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# R. A. I. C. JOURNAL

A P R I L 1 9 4 6

**T**HIS issue of the *Journal* is devoted to the four Schools of Architecture in Canada. There was a time, not long ago, when the busy architect burdened by clients, besieged by contractors and pestered by suppliers of inexhaustible quantities of building materials, must have looked longingly at what he believed to be the cloistered, ivy-clad havens of rest where his confrères who were professors taught the young the facts of life as they pertained to the orders of architecture. They probably had an exaggerated idea of the peace that prevailed inside those cloistered walls, but we will confess, they were not far wrong. Those were the pre-war days when a Canadian School had an enrolment of about thirty-five students, when the term was over by June the first, and when bright students would go cap in hand or on all fours asking for a job at \$10.00 a week during the summer term. Those were the days, too, when a School of Architecture in a Faculty of Engineering was like a little state hemmed in by interested, and sometimes bewildered, powerful nations. The chemicals, the miners, the mechanicals and the civils could be numbered by hundreds surrounding a little group of architects who suffered with them the torments of calculus and analytical geometry, but who, strangely, also studied art through the ages and sang while they worked on their boards. But what of today? Where now are the havens of peace, where indeed are the orders of architecture? The ivy and the cloisters remain, but as symbols of tranquillity they are wholly misleading.

**A**BENIGN and grateful government has made it possible, on the simple facts of matriculation and service at home or abroad, for thousands of veterans to obtain a university education. Of these a surprising number have registered as architects. We know of one School where 186 have entered the course, as against a pre-war mark of 40. Such numbers do not seriously affect lecturing, but anyone familiar with the workings of a school, will realize what they do to daily criticism, the marking of problems, the reading of essays and a dozen other matters in which the difficulties of the staff are multiplied sixfold. The federal authorities gave no thought to questions of space or equipment and, of course, knew nothing of text books long out of print.

**A**S we have said before on this page, the pressure of ex-servicemen in a School of Architecture is a healthy and a good influence. They are all men who have spent years of their lives in a manner wholly unrelated to the business of making a living. They are conscious of a gap which has to be filled. Many of them would not, in the normal course of affairs, be now at a university, and those are anxious to make the most of it. They are, without exception, workers.

**T**HE students themselves, and others, must wonder, at times, whether they made a wise decision in choosing architecture, and whether so many will find gainful employment when they graduate. We believe the chances for most of them are good. Some will fall by the wayside in a five year course, and it is reasonable to assume, that, across Canada, some are in the wrong course. The business of advising students as to the course they should take is not an exact science, and mistakes must have been made.

**O**F those who graduate most should find all they had hoped in their chosen profession. Between 1930 and 1945, the output of the Schools was not sufficient to supply the need for architects in any post-war programme of reconstruction, and the architects in private practice in 1930 are now 16 years older. In 1950 many of those architects will, by death or retirement, be no longer in practice, and many more will be between fifty and sixty years of age. If Canada cannot support our graduates, they will be welcomed with open arms south of the line — but that is a grim thought that, for the moment, we need not entertain.

*Editor.*

# CHANGING CONCEPTS IN HOSPITAL FUNCTION ... A VITAL CONSIDERATION IN DESIGN

By HARVEY AGNEW, M.D.

Address at the Fifty-Sixth Annual Meeting of the Ontario Association of Architects

*Dr. Harvey Agnew, formerly physician at Toronto Western Hospital and clinician at the University of Toronto, was from 1928 — 1946 director of the Department of Hospital Service of the Canadian Medical Association. He has been secretary of the Canadian Hospital Council since its organization in 1931 and for many years has been editor of The Canadian Hospital. Dr. Agnew is widely known from coast to coast as a leading authority on hospital problems. In 1939 he was president of the American Hospital Association. He is a Fellow of the American College of Physicians and of the American College of Hospital Administrators.*

It is indeed an honour to be invited to participate in the programme provided for such an august professional body as this. One feels very diffident about speaking on a subject concerning the details of which you have so much more technical knowledge than has the speaker. Perhaps in accepting this invitation I was akin to the man who had been caught running off with over two hundred pounds of pipe fittings. He explained that he had done it in a moment of weakness.

This is a world of transition. The late Dr. A. J. Mackenzie of this city once wrote, "All that happens about us is part of the great historic disintegration of a phase and all our wishing, all our philosophy, will not hold back the flood." In this particular instance we are not trying to hold back the flood. We are inclined to agree with Tennyson that "through the ages an increasing purpose runs" and are helping to bring about a logical and desirable evolution in the organization and design of our "houses of healing."

It is but to be expected that change—radical change—would take place in the layout and design of our hospitals. Hospitals are essentially utilitarian structures and, therefore, the pace for these changes is set by those who make daily use of these buildings. Actually the hospital is really a miniature town condensed into one large integrated unit—business and professional offices, hotel rooms, restaurant dining rooms and kitchen, a drug store, a steam laundry, a high pressure boiler plant, machine shop and garage, a chapel, miniature bank with vaults, a school, a library, a dairy, a laboratory, a clinic and, in some hospitals, a theatre and even a post-office.

To integrate such a complexity of activities, not to mention the complex operating and maternity services, into a smoothly operating, efficient and economical whole is a major undertaking. To do so successfully requires that the architect have an intimate knowledge of how a hospital functions in its various departments. This is not easily obtained and it speaks volumes for

your profession that you have visualized so clearly the functions of the units which you are designing.

## Functions Change

Of particular difficulty in determining the function—the many functions—of a hospital is the fact that these functions are never static. With each decade—and with each year—the scope of hospital work extends and, of equal importance, the method of performing various procedures is constantly changing.

To make my point clear, let us take a glance—but only a fleeting one—at the hospitals of bygone days. For centuries only charity patients were admitted and then into large wards; in fact, for many years from two to five were assigned to the one bed! We have combined private and public wards in one building for many years on this continent, but to this day most private patients in Europe still go to private nursing homes.

The provision of laboratory facilities has come only within the memory of our senior colleagues. The reason most pathological laboratories and most x-ray departments are in the basement is because that was the only space available when they were set up in an already overcrowded hospital. Blood chemistry has only been done to any extent since the last war. Blood banks were a novelty five years ago.

Obstetrical departments were quite small when I was a student three decades ago; now 40-50 per cent. of confinements are done in hospitals—nearly 95 per cent. in Alberta. (Oddly enough there are still, I believe, a few general hospitals, not in this province, that do not accept maternity work.)

As for changes in procedures, anaesthesia is a good example. Our remoter ancestors used whiskey in liberal dosage, plus a few husky henchmen to hold the happy patient down; our grandfathers used chloroform; our fathers used ether, we were trained in nitrous oxide, ethyl chloride and ether; and now it is largely spinal, local, and cyclo-propane and other newer gases. Patients now go right to the operating room in their own beds, listen to their favourite soap opera during the operation and are back in their rooms and being handed their going-home shoes before they know it.

## More Changes to Come

Looking ahead we must be prepared to see our "active" hospitals becoming still more active. In a third of a century the average stay of patients has been cut in half; it is down now to an average of 10-11 days. Penicillin and sulfa drugs are still further reducing the confined-to-bed period of pneumonia, osteomyelitis and other long-stay patients. Now, in some clinics, they are letting many patients with abdominal operations get up

even on the second and third day! Men with broken legs walk out in walking casts the next day. All this means a rapid turnover of patients and, obviously, more clinical and laboratory activities.

Moreover, statistics have shown that, even yet, some 15 to 20 per cent. of the beds in active hospitals are occupied by patients who could be cared for to better advantage elsewhere — convalescents, the chronically ill, early tuberculosis, the senile, and others. The Advisory Committee on Hospitals to the Provincial Department of Health has urged that sufficient other accommodation be provided to release these beds in active hospitals for the acutely ill. When that is done, as ultimately it must, there will be more acutely ill, short-stay patients per 100 beds in our general hospitals. As the greatest concentration of service — diagnostic laboratory, operating room, nursing — is in the first few days after admission, architects could well consider the extent to which additional operative, laboratory and other facilities should be provided.

### Doctors' Offices

The hospital has long been known as the "doctors' workshop" and, with the increasing complexity of medical procedures, there is a distinct movement towards having doctors' offices provided in the hospital. This trend will be more pronounced as more clinicians assume part-time or full-time salaried hospital posts. There are now many examples of this in the larger cities here and elsewhere. In small centres this development is even more logical and is being given much consideration. In Manitoba, the government is now planning special units for rural areas — a doctor's office combined with simple hospital facilities of eight or ten beds for obstetrical and emergency cases. Saskatchewan is planning along similar lines. Some years ago in London (England) a large combined hospital and doctors' office building was erected. That has been done also in several other cities and may well be a common arrangement of the future.

### Evolution in Internal Organization and Duties

Another factor of increasing significance in hospital design is our *changing methods of providing care in hospitals*.

For instance, with the present shortage of nurses, a condition not likely to be greatly relieved for some time to come, many duties formerly assigned to nurses are now being performed by "ward aides" and others. In many hospitals only the essential and the more responsible nursing and personal services are being done by nurses; other tasks, such as feeding patients, making beds, tending flowers, etc., are being delegated to women less highly trained. This has been long overdue, for many nurses have been doing what could have been done by others less well trained, but it does mean some revamping of the hospital set up. Some hospitals provide more staff nursing, thus making it less essential for the private patient to engage special nurses.

To meet the need for more nurses there is much discussion of central schools for theoretical work with assignment to outside hospitals, large and small, for practical training. If this develops, our present methods of training and housing nurses may be materially altered.

More hospitals need *interns* in order to supply the better type of service now possible. Unfortunately, less than 10 per cent. of our hospitals — the larger ones — can hope to obtain interns and not all of them can expect an adequate quota. As a result, in many hospitals the normal duties of the interns are being performed by specially trained graduate nurses. In some hospitals we have *ward secretaries*. In others we have *schools for medical record librarians* as at St. Michael's in this city. Already over twenty-five of our hospitals have set up *approved schools for the training of laboratory technicians*.

The size and extent of hospital *laboratories* will depend upon how much of the work is taken over by central government laboratories. *Blood banks* have developed rapidly in the past few years but the new Red Cross plan to provide blood to all civilian hospitals will materially alter the picture. Refrigerated storage facilities only will be needed.

The shorter *working day* and week make it increasingly difficult to maintain a 24-hour continuous service. Part-time employment may well continue as an essential feature.

Moreover, there is a growing tendency to have *help live out*, rather than in residence. It costs the employees more, but they like the freedom and the apparently larger pay. This modifies housing and restaurant arrangements.

More hospitals are putting in *central supply systems*, thus giving better control and economizing on materials and personnel.

*Teaching methods*, be they for nurses, medical students, interns, staff doctors, patients, technicians, or others are changing to the visual approach. Film Libraries are now growing to the point that a 16-mm. sound track projector in a properly equipped room is almost essential in the larger hospitals.

More hospitals are now *microfilming* their clinical records, thus reducing storage space to some 2-4 per cent. of that otherwise required.

The above points are mentioned as illustrations of those evolutionary changes going on in hospital practice and procedure which must be kept in mind constantly in designing the hospital of the immediate future — be it such details as nurses' stations, service facilities, and residence accommodation for nurses, aides and interns, or restrooms and cloakrooms for part-time and other help living out.

### Relative Importance of Capital and Operating Costs

To-day it is more necessary than ever before to consider not only the initial cost but the future maintenance cost. Building committees must weigh the relative im-

portance of these two items. When salary and wage scales — nursing and substaff — were low, it was not so vital to go extensively into this point, or to consider such items as labour-saving installations, or the maintenance costs of cheaper flooring, various types of heating plants and other details. In a young country like ours with new communities, it was often more important to provide the necessary facilities at the lowest possible initial cost, letting the future care for itself.

Now we must think differently. With considerably higher wages and shorter hours, the payroll for operation and maintenance is a tremendous factor. The well run hospital usually has more personnel on its payroll, excluding the medical staff, than it has patients. Here in Toronto the payrolls amount to well over \$3.00 per diem (up to \$3.40 and over) for every patient in hospital! And that is before all the other costs of operating a hospital are considered.

Building committees lean heavily upon you for advice respecting arrangements and materials that will assist to keep maintenance costs within reason. This applies particularly to floor and wall surfacing, food service, nurse-mileage per patient, plumbing facilities, inter-communications and labour-saving equipment and arrangements. It is becoming more widely realized that construction costs that at first seem out of line may more than justify themselves in the long run.

#### Increased Utilization

Speaking of construction costs, these, too, are now so high that many committees are quite discouraged. Undoubtedly we could save more space, and that means money by analysing the hours when certain hospital rooms are in use. All too often many rooms are used for but a few hours in the twenty-four. For example:

It is fine to have an outpatient room or suite for each clinic, but many hospitals find that the same room can be used morning and afternoon for different clinics and by careful planning for six days a week.

Some hospitals have built enough operating rooms to give nearly every surgeon a nine or ten o'clock hour with nothing but emergencies in the afternoon. Morning operations are somewhat preferable, but a little organization and teamwork could easily produce more units of service per room.

Metabolism rooms, often used only for an hour or two in the morning, could also be recovery rooms.

Scores of hospitals in this country have elaborate and costly x-ray layouts without a technician capable of doing more than quite simple radiography and without any radiologist on the staff to interpret the findings. A small portable machine would be adequate.

Flexibility to permit function in various ways should be a constant objective.

#### Consult Various Groups

It is disturbing to note how little effort has been made by building committees, in some instances, to get the

opinions of those who must work in the hospital — the ones who are really the experts in function. I know of instances where the superintendent and director of nursing were given practically no opportunity of checking the plans. Fortunately, these examples are rare.

Where a new hospital is being built, we urge the appointment of a superintendent months before the building is to be ready, for such a person will be able to make many valuable suggestions regarding detail while there still is time.

Although some groups consulted may not prove altogether helpful (we could discuss that, too), I feel strongly that every major group interested should be given a chance to express their views — the administrator, the nurses, the doctors, the dietitians, the laundry foreman, the engineer and others. At the Saskatchewan hospital convention last fall Miss K. W. Ellis, professor of nursing at the University of Saskatchewan and a doughty defender of the nurse, said that "no exhausted nurse, who has spent her evenings soaking her swollen feet in cold water, but could contribute some good ideas on improving hospital construction". It was not without reason that the Committee on Nursing of the Canadian Hospital Council recommended at the last convention that a special committee of nurses be set up by the Council to review hospital and residence plans and that a nurses' representative be appointed to any Council committee on construction.

It would be of value, too, in broadening the scope of the hospital's activities to consult other groups. I refer to the social service and public health groups whose vision is seldom jaundiced or confined within.

#### Consider Type of Patient

It would seem necessary, too, to give more consideration than is frequently the case to the type of patient for which the hospital is being erected. Our concept of the requirements for the different types of patient is undergoing definite evolution. Let me illustrate.

All too often in the past hospitals for the *chronically ill* were largely designed for general nursing and custodial care only. Equipment has been limited both for diagnosis and treatment, and medical oversight was minimal and very haphazard. All too often the chronically ill were considered as incurable; being obliging and long-suffering folks, they quickly did become incurable. Now there is a strong movement, and with much logic, to place the chronically ill — and the incurable — in a special wing of a general hospital, to ensure better diagnostic and therapeutic oversight. That would not be necessary if the special hospital be well organized and equipped, as in the case of a few of the better "chronic" hospitals. However, if a wing for the chronically ill be added to a general hospital, it should be planned so as to provide those special features desirable in the care of chronics and not always found in the modern active hospitals — large heated solaria, open sun porches or roof shelters, easy ramps to the lawns, radio headsets, reading rooms, projector-equipped assembly room, etc.

And so also with *convalescent care*. The old idea of convalescence by means only of rest and three good meals a day is obsolete. Convalescent hospitals should not be too small to provide adequate equipment; therefore, they should be limited to strategic centres and should be a self-contained unit open to patients of all general hospitals in the area and so located as to be away from "hospital atmosphere". I question that they should be on the grounds of a general hospital and, definitely, should not be combined with a home for the chronically ill and the incurable. Within a year there would be no convalescent wing — every bed would be held by a long stay chronically-ill patient. They should really be *rehabilitation centres*, providing physiotherapy, occupational therapy, dietotherapy, bibliotherapy through an adequate library, graded recreational facilities, both indoor and outdoor and the necessary medical oversight to meet minor relapses and complications. Mental therapy and social readjustment are often as vital as physical restoration. We can learn a great deal from the rehabilitation developments perfected in the Armed Forces. We are still woefully short of convalescent beds, but the trend today, in Edinburgh, New York and other centres, is to move these patients out at an early stage; the hospitals should really be called "sub-acute" rather than convalescent hospitals.

I feel strongly that we have fallen down badly in that we have not yet designed a satisfactory convalescent hospital adapted to Canadian climatic and living conditions. We are still following stereotyped hospital layouts often quite unsuited for the special needs of these patients. Here lies a real challenge to the architects of Canada.

#### **Effect of Health Insurance**

We hear much of Health insurance on a provincial and national scale and of its cousin in the red dress, state medicine. Whichever comes, and irrespective of when or where a comprehensive plan is developed, there seems to be a general agreement that hospitalization should be one of the first benefits. The people are ready for this benefit; right now on a purely voluntary basis our (Blue Cross) Plan for Hospital Care in this province has some 550,000 participants. What effects might health insurance have on our hospitals?

Indigents as we know them will probably disappear. Public wards will become "standard" wards. That may readily mean smaller wards, all in cubicles, and better equipped. As patients will probably have the right to pay a little more for luxury care, I would anticipate a sharp demand for private rooms and, ultimately less demand for semi-private rooms.

Out-patient departments as we know them now will disappear, for every citizen will have the right to seek a private physician. Some of these out-door departments will probably become diagnostic centres for problem cases referred by private physicians; others may become centres for certain public health clinics — inocu-

lation, tuberculosis, venereal, and so forth. Any designs for a city hospital involving extensive out-patient facilities should bear in mind the probable necessity in the not-too-distant future of adapting facilities to other uses.

#### **Building for a Century**

In this address I have tried to review, all too briefly, some of our changing concepts of the function of the hospital and to indicate that these changes in function must be borne in mind constantly in designing the hospital of to-morrow.

A complication is the fact that our present day type of building is going to last so long — so fearfully long. In 2046 A.D. many buildings being erected to-day will still be in active use and committees will be worried sick over them, like we are to-day over old buildings, because they will still be too good to tear down, yet possibly far too obsolete for satisfactory or economical operation.

Although we might try to make our hospitals less permanent, I am not one of those who advocate building general hospitals to last only for twenty-five years. Such statements are novel and intriguing but such buildings are not very practicable except for military use. Actually they are often too costly to operate and, for that matter, building regulations would prevent such a policy except for quite small hospitals. A semi-permanent type of cottage structure has a distinct place, I think, in convalescent care.

The solution to this problem of preventing a hospital from becoming hopelessly obsolete and a trial and expense to all who must continue to use it for purposes not considered when the building was erected, is to so build the shell that it can be modernized and revamped as often as required with the minimum of expense. Many of you are designing that way now — a minimum of plumbing on lateral walls of rooms; adequate and accessible wiring and air conduits; accessible plumbing; future extensions envisaged before any units are put up.

What we must try to do to-day is to build a hospital adaptable to whatever conceivable use may be required of it fifty or a hundred years hence. As few of us can guess rightly when to take an umbrella to the office, we cannot expect too much success. Nevertheless, if we keep abreast of social thinking and of current medical and nursing developments we should be able to anticipate quite a few of these possible changes. These trends should be discussed with the building committee, for I have long maintained that the function of the hospital architect should be more than to elaborate the rough sketches of the committee and prepare specifications; he should be a consultant whose knowledge of the newer developments in construction and equipment and of the changing relations of the hospital to the sick of the community could be fully utilized in the intelligent designing of a hospital planned as a functional unit for the future — not modelled on the past.

# RECENT DEVELOPMENTS IN EDUCATION AND SCHOOLS IN ENGLAND

By PEGEEN SYNGE DRYER

*Pegeen Synge Dryer, born in Toronto, Canada, 1921. Educated in Dublin, Ireland, 1925-30, and in Toronto, 1930-45. Studied architecture at the University of Toronto, and graduated from there in 1945 with honours, winning the R.A.I.C Gold Medal. Her practical experience includes working with the Toronto City Planning Board, 1943. In 1944 she worked with Ernest Barott, Architect, in Montreal. Since graduation she has been employed with Mathers and Haldenby, Architects, in Toronto. This article was a thesis submitted in May, 1945.*

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### Introduction

One of the few good things that can be said about a war is that it makes a country take stock of itself. Values change and the plans for a post-war world become broad and ambitious. It is questionable whether there would ever have been an Education Bill in the fall of 1944, if there had not been a war. And it is paradoxical that war should bring about any drastic changes in education while that war is still waging, that while everybody in England was fighting for his very life, there should be time for reflection about the improvement of English schools. But once a country has been shaken out of any lethargic peacetime inactivity in order to defend its very shores, as England was forced to do in 1941, the activity of war seems to generate a general dissatisfaction with peacetime values.

Social upsets like wars lead people and nations to educational experiments as a possible cure. These upsets seem to prove that the value of education lies in preparing children, the citizens of to-morrow, as an investment of paramount importance to the State. And if a country can adjust itself to the chaos of wartime restrictions, the possibility of adjustment to a newer and more progressive educational policy is high.

England has been at war now for almost six years, and in those years there has been time for reflection during respite from fighting. In spite of the exigencies of war,

she has revamped some of her domestic policies and education has been one of the most important of these. New methods are and have been evolving all this time. In fact, there has been a marked change in the attitude of how children should be taught. But while there has been an acceleration of progressive ideas in teaching, no new schools could be constructed during the war. So that while in 1938 some antiquated schools might have been tolerated, such buildings as schools for the offspring of men who have fought in this war are certainly not going to be good enough for them afterwards. Undoubtedly, England is going to build many new schools as soon as is possible, but many of the temporary buildings will still have to be used in the transition period. One of the valuable things about these years of war is that they have given architects time to think about the design of schools, time to realize the important relationship of the building to the educational technique.

There are other advantages about a war. There has been no time for decoration on buildings. Speed and efficiency are what count in winning a war, and advancements that have been made in design follow a more functional trend. Necessity has forced architects and engineers to devise new methods of using new materials. And so some very practical discoveries in building technique have probably been developed about which we shall know more after the war. Prefabrication was a necessity. Simple buildings free of ornamentation were an economical solution to an immediate problem. Simplicity in design is proving itself.

In many cases, progress in building design in England is due to the unfaltering determination of health authorities to raise the health standards and thereby the living standards.

The Minister of Health has the power to make local inquiry into living conditions. This active participation of health officials in England has brought about national improvement in housing and the gradual acceptance of subsidized low-cost housing as a remedy for an unhealthy environment. By the end of the last century, official architects were beginning to work in close collaboration with medical authorities. This influence has resulted in many drastic improvements in school design, notably more natural light and proper ventilation.

Each time England has gone to war and has called up her supposedly virile young manhood, physical examination has revealed a very low standard. And the aftermath has been an enquiry into the childhood environment, the setting up of medical board of enquiry and eventually, though only gradually the improvement of

schools. In the Boer War, two out of every five candidates could not pass the physical test. The medical enquiry of schools followed and the first School Medical Service in the history of the English School was formed in 1907. But changes are slow. It was not until 1914 that overcrowded classrooms were reduced. Again in the war from 1914 to 1918 when young men were changed to new work, levels of intelligence for this adjustment were found to be very low. Accordingly, in the early twenties, the state educational policy was revised and in 1926, the Hadow Report was passed. Among its many recommendations was the reduction of classes from a maximum of sixty to a maximum of fifty children, but by 1936 only, one-third of the schools in England had been re-organized along these lines. By that time there were official pleas for a reduction of classes to a maximum of thirty and a request for the formation of a nursery school system for children from two to five. Even in 1936, English educational policy had outrun these reforms.

During the blitz in England in 1941, many schools were closed as a safety measure. And while it is generally assumed that it was a mistake to close them, the mere curtailment of education has now paved the way for a fresh start in education.

For many years health authorities were only concerned with the negative aspects of a faulty environment. Their ambition was to reduce to zero the number of abnormal and pathological cases in schools, but gradually a more positive ideal has formed. They realize that mental growth is related to physical growth and health. To-day there is a general tendency towards equipping the child with a high standard of mental health. English educationalists demand an environmental education and they are presenting the problem to the school architect. It will be his task to design the schools which in themselves teach health, and the practical considerations of proper ventilation, adequate lighting, floors and walls best suited to the non-spread of infection are the first steps in the solution of the problem. Teaching is no longer factual. Children are no longer told what to think but how to think. And they learn by doing. Education has become a process of skilled guidance rather than that of instruction.

Someone has said that the aim of education is to provide conditions that are favourable to growth. It is equally true that the aim of any school architect is to provide the conditions that are favourable for that growth. Ideally a building is a skin that changes and grows as the living organism within changes and grows. The possible changes and evolutions in education are too great for the human mind to conceive so that consequently, the school architect must create a flexible building which will allow for these changes.

The important thing about architectural values is that they are creative in themselves. They must not teach incorrectly. The absolute symmetry of many a classical school is a mistake because it thrusts upon a child an adult idea of order. The child must develop its own idea

of order and not the preconceived one of an adult generation. Many of the newer schools built just before the outbreak of war have been much less restricted than the neo-classical ones. Some of them for instance emphasize the horizontal, by which they produce a psychological sense of freedom in the child. But there is no such thing as perfection in school planning — perfection for the school architect consists in providing for constant change, improvement and adaptation.

The changes in education in England have affected and will affect the planning of schools in four ways. Firstly, most existing schools in England have not enough area for outdoor activities and sports. Secondly, the classroom is no longer a roomful of fixed desks and motionless children. It has become an area of activity and hence requires more space. Thirdly, the planning of the classroom and the planning of the school itself require more space for the practical work which is now recognized as so important a part of the teaching process. Fourthly, there is an increased emphasis on communal activities. Once education has become a part of the process of living and schooling no longer ends for youth at the school leaving age, there is an adult demand for assembly halls and craft rooms which can well be a part of the school.

#### Existing Educational System

In England there are three educational systems. There is firstly the state-aided system of local education. Secondly, there are the private or semi-private, grant-aided day schools. And thirdly, there are the private boarding schools, which in England are called "public schools".

#### NUMBER OF CHILDREN IN ATTENDANCE IN 1938\*

Elementary Schools . . . . .	5,460,000
Grant-aided Secondary Schools . . . . .	485,000
Public and Prep. Schools . . . . .	90,000

FIG. 1.

England is a small island with a high density of population. This concentration enables her to have a localized system of education, an impossible feat for Canada or the United States. There are none of the problems of a rural form of education such as there are in Canada, where so far it has been next to impossible to devise a scheme by which a child can walk a reasonable distance to school. And at that the school with one teacher instructing eight grades is so small that there are none of the benefits of a large school where specialized teaching can be pooled. But in England, the concentration of population is large enough to enable a healthier compromise, whereby a child walks a short distance to a full one form or two form elementary school. As a result the English national system of education can be local.

\*The Design of Nursery and Elementary Schools—H. M. Wright and R. Gardner-Medwin.



Control is shared by the Government and the Local Education Authorities. Financial responsibility is divided between the Government and the Local Authority and it varies from year to year and from one authority to another. The County Councils and Boroughs have their own education committees, officials, and their own school boards. They set up their own educational curricula subject to the approval of the central authority, the Board of Education, which does not wholly control their activities but lays down the minimum conditions under which grants are provided. These conditions include the minimum design standards for the building of schools.

This division of control between the local group and the Board of Education has its advantages and disadvantages. The progressive local authority can exercise its initiative and proceed with new and fresh ideas if the men who sit on that particular school board are a far-sighted group. On the other hand, in the locality where the spark of enthusiasm is dead, there will be little improvement as there is no demand for it. And unfortunately, those localities most in need of the introduction of educational reforms are the very ones least likely to instigate it themselves. Equally, the local promoters of new and better changes in their schools are probably, in most cases, the very ones least in need of those particular improvements. However, the new Education Act 1944, whose fundamental aim is a closer partnership between the government and the local authority will improve this "laissez-faire" policy.

At present, there is compulsory education for all children from the age of five to fourteen. The new Education Act will raise the school leaving age from fourteen to fifteen years of age and eventually to sixteen years of age.

#### STATE ELEMENTARY EDUCATION AT OUTBREAK OF WAR, 1939

Age Group	School	
15 months	Infant Welfare Centre	sharp increase in numbers due to war working mothers
2 years	Day Nurseries	
2-5	Nursery School	mostly privately owned but general tendency towards state subsidization
	Nursery Classes	L.E.A. can apply for state grant for nursery school—poor substitute—adjoining Junior School
5-7	Infant School	generally housed with Junior School with a separate entrance
7-11	Junior School	
11-14	State Secondary School	admittance by exam. — equips child for University
11-14	Selective Senior or Central Schools	less academic—more technical—equips child for job at 15 years
11-14	Non-Selective Senior Schools	for all children—equips child for job at 14 years

FIG. 2.

Figure 2 shows the effects of the Hadow Report of 1926 which advocated that all children proceed after junior school to a post-primary education. The report recognized the distinction between the junior school and the

senior school. But by 1936 local organization along this line was not national.

There are two classifications of either the junior or senior school according to the degree of financial aid on the part of the government. First, there is the council school which may be either a junior or senior school and which is entirely state supported. The council school is built, owned and maintained by the local education authorities. Secondly, there is the voluntary school, which also may be either a junior or senior school and which is a grant-aided day school. The voluntary school is built and owned by its trustees, usually the Church and the local education authority is responsible for the maintenance costs.

The educational policy in England in the last ten years has fairly satisfactorily separated the junior and senior school, but the policy regarding the child from 2-7 years of age has been rather haphazard. In 1926, there was a sufficient number of infant departments in junior schools for the Hadow Report to recommend that they be housed separately in another building. But by 1936, the majority of infant classes were still a part of another school building. By 1939, most nursery schools were privately owned and operated although there were provisions whereby a school board might apply for a grant for a nursery school. But evidently, there was little or no demand for this assistance as regards nursery schools, on the part of the local authorities.

The words nursery school and infant school are very misleading. It is obvious that when the authorities called the school for a child from 5-7 years of age, an Infant School, they did not foresee that there could be any need in the near future for further pre-school education. The housing of nursery schools and in some cases nursery classes has been confusing. Infant classes have been tacked onto junior schools and in many cases, nursery classes have been added to them later. The result has been an unsatisfactory conglomeration of all ages of children in one building. The obvious cure is the provision of combined nursery infant schools so that there will be a well-defined system of education for the child from 2 to 7 years of age. In 1938, only two such nursery infant schools existed in England. In 1935, the Board of Education recognized 65 nursery schools for 5,000 children and 120,000 children accommodated in infant departments of junior schools.\*

#### Education Act 1944

In the autumn of 1944, the English parliament passed a new Education Act, which when fully brought into effect, will be a landmark in the progress of English education. It is quite obvious that the fundamental aim of the Act is towards a more national policy of education. While experience has proved that there is definite merit in allowing the local authorities freedom of choice as to their own individual programme of local education and freedom of choice as to the design of their school build-

\* Article:—The System of State Education by Harley Usill, Architects' Journal, May, 1936.

ing, the new Act exercises a more rigid control by raising both the teaching and school building standards. Thereby the progressive local authority is not held back but the backward local authority is forced to meet required standards. As to the interpretation of the Regulations in the Act, the decision of the Minister is final. Although this indicates a closer partnership between the central and local authority, much of the responsibility falls on the shoulders of the local education authorities. It is up to them to provide new nursery schools and to see that the two present parallel systems of secondary education merge into one as advocated by the Act. Each local authority is to make statutory provision for articles of government of secondary schools. The Act raises the present school leaving age of 14 years to 15 years and eventually it will be raised to 16 years.

On November 3, 1944, the Minister issued the Draft of *The Regulations prescribing Standards for School Premises 1944*, proposed to be made under Section 10 of that Act. The Draft prescribed standards to which schools maintained by local education authorities are to conform and comes into effect on April 1, 1945.

The sites for a county or voluntary school vary from one-half acre to three acres, and are to include a playground.

Size of School	Area
One Class School . . . . .	½ acre
Two Class School . . . . .	¾ acre
Three Class School . . . . .	1 acre
Four Class School . . . . .	1½ acre
Five Class School . . . . .	2 acres
School of more than 5 classes, but not more than 500 pupils and not a 3 form entry Secondary School . . . . .	2 acres
Three Form Secondary School . . . . .	3 acres

FIG. 3.

Although it is natural that these standards seem low to Canadians, they have been considered low in England too. In any school where the number of pupils exceeds 500, the area is to be increased by not less than one-quarter of an acre for every additional 50 pupils.

The Memorandum which follows the draft expands on the regulations governing siting. In selecting the site it stresses the importance of qualified architectural advice and it points out that care should be taken to see that the statutory Town and Country Planning requirements and the provisions of the Highway Acts are observed. Adequate sites, as nearly rectangular in shape as possible, are advised — sites large enough to allow for possible expansion. Sites which slope gently to the south are considered ideal.

Playground space ranges from 1 court\* for an infant school to 2 pitches† for a three form entry secondary school and in no case is a playground to be less in width than 50 feet. The surface of the playground is to be of tar-

\* A court is an area 110' x 60'.  
 † A pitch is an area 100' x 160'.

macadam asphalt or concrete but the hard-surfaced playground should not cover more of the school site than the pitch or court area itself and a covered portion of the playground is advisable for the wet weather. Playgrounds are to have separate entrances but no complete segregation of the sexes as to play space. Infant departments where attached to schools are to have a separate playground.

Playing field accommodation should be provided immediately adjoining the school site and may be used jointly by several other schools with an approved increase in area for each school or department. Minimum areas vary from ½ acre for less than 50 children under 7 years of age to 14 acres for a three form entry school.

No reference is made in the regulations to special provision for swimming but the memorandum suggests the inclusion of a swimming pool in a large secondary school and the possibility of the joint use of a swimming pool by schools and community centres.

The site of every nursery school is to include a garden playing space and must not be less in area than ⅓ of an acre for not more than 40 children. The site is to be increased by not less than ⅓ of an acre for every additional 40 children. Every nursery school and nursery class is to have 200 sq. ft. of garden play space for each child; 40 sq. ft. of which is to be paved for each child. The memorandum emphasizes that the area of ⅓ acre is an absolute minimum and that an area of ½ acre for each group of 40 children is desirable. The playroom in a nursery school or nursery class is to have an area not less than 25 sq. ft. for each child, and in every nursery school there is to be a separate playroom for children under 3 years of age. The area of the separate playroom must be approved.

For all county or voluntary schools, nursery school included, the Draft Regulations determine the provision of cloakrooms, changing rooms and lavatories. Staff-rooms, storage, drying facilities for outdoor clothing and kitchens are to be provided. The Act makes it the duty of the local authority to provide meals and milk in the nursery school. There must also be adequate and proper medical attention. The Draft Regulations say: "In every County or Voluntary School or Department of such school, suitable accommodation shall be immediately available at any time during school hours for the inspection and treatment of pupils by doctors, dentists, and nurses." Every nursery school of 80 children or less is to have one medical and isolation room. Where the numbers exceed 80, two rooms are to be provided. For the junior or secondary school where enrolment is less than 300 a separate room is not deemed necessary.

Similar standards for special schools are included in the Draft Regulations. These schools cater to the physically and mentally unfit. The Regulations also cover boarding accommodation for any type of school.

The lighting regulations are divided into two classes. For daylight illumination on any desk or place of work,

the daylight factor\* is to be not less than 2%. For all other accommodation 1% is accepted. As for artificial light, the lowest intensity of illumination permitted, varies from 10 ft. candles at working level for classrooms to 3 ft. candles for changing rooms, cloakrooms or lavatories. This minimum standard of 10 ft. candles is a good deal less than the 15 ft. candle minimum for classrooms, as determined in the General Regulations for Public and Separate Schools of the Board of Education of Ontario 1943. However, the Memorandum adjoining the Draft elaborates on this. It recommends a daylight factor of 5% for teaching rooms. In order to allow for depreciation in service, the Memorandum suggests that the intensities of artificial illumination should be increased by 40%. Unfortunately, however, it is the minimum standard which is accepted.

In schools where heating is mainly convective, a minimum temperature of 65°F. to 55°F. is permitted. Where heating is wholly from radiant sources, the air temperature ranges from 58° to 48°.

Ventilation requirements are a minimum of 6 air changes per hour for teaching rooms as against 8 air changes per hour for our Ontario schools. The Regulations advise the natural method of ventilation. Section 41 of the Draft Regulations says: "The ventilation shall, so far as is practicable, be secured by means of windows opening into the open air on two opposite sides of every room or opening on one side into the open air and on the opposite side into a corridor; provided that in the latter case a window opening into the open air shall be provided in the corridor opposite to the window of the room which opens into the corridor. At least one-half of every window area shall be made to open and every window shall be so constructed that the amount and direction of the incoming air may be regulated according to the direction of the wind."

Requirements as to proper water supply, adequate drainage, and sewage disposal are carefully drawn up.

One of the most important changes in the schools will be a reduction in the maximum number of children in a class. At present, a maximum of 50 children is allowed in a junior school, and a maximum of 40 children in a senior school. When the new Act comes into effect, it will permit a maximum of only 40 children in a primary school and 30 in a secondary school. In the years after the war of 1914-1918, the secondary system of education received drastic and much needed improvements. And as a result the junior and infant schools suffered. In the last ten years particularly during the five years of war, the inferiority of primary education has become more apparent. Under the new Act, it seems that the conditions whereby the maximum number of children for a secondary school is a lot less than that for a primary school, are merely perpetuating the inferiority of the junior school. One would think that, in view of all that has been discussed in England about progressive educa-

\*Any point on an obstructed plane which receives daylight from a hemisphere is receiving a 100% daylight factor.

tion the standards should be the other way round. The emphasis is going to be on less physical restriction for the young child, freedom to do and learn by play and obviously one would expect an increase in the play area and a sharp decrease in the number of children in that area.

In nursery schools, the maximum number in a group will be 15 for children under 3 years of age, and 30 for children from 3 to 5 years of age. A total maximum of 40 children is allowed if the two groups are combined but no nursery class is to have more than 30 children.

Room areas are carefully tabulated for the existing various kinds of departments or schools. The Regulations say that for a one class school there shall be one classroom with 600 sq. ft. and in addition one spare room of 400 sq. ft. For a three form entry infant school of eight or nine classrooms each is to have an area of 600 sq. ft. or as an alternative, six or seven classrooms each of 520 sq. ft. together with two General Purpose rooms each of 700 sq. ft. The room areas for the secondary schools are drawn up in more detail with areas tabulated for different activities. The minimum area given for a secondary classroom is 480 sq. ft. Assembly halls are specified for all types of schools except the one class school. Even for a two class school, an assembly hall of 1,000 sq. ft. is required. For a two form entry school, a separate hall and gymnasium are called for. The hall must be at least 2,000 sq. ft. in area and the gymnasium 2,800 sq. ft. For a one form entry school a combination hall-gymnasium is acceptable but this accommodation appears impractical for any secondary school.

The total additional cost of the reforms is estimated at 5,500,000 pounds in the year 1945-46, rising gradually to 47,300,000 pounds in 1951-52 and to 79,800,000 pounds ultimately.<sup>†</sup>

The Memorandum which was issued shortly after the Draft Regulations, expands on these minimum requirements and presents some more objective aims for the individual local education authority. In the section titled "Lay-Out, Planning and Construction", one can get a good idea of some of the tendencies in the design of English Schools:—

"While it is recognized that, in certain areas, schools of more than two storeys will continue to exist, it is generally desirable that schools should not be built on more than two storeys. Whether a school should be planned on one or two storeys will depend both upon natural features, such as the size, shape and contours of the site, and upon the experience and preferences of the local education authority or promoters. Modern practice has lately tended towards the single storey building, which can be of lighter and possibly cheaper construction, which imposes no restrictions upon the size or shape of any individual room and which admits the best conditions of ventilation and lighting. It is, of course, particularly suitable for schools for very young children.

<sup>†</sup>School Progress Magazine, June, 1944 — Editorial on the Education Act 1944.

On the other hand, two storey blocks for classrooms and practical rooms make for greater compactness and ease of supervision, avoid long and draughty corridors and give better opportunities for the treatment of the school as an architectural whole. It is not in itself of great importance that a school should be all on one level, and an attempt to secure this where the site is steeply contoured may lead to unnecessary expense.

"The height of the different rooms in the school will depend upon various factors such as the width of the room, lighting requirements and the purpose for which the room will be used. Generally speaking, the height of teaching rooms should be not less than 11 feet to the ceiling. For assembly halls and gymnasiums, a greater height than 11 feet will be required, but excessive heights should be avoided, and in the case of the assembly hall, the height will be governed in part by the requirements of acoustics, on which further details will be found in Chapter XI of the Code of Functional Requirements of Buildings of the British Standard Code of Practice. Apart from the types of room specified above, no room in a school should normally be lower than 9 feet to the ceiling.

"Architectural grouping and treatment of the component elements is, of course, a matter for the decision of the architect, but experience has shown that the completely enclosed quadrangle sealed at its four corners has the following disadvantages:—

(i) the school building cannot be easily enlarged or extended — a point which should be kept in mind at all stages;

(ii) the ground inside the quadrangle is generally too small in area to be useful for games or physical training;

(iii) the rooms on at least one side often have a sunless aspect."

### **Construction and Prefabrication**

One of the most awkward post-war problems that the architect must face is that of semi-permanent construction. Recent developments in constructional design in England tend to indicate an adequate useful life for the building and not a permanent one. The war has forced this. If the building is to have a life of say twenty years either it has deteriorated below a minimum standard at the end of that time or if still in good condition, economy demands that parts be salvaged. And so, if the building is to be structurally sound and in no way impaired at the end of these twenty years, the design must be of easily demountable units for another later use. The development of new forms depends on both the architect and the manufacturer. The Memorandum to the Draft Regulations says: "No precise regulations as regards such prefabricated units are possible at the present time, without unduly hampering enterprise and development, but no units should be adopted without satisfactory evidence, based on tests or experience, that the requirements of amenity, health, comfort and durability can be adequately satisfied."

The basic principles of construction are universal. English climatic conditions and raw materials influence their application. Structural frames are either (1) skeleton frame, or (2) the loading bearing wall. The latter is no longer useful, because it produces an inflexible plan. The skeleton frame may be of three types:—(1) timber, (2) steel, (3) reinforced concrete. Timber is subject to certain restrictions on account of its vulnerability in the case of fire. The Memorandum to the Draft Regulations says that: "in principle, wood framing should not be used for buildings of more than one storey in height."

A steel framework may be either of standard rolled sections or cold rolled strip steel. The British Standard Code of Practice prescribes all the limitations for the rolled steel sections. Protection of steel frames against corrosion appears to be as important if not a more important consideration than protection from fire. The cold rolled strip steel has an advantage and a disadvantage. The working stresses are much lower but the cold rolled steel does not need to be fireproofed, although like hot rolled steel sections, it must be protected against corrosion.

The Open Air School at Swinton and Pendlebury is built of 4" x 2" R.S.J. on the "diagrid" principle. The steelwork was erected in 6 weeks and is oxy-acetylene welded. The roof grids were welded on the ground and then hoisted into place. The roof surface consists of special steel decking supported on hollow steel purlins. The roof is covered with bitumen coated wallboard as insulation plus two layers of asphalt.

Another recent example of steel frame is the Infant School at Shoreham, Sussex, by G. Stillman, in which steel trusses are supported on steel columns. The spaces in between and on either side provide bilateral illumination and cross-ventilation.

Reinforced concrete is used for a structural frame but special care has to be taken to see that the mix is dense enough to prevent disintegration from the damp.

Tests show that a 4" concrete wall plus 1" cork board on the inside has better thermal and insulating properties than an 18" brick wall. A concrete slab when poured on the ground for a one storey school may be either floating, acting independently of the structural frame or it may act integrally with the wall as a beam at the sides.

### **The Development of Nursery Schools and Summer Camps**

Education in England is compulsory from 5 years of age to 15 years of age but the extensions of education that have been made at both ends of this period should be particularly interesting to Canadians. England has had a system of state supported nurseries for children under 5 years of age since the last war, and the new village colleges which are for adults of all ages, are actually community centres.

In Great Britain, the first day nursery appears to have been established about 1860 in London and supported by various philanthropic persons without very much

organization. In 1906, the National Society of Day Nurseries (now the National Society of Children's Nurseries) was inaugurated for some 30 individual nurseries. In 1914 the movement came under the notice of the Board of Education, by whom it was officially recognized. Under the pressure of war, grants were given by the Ministry of Munitions to nurseries in munitions areas. As early as 1918, the Maternity and Child Welfare Act was passed under which local authorities were empowered to open nurseries. In 1919, the supervision to day nurseries was taken over by the newly formed Ministry of Health. The grant per attendance was changed to a 50% grant and in 1929 to a block grant. During the nineteen twenties many nurseries were closed because of the national drive for economy. When war came again, the number of nurseries was too small for the need. At the end of May, 1941, the Government gave a 100% grant to set up nurseries. This has resulted in 1,200 "war-time nurseries".\* In addition there are about 734 affiliated nurseries\* under the auspices of the Ministry of Health and the Department of Health for Scotland.

There are four main types of provision for children under five. There are the day nurseries, residential nurseries, nursery schools and nursery classes. The nursery schools and classes have already been discussed. They may be either entirely or part grant-aided and are organized by the individual education authority. The nursery class is primarily an educational institution. The day nursery and residential nursery differ from them in their approach to the care of the child from the health standpoint. The day nursery which comes under the Welfare Authority is open only for the working hours of the mother. The residential nursery is, as the name implies, more of a home for children.

Children under five in the United Kingdom number 3,000,000. The present nurseries (including nursery classes in primary schools) cover only 2% of that total.\* At present parents of children in war-time nurseries contribute a 1/- per day towards the cost of the nursery.\* In post-war days, a suitable contribution is considered to be 6d. per mail or 1/- a day. The National Society of Children's Nurseries has drawn up two programmes for the provision of nurseries following the war. One is a Four Years' Plan for the immediate transition stage at the termination of which they could provide facilities for 300,000 children. The second programme is a long term one by which they would provide accommodation for all children under five. This, they say, would take a generation.

Besides the regular county or voluntary schools, the local education authorities may run educative summer camps. In 1939, the Camp Act was passed by which the local authority receives government financial aid. There is a small weekly charge for children. In 1941, there were 31 school camps, 20 were permanent and these

covered some 6,250 children. They are situated on sites of 20-40 acres.†

### Village Colleges

The new Education Act makes remarkable provisions for adult education. It is the duty of the local education authority to provide the adequate facilities for technical, commercial and art education in the senior schools. They are required to submit schemes for approval by the Minister and then they are obliged to see that the proposals are put into effect. Local authorities will be expected to make provision in young people's colleges for the part-time education in working hours of young persons up to the age of 18. There will be an obligation on young persons to attend on one whole day or two half-days for 44 weeks each year, or where continuous attendance is more suitable for a continuous period of eight weeks or two periods of four weeks each year.

England's famous village colleges are a part of the pattern for rural reconstruction. These village colleges are essentially a senior school but include enough facilities for the education and recreation of the older people. In fact, these are rural community centres. For many English educationalists these colleges are the realities of a dream, a dream of educational and recreational activities blended so as to be indistinguishable from each other, and housed in carefully thought-out modern buildings designed to provide a community centre for the whole region.

Cambridgeshire is a county with a bold scheme for the provision of eleven village colleges to cover its entire rural area. And the promoter of this comprehensive plan was Mr. Henry Morris, Secretary for the Education for the County Council of Cambridge, who devised it as a step in arresting the decay of the rural area of his county. Mr. Morris proposed to form the nucleus of his village college around a secondary school, for children from 11-14 years. About this would be educational facilities for adults, accommodation for agricultural and domestic instruction, the public and health services, for both the public library as well as the school library, for outdoor recreation, for the voluntary organizations of the district and for meeting of local parish councils. The Cambridgeshire Education Committee approved the proposals of Mr. Morris. In October, 1930, the Sawston Village College, the first of its kind in the world, was opened by the Prince of Wales. It cost \$80,000 approximately, of which \$30,000 was applied to the senior school. The rest was provided by public funds. The owner of a near-by paper-mill donated an admirable site of 12 acres. The Carnegie United Kingdom Trust made a large grant and the villages concerned undertook to raise some \$2,500 themselves.

Sawston Village College was the first of the eleven village colleges which were planned to cover the rural area of Cambridgeshire. The second at Botisham was

\*A Four Years Plan for Children's Nurseries, 1943, by Cyril Nathan, Chairman, National Society of Children's Nurseries.

†Times Educational Supplement.

opened in 1937, the third at Linton in 1938, and the last at Impington was completed in 1939, just as war broke out. These four have amply demonstrated that the experiment has been worth while.

Cambridgeshire has an area of 864 sq. miles, and a population of 217,709. Of the four village colleges, Impington College which serves 10,000 people around 10 villages is the most ambitious and the most striking architecturally.\* The 12 acre site was donated by the owners of a large jam-making firm along with \$40,000. The school was designed by Prof. Walter Gropius, the German architect, and Maxwell Fry, the English architect and it is principally one storey. The building has been well planned. The assembly hall, the adult wing, and the school wing are situated so that they can carry on quite independently, but are knit together in a unified whole. The modern architecture is in keeping with the spirit of the school, as a social centre. When school is out, the Social Centre is "in". The assembly hall seats 360 people, has a fine stage and is equipped for sound films. In spite of war and blackout restrictions Impington is a popular centre. Thirteen hundred persons ranging in age from 14 to 70 attend each week.

The Executive control of the College is in the hands of the Cambridgeshire Education Committee and the Board of Managers. Although the village colleges have been built in part out of public funds, they are in no sense charity institutions. The adult members contribute both financially and by their voluntary help.

The nursery school system and especially the village colleges of England are a trend in educational policy, a policy which embraces a larger age group and benefits the individual. Such changes are social progress.

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School at Selsey, Senior, Architect, C. G. Stillman.  
Page 145, School at Nitra, Senior, Architect, Oscar Singer.  
Page 15, School at Richmond, Yorkshire, Architect, D. C. Hall.

### THE ARCHITECTURAL REVIEW, Year 1939, Volume 86.

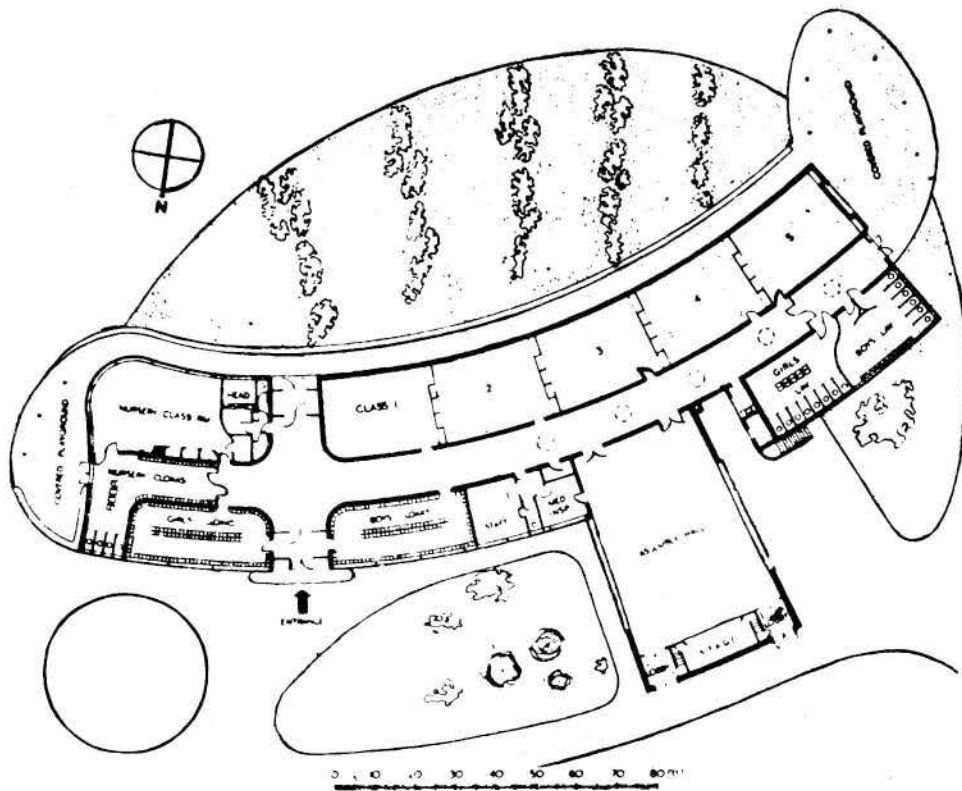
Page 227, Impington Village College, Cambridgeshire, Architects, Gropius & Fry.  
Page 127, Kindergarten School, Cheshire, Architects, Martin & Speight.

### THE ARCHITECTURAL REVIEW, Year 1938, Volume 83.

Page 180, Nursery School at Dulwich, Architects, Samuel & Harding.

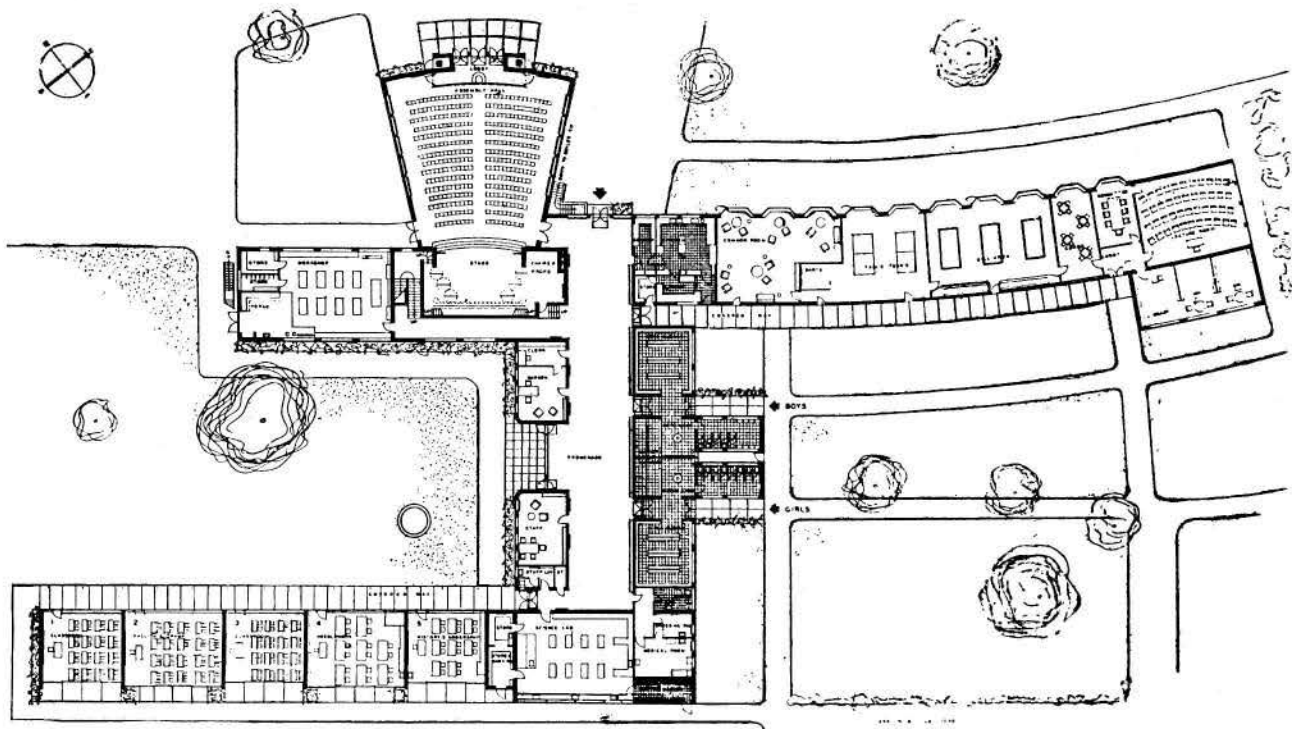
### THE ARCHITECTURAL REVIEW, Year 1937, Volume 81.

Page 5, Burlington School for Girls, Architects, Sir John Burnet, Tait & Lorne.  
Page 11, Junior School, Hampstead, Architect, Kaufman.



IMPINGTON VILLAGE COLLEGE, CAMBRIDGESHIRE, ENGLAND

GROPIUS AND FRY, ARCHITECTS



SCHOOL AT CASTLEFORD, YORKSHIRE, ENGLAND.

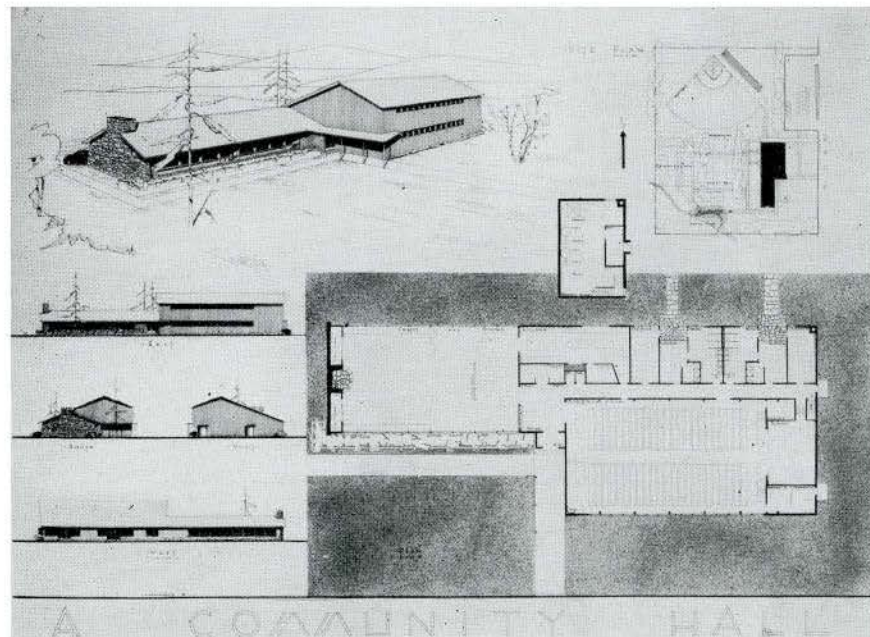
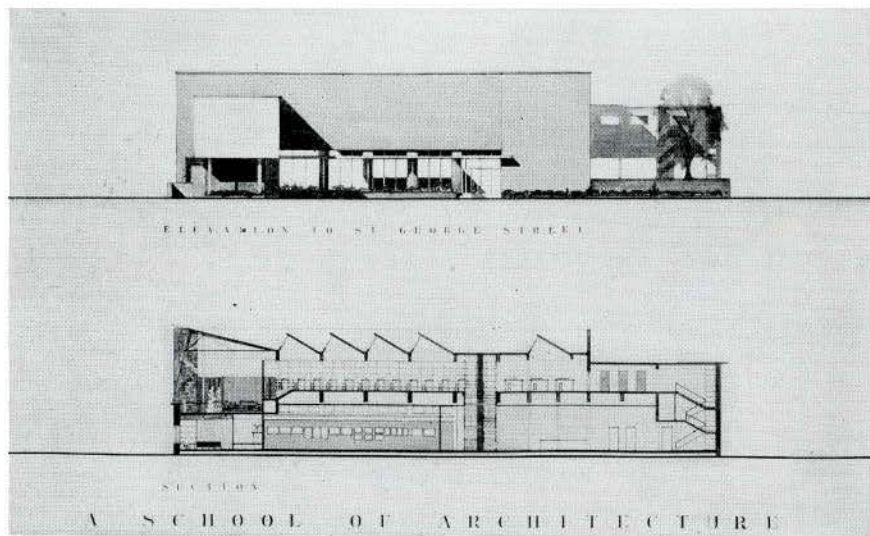
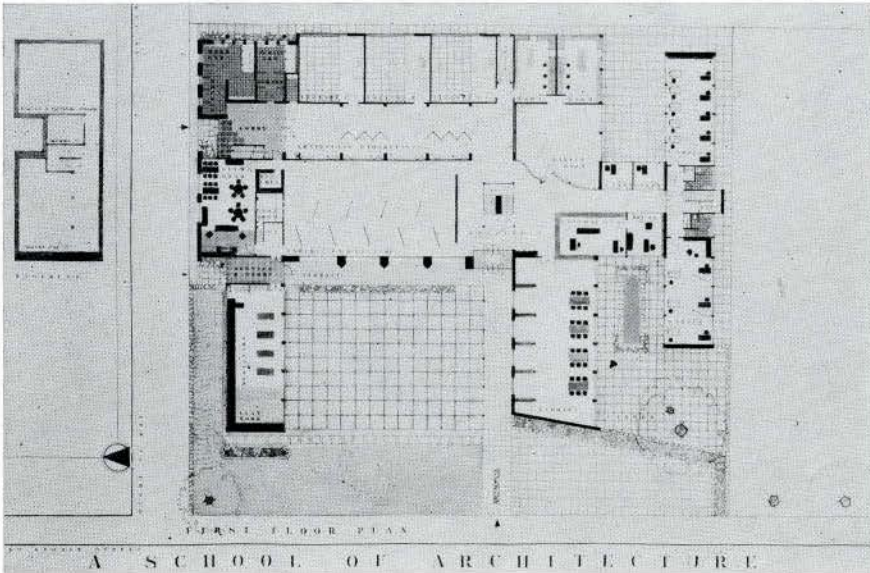
OLIVER HILL, ARCHITECT

**UNIVERSITY OF TORONTO  
SCHOOL OF ARCHITECTURE**

**A SCHOOL OF ARCHITECTURE**

**B. Ludlow, Fourth Year**

Studies of various buildings proposed for the University of Toronto have been undertaken by the students. The School of Architecture illustrated is for a specific site on the campus. The building programme was designed to serve all departmental needs, provide facilities for public lectures and exhibitions, and contain a sample room open to architects in private practice. The building is to accommodate a total enrolment in the five years of 150 students. Drawings required included plans, elevations, sections, perspective and working drawings to a large scale of some part of the building. This problem was set for the Hobbs' Glass Prize, which pays the fees of the winner in his senior year.



**A COMMUNITY HALL AND  
ATHLETIC PARK**

**L. Venchiarutti, Fourth Year**

This project suggested by a Provincial Department called for the design of a farm community Hall and Athletic Park. The building was required to house an Auditorium to seat 300, a dining hall for 200 people to be used also as a craft room, and dressing rooms and washrooms for those engaged in outdoor sports as well as indoor. The building had to be of rural materials and techniques and be of inexpensive construction.

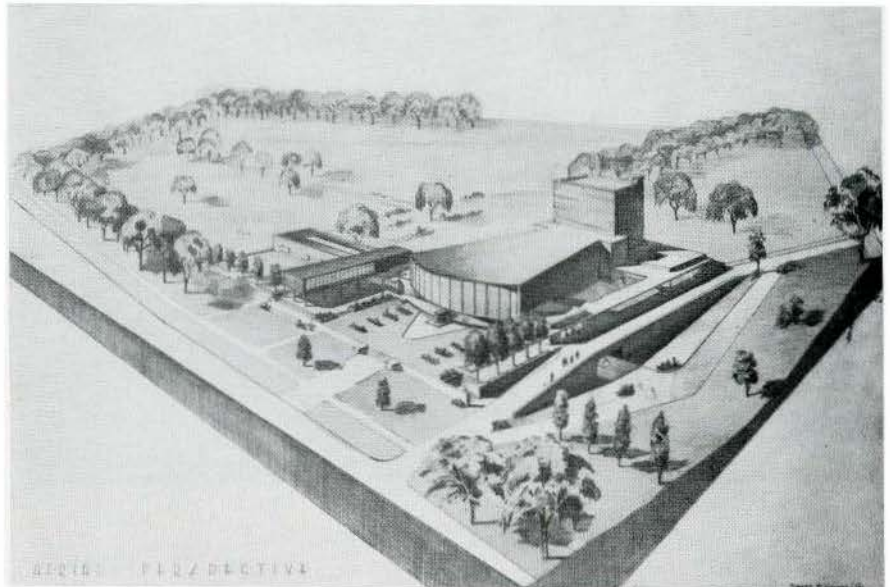
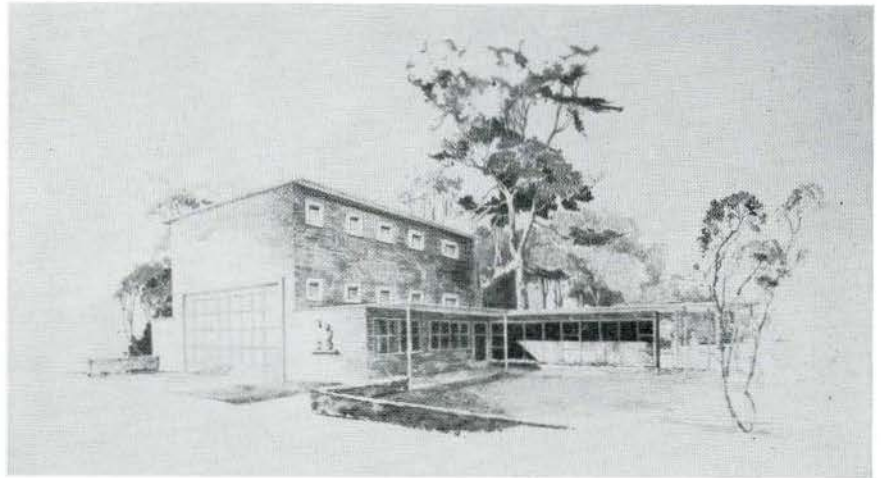


**UNIVERSITY OF TORONTO  
SCHOOL OF ARCHITECTURE**

**A FIRE HALL**

**G. S. Abram, Second Year**

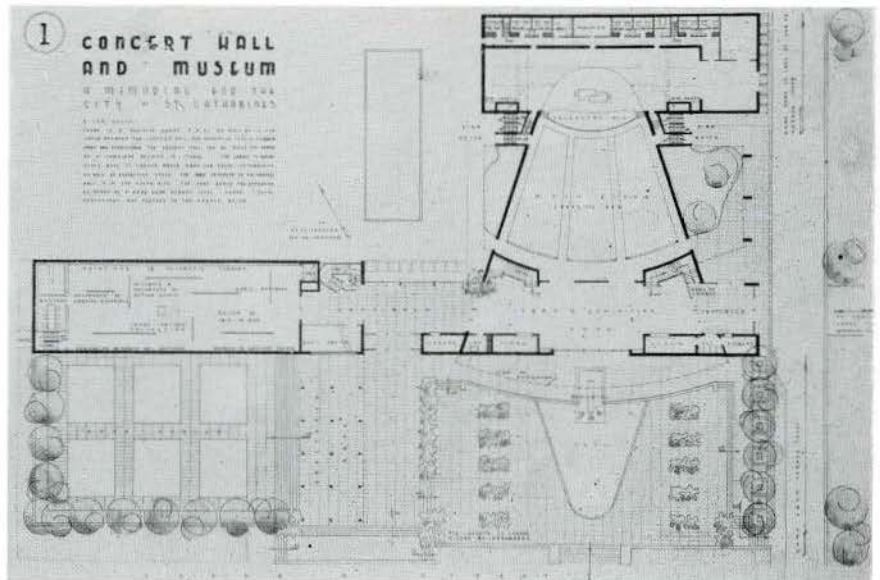
The problem called for complete plans and elevations of the building, but for purposes of reproduction, the perspective only is illustrated. Due attention is paid to rendering of design in various media. This example illustrates a pencil technique.



**A CONCERT HALL AND MUSEUM  
FOR ST. CATHARINES**

**R. H. Williams, Fourth Year**

In each of the Senior Years, one major problem is set by the student. These studies for a Concert Hall for St. Catharines include a large auditorium, a museum and administration offices. The building is to serve as a War Memorial for the City.

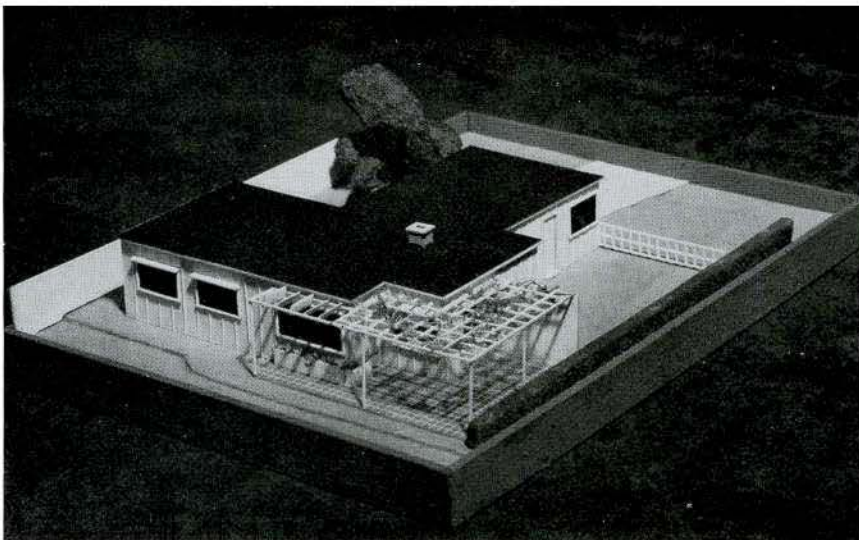
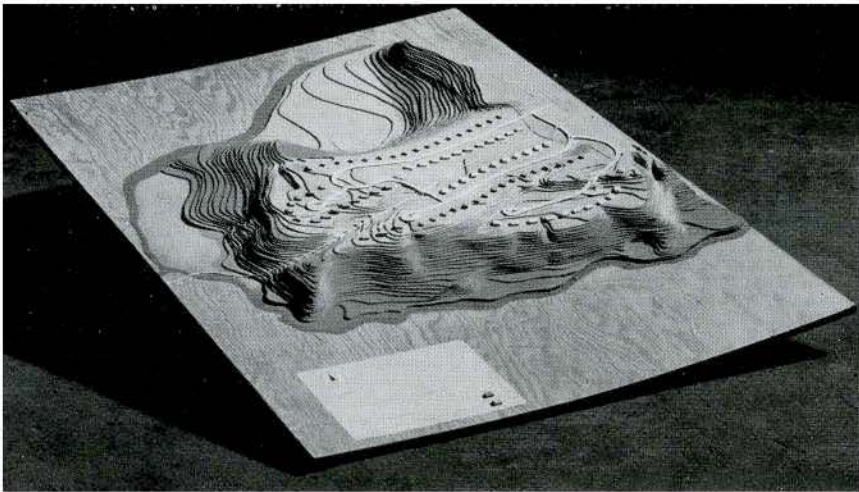
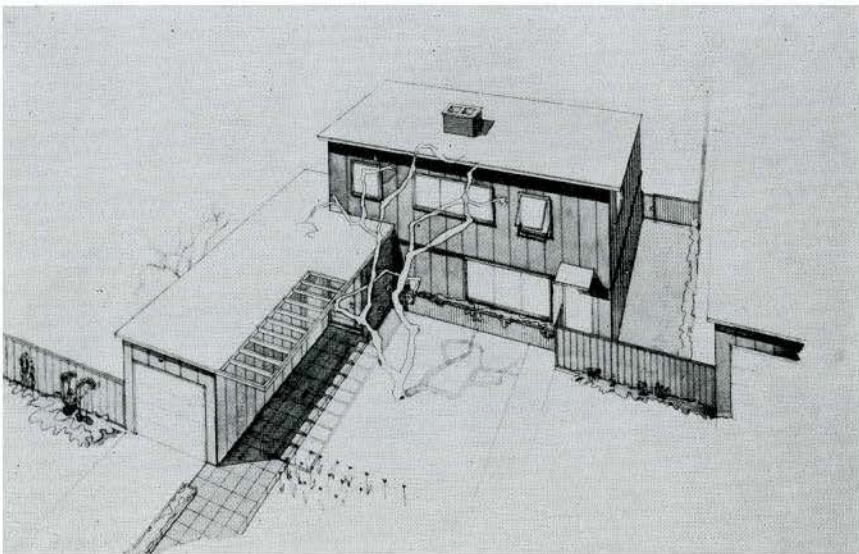


**UNIVERSITY OF TORONTO  
SCHOOL OF ARCHITECTURE**

**A PLANNED RESIDENTIAL  
COMMUNITY**

**H. Fliess, Fifth Year**

The two drawings illustrated are from the presentation of a planned residential community for a co-operative housing organization. The project, on an actual site in the Toronto area, required the development of a community plan locating roads, residences, community buildings, recreation and garden areas, and landscaping scheme. In addition, type houses had to be designed, and a report was required to include a thorough financial analysis of project costs and operating charges. These two drawings show one of the type houses developed and a contour model of this student's solution.

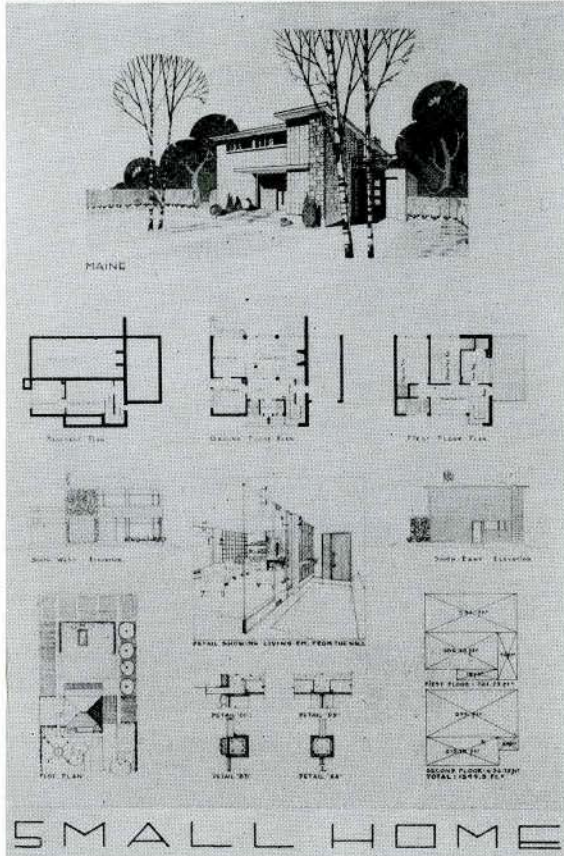


**HOUSE MODEL**

**Gordon Chan, Third Year**

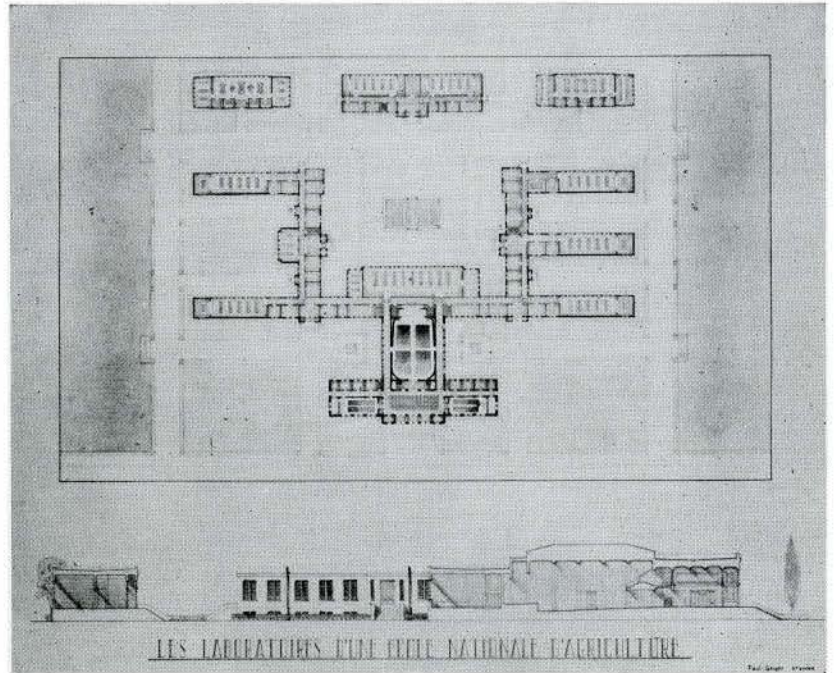
In all major problems a model is required. A finished model of this kind is completed each term. Models in other media, such as plasticene or wood, which can be quickly constructed, are required for most problems, as an aid to study in design.

# ÉCOLE DES BEAUX-ARTS DE MONTRÉAL



## A SMALL HOUSE

Jean De Belleval, 4<sup>e</sup> Année



Paul Goyer, 5<sup>e</sup> Année

## LES BATIMENTS DES LABORATOIRES DANS UNE ÉCOLE NATIONALE D'AGRICULTURE

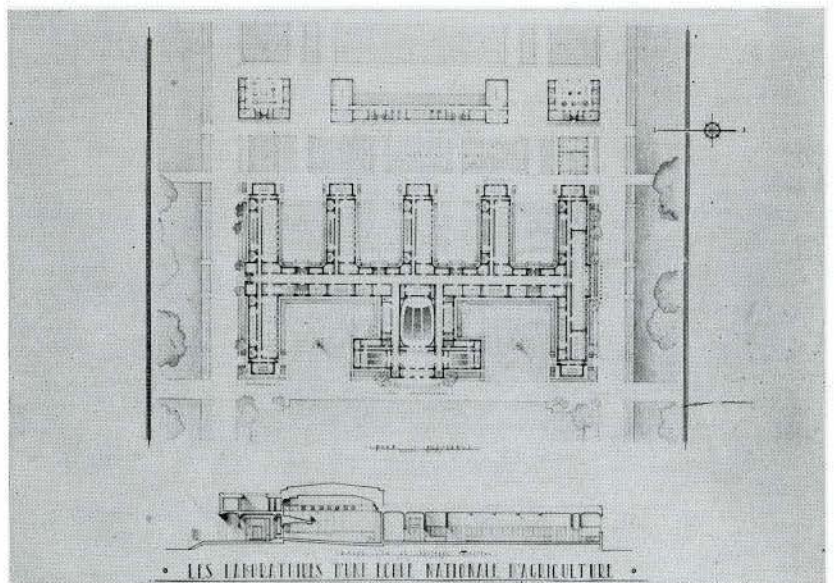
Cet ensemble comprendrait :

**Enseignement Théorique :** Vestibule, accès à deux amphithéâtres d'environ 25 x 40 pieds pour les cours, à un amphithéâtre d'environ 4000 pieds carrés pour les réunions. Salles de préparation des cours, cabinets de professeurs, dépendances d'usage. — Service de botanique (le plus important) : salle d'au moins 25 x 60 pieds, avec paroi vitrée exposée au nord; salle de physique, avec serre, herbiers, cabinets de professeurs, de répétiteurs, de préparation; dépôts. — Autres services (agriculture, pomiculture, sylviculture, entomologie, arboriculture) comprenant chacun : Un laboratoire pour les élèves; salle de collections; cabinet de professeur, de répétiteur; pièces d'usage; dépôts.

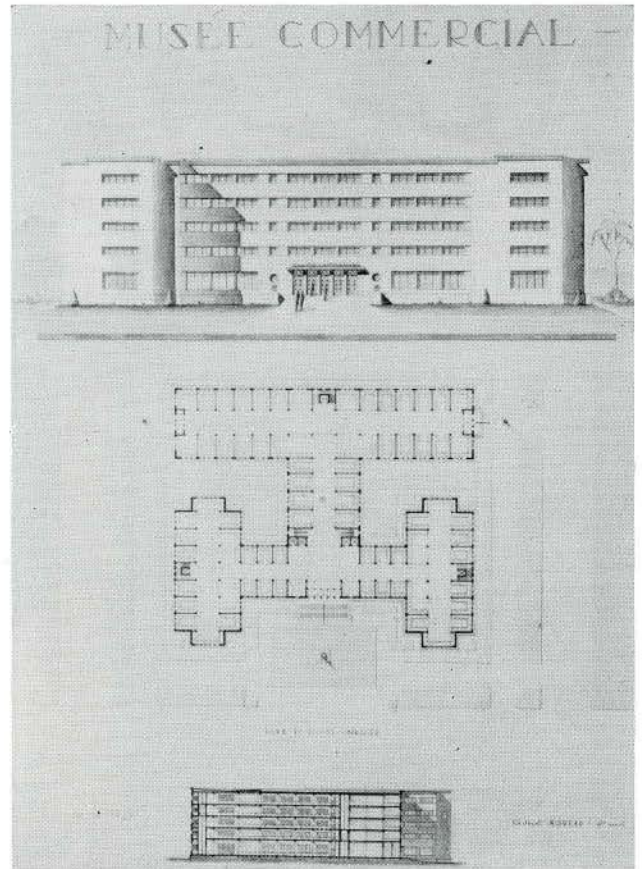
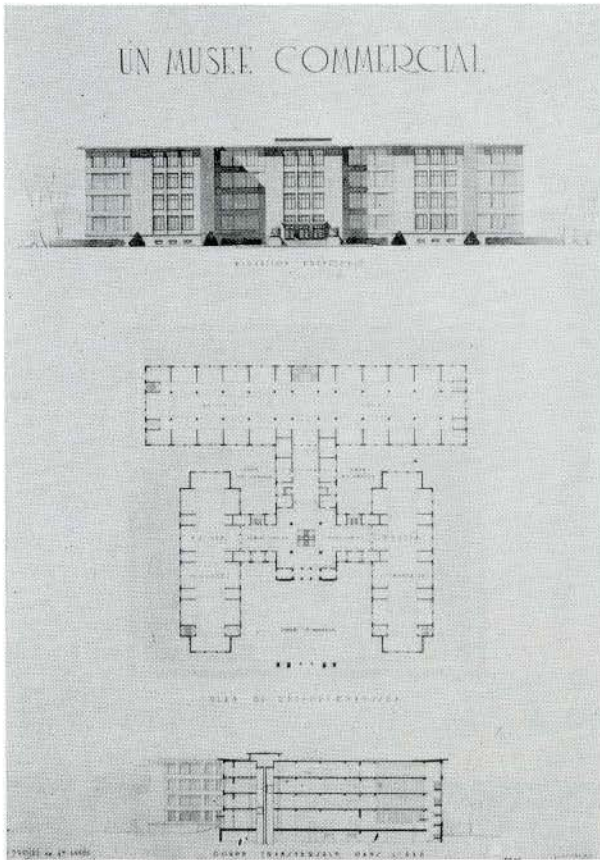
**Enseignement Pratique (trois bâtiments insolés) :** Travaux pratiques de chimie générale: deux laboratoires, cabinet de professeur, de préparateur; dépôts. — Travaux pratiques de chimie agricole. — Travaux d'étude des diverses machines agricoles. — Les trois bâtiments seraient accompagnés d'avvents et d'espaces découverts pour les expériences en plein air.

— Services de toilettes, etc., utilement répartis. — Tous les bâtiments fermés seraient élevés sur des sous-sols éclairés et parfaitement ventilés pour les dépôts de matières premières, la chaufferie, les canalisations. — Le terrain occupé par tous ces bâtiments ne sera pas clos. — Dimensions : 400 x 600 pieds.

Émilien Bujold, 5<sup>e</sup> Année



# ÉCOLE DES BEAUX-ARTS DE MONTRÉAL



## UN MUSÉE COMMERCIAL

Jean Issalys, 4<sup>e</sup> Année

Ce musée, construit par la Chambre de commerce d'une ville maritime, n'a aucune analogie avec les musées artistiques, scientifiques ou industriels. Il serait destiné à soumettre aux commerçants des collections complètes d'échantillons des marchandises qui peuvent leur être proposées à l'étranger.

Il comprendrait:—

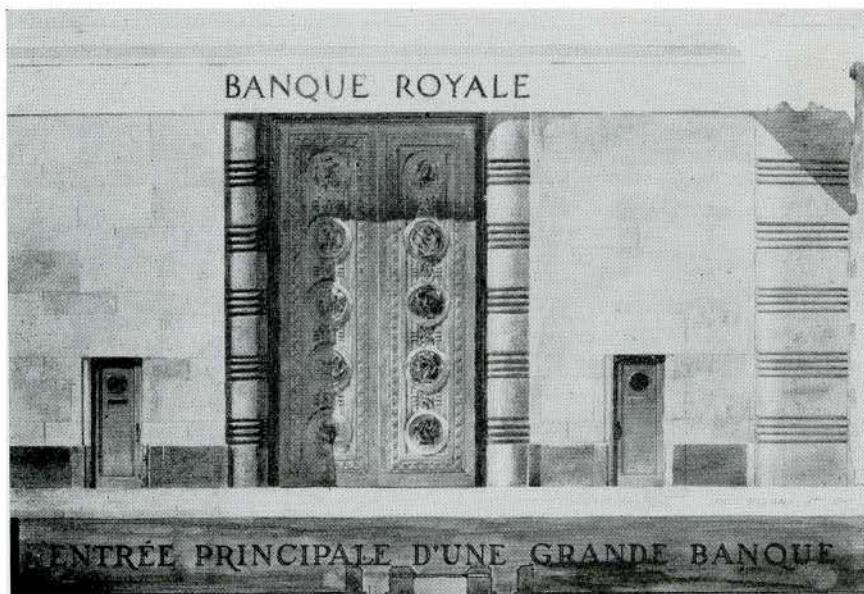
1o — Un bâtiment d'administration.

2o — Le musée proprement dit, comprenant trois divisions, chacune en plusieurs étages.

Pour le classement méthodique des collections, chaque division doit se composer de salles assez restreintes, bien éclairées, complètement indépendantes les unes des autres.

On dispose d'un îlot isolé, sensiblement de niveau, de 400 pieds dans sa plus grande dimension.

Gilbert Moreau, 4<sup>e</sup> Année



## L'ENTRÉE PRINCIPALE D'UNE GRANDE BANQUE

Paul Béland, 3<sup>e</sup> Année

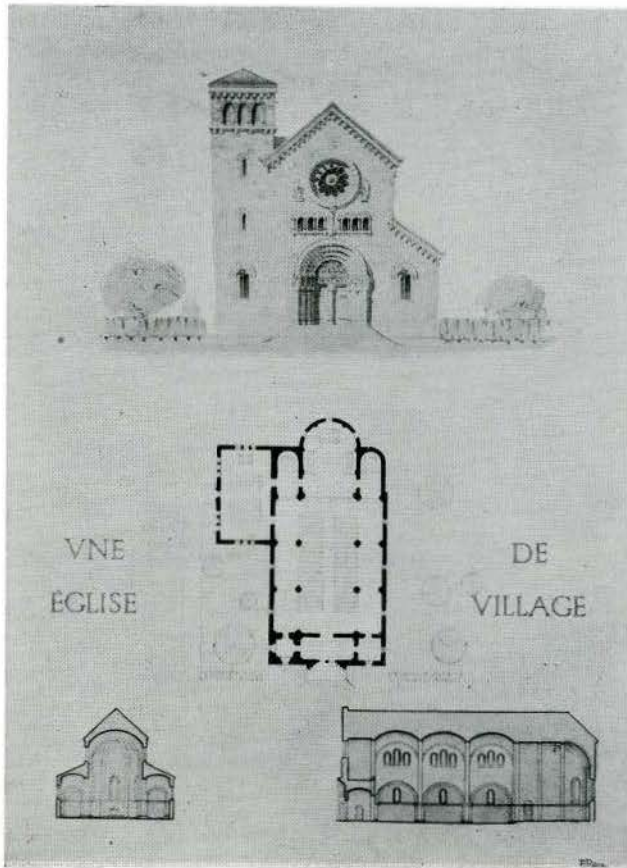
L'ensemble se composerait d'une porte principale flanquée de deux portes plus petites qu'on nomme guichets. Ces portes seraient en bronze, métal qui convient bien pour une banque, il est résistant, monumental, il se prête avec souplesse à la décoration, et sa couleur s'agrémenterait encore avec la patine.

La porte principale s'ouvrirait pour le public aux heures d'affaire. Sa décoration pourrait être obtenue par des incrustations, des saillies, des reliefs de toute nature; toute fois il est, — surtout à notre époque, — recommandable de rechercher surtout le caractère et la simplicité (qu'il ne faut pas confondre avec l'indigence de pensée et d'imagination).

Les deux guichets, ou portes latérales plus petites, seront destinés aux allées et venues du personnel lorsque la banque n'est pas ouverte au public.

Le motif encadrant ces portes serait en pierre, marbre ou granit.

La hauteur de l'étage à rez-de-chaussée est de trente pieds de plancher à plancher. La largeur de la grande porte, partie ouvrante non compris encadrement serait de dix pieds. Les autres dimensions à déterminer par l'étude du projet.

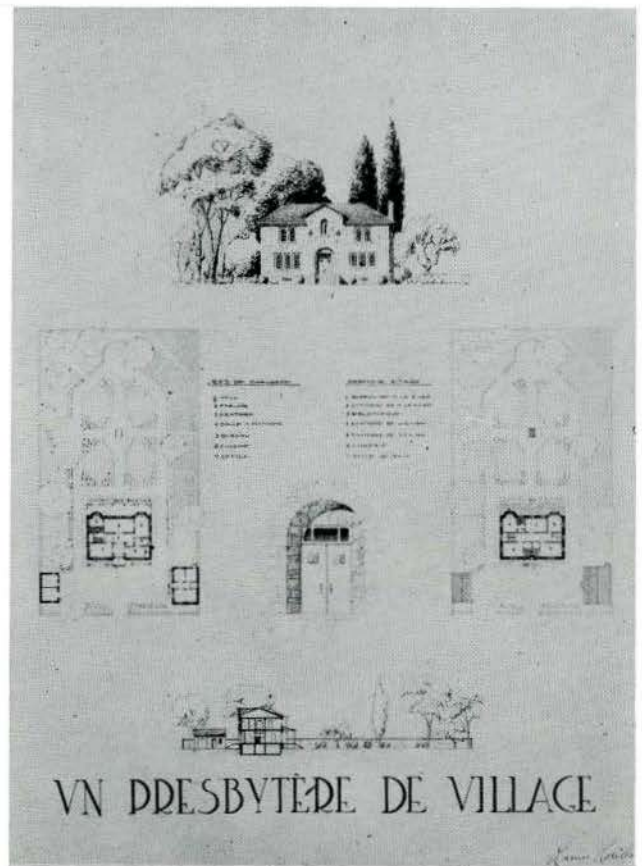


**UNE PETITE EGLISE VOUTÉE**

Pierre Roux, 2<sup>e</sup> Année

(Pour servir à l'application du cours de construction générale sur les voûtes en maçonnerie.)

Cette église serait construite dans un village gaspésien. Destinée à recevoir 400 fidèles, elle comprendrait: 1—Une nef, avec ou sans bas-côtés; 2—Un chœur assez vaste, avec stalles disposées de chaque côté le long des murs, en avant du maître-autel; 3—Deux petits autels bien en vue; 4—Une grande sacristie, avec entrée spéciale; 5—Un petit baptistère à proximité de l'entrée principale; 6—Une tribune d'orgues, accessible par un escalier placé près du vestibule d'entrée; 7—Un clocher.



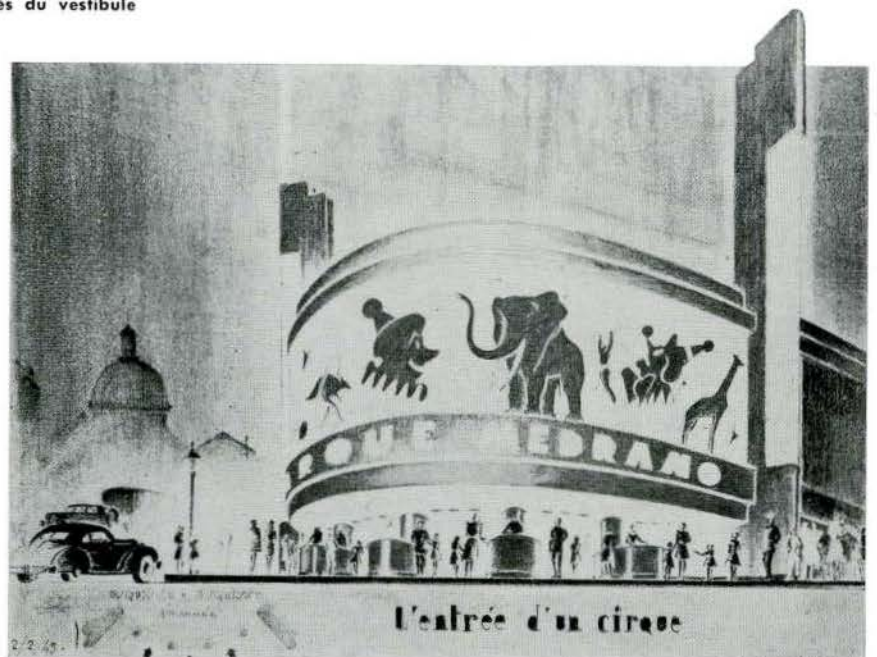
**UN PRESBYTÈRE DE VILLAGE**

Lucien Robillard, 2<sup>e</sup> Année

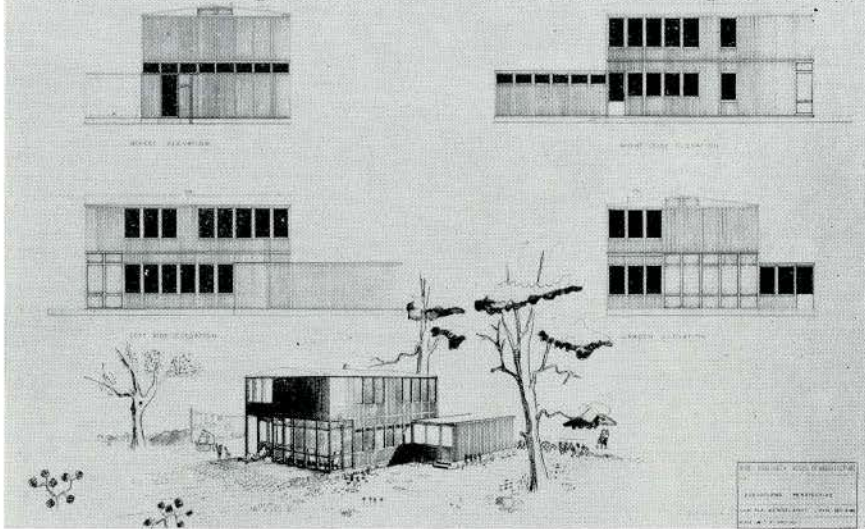
Cette habitation destinée à loger le curé d'une église de village et ses deux vicaires serait construite et aménagée sur un terrain de 125 pieds sur 225, joignant la place de l'église par l'un de ses petits côtés, isolé du côté de l'église par un chemin privé et de l'autre par une rue; au fond, il toucherait des propriétés voisines.

**L'ENTRÉE D'UN CIRQUE**

Jean Issalys, 4<sup>e</sup> Année



**PREFABRICATED HOUSES G.P. SYSTEM AM 5-2-2  
NEIGHBOURHOOD UNIT - VILLE ST. LAURENT - 4 BR. HOUSE**



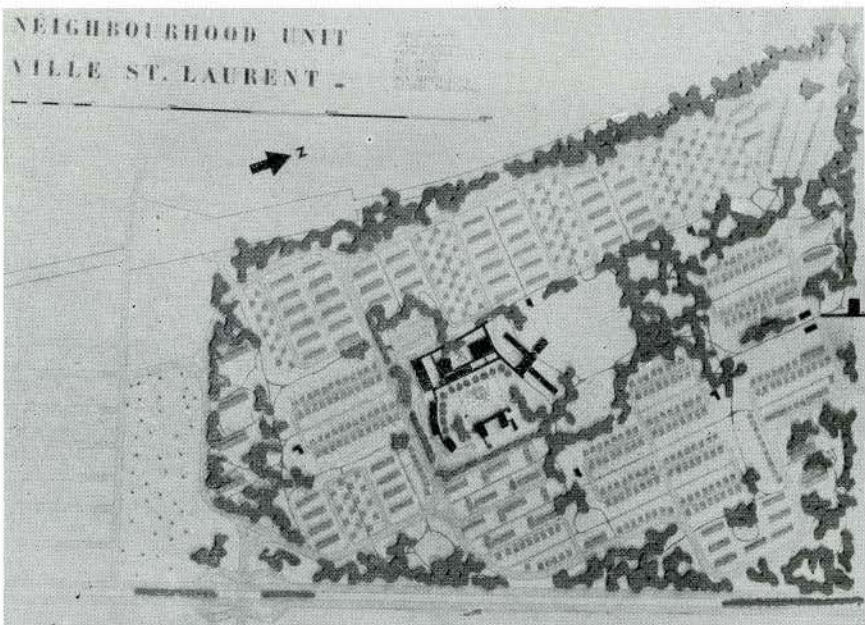
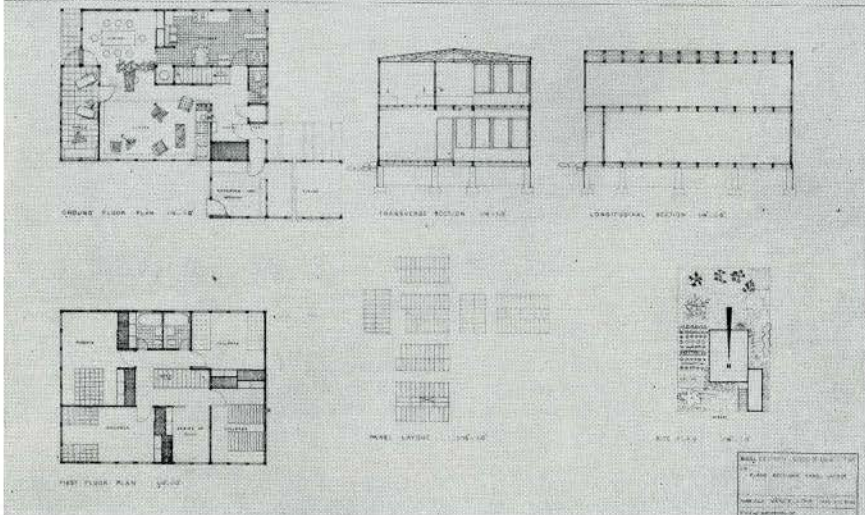
**A SINGLE HOUSE USING  
THE G.P. SYSTEM**

**Ala Mendelsohn, Fifth Year**

The General Panel Corporation prefabrication system, which was thoroughly analysed, was used for the design of the individual houses in the housing project. Interior studies were also made.

First term, four weeks.

**PREFABRICATED HOUSES G.P. SYSTEM AM 5-2-1  
NEIGHBOURHOOD UNIT - VILLE ST. LAURENT - 4 BR. HOUSE**



**A HOUSING SCHEME**

**The Class, Fifth Year**

This project for 1,400 families on a 320-acre site near Montreal. The layout is a co-operative project but each student prepared an individual scheme for the commercial and community centre, and complete details for a type of house accommodation. Further drawings analysed relation of area to neighbouring district and to Montreal City. The site is bordered by two railway tracks, major highway, cemetery, and the industrial district of Ville St. Laurent.

First term, three weeks.

**McGILL UNIVERSITY  
SCHOOL OF ARCHITECTURE**

**A HOUSE FOR AN ARCHITECT**

Arthur Townend, Third Year

This house has a large garden and a studio, and has been the subject of a detail construction problem. The model shows the colours and textures of the materials.

First term, preliminary drawings, three weeks. Working drawings and details, five weeks, model one week.

(Note—Roof and first floor are removable, showing layout of rooms, etc.)

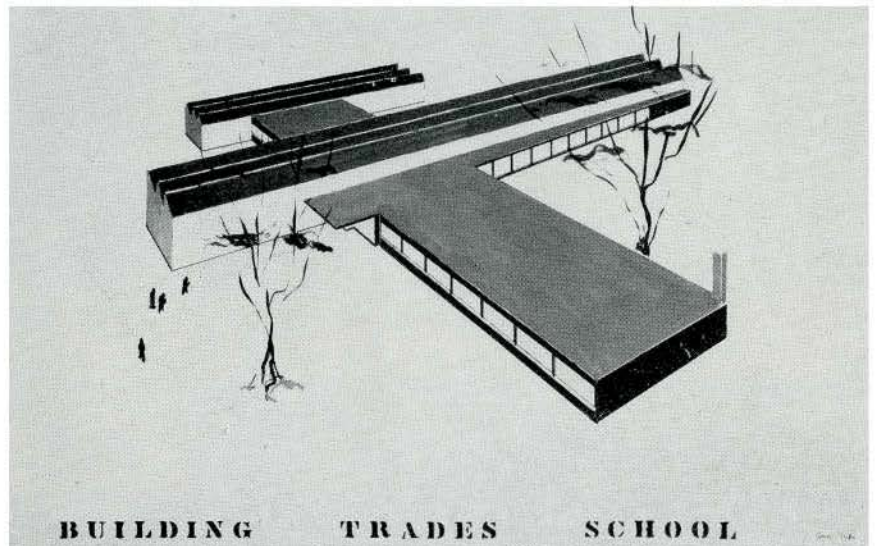


**PERSPECTIVE SKETCH OF  
TRADES SCHOOL**

Ann Luke, Third Year

The students will continue with working drawings for the remainder of the term.

Second term, one week.

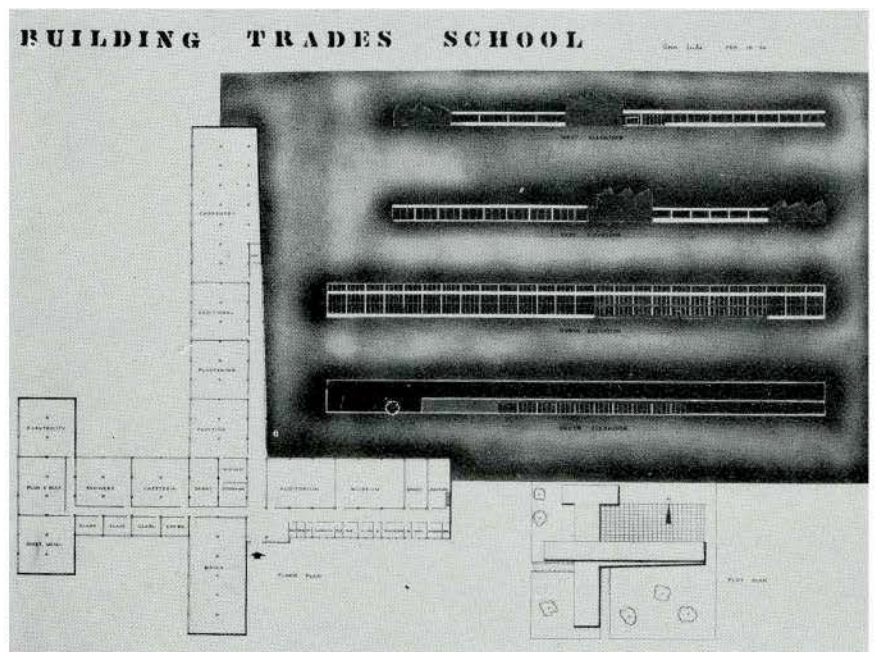


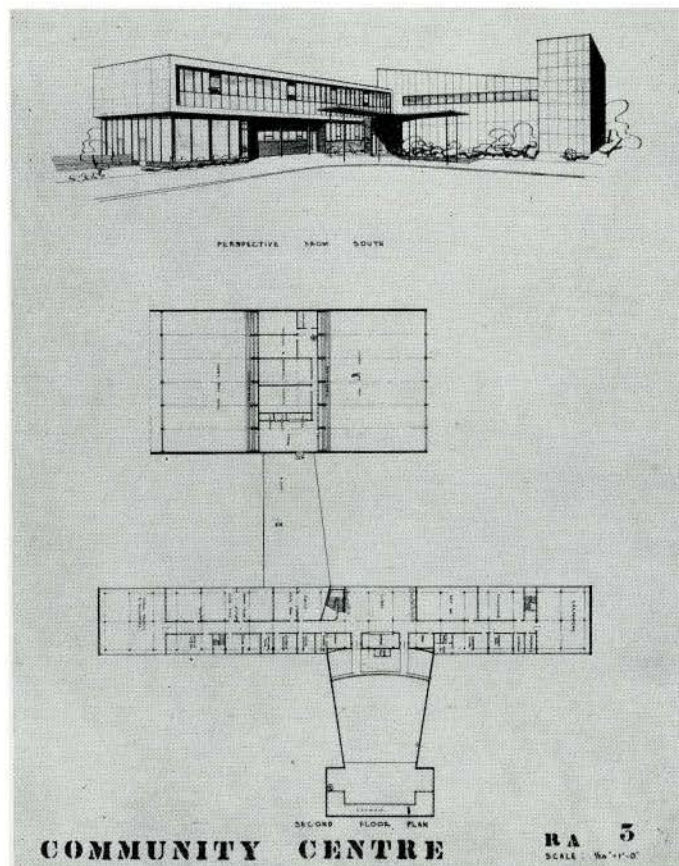
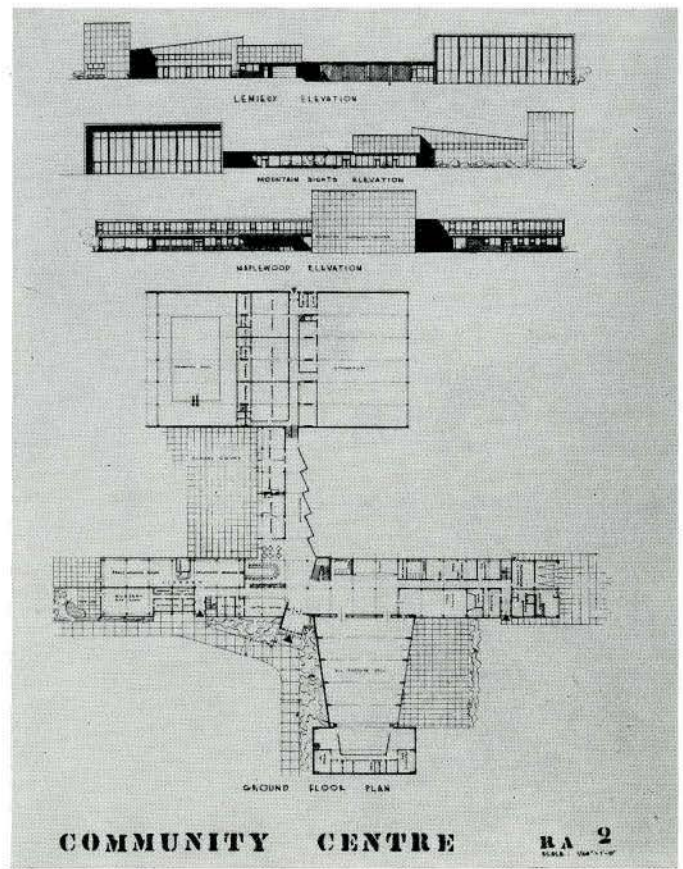
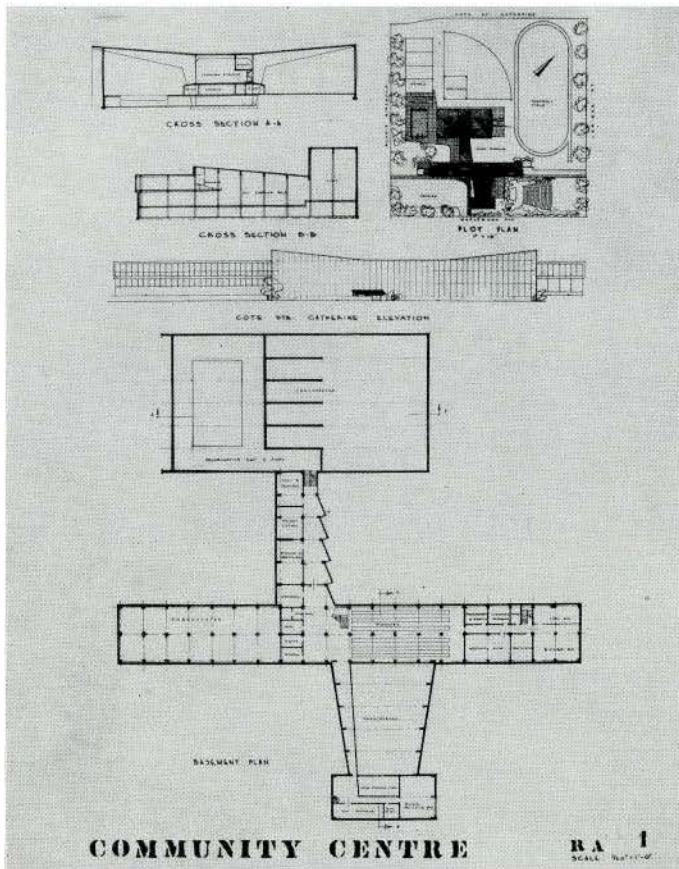
**BUILDING TRADES  
APPRENTICESHIP SCHOOL**

Ann Luke, Third Year

This is a training school for Bricklayers, Carpenters, Electricians, Painters, Plasterers, Plumbers and Roofers. It is based upon the requirements of a local institution, which was carefully examined by the students.

General Scheme, second term, five weeks.





**COMMUNITY CENTRE FOR SNOWDON,  
MONTREAL**

Raymond Affleck, Fourth Year

This project consists of a cultural and social unit, a physical fitness unit, general service rooms, and an athletic ground. Besides the drawings shown, interior colour studies have been made, a detailed report of community centre requirements has been written, and working drawings for a portion of the building have been prepared. A model showing space relationships is also under construction. This work will occupy the remainder of the term.

Second term.



# UNIVERSITY OF MANITOBA SCHOOL OF ARCHITECTURE AND FINE ARTS

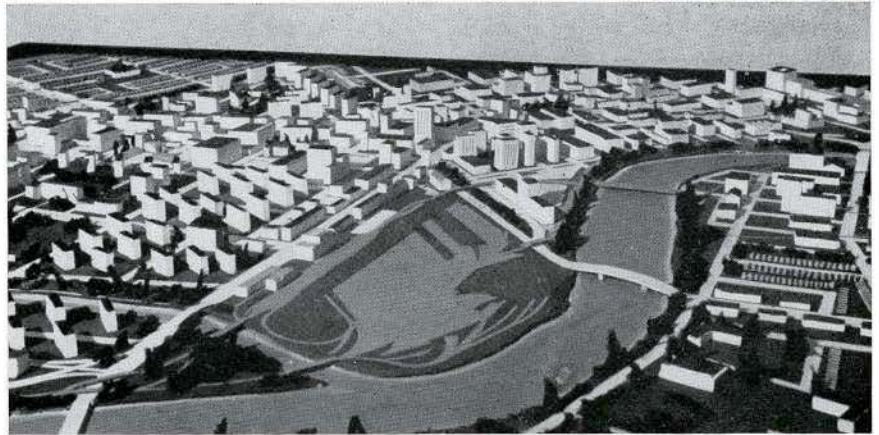
## CITY PLANNING COLLABORATIVE PROBLEM

The Class, Fifth Year

The major portion of the first term of the final year of Architectural Design is devoted to the development and solution of a practical problem in city planning. This year, the eight members of the graduating class collaborated on the study of the central Winnipeg-St. Boniface area. After careful study of the maps and data compiled by the Metropolitan Planning Office, the class undertook a study of the business sections and the adjacent residential and industrial areas.

Changes in the existing street layout were kept to a practical minimum, while the re-zoning of some of the areas allowed for more open arrangement of apartment groups, for a downtown University site, and for the very desirable feature of river frontage parkways.

This model was built after the results of these studies had been incorporated into a master plan layout. The oblique airview was taken from the point indicated by the triangular arrow on the illustration.

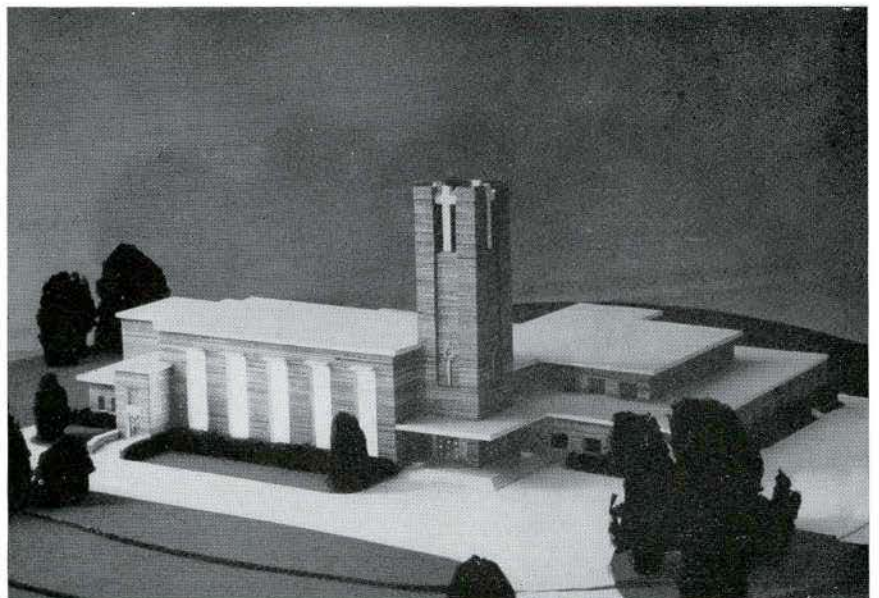


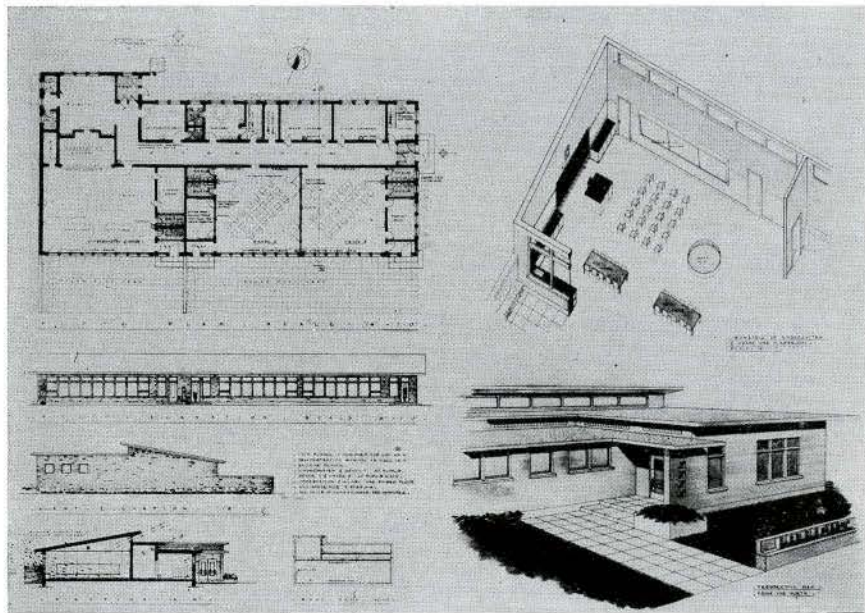
## A CHURCH AND CHURCH SCHOOL

Burton Stovel, Fourth Year

On a prominent site enclosed within the bend of a river in a western Canadian city, this church and church school group was designed for a Protestant congregation and for use as a community centre. The requirements for worship included an auditorium seating five hundred, approached by commodious entrance features for the public. The education portion of the group required five assembly rooms, twelve small and four large classrooms, and administrative offices. The community services included a social hall equipped with stage, dressing rooms, showers and lockers, and a kitchen and serving area.

This particular solution included an open court for outdoor services (beyond the tower in this view). The model was built in conjunction with the development of complete presentation plans, elevations, section and perspective.





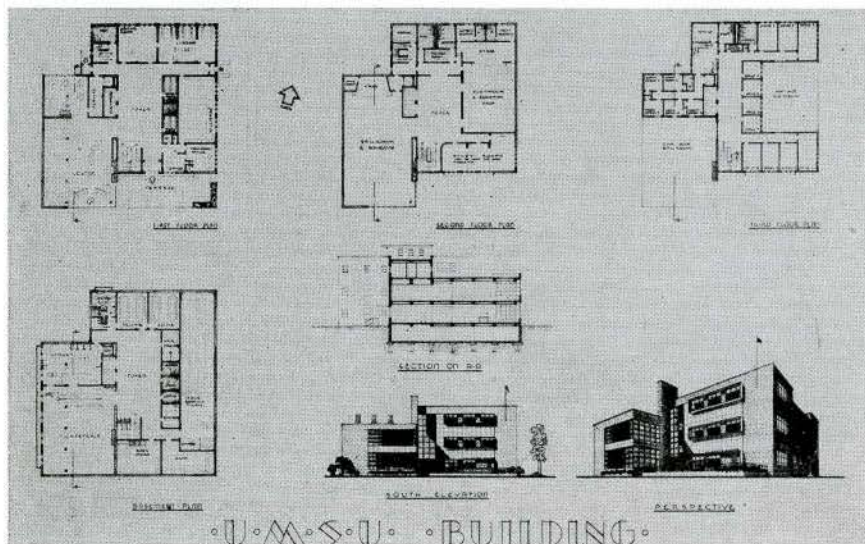
## UNIVERSITY OF MANITOBA SCHOOL OF ARCHITECTURE AND FINE ARTS

### AN ELEMENTARY SCHOOL

George Stewart, Second Year

This elementary school for kindergarten, grades one, two and three, was designed as a model demonstration school to be built on the campus of The University of Manitoba in conjunction with the School of Education. It therefore involved the planning for the necessary classroom and related facilities, as well as those features necessary to the reception of visiting school boards and teachers.

Each grade was limited to twenty pupils. Present trends in education methods suggested maximum flexibility in classroom planning and arrangement of movable units. An observation gallery was provided in connection with the combination kindergarten-grade one classrooms. The site chosen was bounded by roads on the north and east.



### A STUDENTS' UNION

William Hames, Fourth Year

In conjunction with present plans for expansion of the Fort Garry Campus of The University of Manitoba, this building was designed as a centre for student recreational and social activities. The first floor included a large lounge, card and writing rooms, billiard room, library reading room, offices and services. The basement provided for a cafeteria, two private dining rooms, four bowling alleys and several shops. An auditorium seating two hundred and a ballroom of 3,000 square feet with the necessary facilities for checking and washing were found on the second floor; while student organization offices and several small dormitories for staff members occupied the third floor.



### AN OFFICE BUILDING AND MOTION PICTURE THEATRE

Dennis Carter, Fifth Year

This perspective sketch formed a part of the drawings required for the Bachelor of Architecture Thesis.

A site on Winnipeg's Portage Avenue was chosen and carefully studied in its relation to existing and proposed developments of the city's plan, its zoning, transportation and parking facilities.

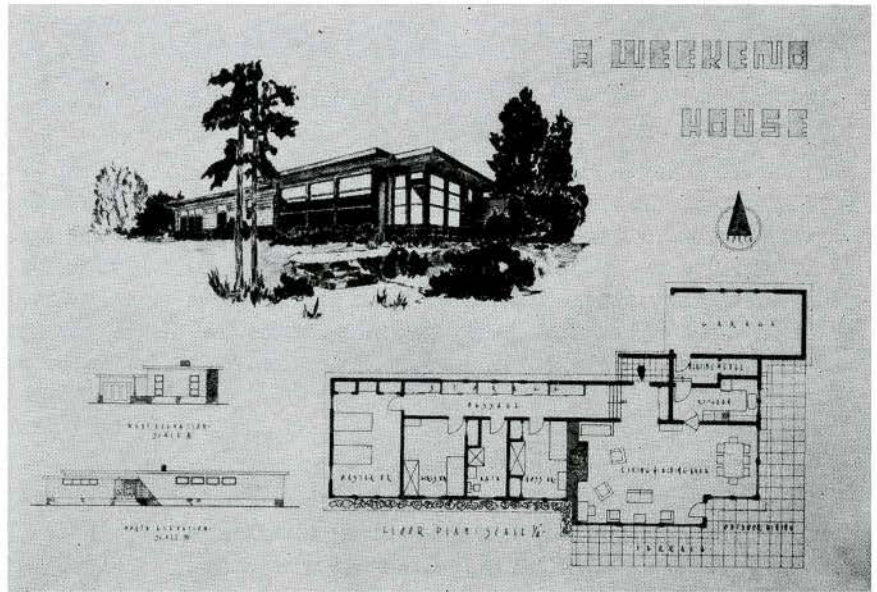
The cinema portion of this group includes a spacious, open-view vestibule designed for the protection of waiting crowds from the winter weather, for the comfortable seating of 800 persons in an auditorium with a reverse-sloped parabolic floor, and for a combination daytime restaurant and after-theatre supper cafe. The eight-storey office building provided on its ground floor for the accommodation of each of the shops now located on the site, plus an off-the-side-walk sheltered shopping promenade with entrance to the office building lobby. Provision of maximum natural lighting dictated the layout of the office floors.

# UNIVERSITY OF MANITOBA SCHOOL OF ARCHITECTURE AND FINE ARTS

## A WEEKEND HOUSE David Thordarsen, First Year

Designed for all-year-round use, this weekend house was to be placed on a high bluff overlooking a lake to the south and south-east. Accommodation was required for a family of four, plus four guests of the boy and girl of the family. Although facilities for outdoor living were very important, ample provision for sheltered living, for evening fireside chatting, etc., was necessary. Abundance of wood and stone in the neighbourhood suggested the materials to use.

In spite of a kitchen plan that was too restricted and storage areas that may have been too ample for weekend living, this solution was commended for its directness and simplicity which resulted in the desired privacy for the bedroom wing, the desired concentration of services, and an open living area arranged for maximum advantage of the view.



## AN AUTOMOBILE SALES BUILDING

Robert Siddall, Third Year

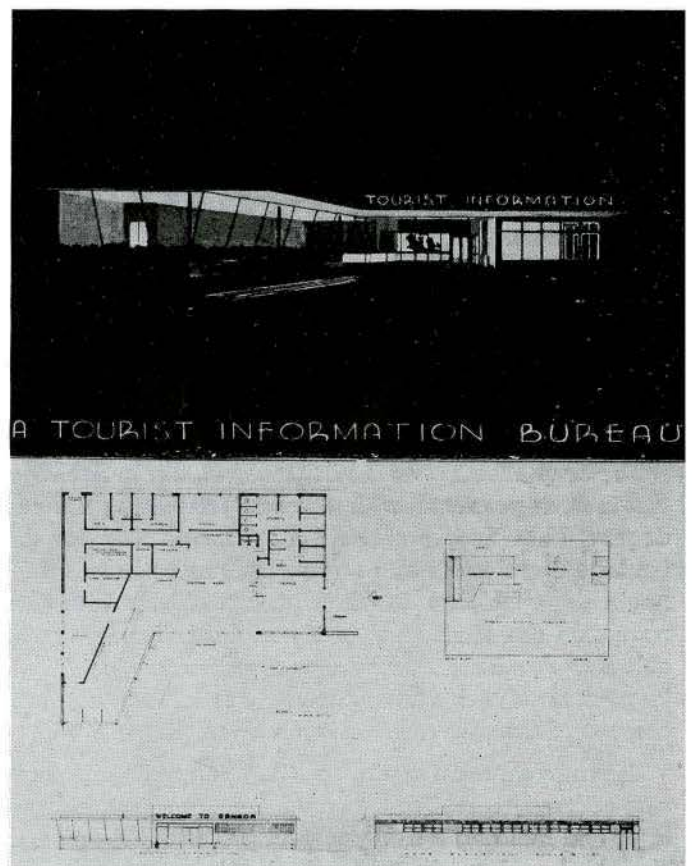
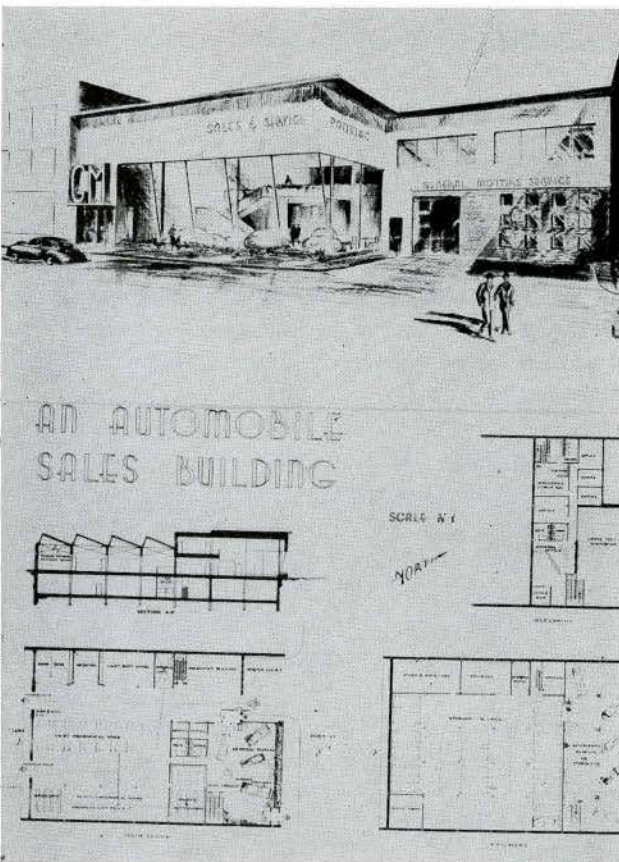
The programme called for a sales building with service station on a lot 100' by 150', between party walls on the south side of a street in the central business district of Winnipeg. The sales area required a well lit exhibition area for four cars, clearly visible from the sidewalk, plus offices and rest rooms on a mezzanine floor. The service portion of the building includes a fully equipped repair room, area for storage of cars in the basement, a service court at the entrance, and facilities for washing and greasing.

## A TOURIST INFORMATION BUREAU

Morley Blankstein, First Year

This information Bureau was intended primarily as a source of road and resort information, but also was expected to serve as a rest room lounge for tourists and for bus riders who might have to change buses at this border point. The inclusion of a lunch counter was required.

The building was designed for the lot adjacent to a customs house, near the outskirts of a large town. It thus involved problems in circulation and in character treatment since it was to be a permanent building used principally, however, during the summer months.



# NEWS FROM HARVARD

By JOHN CRESSWELL PARKIN

I trust the following information concerning the architectural courses at Harvard University will be of value to you and your committee on Architectural Training at its Annual Meeting at Quebec City next week. May I first point out that my observations have been gained while having spent a still comparatively short time at the University, and while a student in the Masters course on a Harvard scholarship.

Perhaps it might be of interest to mention the background of the school. First lectures in architecture at Harvard were given as early as 1874, but it was not until 1895 that a complete academic training for architects was provided. In 1906 instruction in architecture was placed upon a graduate basis, and even to-day is one of the few schools on the continent requiring the degrees of B.A. or B.Sc. as a prerequisite for the degree B.Arch. The present Graduate School of Design was established in 1935, and consists of three departments, namely, the Department of Architecture, the Department of Landscape Architecture, and the Department of Regional Planning, each headed by a Chairman, assisted by a Council, composed of all the instructors in the field under the supervision of the department. The whole school is headed by Dean Joseph Hudnut, while the chairman of the Department of Architecture is Dr. Walter Gropius. The school is fortunate in possessing two buildings, Robinson and Hunt Halls, situated in Harvard Yard, and fortunately adjacent to the very fine Fogg Art Museum. In these buildings are the well equipped draughting rooms, libraries, seminars, exhibition galleries, offices, studios, a complete model building shop, and sample room. The libraries are most complete and feature a collection of filed blueprints of every noted building in the United States. There are at present some 170 students in the School, of whom six are Canadian. One Canadian is studying for his Masters in City Planning, and is a registered architect, two architects, both registered, are proceeding to their Master in Architecture, while two Canadians are studying for their Bachelor in Architecture, and one for his Masters in Landscape Architecture.

The course leading to the degree Bachelor in Architecture is three years in length, following an Arts or Science degree. First Year architecture is compulsory for the landscape architects and regional planners before they begin to specialize in their own fields. This year acquaints the student with materials, forms, surfaces, colours. Freehand drawing, water colour, etc., as we know these subjects are not taught, but instead thorough courses in abstract composition are substituted.

Second year architecture sees the completion of intensive courses in architectural engineering, working drawings, and building techniques and professional practice. The third and graduating year is almost entirely de-

voted to architectural design under Mr. Marcel Breuer, although courses in the Mechanical Equipment of Buildings, and Materials and Methods of Architectural Construction, are also given. By this time the student is also expected to have had at least one term (four months) experience in an architect's office. The final requirement for the degree is the completion of a thesis. This is a problem in building design from a programme written by the student, who must demonstrate his ability in both design and the techniques of building construction.

The degree Master in Architecture is also granted, and is the only studio receiving criticisms from Walter Gropius. There are sixteen students at present in this class, with China, Eire, Venezuela, Puerto Rica, Japan, etc., as well as two from Canada, represented, with only three who took their undergraduate work at Harvard. The remainder are from various points in the United States. Almost all the Masters are on scholarships of some sort, but no one school shows any marked superiority over the others, although those from Harvard show initial advantage. Certainly, results would indicate that the Canadian schools of architecture are at least equal to the average American schools, and show marked superiority in history and drawing. The outstanding success that Harvard students have been enjoying in recent competitions, might be explained by the fact that almost all the recent competition juries of late have had at least one Harvard graduate on them who would naturally be in sympathy with the highly personal design product turned out by Gropius' pupils. Almost all the professors carry on extensive private practices, enabling them to be well versed in costs, new materials and techniques. Gropius, for example, is in the Masters studio only three afternoons per week, the remainder of his time is taken by his practice and prefabrication corporation. This is felt to be the ideal arrangement, since it does put every design problem on a practical basis, and as much time is devoted to construction criticism as to design criticism.

Our current problem is an extremely interesting one. It is the design of a large housing scheme for suburban Boston, in which every type of dwelling unit, walk-up, row house, detached, and elevator apartments will be used, and with a wide range of income groups represented. It is a collaborative affair with our class split into teams, each initially studying a different aspect of low cost housing; costs, orientation, and densities. One from each team acts as liaison between us and the regional planners, who are doing the site planning, and the landscape architects, who are doing the ground layouts. About 60 advanced students in all are involved, and the problem will take four months. Finally, plans, details and models will be prepared. We must also indicate our

*Continued on page 102*

# THE PROVINCIAL PAGE

## ALBERTA

The subject of the generally chaotic appearance of the business streets of our cities has before been referred to in these letters. Its importance to architecture justifies further reference. We may erect well designed business buildings but these, unless they occupy a whole block, are liable to be very soon lost in a miscellaneous jarring crowd and smothered in advertising signs of many incongruous sorts.

The root of the trouble is undoubtedly the total disregard each property owner or tenant displays for any and all neighbours as to heights, size, form or colour. To have something in common is the essential of harmony. It would seem that the desire of many is deliberately to have as little as possible in common with any neighbour whether in their buildings, signs or accessories. Of this attitude the inevitable result is the complete chaos that we commonly see.

The inordinate appetite for self-assertion, regardless of general harmony, defeats itself. It leads to a craving for sheer bigness of advertising signs and to their multiplication until the legitimate service of these signs is totally lost in a mere distressing confusion.

At one time there was a loud public outcry against the placing of huge signs in the country to the detriment of the landscape. This led to the control of these by legislation. In that case the justification of control by legislation was nowhere seriously questioned. If the appearance of our business streets is to be rescued from its present bathos, regulation is, there too, necessary and justifiable. But the complete abolition of signs which is practicable in the country is not practicable in the town where signs are necessary as guides to the public. The precise faults that can justifiably be controlled by city regulations requires some careful consideration.

The excessive size and multiplicity of signs being obviously the most fruitful sources of confusion, it would be well to set some limits to sizes and to numbers. There is no actual need for the letters of an ordinary sign to be larger than about fourteen inches in height. These can be easily read by normal eyesight across a hundred foot street. It is the projecting signs that overhang the sidewalks that cause the greatest confusion by their multiplicity for this quite commonly leads to their obscuring one another. They could with advantage be limited to one

on each fifty foot property, with, perhaps additional ones permissible at street corners.

It may be worth pointing out that the most efficient of all advertising signs are those within and upon the glass of store windows in gold, colour or illumination. These are more easily read from the near sidewalk than those that are placed above the windows. In windows that are lighted at night they are equally efficient by night and by day. They definitely related themselves with the goods exhibited in the windows. They do not clutter up the fronts of the buildings and thus they allow the structure of the building,—which after all is the most important element in the street front,—to express itself. To do this is well worth while even when the building is of the plainest native simplicity. When the building is well designed signs confined to the windows cannot disturb its fine architecture. Such a suggestion may at first appear to be fantastic. But, if carried out, what a mess would be cleaned up. Our distressful streets would be converted into pleasant places.

In designing store buildings, architects, properly enough, provide a space for an advertising sign. Left to themselves it would scarcely occur to them to leave such gigantic and disproportionate spaces as are sometimes provided. When spaces are too big they are apt to become misused in either of two ways:—either by oversized lettering,—or, when several tenants are concerned, they have a fatal way of getting their inscriptions out of line in an irritating manner.

One may frequently see an inoffensively designed building, or even a very fine one to which is applied a huge vertical illuminating sign running up through several storeys quite destroying all architectural effect. Instead of providing a central interest, it effectively splits the design in two to the destruction of its unity and beauty.

We are told that wisdom crieth aloud upon the rooftops. Her voice is often drowned by the harsher tones of quite another party. One might imagine that the apparently magical effects possible with electric illumination would be exhibited in their finest perfection on the roofs of high buildings. Actual attempts fail conspicuously to rise to the height of this opportunity.

Architects appreciate these deadly effects but are apt to struggle vainly in the toils. Regulations can, to some extent, control the evil but cannot, of themselves initiate the good. They are applicable to the general framework, but ought to leave considerable freedom of choice and of initiative in details. Education of the public is needed before there can be any hope for better conditions. It would be well for architects to work towards the education of the public in this matter.

*Cecil S. Burgess.*

## ONTARIO

After a prolonged continental tour, it is difficult for an architect to understand how Toronto fell heir to the title, "The Queen City". When the novelty of being home had worn off, the appearance of the main commercial streets was disappointing. Dreary soot-laden flags attracted the eye above the modernized shop fronts, to rest, with a quiver of disbelief, on the sad pigeon-marked Victorian embellishments on the second and third stories. When the good people of Toronto realized that a Rapid Transit system would shield its patrons from the architectural abortions of a previous era (and some more recent ones as well), would provide an excellent A.R.P. shelter, and, in addition, improve the transportation system it was obvious that the scheme in principle would be acceptable to the majority.

The armchair planners have filled the newspapers with their transportation panaceas. To qualify as an armchair expert one need only possess a wife whose second cousin by marriage once rode on a subway—in the days of his youth. The conflict between the proponents of the Subway vs. those of the Open Cut rages unceasingly. It is the writer's contention that those who object so strongly to the destruction of certain housing units should be made to look at the buildings affected until they developed a jaundiced eye—and that would not take long. No doubt a psychologist could show that a large percentage of the juvenile delinquency is merely a youthful rebellion against such architectural hangovers from our grandfather's hey-day. Those who favour a subway under Yonge Street should be required to help locate several long lost sewers which wander through the city and may never be found until some archaeologist in 3000 A.D. (CIRCA) discovers them while sifting through the ashes of our civilization.

For those actively engaged in the preparation of drawings for a project of this magnitude, the obstacles are legion. Planning must be done on a three, if not a four dimensional basis. Trunk sewers, manholes, high and

low pressure water mains, hydro and telephone ducts and a myriad of local connections form an intricate pattern below the street surface. It is as difficult to get approval on a proposal for a subway station as it is to get a unanimous decision on a controversial question at a U.N.O. Security Council meeting.

Our wife reminds us that, prior to the last municipal elections, we received a letter from a prominent member of the Toronto Chapter strongly recommending a candidate for the Board of Control. We voted for this candidate who was elected by a very slim margin. And now we find this Controller referring to Rapid Transit in most disparaging terms. "Lord preserve me from my friends—I can take care of my enemies".

*A. G. Keith.*

## NEWS FROM HARVARD

*Continued from page 100*

method of financing under the F.H.A. Even the most brief summary of the course here should mention its models which are superb, for this phase of architectural presentation is emphasized, while renderings are kept at a minimum.

Since 1942 the degrees Doctor in Philosophy in Architecture, in Landscape Architecture, and in Regional Planning, have been offered, although I believe there is only one student at present proceeding to his architectural doctorate. A minimum of two years of graduate study, one of which must be spent at Harvard, is required, and a thesis presenting the results of independent research on an approved subject is also an essential requirement. The research may be in design and construction or in historical, scientific and economic problems relating to architecture or the arts allied to architecture.

There is no doubt in my mind that many of the experiments in architectural curricula that are now being made at the Graduate School of Design particularly in the Bachelors course will ultimately have profound effect elsewhere on the continent in the attempt of educators to put architectural education on as sound a base as that of the medical profession.

I hope this information will be of interest to the committee, but should you require any further information please do not hesitate to get in touch with me. Perhaps the greatest thing American architects could learn from us, is to follow our very happy relationship between the Schools of Architecture and the central organization of architects, which is made possible through the Architectural Training Committee.

## OBITUARY

GEORGE ALLEN ROSS, F.R.A.I.C., F.R.I.B.A.  
1879—1946

During the past four decades the energy, the enterprise and character of George Allen Ross made a distinct impression on the architectural, as well as the business development of Canada. Not only the volume of work created by the firm, of which he was the distinguished head, but its variety and high quality contributed greatly to the raising of new building standards, during the expansion of so many widespread communities throughout the land.

The genial manner of his approach, in all circumstances, was well known among his many personal assets.

His friends were numbered in all walks of life and his business connections were wide as they were varied.

In his chosen profession he held a high rank, being honoured as a Fellow by the Royal Architectural Institute of Canada and the Royal Institute of British Architects.

Always of a very healthy and robust appearance, he was an active participant in many forms of sport during his younger days.

He was born in Montreal where he received his early education. After leaving High School he began his professional studies at the M.I.T. in Boston and during his travels abroad attended the Ecole des Beaux Arts in Paris.

After acquiring further experience in the offices of Parker & Thomas, Boston, and Carriere & Hastings in New York, he returned to Montreal where he entered into practice with Mr. D. H. MacFarlane. This connection lasted for seven or eight years during which a large number of important commissions were executed.

Upon the retirement of Mr. MacFarlane, due to ill health, a new partnership was formed with the late Robert H. Macdonald and it was during this period, under the name of Ross & Macdonald, that the firm produced the greater part of its achievements.

The ending of this fruitful career came as a great shock, particularly to his office associates and close acquaintances.

After a very brief illness, George Allen Ross, Architect, died at his home in Montreal on January 21st, 1946.

The untimely passing of this prominent professional personality will be widely regretted.

*J. Roxburgh Smith.*

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## OBITUARY

FRANCIS S. ADAMSON

It is with regret that we have to announce the death of Mr. Francis S. Adamson, who was Deputy City Engineer for the City of Winnipeg, and who passed away Wednesday, March 6th, 1946. Mr. Adamson was an Honorary Member of The Manitoba Association of Architects, which honour was conferred on him for his contribution to the interests of the Association, and the furtherance of engineering and architecture in the City of Winnipeg.

He was born in Nassagaweya, Ontario, and came to Manitoba to study, graduating from the University of Manitoba in 1926. He became designing engineer for the Greater Winnipeg Sanitary district, which position he held until 1939; at this time he was appointed assistant Engineer, and from 1942 until the time of his death he held the position of Deputy City Engineer.

As well as being a member of The Manitoba Association of Architects, he was a member of the Engineering Institute of Canada, and of the Professional Engineers of Manitoba.

*E. Fitz Munn.*

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## PROFESSIONAL COLUMN

Leslie Raymond Fairn, of Wolfville, Nova Scotia, has opened a Branch Office at 41 Argyle Street, Halifax City.

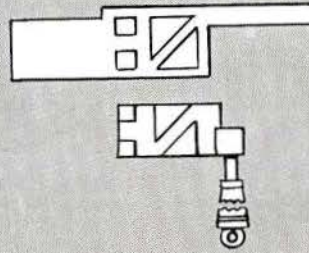
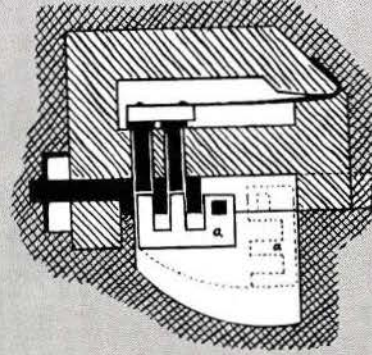
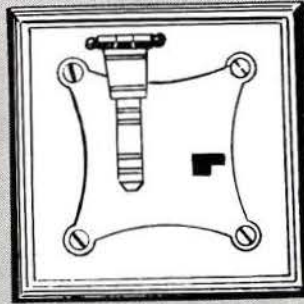
George and Moorhouse, Architects, and John H. Ross, Consulting Engineer, wish to announce that they have moved their offices from 1123 Bay Street to 102 Charles Street West, Toronto.

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## POSITION OPEN

WANTED — Assistant Architect and Inspector of Buildings, City of Edmonton, Alberta. Applications will be received by M. C. Dewar, City Architect and Inspector of Buildings, Edmonton, Alberta. Please state salary expected. Applicant must be a registered Architect in any member society of the Royal Architectural Institute of Canada, or a graduate in Architecture. Duties: To do architectural work on public buildings and to examine plans with applications for building permits, and to administer zoning and building by-laws.

# Speaking of Locks . . .



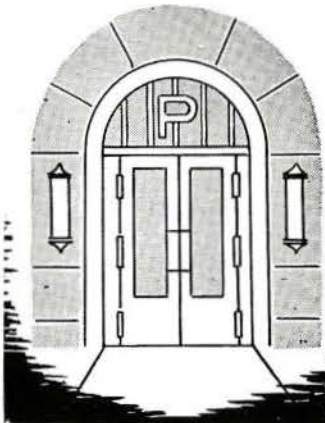
## The Romans had spring in their step . . . and their LOCKS!

WOODEN tumbler locks only stimulated the Romans' imagination. They went into bronze, iron—and springs.

The Romans, experts say, used a spring to press tumblers into the bolt horizontally. The lock could then be used in any required position. This was a big improvement over anything previously put forward in locks.

At Peterborough we have that "Roman urge" towards new materials and efficiency. The fact that people praise the smartness and safety of our locks, handles, hinges and escutcheons, never causes us to cease striving for improvement.

We can now supply sets No. 51770, No. 86770 and others to suit individual requirements.



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