

THE
JOURNAL
ROYAL ARCHITECTURAL
INSTITUTE OF CANADA

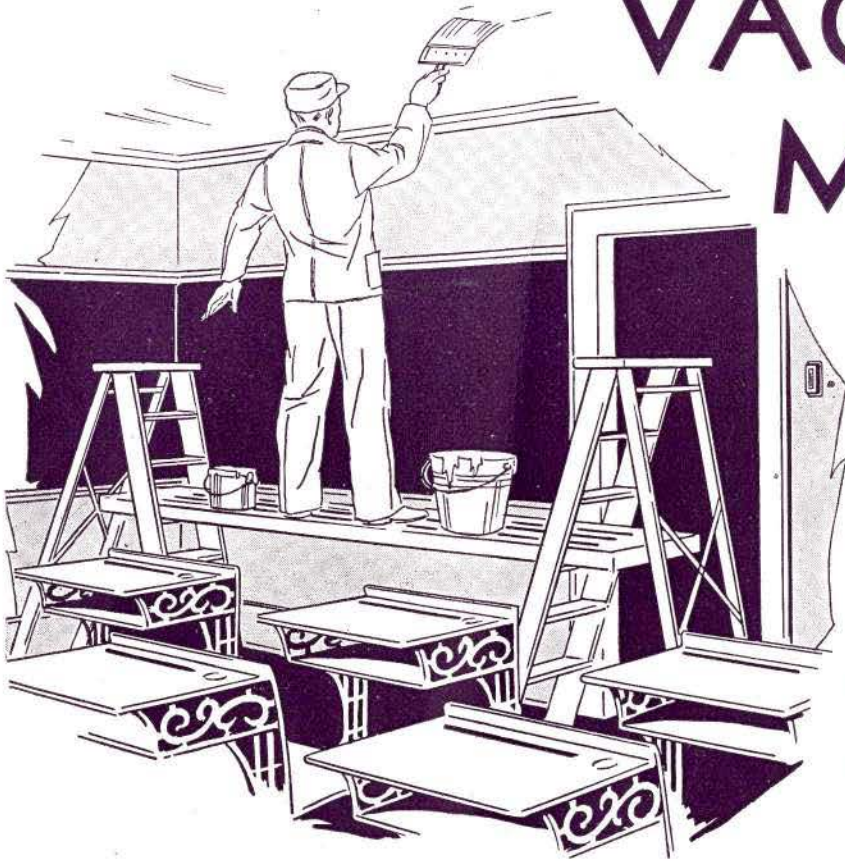


Vol. XII, No. 7

JULY, 1935

TORONTO

DURING the SUMMER VACATION MONTHS



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Check the
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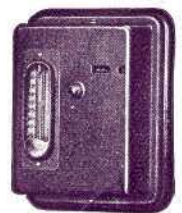
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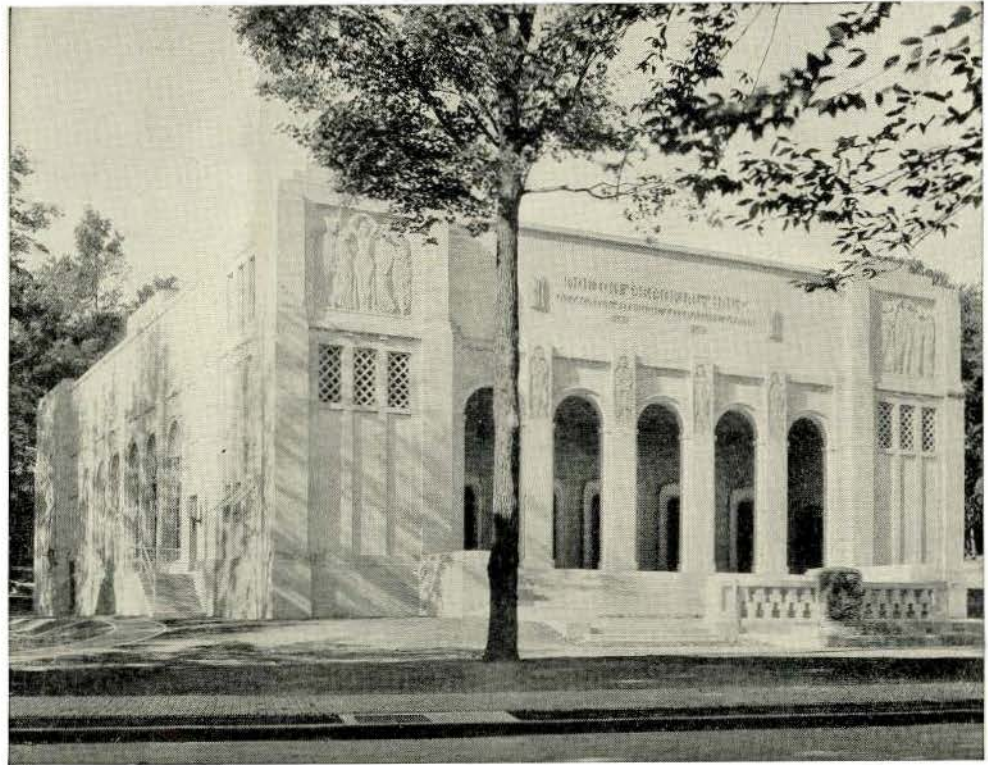
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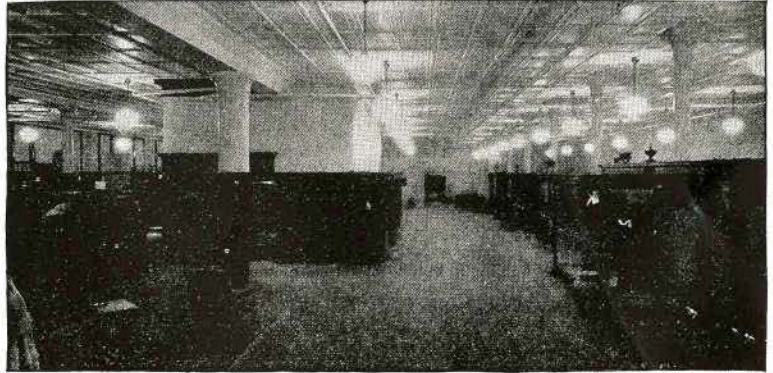
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THE JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

Serial No. 119

TORONTO, JULY, 1935

Vol. XII, No. 7

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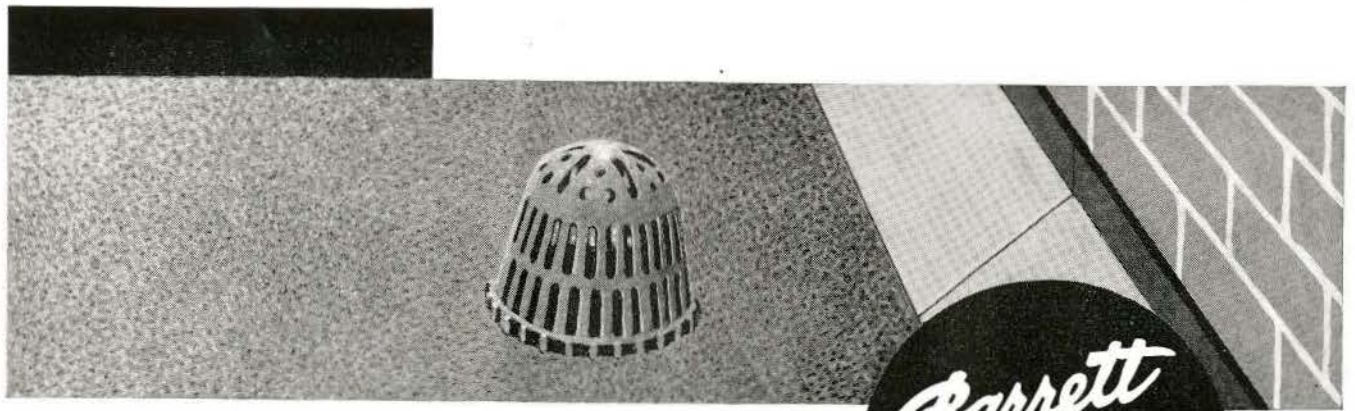
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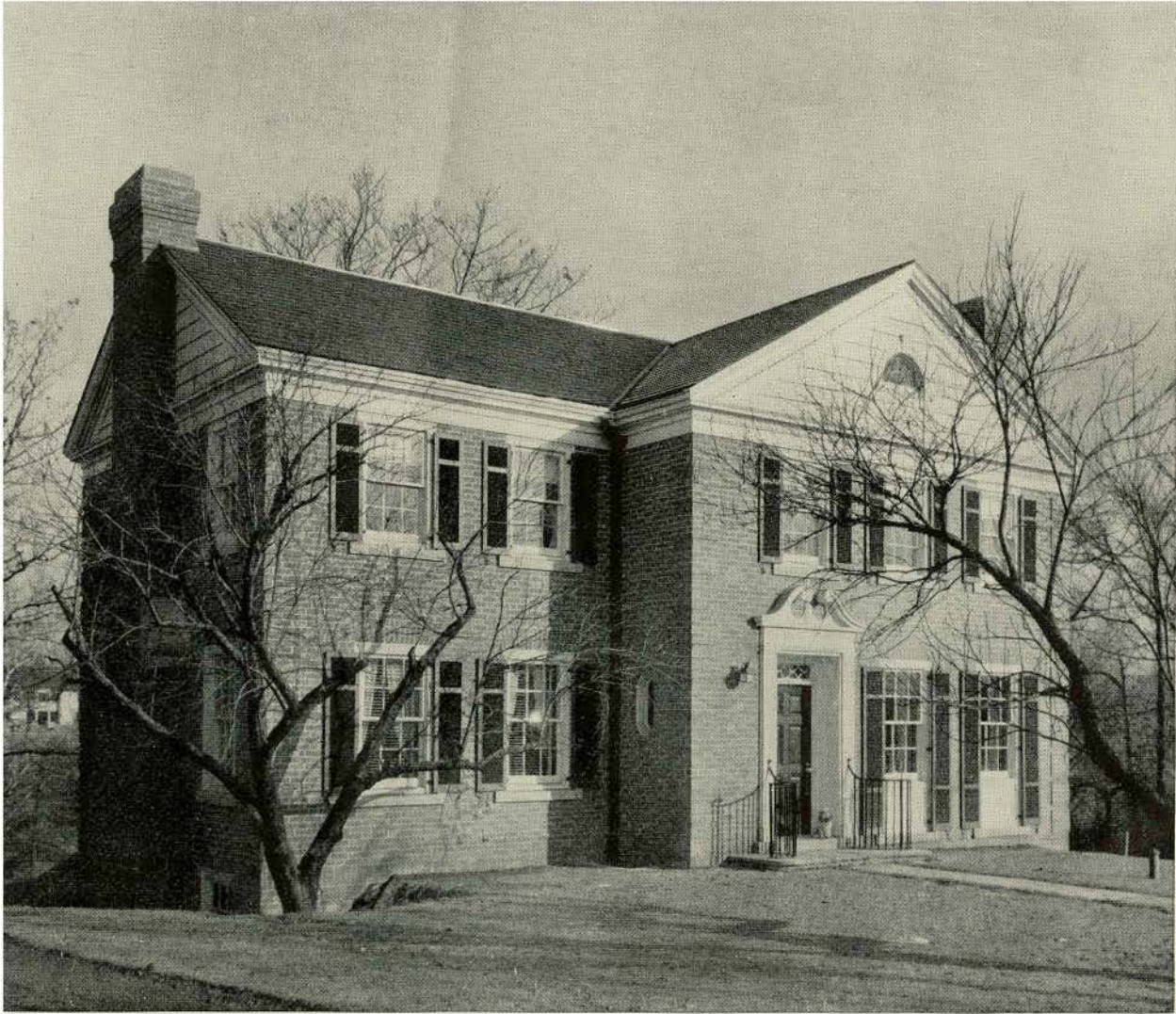
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RESIDENCE OF HERMAN STEPHENS ESQ., CEDARVALE, ONT.

D. E. Kertland, M.R.A.I.C., Architect

R.A.I.C. WELCOMES NEW MEMBERS FROM THE PROVINCE OF ONTARIO

The council and members of the Institute extend cordial greetings to their confreres who, as a result of recent legislation, have joined up with the Ontario Association of Architects and are now members of the R.A.I.C. It is a source of great satisfaction that solidarity has been achieved and a legal status obtained which in its nature corresponds closely with that existing in the other provinces. Our profession is now firmly established in all provinces and the potential power and usefulness of the Institute greatly enhanced.

We have a charter which, as a result of amendments made from time to time, serves our purpose very well. On referring to it one finds the following under the heading "Objects":

"The Objects of the Institute shall be to facilitate the acquirement and interchange of professional knowledge among its members, and more particularly to promote the acquisition of that species of knowledge which has special reference to the profession of architecture, and further to encourage investigation in connection with all branches and departments of knowledge connected with that profession."

This suggests that our activities are very much along idealistic lines followed by learned societies, in fact however, the major part of the council's time is devoted to the solution of problems and the consideration of matters, practical in their nature, which can only be satisfactorily handled by a representative central body.

The extent to which the considerable amount of correspondence and the personal interviews with the Minister of Public Works and others had a bearing on the carrying out of the public works construction programme is difficult to estimate accurately. We do claim our efforts have resulted in a larger part of the \$30,000,000 allocated to public buildings being given to private architects than would have otherwise taken place.

Your Institute took a leading part in the formation of the National Construction Council of Canada on which key organizations such as the Canadian Construction Association, Canadian Manufacturers Association, Engineering Institute of Canada, Trades and Labour Congress of Canada, the Royal Architectural Institute of Canada and other important organizations are represented.

Opinions expressed by this body carry great weight due to the varied and representative nature of its membership. It rendered important service in relation to the public works construction programme, and the splendid and complete briefs on

housing as prepared and presented in Ottawa before the parliamentary committee on housing reflect credit on our Institute representatives who prepared them. It is a satisfaction to record that Mr. Gordon M. West, past president of the R.A.I.C., is now the president of the National Construction Council.

The R.A.I.C. some years ago instituted and conducted a competition open to Canadian schools of architecture, and due to its success, has continued this desirable educational feature. Judgments have been rendered by juries of practising architects, the drawings sent to the competing schools for exhibition, and the winning designs illustrated in the R.A.I.C. JOURNAL, along with the report of the jury.

In the past the Institute has held yearly exhibitions of its members' work alternatively in Toronto and Montreal in conjunction with the Royal Canadian Academy. Awards were given and the photographic enlargements were available for showing elsewhere when desired.

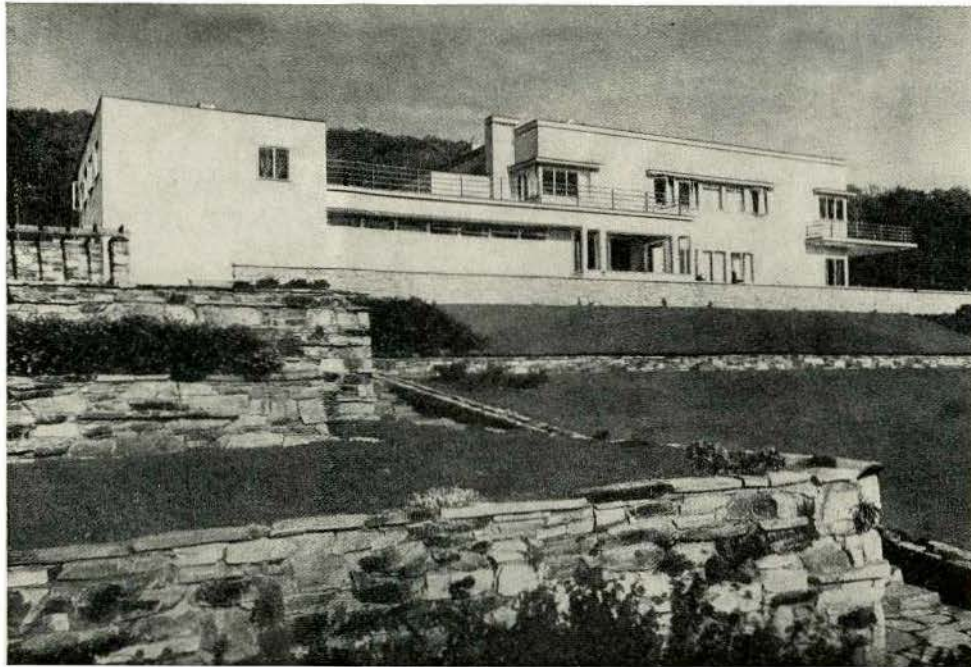
An important activity of value to every practising architect has been the study of service documents by committees of carefully selected experienced architects. This research work has resulted in the production of a series of authoritative practical documents related to contracts, tenders, etc., and copies of these will be forwarded to you by the secretary. Their practical value is evidenced by the Engineering Institute of Canada having been granted the privilege of adopting some of these documents for use by their members.

You will receive regularly the R.A.I.C. JOURNAL, your own magazine, edited by members and devoted primarily to the interests of Canadian architects. It will keep you well posted on Institute activities and cover contemporary worth while work in its articles and illustrations.

The R.A.I.C. is highly gratified by the consolidation of the profession achieved in Ontario. Your position is strengthened and your interests will be guarded and furthered by the unity thus achieved.

It can now be said that the profession in Canada is organized in a truly nation-wide sense, and the influence of the Institute greatly strengthened. Although its contacts are essentially with its affiliated provincial associations, I feel sure that every member of the Institute is greatly pleased to welcome you as a member, and your council and its president cordially join in this greeting.

(Signed) W. S. MAXWELL, F.R.A.I.C.
President, Royal Architectural Institute of Canada



RESIDENCE IN TAUNUS, GERMANY

Prof. Dr. Peter Behrens, Architect

Note the domination of horizontal lines and the horizontal extension of masses, also the receding terraces and the doric expression of grandeur and generous cordiality.

THE MODERN TREND IN DOMESTIC ARCHITECTURE

BY EMILE VENNE, M.R.A.I.C.

Architecte diplômé par le Gouvernement français. Professor of Architecture—Ecole des Beaux-Arts, Montreal

WHAT architects ought to be? Custodians of the past or conquerors of the future? Copyists or . . . architects?

Domestic architecture is absolutely and constantly confronted with facts, material and spiritual. As civilization progresses or modifies, the house of man must progress and modify to adapt itself to actual life, and not to any old worn romance of the past. The primitive shelters of the cave-men have disappeared, and now the house, as the essential instrument of life, must be a home. This is civilization. That instrument must be perfect; materially, affording all of the comfort and ease present means can provide; spiritually, impressive of good feeling, enlightening.

Modern domestic architecture aims at the realization of homes adapted to every racial temperament, in keeping with what is general to all humans. Though it spreads all over the world today, it has not burst out like a torrent of lava. It is the actual end of the road tradition, creative tradition has trailed up to now.

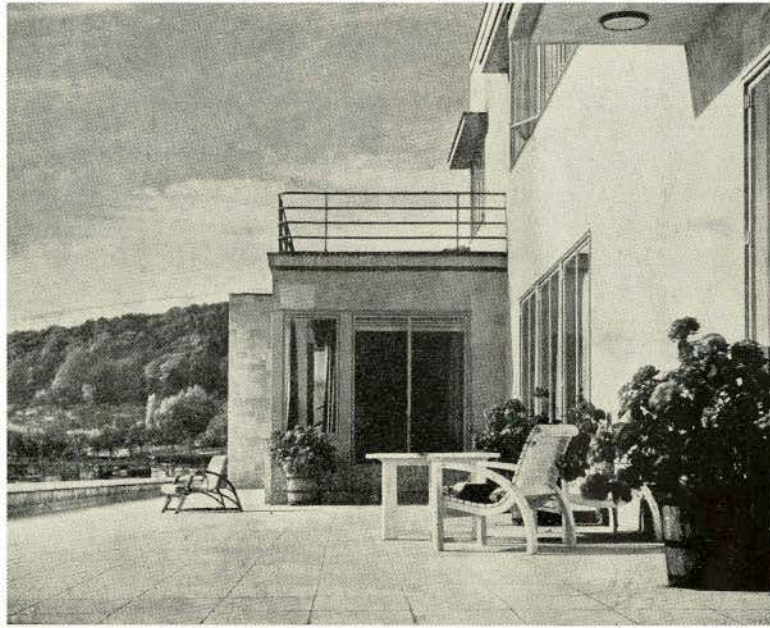
The word "modern" has always been attached to the works and experiments of those who create or crave for continuous progression, invent new methods and perfect the older ones. Exploring in

every direction, some may fall into blunders. We call them fools. It has always been so. Oftentimes they attain success, open new routes. We call them geniuses. Socrates was a modernist, he was compelled to drink the hemlock cup. When a man essays a new path, the majority of his contemporaries consider him foolish and it is the same with architecture. Ideas impose themselves only when success is achieved. Men in general are not quick to apprehend new thoughts. When one appears and wins, it is because older ones have been worn out.

So, to understand the actual trend of modern domestic architecture, I think it is not useless to give a little attention to the development of its spirit, which has now established itself after an arduous trial.

* * * *

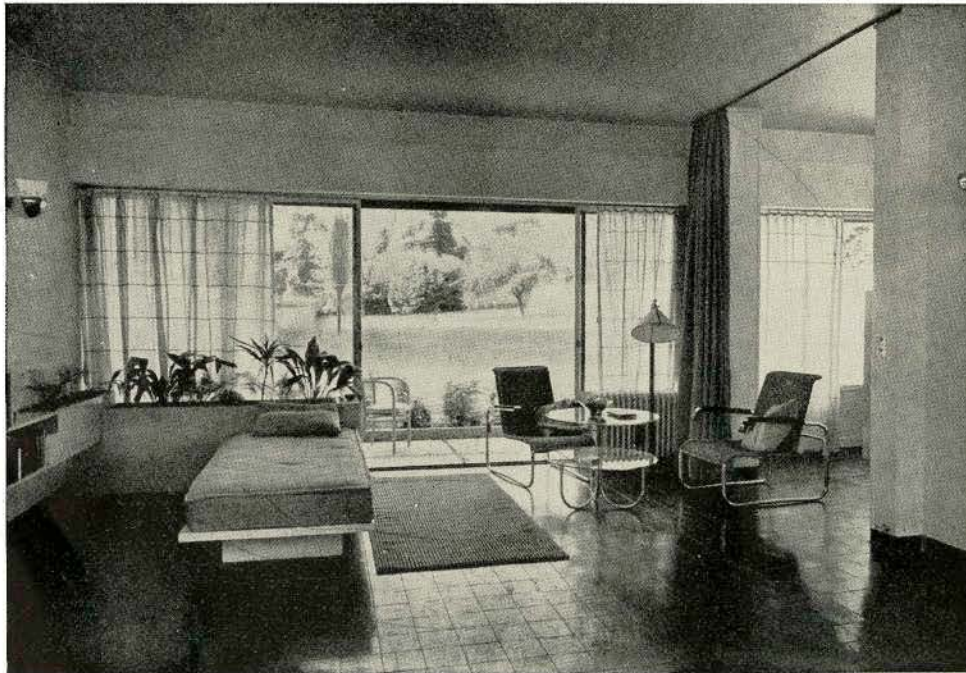
Since the early days of the so-called Renaissance—which was a kind of reaction of modernism, because modernism always seems a reaction—owing to successive, and oft-times quite radical, modifications in social ideals and conditions of living in Europe, domestic architecture had a hard time keeping pace with civilization, continually changing mentalities, and new discoveries. For modern times began three centuries ago. Following



TERRACE—RESIDENCE IN TAUNUS, GERMANY

Prof. Dr. Peter Behrens, Architect

All simple, rational forms. No ornament but still highly decorative by the single play of light and shadow.



LIVING ROOM—RESIDENCE IN VILLE D'AVRAY, FRANCE

André Lurçat, Architect

Note how the garden provides the decoration of the room; also how neat and clear it is and how easy to keep clean.

the downfall of feudalism, mankind was confronted with the problem of re-organizing life upon a new basis. Architects were often foiled by the terrific rapidity of social shifts as well as by the speedily succeeding inventions.

Lend a few moments to a rapid perusal of house plans since the 15th century up to the 19th. Then examine the plan of a house of today reproduced on page 111. You will realize the conquests made "socially". It is sufficient to remark that the openness, the airy and enlightened ordering of the rooms, makes for an easier and much more agreeable life. It prepares you to understand that a workman can nowadays possess a car of his own whilst horse and carriage were the lot of the wealthy alone, not even a century past. And so we can say with Le Corbusier "a new era has begun; a new ideal exists."

But, if the plans were developed to respond to civilization, the forms were more and more derived from the past as we approached our epoch. Renaissance aimed at a revival of classic architecture derived from Vitruvius. Afterwards under the influence of the Italian artists of the cinquecento, architects began to use their initiative. Such an ideal was bound to have disastrous results. A very serious attempt in the 18th century succeeded in creating very livable houses, perfectly adapted to social conditions of the time. Then came the French Revolution, and general revolution in Europe—for periods of war are periods of revolution. At the beginning of the 19th century, nothing very much worth while was achieved. Then came the revelation of Greek architecture and of the Mediterranean world. The 19th century architects were deluged with innumerable documents showing forms, seemingly "new" because unknown until then.

A score of new inventions was amazing the world: steamboats, machines, gas, electric light, automobiles, and what not? New materials came to notice: steel, ceramics, reinforced concrete, glass in large sizes, etc., etc. New means, new needs. But forms, in architecture, as well as ideas have to be worn out to be discarded. The 19th century, in an apparent frenzy to create, was merely wearing out the old forms and preparing the new era.

There were in France, Germany, Switzerland, Belgium, England, Holland, and to a smaller extent in Italy, numerous experiments: neo-romanesque, neo-gothic, neo-renaissance, neo-roman, neo-greek, etc. Never so great a confusion reigned, for all these forms looked awkward with machines of the day, and the prevailing conceptions of life. Architecture had become a problem of decoration.

Viollet-le-Duc, in the introduction to his Dictionary of Architecture wrote: "If there is any art, which is a slave to reason and common sense, it is architecture. Its fundamental laws are the same

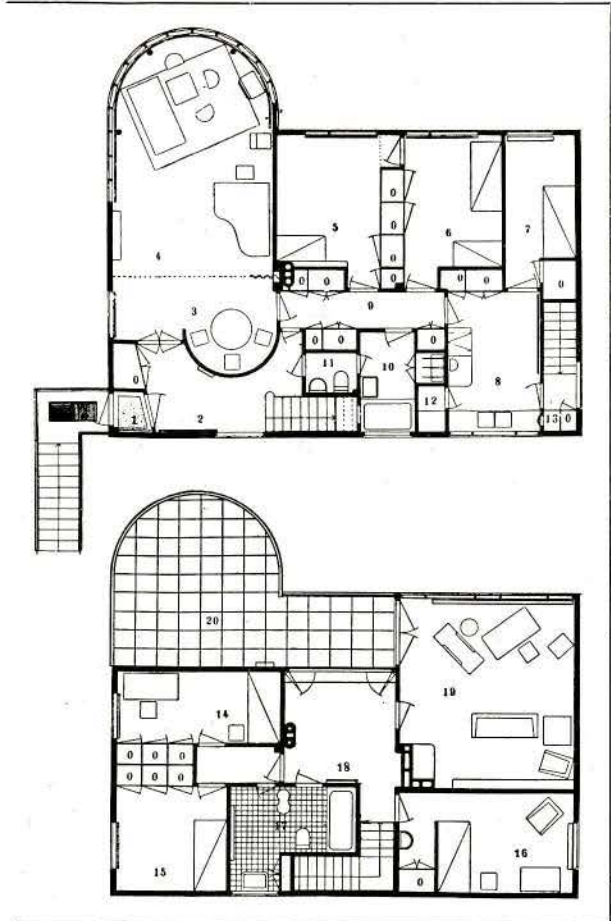
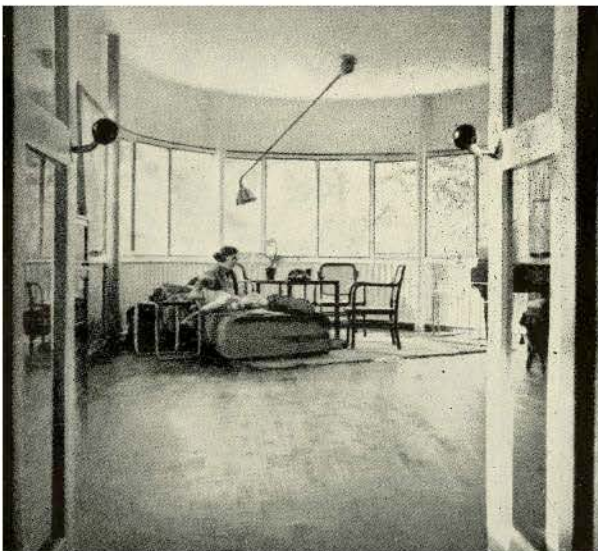
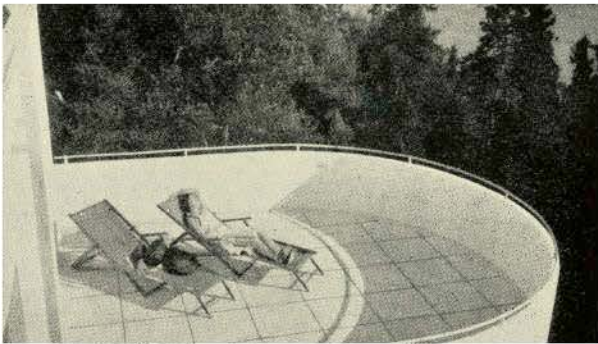
in every country and in all periods: the first condition of good taste in architecture is to obey these laws . . . There are two things one has to consider when studying art, the knowledge of the creative principle, and the choice in the created work. The principle of architecture is a constant submission of forms to habits and customs, to the ideas of the moment, the harmony between garment and body, and a continuous progress . . . If we build a new house let us learn to express our own thought, and not repeat what others have said before."

An interesting and reasonable proposition. Up-to-date also. Still, the house problem which is to build homes, was not clearly enunciated. A thorough re-organization was desirable, every point of the problem had to be re-considered. Designers and draughtsmen were virtuosi. Instead of investigating, they invented decorations. Decorative art overwhelmed architecture. It resulted in *L'Art Nouveau*. Concurrently, around 1900, so-called pure traditionalists still practised old forms of decoration. Then reigned virtuosity of copy, and virtuosity for its own sake.

The artists of *L'Art Nouveau* were anxious for a change. Wood, iron, glass, metals, and even stone, were tortured in unusual fashions. Imagination ran wild. *L'Art Nouveau* claimed the rights of logic in architecture and arts in general, but did not practice its theories for it was purely imaginative. It could not last long. It did not. However, it was a blow to traditional "morals" of architecture. Artists, architects and everyone else felt that art had to go back to its fundamental basis: reason and logic first. It was evident that the problem of the house had to be re-considered and re-solved first by intelligence, for the house of past generations appeared inadequate, impractical and unsuitable.

The old houses with large rooms were costly to live in and required many servants. They had fireplaces but the rooms could not be well heated. Modern appliances, such as hot water heating, and all the instruments invented to render life easier and more economical could not easily adapt themselves to such houses. Requirements of hygiene could not be well satisfied. Windows appeared relatively small and uneasy to handle. Dust and microbes crawled and accumulated in carved details and intricate mouldings as well as under and behind cumbersome furniture. It had no suppleness.

The modern house should have all the facilities and give all the comfort science and industry have made possible. It should re-solve the problem of furniture; providing cupboards, closets, cabinets, etc., built in with the house, so that only tables, chairs and beds are necessary, thereby providing larger spaces which can be utilized for circulation. In this way the cleaning of the house would be



First Floor Plan

- | | |
|---------------------------|-------------------|
| 0. Coat Room and Cupboard | 7. Maid's Bedroom |
| 1. Vestibule | 8. Kitchen |
| 2. Hall | 9. Corridor |
| 3. Dining Room | 10. Bathroom |
| 4. Living Room | 11. W.C.'s |
| 5. Children's Bedroom | 12. Wine Cellar |
| 6. Children's Bedroom | 13. Pantry |

Second Floor Plan

- | | |
|--------------------|-------------|
| 14. Master Bedroom | 18. Hall |
| 15. Master Bedroom | 19. Studio |
| 16. Guest Room | 20. Terrace |
| 17. Bathroom | |

Illustrations

- Top—Elevation from the south
 Centre—Terrace
 Bottom—Living Room

RESIDENCE IN STOCKHOLM, SWEDEN

Sven Markelius, Architect

This house is built entirely of concrete. It is worth noting that Sweden has as much snow as Canada.

facilitated and servants need not be so numerous. A single maid, without wearing herself to death could easily manage and keep spick and span the little house shown on page 111. Even without a maid it would not be a drudgery. This is the new ideal of modern design. It suppresses all useless circulations, and does not double rooms as when the living room was secluded from the dining room by a heavy partition. You can close your dining room by a flying partition, if you want, or have it as large as the living room and itself, or, when dinner is finished you can enlarge the living room. Bed rooms well oriented need no more space than reasonable to provide sufficient air and light. Economy of space, well proportioned and partitioned is a desirable feature, so that those parts of the house where life is more continuous, are at their best and as large as the house itself will permit.

Modern theories consider also that if a certain site is chosen to build a home, it is because it has charm. Therefore, when inside, the more you can profit by and enjoy the pleasure of the outside, the happier can be your home. Why place on the walls a painted landscape, when you can have the advantage, through translucent walls, of the joys always different played by the varying modulations of the light over the trees of your garden? Draw into your living rooms the varied graces of the landscape you like. In old houses, you had to look through small windows, let us open the whole wall, and forget they seclude us (see illustration on page 109). You live in luminosity, you feel the breeze. If you prefer seclusion, how easy it is to draw the curtains.

Really, new principles are not involved. Architecture is too old to know of principles hitherto unknown. But the actual trend is to effect a thorough application of them. It has been made possible by new materials or a better understanding of older ones.

Strikingly superficial decorations have mostly been suppressed. M. J. J. Oud,¹ a Holland architect, explains why "The decadency of manual workmanship is synonymous of the decadency of details." Machines forced it upon us. But machine-work cannot have the delicacy, the refinement, the variety, the personal characteristics of execution so lovely in ancient works. Previous abuse of ornaments has forced a severe diet. Architecture ought to please only by the harmony of the ensemble and quality of proportions. Beauty must be gained solely through the graceful play of lines, volumes and forces. Then the material takes on importance and has a capital value. In his choice, the artist will consider and take note of all the possibilities afforded by existing techniques, utilize new materials created by the industry of man and which, more than the ancient ones, lend themselves to the exigencies of his imagination.

Iron, glass, reinforced concrete, aluminium, monel metal, in fact all metals, all forms of glass and glassware, etc., are not only materials we can use, but they also command new forms and demand an aesthetic treatment appropriate to their special qualities.

Up to the present time, iron and steel have not been appropriately used. The merit of construction where iron is used as the essential element, is in accentuating lightness, the voids and not the solids. And so we have large, very large windows. Openings frankly opposed to solid walls. With large glazed elements, construction can gain more lightness, more grace and more light.

Concrete has possibilities so large that they cannot be entirely defined. It is a first class material lending itself with grace to any fancy and controlled at liberty by calculus. Large plain surfaces are rendered possible, as well as horizontal extensions of masses.

New colouring compounds and processes permit stucco and concrete to be given beautiful colourations that will be of importance in future construction.

All this will lead to the architecture of tomorrow, as visualized by M. J. J. Oud¹. "It is to be a rational expression of life, utilitarian, to satisfy needs of order, of light, and of harmony. New techniques will be used; purity of lines and sincerity of forms will be sought. Materials will not be tricky. The result: 'Limpidity of glass, beautiful finishes and smoothness of surfaces, scintillations of metals, and brilliancy of colours'."

* * * *

Throughout Europe, logical and rational domestic architecture develops itself. For a time, and still at present, in Germany the tendency has been to simplify rather severely. In France and Belgium, with the same aim at simplicity there sometimes appears, as in the works of Süe, Perret—if not so often in those of Mallet-Stevens, Lurçat or Le Corbusier—a touch of the 18th century's gracefulness. In that century the purity of form was fairly well understood. Some of the best modern houses and villas in England, also have something relating to previous centuries. Italian architects, living amidst a tremendous number of archaeological souvenirs, have always found difficulty to follow modernism. However, in cities like Turin and Milan, where remnants of classic ages are less prevalent, modern simplicity has achieved beautiful works. In the Netherlands and Scandinavia, modern architecture, practised with enthusiasm, has known of many beautiful realizations, and also exaggerated blunders.

¹Cf. *L'Architecture vivante 1924*. Notes by Jean Badovici after J. J. Oud for these paragraphs.

One special feature of present day houses in Europe, must be stressed. Not only have they been built for added comfort, but their construction has been made possible through the facilities provided by reinforced concrete. Old sloping roofs—with all their unutilized, or if utilized, uncomfortable underneath spaces, good for “rookeries” or the like, but not good for men—have disappeared. Terraces in the present day house might not seem so romancefully graceful at first to eyes full of Georgian or Colonial gables, but they are by far much more rational today. They furnish large, useful and agreeable extra spaces to the dweller and provide the possibility of enjoying a suspended garden, a solarium, or a gymnasium in the open, giving one full benefit of the sun, fresh air and the charm of the chosen site of construction.

* * * *

And aesthetically? Purity of well proportioned, harmonious masses, sincerity of materials used within their possibilities, lightness and strength. It is none else than the ideal of simplicity which was realized in the Greek Doric architecture of the Parthenon. This, we know, was a temple. Architects of today do not think of copying any of the architecture of the past in their formal expression, but as they decided to take as first basis, logic and reason, they were bound to have

the same aim as that of the Athenians. Did not Plato write over the door of his academy: “Let no one enter here who does not know geometry.” We must not be surprised to find in our epoch such an ideal in domestic architecture. Man has won liberties. In ancient times he was simply a servant of the state. Maybe he is still so, but his wish is rather that the state be a servant to him. And so the house tends to garb itself in the pure beauty achieved by the men who, twenty-four centuries ago, were more like us, scientific, rational mathematicians.

While at present we do not find complete perfection in modern domestic architecture, the underlying will that governs it, will be noticed in looking at the illustrations accompanying this article. Much more could be said without exhausting the subject. Let us conclude in saying that the logical, the rational, the utilitarian, the naked architecture of modern houses needs to be perfect to know the caress of an achæan touch: just the amount of flourish, Ictinus and Pheidias added to the Parthenon. Modern homes will then be the treasures of life. Presently, they will become beautiful, for man is not only intelligent but he also has a heart, which must be satisfied, for complete happiness. Half of the problem is solved, the other half waits. Here is work for real architects.

CIRCUMSPICE

BUILDING SPECULATIONS

“The effect of a lobster supper upon the poet or the artist can be lost in obscurity on the bookshelves or in the cellars of the picture-gallery, but for the architect it stands aloft to irritate or stimulate mankind for many generations.”—*Sir Josiah Stamp.*

Worn out by intellectual toil,
A Greek feels faint. He thinks, “That’s funny;
It can’t have been the olive-oil,
It must have been the tunny.”
Pulling himself together, he works on—
And Athens presently achieves the Parthenon.

A Pharaoh, floating down the Nile
From a successful hunting-party
At which he killed a crocodile,
Consumes a somewhat hearty
Luncheon of pomegranates and cold roast kid—
And Egypt has to build another Pyramid.

A midnight dish of devilled bones,
Washed down by some pre-Christian fluid;
A dawn saluted by the groans
Of a dyspeptic Druid—
And lo! there rises over Salisbury Plain
Stonehenge—a mystery man has sought to solve
in vain.

Yes, it is true. The Arch, the quoin,
The buttress, the machicolation—
Whether the stable wing should join
The eastern elevation—
These are determined not by the T-square
But by the question how a person dined, and where.

The masterpieces by which men
Achieved their family escutcheons—
The reputation of a Wren,
The progress of a Lutyens—
Are traceable to accidents of diet
And sleep made horrible by dreams—or nice and
quiet.

And if by chance you wish to know
The origin and rayson daytrer
Of “Sunnyside” or “Mon Repos,”
Call on the local caterer,
Since he no doubt can shed a lot of light
On what the speculative builder eats at night.

Reprinted from May 8th Issue of “Punch.”



RESIDENCE OF D. S. McMASTER, ESQ., MONTREAL, P.Q.
H. L. Fetherstonhaugh, M.R.A.I.C., Architect



RESIDENCE ON ST. CATHERINE ROAD, OUTREMONT, P.Q.
Henri S. Labelle, M.R.A.I.C., Architect

MODERN PLANNING, EQUIPMENT AND FINISH FOR THE KITCHEN

BY B. EVAN PARRY, F.R.A.I.C.

CIRCUMSPICE," in the June issue of this JOURNAL referred to Wren, but it is to be regretted that he did not give us the phrase to be seen inscribed over Sir Christopher Wren's grave: "Lector Si Monumentum Requiris Circumspice" the free translation of which may be taken as "Reader if you seek a monument, look around you."

However, the principle involved in this article is to look around and in doing so one finds that a competition was recently held in the U.S.A. for a residence suitable for Mr. and Mrs. Bliss and family. The Jury included Messrs. Saarinen, Walker, Killam, and Roy Kelley, all distinguished members of the architectural profession and resident "south of the line."

These gentlemen, with other members of the Jury, judged the designs submitted on the following premisses as being essentials of the modern home.

1. *Practical design*—Cheaper to build because of emphasis on space use.
2. *No waste space*—80% to 85% of area should be usable.
3. *Simplicity*—Cornices and traditional mouldings eliminated.
4. *Outdoor living*—Provision of terraces for outdoor dining, relaxation, and living.
5. *Garage part of house*—Garage close to street, easy to get in and out of, no lot space wasted, easy access to and from house.
6. *More wall space*—Windows and doors placed scientifically.
7. *Dining room*—A good sized dining alcove to replace the old fashioned dining room.
8. *Completely equipped kitchen*—The kitchen should be arranged for the "use sequence" of equipment in the preparation and serving of meals.
9. *No "Traffic lights"*—Passage from one room to another with the fewest possible steps, and tripping over furniture or disturbing other people eliminated.
10. *Air conditioned*—Automatic control of temperature, humidity, and circulation, also filtered air.
11. *Planned wiring and lighting*—Scientifically planned lighting and conveniently placed labour saving equipment.

If these essentials can be accepted, and it is suggested that they can be in some measure, one or two may serve as the text for this article.

PLANNED WIRING AND LIGHTING

Lighting remained dim and inadequate for centuries, and many of the well known forms of fixtures in use today were created around feeble light sources, and established the kind of lighting which was commonly thought desirable, and had much to do with the impression of how much, or rather how little, light was needed to see regardless of age or the kind or duration of eye work, the degree of eye defectiveness, or the tax imposed upon the human resources.

As we can no longer afford to design new houses which carelessly and ineffectually use space, which affect mannerisms of ages past and which depend upon ornamental treatment to offset inherent design weakness, we likewise should no longer live with lighting having similar traditional weaknesses.

The value of conserving wasted human resources as well as the conserving of vision may be expected to take precedence over forms of appraisal which are based upon "dim effects," ornateness of fixtures and portable lamps, and similar factors.

There are now simple direct-reading light-measuring devices with which the values of the light in every part of the house may be checked. These are becoming more widely available throughout the Dominion for the checking of the individual home, a service being offered by local utility companies.

By way of example of wiring for present day equipment, the modern kitchen may be cited *i.e.*:
Electric refrigerator outlet.

Food preparation centre—Duplex convenience outlet above work top for mixing machine, or other portable appliances with optional outlet for soffit light with switch.

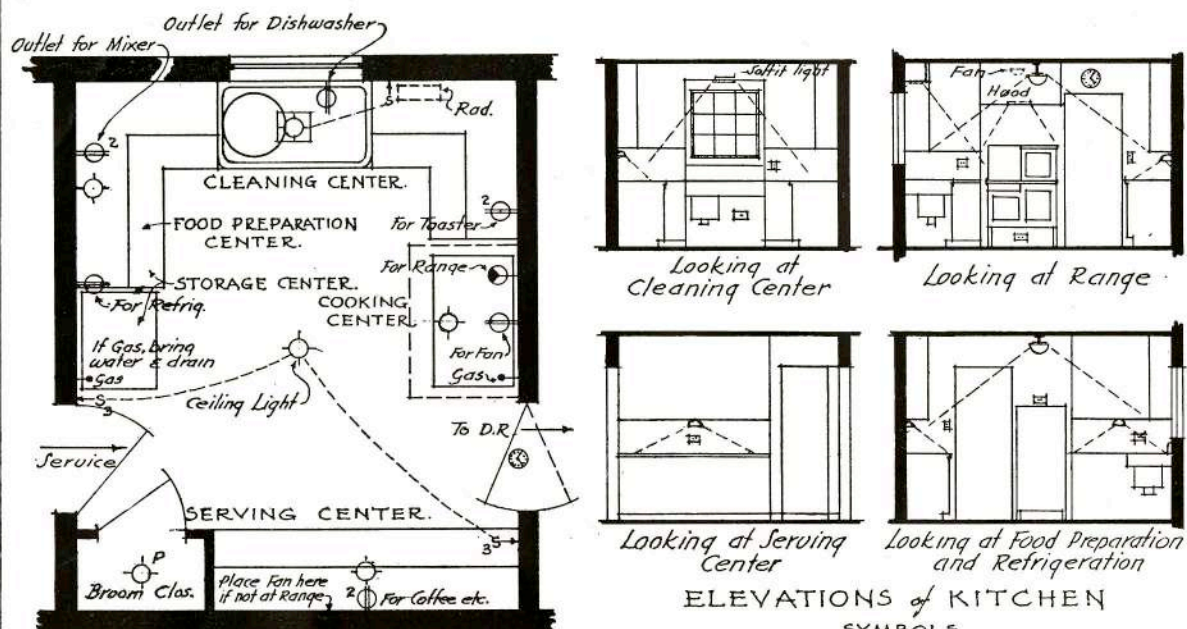
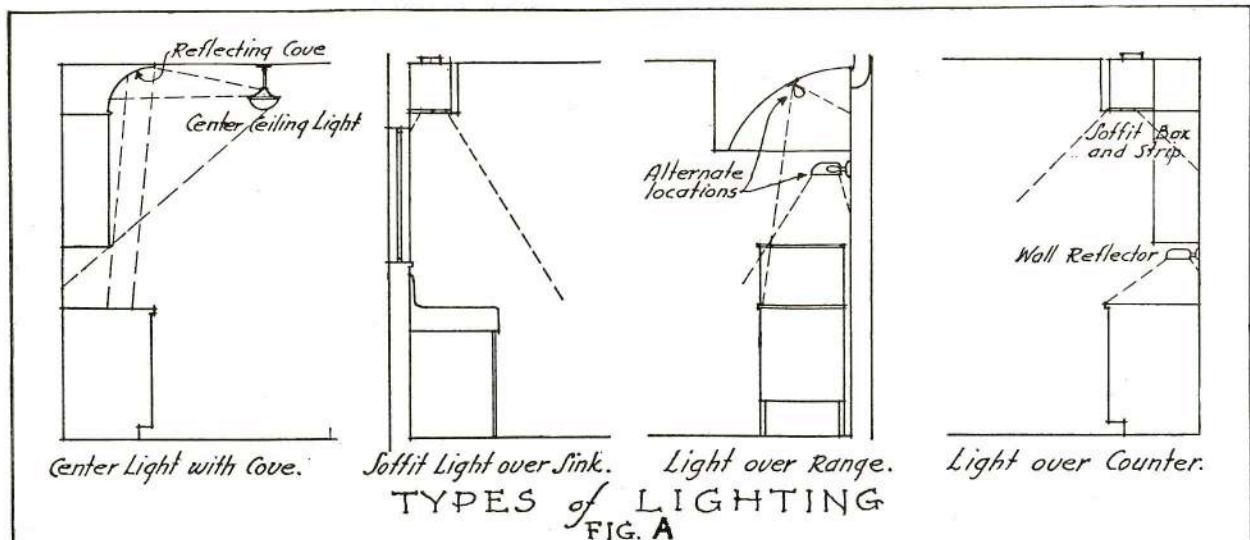
Cleaning centre—Outlet for soffit or wall lighting with outlet below sink for dishwasher.

Cooking centre—Duplex convenience outlet for toasters, percolators, waffle irons, etc., on separate circuit to prevent overloading. Range wiring outlet of special type on separate power circuit. Light over range with switch, ventilating fan outlet with switch and electric clock outlet.

Serving centre—Duplex convenience outlet for miscellaneous appliances.

Pantry—Duplex convenience outlet for portable cooking appliances. Outlet for light over sink, outlet for special equipment.

General lighting—Ceiling fixtures with three-way switches at service entrance and dining room or pantry door. Ceiling fixture in pantry,

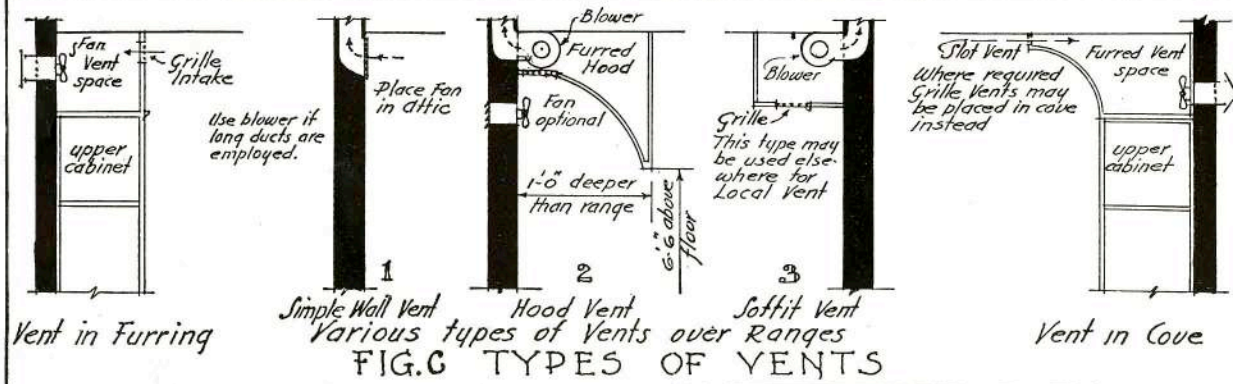


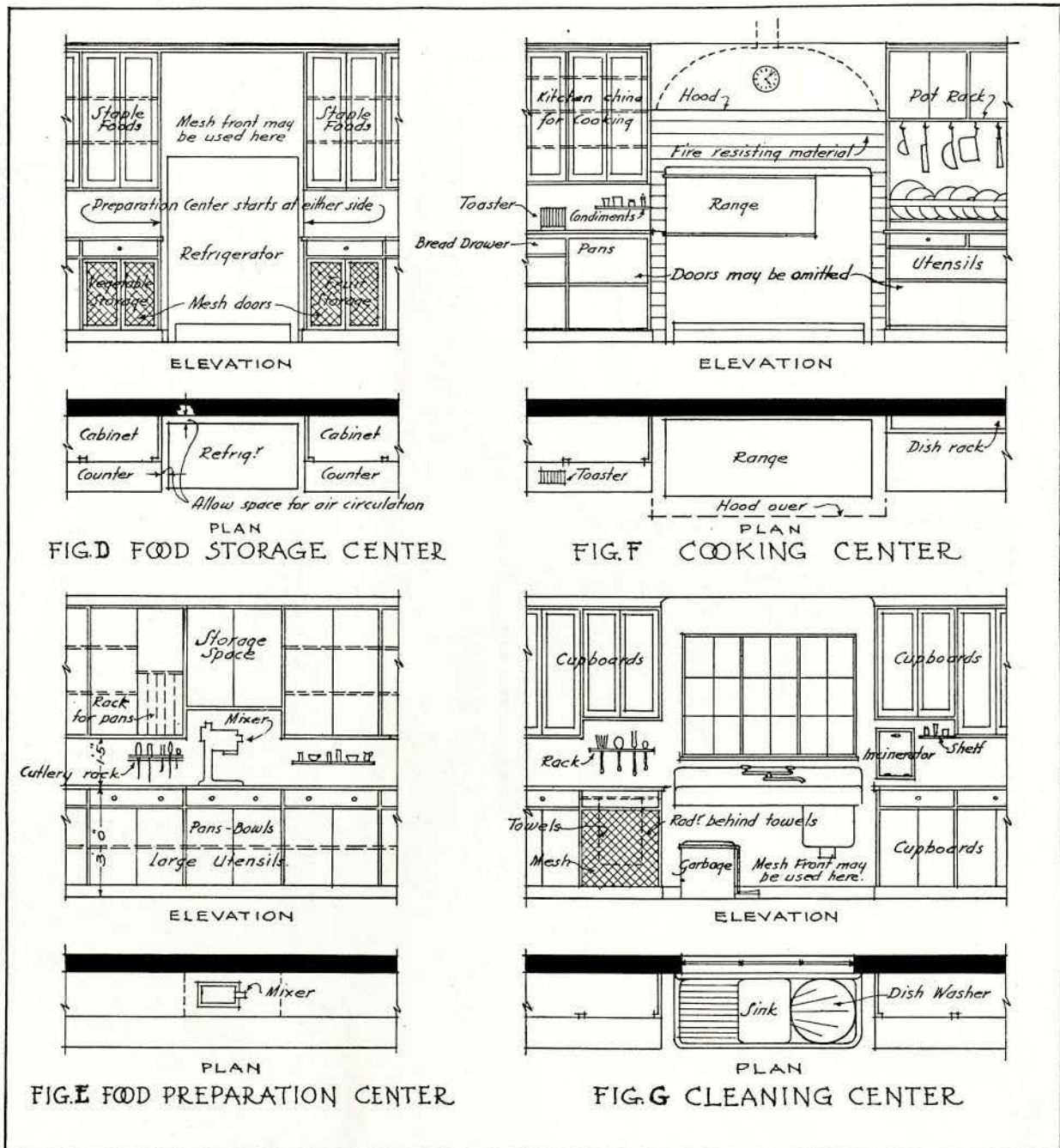
PLAN of KITCHEN

Fig. B

- SYMBOLS
- ⊙ Ceiling Light
 - ⊗ Wall outlet
 - ⊕ Switch
 - ⊖ Power Outlet
 - ⌚ clock
 - P Pull chain
 - ⊠ Soffit Reflector

DISPOSITION of SERVICE CONNECTIONS in RELATION TO THE FOUR MAJOR WORKING CENTERS





with three-way switches at kitchen and dining room doors.

(See figures A, B and C for types of lighting, disposition of service connections and types of vents.)

A telephone in the kitchen is a time-saving convenience, and should be placed near the range or at the preparation centre.

Bell calls for front and rear doors and a servants' annunciator or dining room buzzer should be placed in the kitchen or pantry. There are kitchen specialists who recommend a small radio receiver for the kitchen, claiming that the ability to hear favourite programmes lightens routine labour and makes for contentment.

Dr. Herman N. Bundesen of Chicago, Commissioner of Health, has urged everyone to use ultra-violet light in the home. This advice is endorsed by many other eminent public health officials. Therefore it behooves architects to provide for the necessary outlet for the sun lamp, fixed or portable, in the bath room, bed rooms, and possibly the children's play room.

PLUMBING AND HEATING

Hot water heating equipment should provide a water temperature of at least 160° F. for dishwashers.

The proper location of the sink and dishwasher in the kitchen and pantry is more important than the slight economies that might be made by com-

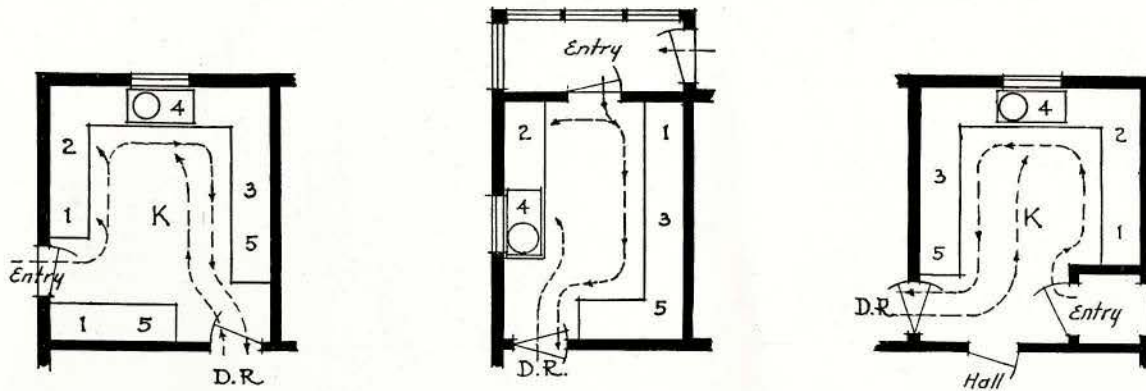


FIG. H TYPICAL KITCHENS WITHOUT PANTRIES

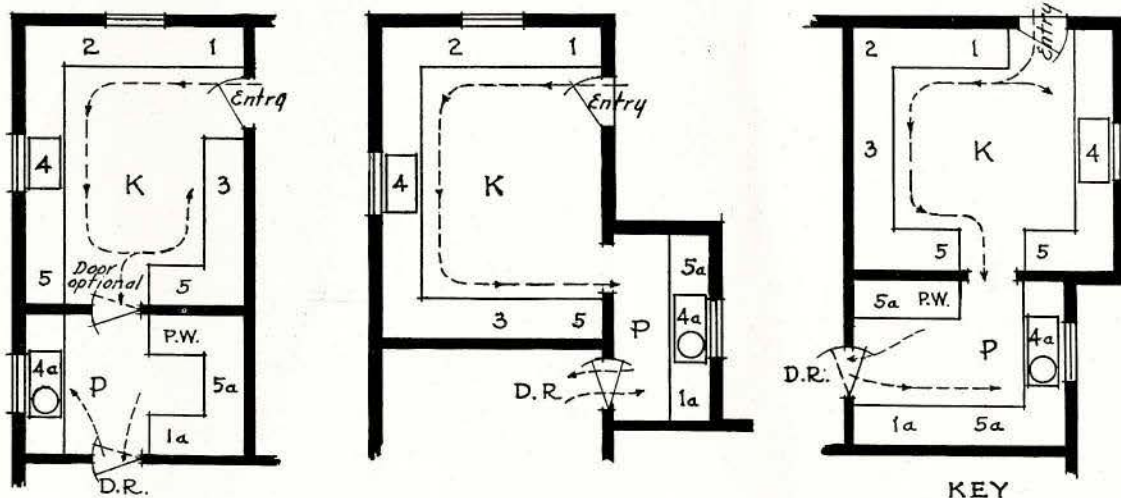


FIG. I TYPICAL KITCHENS WITH PANTRIES

- KEY
- 1 & 1a Food Storage Center
 - 2 Preparation Center
 - 3 Cooking Center
 - 4 & 4a Cleaning Center
 - 5 & 5a Serving Center
 - K Kitchen
 - P Pantry
 - P.W. Plate Warmer
 - D.R. Dining Room

binning the drainage line and vent with lines serving bath rooms and other units.

The heating radiator should not be located beneath the sink unless a duct is provided to carry the warmed air away from the operator working at the sink. A suggested location is at the back of a towel dryer located in a vented cabinet at either side of the sink.

Forced circulation to hot water heating system is interesting because of the development in piping methods and the use of special mechanical equipment. The "gravity" hot water heating system was the original but the system today which is designed to have mechanical circulation is as far ahead of its sluggish predecessor as the motor

car would be ahead of the ancient "velocipede".

The development of this system has made it possible to broaden the function of the heating plant beyond the mere heating of the building. The added function is the supply of domestic hot water for the home and this function can be performed the year round.

It may be thought to be inefficient to operate a heating boiler solely to furnish a comparatively small quantity of domestic hot water during the summer months, but such is not the case. Minimizing of stand-by losses is taken care of in design.

COMPLETELY EQUIPPED KITCHEN

"Use sequence" previously referred to can be defined when applied to kitchen operations and

equipment as follows: (a) receiving supplies; (b) storing supplies in cabinets or refrigerators; (c) preparing and mixing foods; (d) cooking; (e) serving; (f) cleaning up; and (g) restoring dishes and foods.

Kitchen equipment should be organized into work centres, each equipped to perform its functions efficiently. These work centres are shown in figures D, E, F and G.

A good arrangement of work centres is in the following sequence: Food storage centre, near the service entrance. The storage centre should be part of or adjacent to the food preparation centre. Since water is needed both for food preparation and cooking, the sink may well be placed near to the preparing centre, and the range beyond the sink. Work space between sink and range is advantageous for secondary cooking, with appliances such as electric toasters, waffle irons and percolators, and to provide clear space on which to place hot dishes removed from the range. The serving centre should be adjacent to the door to the dining room.

Several typical arrangements of work centres in kitchens are shown in figure H. It will be observed that an exact sequence is not essential; the objective is to minimize waste motion and unnecessary steps. Since a pantry is a desirable adjunct to any kitchen, and particularly where one or more servants are employed, figure I shows its relationship to the kitchen. Frequently the pantry is used

as a cleaning centre for table ware, in which event the dishwasher sink may be located here. The cleaning centre in the kitchen may then be a pot and vegetable sink. But since the pantry also serves as a "buffer" between kitchen and dining room to keep sounds of kitchen work from reaching the dining room, some may object to using the pantry as a dishwashing centre. In other cases where most of the table china is kept in the kitchen for warming before service, and only glassware, silver and incidental table ware is stored in the pantry, a special glass and silver cleaning sink should be provided in the pantry and all other cleaning done in the kitchen.

In planning household kitchens, the following factors should be taken into consideration: (1) Available space in the plan; (2) number of persons normally living (and eating daily) in the house. Where the number is not known, as in rented apartments and houses, the number of bedrooms will serve as a guide; (3) frequency and extent of entertaining at meals; (4) the food service capacity and corresponding space requirements of the several kinds of kitchen equipment needed.

SURFACE MATERIALS AND FINISHES

In the selection of surface materials for floors, walls, ceiling, trim and built-in equipment, the objectives should be: (1) Ease of cleaning; (2) resistance to soiling or staining by food acids and greases; (3) durability under frequent cleaning and high relative humidities; and (4) decorative value.

EDITOR'S NOTE—The drawings in this article have been reproduced by kind permission of the "American Architect."

HOUSING LEGISLATION ENACTED BY THE DOMINION GOVERNMENT

An act to assist the construction of houses was passed by the House of Commons on June 25th, 1935.

Briefly, the Bill provides for the sum of ten million dollars to be loaned by the government to those desiring to build new houses, at a ratio of 20% of the estimated cost from the government and 60% from the mortgage and loan companies. The loan to be for such period and upon such terms as to payment of principal, interest and taxes by monthly installments as shall be determined by the Minister of Finance. The Bill also provides for a survey of existing housing conditions in Canada to be made by the recently established Economic Council; also that the Economic Council shall study and report on the best means to be adopted to improve housing conditions; the feasi-

bility of undertaking slum clearance; the construction of houses, with the assistance of the state, to be leased to low wage earners; and methods by which economies and increased efficiency in house construction can be effected.

The terms of the loans to the individual borrowers and the details of the contracts are now receiving the consideration of representatives of the government and the loaning companies. It is understood that prospective builders will deal directly with the loaning companies, and that the rate of interest will be $3\frac{1}{2}\%$ on the government loan and $5\frac{1}{2}\%$ on the loan from the financial institutions, making the net interest rate on the total loan of 80% of the cost of the building, approximately 5%. It is expected that the repayment of the loan will be amortized over a period of from ten to twenty years.

AIR CONDITIONING AS AN ARCHITECTURAL PROBLEM

BY ROWLAND P. ALLSOP, A.S.H.V.E.,
of MATHERS & HALDENBY, ARCHITECTS

EACH new development or change in the method of heating buildings has presented new problems in design to the architect, as differentiated from the engineer. In a general way we are back again in the days of the hot air furnace in that we have ducts to conceal and registers to expose in the rooms. But the modern system of heating by conditioned air is a vastly different affair than the old hot air system.

In the first place the new system must be efficient. The old idea that it was often unavoidable to have half the rooms overheated and the other half frigid, can no longer be entertained. This means, of course, that for each individual room, ducts and registers must be properly proportioned and properly placed. Where formerly ducts and registers were placed to conform to the exigencies of construction, in the new system, the structure must of necessity conform to the heating design.

While in the old-fashioned warm air systems, circulation was by gravity, thereby making it inadvisable to introduce many long horizontal runs, the new system operating under pressure has no such limitations. The principles of convection currents due to thermal differences is now completely discarded as far as the duct system itself is concerned, and is only considered as affecting the free or uncontrolled air in the room.

While in the old systems, the proposition that "warm air" rises was the governing thought, in the new systems the corollary that "cold air" falls more accurately describes the convection principles employed.

In other words instead of introducing warm air into a room at the floor and expecting it to rise to the ceiling, the warm air is now generally introduced high in the room and allowed to fall as it cools, to the return registers placed in the floor or base. While on the face of it, these two principles would seem to be the same, actually the results are quite different.

The whole theory of modern warm air heating is based on the assumption that the desired temperatures must be maintained at and below the breathing line or from the floor to a height of six feet above it. This, of course, means definite control of the air currents, which control is effected by means of definite regulation of the rate of air change in the room, the provision for directional control at the discharge registers, the proportioning of ducts and registers to produce definite velocities,

and the application of force to the air currents by means of fans. Before the question of humidity and temperature control can be considered, these first problems must be solved.

STRUCTURAL PROBLEMS

The mechanical problems are comparatively simple of solution, but the practical application of the results to the building present problems to the architect which are too often left to chance. The complicated and cumbersome system of duct work throughout the building naturally must be concealed. In office buildings or large fireproof structures, furred out walls, suspended ceilings and so on, can be arranged so that this work will not seriously affect the structure itself.

In the average house, however, such devices are too wasteful of space and would, if adopted, have a serious effect on the cubic content of the building. The problem is complicated by the fact that of all types of construction, the wood interior framing of a house is least suited to the accommodation of concealed mechanical equipment. The structural framing already mutilated by plumbing pipes, is generally almost completely cut to pieces when duct work is run through it.

Horizontal ducts running between joists for instance eliminate, in most cases, any chance of proper bridging, similarly in partitions, risers, cut completely through sills and plates, and break the tie across the building. Until some other form of construction becomes economically possible, we will be faced with this difficulty, for the demand for air conditioning in new houses is increasing by leaps and bounds and will in a very short time be almost universal.

The destruction of the structural value of the interior frame of the building, however, can be avoided if each situation is met in the process of design instead of after the damage is done. For instance, for horizontal runs between joists, the triangular space below the bridging may be utilized for small ducts by making the top of the duct conform to the space available. If the ceiling can be suspended two or three inches below the joists it will permit the use of larger ducts. Where almost the whole area between joists is required and where suspended ceilings are undesirable or too costly, the bridging may be replaced by a heavy steel collar on the line of bridging. Collars of this type should also be used in partitions where ducts cut through sills and plates.

PROBLEM OF NOISE AND ODOURS

The metal ducts themselves and the moving air in them, constitute one of the best conductors of sound possible. Noises generated in the vicinity of the fresh air intake, and the fan room or in the basement where duct work is exposed are easily and quickly transmitted to the rest of the house, if some preventative measures are not taken. It is, therefore, advisable to run main ducts in basement as far from the laundry or noisy sections as possible, similarly the fresh air intake should be on a quiet side of the house. In any case, if at all possible, all exposed supply ducts should be insulated against sound if for no other reason. All connections between ducts and fan should be made with flexible canvas sleeves, and the fan itself should be of the slow speed type, to eliminate whistling and singing ducts, a common condition when the air velocity is too high.

The same general principles apply to odours as to sound. For this reason it is not advisable to connect returns from kitchens and bath rooms to the main system but rather to exhaust to the outer air direct. Where garages are built into the main house, they are preferably heated by radiators. If a warm air furnace is used and a radiator cannot be connected, then gravity louvres should be installed on the discharge register to prevent back drafts when the garage doors are open. In no case should the air from the garage be returned to the system. Also the fresh air intake should not be near the garage doors or driveway, where the exhaust from running motors might otherwise be drawn into the system.

DESIGN OF THE SYSTEM

The properly designed air conditioning system should be capable of (a) heating the building, (b) cooling the building, (c) cleaning the air, (d) humidifying the air in the building while heating it, and (e) lowering the humidity while cooling it.

Practically all of the various systems now on the market will accomplish a, b, c, and d, satisfactorily, but only a small proportion are capable of lowering the humidity while cooling the air.

The systems which utilize water sprays for cleaning and cooling come under this category. While the air is undoubtedly cooled invariably its relative humidity is raised and unless the drop in temperature is great, no improvement in comfort is noticeable.

With a small drop in temperature, the discomfort is actually increased rather than decreased. When one considers that from the point of view of health, it is not advisable to cool a building to more than 15° below the outside temperature, it is obvious that the water spray is not the best method of cooling.

For proper results, the method of cooling should be such that it automatically dehydrates the air. In fact dehydration without cooling at all will go a long way toward lessening the discomfort in hot weather.

Dehumidification can most easily be accomplished by passing the air over a cold surface, which causes precipitation of the moisture content. The cold surface can be provided either by refrigerating coils or by coils through which cold water is circulated. The first system is relatively expensive, and need not be used except where cold water is not available, or where the system is extremely large. To be effective the water temperature should be about 60°F or lower.

A PRACTICAL AND INEXPENSIVE SYSTEM

While there are on the market numerous ready to install air conditioning units complete in themselves, it is a comparatively simple matter to design a system assembled from standard commercial equipment. In our own practice we have followed the latter method. Briefly this system consists of the usual duct work and grilles proportioned according to the established method for any ventilating or warm air heating job, a conditioning unit, a fan and a heating boiler with the necessary controls.

The conditioning unit consists of a series of blast heaters or radiators connected to the heating boiler, an air filter of the spun glass type, and an evaporating pan connected to the drains, in which is set on an angle a copper pipe coil with valves connecting it to the heating boiler. By regulating the depth of water in the evaporating pan, more or less of the heated coils are immersed and the rate of evaporation and consequent humidity during the heating season is thereby controlled.

In summer cold water is circulated through the blast heating coils, the condensation is collected in the evaporating pan below and thence to the drains. The rate of precipitation and consequent dehumidification is controlled by regulating the amount of cold water passing through the coils.

The advantage of this system from the designer's point of view is that he has a choice as to the selection of the type of filter, blast heater, fan, and heating boiler and may vary his selection of any one part to suit any particular condition.

If summer cooling is to be provided, it is essential that some heat transferring surface be provided that will permit its use as a cooling surface in summer. This feature cannot be economically applied to a hot air furnace, and the relatively unsatisfactory water spray must be used for cooling, if costs are to be kept within reasonable bounds.

The heater should, therefore, be either a steam or hot water boiler. When hot water or steam boilers are used, allowance must be made for rapid

transference of heat from the blast heaters to the air. This is particularly necessary where steam boilers are used, in which case the boiler must be large enough to generate steam as fast as it is condensed in the blast heaters. The capacity of a steam boiler should be considerably greater than would be required to handle the equivalent amount of cast iron steam radiation.

SOME INCIDENTAL ITEMS

The operation of any air conditioning system is likely to cause some dissatisfaction among owners if they are not familiar with its peculiarities. In the winter they must realize that the relative humidity indoors will be much higher than outside

and that condensation forming on the window glass will freeze. Storm sash should, therefore, be provided and installed at the beginning of the heating season or the windows should be double glazed.

In warm weather when cooling is necessary, windows must be kept closed if satisfactory results are to be obtained. It is humanly impossible to cool and dehumidify the outside air.

Designers should be warned against providing too great an exhaust system in rooms where fireplaces occur. In such rooms the air should be under pressure. If a vacuum is created, it may seriously affect the draft in fireplace chimneys with annoying results.

NOTES

At the first meeting of the new Council of the Ontario Association of Architects, held at the rooms of the Association on Tuesday, July 9th, Murray Brown, F.R.A.I.C., of Toronto, was elected president for the ensuing year. Other officers elected were as follows:

Vice-President—John M. Watt, London
Treasurer—A. S. Mathers, Toronto
Secretary—J. P. Hynes, F.R.A.I.C., Toronto
Chairman of the Registration Board—Dr. John A. Pearson, F.R.A.I.C., Toronto
Vice-Chairman of the Registration Board—Prof. C. H. C. Wright, Toronto

* * * *

H. A. Terrault, chairman of the Town Planning Commission of Montreal, addressed the members of the P.Q.A.A. during the early part of June, explaining the proposed Metropolitan Boulevard Scheme. A discussion followed Mr. Terrault's address and it was decided that the P.Q.A.A. should form a committee to put forward every effort to ensure the construction of the proposed boulevard.

* * * *

The R.I.B.A. London Architecture Medal for 1934 has been awarded to Sir John Burnet, Tait and Lorne, F.F.R.I.B.A., for the Royal Masonic Hospital. The R.I.B.A. London Architecture Medal is awarded annually to the architect who has designed a building of merit built during the three preceding years within a radius of eight miles from Charing Cross.

D. J. Spence, M.R.A.I.C., of Montreal, has been appointed assessor in connection with an architectural competition for an art gallery to be erected in Wilmington, Del., U.S.A.

* * * *

Percy Edward Thomas, F.R.I.B.A., of Cardiff, Wales, was elected president of the Royal Institute of British Architects on June 24th, 1935, succeeding Sir Giles Gilbert Scott who occupied the presidency for the past two years.

* * * *

Percy E. Nobbs, past president of the Royal Architectural Institute of Canada, in a radio address given recently over station CFCF Montreal, made an urgent plea for public interest in housing. He complimented the government on the housing legislation recently enacted, but pointed out that "The great problem of providing decent housing accommodation at rents within the means of the \$500 and \$650 a year wage groups, which make up a large proportion of our population, still requires consideration.

* * * *

The XIII International Congress of Architects will be held in Rome, Italy, from September 22nd to 28th, 1935, under the auspices of the Italian government. An invitation has been extended to members of the R.A.I.C. to attend the Congress and participate in its deliberations. Complete information regarding the programme, excursions, and hotel accommodation is available at the office of the R.A.I.C., 74 King Street East, Toronto.

CORRESPONDENCE

Editor, THE JOURNAL, R.A.I.C.

From time to time members of the Department of Art, Science and Research browse through the Encyclopaedia Britannica for information and inspiration, and they are inclined to think apropos of the June issue of THE JOURNAL, that "Circumspice" does likewise.

This assumption is based upon the following excerpt to be found in that erudite tome:

"Each age seeks some new interpretation of nature and imagination—the well-springs of artistic life and from these reviving streams continually flow new harmonies, new inventions and recombinations, taking form and colour according to the temperaments which give them birth."

"CARADOC"

OBITUARY

ROBERT M. MATHESON, M.R.A.I.C.

The death of Robert M. Matheson, well known architect of Vancouver, B.C., and member of the firm of Townley and Matheson, occurred very suddenly on June 30th, 1935.

Mr. Matheson was born in Prince Edward Island in 1886, the family moving to New Westminster, B.C., in 1890. He received his architectural education at the University of Pennsylvania, from which he obtained a diploma. He also served as a student under Paul Cret. In 1917, Mr. Matheson became associated with Mr. Fred L. Townley, with whom he practised architecture until the time of his death. He was a member of the Royal Architectural Institute of Canada, and was Honorary Treasurer of the Architectural Institute of British Columbia in 1930.

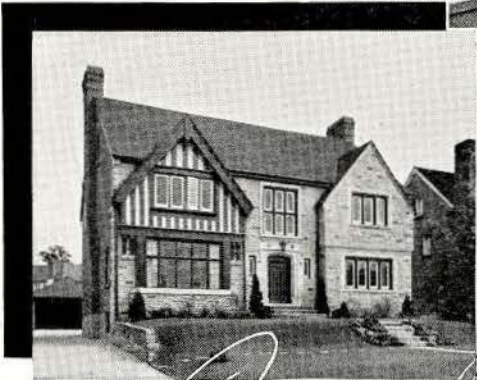


Illustration shows Mitchell-Inco Monel Metal Cabinet Sink and Cabinet Top in a new home on Dewbourne Ave., Forest Hill Village, Toronto.

•
FORSEY PAGE AND STEELE
 ARCHITECTS
 B. B. KENNEDY, BUILDER

Good taste **OUTSIDE** *and* **IN**

After all, a pleasing exterior is not the most important thing in a house. The owner sees more of the interior than of the exterior. The mistress of the home, who is the final judge and jury, sees most of the kitchen. So in the long run, your ability as an architect is judged by the kitchens you install.

How important then, to use a material of lifetime beauty and serviceability for sink and working surfaces!

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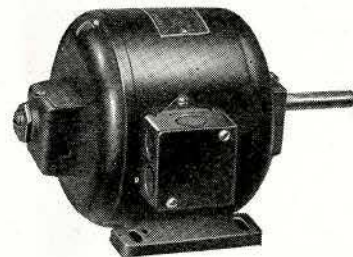
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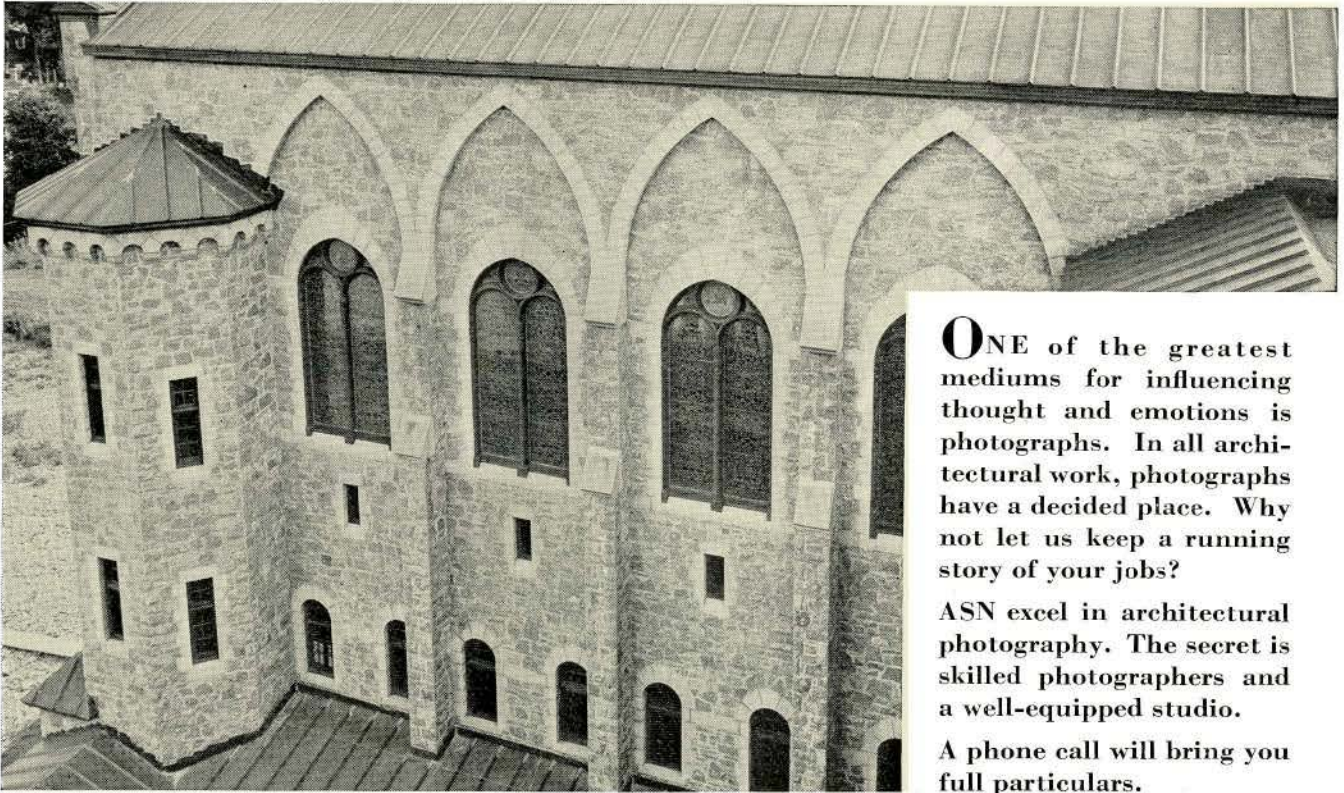
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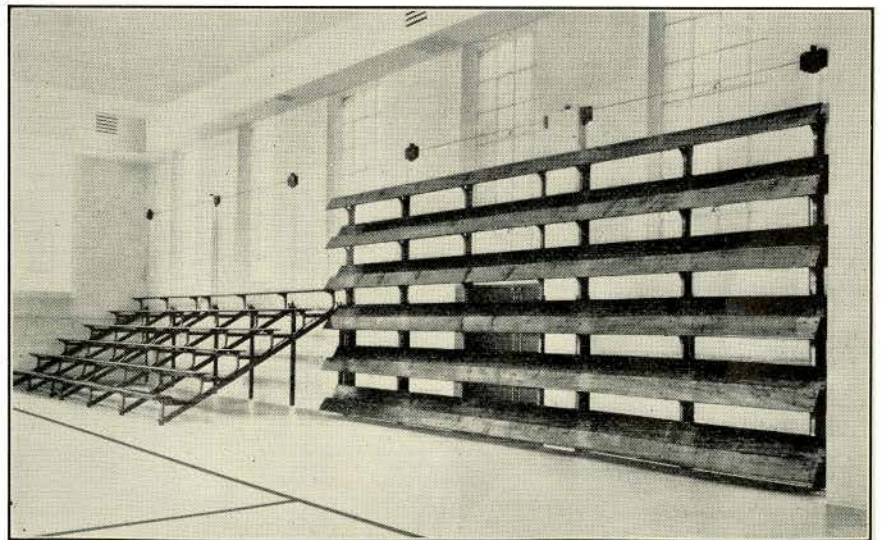
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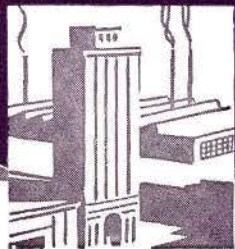
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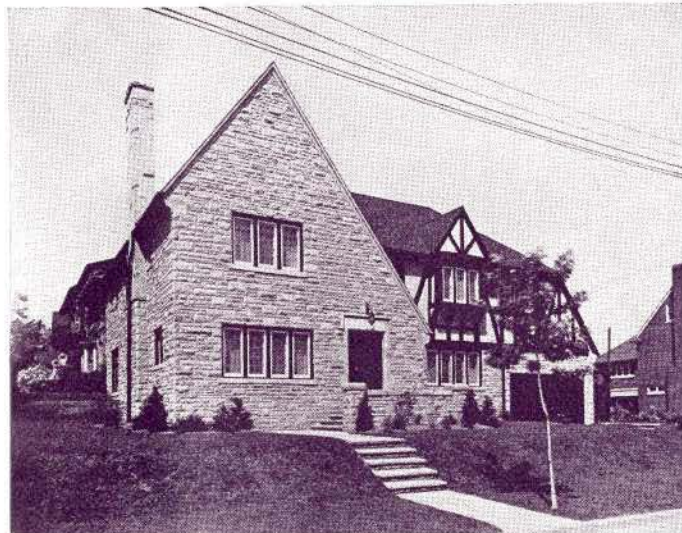
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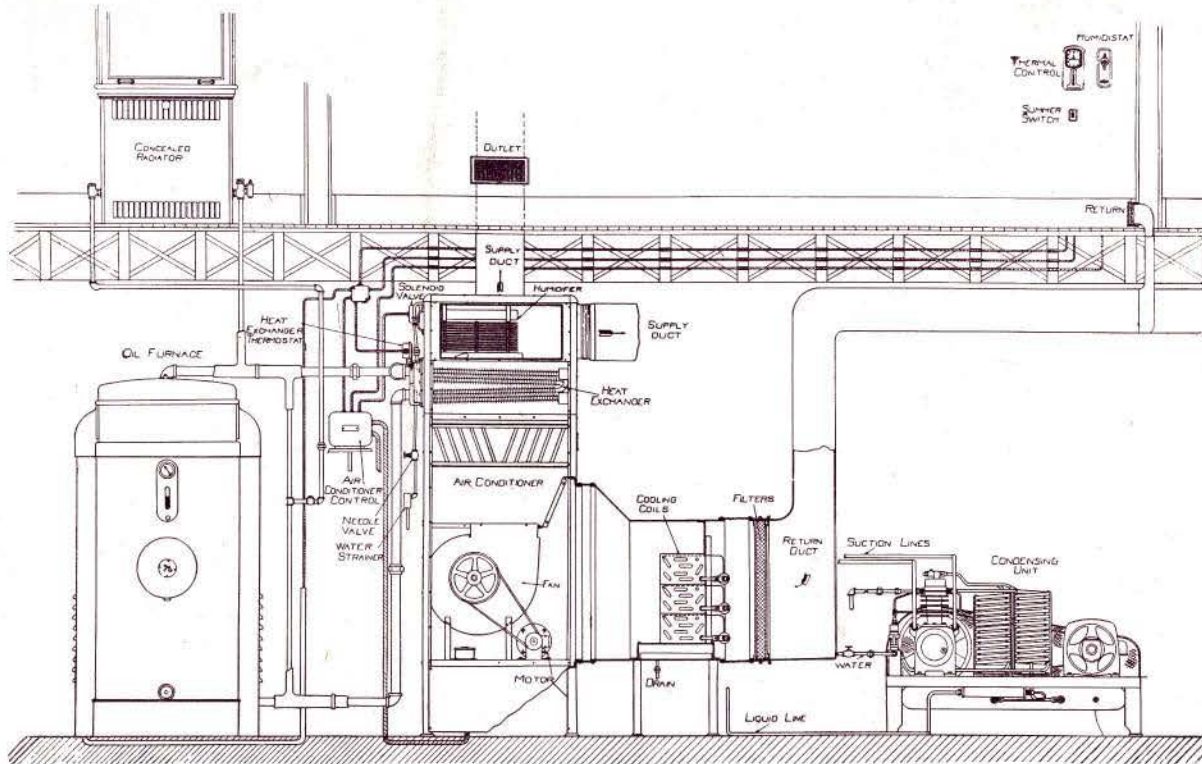
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