felt obliged to do so indicates that elsewhere in the Province his feeling of responsibility was not equally shared. If it were, his quota would have been lowered by, at least, 75%. It may be necessary to point out to some just where they stand in relation to the education of the young architect. We have a profession, like law and medicine, in which, in return for certain privileges, which we enjoy in society, we are able to limit our numbers, and raise our professional standards by requiring that architects take a five-year course at a university or other institution. The successful completion of that course is the recognized entrance to the profession by the R.A.I.C. It is, therefore, an obligation on the part of every architect in the Dominion to support the universities in the complete carrying out of their courses in every particular.

THE five-year course consists of five academic years and one kalendar year of practical work, which is usually divided into time spent with an architect and with a builder or contractor. Members of the R.A.I.C. would rise to a man in protest if the schools dropped this year of practical work, but the schools are themselves powerless to provide it. The medical profession limits its numbers by the clinical facilities which are provided in Canada only by the general hospitals attached to medical schools. That is where the doctor gets his practical training as a student. In our profession every architect's office is a clinic, and there are several hundred in Canada. We fully realize the generous response of many architects in the past, but we realize, equally, the apathy of others. If the latter appreciated their obligations in the matter, the indignity imposed on the College staffs of writing letters begging cooperation would be unnecessary.

A FEW students must be reminded that in entering the architect's office, they are not conferring a favour on the architect, but are continuing their education for which they must work, and to some extent, pay. The average first or second year student cannot demand the wage of a graduate, whatever his domestic or other responsibilities. He must face the fact that he and his education only are the concerns of the architect. To introduce other considerations, as some have, is embarrassing for both parties and casts a cloud over the whole employment programme in which the innocent many will suffer for the unreasonable demands of the few.

WE would earnestly draw this aspect of architectural education to the attention of the profession as their most important contribution to the profession – probably in its history. If it is poorly done, we shall reap the whirlwind in the next decade, and not we, but the public whom we were given a charter to protect.

Editor

ADDRESS BY THE RT. HON. VINCENT MASSEY, C.H.

On the Occasion of his Installation as Chancellor, November 21, 1947

YOUR Honour, Prime Minister, Members of Convocation, Ladies and Gentlemen: My first duty this afternoon must be to thank the members of the Senate and of the Board of Governors for having given me the high privilege of serving the University in this venerable office. I do so most humbly and sincerely. To have been thus given their confidence is an honour which both deeply moves its recipient and imposes on him a great responsibility which he will not forget.

I shall be very proud presently to receive on your behalf as Honorary Doctors of Toronto, the distinguished persons who have accepted the Senate's invitation to join our company. We are very happy indeed to welcome our graduands of today as members of our academic family.

The office of Chancellor of this University has a long and honourable past. It offers a serious challenge to anyone selected to succeed the nineteen men who have held it since the beginning. Among them are many eminent figures in the life of this community, from the colonial governors in the days of George IV all the way to my immediate predecessor, whose devoted service to the University over so many years, and in so many capacities, is a unique chapter in its story.

The tale of our University is an absorbing one, how from the simple beginnings of a tiny college in the fortunate indeed in the devoted company of teachers and students, it has grown into the great institution of today embracing so many faculties and schools, and harbouring 17,000 student members, about half of whom have entered its doors from our armed forces. We are fortunate indeed in the devoted company of teachers whose ability in the performance of their high task needs no praise from me. We are fortunate, too, in the unflagging loyalty of the members of our governing body and of its permanent officers, whose important function it is, under a wise and indefatigable Chairman, to serve this foundation in the administrative field.

Whatever may be the role which each of us plays, it is now more than ever true, when opportunities and problems seem to grow at an even pace, that it is both a rare privilege and a sobering responsibility to be associated with so great an institution. With the able and imaginative guidance of its President, it performs a task of ever-increasing importance. It deserves well of its sons and daughters, and of the whole community which it serves. Before long, those who believe in its work (and I know how many they are) will have an opportunity of showing their faith. We have full confidence that the appeal which we shall make will enable us greatly to strengthen the services of the University and widen its influence.

Higher education in Canada shares in full measure the problems confronting it elsewhere. Our universities occupy their own sector on a common front, but they have, in some respects, I believe, a special role to play in our national life. For one thing, as we are reminded today, they serve as a vital point of contact between this country and the outside world. We have in Canada our own academic traditions to which we will remain faithful, but we welcome ideas from abroad whenever they can fittingly be built into our own structure. Nothing could be more alien to the spirit of a university than to attempt to exclude them. Through academic windows, indeed, we can best see beyond our boundaries. Thus, for example, can we keep in touch with the best in American life, always represented as it is by the institutions of higher learning in the United States. Such contacts are a department of our external relations as important as it is unobtrusive.

Canadian education, as we know, was fortunate to inherit much from England and Scotland. We look to our universities to keep in being those precious links with the intellectual life of Great Britain which are hard to maintain in the face of the physical difficulties of the time. We must treasure the humane tradition in education which we have received from across the water; the belief that education is primarily a spiritual matter; that it must be concerned with the individual; that the humanities must hold their old pride of place in its pattern; that the university is no place for the pedant, for it has always been the glory of learning in the British Isles that its virtues have been closely woven into the stuff of daily life. All this is part of a great inheritance.

If our universities provide vital links between ourselves and other lands, can they not play a special part within Canada itself? Our history has been a long quest for unity. Our academic institutions, acting not only as individual bodies but in generous collaboration, can truly serve this supreme end. I shall mention only one aspect of the subject—the relation between the two great races which have made Canada

and must share her future. The welcome presence here today of the distinguished Rector of Laval reminds us alike of the contribution which French Canada has made to our common fortune, and of our hope to deepen the understanding between ourselves and our fellow-Canadians of French origin. Here, surely, is a natural role for our universities to play. Cannot your ancient foundation at Quebec, Monseigneur Vandry, and ours here in Toronto, do much together to strengthen our concord? There are many things we could do in exchanges of teachers and students and ideas which would minister to such a cause and help realize the prayer of a Canadian poet when he said: "Father of unity, make this people one."

Universities today seem everywhere to be in a period of transition. It is true of course that life is always in transition. Were it not so we should be living in a static world, but today the pace has been quickened. It is more difficult, but also more important than ever, to give fresh thought to the purpose of such institutions, to consider the direction or directions in which they appear to move. It is easier to look back and see whence we came than to perceive our goal. The subject has not escaped the attention of men far better equipped than I to give the contemporary university a fresh appraisal. The theme indeed represents a well-trodden path. The flowers on its verges seem to have been gathered, so that perhaps all one can hope to do in following the others is to put together a nosegay of other men's plucking. I take comfort at the moment from Joseph Conrad's sea captain, who, you will remember, "enunciated platitudes not with the desire to dazzle, but from honest conviction."

The modern university often seems like Topsy to have just "grow'd." Resembling an eccentric piece of architecture, its academic gables and turrets and porticoes record the application of public opinion from without or of new ideas from within. Sometimes the original structure has been enriched and embellished and its functions rightly broadened. Sometimes the simple lines of the old building have been obscured and vulgarized and its task confused. I am on dangerous ground, as I know well. It would be inappropriate and indeed rash to discuss such things in detail today. I venture only to suggest one or two principles on which I think we can agree. If there are few institutions which do not call for re-examination in times like these, one might expect a university in the nature of things to know more than others, about the age in which we live and its relation to that age. Yet the pressure of the daily round, "the common task," makes contemplation difficult, detachment all but impossible. I asked an undergraduate not long ago how he enjoyed his course. "I am working so hard," he said, "that I have no time to be either bored or interested." There is something to ponder in this remark. But the teacher must work even harder than the taught; the strain upon him is remorseless. Leisure should surely have some place in the academic scheme, the leisure that invites thinking and gives it the setting it needs.

It will help us in our reflections to ask ourselves afresh a very simple elementary question, the answer to which we know full well: What is a university? We know that it is certainly not a group of buildings, nor anything physical. Of any university it can be said that nobody built it, that nobody owns it. It is a community of human beings. The universities of Paris and Bologna and Oxford, let us remember, came into being in the Middle Ages as bands of masters and scholars; and that is what the modern university remains in essentials for all its intricate structure—a community of teachers and students. The ancient universities of England have indeed never lost this simple form. Newer foundations in both Great Britain and North America have of necessity a much more complicated organization, but all the machinery, personal and material, vital to the well-being of each of them is ancillary to the needs of the company of teachers and students which is its heart. That has not changed with the years, nor has the dual task of teaching and pursuing knowledge, education and research, which it is the eternal duty of the university to perform.

Today I should like to suggest that there are two lions in the way: one is excessive numbers, what a wise American called "the curse of bigness," and the other what might be termed irrelevant expansion, excursions into fields which it is not the university's business to enter. I am aware that the two lions which John Bunyan's Christian encountered were chained, and did him no harm so long as he kept to the middle of the path. I am not so sure that our lions are chained. It would be the part of prudence to assume that they are not.

Today the numbers in our universities are swollen for excellent reasons. It is an honourable duty to minister to the needs of the ex-serviceman as best we can and to help him make up for the lost years, but when the present undergraduate wave recedes, as it will, what then? The numbers everywhere will still be great—greater than before the war. In the name of democracy—that most abused of all words—it is often urged that the doors of universities should be open to all who wish to enter. But if modern democracy is to be well served, the education of future leaders should surely not be impaired by the presence within a university of those who are not intellectually qualified for its privileges, and whose very numbers only make it difficult or impossible for others to receive the attention which their promise deserves. It was H. A. L. Fisher who said, "The university stands for quality, and if it is to perform its proper function it must safeguard itself against the admission of the unfit." "Mass-education" is surely a contradiction in terms. Every teacher knows

the difference between the group small enough to ensure an intimate and effective contact between himself and his student, and the class so large as to reduce teaching to a merely mechanical function. You may remember the observation of a disillusioned scholar in the United States when he gave playful expression to his feelings in defining education as "that process by which the contents of a professor's notebook reaches the notebook of a student without disturbance to the mind of either." The ideal was never better defined than it was a hundred years ago, when it was said that a university should be "an alma mater knowing her children one by one, not a foundry, or a mint, or a treadmill."

The other danger is more subtle—the assumption by the university of functions which are alien to it. How hard they are to define! Higher education has always been concerned with preparation for the great professions. That must be one of its major duties, but the list of occupations for which it is the training-ground has steadily grown. How far will the process go? It is good for the occupations concerned to have the high standards of a university established in the training for them, but it is not so good for the university to be asked to make digressions, if digressions they are. Its essential task is surely to train the mind, not to serve as a vocational school. Public opinion is right in asking that universities should be brought to the people. They should of course be in close and active touch with the community. They do not exist to provide a refuge for highbrows, but their popular services can be performed without deflection of their course or distortion of their purpose. Universities would do well to avoid the boast of the politician who, having slightly confused the text of Shakespeare with that of St. Paul's Epistles, declared that he would be, "like Caesar's wife, all things to all men." Perhaps we shall be safe if, when we embrace further branches of vocational teaching, we take care to recognize them not as part of a university's essential task, but definitely as accessories to be organized as such, and secondly, if we see to it that such new schools give their students not merely training for technical work, but also education in the fundamental principles which underlie such work. Technology, to justify a place in higher education, must be presented in the broadest context.

But the supreme function of a university is not to train for anything. The cultivation of the mind is to be valued for itself. The gifts of a liberal education have often been defined. They include, I would suggest (aided by the thoughts of others before me), intellectual honesty and a respect for ideas; mental alertness; clarity of thought and precision of expression; suspicion of the catchword; a critical sense which can detect the superficial and can distinguish the real from the spurious, the excellent from the second-rate; quickened sensibility and an awakened imagination; the ability to discern beauty and enjoy it. Such are some of the things which should come from a liberal education; some of the lessons which the humanities should teach us.

But how do we value the humanities in the marketplace of today? What is the "quotation of their stock"? That question has been debated throughout the generations, and the foes of liberal education have been many. "It is very seldom seen," said one of them, "that anyone discovers mines of gold or silver in Parnassus. 'Tis a pleasant air but a barren soil." So observed, not a modern Philistine, but an 18th century philosopher. I believe that there are fewer conscious enemies of the liberal arts today than there have been in the past: we do not ask a living education to be utilitarian in the narrow sense. There can be, after all, no more *useful* gift for a student than discipline of mind. If we wish to juggle with the word "practical," let us bring the matter down to the concrete. What can be more *practical* in modern business or industry or public administration than the work of young men or women who have been trained to think clearly, to organize their ideas, to detect the essential points in an argument, to express themselves effectively and, may I add, with economy in words. All this should be the gift of a liberal education.

One of the problems of the modern university, and a most urgent one, is to relate the teaching of the humanities to the training for a profession. We recognize the fact that *education* and *training* are two different things. One is concerned with the equipment for a career, the acquisition of the necessary knowledge and techniques; the other, the training of the intellect, which has no aim beyond itself; but the two we know must be brought together and harmonized. Sometimes such an attempt has led to an uneasy marriage between them. The problem has never been better stated than by Newman. Thus runs his argument: ". . . the man who has learned to think and to reason and to compare and to discriminate and to analyze, who has refined his taste and formed his judgment and sharpened his mental vision, will not indeed at once be a lawyer or a pleader or an orator or a statesman, or a physician, or a good landlord, or a man of business, or a soldier, or an engineer, or a chemist, or a geologist, or an antiquarian, but he will be placed in that state of intellect in which he can take up any one of the sciences or callings I have referred to, or any other for which he has a taste or special talent, with an ease, a grace, a versatility and a success to which another is stranger." But it is easy to oversimplify the distinction between training and education. The training for a profession, properly conceived, can surely in itself contribute to a liberal education. It is therefore perhaps not only a problem of content but also one of method. Many of the subjects in a doctor's training, for instance, or in that of an engineer, if taught with imagination and with

a concern for the underlying principles, can in themselves do much to train the mind. On the other hand, one might add, the humanities, if taught without imagination, with an emphasis on their mechanical side, can become so dehumanized as to cease to deserve the great name they bear. We have but to observe the fate of the classics in modern education to be aware of this.

There is another question, an even greater one which confronts the modern university. Today the physical sciences make increasing demands on our resources. This is due in part, but only in part, to the impulse given them by the war. The pursuit of natural science, which has performed miracles for man's material needs and has even lengthened his life, has now led him to the threshold of his own destruction. But there can be no restraint on research. We have always known that knowledge is dangerous, but that nevertheless it must be pursued. We can set no limits on the horizon of learning despite all the perils involved. Our universities give the fullest expression of that hazard. But our difficulties will only grow if we allow natural science to eclipse the humanities. Our problems will indeed be increased by the divorce of science from philosophy; by putting them in water-tight compartments. That has been for too long a growing tendency. Atomic force could not be left to technocrats who ignored the principles which underlie human relations. Such men would be as dangerous as statesmen who were ignorant of the existence of nuclear fission. The world needs scientific philosophers and philosophic scientists. The contest between science and the humanities is surely a meaningless strife. If true to itself, science must possess many of the blessings which the humanities themselves confer on their devotees. We have been rightly asked by thoughtful men to look on science itself as one of the great humanities. We need to bear in mind the warning: "You may not divide the seamless coat of learning." As Lord Greene said not long ago:

> "A race that knew and cared for nothing but science and its practical application would, if left to itself, become as soulless and mechanical as the formulas that it invented, and the engines that it created; just as a race that knew and cared for nothing but the humanities would end its life in dreams or in some cloister of the mind."

But the latter danger would not seem to be the greater one today. We are not likely, at least here in North America, to be immured in any "cloister of the mind." On the contrary, the humanities seem to be in retreat while we stand in urgent need of what lies in their gift. Our humane Christian tradition is now imperilled as it has not been for many centuries; imperilled not so much by physical forces, however menacing they are, as by an opposing philosophy, pagan, materialistic, tyrannical, ruthless. Should it prevail, human freedom would be extinguished and what we know as western civilization would disappear. What have we to offer in its defence? Mere denunciation is not enough. Negatives will not suffice. Spiritual dangers must be met with spiritual weapons. Matthew Arnold, in an essay which bears re-reading today, says that, ". . . culture is the eternal opponent of the two things which are the signal marks of Jacobinism — its fierceness, and its addiction to an abstract system." The movement of which Arnold wrote belongs to other days, but that creed which is now entrenched behind the barriers of Eastern Europe, with its outposts throughout the free world, has similar attributes. It, too, is both militant and doctrinaire. It, too, can have no more effective opponent than the man or woman who has received what the humanities can offer, along with a sense of the value of their gifts. Our universities stand both as the exponents and guardians of our ancient way of life. They bear the very seeds of freedom. We look to them for guidance in this confused and troubled age. It is the humanist who can come closest to the ideal which shines out of antiquity: "Happy he, who has been able to comprehend the causes of things."

☆ ☆

HEATING AND AIR CONDITIONING OF THEATRES

By KAREL R. RYBKA, P.Eng., M.E., D.Sc.,

Consulting Engineer

Preamble

Although heating of a building is just one of the phases of air conditioning, it is usually mentioned separately. Often, we even hear people speak of heating, ventilation and air conditioning, which seems to amplify the sin. There is, nevertheless, reason to this apparent contradiction.

We have found the heating of a building in wintertime an essential in our climate; during other seasons ventilation has become nearly as important. Both of these processes are a part of the more general term air conditioning; engineering usage has however decreed that the term air conditioning should be applied only to installations which attempt to maintain simultaneously in a building optimum temperature, humidity, movement and quality of the air. This would, in most instances, require more care and more costly installations than those required for heating and possibly ventilation.

Anybody who had contact with design and construction of large indoor assembly spaces in the course of the last 25 years, must have noticed the extreme instability of the practice of air conditioning them. Many of the details of installation and even some of the fundamental data are being used by some, merely because the majority does seem to be in agreement on their value, but only few could actually give valid reasons for their application. An analysis of the diverse recent trends thus might supply some worth-while knowledge, particularly to those who are faced with the task of improving existing installations.

History of Air Conditioning of Theatres

Some years back radiator heating, combined with big exhaust fans in the roof—aspirating air from the auditorium through large elaborately treated ceiling grilles—was common practice for heating and ventilating theatres. This caused overheating and other troubles throughout the year. Whenever the "house" was reasonably filled the heat given off by the occupants usually exceeded the heating load even on the coldest days in winter. The exhaust system, which was intended to take away the excess heat and thus reduce the temperature by aspiration of outdoor air through doors and other openings, was sorely lacking in producing reasonable conditions. It caused bad drafts at entrances and at exits which, from necessity, were kept open, but left the centre of the house, and particularly the then favoured galleries, as unbearably hot as ever. Automatic temperature control on radiators, etc., was not sufficient to give an appreciable measure of improvement.

Later, the direct heating was occasionally supplemented or even supplanted by a large, fan operated, fresh air supply system which—in the winter—employed heating coils for temperature control, and sometimes was provided with air washers for humidity control and for whatever cooling and air cleaning they would ensure. The humidity control was merely an obsession as the occupants give off more moisture than desired, and whenever the air contained soot and similar greasy impurities, the filtering effect of washers was very low. The cooling effect was of any consequence only in areas with dry summer climate, unless refrigeration is applied to the washer.

The air from these supply systems was usually introduced into the theatre through adjustable outlets under the seats; fortunately in many of these systems the heating coils froze and burst during the first heating season, and if there were some radiators in the building, then the air supply system was not put to much use thereafter—except on hot summer days. Whenever it stayed operative, it remained a source of troubles. It was required most of the year to cool the house, and the air was introduced at several degrees below room temperature against the patrons' feet, which are notably sensitive to drafts; also, by the time that the fresh air reached the level of the patrons' respiratory inlets, it had to pick up all the body heat and body odors given off by them; and this resulted in a feeling of discomfort, due to the combination of "cold feet" and stuffiness. It is surprising that it took many years before the full import of the drawbacks of this type of ventilation was realized. Many attempts were made in the meantime to improve these basically unsound installations, by recirculating for economy a portion of the air from the auditorium, and by artificial cooling, and possibly ozonizing in an endeavour to dispose of the staleness, etc. Some of these attempts were even "patented" and highly advertised and brought their owners considerable royalties, and caused the users and patrons many worries.

These earlier attempts have ultimately proven that the conditioned air should be supplied in a manner that will avoid drafts and that it will reach the respiratory

tract of the occupant before it is polluted; this led to overhead or side-wall supply, which is now generally used. In order to ensure that the air would not drop too fast and cause drafts, the temperature difference between the room air and the air supplied by the air conditioning system must be kept within 10°F. to 15°F. which, in turn, led to a supply quantity of about 20 cubic feet of air per minute for each occupant, of which about 30% should be fresh air. This will need to be increased where smaller temperature drops only are possible, such as given by evaporative cooling, etc. Some attempts were made to permit introduction of smaller quantities of much colder air at high velocity; to avoid drafts, they relied on the aspiration of room air into this air stream before it reached the occupant. These attempts were rendered difficult, as the high velocity air streams tended to be noisy, and if they encountered any obstruction, before they were sufficiently decelerated, they also caused bad drafts.

Thus, the present trend for air supply in theatre air conditioning is towards the use of ceiling "plaques" or diffusing outlets in ceilings or in the walls. "Plaques" are large plates located close to and parallel to the ceiling under the mouth of a supply duct; they are designed to deflect the air supply parallel to the ceiling. Ceiling diffusers consist of a series of concentric hollow metal cones in mouth of supply duct designed to spread the air stream into a widening cone, and so gradually reduce the air velocity. Wall type diffusing grilles consist of a series of baffles in duct outlet and arranged to spread the air stream either horizontally or, less frequently, vertically.

In order to ensure proper air circulation through the auditorium, an amount of air equal to that supplied must be exhausted or given a chance to escape in a predetermined manner. This is achieved by recirculating some air from the perimeter of the room near the breathing level of the occupants, or from points which are well distributed over the floor area; earlier underfloor supply outlets have done good service for recirculation; some air may be exhausted directly to outside, particularly from milk-bars, washrooms, lounges, and – where smoking is permitted in loges or balconies – from these "smoking" areas. It is well to arrange the control of exhaust and recirculation in a manner which will ensure a slight excess of air supply into the auditorium, as it will counteract any infiltration of untreated air through entrances, etc. It will also tend to counteract any possible infiltration into auditorium of undesirable odours, heat, etc., from projection suite, washrooms, the presently very popular but odorous pop-corn counters and milk-bars in foyers, etc.

Physiological Requirements of Temperatures

The trial and error method in theatre air conditioning practiced in the recent past has also proven another point of utmost importance. In the early days of summer cooling maintenance of a constant temperature of 70°F. in the house was considered an optimum for all the year. The present practice, backed by experience and by research, however, strives to maintain about 70°F. only at all times when the outdoors is cooler than this point. With rising outside temperature it is desirable to raise the indoor air temperature until a maximum of about 80°F. for 95°F. or higher outside is reached. This is necessary to reduce the physiological shock on entering and leaving the conditioned space. It may not produce lasting ideal comfort conditions after a person has spent some time in the house, but it will reduce the time and physiological strain necessary for adjustment to the lower temperature on entering, and again to the higher outdoor temperature on leaving.

Controls

Automatic controls are paramount in air conditioning. In theatre work they will reduce themselves to controls of combustion systems, controls for operation and protection of refrigeration plants and temperature controls for the house. The last item occasionally may be supplemented by humidity controls, but only under very special conditions.

Good temperature control involves about 5 to 7 per cent of the cost of an air conditioning plant in a theatre; as this system forms the very heart and nerves of successful air conditioning, undue economy in it must be avoided. In small installations electrically operated control systems are quite satisfactory, but in larger houses the more reliable and accurate air operated controls have established their superiority.

Automatic temperature controls should ensure the optimum temperature in the house. In the summer it must be either adjusted fully automatically or easily changed manually to conform to the sliding scale of changing outdoor temperatures. The temperature is mostly controlled from the recirculated air mains; in the house, the control instruments would be subject to undesirable influences of body radiation of nearby people, drafts, etc. Fuel economy in winter and cooling economy in summer should be possible by automatic or manual reduction of fresh-air intake to the possible minimum which would still be compatible with the number of patrons. Change from summer operation to the reversed winter cycle of control operations should be as simple as possible, preferably automatic. In addition to all this, the heating and cooling coils, air washers, etc., must be protected against freezing in winter, and the patrons against cold drafts through suitable limit controls.

If these requirements are laid down and the controls selected to meet them as closely as possible, and if, in addition, the later discussed sub-division of the plant to give separate operation of auditorium and of ancillary spaces is enforced, reasonably good results may be expected.

Present General Practices

Apart from air distribution, movement and temperature in the auditorium of an air conditioned theatre, many other items need to be considered. It has been already stated that a theatre need be cooled pretty well summer and winter. However, in the winter, at least before a performance and sometimes during the same, heat must be introduced into the auditorium. On the other hand the foyers, vestibules, offices and other accessory spaces need heat all winter, and often outside of the periods of performances. It is therefore necessary to sub-divide the heating system for fuel economy into a section serving the accessory spaces and one for the auditorium. The foyers and entrances should be controlled separately wherever possible.

The section for heating the auditorium is best designed as recirculating forced hot air system, as it is then best suited for quickly heating up the space before the performance after extended shut-down, and for rapidly reducing the heat supply with the aid of automatic temperature controls, whenever the demand for heat drops.

An automatically regulated fresh air inlet is provided, which will introduce the amount of fresh air required for maintenance of the desired quality of the air, and further increase this fresh air supply when cooling is required. This system will then serve readily as ventilating plant in the summer and it becomes a matter of economics to decide what additional equipment to provide.

In a high grade theatre, which is expected to attract the patrons in the summer, cooling and dehumidification of the air in summer will become a necessity. The anticipated operating schedule, local weather and type of available water supply, etc., will determine the details of this equipment. If it is reasonably certain that the theatre will not be operated much during the day, then the improvement due to air cooling may be so slight that the high first cost and operating cost may become substantially a waste of money. In some instances, particularly where ice is inexpensive, a few tons of ice placed in the air stream have sufficed to overcome the worst hours in the summer season.

Some Canadian cities, notably Toronto, Port Arthur, etc., have ample and inexpensive supply of "City" water which does not rise often, and then only for very short periods, above 55°F. In such cases, air can be economically cooled and even dehumified by heat exchange between the air and water in extended surface (fin type) cooling coils. In some districts sufficient cold water can be obtained from deep wells for cooling air for conditioning. This applies particularly to the areas near the Great Lakes which have many good wells; but special care must be taken to ensure that the available water supply is reasonably clear, and free of readily scale-forming minerals, which quickly plug coils. They also must be free of obnoxious gases as the disposal of the waste water then becomes a problem. Many municipalities, such as Windsor, Sarnia, London, etc., are loath to permit discharge of these waters into the street sewers. In some instances, the occasional leaking at valves and joints is liable to pollute the air supply, and many a costly well had to be abandoned and sealed, due to the obnoxious gases which persisted in penetrating into the house or into neighbouring buildings.

Some consideration need be given to the humidity of the air in the summer. In water cooled installations ample cooling surface will suffice to keep it usually within reasonable limits.

In districts where the air humidity in summer is very low, it is possible to obtain sufficient air cooling by means of evaporation of water into the air stream either by means of air washers or specially designed humidifiers. This method is based on the fact that it is necessary to expend about 1000 BTU of heat in order to evaporate one pound of water. If the air is dry, then it is harmless and often advantageous to evaporate moisture into it; this evaporation is done by means of sensible heat extracted from the air stream, which reduces its temperature. The foothills of the Rockies, large areas of the Prairie Provinces, etc., are suitable for this system of summer cooling, but it should be noted that the resultant air temperatures may require larger air quantities for effective cooling of the building, than heat exchange in cooling coils supplied with sufficiently cold water.

Wherever neither cold water nor very dry air are available, and summer temperatures are apt to exceed 70°F. for longer periods, artificial refrigeration may become a necessity for air conditioning. It should be remembered that this adds considerable first cost and maintenance and operating costs to the already high present day costs of the necessary mechanical plant.

In central Ontario the minimum cooling load in a movie theatre for 1000 people would add about 50 horsepower to the electric load for refrigeration plant for "direct expansion" cooling. This will add a service charge of at least $50.00 monthly and the actual current cost, or probably $75.00 monthly to the operating cost of the house in summer. To this cost also must be added the costs of the cooling water.

In some municipalities water is becoming scarce and additional costly equipment must be added for conservation of water; this too requires electric power to drive it. This applies for example in Montreal, where water for air conditioning is expensive and city ordinances require its conservation.

In many instances it has been thus found more advantageous to provide in the building a large storage tank for chilled water, which permits the use of a somewhat smaller refrigeration plant arranged to cool the

water in the storage tank and in turn to use this water to cool the air supplied to the theatre. This plant will be operated more continuously than a direct expansion plant, at considerable savings. For the 1000 people mentioned above and assuming a 12 hour operation of the theatre every day, theoretically a 25 horsepower electric motor would suffice to give the same total cooling capacity as the foremention ed 50 horsepower unit; this requires sufficient water tankage to store the entire output of the refrigeration machine, during the periods when the theatre is closed. Owing to losses in storage, reduced refrigeration effect at lower chilled water temperatures, etc., the actual reduction of the required machine size will be less. But, in places where water economy forces the use of cooling towers, water economizers, etc., the size of, and the power to drive, this equipment will be similarly reduced.

Whereas until recently the reduced size of refrigeration machine usually offset the cost of water chiller, circulating pumps and of the more costly water cooling coils, etc., at the present time the high costs of construction and labour in the field has occasionally led to a considerable increase in cost of the storage system. It is thus advisable to study these questions for each case individually.

Another interesting way to reduce the size of the refrigeration plant is possible under favourable conditions, wherever ample low cost water is available at less than 55°F., but where economical water cooling of air is rendered difficult by occasional rises in water temperature to 60°F. or slightly higher. This occurs lately in Toronto and happens usually only in August and possibly in September. It is then possible to reduce the water temperature to the still effective temperature of about 55° F. with only about half the refrigerating capacity usually required for direct cooling by refrigeration.

In addition to the heating and cooling of air, required in air conditioning of theatres, cleaning of the air is also usually included. Mechanical filters are still predominant; the electrostatic filters which have of late been introduced in air conditioning are too expensive for theatres. The amount of cleaning and daily maintenance will not be reduced by better air filtration, as most of the dust in a theatre is raised by the patrons when walking, and even when moving in their seats. The habit of patrons of littering the floors and seats with ticket stubs, bits of paper, nut shells, etc., will not improve by better air filters.

Future Trends

In general, scant new thought has sprung up in the field of air conditioning for theatres over many years, except in the methods of introducing the conditioned air into the spaces and in the temperature requirements. Little change is anticipated in this regard, though details change from time to time. There was for a while a tendency to accept in theatres distributing outlets and exhaust and recirculating grilles as a necessary evil. The present trend is successfully dispensing with some of their "functional beauty." This is, however, merely a matter of co-operation of the Architect and Engineer. The unashamed exposure of mechanical equipment originated in old buildings, which were modernized, and where concealment would have been unduly costly. The introduction of this trend in new buildings was partially due to the way of least resistance and in part to an endeavour to "advertise" air conditioning. This is now unnecessary, as it is expected in all better houses.

There is one development which may become of particular interest to those theaters which have sufficient low cost water of constant temperature; this is the often discussed reversed refrigeration for heating. This type of heating extracts heat from a low temperature medium by further cooling it and passes it into a heating system by compression. It is most effective in installations which do not require very high temperatures of the heating medium, thus it would be best suited for oversized air heating systems, and possibly for floor heating (panel) installations. As the air circulation in theatres is usually based on low temperature differentials and some form of cooling equipment is required for summer use, theatre air conditioning appears particularly adaptable to reversed refrigeration.

☆ ☆

Photographs by Nott and Merrill

FAIRLAWN THEATRE, TORONTO, ONTARIO

JAY I. ENGLISH, ARCHITECT

STAGE

LOBBY

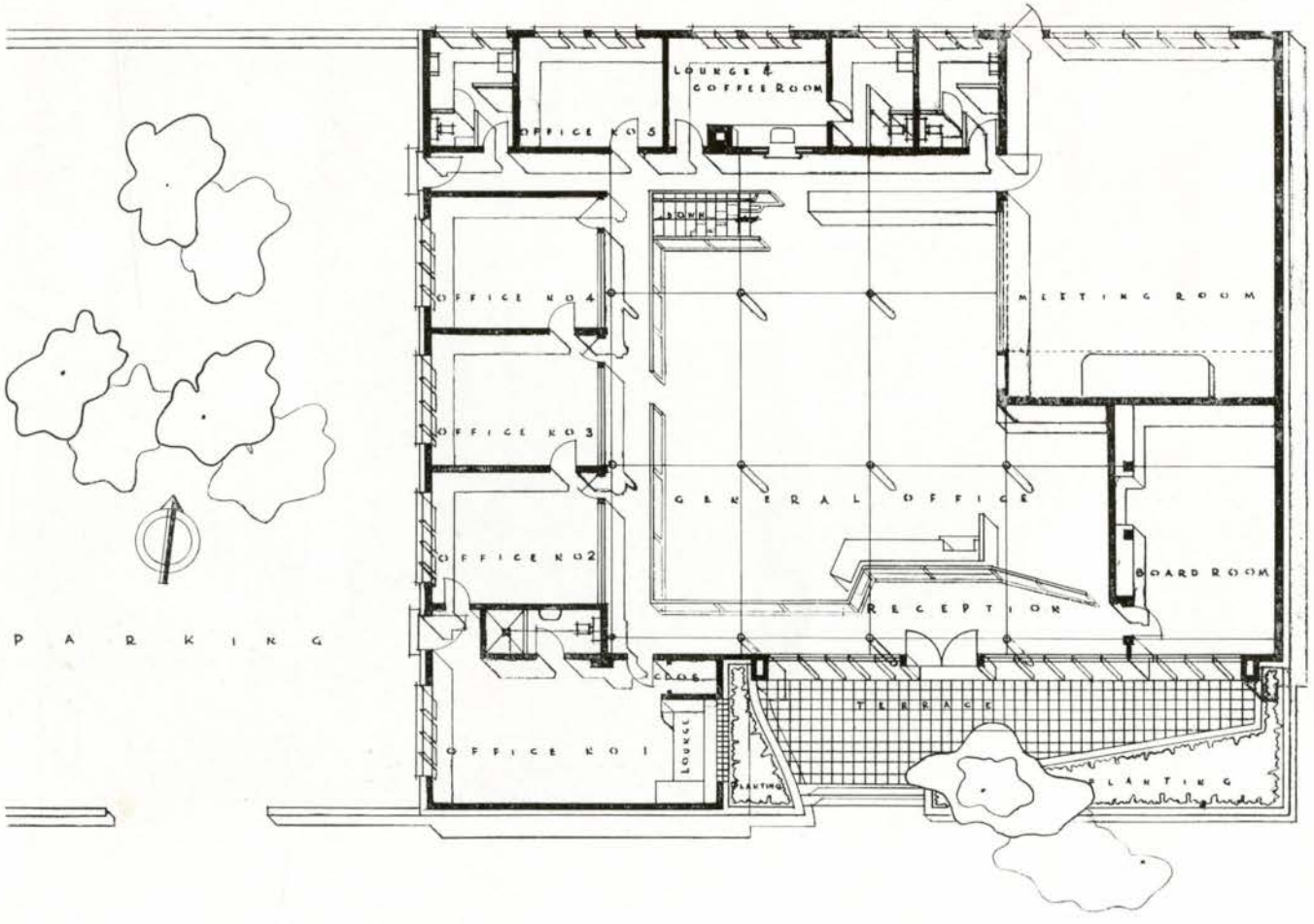
STANDEE SPACE

FOYER

Photograph by Tony Archer

McGAVIN LIMITED, ADMINISTRATION BUILDING, VANCOUVER, BRITISH COLUMBIA

ROBERT R. McKEE, ARCHITECT



LAYOUT

General offices cover 6000 square feet which is represented by: (a) General office (accounting); (b) President's office, including dressing room, shower and built-in furniture; (c) Board Room — full height bleached walnut panelling; (d) Meeting Room (Employees' and managers' discussions); (e) 5 Private offices; (f) Lounge and coffee bar for staff.

MATERIALS AND EQUIPMENT

Building—6" steel columns supporting laminated roof of 20-year tar and gravel.

General—Walls are Clayburn brick buff plastic. Main steel sash is structural in the sense that it contributes support to the "hat brim" or overhang on the main facade. This overhang provides solar control for the general offices.

The entire plant is acoustically treated with ⅞" acoustic tile on ceilings. It is also entirely fluorescent lighted with a maximum night capacity of 55 foot candles on the floor. For five months of the year no artificial light is required in the offices since all walls off the general office borrow light to secondary offices, which are lighted on two sides. The plant is radiant heated throughout. Copper pipes are run in the concrete slab, which is waterproofed integrally. On this slab are placed three types of flooring: (a) Heavy-weight linoleum; (b) Industrial tile; (c) Parquet oak ¾" tongue and groove laid in a dry mastic.

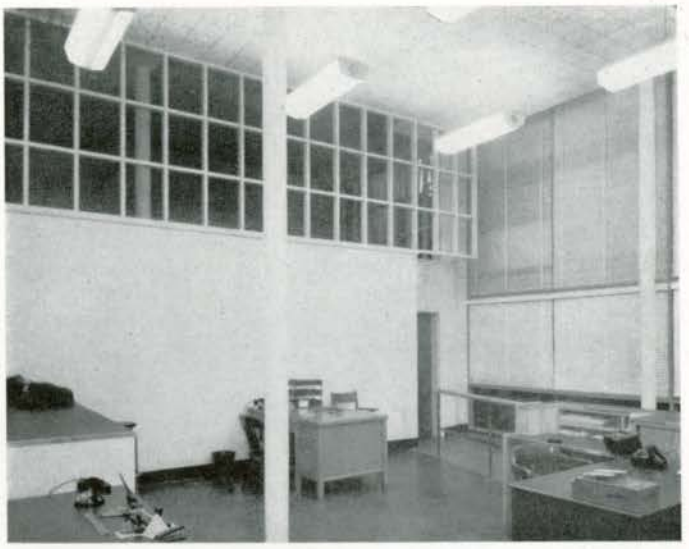
SOLAR SYSTEM

A great deal of study went into the design of the building, to allow the maximum protection from glare and allow the low winter sun to enter the building — also keep it out in the summer. This called for our "hat brim" or overhang, which controls the sun to a certain degree. However, the aesthetic considerations predominated and a 32" overhang was used where a 45" overhang was necessary to do a 100% solar job. Despite this fact glare is negligible, and what winter sun we are getting is paying dividends to McGavins.

The main steel sash not only lights the building but ventilates as well. 30% of the glass area opens and is protected by the overhang. In conjunction with this are two ¼ h.p. reversible fans to provide a change of air if and when required. Space has been allowed for an air conditioning unit which will be installed when materials are available.

Contractors — Bennett & White Construction Company Limited. Electrical — R. Lennox McKenzie, Consultant. Heating — Leek & Co., Consultants.

Photographs by Steffens-Colmer Limited



CORNER OF ADMINISTRATION AREA

BOARD ROOM

MEETING ROOM

LODGE, BAYVIEW,

NORTH YORK TOWNSHIP, ONTARIO

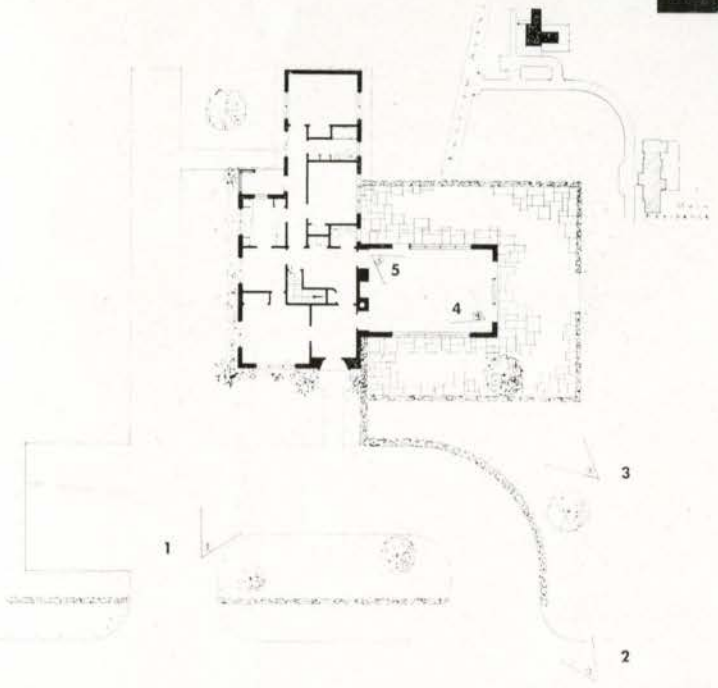
EARLE C. MORGAN, ARCHITECT

VIEW 1 (See plan)

2

3

4



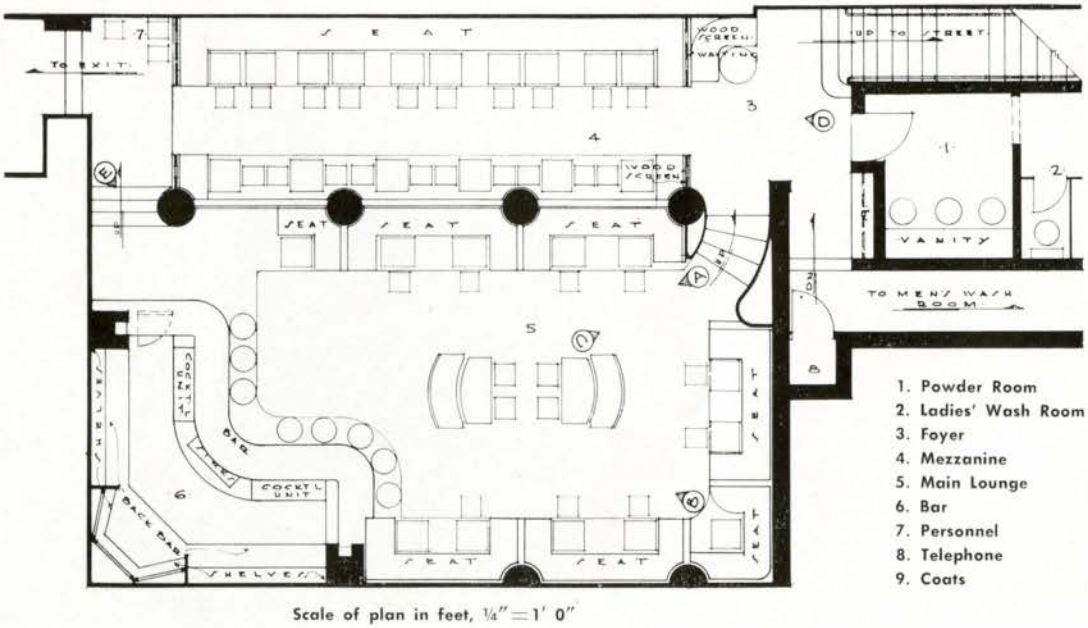
5

Photographs by Pando

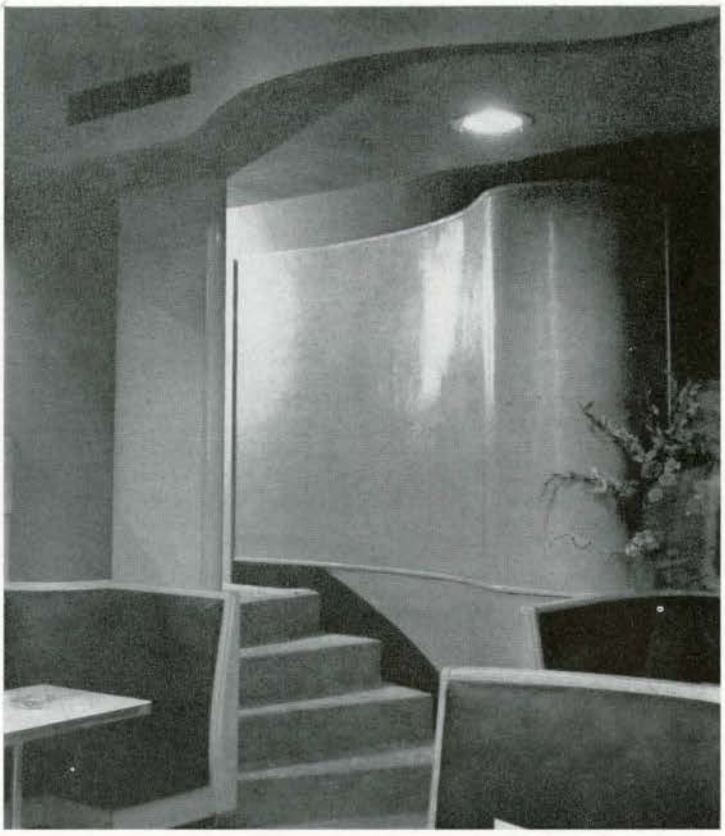
VIEW FROM E (SEE PLAN)

COCKTAIL LOUNGE, PLAZA HOTEL, OTTAWA, ONTARIO

HARRY LINDSAY McQUIRE, ARCHITECT



Scale of plan in feet, ¼" = 1' 0"



VIEW FROM C

DESCRIPTION OF LOUNGE

Bar — Mirrors are peach; central section of back bar for bottle display, flutex satinol glass back lighted with fluorescent lighting; top of back bar and bar shelf, white linen Formica; refrigeration, sinks, cocktail dispensers — stainless steel; bar rail is mahogany, and face of bar and all other woodwork limed oak.

Ceilings — Plaster painted; colour, regency blue. Walls — Japanese grass cloth, painted; colour, Dubonnet. Seating — leather; bottle green. Floors — covered with linoleum and carpet; linoleum under tables for long benches on walls; remainder of floor carpet, carved Wilton — colour, mushroom.

Lighting — In main ceiling, fluorescent trough lighting. Troughs are chalk white with plaster reflectors painted regency blue same colour as ceiling. Lighting back of curved plaster fascia and in bar ceiling, flush incandescent.

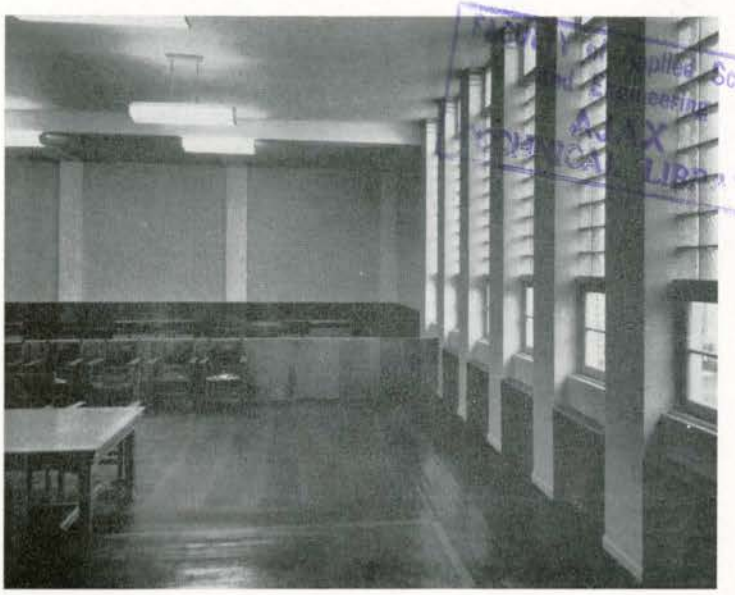
VIEW FROM D

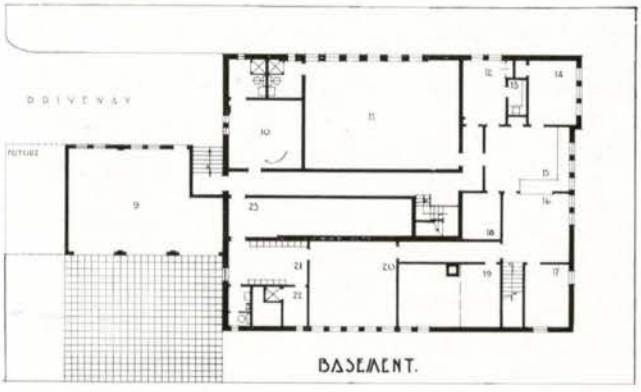
VIEW FROM A

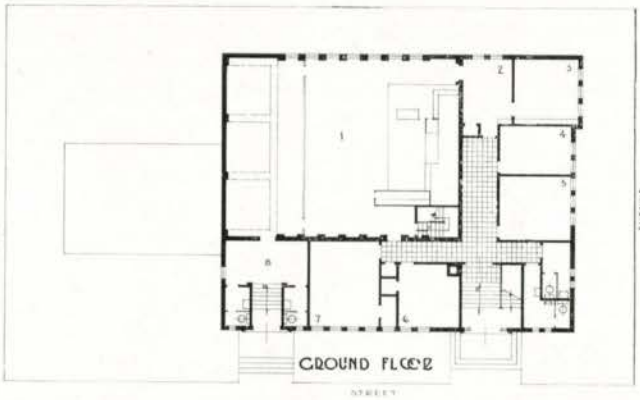
VIEW FROM B

POLICE STATION AND COURT HOUSE,
LETHBRIDGE, ALBERTA

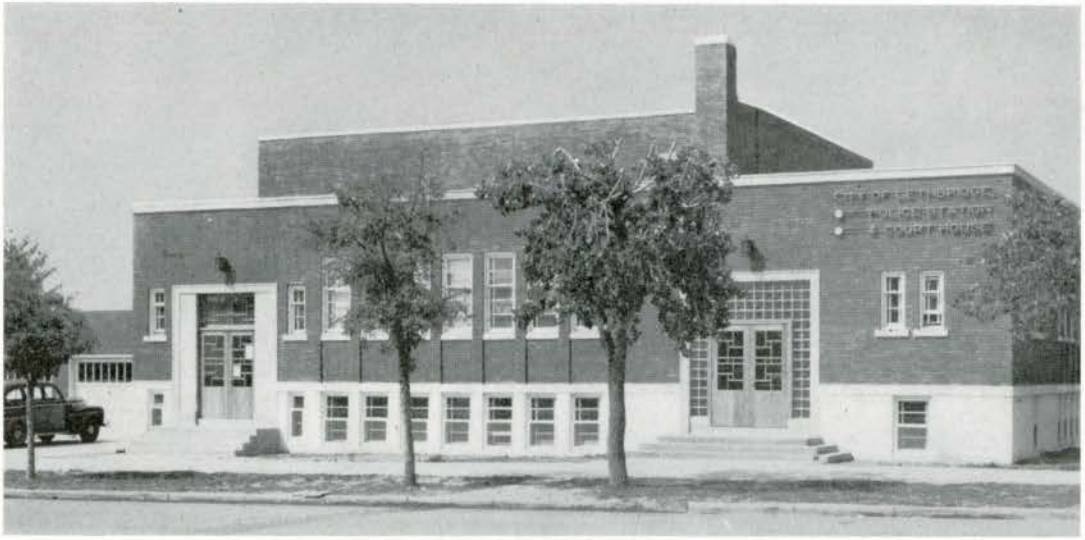
MEECH, MITCHELL AND MEECH,
ARCHITECTS AND ENGINEERS







1. Court Room
2. Magistrates Clerk
3. Magistrate
4. Police Office
5. Police Chief
6. Witnesses
7. Barristers
8. Spectators' Entrance
9. Cars and Motorcycle
10. Women's Cell Block
11. Men's Cell Block
12. Photography
13. Dark Room
14. Radio
15. Complaint Office
16. Waiting Room
17. Detectives' Office
18. Record—Storage
19. Boiler Room
20. Parade Room
21. Locker Room
22. Shower
23. Revolver Range



IMPROVED TECHNIQUES IN ARCHITECTURAL MODELLING

By STEVEN H. WARING,

Manager, Airmodel Division, Photographic Survey Co. Ltd.

IT is doubtful whether any architect will cry out against the value of a colourful, accurate scale model in the presentation of ideas to builders and town or community planners. It is equally doubtful whether any architect will fail to cry out against the cost of personally manufacturing or otherwise obtaining such a model. Because the cost factor, for the most part, is the villain which heretofore has limited the use of accurate scale models to all except those fortunates whose project budgets may be lightly referred to as the pleasantly elastic type.

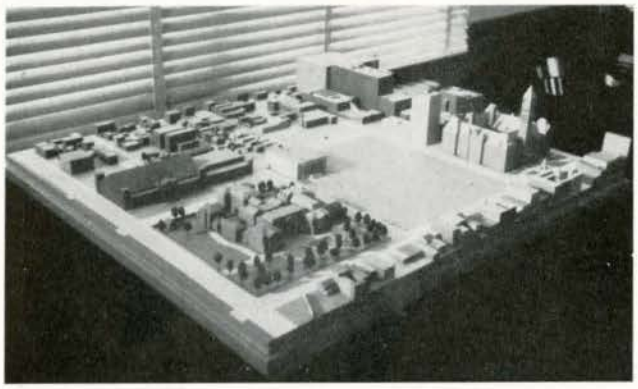
However, all architects who have ever been prevented by costs from using models may now take heart. The cost factor has been attacked hip and thigh by war-born advances in methods and materials of model construction and the time is not far distant when almost any architect who wishes to employ an accurate and attractive scale model of his project will be able to do so and still remain within the confines of even a modest budget.

In prewar times, architects received little or no help from professional model-makers largely because professional model-makers were extremely few and far between. As a consequence, although many models were produced, there were few standard materials and almost no standard construction techniques. The effect of such a situation on the cost is obvious.

Not until accurate models of all types were urgently required for military purposes during the war did manufacturing techniques and materials come in for any attempts toward standardization. It was high-pressure development when it did get under way, however.

At the outset there was very little but the simple fundamentals of model-making available to those whose job it was to adapt models for wartime use. The first unit responsible for such work was formed by the R.A.F., and included three professional model-makers, two architects, a surveyor, a sculptor, a painter and a display artist. Their pooled knowledge made one simple fact painfully clear: processes and materials employed up to that time in the manufacture of models were totally inadequate to cope with the demands foreseen by the land, sea and air forces.

A brief inspection of the methods and materials employed for model-making at that time will provide some idea regarding the problems faced. To begin with, lack of organized modelling meant that most models were individually made, processes involved were the business of the maker, and detailed information, although not guarded, was difficult to collect.



This Airmodel of Toronto's proposed Memorial Civic Square, designed as an accurate depiction of the mass forms of surrounding buildings with unnecessary detail omitted, was prepared entirely from information obtained from aerial photographs. The area of the square itself is open because details of its construction are not yet known. Boundaries of the square are Chestnut, Bay, Louisa and Queen Streets, with the Armory, Osgoode Hall and the City Hall easily identifiable.

A modeller making a large-scale architectural model usually manufactured the base from three-ply wood, sometimes five or seven-ply. His landscape effect was produced by three-ply contours modelled in plaster. Buildings were made of card with windows of celluloid. Trees of sponge completed the form. The landscape was usually painted in an oil paint or sometimes an enamel. For buildings a water paint, either transparent colour or poster colour, was customary.

The processes used to work these materials were often lengthy and not altogether satisfactory. Often the tools were not large enough to accommodate the size of contour involved in an average model. If card was used instead of three-ply, a knife was more often the best available tool for cutting the contour shapes. Landscaping involved modelling the area when the plaster was setting. On any large area this meant several mixtures, or else spreading plaster over the surface and laboriously carving it down to the contour line on setting. To add to the problem, when hard the mixture was extremely fragile.

Cutting the card for the building by hand was a long job. If wood was used, the sanding and surfacing was considerable, unless power tools were available. Unsatisfactory paints cracked or chipped and their application by hand took valuable time.

Both materials (often adapted at great expense of time and effort) and methods varied not only with the

type of model but with the modeller. Rarely were model-makers in a position to undertake detailed research necessary for development of better materials, nor were they in a position to secure tools to simplify their job. Advertising and display firms often had power tools at their disposal, but they were not sufficiently concerned with models to pay great attention to improvement of production. Museums, schools and government departments constructed models with care and attention to detail, but the time required for their production was too great to be practical.

Obviously, such methods—or lack of methods—could in no way fulfill the military requirements; quick production of a highly accurate model. As a consequence, the R.A.F. unit had, therefore, to virtually start the business of model-making from scratch.

The first operational model, showing a target in enemy territory, was to be used for the briefing of troops who were to take part in the operation. The reconstruction of a bridge on fairly heavily contoured land form was required. The details of this area were supplied by maps, plans and air photographs.

The layers of contours were made up of a soft half-inch wallboard. They were cut laboriously by a series of jig saws, fret saws (tools often too small) and knives, a lengthy and untidy process. When mounted on a base, these contours were whittled down to produce a smooth surfaced land form. This was painted and the detail, made from wood and metal, was added. Coarse sawdust representing trees, when mounted, completed the model. The resulting land form, unfortunately, was not as accurate as was required, and the detailed work delayed the model's delivery by some days.

It was imagined that in the light of experience, the next model would be produced faster and with less difficulty. As it happened, however, the requirements were completely different: a reproduction scale of 100 feet to 1 inch, of the docks at Wilhelmshaven, showing all the buildings in detail, whether they were solidly made or constructed of girder work. This new model presented many more and different problems, every one of them time consuming.

However, the solutions to the problems set by these two early models did provide a basis for the speedier production of subsequent models. A needle-action bladed power tool used in display work proved to be the answer to contour cutting. Unrestricted and free to move over the surface of a board any size, this machine was ideal for the job, giving an accurate clean cut, with at least 75% saving in time. Upon such reliable contours an accurate land form could be modelled. The use of an enlarged and rectified vertical air photograph, a process completed in a matter of thirty minutes, mounted on to the land form, eliminated the long, tedious job of gridding and plotting.

In regard to materials, good quality cork linoleum was found ideal for small scale buildings and detail. Various plastics, as well as different metals possessing a low melting point, took care of many problems that previously had beset the modeller carrying out detailed work.

As methods and materials improved, the demand for models increased. Construction of many different types was undertaken: models for briefing purposes, models for the identification of enemy armoured equipment, for the planning of coastal raids, bombing operations, and numbers of models for all the large scale landings as well as many smaller operations. Other work, apart from small scale models used for airborne operations, involved the large scale reconstruction of enemy research stations and plants concerned with jet and rocket propelled missiles, as well as many of the rocket launching sites in France for use in detailed studies of the development of these weapons.

The variety of the above mentioned output will indicate why it was necessary for production to become highly organized. The staff, which had grown to 140 and eventually included many Americans, combined its specialized knowledge to devise new and labour-saving methods for almost every process involved. And so, under the impetus of war, techniques advanced. The return of peacetime saw modelling emerge as a considerably technical job, with greater scope than ever, especially in regard to architectural applications.

The most striking adaptation of a war-type model to peacetime use concerns models made from air photographs, depicting in detail large land forms. These have been demonstrated to possess ideal qualities for town and community planning.

Vertical air photographs when used stereoscopically, can supply almost all the information required to plan the development of an area. But while this information is readable to the man experienced in the interpretation of photographs, it is not so plain to one unskilled in interpretation techniques.

This is where the value of a model becomes immediately apparent.

The land form can be reproduced accurately and to scale. Details of trees and buildings can be added. All technical information required by both architect and engineer can be shown without confusing any of the details already indicated. The complete project, down to the drainage, can be planned on such a model which, apart from being ideal for purposes of discussion, enables all concerned with the project to form a complete picture of what is entailed, an important factor when a number of people are involved. When the planning is complete, the model can be used very successfully for display to those who may perhaps occupy houses on the site, the amenities

and advantages of which are immediately apparent. Similarly, for city planning, a model can reconstruct in as much detail as is required, existing buildings from air photographs which give both plans and heights accurately.

The application of improved materials and techniques to the larger scale architectural model will be seen if the example model, whose details of construction were given earlier, is remade in the light of wartime experience.

The base, if it is to withstand any wear, instead of being made from five or seven-ply, can now, with the help of a power saw and electric sander, be made as cheaply of masonite, with a simply constructed frame, lighter and by its particular triangular construction practically free from warp or twist. Contours, enlarged accurately by photography and traced on to a wall board of appropriate thickness, can be cut by the cutting tool. The landscaping, modelled in a specially prepared mixture of plaster, pulp, paper and glue size, can give a true reproduction which neither cracks nor swells. This mixture provides a rock-hard surface which needs no repairs after setting—which in itself means a considerable saving in costly man-hours.

Buildings, if made of card, can be cut mechanically. If constructed of close-grained wood they can be shaped by the circular saw and finished accurately by the precision sanding machine, making them immediately ready for shellacking and painting. Not only the windows, but also intricate exterior details, can be made of acetate sheeting, extremely easy to cut and shape, either by tools or moulding, and welded in a few seconds by the appropriate solvent. Just two materials, either card and acetate, or wood and acetate, are sufficient to complete any building no matter how complicated. It is quite possible to prepare an entire building from acetate sheeting. Over a period this type is liable to warp but for a quick and temporary model it provides an ideal medium.

The shrubs, made of sponge as before, or alternatively of cheaper cotton batting dipped in plaster and shaped, can be produced simply. A single thin spray of shellack makes them ready for a coat of oil paint.

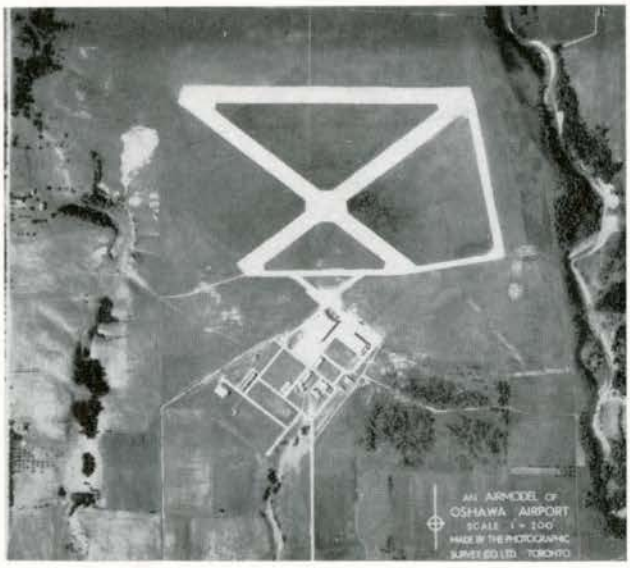
The buildings, shrubs and trees, can be spray-painted with a fixed and permanent colour in a few minutes, and the use of a very simple mask can add the effect of bricks. More complicated stonework can be produced with liquid masking applied with a brush in a shorter time than it would take to handpaint the details.

The landscaping, with grass stipple-painted, and areas of path and roadway spray-painted, immediately give the essential differences between turf and surfaced areas. On such a model the time saved by these new methods and the use of new materials and equipment amounts to almost 40%, which means an appreciable reduction in cost.

The new modelling technique is most certainly a great advance in the construction of the ordinary architectural model. This, combined with air photographs, which are covering increasingly large areas, is a new and extremely valuable tool becoming available to both the city and the community planner.

In planning, this type of model is a logical development of air photography. Now that complete coverage exists of Toronto, produced recently for a mosaic of the city ordered by Mr. T. LeMay of the Toronto and York Planning Board, it is hoped that the large and accurate fund of information which these air photographs can provide will be used for the production of reliefs, simple and detailed, for use, not only in all stages of planning work but for the demonstration of the many new projects proposed in Toronto, to the community whose interest, co-operation and help are often vital to the successful completion of many schemes.

These advances in modelling, and its strong link with air photography, puts the manufacture of models in line with present day production. The fact that they are already being produced in this way speeds the day when all types of "factory built" models are within the reach of any architect.



The accuracy now obtainable in topographical modelling is well illustrated by this illustration of the Airmodel of Oshawa Municipal Airport, made from air photographs.

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

OFFICERS

PRESIDENT . . . . . CHARLES DAVID (F)

FIRST VICE-PRESIDENT . . J. ROXBURGH SMITH (F) SECOND VICE-PRESIDENT . . . JOHN S. PORTER

HONORARY SECRETARY . . . MURRAY BROWN (F) HONORARY TREASURER . . A. J. HAZELGROVE (F)

PAST-PRESIDENT . . . . . FORSEY PAGE (F)

SECRETARY . . . . . MISS ANNE CORY

74 King Street East, Toronto

COUNCIL

P. L. JAMES (F), JOHN S. PORTER, P. C. UNDERWOOD . . . . . British Columbia

M. C. DEWAR, G. K. WYNN . . . . . Alberta

E. J. GILBERT (F), FRANK J. MARTIN . . . . . Saskatchewan

NEIL K. BROWN, H. H. G. MOODY, J. A. RUSSELL . . . . . Manitoba

Ontario

W. J. ABRA (F), MURRAY BROWN (F), JAS. H. CRAIG (F), A. J. HAZELGROVE (F),
A. S. MATHERS (F), R. S. MORRIS (F), FORSEY PAGE (F) P.P., W. BRUCE RIDDELL (F)

Quebec

OSCAR BEAULE (F), CHARLES DAVID (F), EUGENE LAROSE (F), HAROLD LAWSON (F),
MAURICE PAYETTE (F), GORDON McL. PITTS (F) P.P., J. ROXBURGH SMITH (F)

H. CLAIRE MOTT (F), G. W. WILSON . . . . . New Brunswick

C. A. FOWLER, A. E. PRIEST . . . . . Nova Scotia

EDITORIAL BOARD REPRESENTATIVES

British Columbia: R. A. D. BERWICK, Chairman; WILLIAM FREDK. GARDINER, H. C. PERRAM, JOS. F. WATSON

Alberta: C. S. BURGESS (F), Chairman; M. C. DEWAR, PETER L. RULE

Saskatchewan: E. J. GILBERT (F), Chairman; H. K. BLACK, F. J. MARTIN, F. H. PORTNALL (F)

Manitoba: J. A. RUSSELL, Chairman; NEIL K. BROWN, H. H. G. MOODY

Ontario: JAS. A. MURRAY, Chairman; WATSON BALHARRIE, L. Y. McINTOSH, ALVIN R. PRACK, HARRY P. SMITH, J. B. SUTTON, A. B. SCOTT .

Quebec: RICHARD E. BOLTON, Chairman; O. BEAULE (F), JOHN BLAND, P. H. LAPOINTE, HAROLD LAWSON (F), J. CAMPBELL MERRETT, PIERRE MORENCY, LUCIEN PARENT (F), J. ROXBURGH SMITH (F)

New Brunswick: H. CLAIRE MOTT (F), Chairman; W. W. ALWARD, J. K. GILLIES

Nova Scotia: LESLIE R. FAIRN (F), Chairman; A. E. PRIEST, J. H. WHITFORD

INCORPORATED BY THE DOMINION PARLIAMENT 16th JUNE, 1908, 1st APRIL, 1912, AND 14th JUNE, 1929

NEWS FROM THE INSTITUTE

INTERNATIONAL FEDERATION FOR HOUSING AND TOWN PLANNING

The 19th International Congress on Housing and Town Planning is to be held in Zurich, Switzerland, during the week June 20th to 26th, 1948. Four general sessions will be included on the Programme, devoted to the following topics:

Financial Aid to Housing,
Housing Progress,
National and Regional Planning of Towns and Countryside,
Financial Relation of Planning to Ownership Rights.

In addition, there will be informal meetings of Study Groups, where experts from different countries can gather for a free exchange of information and ideas. Subjects for these study groups will include:

Training the Planner and the Planning Team,
Methods of Development Control,
Analysis of the Survey,
Neighbourhood Planning,
Standards and Equipment for the House.

An Exhibition of Swiss Housing and Planning is being held in conjunction with the Congress, and tours of the city of Zurich and of different parts of Switzerland will also be organized.

The Federation is anxious to have a broad representation of delegates from all countries at the meetings, and will welcome any interested members of the Profession who might be in Switzerland at the time of the Congress. Any requests for further information, or questions about the Congress, should be addressed to the office of the International Federation for Housing and Town Planning, 13, Suffolk Street, Haymarket, London, S.W.1, England.

EMPLOYMENT OF STUDENTS

The Institute has received an appeal from the Department of Labour with regard to the employment of university students. Through the Department's Bureau of Technical Personnel and the Executive and Professional Division of National Employment Service, they are providing a placement service for the greatly-increased number of students, the majority of whom are enrolled under the Dominion Government's rehabilitation plan for war veterans.

It will be necessary to enlist the full co-operation of employers if the employment needs of students are to be met, and the Department is anxious to advise all employers who might provide either summer or permanent employment, of this employment service.

SIR HERBERT BAKER SCHOLARSHIPS

The following notice has been received from the Foreign Relations Committee of the Canadian Arts Council. We regret that there is no further information available on this subject, but wish to bring the matter to the attention of the members.

"The Royal Academy of Arts (London, England) is considering the award of scholarships under the terms of the bequest of the late Sir Herbert Baker, K.C.I.E., R.A., and invites young practitioners of the arts who wish to be considered for election to the scholarships to submit their names, ages, qualifications and aims to the Secretary, Royal Academy of Arts, Piccadilly, London, W.1, not later than the 1st March, 1948.

"The purpose of the Herbert Baker Scholarships is to promote the study of the interdependence of Architecture, Sculpture, Painting and Poetic Literature.

"These scholarships, of the value of £250, are open to advanced students and young practitioners of the arts in Great Britain, Northern Ireland and the Dominions (including Rhodesia and Kenya) of the British Commonwealth."

EXHIBITION OF CHURCHES BY THE NETHERLANDS GOVERNMENT

Some time ago, the R.A.I.C. received a request from The Netherlands Commission for Reconstruction at The Hague to forward any material which we might have on Canadian Churches, for inclusion in an exhibition being sponsored by the Commission. At that time, an appeal was addressed to the Provincial Associations for representative material which might be included in such an exhibition, and a small collection of photographs was sent to the Commission from the Ontario Association of Architects.

We have now been advised by the Department of External Affairs that this Exhibition is not being held until May, 1948, and that the Commission is still anxious to obtain further examples of Canadian churches. The Institute would be glad to receive plans, perspectives or photographs of churches in Canada, together with any elucidating descriptions, which might be suitable for sending to The Netherlands for this exhibition. Requests for information, or material for this purpose, should be addressed to The Secretary, Royal Architectural Institute of Canada, 74 King Street East, Toronto.

ALBERTA

Some years ago architects and others were earnestly exhorted to suggest schemes for work that would be urgently required after the war. A very considerable body of such work was compiled and many public authorities must have on their fyles a large back-log, as it was called, of this sort. It is to be hoped that in time this back-log will be set arolling, but meanwhile

the bulk of work now being carried on is of a very different description. Private necessities and private enterprise are pushing their imperative needs. The casual onlooker sees more of buildings for the sale of motor cars and hears more talk of existent and non-existent housing than of large public works of an architectural sort.

Amongst the requirements of special immediate importance in Alberta are all types of tourist accommodation, these being promising means for increasing income and employment. Having, in Banff and Jasper Parks, the largest and finest national parks in the Dominion it is reasonable to attract tourists by providing the essential accommodation. This is the more important as it is the sort of trade that tends to restore to health the slightly anaemic Canadian dollar. Many new camps and extensions to camps are being laid out in the mountain districts. Within the national parks it is the announced policy of the federal government to encourage a sufficiency of these along all the highways and at some of the more secluded places of resort. These cannot escape the general rise in cost and in price of accommodation.

For the sake of the tourist industry it is unfortunate that the war has occasioned a lag in hotel accommodation. This has caused a strong tendency towards the hybrid "motel" or motor camp offering some approach to hotel accommodation. These, owing to the general shortage of housing, are apt to become places of prolonged or even permanent residence with the threat that they may become undesirably congested residential areas.

Another very general demand has arisen for community centres of various sorts frequently promoted under the term "war memorials." There may be in a broad sense some justification for thus applying the term inasmuch as public sentiment has been influenced in this direction by a reconsideration of social needs by after-war reviews of the general situation. To some an appeal for subscriptions for the erection of a hockey rink under the title of "war memorial" may seem to be stretching the name very far. To many it is apparently quite appropriate and numbers of such memorials are being liberally subscribed for and erected. The prudent architect will not too strenuously uphold the negative in this debate. The reason and justification for the popularity of these buildings is to be found in the circumstances existing where good farming land is occupied in large holdings. The people are prosperous and energetic but widely scattered. Desire for social intercourse is strongly felt. A village of two or three hundred population may be the one common centre for several thousands within a radius of thirty miles. A hockey match is an event that will bring thousands together. But this is merely the initial force that brings these people together for many other purposes, some of them of greater importance than the match itself. The event is more important than the name seems to imply. In a number of cases the rink does tend to become secondary. The club-house is in these cases a genuine farmers' club with theatre, news room, dance hall and other club services. This is likely to become the recognised type of farm community centre. Life on the farm is thus becoming of wider and more wholesome scope.

Cecil S. Burgess

MANITOBA

The December meeting of the Council of the Manitoba Association of Architects saw the culmination of several months of deliberation and of revision of the regulations for qualifying examinations for licence to practise Architecture in the province of Manitoba. The increasing number of ex-service men serving as apprentices in architects' offices has emphasized the necessity of revising the old regulations which specified examinations of a definitely antiquated nature. A summary of the regulations appears below. The fee for each examination will be fifteen dollars except in the case of the final item K.

After 1 year (or more) in an architect's office

A. History of Architecture - - - - - 3 hours

After 3 years (or more) in an architect's office

B. Building Construction, Materials and Details - - - - - - - - - - 3 hours
C. Strength of Materials and Graphical Statics - - - - - - - - - - 4 hours

After 5 years (or more) in an architect's office

D. Mechanical Equipment of Buildings - - 3 hours
E. Foundations - - - - - - - - 3 hours

After 7 years (or more) in an architect's office

F. Structural Design - - - - - - - 3 hours
G. Theory of Architectural Design - - 3 hours

After 9 years (or more) in an architect's office

H. Design Problem - - - - - - - 12 hours
I. Reinforced Concrete Design - - - 3 hours

After 10 years (or more) in an architect's office

J. Professional Practice (oral or written)
K. Submission of set of working drawings and specifications for a building whose subject and requirements are to be chosen in consultation with, and subject to the approval of, the Board of Examiners.

The annual meeting of the Manitoba Association was held January 19th, followed by a reception and dinner in the Macdonald Room of the Fort Garry Hotel. Members of the faculty and of the two upper classes in the School of Architecture were guests of the Associa-

tion. The guest speaker for the occasion was the Honourable Errick F. Willis, Minister of Public Works for the Province of Manitoba. In brilliant phraseology he outlined a blueprint for the future of the Canadian way of life.

Announcement was made that the seeming impasse which had been reached between the Central Mortgage and Housing Corporation and the locally sponsored Homes By Architects has now been cleared, and that there is reasonable assurance of the development of a mutually satisfactory small homes publication and service.

At the meeting of the new Council of the Association, to which E. Fitz Munn, Eric W. Thrift, Roy Sellors and Ernest J. Smith had been elected as new councillors, H. H. G. Moody was unanimously re-elected as President and J. A. Russell as Vice-President. Mr. Moody and Mr. Thrift were nominated as delegates to the Annual Meeting of the R.A.I.C.

John A. Russell

ONTARIO

Pay day was just around the corner. The chief draughtsman and Miss H., the secretary, had to eat. So did we, but we were fortunate enough to be eating on the family. To meet the day we decided to send in our first account for services rendered, but being a rather unusual commission no rule of the Association seemed to cover the fee. It was then that a lump sum was agreed upon. As bookkeeper I made the first entry in our Grand and Toys. The account was mailed and there was nothing to do but wait. The day following the cheque was received, by hand, with a letter from our client assuring us that we would never make a living if we charged such small fees. The cheque was for double the amount we had asked. A new set of books were obtained. I was relegated to the draughting room, Miss H. became Secretary-Bookkeeper and everyone in the office appeared relieved.

Those were the days! About the same time after the real war as we are to-day after *the* war. In those days things were different. Take for example the time when it became necessary to have a contract signed by the owners and the contractors. What to do? We telephoned Mr. Lyle. Everyone 'phoned John M. when in doubt. The result was a delightful lunch at one of Mr. Lyle's clubs and later the signing of the documents as if it were a daily occurrence.

A conservative client wishing to be certain that he was getting value for his money demanded that Mr. Henry Sproatt pass our design. Mr. Sproatt refused but later relented—and after examining our drawing telephoned our client and after giving him a going-over demanded "What the devil is a DEN?"

Dr. John Pearson would keep you in his waiting room sending out slips of paper from time to time with sage remarks on the evil of tardiness in keeping appointments. In time we were ushered into the great office where our questions were answered and we were pressed to take tea and crumpets.

These three great gentlemen I mention only as a pattern. There were many other gentlemanly practitioners in Toronto, and I assume in all other cities in Ontario who could, and did, find time to devote to the youngsters who had the ambition and the courage to embark on the Glorious Adventure in Architecture. To us they were the venerable gentlemen of the profession. Revered, their advice and instruction was as gold. They were the towers of strength when our puny efforts failed. They gave of their experience and knowledge unstintingly, without thought of personal inconvenience. They were the master craftsmen the goal to seek of all of us.

Has the gaiety and kindliness and fun gone out of Architecture as an art with the advent of space planning?

Who can forget the all-day cricket match between the offices of Sproatt and Rolph and Darling and Pearson (imagine Jules Wagner playing cricket, or for that matter any of us young draughtsmen)? Who can but remember the Christmas parties. Where was ever such music and song as in Eden Smith's office.

Twenty-five years of practice and two wars make a man either lonely or old. I think I am both. Lonely for the profession and all the associations, the thrill of a new commission, the striving to make each one better than the last. Old because being a decrepit farmer I am almost content to live in the memories of that golden age before and just after the first unpleasantness, yet still retaining I hope "a touch of tendency." This remark may open the door of the minds of certain unnamed old friends who joined me in drawing on the table-cloths at more annual meetings than I care to mention.

There must be a moral or a message or a point to all this rambling. Perhaps it is three questions. What are we (the old traditionalists and die-hards) doing to encourage these bright and enthusiastic newcomers to our ranks who, despite 73¢ bacon and 40¢ gasoline are contributing such an amazing collection of good ideas, excellent design and forthright thinking?

Are we of the last war giving to these of this war what we received from those gracious gentlemen who helped us to become established in the Great Adventure? I sincerely hope we are. But I confess I am a pessimist. Aren't we inclined to be just a bit selfish, too absorbed in our own activities to devote much time to others? I hope I am over pessimistic. Perhaps after all we have not yet become fully mechanized.

H. J. Burden

CONTRIBUTORS TO THIS ISSUE

Karel R. Rybka, Mechanical and Electrical Engineer, graduated at Prague in 1923. In 1937 was awarded the Degree of Doctor of Science during a brief visit in Prague. Came to Canada in 1928 and has since been

engaged in Consulting Engineering. Was prominently connected with the construction of some of the major buildings in Toronto, such as the Royal York Hotel, Eaton's College Street Store, Maple Leaf Gardens, Toronto Stock Exchange, some of the University Buildings, some large office buildings, factories, diverse recreational buildings, many moving picture theatres, etc. Is a member of the Engineering Institute of Canada, the Association of Professional Engineers of Ontario, and the Corporation of Professional Engineers of Quebec.

Steven Waring was born in England. He studied stage design at Reading University in England for two years when he joined the R.A.F. in 1941. For his work in the development and production of target briefing models, as well as in the training of U.S. Army personnel, he received both British and American awards. He came to Canada in November, 1946, joining the Photographic Survey Co., Ltd., Toronto, where he is now in charge of the modelling division.

☆

Many architects have commented and even written letters to the editor congratulating the Editorial Board on the January issue. **Mr. Charles F. Comfort,** who wrote the leading article, organized that issue, and the Board acknowledges its obligations to him for his very fine efforts.

OBITUARY

S. M. EVELEIGH

A few weeks ago Vancouver lost one of her favourite sons with the death of Sidney Morgan Eveleigh, a resident and prominent citizen since 1888. The Architectural profession in British Columbia and particularly Vancouver sustained an equal loss, for Mr. Eveleigh was well known as an Architect throughout the Province. Eveleigh Street in Vancouver is named after him and as an original member of Vancouver's Library Board he was personally responsible for Andrew Carnegie's financial assistance to the sum of $50,000.00 to help finance the City's first Public Library.

Mr. Eveleigh also was the first honorary Secretary of the Architectural Institute of B.C. and the oldest member of the Institute at his death. He was an honorary Life Member of the B.C. Institute and a member of the Royal Architectural Institute of Canada.

Mr. Eveleigh was President of the A.I.B.C. in 1923-4 and served as a Council member for twelve years prior to being elected Honorary Secretary, which he retained two years prior to his death.

Words so few could not express the devotion to his profession, and although he was bed-ridden for 9 years he continued to take the same keen and watchful eye on the affairs of the Institute and its members up to a few hours of his death.

Mr. Eveleigh was born in Bedford, England, in 1870. Soon after arriving in Vancouver in 1895, he formed a partnership with Mr. W. Dalton under the name of Dalton and Eveleigh. The Vancouver Court House and many other important public buildings were designed by them.

William Fredk. Gardiner

HUGH CARLTON PERRAM

One of Victoria's outstanding Architects passed suddenly away recently in the person of Mr. Hugh Carlton Perram. Mr. Perram came to Victoria from California just prior to the last World War, and his popularity and kindness, as well as his ability, speak very highly for him by the volume of work he undertook in the few years he practised in Victoria. The first two years he directed the National Housing Administration on Vancouver Island, and later followed into private practice.

Mr. Perram was 62 years of age and was born in Aurora, Ontario. It will be of interest to the Montreal Architects to learn that he practised there prior to taking up residence in California in 1929. Mr. Perram, better known as "Hugh," was a member of the Architectural Institute of B.C. and had he not died would have been elected to the Council to represent the Victoria Architects. However, fate prevented this which is our loss. We shall however, and particularly his many friends in Victoria, remember him as an honourable member of the Architectural profession and a real gentleman.

William Fredk. Gardiner

GEORGE J. STEPHENSON

One of Saskatchewan's Pioneer Architects in the person of George J. Stephenson, died in Saskatoon on January 17th. He was Past President and an Honorary Life Member of the Saskatchewan Association of Architects.

Mr. Stephenson was Past Master of St. Andrew's Lodge No. 174 A.F. and A.M., Regina, and was buried with Masonic rites in Saskatoon.

He was born in Newcastle, England, and came to Canada with the Barr Colonists. He acquired land near Paynton, Sask., but soon opened an office for the practise of architecture at North Battleford. He was a charter member of the Saskatchewan Association of Architects being holder of certificate number four. At the outbreak of World War I he went overseas with the 9th C.M.R.s and was discharged with the rank of Captain.

On his return to Canada he was connected with the Provincial Architect's Branch of the Saskatchewan Government for a short time and was then appointed Resident Architect for the Dominion Department of Public Works. He held this position until his retirement about seven years ago, serving in Regina, Halifax and Saskatoon.

E. J. Gilbert

Facts by Pilkington about Glass
FOR ARCHITECTURAL STUDENTS

NO. 16 — **PREPARING SPECIFICATIONS FOR GLAZING**

More wastage occurs through out-of-date specifications being used, where glass is concerned, than in any other way. There are a good many accepted phrases which creep into specifications, which are honoured by time but not by sense.

To specify a glass as "the best of its respective kind" is a typical example. What does this mean? It means that it gives an opportunity to people who are perhaps not as conscientious as they might be, to interpret this in their own way, and supply a glass *they* consider suitable. There have been instances of architects interpreting their own specifications as calling for best glass, whereas the contractor's interpretation is that ordinary glazing quality is required, and this has been supplied. The only safe, sound and commonsense way of preparing a specification for glazing is to specify the recognized description and terms as shown in the examples given below for Sheet Glass, Polished Plate Glass and Cathedral and Figured Rolled Glass.

GLAZING SPECIFICATION

GENERAL

All glass to be of the type, quality and substance specified, and to be of British manufacture.

The glazier must be prepared to produce at the completion of the job invoice or voucher from the manufacturer to show that the glass supplied is in accordance with the specification.

SHEET GLASS

"All windows . . . shall be glazed with SHEET GLASS 24 oz. O.Q."

Sheet Glass is made in the following thicknesses and qualities:—

Thickness:

18 oz.	approx.	1/12"
24 oz.	„	1/10"
26 oz.	„	1/8"
32 oz.	„	5/32"

Qualities:

Each thickness is supplied in two recognised glazing qualities, i.e.

O.Q. . . . Suitable for general glazing purposes.

S.Q. . . . For high grade work where a superfine glass is required.

(See earlier sheets for additional information)

POLISHED PLATE GLASS

"All windows . . shall be glazed with ¼" POLISHED PLATE GLASS, G.G. (*)."

The normal substance of British Polished Plate Glass supplied, unless otherwise stated, is approximately ¼", and is available in qualities as stated below:—

G.G. . . . *For ordinary glazing.*
S.G. . . . *For Selected glazing.*

If a substance other than ¼" is required, it must be specified.

(*) The substance and quality specified is determined by the size of pane and type of job for which the glass is required.

CATHEDRAL AND FIGURED ROLLED GLASS

"The windows of . . . shall be glazed with PINHEAD MOROCCO GLASS (*) ⅛" thick."

CATHEDRAL and FIGURED ROLLED GLASS is made in a variety of patterns and textures and classified as follows:—

Non-Formal Textures: The textural surface just gives sufficient obscurity to prevent clear vision through the glass. CLEAR, PLAIN, RIMPLED, DOUBLE ROLLED, WATERWITE, CLOUDED.

Formal and Semi-Formal Patterns:

Brightness: The semi-formal pattern gives brightness to the appearance of the glass; a characteristic which is developed to a much greater degree in the formal patterns.

Obscuration: Both formal and semi-formal patterns prevent direct vision through the glass; the formal almost obscuring vision, the semi-formal creating only partial obscuration.

HAMMERED, ARCTIC, ARCTIC (Small), MAJESTIC, MURANESE, RIPPLED.

Diffusion Patterns: A deeply impressed pattern giving a high degree of brightness to the appearance of the glass. Direct vision is completely obscured, with very little loss of light. MOROCCO (Pinhead), MOROCCO (Small), MOROCCO (Large), AMAZON, SPARKEL.

Complete Diffusion and Obscuration Patterns: A deep geometric pattern is impressed, giving a high degree of brightness to the appearance of the glass and complete obscuration with very little loss of light. KALEIDOSCOPE.

(*) The type of glass used will depend upon the purpose for which it is required, *i.e.*, privacy, diffusion, etc., and should be described by name.

OTHER FORMS OF GLASS

WIRED GLASS, ROUGH CAST GLASS, PRISMATIC GLASS, TOUGHENED GLASS, "ARMOURPLATE" GLASS, "VITROLITE," Etc.

These should be fully described by their trade name.

All glass should be of British manufacture and have on each light an identifying label. (To further protect your clients the Contractor should leave the label on until after final inspection.)

This is published by Pilkington Glass Limited, whose Technical Department is always available for consultation regarding the properties and uses of glass in architecture.

★

PILKINGTON GLASS LIMITED

***Head Office* — 27 Mercer Street, Toronto, Ontario**

Branches:

HALIFAX, MONTREAL, KINGSTON, TORONTO, HAMILTON, ST. CATHARINES, FORT WILLIAM, WINNIPEG, REGINA, CALGARY, EDMONTON, VANCOUVER

The Mark of Distinction