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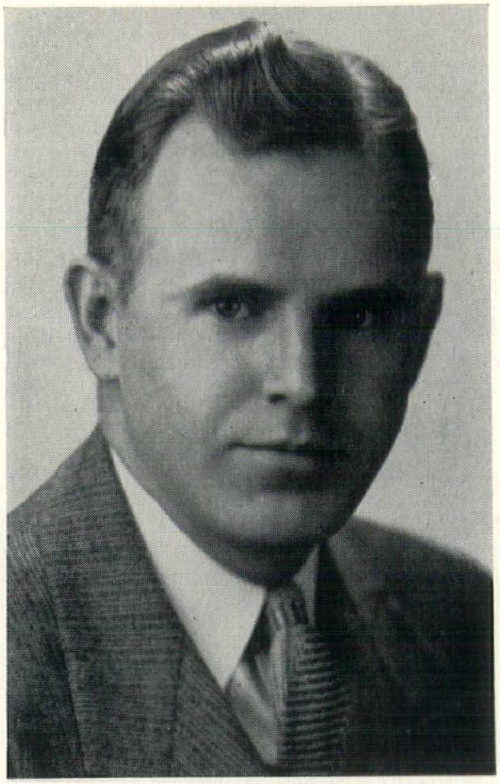

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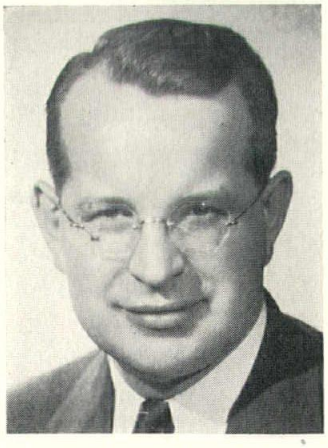

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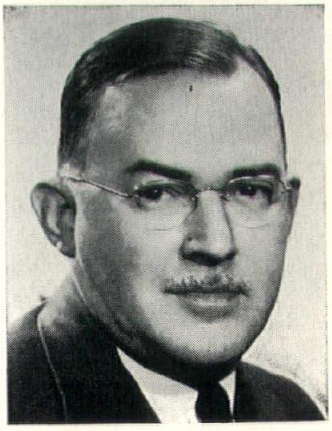

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Volume Two JANUARY, 1949 Number One

Basic Principles of Radiant Heating

By ERIC F. HYDE

The following address was presented by Mr. Hyde before the Great Lakes District A. I. A. Seminars in September, 1948. Permission has been obtained from Mr. T. Napier Adlam, from the A. M. Byers Company, and from The Chase Brass and Copper Company for publication of references from their respective copyrighted publications and hereby gratefully acknowledged.

Radiant heating was rediscovered in the early part of the century by Professor Arthur H. Barker of London, England, when he noted that one particular room in his home was more comfortable than the other rooms due to the fact that one of the walls was tempered by furnace flues. He found that he was able to produce the same effect by embedding hot water pipes in the walls of the cooler rooms, and so the modern method of radiant heating was born. Professor Barker obtained the first patent on this method of heating in England. The method covered his idea for obtaining thermal radiations from plaster in which is imbedded a network of pipes. Inasmuch as Professor Barker was not commercially minded, these patent rights were sold to Messrs. Richard Crittal and Company, who developed and installed this method of heating in many of the modern buildings of Europe. The first large building to be equipped was the Royal Livre in Liverpool, in 1909.

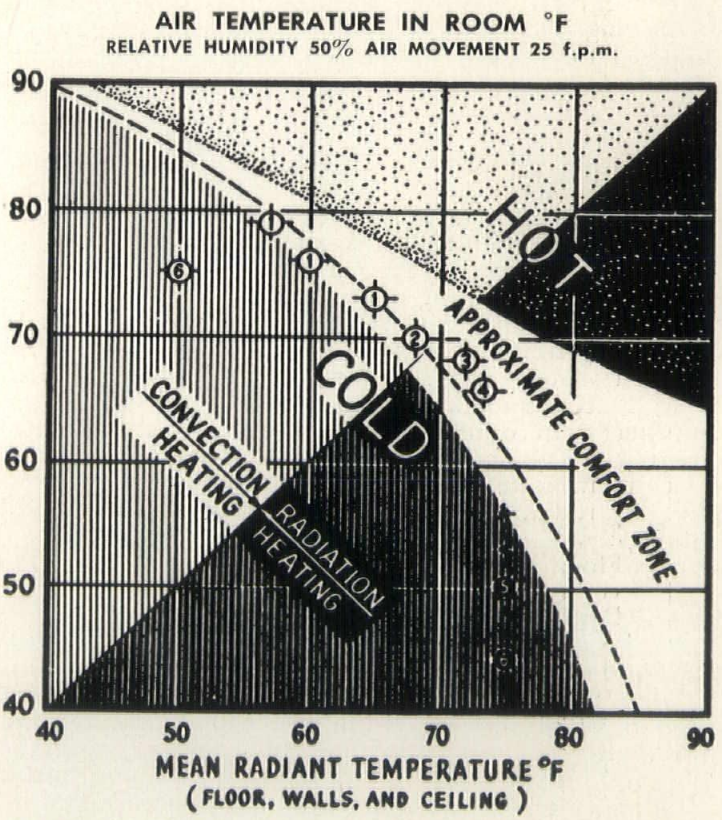
The next development in radiant heating was made by George H. Widdows, county architect of Derbyshire, England. Mr. Widdows developed a system whereby thermal radiations are emitted from the floor by placing the pipes under the floor. At first, steam was used in the pipes, but when it developed that the occupants could be kept comfortable with lower temperature, Mr. Widdows changed the heating medium to hot water.

Following Mr. Widdows' innovation of heating with pipes below the floor, Messrs. G. N. Hadden and Sons, heating contractors of Trowbridge, England, conceived the idea of creating the same conditions by circulating hot air through ducts or flues placed under the floor. Undoubtedly, this idea had its inception from a well-preserved historical heating system known as the hypocaust system which the Romans constructed in 55 A. D. at the Roman baths, in Bath, England, which is situated only about ten miles from Trowbridge. The Romans made charcoal fires and allowed the smokeless fumes and hot air to pass through the flues placed under the floors and in walls. This method of heating was used extensively throughout the Roman Empire about 2000 years ago. Examples of it are to be found in Carcalla and Pompeii.

This idea was developed by Mr. T. Napier Adlam, now vice president of the Sarco Company of Bethlehem, Pennsylvania, who worked with Professor Barker and G. N. Hadden and Sons on the design of this method of heating for Liverpool Cathedral. The system was designated by G. N. Hadden and Sons, the patentees, as the "Romans" system of heating.

According to the A. M. Byers Company, radiant heating systems have been installed in the United States since 1911. It is difficult to say whether these early ex-

(Continued on page 8)



COMFORT CHART for radiant and convection heating, showing approximate comfortable balance between wall and air temperature for an extremely wide range of conditions. Comfort zone is for winter only, summer values would be somewhat higher. Dash line indicates design-value for mean radiant temperature (average of walls, floor and ceiling) with air temperature given—example: for 65° air, line shows MRT as 72°. Points indicate results of various tests and computations from the following sources: 1, 1, 1. A.S.H.V.E. Laboratory. 2 Comfort Chart, A.S.H.V.E. Guide. 3. Westinghouse Research Laboratory. 4. T Napier Adlam. 5. and 6, 6. (English practice) L. J. Fowler and Arthur H. Barker.

—from Byers "Wrought Iron for Radiant Heating"

BASIC PRINCIPLES OF RADIANT HEATING

(Continued from page 7)

periments in radiant heating were inspired by European activity or whether they were the independent product of Yankee ingenuity.

The earliest installation of record was that of the Phipps Psychiatric Clinic of John Hopkins College in Baltimore; which was installed in 1911 just two years after the Royal Livre in England. This system consisted of wrought iron heating pipes in the walls of certain rooms. Evidently, one reason for this was to prevent the patients from burning themselves on hot pipes.

In 1915, radiant heating coils were placed under a concrete first floor slab in a residence which is now Riverwood Inn near Schnectady, N. Y. Ceiling coils were also used on the second floor.

In 1929, wrought iron pipe coils were embedded in concrete to heat the floor of the Sacred Heart Church in Pittsburgh, Pa. Carlton Strong was the architect of this job, and Kaiser, Neal and Reid were associated with him in this project.

The British Embassy was built in 1929 and heating was first turned on during the season of 1929-30. This building was designed by Sir Edwin Lutyens, R. A. Associated with him was Frederick H. Brooke, of Washington, D. C. The heating design was originated by Richard Crittall & Co., Ltd., of London. Actual plans and specifications were prepared by Jaros & Baum, consulting engineers in New York.

While these installations aroused a certain amount of passing interest in this country, probably the greatest impetus to radiant heating was given by Frank Lloyd Wright when he designed the office building for S. C. Johnson and Son, Inc., Makers of wax at Racine, Wisconsin, 1938. Westerlin and Campbell of Chicago were the heating contractors. This building was publicized extensively and caused a great interest in radiant heating in this country. From then on radiant heating installations have multiplied in number.

Radiant heating, in the sense in which it is generally applied to the heating of buildings, may be defined as a method of heating by means of radiant heat rays emanating from warm areas of the floor, walls, and ceiling of the room itself. It is well to keep in mind, however, that due to the fact that some room surfaces are warmer than others, a certain amount of convective heating always accompanies the heating by radiant rays.

Tests indicate the following proportions of convective to radiant heat for panels in floors, walls and ceilings:

Floor — 45% convective, 55% radiant
Walls — 40% convective, 60% radiant
Ceilings — 33% convective, 67% radiant

With radiant heating it is possible to maintain the temperature of air in rooms at a lower temperature than the average temperature of the room, whereas in the ordinary types of heating, the air is ordinarily warmer and the walls cooler than the average temperature of the room. This condition is very desirable from the health standpoint of the individual. At the famous health resorts of Sun Valley, Idaho, and in Switzerland, skiing in bathing suits is a common practice. There, the body is subjected to a low ambient air temperature and the heating is due to radiant heat direct from the sun and reflected rays from the snow. The results are highly invigorating. Figure 1 shows the relationship between air temperature and mean radiant for comfort conditions.

Radiant heating systems in general produce more uniform temperature conditions in a room than is found in systems of other types and generally the temperature of air in the space is near the mean effective temperature.

Other advantages of radiant heating systems are the following:

1. It is clean, it saves redecorating.
2. It is inconspicious,—does not require floor space.
3. It is draftless—or drafts are more or less imperceptible.
4. Radiant heating coils cannot be tampered with.
5. It is economical to operate.
6. There are low ventilating losses.

The disadvantages of radiant heating systems are the following:

1. There is a lack of circulation of air and noticeable stratafication occurs in rooms when people are smoking.
2. The thermal capacity of the structure makes for too hot or too cold conditions at times.

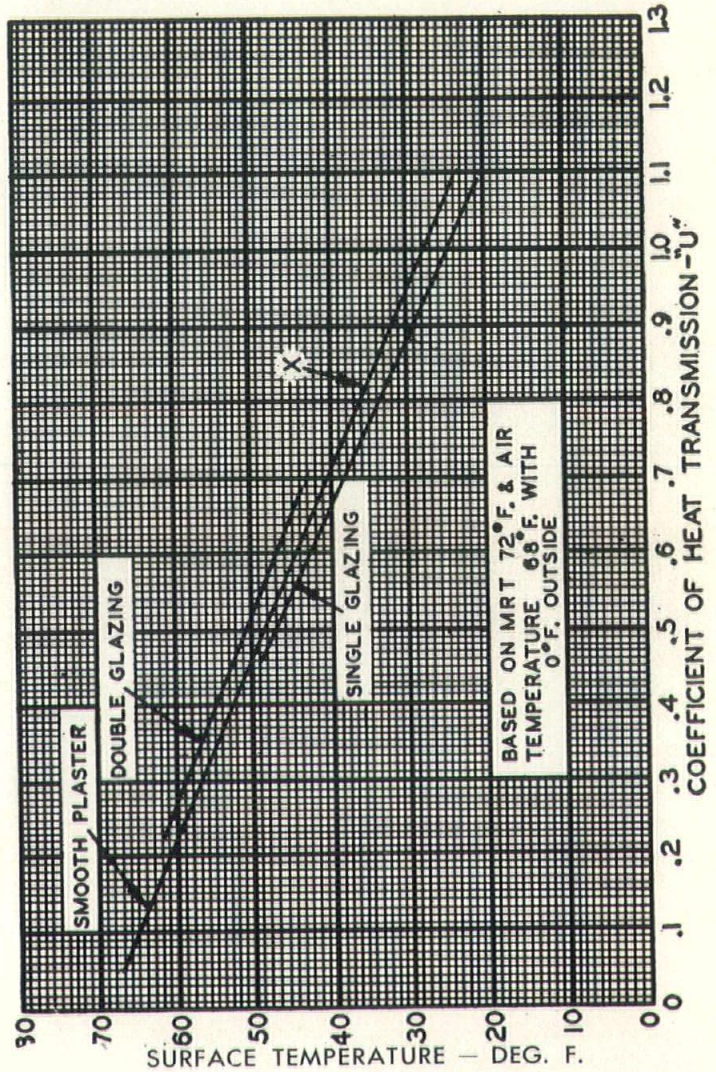


Fig. 2. *Inside surface temperatures of unheated surfaces with 0°F outside and 68°F inside air temperature indicated by curve X. Rough plaster, plus 1%; wood paneling, plus 1¼%; plaster papered, plus 1½%; concrete, plus 1%; brickwork, plus 1%; white paint, —2%; tiled surface, —2½%.*
—from Adlam "Radiant Heating" page 48

In spite of the inherent disadvantages of this type of heating, however, users of radiant heating systems are generally enthusiastic about it.

Now let us look for a moment into the nature of radiant heating in general. As you are aware, heat is transferred in three different ways; by conduction, by convection, and by radiation. It is the latter form that we are concerned with in this discussion. However, as

(Continued on page 9)

BASIC PRINCIPLES OF RADIANT HEATING

(Continued from page 8)

explained previously, convective currents are always present where walls are at different temperatures. Conduction is also present between the wall surface and the layer of air next to it. This is incidental, however.

Radiant heat is a form of kinetic energy and as such follows the laws of radiation which governs the radiation of all matter in the universe. Bodies at high temperature radiate both short and long electromagnetic

NAME OF JOB _____ DATE _____

TYPE OF PANELS TO BE USED :— CEILING PANELS

NAME OF ROOM ROOM A

	RADIATION						EXPOSURE LOSSES			
	SQ.FT.	U	SURFACE TEMP.	e	EMISSION PER SQ.FT.	TOTAL B.T.U. EMISSION	SQ.FT.	U	TEMP. DIFF.	B.T.U. LOSSES
	A	B	C	D	E	F	G	H	I	J
OUTSIDE WALL	246	0.25	59°F.	0.94	117.3	28,905	246	0.25	66°F.	4,182
INSIDE WALL	528	—	66°F.	0.94	125.5	66,264	—	—	—	—
GLASS (EXPOSED)	42	0.95	27°F.	0.90	87.3	3,666	42	0.95	68°F.	2,713
GLASS (COVERED)										
FLOOR	288	0.10	66.7°F.	0.91	120.18	34,500	288	0.10	68°F.	1,958
CEILING										
DOORS (OUTSIDE)										
TOT'LS OF UN-HEAT'D SURF'S	1104			AV'G. 0.93	AV'G.	TOTAL 133,335	CONT'S 3,456	CHG'S 1¼	TOTAL AIR 4,320	5,345
HEAT'D SURF'S CEILING	288			0.92			TOTAL B.T.U. LOSSES			Z 14,198
FLOOR										
WALLS										
TOT'LS OF ALL SURF'S IN ROOM	1392			AV'G.		TOTAL				

Item		
1.	Total Unheated Surfaces in Square Feet (Col. A)	1,104
2.	Total Radiation from Unheated Surfaces (Col. F)	133,335
3.	Total Surfaces in Room in Square Feet (Col. A)	1,392
4.	Total Radiation Required for 72° MRT (127.8 [from text] × Item 3)	177,897
5.	Radiation in B.T.U. to be Provided by Panel (Item 4 — Item 2)	44,562
6.	Area of Available Heated Surfaces in Square Feet (Col. A)	288
7.	Radiation Required per Square Foot of Panel (Item 5 ÷ Item 6)	155
8.	Emissivity of Heated Surface (See Text)	0.92
9.	Temp. Required for Heated Surface as Obtained from Table 4	99°F.
10.	Average Radiation Emission per Square Foot from Unheated Surface (Item 2 ÷ Item 1)	120.77
11.	Average Emissivity of Unheated Surfaces (Col. D)	0.93
12.	MRT of Unheated Surfaces (Text and Table 4)	64°F.
13.	Total B.T.U. by Radiation from Panel (From Fig. 126)	10,281
14.	Total B.T.U. by Convection from Panel (From Fig. 127)	4,078
15.	Heat Transmitted from Adjoining Rooms if any (See Chapter 13)	—
16.	Total Heat Given to Room (Item 13 + Item 14 + Item 15)	14,359
17.	Total Heat Losses from Room ("Z" Above)	14,198
18.	Surplus or Deficit (Item 16 — Item 17)	161
19.	Heat Given Off by Panel + % Loss (See Chapter 13)	
20.	Total Length of Pipe in All Coils (See Chapter 13)	
21.	Size of Pipe (See Chapter 13)	
22.	Centers of Pipes in Coil (See Chapter 13)	
23.	Longest Length of Pipe in Coil (See Chapter 16)	
24.	Total Pounds of Water per Minute at 20°F. Differential.	
25.	Total Heat Load — Item 19 + % for Loss by Mains and Circuit Pipes if any.	
26.	Loss of Head Due to Frictional Resistance (See Chapter 16)	

Fig. 3. *Recommended form for use in calculating heat requirements for each room. —from Adlam "Radiant Heating" page 194*

waves. Bodies of lower temperature radiate long waves only. Whenever on their path electromagnetic waves encounter matter, their energy is absorbed; that is transformed into kinetic energy of the molecules of the matter encountered or into heat.

All electromagnetic waves travel at the same rate of speed which is 186,000 miles per second or 299,800 kilometers per second. Cosmic rays, x-rays, heat rays, radio waves, and electric waves are all forms of electromagnetic waves. They differ only in their wave length. Cosmic rays are the shortest waves known. The longest waves are electric waves, approximately ten miles long.

Some materials are opaque to electromagnetic waves of certain lengths. For example, glass is transparent to light waves and opaque to heat waves. Human bodies and metals are transparent to x-rays. Cosmic rays at the lower end of the spectrum are capable of passing through almost any material.

Opaque bodies reflect part of the impinging waves. A white body reflects all light waves and rereadiates same as heat waves.

The amount of energy or heat that is radiated or emitted by a body is governed by its absolute temperature. Stephan and Boltzman proved that this emission is proportional to the fourth power of the absolute temperature. This law can be stated mathematically as follows:

$$Q = \frac{0.1723\ e\ T^4}{100{,}000{,}000}$$

Where Q = total black body radiation. Btu per square foot per hour.

e = emissivity

T = absolute temperature, degrees Fahrenheit.

Table I give values of this formula for varying temperatures and emissivity cofficients.

This table is basic to the calculation of radiant heating systems. A typical calculation for a radiant heated room is given in the following example. One can get a clear picture of how it differs from the usual heat loss calculation by its solution.

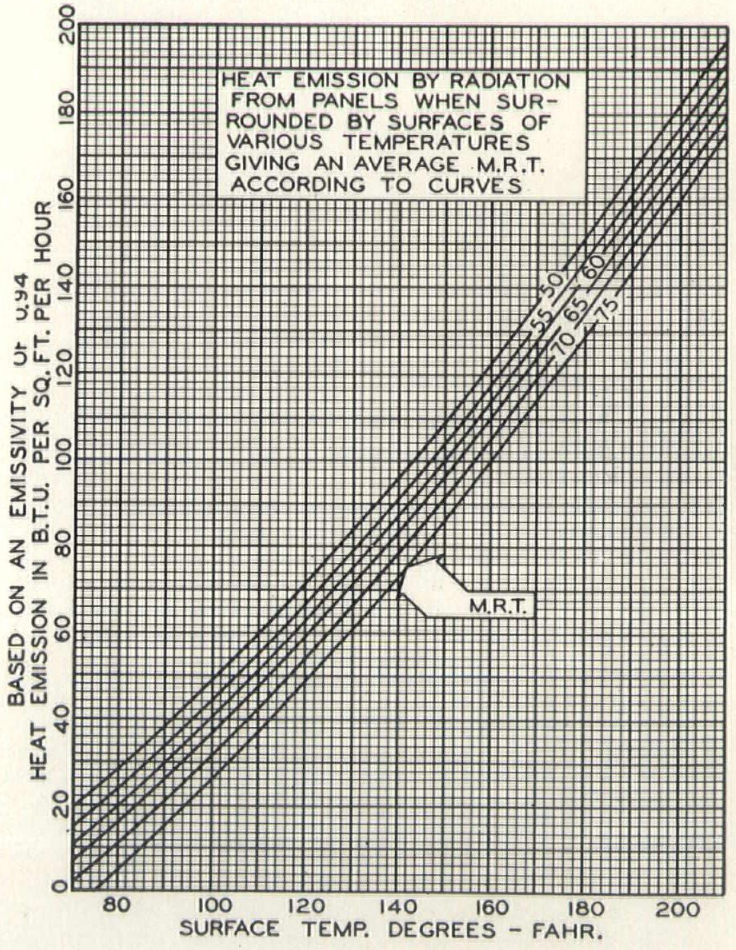


Fig. 4. *Heat emission by radiation for various surface temperatures —from Adlam "Radiant Heating" page 196*

Problem: It is required to find the amount of radiating surface necessary to maintain an air temperature of 68° F. and an MRT of 72° F in a room 18 feet long, 16 feet wide and 12 feet high with 42 feet of wall surface exposed and 42 square feet of windows. Heat transmission coefficients are outside wall 0.25, window glass 0.95, floor 0.10. Walls are rough plastered, ceiling smooth plastered. The ceiling is to be used as the radiating surface at a temperature not to exceed 110° F.

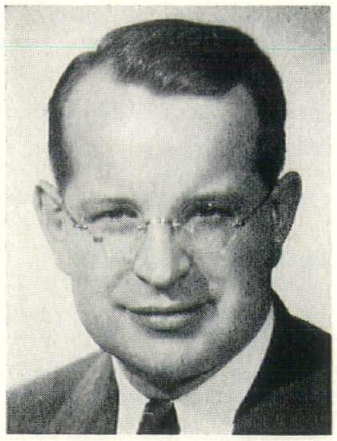
This example illustrates the conventional method of

(Continued on page 18)

THE SECRETARY'S COLUMN

With the beginning of a new year, this column is an innovation to assemble many miscellaneous items which come to the secretary's desk, and which will fill copy space. We hope that they will be of interest.

Chapter secretaries are reminded that under the By-Laws of the A. S. O., of which each Chapter is a component part, the A. S. O. secretary must obtain from them an up-to-date roster of corporate and associate members in good standing. The Dayton Chapter's list arrived recently in mimeographed form, and we understand that each Chapter member also received a copy for his own use. That might be a way of facilitating committee activities, since a fellow's home telephone number is sometimes hard to find at ten P. M. when information is needed before breakfast.



JOHN W. HARGRAVE

The new A. S. O. Treasurer, Walter Damon, is proposing a uniform invoice from which chapter Treasurers may use to collect their Chapter dues and the A. S. O. dues. Sample copies will be sent to these esteemed gentlemen within a few days for their consideration.

A complete change in personnel in many departments of the state government has taken place this month. As far as we know, no immediate change is expected in the State Architect's Office or the Department of Factory and Building Inspection where we architects must take our efforts for approval. There has been a rather complete turnover in the Attorney General's office, however. We hope that the new lawyers will be more willing to prosecute violations of the Architects Registration Act than were the former incumbents. Many flagrant violations have occurred and have been referred to the Board of Examiners of Architects which is "charged with the duty of enforcing the provisions of this act." Under Sec. 1334-18, General Code of Ohio, paragraph (3), "The attorney general of the state of Ohio is hereby designated as the legal advisor of the board created under the provisions of this act."

The Legislative Committee has been busy reviewing with legal counsel the changes in the Registration Act which the Board of Examiners of Architects has requested. Definitions of the term "architect," "practice of architecture," and "building" are desired in the law itself rather than only in the legally filed Rules of the Board. A clearer definition of the type work which must bear the professional seal of an architect or professional engineer is also desirable so that building inspection departments may require same with authority.

Visits to the architectural departments on the various state campuses were stimulating experiences in recent months. The profession can expect continued improvement in Ohio's architecture, for those young fellows are absorbing and critically examining a lot more training than used to be given college students.

All over the state there may be flagrant violations of the laws of gravity and structural design committed by innocents who had no knowledge of the science of construction. Unwittingly, they violate the constitutional liberties of their neighbors and their children, as well as the state building laws. Each architect is urged to notice such violations, either past or recent, to take pictures, make measured drawings of the incorrect structural members, and to obtain such information as possible as to the date of construction and the buildings record. If there has been a failure with subsequent endangering of human life., get the facts. Then send the information to the A. S. O. Secretary. We need visible proof of what all architects know—that the safeguards provided by the State Architects Registration Act assure the public that any registered architect knows how to design a building safely, and fixes penalties for any violation, but that non-registered persons have no legal proof of their ability, and are hard to prosecute except under the protection given by the Registration Act.

Cincinnati architects were shocked and grieved when Standish Meacham, past Chapter president and director, died at his home on New Years Day. Actively engaged in practice with his father-in-law under the firm name of Rapp and Meacham, he was a leader in many civic activities. A former member of the Cincinnati Board of Education, a proponent and active promoter of better housing, a leader in the Seventh Presbyterian Church, and a loyal member of the profession who made many public appearances speaking on "What is an Architect?", he displayed a fine wit and good judgement which kept many a stormy meeting on even keel. To Eleanor, his wife, and to his son, Standish Meacham, Jr., have come many expressions of sympathy indicating how important a place this architect had filled in his community.

Russell Potter is the freshman on the State Board of Examiners of Architects. Appointed to the Board in October, he succeeds Charles Strong, who served on the Board from 1935 - 1938, and who declined reappointment because of health. Chuck Strong did a fine job as an examiner, and took many hours from his busy schedule to discuss registration with young applicants who were jittery and afraid of the ordeal in Columbus. His experienced judgment will be missed by the Board, but all agree that he has earned the right to retirement from the Board since he desires it.

The Cleveland Chapter convention committee will be coming forth with its program for the 1949 A. S. O. convention, possibly in our February issue, and we are informed that it will be a dandy. Since the national A. I. A. convention will be in March, architects should be anxious to get together again in the fall for the state sessions in Cleveland. Whether the program includes a World Series, we haven't heard.

If you would rather have this space used for a Mickey Mouse cartoon, say so. Better still, if you'd rather see your own name signed to an article, letter, and drawing or photograph, send it in for the printer always wants more.

—JOHN W. HARTGRAVE, *Secretary*

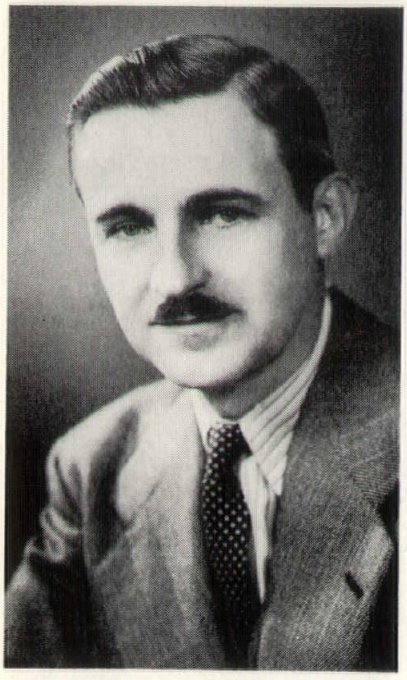
ERARD AND O'SHEA ADMITTED TO PARTNERSHIP

Bellman, Gillett and Richards of Toledo announce the retirement of Lawrence S. Bellman, F.A.I.A., senior partner of the firm and the admission of George H. Erard, A.I.A and Michael B. O'Shea, A.I.A. to the partnership. The firm, now headed by John Gillett, A.I.A., A.S.M.E. and John N. Richards, A.I.A., has the following associates: Robert P. Heston, Stanley W. Latterner, Robert C. Moorhead, Fred J. Speirs and Donald L. Todd.

A.I.A. NATIONAL CONVENTION
HOUSTON, TEXAS — MARCH 15-18

COLUMBUS CHAPTER ELECTS CODDINGTON

At the 35th Annual Meeting held in December at the Seneca Hotel a big turn out of the Columbus Chapter members elected Gilbert H. Coddington, 329 E. Broad St., Columbus as their "fair deal" president in 1949.



GILBERT H. CODDINGTON

The new president graduated from Ohio State with two degrees in Architecture in 1931 going on to Columbia for a Master's degree in 1932.

With the thought apparently in mind that patriotism and the desire for freedom must be rekindled with each generation, the hands of the dictators were (insofar as possible) tied and the old two party system revived with two complete slates of candidates from which the members could and did exercise their right of franchise.

For vice president, John M. Seidel (Ohio State '37) was moved up from the office of Secretary and for Secretary, Robert R. Reeves (Ohio State—Yale '39) was moved "up" from the job of Treasurer. Both John and Bob are with the firm of Betham, Richards and Armstrong. For the arduous duties of Treasurer, Geo. L. Tilley (Ohio State '33) Asst. Prof. Dept. of Architecture—Ohio State University was elected. Time will tell just how good a collector a "Prof" can be. The retiring president, Richard (Dick) L. Tully (Ohio State '32) was elected to the Executive Board of the Chapter.

CONVERSATION "INSPIRED" ? ? ?

Not long ago I had some business in Cincinnati and while in this Southern Ohio Metropolis, I was invited to inspect some of the features in a very much publicized hotel. I found some very interesting (that does not include either the term practical or functional) features but the one that, for the reason hereinafter explained, made the greatest impression, was the ink blot on the walls of the bedrooms. This accidental map of a sea monster was superimposed by a yellow Saturn ring and a misplaced orange, and perhaps other equally abstract spots, with no visible, at least not to me, rhyme, reason, or explanation of what it was or was intended to be.

Being from such a rural, pioneer village as Columbus, it of course could not be expected that I would or could understand or appreciate any thing so artistically ethereal or so profoundly impressive as a big ink blot intentionally (and, perhaps, with malice aforethought) splattered on the wall—so, not being able to hide my ignorance or suppress my curiosity, I asked what was the explanation of this "Michael Angeloic" presentation. Answer—this decorative effort was intended to be a conversation creator or "inspirer."

This answer reminded me of a conversation creator or interrogation creator or "inspirer" the Doctor put on the N. E. corner of my forehead in the form of adhesive tape, after a minor bit of surgery. Talk about inspiring conversation and questions as to how, and by whom, how is the other fellow, etc. That small white cross created so many questions that I started wearing my hat in restaurants in self defense. Anyway, I found out what a "conversation inspirer" is, or should I say — was.

P. S. Wearing the hat did not help as that also created a lot of talk, so the "Doc" helped me out by using some pink adhesive. This only created an inoffensive whisper.

—Ralph Kempton

INSTITUTE INAUGURATES ANNUAL ARCHITECTURAL AWARDS

The American Institute of Architects, desiring to encourage the appreciation of excellence in Architecture and to afford recognition to exceptional merit in recently completed buildings, has, by Convention and Board action, instituted an annual nationwide program of Honor Awards for Current Work.

This first annual program for 1949 will make awards for distinguished accomplishment in two classes of buildings, Residential and School Buildings, completed since January 1, 1945.

It is intended that during ensuing years the program will provide for awards in a series of building classes.

RULES OF PROGRAM

All buildings shall be buildings designed by corporate members of the A. I. A. which have been completed since Jan. 1, 1945, and shall have been erected in the United States or its possessions, although the buildings need not be in the Chapter area through which the entry is submitted.

According to the rules, the Cleveland Chapter may submit three entries in each classification, while each of the other chapters in the state may sumbit two entries in each classification. No entries are to be submitted to the national contest by members, but rather to their own Chapter Juries who will select the Chapter entries and will arrange for forwarding same to the Houston convention before March 1, 1949.

All entries for the national competition must be mounted on 3/16" or ¼" thick composition board 30" x 40". Each residential building must be displayed on only one mount, while school building entries may be permitted on two mounts. Two exterior and one interior photograph, site plan, and floor plans at scale are required. Supplementary data as to capacity and cubage are also required. Entries are to be submitted with concealed identification of authorship, and will be judged nationally by Juries appointed by the Board of Directors.

Chapter presidents are urged to act immediately to encourage a Chapter competition for the selection of Chapter entries.

GOLD MEDAL TO F. L. WRIGHT

Frank Lloyd Wright, one of America's most famous architects, has been selected to receive the Gold Medal of The American Institute of Architects, highest honor of the organization.

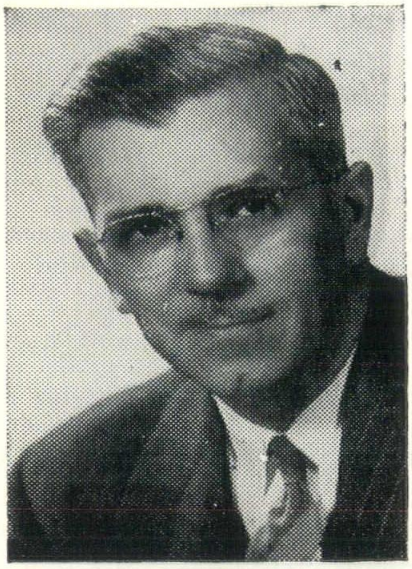
This announcement has just been made by Douglas W. Orr, of New Haven, Connecticut, President of The A.I.A., who said that Mr. Wright was selected to receive the Gold Medal by the Board of Directors at a recent meeting. The Gold Medal will be presented to Mr. Wright at the 81st annual convention of The Institute in Houston.

"The award was made in recognition of Mr. Wright's distinguished contribution to the profession of architecture," said Mr. Orr.

NEW STEEL FILM

Designed for educational programs before student and professional architects and engineers, mechanical engineers, contractors' associations and like groups, the new film "Rail Steel in the World of Today" just released has been well received at advance screenings for selected groups. The film provides a fast moving and colorful record of the product and service of an important segment of the steel industry to engineering and construction.

The film was produced by the Rail Steel Bar Association of Chicago under the direction of the association publicity chairman, C. L. Volkman. While the film tells a comprehensive story, it is of particular interest to architects and engineers. Produced in Kodachrome with a musical score and narration by Lowell Thomas, the production is well supported by animated technical graphs on the relative values of various grades of reinforcing steel and provides an interesting glimpse of the future in connecnection with the current increasing use of higher bond stresses and the elimination of hooks on concrete bars.



C. L. VOLKMAN

After a short introduction, giving the origin and development of the idea of rail steel the story moves into the production of railroad rails in a modern open hearth steel mill. The story then follows the rails into use on the road bed, their removal and subsequent use as billets in the twenty-one United States and Canadian rail steel bar mills. Then on to fabricating processes and the end uses of the bar mill products in agricultural machinery, metal furniture, concrete reinforcing bars, etc. Some interesting shots are included such as the dynamiting of a coal bunker and the explosion in a large commercial building. Close ups illustrate the ability of modern rail steel to withstand without damage the effect of such high and unusual stresses. The technical animated graphs have been unusually well received because of their clarity and practical approach to economical refinements in current designing practices. Closing sequences show many of the country's outstanding reinforced concrete structures of various types including a number in Ohio in which rail steel reinforcing bars have been used.

The film is available for showing by local chapters without charge upon application to the Rail Steel Bar Association, 38 South Dearborn Street, Chicago, Illinois.

• • •

"The best way to find your missing kinfolk is to get rich."

• • •

The husband answering the phone said, "I don't know. You'll have to call the weather bureau."

"Who was that?" asked the wife.

"Some sailor, I guess. He wanted to know if the coast was clear."

"THE HOUSE FOR YOU"

A program presented, before the Detroit Chapter A. I.A., by Harold and Catherine Sleeper. Mr. Sleeper is president of the New York Chapter, A.I.A. Mrs. Sleeper is co-author with him of the new book, "The House House for You to Build, Buy, Rent," published by John Wiley & Sons of New York.

The Public and Architects

Last week an excited man called up and asked if I could give him *blue prints* for a store front "tomorrow." I tried patiently to explain that we did not make blueprints; that we made drawings. Later these are sent to a blue print company whose business is to make *blue prints.* He went on saying that in a few days the builder wanted to start work so he had to have *blue prints* immediately.

I then explained the processes preceding the making of blue prints: First, a conference; next a study of his merchandise, then measured drawings are made. This done, working drawings can be started. When these are approved, *blue prints* are made by a blue print company and these are then used by the contractor both for bidding and building.

"How long will all that take?" he asked. I answered: "At least several weeks." Then he said: "I can't wait for all that business." and hung up.

There are many people who really think we have our officers full of blue prints, all ready to hand out.

Recently I designed a one-story house for publication in the magazine, "The Family Circle." Contract sets of drawings were sold by the magazine.

At least a dozen letters were received asking for blue prints of just the same house, but—

One wanted all rooms just a little larger.

Another wanted a two-car garage instead of a one-carport.

A third wanted a basement added.

Still another wanted a story-and-a-half house with two more rooms in the half-story.

In only one case was there any mention or hint that they expected to pay for these changes. The others evidently took it for granted that we could pull blue prints, which fitted their special needs, directly out of a drawer.

I answered one letter saying that new plans including a basement would cost $45.00. The recipient never answered.

So it is very evident that the public has little idea of how we work—or how much time, effort and thought go into even a small-house set of contract documents.

We architects must accept much of the blame for the public's ignorance. Until lately we have made slight effort to explain our reason for *being* and our way of *working.* Whether this has been due to our modesty or to our inertia, or to our don't-give-a-damn attitude, I can't be sure. It's probably due to a combination of all of these reasons.

It is certainly high time for architects to disabuse the public of certain conceptions. These can be generally classified as follows.

First, the older citizens usually think of us as the flowing bow-tie artist-architect, with smock and goatee. We are dilettantes who draw nice sketches and whose services can be afforded only by the very rich. These architects never let financial considerations hamper their creations.

For better or worse, this variety of architect is practically extinct, and as the older generation passes on,

(Continued on page 13)

"THE HOUSE FOR YOU"

(*Continued from page 12*)

this type of architect will scarcely be remembered.

Secondly, we are thought of as the blue print makers, as I have shown. There is nothing to our job, as we are visioned by this group—just dealers in blue prints.

A *third group* thinks of architects as O. K., but not a necessity—just a luxury for the well-to-do class to use. They don't think the architect is practical or cost-conscious. This is the public we need to approach with our story.

The *Fourth* opinion is held by many who have used architects or who know how they function. We don't need to discuss them.

We must let the public know more about the architect and to tell them what the architect does and how he goes about his work.

This should make it possible for more people to build better houses so that they will have "The House for You" rather than a Blandings House.

Why the Public Needs the Architect

When industry decided to cut accidents in factories due to hazards, what did it do? Expert safety engineers went to work analyzing the records of years. These experts learned from the past experience. Then in ten years, due to their findings and the industry's cooperation, the industrial accident rate was cut 50%.

So in the building field the architect is the expert who will guide you so as to avoid the pitfalls and hazards of building.

Not only is the architect expert, but he has nothing to sell except his service to his client—no bones to grind. He is the client's agent, adviser, and confidential guide. His advice is unprejudiced, and he should be a trusted councellor.

Architect Is Good Insurance

The architect's fee frightens some persons who don't realize that he is good insurance.

We had a griend who ordered a builder to duplicate a house that this friend liked. He could see the house, and didn't think it necessary at first to call upon an architect.

After the foundations were started the owner suddenly realized that there would be a very steep grade from the street to the garage. Lowering the garage and building a retaining wall would cost some $700.00

Then an architect was called in. It was too late to save this extra, but it was found advisable and possible to change the house plan so as to give better orientation to the porch and living room -that is, improve the exposures for sun and views.

In the above case the owner didn't realize that every house plan has to be adapted to the specific site because—

(1) The points of the compass vary.
(2) The views are different.
(3) The grades are never the same.
(4) Trees and neighbors are variable, too.
(5) The architect struggles to fit the house to the site, and produces a site plan.

These things many clients do not know unless told.

It is safe to say that the architect insures the owner in ten very specific ways, in return for his fee.

(1) Insures ease in securing mortgage at a good rate.
(2) Insures the fitting of house to lot.
(3) Good planning insures comfort and convenience for your individual needs.
(4) Good design insures good appearance.
(5) Supervision by the architect insures full value in materials and labor.

(*Continued on page 14*)

"THE HOUSE FOR YOU"

(Continued from page 13)

(6) Careful selection of mechanical equipment insures low operating costs.

(7) Insures low replacement cost by wise material and equipment selection.

(8) Insures against early obsolescence.

(9) Insures good, safe, trouble-free construction.

(10) Insures good resale value.

How the Architect Does His Job

You should know how an architect functions so as to get the most from his services. He has a method of producing his work, or his production line.

I won't go into the number of conferences you hold with him from the start, through each step to the finish. That depends largely upon the client.

First, a rough program is developed so that a lot can be selected to fit the needs. The program includes:

Number of rooms.

Type of House.

Cubage.

Approximate cost of house and lot.

It's just too bad when a narrow 40′ or 50′ lot is purchased, and then a program is developed that calls for a one-story Ranch Type house requiring an 80′ lot.

Second, you should let the architect help you select your site. He will probably warn you against sites that seem cheap but which will raise the house cost; or against sites which won't take the type of house you want.

In the Home Builders' Course at Columbia one man confided that he had bought a sloping lot with a hollow portion at one end of the lot. He had been filling in this hollow for six months, over week-ends, to a depth of 4′ to 8′. After taking the course, he became worried as to how he would prevent the house and fill from sliding down the hill. I feel sure that had he taken an architect with him to the site at the very start, all that work could have been eliminated, as well as future headaches.

Thirdly, with the lot selected, the program is clarified and completed.

Sketches are now developed, fitting rooms together, showing roughly the design and exterior materials.

The architect draws these on tracing paper so that he may work over them when making changes and corrections.

Here is the time for full cooperation from the owner. Here is the time for decisions to be made. Changes are easy during this period. The architect may show you several schemes to get your reactions.

Working Drawings:

When everyone has agreed upon the sketches, working drawings are started. These are larger scale drawings showing all dimensions, details, sections, and are used for getting bids or estimates from the contractors and for actual building.

During preparation of working drawings the engineers are working on the heating and plumbing and electric work on large jobs, or the architect may do this himself on small houses.

Specifications:

Along with the working drawings, specifications are prepared. They look like a magazine, in size.

The fewer changes made by the client during the production of these "contract documents," the better.

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"THE HOUSE FOR YOU"

(*Continued from page 14*)

Schedules of Finishes:

Many decisions are required of the client as to kind of finish of walls, floors, doors, etc. which are noted on drawing sheets or placed in the specification.

Bids or Estimates:

When all these contract documents have been completed you will be ready to send them out for bids or estimates to the contractors.

Contract Forms:

The architect prepares contract forms when the contractor has been selected.

After the client signs the contract—the dirt begins to fly!

Your architect acts not only as a sleuth during construction but he then aids the builder in getting the right textures of finishes, jointing of brickwork and colors. The client is, of course, included in these decisions.

Certificates for Payments to Contractor:

Monthly the bills go to the architect, who checks them, in his accounts, and then by way of certificates, notifies the client the amount of payment due to contractor.

Length of Service:

All of this work that the architect does may take from one year to two years.

Fee for Service:

For this service you pay a fee of from 8% to 12% of the cost of building—or by a cost-plus fee.

Which ever of the two methods is agreed upon, it won't make much difference. For example, let's say you are building a $20,000 house and the fee is set at 10%, or $2,000.

Maybe that sounds like a lot of money, but it may save the total of that sum in the forty years' life of the house in any one of the ten ways I referred to that the architect insures your house.

If you figured this fee, for comparison, on a monthly basis over forty years, it would amount to only half of what you pay for fire insurance.

Or compare it with what you would have to pay a real estate broker on such a house. For just a sale, he would get about half of the architect's fee.

Don't think that the architect gets all that $2,000. If the job goes through his office smoothly without hitches, here is the picture:

33 1/3% of his fee goes to draftsmen	$666.66
33 1/3% of his fee goes to overhead	666.66
33 1/3% of his fee goes for his own time and profit	666.66
	$2,000.00

Maybe he splits that with a partner. So you see there is not much for his effort, worry, and know-how over a long period.

The owner usually reimburses, in addition to the payment of the fee, for travelling expenses, blue prints, etc.

How the Client Should Prepare:

A client can do much in the way of preparation for his greatest investment—a house of his own. Designing and building today are so intricate that an architect needs the full cooperation of a client—not just his acquiescence. Lacking such cooperation, both architect and client will fail.

I had an early lesson in what were the duties of an owner and an architect. I sat in on a conference when

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"THE HOUSE FOR YOU"

(Continued from page 15)

an older architect talked to a young couple. The gist of his talk with the client was: "Allow a few months of self-analysis to jell your problem.

"Decide how you want to live before you start planning. If I design your house expressing only my own ideas, it will be *my house,* not yours.

"Our habits, backgrounds, likes and interests may differ. I have thought for years of what I'd like and want. I'm sure I could design a fine house and *call it yours*—but it would still be mine.

"I have a head start in this problem: you must start from scratch."

A client could start discussions by comparing his manner of living with that of his friends.

He should begin to observe all houses that he sees, so as to find a basis for judgment.

A client should not have too many prejudices. All of us are influenced by training and environment. If an Eskimo were asked which type of house he liked best he would without doubt point to an igloo.

A client should take as much time as possible to let his taste and knowledge develop and mature.

If he changes his viewpoint—good!

Clients still want the *special, individual* homes.

A client should therefore learn to study his own requirements, to recognize his individual taste, and to know how to express it in a house.

His house should be stamped with his own taste, his personality, and should be fitted for his mode of living.

The architect should encourage his client to make an early start—in fact, it is never too early to begin such a study so that he may understand the various aspects of building before buying a lot and before sketches are started.

Architects suffer because of clients' lack of know-how. Seldom have architects been sufficiently forehanded to advise clients in advance how to go about their preparation in a thoroughgoing way.

Clients should know something about construction, materials, finish.

They should know the elements of good design, good planning, so that they will be able to help rather than hinder their architect and builder.

One of our most difficult clients was an industrial engineer executive who had learned to draw while in college. He came to his first conference with floor plans which he thought were about completed. He wanted the architect simply to draw up the elevations. However, the architect had to show him how his second floor was much larger than the first floor, and that he had failed to allow head room on the stairs.

Therefore, if a client wants to draw, let him go ahead —but he should stick to diagrams and sketches. He can then change and improve his plans, one after another. He should learn to use transparent paper so that he will save time, and so that one floor will fit over the other.

A client should learn the architect's lingo and sign language so that he can work with the architect. Let him look at his own rooms and measure them. Then he will have a yardstick to work with.

There is a group of architects, I regret to say, who believe it best to keep their clients in total ignorance regarding the entire procedure of planning and building. They say that a little knowledge is dangerous. I don't believe this is actually their reason. They prefer to proceed in their own way, without compromise or question.

I can't agree that this method would make it possible for me to say to a client "This is the 'House for You' ". It would be the house for the architect who wouldn't be living in it. He might, of course, get a kick out of its publication. He might even receive a prize. But those who were supposed to live in the house, who had paid for it, might not appreciate its fine qualities. Why should they? They had not been let-in on the reason why it got that way. It didn't fit their mode of living nor their specific needs.

How does the public avoid an architect who approaches the problem in this high-handed manner? Simply by talking to several of his former clients before engaging the architect.

This interesting article will be concluded in our next issue.

TOLEDO SELECTS STOPHLET

Mark B. Stophlet, prominent Toledo Architect, was elected president of the Toledo Chapter, American Institute of Architects, for the year 1949, at a meeting of the Chapter held this week.

Other officers elected included: Vice-President, Newton F. Marvin; Secretary, John P. Macelwane; Treasurer, Carl H. Becker; Board of Directors, Michael B. O'Shea; Chapter Representatives to various organizations, Herman Feldstein, Chas. H. Stark, Horace M. Coy.

Mr. Stophlet was formerly a partner with his late brother, Fred Stophlet, in the Architectural firm of Stophlet and Stophlet. He is now an associate member of the firm of Britsch & Munger with offices in the Nicholas Building, Toledo, Ohio.

The Toledo Chapter has an ambitious program of professional and social activities scheduled for the coming year.

CUMMINGS FILLS KAELBER VACANCY

The election by the board of directors of the American Institute of Architects of George Bain Cummings, of Binghamton, N. Y., to the board was announced today by Douglas W. Orr, of New Haven, Conn., A. I. A. president.

Mr. Cummings will serve as regional director for the New York district until the convention in March, 1949.

Mr. Cummings was named to fill the vacancy on the board caused by the death on Nov. 21 of William G. Kaelber, of Rochester, N. Y.

For many years Mr. Kaelber was very active in the affairs of his Chapter, the State Society and the Institute. He had served on the State Board of Architects for the State of New York and had taken especial interests in the architects registration laws, the examinations involved and reciprocal registration procedure. His passing is a distinct loss to the profession of which he was a distinguished member.

FRANK LLOYD WRIGHT

Under the heading "The Prophet Honored in His Country" the magazine, "Esquire" has an excellent character portrait of Frank Lloyd Wright in its January issue. A full page portrait by the well known photographer Yosuf Karsh of Ottawa, Canada is shown and the two page spread is illustrated with 5 color photographs of Falling Water, the home of Edgar J. Kaufman of Pittsburgh.

WANTED—Architectural Draftsmen, several experienced by Inscho, Brand and Inscho, 602 Broad Street, Columbus 15, Ohio.

BASIC PRINCIPLES OF RADIANT HEATING

(*Continued from page 9*)

calculating the requirements of a building for a radiant heating installation. If the amount of heat emitted from the panel surface was less than that required or if the temperature required was more than that allowed, then additional panel surface would have to be found to supply the additional heat, such as wall or floor surfaces.

To solve this problem, it is well to set up the calculations in a form similar to that of Figure 3.

1. First calculate the areas of the various inside surfaces of the room and insert these in Column A.
2. Next enter Heat Transmission coefficients U in Column B.
3. Using Figure 2, determine the inside surface temperature. For an outside wall temperature of 0° F and a Heat Transfer coeficient of 0.25, the inside surface temperature is found to be 59. Enter these values in Column C.

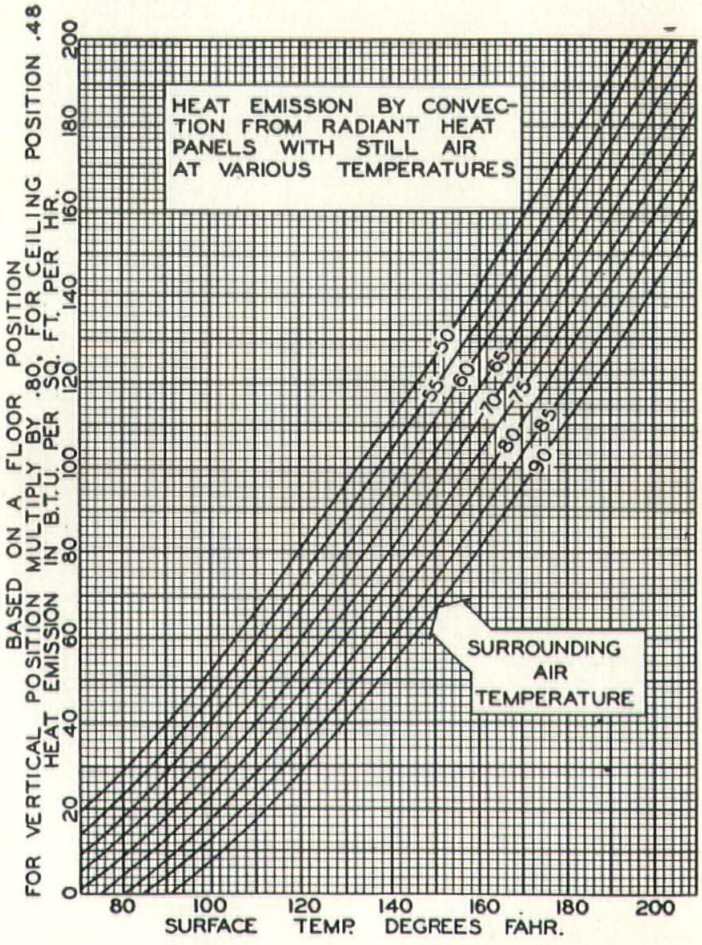

Fig. 5. *Heat emission by convection for various surface temperatures —from Adlam "Radiant Heating" page 198*

4. Next, determine the emissivity coefficients for the various surfaces from Table 2 and enter same in Column D. For a rough plastered wall, the emissivity factor coefficient is 0.94.
5. Now, using surface temperature values in Column C and emissivity values in Column D, refer to Table I and determine values of emission per square foot which is entered in Column E. For 59° F and 0.94 emissivity, the value is 117.5.
6. Multiply square feet of wall from Column A by emission per square foot in Column E gives a total BTU emission which is entered in Column F. 246 x 117.5 = 28,505.

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BASIC PRINCIPLES OF RADIANT HEATING

(Continued from page 18)

7. Total Column A and Column F. We find a total emission of 133,33 BTU and unheated wall surfaces totalling 1,104 sq. ft.
8. Dividing 133,335 by 1,104 gives an average heat emission rate of 120.72. Enter this as Item 11.

TABLE 1 - TOTAL BLACK BODY RADIATION TO SURROUNDINGS AT ABSOLUTE ZERO

Radiation in Btu per square foot per hour emitted to surroundings with a temperature of absolute zero, by bodies at various temperatures and with emissivity factor e, calculated from the formula:

$$Q = \frac{0.1723\ e}{100{,}000{,}000} \times T^4$$

where
Q = total black body radiation, Btu per square foot per hour;
e = emissivity; and
T = absolute temperature, °F.

BLACK BODY OR MEAN TEMPERATURE, OF	EMISSIVITY e								
	1.0	0.98	0.96	0.94	0.92	0.90	0.88	0.86	0.84
	RADIATION, BTU PER SQ. FT. PER HR.								
15	87.7	86.0	84.3	82.5	80.7	78.9	77.2	75.2	73.7
20	91.4	89.6	87.8	85.9	84.2	82.3	80.4	78.7	76.7
25	95.4	93.5	91.5	89.6	87.7	85.9	84.0	82.0	80.1
30	99.3	97.3	95.4	93.3	91.4	89.4	87.4	85.4	83.4
35	103.5	101.4	99.4	97.3	95.2	93.2	91.1	89.1	87.2
40	107.6	105.5	103.4	101.3	99.0	96.8	94.6	92.5	90.5
45	112.1	110.0	107.8	105.4	103.2	100.9	98.6	96.4	94.2
50	116.5	114.1	112.0	109.5	107.2	104.9	102.6	100.4	97.8
55	121.1	118.85	116.2	113.9	111.4	109.0	106.6	104.0	101.7
60	125.8	123.1	120.9	118.2	115.8	113.4	110.8	108.2	105.8
62	127.7	125.1	122.7	120.0	117.5	114.9	112.2	109.8	107.2
64	129.6	127.0	124.4	121.8	119.2	116.7	114.0	111.4	108.9
66	131.6	128.9	126.2	123.8	121.0	118.4	115.9	113.1	110.4
68	133.5	130.9	128.3	125.5	122.9	120.1	117.5	114.8	112.2
70	135.5	132.8	130.2	127.4	124.7	121.9	119.2	116.5	113.9
72	137.4	134.8	132.0	129.2	126.5	123.6	121.0	118.1	115.5
74	139.6	136.7	134.0	131.2	128.4	125.6	121.8	120.0	117.2
76	142.0	139.1	136.4	133.5	130.8	127.8	125.0	122.1	119.2
78	144.1	141.1	138.4	135.6	132.7	129.7	126.9	123.9	121.2
80	146.6	143.6	140.9	137.9	134.9	132.0	128.9	126.1	123.2
82	148.5	145.5	142.7	139.6	136.8	133.7	130.8	127.8	124.8
84	150.9	147.9	144.9	141.9	138.9	135.8	132.8	129.7	126.8
86	153.1	150.1	147.1	144.1	141.0	137.8	134.9	131.9	128.8
88	155.4	152.3	149.4	146.1	143.0	139.9	136.9	133.7	130.8
90	157.9	154.8	151.8	148.4	145.2	142.1	138.9	135.7	132.6
91	159.0	155.9	152.8	144.7	146.3	143.1	140.0	136.9	133.6
92	160.1	157.0	154.0	150.8	147.2	144.1	141.0	137.8	134.5
93	161.1	157.9	155.0	151.5	148.3	145.0	141.9	138.5	135.2
94	162.3	159.1	156.0	152.5	149.4	146.1	142.9	139.8	136.2
95	163.7	160.3	157.1	153.9	150.7	147.3	144.0	140.8	137.5
96	164.8	161.4	158.1	154.9	151.7	148.3	145.0	141.6	138.3
97	166.0	162.8	159.4	156.1	152.8	149.4	146.1	142.8	139.2
98	167.0	163.8	160.3	157.0	153.7	150.3	147.0	143.6	140.2
99	168.1	164.9	161.3	158.0	154.9	151.3	148.0	144.6	141.1
100	169.6	166.1	163.0	159.5	156.1	152.6	149.2	145.9	142.4
105	176.1	172.8	169.1	165.8	162.2	158.5	155.0	151.5	148.0
110	181.6	177.9	174.3	170.8	166.9	163.5	159.9	156.2	152.6

Adapted from Radiant Heating—Adlam, pp. 49-52

9. Now determine the average emissivity coefficient. This is done by multiplying the values given in Column D by their respective areas given in Column A and dividing by the total area 1,104. The average emissivity is found to be 0.93.
10. With average heat transmission of 120.8 and emissivity of 0.93 refer to Table I and determine the MRT of unheated surfaces to be 64° F.
11. For the required MRT of 72 given in the problem and an average coefficient of 0.93 by reference to Table I find the average emissivity required to be 127.85 BTU per hour.
12. Find total emission of all surfaces to be 1,392 x 127.85 = 177.897 BTU per hour.
13. Determine the emissivity lacking by subtracting to be 177.897 - 133.335 = 44,562 BTU per hour.
14. Dividing 44,562 by 228, the area of the ceiling and determine the emissivity per square foot to be 155 BTU per square foot per hour.
15. Referring again to Table I for 155 BTU and 0.92 ceiling coefficient, determine the ceiling temperature to be 99° F. This is less than the maximum allowed so it is O. K.

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BASIC PRINCIPLES OF RADIANT HEATING

(*Continued from page 19*)

16. Next determine the amount of heat radiated by the ceiling to the room. This can be done in two ways: First, by Table I. The emissivity rate for the heated ceiling was found to be 155 BTU per hour per square foot and for an MRT of unheated surfaces of 64° F was 120.77

    155 - 120.77 = 34.77

    34.77 x 288 = 10,080

    Second, by reference to Fig. 5, radiation from 99° F to 64° F =

    $$36.5 \times \frac{.92}{.94} = 35.7$$

    35.7 x 288 = 10,281. Enter this as Item 13.
17. Next determine the transfer by convection by reference to Fig. 5. From a surface of 99° F to an average air temperature of 68° F this is found to be 29.5 x .48 for a ceiling, or 14.16 BTU per hour.

    14.16 x 288 = 4,078 BTU per hour by convection. Enter this as item 14.
18. The total transfer by radiation and convection is 10,281 x 4,078 = 14,359 BTU per hour. Enter this as item 15.
19. The heat loss by the ordinary exposure method is found to be 14,198 BTU. Therefore, the ceiling panel as figured will work (Refer to the original problem).

TABLE 2 - EMISSIVITIES (e) OF VARIOUS MATERIALS

MATERIAL	(e)	MATERIAL	(e)
Dull black matt finish	1.00	Woodwork (painted)	0.93
Plaster (rough) unpainted	0.94	Glass (plain)	0.90
Plaster (smooth) unpainted	0.92	Linoleum (unpolished)	0.90
Plaster (papered)	0.94	Iron (painted)	0.93
Stonework	0.94	Glazed earthenware	0.90
Brickwork	0.95	Unglazed earthenware	0.94
Concrete (rough)	0.95	White marble	0.85
Concrete (smooth)	0.92	Asbestos board	0.92
Woodwork (waxed)	0.91	Asbestos tiles (polished)	0.85
Woodwork (rough)	0.95		

Copied from Radiant Heating—Adlam p. 47

The method of calculating just outlined is not the only method by which radiant heating systems may be computed, but it follows closely the method given in the "Guide" although the values given in the table are not those in the Guide. They have been taken from "Radiant Heating" by Adlam.

Other methods which are in use today in the United States are outlined in charts published by the Chase Brass and Copper Company and by Revere Copper and Brass Incorporated. The latter were compiled by Professor F. W. Hutchinson and give values for added air for ventilation.

Some of the outstanding authorities on radiant heating in this country are T. Napier Adlam of the Sarco Company, who was associated with Prof. A. H. Barker, the discoverer of the radiant heating; Prof. F. E. Giesecki of the Texas A & M who made an extensive study of radiant heating fundamentals and who published his findings in "Heating, Piping and Air Conditioning" and in a book on "Radiant Heating and Cooling." Professors B. F. Raber and F. W. Hutchinson who at the University of California made a very technical and mathematical study of the fundamental principles of radiant heating and published them in a book entitled

(*Continued on page 21*)

BASIC PRINCIPLES OF RADIANT HEATING

(*Continued from page 20*)

"Panel Heating and Cooling Analysis"; Professor C. O. Mackey of Cornell University who has made similar studies which are published in bulletins of Cornell University.

The American Society of Heating and Ventilating Engineers at their laboratory in Cleveland have now taken up the study of Radiant Heating. A conference was called together on March 7, 1947, to determine whether or not the society should initiate any research in this field. Representatives of universities, other technical and trade associations, government and industry were present. It was decided that the society should undertake the work.

As a result of this conference, a committee on "Panel Heating and Cooling" was set up, consisting of a steering committee and four groups to study the following parts of the problem:

Heat Transmission within and behind the heating panel.

Heat transfer between the panel and the space.

Controls for radiant heating.

Comfort sensations.

A start on this work has now been made with a working slab poured at the laboratory to determine temperature distribution and heat flow patterns. The radiant heating industry has been lacking in accurate basic data on radiant heating. As compared with the reliable data which has been developed over the years on Heat Transmission Coefficients of Building Materials and Flow Data on Pipes and Fittings, there is to date nothing to compare with this data in the radiant heating field. It is to be hoped that this want will be satisfied within the next few years by the Heating Society.

The information used in this discussion of the Basic Principles of Radiant Heating has been gleaned from various sources, from which the writer has copied freely or adapted the information found therein. These sources of information are the following:

(*1*) *Byers Wrought Iron for Radiant Heating Installations, A. M. Byers Company, Pittsburgh, Pa.*

(*2*) *Present Methods of Heating by Thermal Radiations: T. Napier Adlam "Heating and Ventilating," July, 1931, page 75.*

(*3*) *Applications of Radiant Heating; T. Napier Adlam "Heating and Ventilating," August, 1931, page 65.*

(*4*) *Radiant Heating, T. Napier Adlam, The Industrial Press, New York.*

(*5*) *Chase Radiant Heating Manual; Chase Brass and Copper Co., Waterbury, Conn.*

★ ★ ★

A man once owned a very fine horse which was the envy of all his acquaintances, one of whom, a shrewd trader, often asked to buy the animal. The owner always refused, but when the horse died, he had it sent to the trader. Some time later the two men met and the practical joker asked the other how he had liked the gift. The trader replied, "I made $3600 off him."

"How did you manage to make that off a dead horse?"

"Oh," said the trader, "I sold raffle tickets."

"My dear fellow, didn't anyone object?"

"Oh, yes," the trader answered calmly, "but the only one who objected was the man who won the horse, and I gave him back his money."

ARCHITECT'S PUBLICITY

From the Bulletin of The Indiana Society of Architects, A. I. A.

Getting our name as an organization, and our names as individuals inscribed on the pages of the daily papers is essential to the life of the profession. However, in obtaining the recognition which is fairly ours, we are pretty much dolts. We sit back in the smug anticipation that the news hounds are going to get on our trail, when we are part of a story, and track us to earth, and force the story out of us. And then if our name dosen't appear or the story lacks in accuracy, we are as sore as Job's affliction. By contrast our friends, the realtors, keep pouring their stuff in to the papers, and you may be sure names are included. The papers don't have to hunt for their stories. They come to them. We have the top ranking man of our profession visit us, the President of the Institute, and not a line relative to his visit appears in our papers. You may be sure that when John L. Lewis comes to town, it's not only noted, but columns of interviews appear. We have been inclined to excuse our indolence in the matter of publicity by saying, "We don't advertise, so of course, we can't be publicized. What's the use of trying?" Well, we're just all wrong.

Three members of the Society who were aroused over some recent false publicity in local papers, and who anticipated running smack into this "You don't advertise" barrier, took it upon themeslves to visit the local papers in the interest of more and better publicity for architects. They visited with the top policy making men in the editorial field. They were confronted with these rather astonishing suggestions. The newspapers are anxious to give the architects credit for their jobs, just as they give credti to an artist when they reproduce a painting. The matter of advertising does not enter into the news story of the paper. They want their story to be accurate, and the architects can be of real aid in keeping them so. We are invited to send our stories and renderings and what not in. It all won't be published. Judgment as to publication must rest with the newspapers, but will be used. It was suggested that we keep a running file of current jobs, kept persistently up to date, in the office of the newspapers, so that when a job became news, the reporter need only refer to the file to learn the architect. In

PROFESSIONAL CARDS

brief it was made clear that all that was required was a proper liaison between architects and papers. It all boils down to simple cooperation. We rather anticipate that the situation brought to light in this conference is duplicated about the State. Let's become intimate with our papers—learn to call editors and reporters by their first names, and get the stuff to them.

SAYS ROGER ALLEN IN ARCHITECT

I will try to be at the meeting but may be on my way to Mexico City as I have received a letter from Vincente Oliviere who is in the jailhouse with his face against the wall. While reposing in a custom house in North America he has stashed away a trunk with a false bottom (what'll they think of next?) containing $285,000 in cash money of which I am to get one-third, $95,000 if I come right down there, bringing $7,300 to pay Vincente's fine, and so on and so on. Furthermore he is going to entrust me with the care and education of his beautiful 18-year old daughter.

After thinking the matter over, I have written an open letter to Vincente breaking the news to him that I ain't going to do it. I do not wish to get $95,000 in one piece as it would merely complicate my life and that of the Internal Revenue officials. Furthermore, I do not wish to be entrusted with the education of any 18-year old beautiful girls. In my past life I have been entrusted with the education of two beautiful girls, related to me by marriage on my wife's side except when I talked them over to my side, and that is sufficient. The Ottawa Hills PTA has seen the last of me. Vince can go get a younger man.

This that I have been telling you is the modern version of the perennial "Spanish Prisoner Swindle" and has been going on for the last 40 years.

Mark Swisher Moves

Mark Swisher, Inc., General Contractors of Cleveland, Ohio specializing in Industrial, Commercial and General Construction have moved into their own building at 1600 East 25th Street, where their offices, shops and warehouses are now located.

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Have you ever noticed that a knocker is always on the outside of the door?

Which side of the door are you on when you have occasion to mention or discuss the reputation or accomplishments of another architect?

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