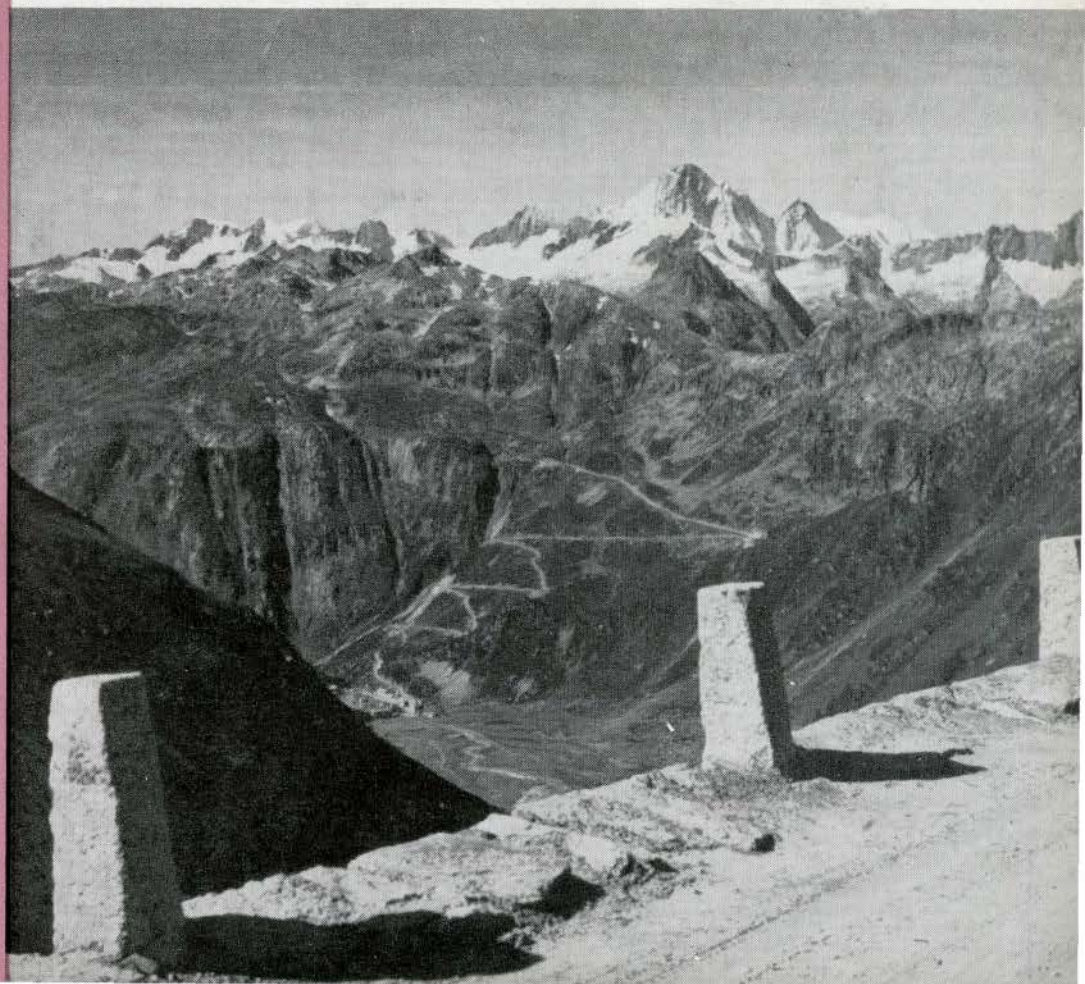
JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA



VOL. 26
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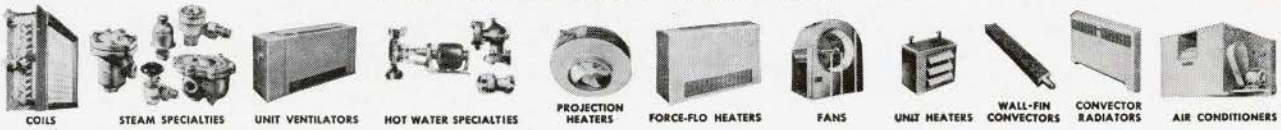
No. 3

THE COMPLETE LINE FOR '49



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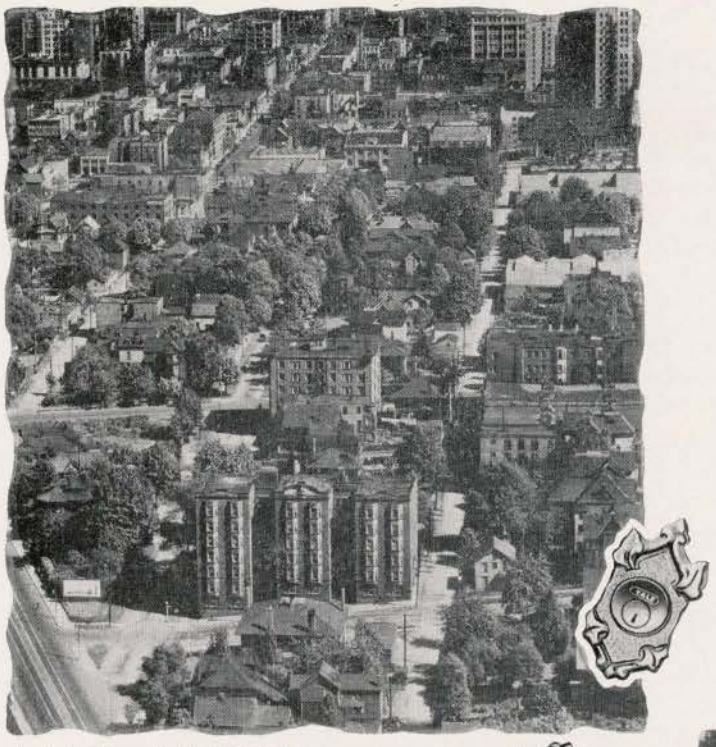

Aerial view of Vancouver

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Two entrance door handle sets are shown here, in cast nickel and bronze.

Photographs courtesy C.N.R.

Aerial view of Winnipeg

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JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

Serial No. 282 TORONTO, MARCH, 1949 Vol. 26, No. 3

PRESIDENT . . . . . A. J. HAZELGROVE (F)

CONTENTS

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JOURNAL
R. A. I. C.
MARCH 1949

THE Annual Meeting of the R. A. I . C. at Niagara Falls must go into the Records as a most successful Assembly. The site, which we made a point of seeing from a dozen different hotel bedrooms, is one of the grandest in the world; the hospitality of the Hamilton Chapter was unbounded; the company excellent and the meetings were profitable. As is always the case at a convention where people, who are largely delegates, feel obliged even when recumbent on a bed, to talk shop, we learned much about building materials, and matters that had no place on the lists of events. We yearn to hear more from Mr. Ross McKee of a telescopic dwelling that can be carried on a flat car and, when disembarked, be drawn out by a truck into a structure which will sleep sixty men. We have told this story more than once, and rather spoilt it by telling an expert audience that the truck heats the building. Eye-brows were raised at the thought of so puny a system being at all effective in Vancouver of all places, in winter. We must have been misinformed. We heard also, on unimpeachable authority, of foam glass houses presumably with "casements opening on the foam of stormy seas."

WE are unable to work up much enthusiasm for the small house. At present it is too expensive for those who have yet to be decently housed, and we see no future in one where a mastic or other joint between panels protects the owner from imminent collapse. Consequently, we were rather sorry to find the General Meeting unable to express an opinion on subsidized low rental housing. The timidity of the meeting was, we felt, due, largely, to unfamiliarity with housing done elsewhere, and to a misconception of the meaning of subsidized housing. There was a feeling that private enterprise would suffer, but, since the architect prepares the plans for public tender, and the successful contractor deals through the normal supply houses and uses union labour, we fail to see the point. There was, too, the cry which sent an icy shiver down every spine "Public housing means bureaucracy"! Of course it does, and we have it already. No one suggests that Mr. Mansur and General Young, each with a stenographer, are now controlling our housing programme without a staff. From all we hear, it is a highly trained and competent staff fully qualified to carry out a scheme of public housing in Canada if that were the policy of the Government.

ONE notices over the years that Ministers no longer express themselves irretrievably with "over my dead body" statements in regard to public housing. We would suspect that their advisers are now convinced that recommendations and predictions in Report No. 4 of the Committee on Housing and Community Planning were not unfounded. Indeed, I am informed, that we are spending, for 1949, two million dollars a week on subsidized rental housing. All of it, of course, is for veterans. In the meantime, natural increase and immigration add to the pressure on civilian housing especially in the lower income groups. We think it was Mr. George Bernard Shaw who said that all reforms go through five unavoidable stages.

1. It's impossible.
2. It's against the Bible.
3. It will bankrupt the country.
4. It isn't being done properly.
5. We knew it all the time.

We wouldn't swear to it, but we think we have just passed Stage Two in Ontario.

Editor

NEW STRUCTURAL SYSTEMS AND METHODS

By **FRED N. SEVERUD,** ***Consulting Engineer, New York City***

Address at the Fifty-Ninth Annual Meeting of the Ontario Association of Architects, January 22nd, 1949

AS an engineer, I am supposed to be very good with slide rule and calculus and other things that pertain to figures, and that is the definition that most people put on engineers. Then you as architects are supposed to be something else. I believe it is important that we get rid of those definitions. That is, we may have to use them, but let us revalue them and see what it means, because if we are going to split up the field into narrow slices and then handle these slices and pieces by just juggling them and putting them together, then I believe we are not going to do justice to our problem. Because the problem is one, the problem is to know materials, know construction, and then to utilize that knowledge to the full advantage of our client. We are handling somebody else's money, it is a trust, and he relies on us to do it honestly. We can not do that if we just lazily perform the functions within our own narrow definitions without gaining a perspective of the problem as a whole.

In my field, and also in yours, there are other definitions that I believe have been very harmful. We have a definition of a beam and a slab and a column, and we close our mind to it after we have said those words. We say, "Oh, well, we know all about it." In that way, there has been a certain amount of stagnation. I believe, that we must get rid of stagnating concepts before the onrush of new materials and methods will hit us and find us in a rut.

To gain a certain amount of freedom from definitions I should like to have you join me in some mental gymnastics. In fact, I would recommend that when you have a little time you actually do go through them physically and personally. First it is simple enough. Lie down on the rug, let's say face down, and just analyze what is happening. Start with your head: You feel the pressure against the rug, and that pressure is coming from where you are looking. What is it? It is the strength of gravity trying to suck you into the center of the earth. Then follow through from the head and on. You will find that most of your body is being drawn directly towards the floor, piece by piece. You have then, you might say, made a personal acquaintance with one of the basic principles. Something we know, yes, but it is the foundation of real knowledge of what we are about to discuss.

You are sitting on chairs. What is happening? What happens to the load of your head? Well, it is not lying on the rug, it is going through your neck. It goes to the seat of your chair, and the chair helps you resist being sucked in. If not, we would hear a bang, and you would all be sitting on the floor, your next line of defense against the relentless pull of gravity.

If you like this line of thought, get down on your hands and knees. Let's say you lift your knees off the floor. You feel quite comfortable, and if you analyzed that position, what is happening? You are resting on your hands and toes, and these are your only physical contacts with the forces of gravity. Obviously in that position you consist, then, of a main beam from knees to shoulders, framing into the cross-beam between the shoulders. The two hands and arms are two columns, and if you take the knees together, because they are close, that is another column. Then you are a cantilever beam with your legs at one end, and at the other end you are a cantilever consisting of the neck and the head. It is a very comfortable position; in fact it is one of the best ways of supporting your body and providing space. (Figure I).

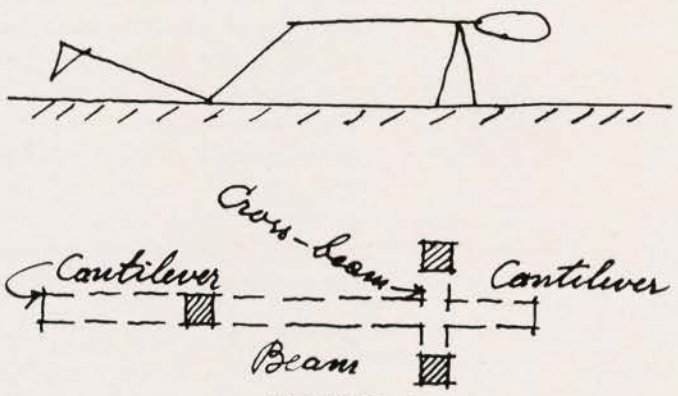


FIGURE 1

We cannot just provide structures that have no space at all, we must remember we can't have buildings consisting of columns only. Pursuing our gymnastics further, let your toes reach the floor, straighten out your knees, and then your toes will be the column instead of your knees. There you feel a drastic change in the whole operation. You have to bring strong muscles to bear, and you can't stay in that position very long, it is not comfortable. Well, you are carrying the same load, aren't you? Yes, but you are doing it differently. (Figure 2). The diagram speaks for itself. The conditions at the head are the same, but the main beam is on a much larger span, and it doesn't have the cantilevered legs, from the knees down, to relieve the strain.

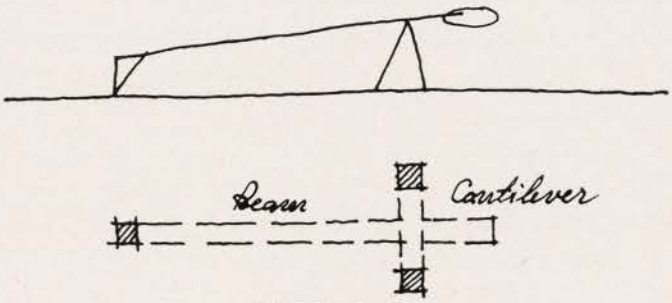


FIGURE 2

If you go through some of these exercises, and do them intelligently, you recognize that the concept we had of beams and columns is something maybe a little different than you thought when you started. If you were to pursue this subject further you will find that by going through various gymnastics and analyzing them intelligently you begin to discover the concept of continuity and integration. The field opens up and you can get into it, you can get acquainted with the stresses and forces, not by figures, not by terms and definitions, but by recognizing that you are dealing with one whole structure and not just pieces.

As a final instance, if you take a chair and lift it up in your right hand, find out what happens to your body. Your arm is a cantilever and the tendency is to twist it off at the shoulder, but that joint is strong enough and resists it. Then again the load being applied to the right shoulder has a tendency to bend your torso to the right. Then you feel if you follow through the stress flow in the body, not only do you tend to lean to the right but also forward so that the maximum pressure is felt on the ball of the right foot. You are, in technical terms, a column from which a bracket (the right arm) extends to subject the column to eccentric moments about both of the major axis.

After these exercises, let's sit back and look at some history:

Construction methods have continued down through the ages because that is the way it was done; you threw a wooden beam across a span, then wood joists on top, and then the floor. And when steel came along the same principles carried through. Even such a monolithic medium as concrete has been afflicted by that same malady. We should realize that we are carrying old concepts with us that may be very harmful if we don't get rid of them before the onrush of further information will hit us.

With this introduction we will have to proceed in a more definite manner. In our limited time, if you want to follow me, you will have to do some mental gymnastics, because I will have to be a little jumpy in order to cover the field.

Let us then leave the field of generalities, and come to grips with a specific problem. We have the problem of a hospital, shall we say, as happened the other day. What are the materials we are going to build it of? Strangely enough, one of the most fundamental basis for deciding that question is the type of ceiling that we are willing to accept. That may seem strange, but it is a fact just the same.

Recently, as you undoubtedly know, painted reinforced concrete ceilings have been widely accepted. The development of plywood forms, painting them with a proper form oil, has given us a means of forming perfectly acceptable ceilings that do not need plaster.

And plaster after all is a very foolish thing. Why look at a dead surface? Of what good is it? Why smear on something that you don't need and be saddled with a maintenance problem to boot? Because plaster will always crack, and then, if water is spilled on the floor above and comes through the ceiling, the water will cause plaster to spall, but with a painted concrete ceiling, it just dries out.

So let's say the client is willing to accept a painted concrete ceiling. He may want you to go to certain refinements. He may want you to grind off with a carborundum wheel the most obvious marks of joining the forms, and he may want you to do a very perfect paint job. But he is willing to accept it on such a basis. Then, at the present rating, for most buildings, you will find that reinforced concrete poured in place is the most economical thing you can do.

Obviously I have to talk in generalities, and later on by specific questions I shall be very glad to answer any questions that you may have in your minds about specific buildings, but with present prices, present labor conditions, if such a ceiling is acceptable, then a reinforced concrete frame seems to be indicated. So we will follow through and say that this is the case in our consideration. And even more so if the top of the concrete can be used as the immediate or the almost immediate finish for the floor. Then we have a finished ceiling, a structural unit, and a finished floor surface given us in one operation.

Now then, if reinforced concrete structure is indicated, what structure shall we use? I don't believe we would arrive at the ideal situation where there is just one framing method, but I will mention some framing methods that have proved to be vary serviceable and I will start with the one I am personally quite fond of. Getting back to my introduction and the importance of not having too definite ideas of splitting the construction into beams and columns and so forth, let us find out what is the proper distribution of concrete, what is the configuration that gives the best use of it? Is it the narrow beam and slab that we have known heretofore? Usually it is not. (Figure 3). Let us say this is a cross-section through an ordinary apartment house; here is the outside wall and this is an interior column. If we analyze for a moment the difference between the structure as shown and the ordinary narrow beam and slab, it becomes very readily evident that the old form is not the way to do it. If you

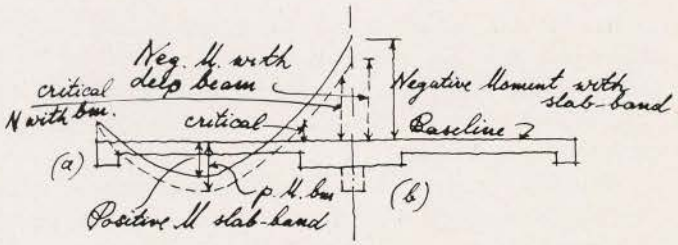


FIGURE 3

take these moment curves, which is a line showing the magnitude of the forces, or the critical forces usually, we find that with the normal construction the moment curve may do something of this order. Now if a slab is analyzed according to the modern methods, not only as a slab but also as a slab with a thicker end, that broad band here, then the moment curve is something different, it starts from a higher point and then it is lifted up bodily and comes up the same way.

You might say then you lose by negative moment what you gain by positive, if we consider this as a base line, then the positive moment is smaller than the normal construction, but the negative moment which in one case is of this magnitude is in the other case of a somewhat greater one.

But is it not true that we lose on negative moments, because the critical moment is at the point where the slab dives into the beam, or what we call the "slab band." so the critical negative moment for standard construction is at the end of the beam, whereas for slab band construction it is at the end of the band, which is obviously smaller. At this point the slab connected with the slab band has a much greater efficiency, because of the deeper depth of the concrete. So it is just a question of finding the correct distribution and not being worried about what you call it, whether a beam end or a slab band or whatever its name may be.

It so happened that with slab band very often a four foot width of a slab band is about right. It allows you to use a full-width plywood sheet, without cutting. Plywood used for form work comes from the factory with specially treated edges. It also means that the edges will stand up much longer, you can use plywood 12 or 14 times; the forms begin to get a little ragged but you can still re-use them 12 or 14 times with good results.

This type of construction is used extensively for housing in the Metropolitan area. The beam usually is over closets and such areas, and in that way not only is the projection, which is usually five inches, not objectionable, but it also cuts down the price of partitions. Closets need not be storey-high, and you will be surprised to find out what saving there is in saving miles and miles of partitions.

Another advantage of a band of this kind is that it gives extreme flexibility in the placing of the columns. (Figure 4). If you draw a rather typical end conditions of a housing job, these lines would indicate the slab

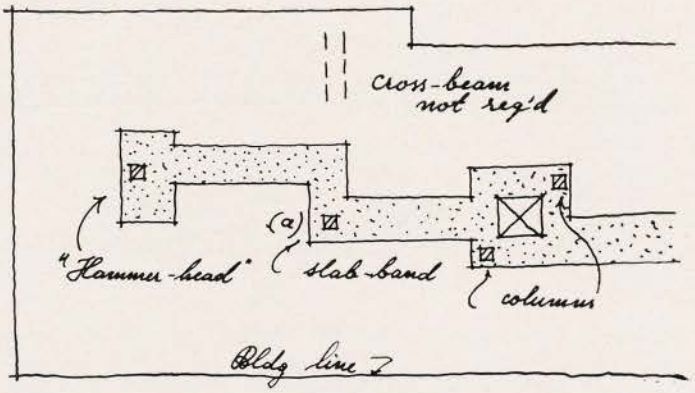


FIGURE 4

band, and if it were normal to let it go in a line of this kind there is nothing wrong with it. Straight lines are not necessary, if full advantage is taken of the materials. For instance, you may have a column coming here, one column there, and one here, and another here and here, and so on. Take this column (a) for instance, the slab band would act as a cantilever for the distance shown, and just put a bending in the column. And it doesn't matter whether bending is taken up by a column or beam.

Most engineers will say you need to have a beam all the way through to pick up the offset, but you don't, because you have to have a column anyway, a column has an inherent capacity to bend and we might as well utilize it and eliminate the beams. Beams are costly and the edges of the beams are very costly to finish.

You might ask, "What do you do in the corners?" The framing is by slabs in a direction towards the slab band. (Figure 5). Instead of having reinforcing bars running only at right angles, we fan them around, and at the corners we add a few diagonal bars, because

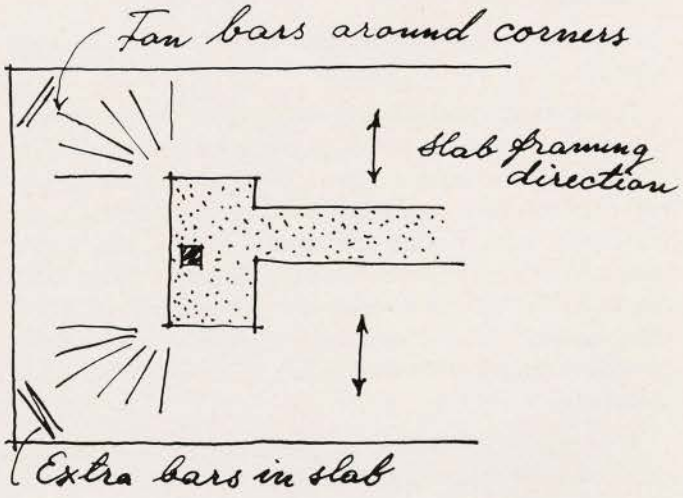


FIGURE 5

within the thickness of the slabs the corners become very stiff elements, because the span is short. Instead of having beams and cross-beams the result is a flat surface without projection into the rooms.

A construction of this kind has excellent flexibility which you as architects will recognize, if you come to a problem where the engineer wants to put you in a strait-jacket and says the columns must line up and you must have crossbeams here, there and everywhere. As you see, around openings it is very simple to put a collar around the opening. No need for crossbeams to pick up the eccentric load; you just distribute reinforcement according to the stresses and you have another means of framing that is very, very helpful. For a concrete example, see the layout of Farragut Houses, Fellheimer and Wagner and Carl A. Volumer, architects.

(Figure 6). One type of framing that has become very popular is to simply have a flat slab, without any column capitals or drop panels; a column just diving into the floor. It has been used for a few years. We have also used it but with great caution, because there is a tremendous concentration around the column head and it means that the stresses here are so great that you must put more material in the total slab. That means that such extra material is just asleep at places and the slab thickness is determined from localized stresses. It is true that form work is simplified. It is an architect's dream in the form of appearance, and mechanical engineers, of course, like it very much. But you are paying money for it and, I believe, it is also taking something of a chance, because that type of construction has not been tested long enough for me to feel too comfortable about it.

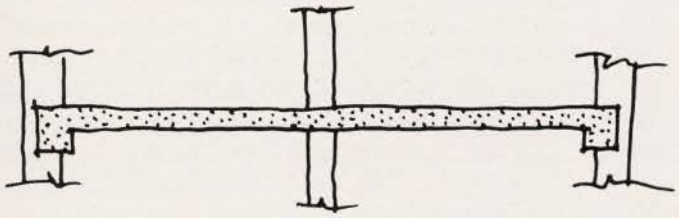


FIGURE 6

It has also a very serious drawback that within the very thin slab any inaccuracy in placing of reinforcement is felt drastically. On a thicker member it doesn't mean too much percentage-wise. If a bar is an inch out of place, well, there is still enough safety factor in a deep member so that nothing will happen, but if you take a thin slab – let's say a six inch slab, which some of these are – the effectiveness of "D" is about five, and that goes in squared, or 25, and if instead of five you get only three, as a "D" squared, it makes 9 and then you have eaten up your safety factor. So I believe that it is well to be a little cautions when you see jobs with such a type of framing described in magazines. I wouldn't, if I were you, fall for it right now, because I can foresee that during the years the flow of stresses will create a hump at the column, and before you know it you may see a little daylight under partitions, your client may be worried about cracking, and you may have a major headache on you hands.

And since the slab is usually more economical anyway, and because we are not too sure about it, we have not used very thin slabs. Sometimes to create completely flat surfaces we have used filler blocks for a certain area and then solid concrete of the same thickness at the columns. In that way then we get an absolutely flat ceiling and a reasonable depth is provided without increasing the dead load, because the filler blocks take away the concrete where it is not needed. The filler blocks also furnish an excellent plaster base.

We just completed an administration building at Cornell University (Ackerman, Ramsey & Sleeper were the architects), and it was very successful, everybody likes it very much. That slab was six inch blocks with one and a half inch topping. The spans were so organized that the columns along the corridors were spaced 14 feet apart and the spans from outside were about 22 feet. (Figure 7).

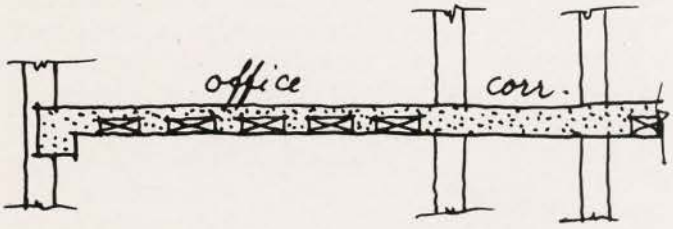


FIGURE 7

I might draw the cross-section of the framing for a hotel job just being started in Panama. This is a sunshade, this is a balcony, and these are living quarters. The construction of the sunshade was just a very thin concrete slab, and over the balcony we used tile fillers, and also over the living quarters, but with solid concrete at the columns. So there a similar construction was used. (Figure 8).

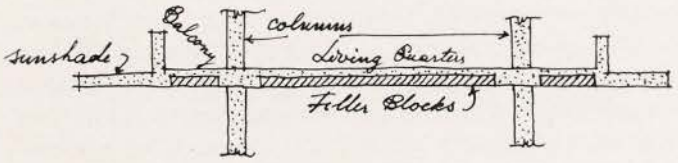


FIGURE 8

I don't think time will permit me to mention all of the various systems. May I just say that one system of a flat slab type that has quite a bit of merit to it, is one where the stress concentrations at the columns are being recognized by placing a steel yoke – I am sure many of you may be familiar with it. The steel yoke usually consists of four inch channels that are set at the column heads (Figure 9) to take care of those major stresses. And I believe that for the time being, until we know more about it, any one of you that is interested in just a flat concrete slab, and thin, might well consider the Wheeler system. You may have to pay a small royalty, but it may be worth it.

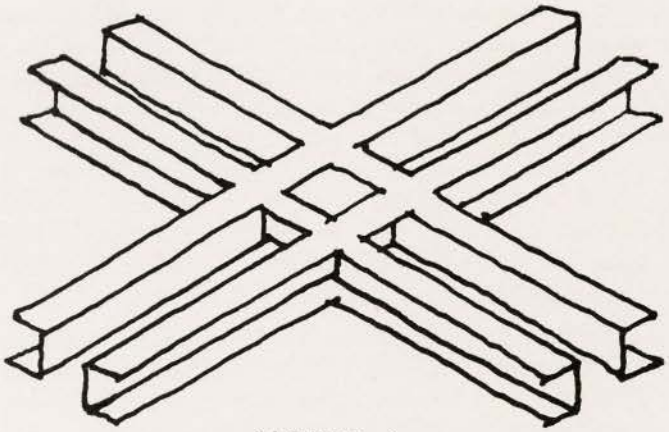


FIGURE 9

Now leaving the field of cast concrete, let's talk a bit about precast concrete systems. Many of them have started with great impetus and enthusiasm, but unfortunately often by people that did not have enough experience, that didn't realize that you must have plenty of tolerance in the field work. If you don't have it you will pay for it very heavily. If you have to set everything with the greatest amount of accuracy, it can be done, but it is not the way a job is done in America, it is foreign to our whole idea of construction. Construction must have in it some rough and readiness that can take up the inaccuracies. Let us get things done, and do it fast. So many of these precast systems have fallen by the wayside. I will mention one that was done on a very large scale. (Figure 10). A waffle panel was produced in precast concrete molds resting on the ground, like a waffle iron, you might say. The forms were oiled and the concrete was poured into them. Then the concrete was cured by a vacuum process, steel troweled, and the panel was lifted out by a vacuum lift, the vacuum process consisting of a rubber mat connected with vacuum pumps to draw off the water in the curing process, and then providing a contact over a great area in the lifting process, so that the concrete can be lifted out of the molds at an early stage without great strains. The system created quite a stir, and great hopes were expressed for getting it done at a very low figure. It did not prove too successful from a cost angle principally, it is claimed because the molds had to be too many, and the whole thing had become too complicated.

FIGURE 10

But in general I think that a system of that kind is inherently complicated. Going out into the field and looking at it you are impressed with the great apparatus for the vacuum process and with hundreds of molds that had to be produced with great accuracy, and in order to make a fit every panel had to be almost precision made. And then all the various kinds of labor, one for the vacuum process, one for pouring, and a different trade for finishing, and then finally, the panels had to be placed by stonesetters. The conflict between these various unions, and the standby time was so great that the costs came in, so far as I know, about three times as much as anticipated.

I am not ready to say where the fault lies. It may be in doing it again better organization can be accomplished, and a system of this kind would have real merits, but I can't quite see it, because after the whole thing had been placed there were certain corners that didn't fit, and a lot of chopping off and leveling to be done. As Mr. Beveridge said just before the Session, a poured surface covers a multitude of sins. It is true, if you have a poured surface, you don't have to worry about having your construction elements too accurately fitted to each other.

So that I don't discourage you too much in thinking of precast concrete, I want to mention a project that was eminently successful. The problem was quite interesting. The University of Vermont needed dormitories very desperately within a certain time period. It had to be completed for the opening. There was a dearth of masons and something had to be done about it. The contractor was very eager to try some of the precast methods. He had seen the waffle system before the prices came in, and he was quite excited about it. I had just returned from a trip to Europe where I had studied some methods that have proven successful, and some that have not. Between the Architects, McKim, Mead & White, myself, and the Contractor, the Rappoli Construction Company, I think in all fairness Mr. Rappoli should be given the main credit for working out the details and at least for having the courage to go through with it. If it had not been a lump sum job I would not have given my approval, I will say that. But since it was a lump sum job, and since he was willing to risk his money and was willing to work with us to simplify the whole thing, we went ahead on what proved to be a very successful method.

(Figure 11). Let us say this is a cross-section through their dormitory, it is set on an ordinary foundation, and a poured concrete slab again. The principal elements of the walls and partitions were made by making a wood form off the ground, then pouring a layer of concrete horizontally on the wood form, steel troweling the surface, painting it with formoil and lacquer, and then doing it again and again. Four layers were tried, but three seemed to be the optimum number. Then these panels were raised up in vertical position and then split by steel wedges. They had hooks projecting from them at the top, and they were dangled in a fifty ton crane. The outer wall consisted of an eight-inch precast concrete panel, full width between the windows and full storey

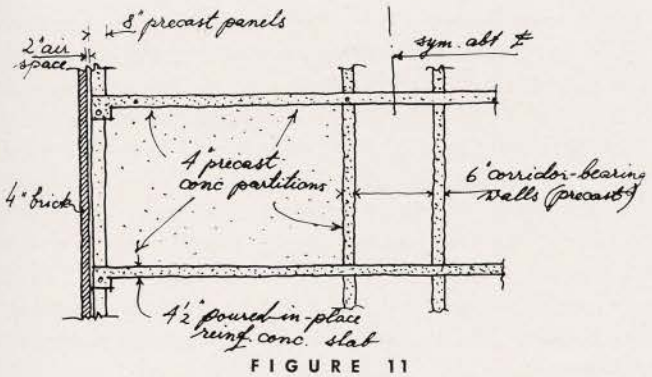


FIGURE 11

height. The unfinished surface produced by pouring against the wood form was turned in to what later became the cavity. All the buildings there are brick, and for many reasons cavity walls were selected. As these big sections were hanging in the crane, they were directed to chalk marks in the floor, small pieces of reinforcing bars were laid on the floor, in a grout bed, and these sections of reinforcing were laid so the grout would not be squeezed out. Then the sections were temporarily braced. A wooden vertical brace would slip in at the bottom, and by wedging either to the right or the left it could be plumbed in an accurate position, and very simply so.

Then after the outer section had been set, a similar section was set along the corridor, full width between the doors. When these two sections were erected, then the partitions section would come, consisting of a four-inch concrete full size panel. That partition section would fit in between the two others with plenty of clearance and a steel plate at the top would connect the two, so that after the partition section had been set everything was fully stable. And so on throughout that story of the building.

Then a poured concrete slab would engage the lifting hooks, thereby providing for the necessary stability and also give the necessary tolerances, and it meant that you wouldn't have to be too careful as to how these various sections were placed, because they were not directly related to the sections above.

The buildings went up four stories, and then in some of the buildings hanging scaffolds were hung from the roof, from the concrete skeleton and the brick part of the cavity wall would proceed. As I said, the masons were few and here the masonry could go on any time. The whole affair presented interesting problems to which were found good solutions. The time schedule was met and the contractor claimed that he saved money. He is of course, cagey enough not to be willing to disclose his figures, because he is now engaged in going after other work and he would be a fool if he tells his competitors how much it cost him.I have some idea of the cost figures, but I don't think it is fair to disclose them.

The ultimate results were rooms that were clean and devoid of maintenance. In a block wall, as you know, painted directly, you can not avoid ledges, and as I am sure you are very conscious of here in this general territory, dirt will collect on those ledges and you have a cleaning problem on your hands.

Everyone is very well satisfied with the results there, and it is something that I find very, very encouraging, because I have seen so many things that went wrong, so many of these fanciful systems that looked so wonderful on paper, and then when it came to the job it would just simply flop.

I might mention that we are up against somewhat of a similar problem in connection with a dormitory in Hartford. O'Connor and Kilham are the architects, but there it is only one building and I don't think it is economically justified to engage a fifty-ton crane on one building, because it can not operate continuously; in four buildings, yes, you can organize it and get the proper routine, but not with just one building. We laid it out in a manner that we tried as best we could to get the right solution, but whether it is the right one or not, we won't know until it is built.

(Figure 12). Let's think of it in plan: These are the outer walls, then the wall sections consist of 8 by 24 precast sections; I don't call them columns and I'll tell you why.

Let's consider that as just a section of the wall and here is the interior. Similarly the corridor elements are 8 by 24. These are precast and then just partition sections in between, made out of cinder blocks. And then again, we have the four inch brick wythe on the outside. These then become the corridor, here is the dormitory and here is the outside.

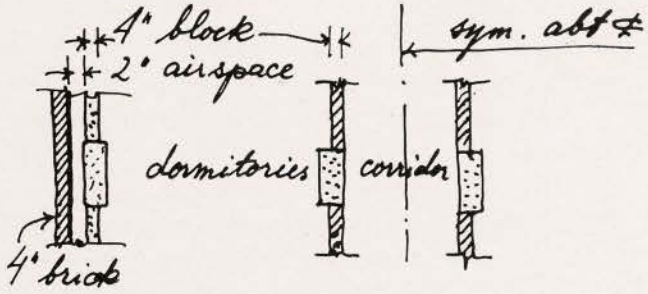


FIGURE 12

The reason for selecting 8 by 24 units is this. According to reinforced concrete regulations minimum size columns are usually 12 inches. For that reason, if we were to call these columns, they had to be 12 inches, but the codes will allow you to use an 8 inch reinforced concrete bearing wall. So by using a section of 8 by 24, what is it? Is it a column or is it a wall? Well, the code tells you how to calculate reinforced concrete bearing walls, it tells you what the stresses should be, but there is nothing about the minimum or maximum amount of

openings in reinforced concrete, because you are supposed to figure it according to the stresses. So for that reason we have selected 8 by 24 sections, or bearing walls, and they furnished the skeleton of the structure. Here again we have just a poured slab in between.

It is easy to see the reasons behind this type of construction because you can well afford to have a 15 ton crane running back and forth, that is nothing – that is part of the contractor's own equipment which he can use for so many things. But you can not, I don't believe, justify a 50 ton crane on a job of this size.

May I mention before leaving the precast concrete field, some of the sections you are very familiar with, such as Lithibar and Flexicore – (Figure 13) that is Lithibar, and Flexicore is a section that is produced by rubber tubes that are inflated and then withdrawn. Lithibar is simply precast concrete joists. They can usually not compete with poured in place concrete. But they are very useful where speed is of the essence. They are very useful with a small contractor that does not know much about concrete, for instance, for the first floor of a residence, also for schools. We are building a school in Darien right now using Lithibars for the first floor. We are not saving any money, we are saving time and the elimination of form work is a desirable feature.

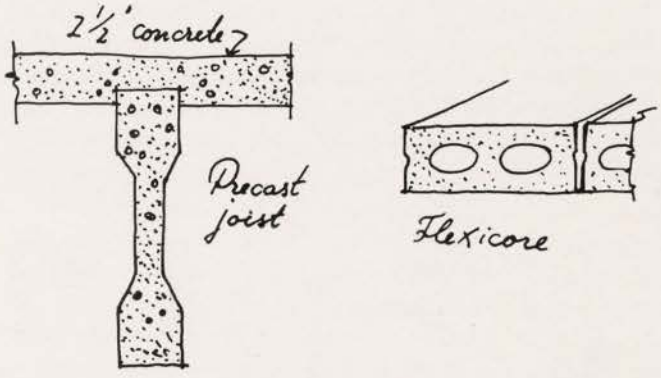


FIGURE 13

Regarding various types of steel construction (Figure 14), recently steel joists have become quite popular in New York City. You start with a steel beam and rest joists on it. Then you pour Aerocrete all around the joists so a flush ceiling is produced. There is an apartment house going up on Eightieth Street, as I remember, with radiant heat and this system has been selected.

Then you have the Robertson system, which is extremely popular with departmental stores. (Figure 15).

FIGURE 14

That consists of steel pans that are filled with concrete. The great advantage of this system is that the conduits can be run any way you please, and although there is a cost premium – that is, if a Vermiculite ceiling hung from it is required for fire protection – it is still very popular. We are building a department store in Miami for Burdine's, I believe finished now, and they were willing to pay the premium. But for another that is going up near New York, they found that the price was a little too much, and we are doing that in ordinary concrete. But you can readily recognize the freedom in changing displays when the wiring can be run any way you please.

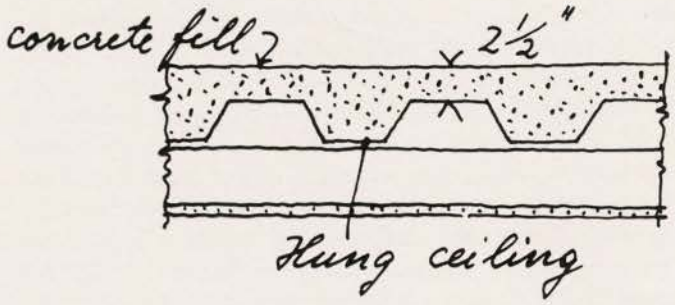


FIGURE 15

One thing I would also like to emphasize is the tremendous importance in having our eyes open for the use of local materials. I can mention a problem that we had in South America, where I was sent to review the drawings of a whole town, the rebuilding of an oil town that had been designed by local architects. The prices came in terrific, and although they originally just wanted me to review it from the standpoint of safety, costs became an important factor.

I took quite a while to look around to see what was there – see what there was that could go into the buildings. It had been projected to build them of reinforced concrete, necessitating the importation of a tremendous lot of reinforcing steel that wasn't available anyway. I found that they were abandoning a local narrow gauge railroad that they had used for transportation to the refinery, and they were using a fleet of trucks instead. So everywhere I went I saw these piles of rails. I realized that that city must be built of rails, and the way we did it was, to give one example, (Figure 16) – the obreros' – the workers' houses, were one storey buildings, and the roof construction consisted of rails. The rails were spaced evenly and then covered with very thin concrete – of about two and three-quarter inch thickness. That was the upper layer. That furnished the slab, you might say. Then lengthwise of the building, we laid rails in a lower layer, so if we draw a section of it, this rail would be at the lower elevation, and concrete would be poured around it, and the other rails would ride it. The rails at the lower elevation would, of course,

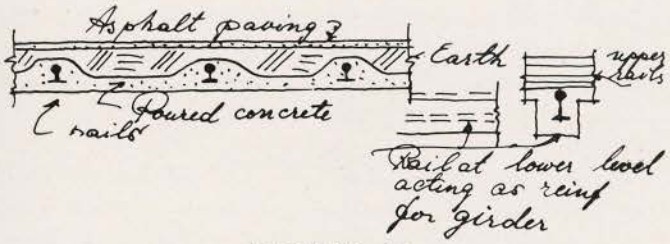


FIGURE 16

have a much greater effective depth and would act as girders and the whole system was so organized that the total capacity of the rails was fully used.

These top rails were just long enough — and it was just my good luck — to reach over the building and give the necessary sunshade without any cutting or splicing. And then the lower rails, resting on precast concrete struts, with rails as reinforcement, would be so organized that all you have to do was set the precast concrete struts, and lay a lengthwise layer of rails, and lay the other rails on the roof, and provide a concrete cover. Then, for insulation, we just filled up with earth, and as roofing we used asphalt paving, because asphalt was a by-product of the refinery.

So there you have all local products, and as you can recognize, the cost was cut down drastically.

Instead of using heavy bearing walls, we used four-inch brick wall, because the climate was tropical, and since it is in an earthquake zone, we reinforced it with thin pencil rods in the joints.

When I presented the scheme to the local architects, there was quite a group of them, most of them of course were trying to defend their position by saying, "Well, of course, we can see that it is cheaper, but our system is much better," and so on, but the chief architect just shook his head sadly, and said, "No, Senores, es muy mejor" (It is much better). So he admitted that, even structurally a design of this kind is better, because a reinforced brick work is far stronger than just heavy walls — which are not good in earthquake zones anyway, because loads should not be piled up, they should be minimized. So there is an example to prove the point that we must have our eyes open for using what there is on the spot.

Cavity Walls

A moment ago I mentioned about cavity walls, and may I say just a few words about the experience that we have had with cavity walls. I would say it has been almost miraculous to see the tremendous miles and miles of cavity walls that we designed during the war stand the roughest kind of building, being just slammed together during wartime haste, and being just two block wythes, not exen brick exterior, giving perfect results. Never have I yet had anybody tell me that there was a leak in any of the cavity walls, and we have built tremendous projects of cavity wall construction. It has

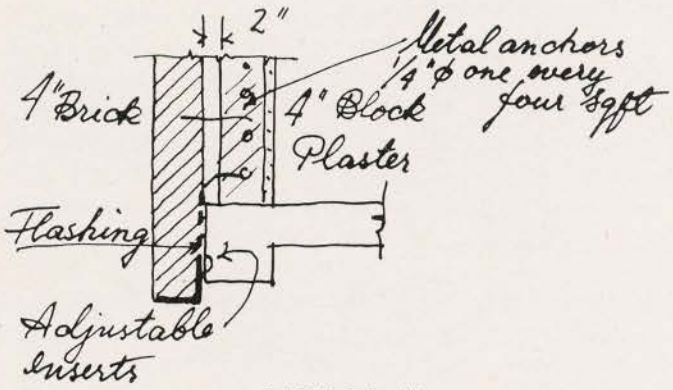


FIGURE 17

also what I consider the great advantage that it can breathe. Let's just draw an ordinary section of cavity wall construction (Figure 17). Let's say this is four-inch brick and four-inch block, and here is a spandrel, and so on. Now any vapor that accumulates in a room, for instance in the showers or when they are washing in the kitchen or whatever it may be, cooking, can escape very readily into the cavity. The wall is in that like the skin of the human body. Just as you open the windows to carry vapors out through the fresh air, so also in the human body as you breathe, you carry vapor through the lungs, but you also have the necessity of being able to throw vapor out directly through the walls, just as in the human body it is vital to have vapor thrown off through the pores. If you gild the body you can't stay that way very long without being choked to death.

So in that sense, the cavity walls not only have the great advantage of not allowing water to get in from outside, but in allowing vapor, not water, to get to the outside, and by a certain amount of percolation of the air they are evaporated just as fast or faster than they come in. I have had the curious experience that never have I been able to detect any weeping — as you know, there are weepholes at the bottom — in cavities with brick facings. With blocks, yes, in blocks you always see the iron streaks. But with brick facing, no. There must be moisture coming in, but the circulation of air, which is free to move, evidently is enough to evaporate any water that comes in before it finds its way to the weephole.

The detail I show here is the modification we have made recently, of having the cavity come right down by the angle, and then the angle is galvanized for protection, and we eliminate the need for flashing. (Figure 18). That is a rather typical cavity wall construction, and plaster is applied directly on the cavity, no damp-proofing is allowed, because we don't want to make the wall too tight.

Speaking on that subject, not so long ago I was at a hospital where we have quite a large addition to design and I have always been much interested in defects of buildings, because I would much rather learn by other people's mistakes than by my own. So I went through

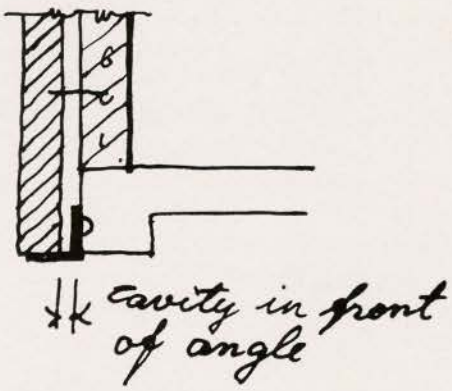


FIGURE 18

all the cracks and found a satisfactory answer for all them, but then they said, "Now here is a problem I am sure you can't solve, because we have been troubled with it for years." They had a little penthouse apartment that had been added later. The original cornice was very fanciful, copper in old style, and to keep the addition in style, it had a copper facing. But as I say, they couldn't understand it, they had leaks and leaks and they would go over the copper with a microscope. I said, "You don't have any leaks, the poor fellow is living in a tin can. Vapor condenses because you don't have the pores open in the building."

So that is something to keep in mind, particularly when we have the onrush of metal lined walls, that unless there is provision for those walls to breathe there is going to be trouble. In fact, there has been to a great extent, and I know often that people are not aware of that simple fact. I was given a job by a steel company, to develop a wall with a metal facing and they said, "For heaven's sake, don't let any metal go through the wall, because we just get rivers of condensation." That is not true, metal sills go through with no condensation. That is not the answer. They sealed the building so tightly that vapor could not get out. You can not educate the inhabitants to open their windows and let it get out, they are not used to living in a tin can and are just going to suffer.

Wates System

I believe our time is running away with me, so I will mention just a few more points. When I was in England I saw a type of construction that was very successful and that was of an ordinary panel type precast concrete produced on a circular rolling conveyor, where concrete was poured in a form and then every step it made was a simple operation, and it came back on the circle being finished, and delivered to small trucks that took it away. The whole set-up of the plant was such that it required a capitalization of only about $15,000 for a very large project. So it was built right in the field, and the machinery was movable and then the erection was made by — I had better show you the unit first so you can follow me

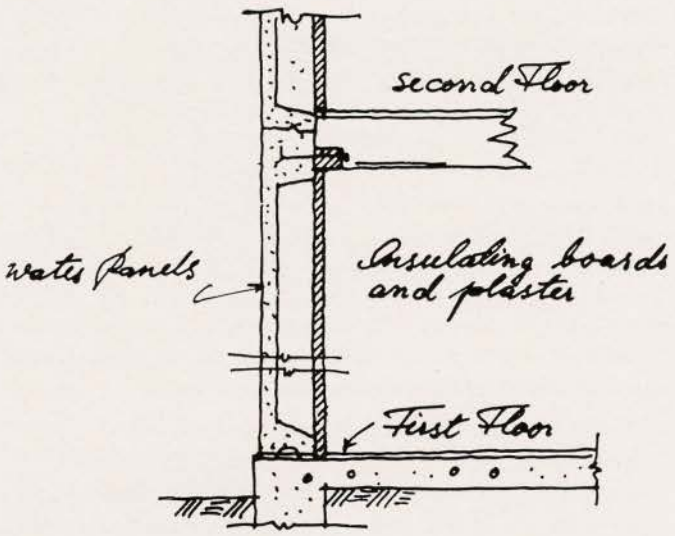


FIGURE 19

— (Figure 19) if you draw a cross-section of the wall, you have ribs around the perimeter, this was an inch and a quarter, and this dimension was as I remember it six inches. The wall was storey height, and the panels were about four feet wide. They were produced horizontally in this position, where the outer surface would be the top surface, in steel molds, and then a pipe template was erected on the job in less than four hours, and that pipe template served to put these panels up against. It served as ladders, it served as scaffolding, it served many purposes, it served as the support for swinging the panels into place in most cases.

There minute attention had been paid to every detail, and that is why it worked, and it was really a wonderful sight to follow through an operation that was graceful, without straining, without anything that didn't fit. People went about it seemingly leisurely, but it is amazing what little time it took to put that house together.

The inner surface was formed by insulating board and plaster, on the outside they used a queer little equipment for squirting stucco, it was like a can with a handle, and as you swung the handle, the stucco would be splashed up against the wall.

I dont know if the construction was such that it would be acceptable here. Mr. Wates, the promoter of it, was here on a trip, He has just returned to England, and we may hear something of it. But I mention it as a principle that is sound and really worked. McClosky tried something similar in Philadelphia, but it didn't quite work. I have been told that he had to give it up and is now building houses, standard stud wall type.

Concrete Without Shrinkage

May I touch on one point, in connection with producing concrete, which I think is very important and is coming. Concrete is vulnerable because it shrinks. As

it is in the liquid state it can not crack, but just as soon as it hardens, then, because it shrinks, it has to drag other pieces of concrete with it. If you consider these two chairs as two elements of concrete, then as they try to shrink they move away from each other and have to drag against the floor. If you could produce concrete so it were under compression while it is setting up, rather than having to drag against a frictional surface, then you would get concrete of far superior quality, you would get concrete with full tensile stress.

Atterbury Panel

A wall panel is now being produced on that principle. I have been the consultant on organizing it from that angle, and what we are doing is pouring concrete at high temperature in the steel forms, taking it out of the insulating jacket just at the right moment and provide cooling of the steel form timed with the shrinking of the concrete, so the concrete always sets up with compression in it rather that tension. In other words, instead of as before, concrete having to move against the form, we make the form move against the concrete and press it together. I am sure that that principle is the right one and that very soon we are going to get precast concrete that is practically indestructible, with strength far superior to natural stone.

Tilt-Up

Many tilt-up walls are being tried. We worked out one for the Government that looked very good, but it hasn't been tried yet. In general a tilt-up system, as you know, consists of pouring a section of the house on the ground and then tilting it up in position.

Mr. Creedon, an engineer, has developed a scheme whereby he tilts up the three sides of a two-story house, leaving the front open, then he takes the second floor slab, lifts it in a crane, gets it up to the proper level, and slides it in on the house, as you would slide a drawer into a slot. It is clever on paper, but I am not convinced that it has much merit to it.

Prefabrication

In general I would like to make this observation, that in the prefabricated field there has been a tremendous amount of fumbling. During the War the various furniture manufacturers saw a great field that they knew nothing about, and they received such a black eye that they are having a hard time living it down. One little piece was always missing that upset the whole business, or warping of the wood made it impossible for the pieces to go together. Other recent experiences have been somewhat in the same vein.

I am personally convinced that until prefabrication is really prefabrication, where everything is produced in the factory – let's take a small house now, we are thinking of prefabrication mostly in that connection. If a complete house could be built in the factory with the plumbing, electricity, everything connected up, and without the necessity of joints, everything built in the factory, then the only problem is to get it on the foundation. You will say, "How in the world can you do that, how will you get under the bridges and grade crossings and so on?" It is very simple, you don't go under, you go over! With the increase in technique of developing aerial transportation, it is, to my mind, a foregone conclusion that very soon we will come to a point where houses can be produced in the factory and then lifted to place by aerial transportation, by helicopters, jet propelled – they can be designed right now to great capacity.

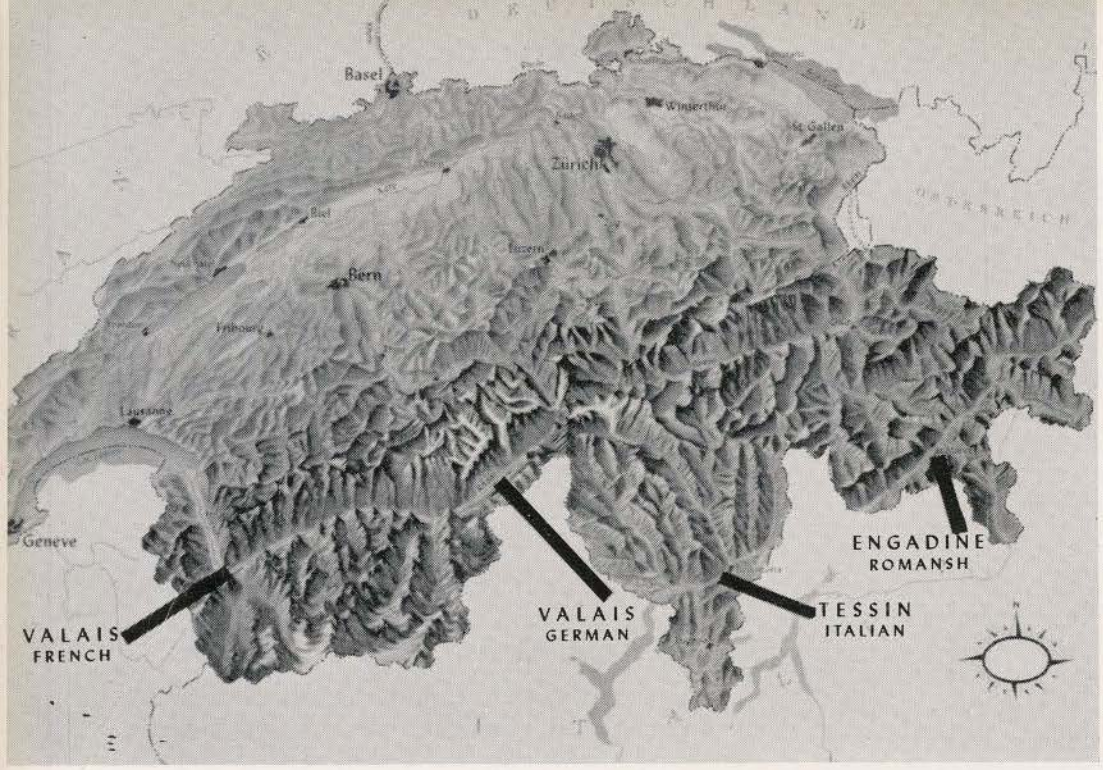
In that sense, prefabrication has a future, but I do not believe by building pieces in a factory, packaging them and sending them to the job, and unravelling the packages and getting them in place and putting the pieces together, is the right method.

It may sound fantastic, but I don't think it is at all, it is the way to go about it. Whether it is by aerial transportation or by other means, I believe that prefabrication must be complete and either you get the plant to the field or you take the complete product from the factory and then deposit it where it belongs.

Conclusion

I think I have taken even a few more minutes than I should, so as a few closing words, I will say I am convinced that it is vitally necessary for all of us to recognize that we cannot consider ourselves as just being specialists in our own field, and rely on other professions to handle their separate packages, and then try to put it together. We will have to all recognize that buildings as such are complete units and we must have a full recognition of the fact that we must have a basic understanding of all the factors entering it. With the great onrush of information we must take advantage of all the techniques of absorbing this information, particularly the basic fundamentals. With an intimate knowledge of such fundamentals, we can establish a firm basis for cooperation.

We must work as a team, we must know the rules of the game, and although we each have our individual strong points, we will have to work together I believe more intimately, and if we do so it will be with much better results.



Map Courtesy of Standard-Mineraloelprodukte A. G., Zurich

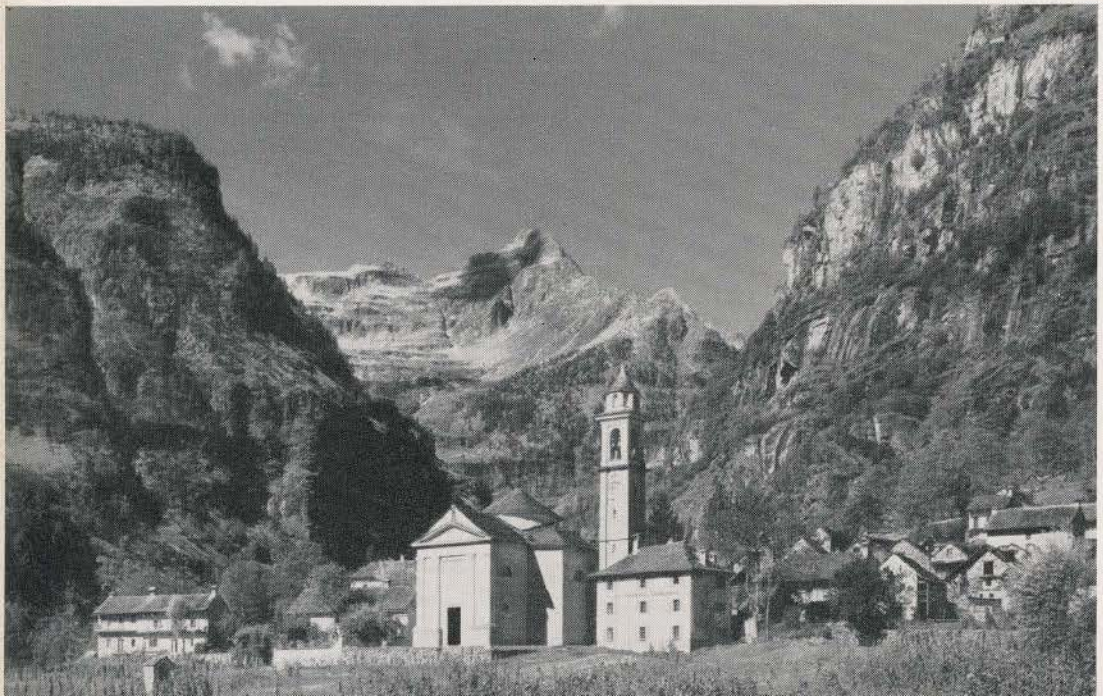
Map of Switzerland showing the location of the Cantons of Valais and Tessin and the Engadine (Canton Glarus) in which these photographs were taken.

COVER PHOTOGRAPH

The view North West to the Grimsell Pass and the Jungfrau group from the Furka Pass, 8100 feet above sea level.

ARCHITECTS ON TOUR

Mr. G. E. Kidder Smith, who did the photography for "Brazil Builds", and is preparing similar volumes on Sweden and Switzerland, took these photographs when he made a tour through the Alps and North Italy. The photographs on these pages are supplied by Mr. Hugh Owen who accompanied him. They are of the traditional architecture in three valleys. Each geographical area, in the flat land between the Juras and the Alps as well as each valley, has developed its own characteristics and the variety is enormous. The rivers which rise in the Gotthard massif, the Rhine, the Rhone, the Inn and the Ticino, together with the four languages spoken, give some indication of the wide external cultural influences. The poverty and simplicity of the peasants' life in the high valleys is startling after the wealth, luxury and culture of the cities.



SONOGNO

TYPICAL ITALIAN SWISS HILLSIDE VILLAGE

Sonogno, surrounded by a chain of peaks 9000 feet high, lies at the head of the Verzasca valley, north of Locarno on Lake Maggiore. The beauty of its setting was offset by the apparent poverty of the mountain peasant. The stone walls and roofs are typical of Italian Swiss houses.

SONOGNO, THE PAVED MAIN STREET

SONOGNO, A SIDE STREET

LES MORGNES, VALAIS

Village houses of log walls, cantilevered balconies and stone roofs. Store rooms on the ground floor.

LES MORGNES, VALAIS

Detail showing mushroom construction of barn.

THE CASTLE AT SION, VALAIS

VICOSOPRANO, CANTON GLARUS

Typical barn construction in the lower Engadine where there is strong Italian influence. Masonry piers and wood panel infilling.

RECKINGEN, A TYPICAL VALAIS BARN

HOSPENTHAL

Detail of "semi-detached" house. The internal partitions lock structurally with the external wall and are expressed on the exterior. The farther house is sheathed with minute shingles.

HOSPENTHAL

The ubiquitous fountain in the village square. Hospenthal lies at the Northern foot of the Gotthard Pass.

TYPICAL ENGADINE HOUSE

The Engadine, which contains St. Moritz, has, like all other valleys, its own geological character. These peasant houses are sometimes enormous and may contain four families. The reveals of the windows are splayed and often brightly decorated. The lower windows usually have wrought iron grilles.

MÜNSTER, VALAIS

NIEDERWALD, VALAIS

Typical upper Valais village with barns and houses closely huddled around the church. The pattern changes from valley to valley. Some have no villages at all, the huts being dotted over the mountain sides.

RECKINGEN, VALAIS

Two views of the village church.

STALDEN, VALAIS

HOSPENTHAL

ST. NIKLAUS, VALAIS

ADDRESS OF MR. LOUIS SKIDMORE

at the Fifty-Ninth Annual Meeting of the Ontario Association of Architects, January 22, 1949

IT is a great privilege to be with you at this Annual Meeting. It is of great benefit particularly in these times to exchange ideas and experiences.

Compared to the architects of today, the architects of the 13th Century must have had a very easy time. Just think of it—nothing to worry them except to make certain that the stone-work got into the right places. No problem of reconciling the structure with ducts, pipes and conduits; no elevators or escalators; no mechanical equipment; and none of the countless items that year after year keep Sweet's Catalogue in business. We can imagine with envy that their specifications consisted of just four sections; General Conditions, Excavation, Masonry and Art.

However, we know that the architect is dependent on the period of civilization in which he finds himself. The effectiveness of his work can be measured by the degree in which he understands this period and accepts it as his program.

In certain historic structures we can still feel the spirit of the age which they served. When in Karnak it is easy to imagine the mysterious rites of the time. In Athens one feels a contrasting clarity and grace, reflecting the balanced philosophy of the builders. In Rome, the highly organized political character of the Empire is vividly recalled in their monuments. No one who has been in the cathedral at Chartres can deny the hypnotic spell of Mediaeval faith.

The last great period of building (and personally I think we're still experiencing its effects) was during the Renaissance when sophistication took the place of faith. Here the articulation of structure was all but lost in concern with ornament.

The degree of originality and drama varied in these buildings but the fact remains that in all cases they reflected unified forces which were abroad at the time. Where there is a strong current of action and reaction at work in the organization of people, either within a nation or between nations, there will be a characteristic expression—good or bad as it may be.

The General Grant style, which followed the Civil War in the States, is generally regarded as a mongrel; however, it can be said to its credit that it was uninhibited by traditional elements. In its own way it recognized the emergence of machine production, even if this expression took the form of such absurd details as rows of useless spindles turned on the wood lathe and the completely unfunctional brackets cut on the jigsaw.

Machine production went on from that time to provide untold items of use (and often uselessness). The engineer, as would seem natural, accepted the machine and its possibilities as his stock in trade early in the game. The architect, for the most part, turned his head in aesthetic horror and resorted to copying from his history books.

The Eclectic in architecture is not restricted to those who work in the historical styles. There is plenty of it in so-called modern architecture where stylistic details are applied without understanding the basic consideration which developed them. There is much more of this "modernistic" skin treatment than there is good modern design.

But let us return to the post-Civil War days. At about that time certain engineers, recognized the possibilities of new materials and new techniques. They followed engineering principles to produce structures which later were to be accepted as milestones. In this connection I wish to mention Paxton's Crystal Palace and Roebling's Brooklyn Bridge. Even as late as the 1930's it was intended that the magnificent steel pylons of the George Washington Bridge over the Hudson in New York be covered with Gothic masonry. However, the beauty of the the bare steel structure was so apparent that this idea was fortunately abandoned, The spirit of the times was expressing itself by sheer power of the program, engineering principle and limitations of the budget.

In the States such men as Albert Kahn followed this trend to produce industrial buildings of great beauty and conviction. It was only when he came to that section of the structure known as the "front office" that he became self-conscious and applied the skin treament.

While I state these facts at the risk of their being "old hat", they nevertheless serve to illustrate the point that we, as architects, must be constantly alert to new programs, methods and economies. To these essentials we must then add over-values which only a trained architect can produce.

Architectural thought is no longer ingrown and the ivory tower days are fast disappearing. We are now taking our rightful places as *initiators* and *co-ordinators* of the many factors involved in modern building. We must constantly resist the danger of becoming set in our ways.

One of the most refreshing and instructive experiences that has happened to our office recently is the problem of designing and building a new town connected with oil operations in South America. The site is a desert. The wind blows 30 miles an hour night and day. In order to become acquainted with the problems, a number

of field trips were organized and other oil camps in all parts of Venezuela were inspected. The climate, the soil, the native living habits, the local labor and materials were studied. All this went into a 100 page report which gave the client a complete picture of his problem at the outset.

Here is an example of the flexibility demanded of an office today. We had to go far beyond the established base line of information from which we automatically proceed in our domestic work.

During the war we were commissioned to build an entirely self-sufficient town in the hills of Tennessee to serve the Army's Atomic Plants. In less than two years' time a city appeared which housed at the peak 70,000 persons. This town is now known as Oak Ridge. In this case, our responsibilities were wide, including town planning, surveying, roads and utilities, as well as the programming and design of housing and community facilities. We prepared requisitions for the ordering of material. We supervised construction. Since the war we have almost continuously maintained at Oak Ridge a complete architect-engineer staff which acts as a service organization to the Atomic Energy Commission. It is my belief that the architect-engineer contracts developed during the war considerably strengthened the position of our profession.

Our philosophy of design is simple. Before pencil is put to paper in the design room, the owner's requirements are closely examined and thought out into a written program of requirements. Thus when the physical design is begun there is a clear basis of procedure. Incidentally this is good for the designer's morale and for the job costs. This approach not only clarifies procedure in the office but gives the client confidence that his program is clearly visualized in principle.

In this connection I am reminded of the remark made by one of my architect friends, a former Paris Prize Winner. Upon seeing the volumes of statistical programs for the Oak Ridge requirements, he said "There is the architectural rendering-1943 model". When my friend was in the Beaux Art, students were trained like a stable of race horses to run a few set patterns, mainly for the prestige of their critic. If a pattern fitted the particular program at hand that was fine; if it only came close, it was used anyway.

As a next step after the written program we put into diagram form the required areas and their ideal relationships. This brings out clearly the individuality of the problem. At this time the client is given fair warning that if his special requirements are jammed into a preconceived structure, the result will be inefficient and certainly undistinquished. As a matter of fact we were fired and rehired twice by the same client for refusing to put a wind tunnel into a Colonial building.

A client usually feels confidence and pride that a structure is being designed for his *particular* problem. The logic of designing the building as an organism, providing the same care for circulation of mechanical systems as for circulation of humans, also makes sense to him. In this way, contemporary expression of his problem seems natural and inevitable—and contemporary architecture has sold itself.

Stress is then placed on the relation of the design to the economics of the problems, be it housing, hotel, hospital, factory or department store. This involves selection of the most suitable structural system, designwise and cost-wise. Emphasis is placed on simple and logical use of materials without forcing them into responsibilities not in accord with their nature. Maintenance problems are also given much attention.

More and more the architect is being given the opportunity of making his weight felt in site planning and the organization of utilities outside the building proper. We are all working toward the integration of design factors relating the owner's problem to the building, the building to the site and the site to the community.

In the recently completed Terrace Plaza Hotel in Cincinnati we had the rare opportunity of providing complete services—from special foundation problems to the design of match covers. Here our services included demolition, all structural and mechanical engineering, special lighting, fabrics, furniture, selection of painters and sculptors and the design of accessories from employees' uniforms to the ash trays.

Our ideas of organization consist briefly of building the organization around key men, rather than attempting to press men into a mould. Rigid procedure is kept to a minimum relying upon capable and independent individuals who have the desire to cooperate.

We have another policy of organization. From time to time we deliberately bring youngsters into the office They are usually "full of enthusiasm"—and help to pep us up. They also serve to establish successive age groups in the organization. Another factor that contributes to the general alertness is the policy of taking on work of a wide variety of character.

I'm certain that we are all interested in how our present period of building will stack up in the future. In this regard there is a tendency to overemphasize the importance of the "skyscraper" as typical North American Architecture. It should be considered only as a solution to a local need based on very special conditions.

For the broader expression of our times we must turn to our bridges and highways, our river control and power projects certain of our commercial buildings, our factories and laboratories, our grain elevators, our hospitals and a few houses here and there.

History indicates that great advancement in design occurs when the times are comparatively peaceful. While these periods may be generated in times of stress, they can only reach fulfillment in periods of good will.

(Continued on page 91)

THE FORTY-SECOND ANNUAL ASSEMBLY OF THE ROYAL ARCHITECTURAL INSTITUTE OF CANADA

THE Inaugural Session of the Forty-second Annual Assembly of the Royal Architectural Institute of Canada, held in the General Brock Hotel, Niagara Falls, Ontario, on Friday, February 25th, 1949, at 2:00 p.m.

Mr. A. J. Hazelgrove, President, in the Chair.

REPORT OF THE COUNCIL

On behalf of the Council, it is pleasant for me to extend a most cordial welcome to the Forty-second Annual Assembly of the Royal Architectural Institute of Canada.

It is customary to commence the Annual Report of Council with some remarks on the state of the Profession and on construction economy in general. To a great extent the two go hand in hand.

The apprehensions of the prophets of gloom for 1948, the third post-war year, proved to be as unreliable as recent weather forecasts. Contrary to pessimistic forebodings, the volume of construction for the year reached an all-time peak, in common with business in general. We have seen this referred to as a boom condition, but we doubt the relevancy of that definition. Is it not rather a token of the immense and important place which Canada now takes in world economy? Is it not also a sign of the awakening of the great potential of Canada, after years of retarded development? We look for some ups and downs, but faith and courage will carry us out of the valleys even as they brought us to the peaks.

We believe that the problems and obligations met by the Profession in the past year, and the fruits of the labours of the whole Construction Industry, are the best answers to theories now being spread that any private concern, be it a business or a Profession, must, ipso facto, be a social menace.

The President of the Bank of Montreal, speaking on the same point, added: "Business must tell its story more completely, and in terms more readily understood by the man in the street, than it has done in the past."

There is food for our serious consideration in that admonition.

Now we come to a part of our annual report which we would gladly forego. "Time, like an ever rolling stream, bears all its sons away." It is our duty to record, with deep regret, that thirteen members of the Institute went out with the tide during the past year. We will respect and remember them by standing in silence as the names are read:

Louis A. Amos
Leopold Beaulieu
Roy Hartnoll Bishop
William M. Dodd
David R. Franklin
Robert Stacey Hambleton
William Ford Howland
Harold Robert Little
John Methven
J. Melville Miller
A. W. Reynolds
C. A. Reeves
George J. Stephenson

"They rest from their labours, and their works do follow them."

As we think of those who have passed from sight, we also think of those who follow in their train. Your Council has heard much of the quality of the serious minded young men now going through the Architectural Schools. The time appears to be opportune to renew the appeal made by your President in the January Issue of the "Journal". It was an appeal for the older men to give these tyros every encouragement, to take one or more of them under our individual wing, and to supplement their very excellent training in the schools with the help and advice on non-academic matters which experience only can furnish.

It is also opportune to consider another type of student, not numerous it is true, but meriting some recognition at the hands of our professional bodies. We refer to the man who through circumstances or for divers reasons has not had opportunity to attend university, but who nevertheless has the ambition and the ability to advance himself to professional status by private study and the passing of the series of examinations prescribed by regulations set up under provincial statute.

We do not suggest that this is the most desirable way to qualify, but we do say that it is the duty of our Institute and its members to recognize outstanding ability wherever displayed. Your President will therefore recommend to the Incoming Council that from time to time some worthwhile and special award be made to outstanding students, registered as such with the Provincial Associations and who are taking prescribed examinations.

At the beginning of this report, we referred to the great potential of Canada. This recommendation is an endeavour to tap and develop a secondary source of the great potential of architectural ability which will serve Canada in the future.

In preparing the material for this report there was striking evidence of the multiplicity of activities included in the work of the Institute. Your Executive Committee has consistently shunned the temptations of the side

roads and endeavoured to stay on the broad highway of increasing service to the profession, and the public at large.

If we are to maintain and develop that service, it is absolutely essential that the Institute Office and staff be put on a basis comparable with the standing of the organization and the ever increasing volume and importance of the work. This is not a new proposal—it was made some years ago, but due to lack of agreement by some of our constituent bodies, it has not been possible to put it into effect.

At this point, your President would like to make a few personal remarks on the subject. Previous discussions have always mentioned Ottawa at the most desirable location for the R.A.I.C. Office, and as the most practical location for effective work on behalf of the Institute. As a resident of Ottawa, I have refrained hitherto from commenting on the location, feeling that it should be determined by those living outside the Capital Area. Based on my experience in the Presidential chair, I am going to break that silence and say without equivocation that Ottawa is the only logical and practical location in which to establish the Institute Office. Further, I say that if this Institute is to attain maximum usefulness, it is imperative that the business of the Institute be carried out by a paid officer working under the direction of the Executive Committee. In saying this, I make no reflection on Mrs. Barstow who has established her reputation as Secretary par excellence, but, gentlemen, it must be obvious to you that we need something more than a Secretary. We need, more than anything else, a full time Executive Officer to watch the interests of the profession from coast to coast, and to carry out the instructions and policies determined by the President and Council.

No President, unless perhaps he be a retired Architect, can cope alone with the volume of work and travel incidental to his duties. He may struggle to do his best without entirely neglecting his practice, but during his tenure of office he contemplates things left undone which ought to have been done, and so contemplating, wonders whether there is not a better way. I suggest that development of the Institute to its full powers and maximum usefulness demands the better way already proposed. Thinking not of myself but of my successors, common sense alone should determine the lessening of the burden which retards a President in the full discharge of his proper function.

The hindrances to the suggested end are well known. I hope that the statement I have just made will be accepted by those who differ from me as a frank and true picture, introduced for the purpose of keeping this issue alive and in the hope that reiteration of the facts will induce favourable reconsideration.

Reverting to the Editorial "we", one of the most important matters to come before your Executive Committee during the past year was the situation in Saskatchewan. Unfortunately, information reached us from a private source *after* the matter was an accomplished fact.

On the 22nd of June, 1948, your President received a personal letter from an Architect friend in Saskatchewan, in which letter was conveyed the astounding news that the engineers in that province had succeeded in putting through a revision to the Engineer's Act which would permit them to design among other things, factories, warehouses, swimming pools, rinks, garages, cold storage plants, grain elevators and flour mills, hospitals, schools, and public buildings, and structures necessary for the proper housing, administration, or operation of the works mentiond in paragraphs 1 to 7 of the Act.

At this time the Institute had received no communication whatever from Saskatchewan with regard to the legislation, and it was not clear from my friend's letter as to when it passed the Saskatchewan House.

Later, it transpired that the legislation was enacted in March last.

Now some may feel that legislation concerning the status of the Architect in the Provinces is a matter beyond the jurisdiction of the Institute and the Institute Council. Your Executive Council takes the position that the Institute, formed as is it by the component provincial associations, has a very definite interest on behalf of its whole membership in counteracting increasing encroachment by others in the field of Architectural practice.

To take Saskatchewan as an example, no doubt if the Institute had known of the situation in advance, strong representation would have been made to the members of the legislature on the training and qualifications required for designing and planning buildings, and the absence of training of that kind in the background of most professional engineers. Certainly it was a great mistake if tacit consent was given to legislation which would permit engineers to design certain types of buildings without qualifying that privilege with some important restrictions. However, in this Confederation of ours where the control which Provinces exercise over property and civil rights is so jealously guarded, the Saskatchewan Architects no doubt never thought of seeking outside assistance, much less of trying to conform their position to some Dominion-wide policy.

Your Council believed that the Institute acted in a manner consistent with its relations with component Societies by communicating at once with the Saskatchewan Association, offering assistance and endeavouring to obtain the facts. This was more than three months after the passing of the legislation, but neither the Executive Committe nor the officers of the Institute are omniscient, and it was not practicable to act in a situation of which we had not even heard.

Our offer of assistance was warmly acknowledged, but we were informed that no steps could be taken

to seek amendments to the objectionable legislation until next session of the Provincial Legislature.

At the annual meeting of the Saskatchewan Association, a Committee was formed to prepare the necessary material.

Your President has been criticized for not taking immediate action after the information was received from Saskatchewan, and doubtless will be criticized for stepping outside of the bounds of Dominion relations in a matter purely provincial. The answer to the first criticism is that acts once passed are not amended between sessions of the legislature, that everything was done that could be done at the time, and to the second, that the matter in its implications extends beyond provincial boundaries and is of importance to the whole profession.

Therefore, your Executive Committee invited special delegates from each Province to a conference during this Annual Assembly, the objective of the conference being a review of the status of the Architect in Canada and a consideration of action necessary to preserve our professional position. It is hoped that this conference will present its findings to this Annual Meeting.

A review of the activities of the Institute must necessarily duplicate some of the items mentioned in the reports of the Standing Committees—but at the risk of repetition we refer to some matters of special interest:—

The Institute Office made an attempt to keep the members posted on Dominion Import Regulations so far as they concerned building materials, but the flood of amendments, counter amendments and departmental rulings thereon made it impossible to keep up with the Canada Gazette, so the circulars were dropped.

The Institute was asked to make a submission to the Dominion Authorities seeking an increase in the Import Duty on architectural plans from foreign countries. While it may be said that there is no difference of opinion as to the desired increase, there is some divergence on the wisdom of pressing the matter at this time.

It is regrettable that the Income Tax exemption whereby salaried Architects could charge dues to their professional organizations as an expense, has been withdrawn. In common with other professional bodies, representations were made to the authorities as to the inequity of this ruling, but without avail.

The Institute has conferred with the Department of Public Works in Ottawa in connection with the revision of the Department's terms of engagement of private architects. Several clauses which were open to objection have been clarified or amended to conform to general practice, but the question of remuneration of the Clerk of the Works remains unsatisfactory, although some amelioration of the architect's position on smaller work is included in the latest draft. As the matter is still under discussion it would be unwise to go into it in detail at this meeting, but when discussion ends, the conclusions will receive publicity in the "Journal".

The Institute had many enquiries from European architects wishing to establish in Canada, and from some who wished the Institute to sponsor their entrance. Your Executive felt that in the present unsettled state of affairs, sponsorship was impracticable if not impossible, while the large number of Veteran students who will be graduating from the schools furnished an effective reason for withholding encouragement of any influx of European architects at the present time.

We are greatly indebted to Mr. Edouard Fiset of Ottawa, who, as the honorary representative of the Institute, attended two important International Conferences on Housing and Town Planning at Lausanne and Zurich. Mr. Fiset's very excellent reports were published in the "Journal".

The long cherished hope of establishing an Architectural Scholarship is several steps nearer realization. At the Annual Meeting you will be asked to ratify certain proposals which will make an award possible during the coming year.

The Council is happy to take this opportunity to acknowledge the indebtedness of the whole Membership to the Editor and the Editorial Board for their labours in connection with the production of the Institute "Journal". The "Journal" has been maintained at a consistently high standard. The Honorary Treasurer will be reporting on the financial return. In receiving the report, it should be remembered that, while the returns derive from advertising, the advertising would not materialize were it not for the exceptional character of the "Journal" itself. We pay grateful tribute where tribute is due.

It wil be recalled that the President and Executive Committee in 1947 honoured the Right Honourable W. L. Mackenzie King with an Honorary Fellowship of the Institute, in recognition of his untiring efforts to ensure the development of Ottawa and its environs in a manner befitting a National Capital. Due to Mr. King's indisposition, presentation of the certificate and medallion was deferred until last Spring, when the Executive Committee waited on Mr. King in Ottawa. The presentation was made by Mr. Chas. David, Past President.

This year, by resolution of the Executive Committee, it was decided to honour Mr. Jacques Greber, S.A.D.G., S.C., S.F.U., by award of an Honorary Fellowship of the Institute in recognition of his work in the preparation of the Master Plan of the National Capital.

On behalf of the Council, I wish to express my thanks to Mr. Charles Lenz, President of the Ontario Association of Architects, and through him to the Council and members for their support of the Hamilton Chapter in making it possible for us to meet in this world famous

spot. To the Chairman and Members of the Hamilton Chapter I extend special thanks for their efficient and excellent arrangements for this Forty-second Annual Meeting. It is no small task to make such arrangements when the venue is in one's own city, but the difficulties bear great increase when the place of meeting is many miles from the Chapter centre. Believe me, gentlemen, we are very grateful to you.

FINANCIAL REPORT

The following is a summary of the Report of the Honorary Treasurer, Mr. J. Roxburgh Smith (F), as confirmed by the Auditor:

Revenue

Pro Rata Contributions from Component Societies	$6,079.00	
Sale of Contract Forms	1,962.30	
Re the Journal, R.A.I.C.	6,227.56	
Bond Interest	218.54	
Total Revenue		$14,487.40

Expenditures

Secretary's salary	$2,280.92	
Convention Expenses (net)	1,039.36	
Travelling Expenses (net)	1,196.25	
Rent—Montreal Office $ 50.00		
Toronto Office 445.00		
	495.00	
Allied Societies Fees	283.66	
Printing, Stationery and Office Expenses	849.94	
Telephone, Telegrams and Postage	681.31	
Scholarship and Competition Awards	25.44	
Insurance	14.80	
Audit Fee	50.00	
Legal Fee	615.93	
Cost of Contract Forms	1,198.96	
Unemployment Insurance	36.33	
Sundry	135.82	
Total Expenditures		$8,903.71
Gross Surplus		$5,583.69
Less Depreciation for furniture and office fixtures		65.80
Net Surplus		$5,517.89

Summary of Assets

General Account — Cash, Bonds and Other Assets	$16,230.73	
Capital Account — Cash and Bonds (Fellowship Entrance Fees)	9,909.63	
Scholarship Account — Cash and Bonds (Fellowship Annual Dues)	6,631.74	
Reserve Fund for the Journal, R.A.I.C.	5,037.50	
Total Assets		$37,809.60

A. J. HAZELGROVE, *President*

BOOK REVIEW

THE HOUSE FOR YOU TO BUILD, BUY OR RENT

Catharine and Harold Sleeper, John Wiley & Sons, Inc., Published in Canada by Reginald Saunders, & Co. Ltd., Toronto Price $5.00

The co-author of Graphic Standards, and author of Architectural Specifications, together with his wife, present a guide to house building, buying or renting, directed principally at making these exceedingly nervous operations intelligible to the general public. The authors feel that negotiations can be approached with more eqquanimity, if certain basic facts of site, selection, house design and house construction are known. The book presents these facts in clever drawings, cartoons and popularized script. It is not a book of photographs, and existing plans, but rather a compendium of background information, useful analysis and check lists to guide the layman considering an unfamiliar field making large demands on his pocketbook. A visual presentation of the peculiarities of the "architect's lingo" is given presumably to enable the bewildered client to follow at a respectful distance the mysterious arguments of his architect and contractors. Some time is spent on appreciation of the contributions of the architect, even to inclusion of an outline of his formal training and practical experience.

To the technician, the book does not pretend to contribute, being deliberately too much of a "Popular Mechanics of Architecture" for him. To the professional planner, it serves as a provocative check list for analysis and presents a view of the proceedings from the client's point of view. Incidentally, the book's cartoon and sketching technique should suggest to the architect an effective and rapid method to get his ideas across to clients whose understanding of orthographic projection in plan, elevation and technical discourse is usually as profound in the female of the species as her grasp of nuclear physics, and whose understanding is usually inferred by the male. To the architectural student, the book offers a very reasonable analysis of family and lot as they shape the house, and may help him to reconcile aesthetic theory with practical requirements. To its primary audience, the general public, the book says most. Architects could well keep "The House for You" in their library under the heading of client education. The style of writing appears to derive from a definite reaction to having codified Specifications in Mr. Sleeper's monumental work. It is disappointing to find a chapter on Types and Styles, wherein English, French, Colonial, Contemporary are summarized a la Graphic Standards, The rest of the book is a factual analysis of today's social, technical, and economic factors shaping today's house—a commendable and functional approach, certainly incompatible with this implied brokerage and shopping among the periods.

James A. Murray

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

NEWS FROM THE INSTITUTE

ALBERTA

In my capacity of President, I take great pleasure in expressing a warm welcome to this our thirty-eighth annual meeting. It is unfortunate that so many of our members from Calgary are not in attendance, and looking back on our meeting last year, I feel that serious consideration should be given to having our next meeting in that fair city.

It is said that activity in the building trade is a design of prosperity, and so it is rather apparent that prosperity has arrived in this Province of ours. Indeed, I feel that there is more opportunity here than anywhere in Canada today, as where else have they those huge natural resources that we possess, and which are just beginning to be developed. Our opportunity lies right here, and the Architect will need to play a big part in the development of this area.

Our Provincial Government has new revenues today amounting to millions of dollars, and I don't think it is wrong to suppose that a great deal of this money will be spent on the improvement of our educational and health facilities, along with various other items in the interests of our society as a whole. It will be our duty to provide architectural service in these and many other private developments that are bound to come, and, if we are to retain the high regard that our profession has carried for the past centuries, we must realize that our supreme function is to render to the public a service that will give to the people of Alberta the best in architectural planning and design. To do this, we must find the time for detailed research and study of new uses of materials and latest methods of construction.

Unfortunately, co-operation among us has been sadly lacking in the past, and it is my recommendation that local chapters of the Association will find time for periodic gatherings in which it is hoped closer liaison among all will result. It is essential that members adhere always to strict professional practice and behavior, and a closer relationship among the members will, perhaps, discourage the "shopping around" of would be clients that has so often occurred in the past, to the detriment of the profession as a whole.

In some Provinces the engineers have encroached, through Legislature, into the field of architecture. This will be discussed today at this meeting, and I feel that if such an attempt is ever made in Alberta it will be absolutely necessary that we are able to put up a solid front, and be in such a position that our profession can not be criticized.

In these busy days the shortage of staff is acute in every office. The schools of Architecture in Canada have, at present, very heavy enrolments, and no doubt many of us are being swamped with applications for summer employment. I hope that all those of us who have established a practice will take in as many as possible, and give of their advice, instruction and the knowledge of their experience. It is up to the profession as a whole to encourage these bright and enthusiastic newcomers who will, no doubt, contribute a good deal of excellent design and forthright thinking into any office.

I would like to thank the members of council who gave of their time during the past year toward carrying out the affairs of this Association, and although it has been a year with very few problems to meet, I feel that it has been quite a successful one.

Gordon K. Wynn

BRITISH COLUMBIA

This, the first B.C. letter from Victoria for some time, comes when both the Architects and the Engineers are awaiting the outcome of their proposed New Acts in the Legislature.

Partly in connection with this, but more for the interest of the General Public, an exhibition of Current Architecture is being shown in the Rotunda of the Parliament Buildings. It is the same exhibition which proved so successful in Vancouver and though, through lack of space, we have had to thin it out a little, we are hoping that it will create a great deal of interest in more Conservative Victoria. Professor Lasserre will meet the local press to obtain their co-operation. The same evening, at a dinner meeting, he will address Members of the Chapter and Students on Architectural Education, particularly with references to U. B. C.

These Meetings of the Chapter are now arranged to coincide with meals and are showing a far better attendance! In addition to the regular meetings there will be meetings for members and students, as is proposed for Professor Lasserre. These are welcomed by all.

Canada's so called Evergreen Playground has let us down badly. Interspersed in the record cold spell we have had two days of record rainfall. The results are quite horrifying and the number of leaks and wet basements in buildings, old and new, points to a revision in design standards both from the Architects' point of view and also in the case of the local drainage system.

J. H. Wade

ONTARIO

Much of the trouble in our world to-day is caused by Things in the Wrong Places.

This phenomenon appears in a million different manifestations and over a tremendous scale. All the way from

a misplaced eraser to an unbalanced distribution of natural resources.

Individually and collectively we strive day by day to cope with these problems. I trip over a footstool, and correct the situation by kicking it back into place. Our electric power threatens to run short, and we hasten to build dams to hold the water where it is needed to serve our purpose.

Somewhere in the middle of the scale lies the field of the architect. The architect is deeply concerned with this type of problem, for much of his time is devoted to putting things in their right places. Sometimes this is called functional planning, or co-ordination of spatial relationships, or other high-sounding term. In reality it is just putting things in their right places.

This process, carried to its logical conclusion, has neither beginning nor end.

A desk is a component in the plan of a room; by itself it lacks meaning. A room is a component in the plan of a building; by itself it lacks meaning. A building is a component in the plan of a city; by itself it lacks meaning.

Each individual design, of whatever scale, can be evaluated only in terms of its relationship to its immediate environment. Should you doubt the importance of environment, it is only necessary to imagine a Comptometer in the teepee of an Indian, or the Empire State Building in the middle of the Gobi desert.

No enlightened person to-day would deny the essential interdependance of architecture and town planning. No building can exist apart from its site. No building exists as a separate entity, but as an element in the plan of the community.

Unfortunately our appreciation of community planning is still in a rudimentary stage of development. And this is where we go far astray.

As a result, we see on every hand innumerable cases of Architecture sadly out of step with Planning. The prize example in Toronto to-day can be found at the intersection of King and Bay Streets.

Here at a corner already dedicated to Finance, two immense new Banks rise to dominate their elders. The imposing Bank of Montreal has already opened its Herculite doors to a respectful public. The new Bank of Nova Scotia will be even bigger, taller, and, possibly, even more dignified than its neighbor.

They will not be notable examples of contemporary architecture. But we may assume with confidence that the distinguished architects responsible for their design will have solved the problem within their terms of reference.

Only too often the architect's best efforts are frustrated by conditions quite beyond his control. His work stops short at the exterior walls; the site and its location are imposed by economic factors against which he is powerless. Such appears to be the case in these examples.

The city planner will not pass this corner without experiencing resentment and dismay. It is so painfully evident that these huge new buildings are Things in the Wrong Places.

As architecture, we may accept them. As planning, they are utter failure.

In a downtown area already jammed beyond capacity, these monsters will bring more people, more cars, a still greater demand on public transit. And, by way of compensation, somewhat less light and air.

A big building has this in common with a good square meal. There must be a reasonable interval between it and the next square meal, in order that both may be enjoyed to the full.

Le Corbusier demonstrated this common-sense principle just twenty-nine years ago, in his early plans for the business center of Paris. His 60-storey office towers were spaced a thousand feet apart—a magificent conception. The only sensible way to use a skyscraper.

This is idealistic, of course. Our system of taxation, our long-established land values, impose other conditions upon us. But need we accept, without question and for all time, a scale of "values" so patently out of line with common-sense solutions to planning problems?

Shall we wait another twenty-nine years?

"Too soon ve grow oldt,
Too late ve get shmart"

—Old German Saying

Kent Barker

QUEBEC

In the good old days when writing was writing and reporters were unknown, the ghost writer produced the manuscript from which the stuffed shirt said his piece. Today we see the situation in reverse, where the report of the P.Q.A.A. Annual Meeting is written by a stuffed shirt and the real ghosts are Messrs. R. E. Bostrom and H. Ross Wiggs who attended the meeting in person and were kind enough to give me the facts and highlights on which to base a report.

The meeting were held in the Chateau Frontenac, Quebec City and were opened with the adoption of the minutes of the 57th Annual Meeting held in Montreal on January 30th and 31st, 1948. The reports of the President, Standing Committees and the Auditors were given and were followed by the President's informal comments.

J. C. Meadowcroft was elected President for the ensuing year with Pierre C. Amos as first Vice-President, H. Ross Wiggs as second Vice-President, Emile Venne as Honorary Treasurer and Maurice Payette as Honorary Secretary. John Bland, George E. DeVarennes, Edouard J. Turcotte, A. T. Galt Durnford, Gaston Amyot, Alphonse Belanger, Henri Mercier, Rene Blanchet, H. A. I. Valentine and Patsy Colangelo were elected councillors and Maurice Payette, Harold Lawson, A. J. C. Paine, L. N. Audet, Oscar Beaule, J. Roxburgh Smith,

R. E. Bostrom and J. C. Meadowcroft were elected delegates to the Royal Architectural Institute of Canada. The retiring President commented on the highly satisfactory financial statement for the past year.

The Friday afternoon and evening sessions were devoted to new business. They were very lengthy but were finally concluded at the appointed hour on Saturday morning. It was here that a great many members expressed their views, with eloquent expositions from the heads of special committees who gave detailed accounts of the Associations activities during the past year and who recommended definite policies for the future. On Friday evening a number of the delegates dined at La Maison Blanche at Beauport and no doubt discussed the profession of architecture well on into the night. Saturday morning concluded the business of the meeting with cocktails and lunch in the Chateau Frontenac which was well attended. The guest of honour was Mr. Antoine Rivard, representing the Honourable Maurice Duplessis, Premier of the Province of Quebec. Mr. Rivard spoke briefly on the responsibilities of architects for the appearance and physical environment of our Province. Mr. Gerard Morriset then gave an illustrated lecture on the Quebec House from the earliest times. Included in his slides were many in colour and also illustrations of the historic houses and landmarks to be found around Quebec and Montreal. Another interesting feature was the kind invitation of Mr. Paul Rainville, Director of the Provincial Museum, to see an exhibition of paintings by outstanding contemporary Canadian and American painters on the subject of "oil". Then there were a number of small exhibits prepared by well known manufacturers of building materials and appliances which the architects were invited to see.

I am assured that those members who attended the Annual Meeting enjoyed their visit to Quebec City where they were greeted with cold weather and blizzards. Yes, the weather was picturesque but it may have discouraged many who contemplated leaving the hotel. However, a good view of the river can be had from many of the bedrooms in the tower and I feel sure that a number of members enjoyed watching a ferry plow its way through the ice.

Richard E. Bolton

ADDRESS OF MR. LOUIS SKIDMORE

(Continued from page 83)

The significance of architecture in our time will be greatly conditioned by the degree in which the world's international differences are settled. We, as architects, can in some measure aid this realization by taking advantage of every opportunity to give vital expression to our environment.

It has been said that "courage is the ability to show grace under pressure." To me this well expresses the technique of living and working in these chaotic times. Taken as a whole, the impression of present day building is pretty frightful. There is not yet the prevailing spirit of grace—but there is plenty of pressure. It is up to us to act with grace.

In this connection, you may be interested in the status of construction for the United Nations.

The 17 acre site has been cleared of large slaughter houses and other structures. Demolition is complete.

Excavation for the entire site, except the area reserved for the Mission Building, is under contract. Excavation is 90% complete.

The foundation contract has been let and work started.

A general contract for the Secretariat building has been awarded, and the contractor's "shanty" is on the site.

Steel has been purchased with first delivery on March 1st. Erection is to start April 1st and to be completed August 1st.

CONTRIBUTORS TO THIS ISSUE

Fred N. Severud

Mr. Severud was born in Bergen, Norway, and graduated in Civil Engineering at the National Institute of Technology, Trondheim, Norway. He practices as a consulting engineer from his office in New York, and his work includes a variety of structures including hospitals, airports, housing developments, marine construction and industrial buildings of all types. Mr. Severud's approach to structural design is well known and he has consequently been in great demand as a lecturer by students and professional men. He has spoken at Harvard, Princeton, Yale and Oslo. He is a prolific writer and has contributed to most of the engineering and architectural magazines in the United States.

LOUIS SKIDMORE

Partner, Skidmore, Owings and Merrill: Born Lawrenceburg, Indiana, April 8th, 1897. Schools: High School, Peoria, Illinois, Bradley Poly. Inst., Peoria. Post Graduate work, Massachusetts Institute of Technology.

Architectural Designer Maginnis and Walsh, Architects, Boston, Massachusetts. With A Century of Progress, Chicago, as Assistant General Manager. Director, School of Architecture, Armour Institute (now Illinois Institute of Technology). Senior Partner, Skidmore, Owings and Merrill, Architects, New York, Chicago and San Francisco.

Professional Advisor to Chicago Art Museum on architectural competition. Board of Design, New York World's Fair. Associate Architect on United Nations. Served with 16th Aero Construction, United States Army with A.E.F., World War No. 1. Awarded Rotch Travelling Fellowship for two years' European Study. Manhattan District award for services in connection

with work Atomic Energy Commission Program at Oak Ridge, Tennessee.

Member, American Institute of Architects, Architectural League of New York, Association Military Engineers, New York Building Congress, Vice-President and Director, Phi Kappa Sigma. Presbyterian. Clubs: Engineers, New York City; Tavern, Chicago; New York Economics Club. Author: Section on Exposition Architecture, Ency. Britannica; co-author with Samuel Chamberlain: Tudor Architecture; Contributor to Architectural Forum, American Architect, Architectural Record, etc.

FEDERAL COURT PUTS "WATER HAMMER" INTO INDUSTRIAL CONSTRUCTION PICTURE

"Water Hammer" may well become a major factor for consideration in new plant construction and design as the result of a verdict returned in Madison, Wisconsin federal district court last December. In the action, the L. L. Olds Seed Company of Madison won their suit for $25,249.01 for water damages against the Commercial Union Assurance Co., Ltd., New York. The seed company based its action on the standard extended coverage clause in its $555,000.00 policy.

"Water Hammer" is a very common hydraulic phenomenon present wherever flowing water is suddenly stopped (as by automatic valves in many industrial installations).

The case, based largely on expert testimony was submitted to the jury after only two days of argument. The jury returned its finding after five hours.

Events leading up to the case began in November of 1946 when employees of the L. L. Olds Seed Company reported for work on a Monday morning to find the basement of the building completely flooded to a depth of approximately five feet. Subsequent investigation disclosed that the water was coming from a ruptured 2 inch lead water main under the floor.

Court action began after the Commercial Union Assurance Co., Ltd. ruled that the resulting damages were not covered under the terms of the seed company's policy. Emerson and Walter Ela, attorneys for the seed company, immediately filed suit basing their claim on allegations that the pipe rupture was caused by "water hammer" in fact an explosion and thus within the terms of the standard extended coverage clause of the policy.

Amount of the damages was stipulated and the issue was resolved in pre-trial discussion to a determination of whether or not there was actually an "explosion" in the water pipe. Judge Stone instructed the jury to restrict its findings to this issue.

Both parties in the case summoned experts to the witness stand for testimony on the possible causes of the rupture and the nature of those causes. Court examination of the actual section of damaged pipe led the jury to decide that the damage had been caused by "water hammer" and further that "water hammer" damage was explosive in nature, caused by sudden pressure from within.

Concerted action by insurance underwriters as a result of this verdict could result in revision of codes to require "water hammer" arresting equipment. Or, in the event that extended coverage clauses are rewritten to except "water hammer" damage, such protective equipment would be of primary concern to industrial builders.

Expert testimony on the result and nature of "water hammer" was given during the trial by Professor Lewis Kessler of Northwestern University and Henry Pommerenck, field engineer for the Wade Manufacturing Company of Elgin, Illinois, manufacturers of devices designed to prevent "water hammer."

NOTICE

The Canadian Region of the Illumination Engineering Society will hold their annual conference at the Royal York Hotel on Thursday, April 28 and Friday, April 29, 1949.

A cordial invitation is extended to all those persons in management or engineering, who are interested in lighting and its application, to attend. Guests may register for the whole conference or only during the presentation of individual papers.

Outstanding speakers from all fields of lighting will present papers at the conference. They include I.E.S. President, L. E. Tayler, Ward Harrison, international authority on brightness, Robert L. Zahour on "Office Lighting" and Art Barr covering "Slimline Fluorescent in Store Lighting" and Mr. Ralph Evans will speak on "Seeing Colour."

Of particular interest to architects will be a paper by John Chorlton, "I.E.S. Recommended Practice of School Lighting, in Practice" and Don Angus who will speak on "Consulting Engineers' approach to Lighting Projects." A copy of the complete program can be obtained from F. C. Ashby, 212 King Street West, Toronto, Ontario.