

The
**PRAIRIE
SCHOOL**
Review

Volume IX, Number 2

Second Quarter, 1972

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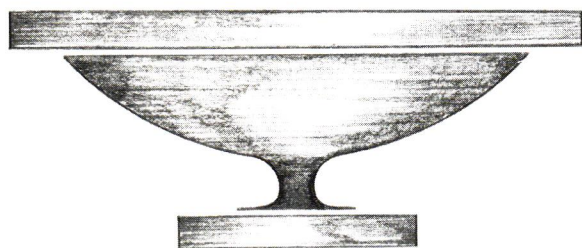
ABOVE:

The Chicago Stock Exchange Building, considered by many to be the epitome of the Chicago School of Architecture, stands no more, a victim of "progress."

COVER:

Chicago's downtown is still the most exciting architectural experience in the world. Old and new buildings combine to present a panorama of excellence unexcelled anywhere. Photo by Hedrich-Blessing.

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From the EDITORS

With this issue of The Prairie School Review we conclude the transcription of the Concora Symposium held at Northwestern University in 1969. It is fitting that we open these pages with a photograph of the Reliance Building, still standing at the corner of State and Washington in the heart of Chicago's loop. No architect has ever superseded Charles Atwood in inventiveness and elegance in skyscraper design. Today's masters owe much to this structure. It is now under consideration as an official Chicago Landmark Building — let thoughtful men prevail.

The Chicago School of Architecture:

A Symposium—Part II

Structural Development

by Carl W. Condit

There has been so much written about the Chicago School (that's such a convenient term I'm going to continue to use it), written by me and other people, that I think it would be an insult to the intelligence, as well as boring, to go over a lot of the details again; so what I would like to do is to put the commercial and public work of the Chicago movement into a perspective in which it constitutes the focal point, the center point, so to speak, of about 200 years of structural development. First, it is the culmination of about a hundred years of structural development preceding it; and then the beginning of a more intricate, vastly greater structural development that has followed it.

What I shall say is complementary to what Mr. Weisman has said. He has talked very eloquently, very expertly about the architectural form, the architectural characteristics of many interesting buildings of Philadelphia, New York, Boston, and other parts of the country. (I wonder if he knows, by the way, that a little bit of the central court of McLaughlin's Shillito Store in Cincinnati still exists. It's imbedded in the new building, a piece of PWA-like architecture of 1937). What I have to say will be complementary because I want to talk about structural development, and there are two reasons for talking about that. The first is that I am a historian of technology, and the other is that I think one can assert a fundamental generalization here: Most great architecture (I don't know what proportion, but certainly a very high proportion of great architecture) represents the expressive and symbolic fulfillment of technical potentialities. (The foremost examples that occur to me would be Roman concrete building, beginning in the reign of Nero and going on through the end of the Empire in the west, and high medieval building in the 13th century). I would take that to be axiomatic; it does seem to me to be fundamentally true. So what I want to do is move very rapidly through the chronology of technical development which constitutes the means by which a new architecture came into being at the end of the 19th century in many places, as Mr. Weisman has correctly shown. (Mr. Weisman will excuse me if I think the real masterpieces of it are in Chicago beginning in 1889, continuing up to about 1905 or 1910; I'm talking about the commercial work now).

I have resisted the temptation to show slides of these early things because if I did I'm afraid we would never get to lunch. Besides, I think one word is worth 10,000 pictures, so I'm going to rely on a descriptive and analytic approach.

Let's go back to the beginning; it isn't the true, the only beginning, but it will do very well: The Calico Mill in Derby, England, of William Strutt, 1792-3. This was the first multi-story, supposedly fire proof building (it was at least partly fire proof) in which iron was used for structural members; the columns were of cast iron. As the first multi-story building with iron columns the Calico Mill is the first modern industrial building. A few years later came the Marshall and Benyon Flax Mill in Shrewsbury, 1796-7, by Charles Bage, a man whose work deserves the most careful investigation and is just beginning to receive it. This building, opened in 1797, had the first all-iron interior frame: cast iron columns and case iron beams.

Now the chronology is compressed here, for things came at a very rapid rate. It appears that the first iron roof-truss was used in a foundry in Soho in London in 1810, William Murdock being the designer. The first proposal for an I-beam (this is an extremely complex little part of structural history) came in Thomas Tredgold's practical essay on the strength of cast iron in 1822, paralleling the theoretical work of Navier (which was way beyond Tredgold, as Navier was too much interested in mathematics and too little interested in the practical work that Tredgold represents). The history of the I-beam turns out to be vastly more complicated than anybody imagined, but it seems that that essential feature of metal frame construction can be traced to Tredgold. (The flanged-beam had been introduced earlier by Boulton and Watt in several mills). Iron was coming rapidly to the fore in the advanced industrial nations, chiefly England, with France lagging behind by only a couple of years. Experimental work was necessary to understand its properties, its structural role, its potentialities, and we get this first in the experiments of Eaton Hodgkinson and William Fairbairn at Manchester, 1826-30, published in the *Philosophical Transactions* of the

Royal Society at Manchester in the following year (1831).¹ I don't think anybody has tracked down the exact date at which the free-standing iron frame first appeared; the little market place called the Madeleine in Paris in 1824 is an early example; but I doubt if it is the first one. (All those markets in Paris, as you know, were superceded by Les Halles Centrales in the mid-century, which themselves are being superceded by something else right now). But I think that the important one, the significant one, among the early free-standing frames is the Hungerford Fish Market (London) of Charles Fowler, 1835, because it is the first case in building construction, so far as we know, where there is a concern on the part of the designer to brace the building, to render the building rigid against wind loads; and we see wind bracing in the form of knee bracing for the first time in this building, although it had been used in bridges before that. (In knee bracing a small diagonal brace is set in the angle between a column and a beam). Wind bracing is one of the very puzzling things in the history of building. William Penn talks about wind beams in his *Directions to Those Who Are Inclined to Settle in America* in 1682; and we have the theory proposed today that part of the function, rather a small part, of tower buttresses and flying buttresses in the Gothic cathedral was to absorb wind stresses. Yet, as I want to show when we come to specific Chicago buildings, it is very late before this is considered an essential element in building.

Let me pass over very quickly the introduction of rib construction in the floral conservatories, in England, especially those that are the work of Joseph Paxton and Decimus Burton, rightly illustrated as important in James Fitch's excellent book, *American Building: The Historical Forces That Shaped It*. Wrought iron, of course, is one of the necessities of construction wherever any member is subject to deflection; this was known as a consequence of the Fairbairn-Hotchkisson experiments at Manchester. It begins to appear, first in 1841, in England, and in the 1850's in the United States. Once again there are complicated technological problems; here the primary one is the development of a mill that can roll a beam that's large enough to span the bay openings that were becoming standard at the mid-century. (It was the Trenton Iron Works that finally solved that problem in the United States, others paralleling it).

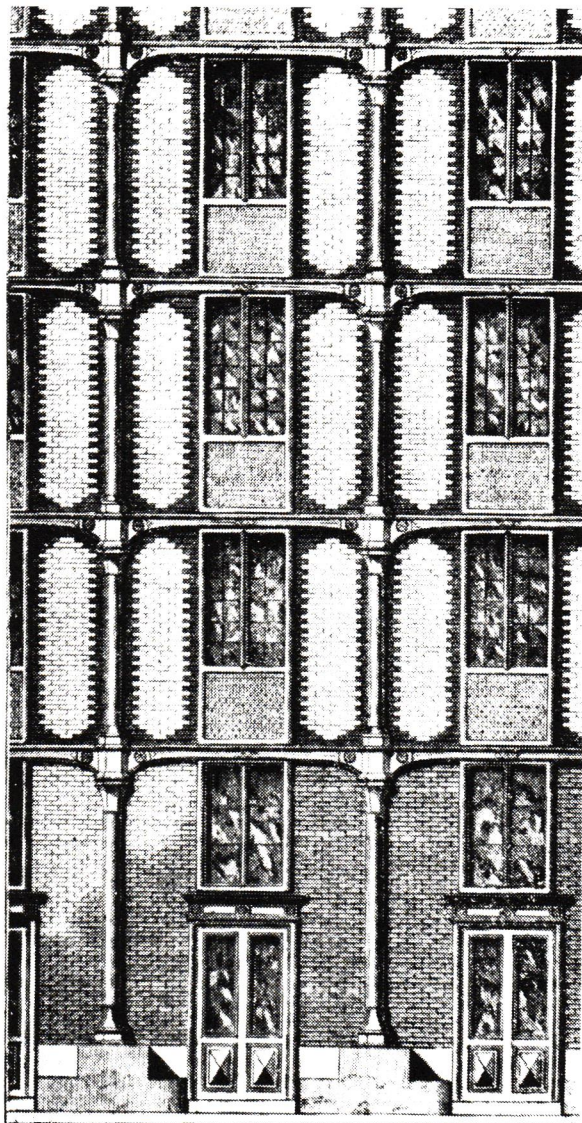
The stage is thus set, by the middle of the 19th century, for a radical breakthrough, a dramatic

¹ Published in the United States in 1832, in the *Journal of the Franklin Institute* See Carl Condit, *American Building: Materials and Techniques* . . . (Chicago, 1968), pp. 78-79. — EDITOR, JCW.

breakthrough, and it comes very quickly in the first of three buildings of fundamental importance in the development of modern building techniques. The first one, of course, is the Crystal Palace in London; Paxton was the chief designer, Charles Fox, C.H. Wild, William Cubitt, were engineering associates. Everybody knows about the Crystal Palace; let me summarize its importance quickly: The first large scale iron frame building; the first with glass curtain walls; the first with pre-fabricated wall elements; the first with an embryonic form of portal bracing (the necessity of bracing the Crystal Palace against wind loads was a crucial matter), that is, bracing in which the horizontal framing member is connected throughout its depth, or at top and bottom at any rate, to the column; and it is certainly a very early building in which truss framing is used (i.e., trusses as well as girders, columns and ribs).

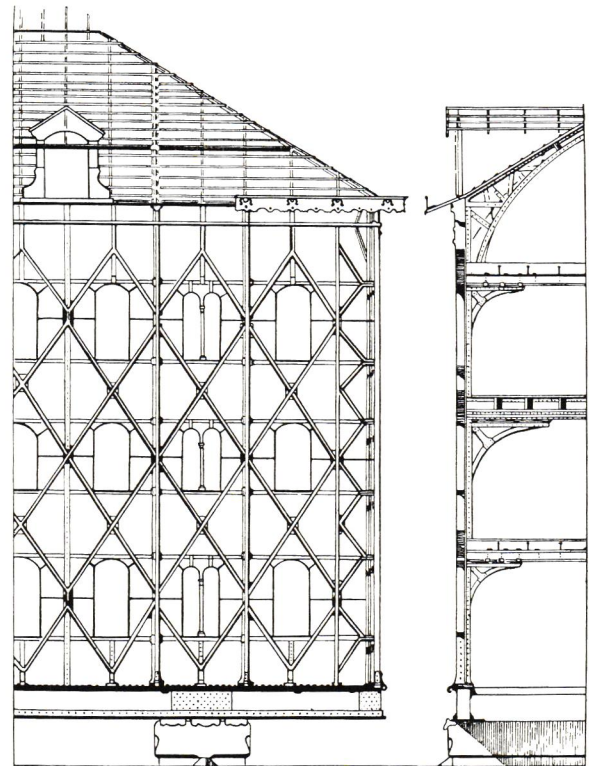
The second one of this triumvirate, to distort the metaphor here, is the Navy Boat Store at Shearness, England, by Godfrey Green, 1858-60. The modern H-column was introduced here and the true portal framing, in which the girder is riveted throughout the depth of its web to the column. (It was knee bracing that was introduced in the Hungerford Fish Market Building).

The third and most important of this group of buildings, the one which I think brings the pioneer phase of this development to its culmination (and simultaneously constitutes the basis of what is going to come in the industrial cities by way of spontaneous economic necessity), is the Warehouse of the St. Ouen Docks near Paris, Hippolyte Fontaine the architect, 1864-65. This is one of the rare cases in the history of technology where you can really say "first" (an apparent first in many categories) and defend it. It seems to be the first multi-storied iron frame, fireproof, curtain wall building in the world. All the structural means of the skyscraper are here, addressed to purely utilitarian ends. There are a couple of things necessary to the skyscraper still missing: of course you need internal transportation, the elevator has to be present; and you must have fireproof cladding over the iron members. The iron members are exposed in the Warehouse, as they were in the Boat Store; and as they were in the Crystal Palace, with the result that it collapsed during a fire in 1936. The members are not only exposed in the sense that the iron is exposed, but they are also exposed in the external curtain walls of this building, so that the whole structural system of the building is presented to you in the visible iron frame and the brick webbing that fills the bays. There are a few things that look backward in this remarkable building; the use of cast iron girders, for example (they really belong to



the past by this time); the short spans are supported by cast iron, although the long spans are supported by built-up wrought-iron plate girders of the kind that Robert Stephenson developed for railway bridges in 1841.

Now a couple of other buildings should be mentioned briefly. A curiosity, but certainly a seminal one that has some potential for the future, is the Menier Chocolate Works on the Marne at Noisiel-sur-Marne, Jules Saulnier, the architect. It opened in 1872. (This building has modern counterparts; and when we talk about new schools and raise the question of priority in this area I certainly must agree with Mr. Weisman that the contemporary designers seldom know about the designers that anticipated them a hundred years ago). In the case of the Menier Chocolate Works, the problem there was to carry the iron frame of the building over a rather wide span on the Marne River, and the piers that support it are fairly widely spaced. The result is

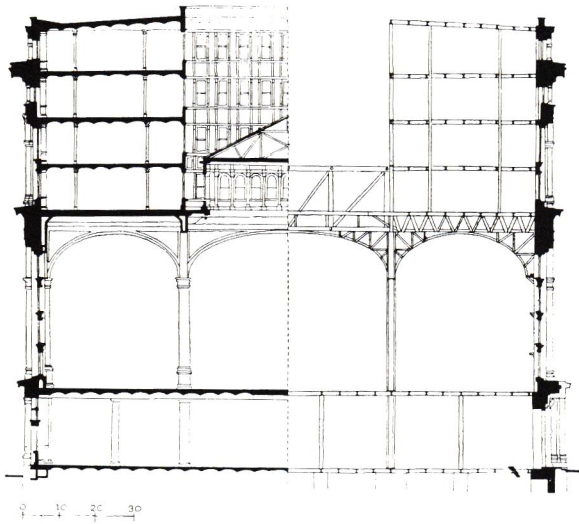


Noisiel-sur-Marne. Menier Chocolate Works, details of sections. 1871-72. Jules Saulnier. From Singer, History of Technology.

Paris. Warehouse, St. Ouen Docks, detail. 1864-65. Hippolyte Fontaine. From The Guilds Engineer.

that the frame is so extensively braced, with double diagonal bracing in all the bays, that it becomes a truss, very nearly a lattice truss. Now if you look at the IBM Building in Pittsburgh you will see a lattice truss; that building is terribly "in" now, and here's the Chocolate Works in France, pretty nearly a hundred years old, that anticipated it.

The greatest work of building art in the 19th century, and the one that taught everybody how to do it, is the Eiffel Tower in Paris, completed in 1889. There are so many things involved here that one really shouldn't mention it unless he is prepared to talk at some length about it, but let me simply reduce it to three things that are absolutely essential. First of all, the bracing of a very high frame. Eiffel was the leading authority on the aerodynamic stability of high structures in the 19th century. (He turned to aeronautics, you may remember, when he left building at the turn of the century. His interest in flight and the development



New York. Produce Exchange, section. 1881-84. George B. Post.

of airplanes grew out of his interest in wind, because wind pressure is a crucial thing in structures of this height). Another thing is the antecedent of the Tour Eiffel, which is not any building in Europe but the braced iron bent of the railway viaduct, particularly of the form Eiffel himself developed for the Com-mentry-Gannat railway line between 1863 and 1872. Finally, this is probably the only free work of building in the history of construction and architecture; it exists simply as a monument to itself, a

Chicago. The Rookery. 1885-86. Burnham and Root.



symbol of the technical power of the time; and it is designed scientifically within an inch of its life.

Now we've covered most of the span of the 19th century. I haven't said very much about buildings, but then I don't have to because Mr. Weisman has said a lot about them. The means were now available to produce something pretty exciting, a new architectural development, a new movement, a new style, a new school, whatever you want to call it; and it still seems to me that it comes in Chicago. Not necessarily in 1885, but very quickly. The first steel frame building was in Chicago, the second Rand-McNally Building of Burnham and Root, 1888-9. With it the decisive act had occurred; and henceforth big buildings (until they got sculptural, "existential", massive and concrete at the present time) had to be built in this way.

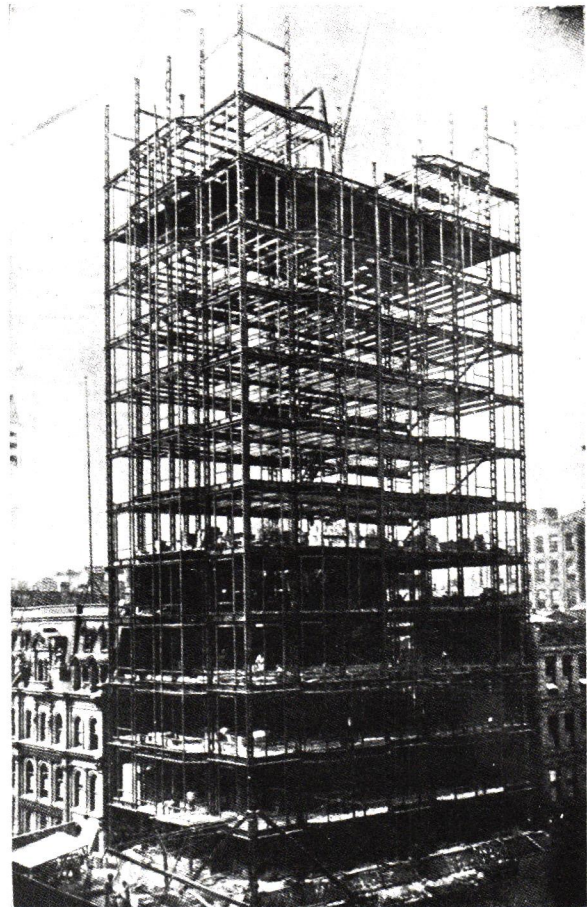
Among the buildings that generate or lead us to a new building form, the fulfillment of a new technology, the *expressive* fulfillment of it, is the Produce Exchange in New York. That building was demolished about ten years ago, which seems to me a typical act of vandalism (it's worse in New York than it is here, and it's bad enough here, certainly). The Home Insurance Building in Chicago you know well. The Rookery, by Burnham and Root, represents complete skeletal construction, it seems to me a first class architectural expression of it (without parallel really), in the court walls. Unfortunately you have to go inside and climb the stairway in order to see it, but there it is. If you want to know how to do it, John Welborn Root was pointing the way there.

Now, instead of reviewing the development in Chicago in detail, let me just say that by this time the technical means were available, and there were examples of how these means can be used in a functional and expressive way. By the way, I don't think these buildings are a symbolic architecture in the sense in which I use that word (which is derived somewhat from the sense in which Ernst Cassirer uses it). I think that architecture can have a symbolic character only if there is some public agreement on a cosmos, an encompassing order, which can be translated into geometric and formal terms, and there is no such agreement; so I'll simply take the word *expressive* for want of a better one. I think the first masterpieces of a new urban architecture come in Chicago; I don't know of any buildings elsewhere that seem to me to represent quite this fulfillment, to point so clearly in the direction of a new potentiality or so fully in that direction.

I'm going to discuss only two of them, and I've chosen these two because each one represents, I

think, excellence of a very high order, and at the same time they represent the two dominant streams which characterize the Chicago movement at the turn of the century, both the commercial public work of the 90's and the residential and smaller public and ecclesiastical work of Wright and Griffin and Bergen and Elmslie and all the rest of them after the turn of the century. (By the way, I think those two movements still characterize contemporary architecture — one of them happens to be in the ascendant at the moment, and the other somewhat in eclipse, but here they are still side by side). For these movements I can't find a single word, a single label, and Mr. Weisman is right, I think, in suggesting that maybe we ought to stay away from labels for a while and simply describe the characteristics.

I would call one of these, the older one, the one that is most deeply rooted in the work of the 19th century and most fully expressed in the work of the Chicago movement, the Empirical-Functional-Utilitarian-Objective movement or stream, in which form is determined by practical requirements. The practical requirements, being utilitarian, demand the most efficient structural means available to satisfy these requirements. And what you usually get as a consequence is an articulated wall; Reyner Banham used the expression Diagrammatic Architecture, which seems pretty good, but the usual expression is the articulated wall, which grows directly out of the underlying frame; and this means of course that the structural means is the frame, the iron frame, and then the steel frame as we move into the 1890's — it doesn't come in New York until 1894, by the way, and in London in 1902; and in Paris still later, despite the long lead that the French builders had under the leadership of Eiffel. The formal expressive result is the articulated wall, and its chief practitioners in Chicago were William L. Jenney, above all Holabird and Roche, and to a certain extent, D.H. Burnham, but they have their counterparts on a lower level in other cities. There is so much overlapping here that one can't draw exact boundaries. The other movement, or stream, that begins in Chicago, and is still characteristic of contemporary work, I would call the Plastic-Sculptural-Subjective-Self-Expressive approach. Today it's self-expressive within an inch of its life, especially in the hands of people like Paul Rudolph and some other architects, but I think one can find its antecedents. It may be characterized by a kind of sculptural plasticity on the one hand, or by a curtain-wall expression in which there is a considerable emphasis on ornament, or on movement through a flowing ornament. John Welborn Root and Louis Sullivan, it seems to me, are the leading



Chicago. Reliance Building during construction. 1894-95. D. H. Burnham and Company. From *Birkmire*.

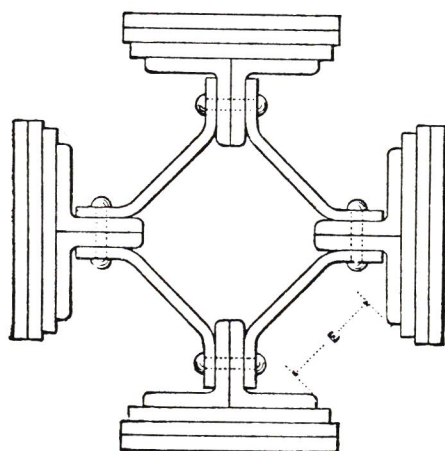
people in this stream.

Now to take the two examples that I have chosen from Chicago, one for each of these streams; they are very familiar, so I'm not going to make a detailed analysis; but I think there's still something to be said about both of them. Then I'm going to take contemporary counterparts, also in Chicago. I shall not take up these buildings in chronological order, because that order doesn't really make sense; the older of the two streams is the Empirical-Functional-Utilitarian-Objective, and so I'm going to take the example of it first, although the actual building does follow by a few years the example of the second.

The building is the Reliance Building, still standing at 32 North State Street. I shall start with the means because this is what I want to emphasize, and then we'll go to the building itself. The illustration, from Birkmire's *High Building Construction*² is poor, but at least I think one can see something of what I want to talk about. The building rests on the familiar raft foundation. (I say familiar because it

2 William H. Birkmire, *The Planning and Construction of High Office Buildings* (New York, 1898), p. 63 (fig. 30).

was very common in Chicago — developed by John Root for the Montauk Building about 12 years before the Reliance was completed). Now for the essential means: First the corner columns (the columns at the corners and at certain points along the walls being larger than the internal columns) are what are called Gray columns. There was a double problem with columns in high buildings. The first problem is to resist the bending and shearing force of the wind, and that resistance of course requires a bracing system in the building, but the column itself is nevertheless subjected to it. The other problem, and more crucial if the building is adequately braced, is to resist the tendency of columns to buckle. If they buckle the stress is no longer simply compression; they are subject to bending and hence tensile stresses, and these may reach dangerous



30-INCH COLUMN.

Gray Column, section. From Birkmire.

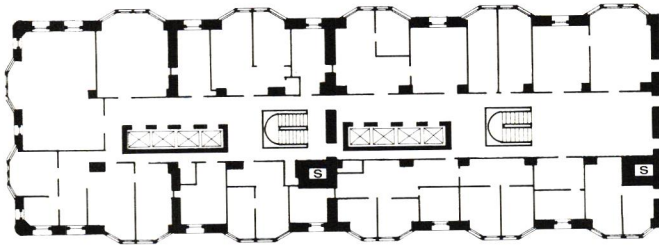
levels. So, the Gray column is made up of eight angles bolted together in pairs with plates welded to each pair, so as to make four heavy, rigid T-shaped members in horizontal section. And then they are laced together by webbing; and the webbing, since these angles take the compressive stress and constitute the resistance to buckling, can be relatively light; and that's why you see the open work in these columns, especially at the corners, as though you could look through them.

In the second place there is the whole floor framing system. The secondary floor girders have their long axis at right angles to the wall. The primary girders are the spandrel girders, and there are two different kinds: There are solid web plate girders in the main wall planes; and then the spandrel girders are trusses — taking us back to the Crystal Palace — twenty-four inches deep, which are riveted to the columns through their depths, so that you have a very strongly braced system of portal bracing (there are no diagonal elements, no knee

braces, and no diagonals across bays in the Reliance Building frame). This means of course that the entire wind load, the shearing and bending force of the wind, have to be taken by this portal bracing system, and that is the reason for the great depth of these girders, twenty-four inches, which is far greater than is required for the load they carry.

Now to notice how Charles B. Atwood, of D. H. Burnham and Company, who was the designer of this building, treated the exterior. (Atwood by the way, designed the Museum of Science and Industry in Chicago, erected originally as the Fine Arts Building for the Columbian Exposition — it's interesting to see what the right hand could do while the left hand was doing this skyscraper at Washington and State Streets). I have talked about the means, the technical means. The requirement which they serve was simply to build an office building with maximum light, maximum interior space, maximum economy of construction (fireproof construction of course) and the maximum resistance to fire. The base you can't see well here, but you can see the terra-cotta covering or the fireproof cladding of the columns, and the rest is simply glass. Above the open base, which rises to about the equivalent of a story and a half, (and they would be very generous stories at that time, about fourteen to fifteen feet), you have this vivid, very delicate screen-like wall, which consists simply of the terra-cotta covering over the fireproof cladding. (The actual structural members are not visible in a multi-story building, as you know; as that would be in violation of the fire code. A similar covering is on the heavy columns, the Gray columns). The floor frame is angled out in a trapezoidal shape to provide the oriel window, or projecting bay, that is such a common feature of the Chicago work. The only other vertical elements are the thin mullions of steel, again covered by the usual fireproof cladding and the terra-cotta.

Now for the surface. (The building is terribly dirty and disfigured today. It has been so badly treated that one has to stop and look at it carefully to realize what is under the grime and the ugly signs and the usual paraphernalia of what we call an affluent society, that is a rapacious society). The ornament on the spandrel is of Gothic provenance, but it is very flat and it has a flowing foliate or floral character which intensifies the sense of movement — these bands that undulate, or move outward and inward, sink back to the wall plane and out again. The whole thing (very nearly what we have in the Eiffel Tower, interestingly enough) is a union of space and structure; you don't see the structure, but you know it is there and you know what it is like. And now that I've shown you the frame, you realize



Chicago. Monadnock Building, plan. 1891. Burnham and Root.

how closely the surface reveals it; so that, in the sense of movement and delicacy, and a certain richness of pattern combined with great clarity, we have the architect exuberantly telling us about the technical means, and the potentiality, the expressive or formal potentiality that he drew out of it. The narrow mouldings mark the tops of the spandrels and help to intensify the pattern, introducing a shadow line. The building originally terminated in a simple spreading roof, a kind of cornice spreading out like a flat plane or a thin slab at the top, which brought the whole thing to a very nice stop. Notice also, by the way, how nicely the horizontality and verticality are combined, there's a strong vertical sense in each floor, but the succession of floors, which the thing is in fact, is brought out. (That projecting roof was replaced a number of years ago by an ugly brick parapet typical of the way these buildings are treated today. A parapet is easy to maintain and the roof is somewhat difficult and expensive to maintain, and so it was replaced, and the building now terminates in a very ugly top). This building seems to me clearly a forerunner of what Banham called Diagrammatic Architecture, the present Miesian Architecture, the architecture of steel and glass. Much of the work of Skidmore, Owings and Merrill reveals this kind of architecture.

Now the other building that I want to discuss comes a little bit before the Reliance, but I have explained why I wanted to do violence to the chronological order. This is perhaps the most celebrated, at any rate one of the two most celebrated buildings in Chicago, the Monadnock Building of Burnham and Root, 1889-91. It was opened in January of 1892, just about a year after Root died, but he had completed the work on this building. It is now known, through the researches of Donald Hoffmann of Kansas City, that Root was entirely responsible for this design. (If anybody wants a doctoral project I'll throw one out: Somebody ought to go down to the vault of Aldis and Company where there are thousands of letters that passed between the sponsors of these buildings, two



THE MONADNOCK, BURNHAM & ROOT, ARCHITECTS.

Boston financiers, Peter and Shepard Brooks in this particular case, and Aldis, the building's managing firm here, and the architects of the building, that are full of all kinds of fascinating ideas). Again first the means. The means in the Monadnock Building are very much different and that is why it looks different. If the Reliance is the forerunner of the E-F-U-O, the Monadnock is the forerunner of the Plastic-Sculptural-Subjective-Self-Expressive type of today. You have the same problem, in a building of about the same height, although of very much greater floor area; but the means are quite different. The figure here represents a floor plan of the building, and it shows several things immediately: First of all, it shows a solid wall at the outline of the building; thus the exterior wall is a solid masonry wall (not a curtain wall or an articulated wall, that is, one which is a kind of a diagram, or an expression in that way, of the articulated frame underneath it). And the plan shows also that there are masonry walls in the

interior that extend across the building. Then there is a central corridor around which, in this narrow slab-like form, the offices are distributed. Each one of the offices, or each one of the bays, is characterized by the trapezoidal projection, the oriel, which is so common in these buildings. Another thing that I want to call your attention to is that along the corridors there are two rows of columns that define the corridors, the cross walls, and then the masonry wall that outlines the building. This means that you have a different structural system; for the floor loads of the Monadnock Building are divided between the piers of the brick wall, the interior columns of the building, and the interior brick walls. The interior brick walls were introduced for part of the wind bracing. The interior columns of the building, which are wrought iron columns (this frame is the traditional mixture of wrought and cast iron, wrought iron for tension members and some cast iron for columns), are what are called Z-bar columns, in which four angles that are like a stretched-out Z in horizontal section are riveted to a central plate. In other words, you have a flanged column, the purpose of which, once again, is to offer resistance; just as you have flanged beams to offer resistance to deflection and shear and torsion, so also here the flanges are to resist the tendency of the column to buckle. The floor framing system is a system of iron framing, iron beams and iron joists that extend from the columns to the piers in the exterior walls. The Monadnock Building again has a system of portal bracing, but the interior brick walls as well as the exterior massive brick walls are part of the bracing system. In other words, what you have in the Monadnock Building is a brick box — a chambered brick box — or a single brick box with internal diaphragm walls that divide it into compartments. This whole form is quite stable, if it is of sufficient weight to carry the gravity loads, under wind loads; but in addition of course, you have a system of portal bracing on the inside. These are the means once again.

I call this building one of the two foremost works of the Chicago movement, the other one being Sullivan's Carson Pirie Scott Store. I'll risk an even more hazardous generalization: I think that the Monadnock and the Carson Store constitute the two greatest works of commercial architecture in the United States. There is no question about the fact that the Monadnock Building is a landmark. First of all, it was the first building in which the architect turned his back on all traditional systems of ornament, or decorating schemes; it is a direct geometric statement. But it's much more than that. There are all kinds of details here which might seem over

subtle, but one can't help but notice them; and they turn the whole thing into a flowing, moving, plastic work that has a remarkable richness. First of all, the big piers at the base terminate at the second floor line, and at that point the wall curves in slightly. Then it goes up vertically to a little below the top, to the attic story; and then it flares out at the top to match the curve at the bottom. The corner, approximately to the third floor line, is a sharp dihedral angle; then it is chamfered; it has a rounded chamfer and the radius increases; that is, the roundedness of it increases as you go up, so that this sharp-edged angularity at the bottom gives way to a softer rounded effect which flows very beautifully into the flaring at the top. The soffits (the under surfaces of the vertical tiers of projecting bays, or oriels) are rounded. You look underneath and see that the brick work is moulded to fit into a rounded saucer-like form, or segment of a saucer. There are many of these details, for instance the windows that are so nicely, sharply cut in with very simple sills and mouldings.

It's through such means that Root turned this thing into a sheer, unmistakable masterpiece. If I let my mind run through contemporary building that takes off in this way in a new plastic massive kind of thing, I can't think of anything that quite has this combination. It has all the things that I've just mentioned, but in addition it has this combination of mass and stability and fluidity. I think much of the new work in concrete grew up out of a reaction against the brittleness, the thinness of the glass and steel work; but this building has not only the mass and solidity and stability of brick, and of course the texture of brick, but it also has astonishingly fluid and plastic quality, in the undulating wall, so that solidity gives way to fluidity, only it doesn't — the solidity stays so that we have this paradoxical combination of fluidity and mass. That's something which has antecedents in many great triumphs of constructive building, constructive architecture, in the past. Just to dip back into the buildings of comparable scale in the remote past, the Roman concrete work shows the same thing in many buildings; the Pantheon for example has this paradoxical combination of enormous weight that seems to be weightless, that floats up remote from any visible support, or at least the support seems to disappear, or one's kinesthetic sense of the support is suppressed when you look at the thing itself. Likewise in the Monadnock Building you have weight with a sense of movement and weightlessness.

Now, as I said, I want to put the Chicago work of the nineties, the architecture of Root and Sullivan,

Holabird and the rest of them, in a focal position; and to do this I want to bring up the contemporary counterparts to the buildings which I have discussed. The one that I have decided to take as a counterpart to the Reliance Building is the Civic Center in Chicago, 1963-65, mentioned briefly by Mr. Weisman. Let's look at it a little longer. This building is extraordinary in many ways, most emphatically in its scale. But what I want to underline particularly is the cool, steady, unambiguous, clear, massive — yet somehow rather light — expression (even rather delicate expression) of the underlying steel frame of this building. Now, the problem in the Civic Center (for which the architects were C. F. Murphy Associates; Skidmore, Owings and Merrill; Loeb, Schlossman and Bennett; with Jack Brownson of Murphy Associates in charge) was to provide a great deal of open space for court rooms, hearing rooms, special public enclosures, large lobbies, and so on, that are found throughout the height of the building, so that not only a maximum of open space free of columns in the interior was required on any floor, but also great ceiling height: Since these are public enclosures, the conventional nine-foot ceiling height obviously was not going to do. The requirement was an eighteen-foot floor to floor height, from the bottom of the spandrel to the bottom of the next one, and these eighteen-foot floors to be continued right up the building. That's why it is 648 feet high and yet has only thirty-one stories. (There are feet added on because of the thirty-six foot height of the base and then the very high screen that surround the mechanical-electrical equipment in the penthouses on the roof). To minimize interior obstructions, the base span on the short dimension was fixed at forty-eight feet, which at the time was unprecedented, and on the long elevations at eighty-seven feet, which was not only unprecedented but unheard of, or unimaginable, at the time. This required a floor framing system of Warren trusses. The trusses were used rather than solid web girders in order to lighten the framing members and also to provide openings for ducts and so on. Thus the floor framing system includes Warren trusses five feet four inches deep. The floor to ceiling height is twelve feet, and the spandrel panels of Cor-ten steel are of a depth of six feet. The columns are cruciform, the horizontal axis being six feet in either direction. Thus, the column is as wide across as the height of any one of the larger people who can be seen in the illustration. So there is a new, tremendously expanded scale here, and a structural system that's full of fascinating things (I'll resist the temptation to go into greater detail about that).



Chicago. Civic Center. 1965. C. F. Murphy Associates; Loeb, Schlossman and Bennett; Skidmore, Owings and Merrill. Richard Nickel photograph.

The influence of Mies is profound here; Brownson was a student of Mies' and he openly admits and is quite proud of the fact that he spent many, many nights over a period of weeks, even months, in talking to Mies about this building, which really has heroic characteristics. It matches beautifully the giant order of Corinthian columns (which are five stories high) in the City Hall to the west of it, so that the massiveness, the hugeness, the kind of Cyclopien quality of that building is matched here. But in the Civic Center there is what I call the paradoxical combination of clarity and strength: There is rudeness, mass, durability, (the rusted oxide surfaces, bring that out very strongly); but at

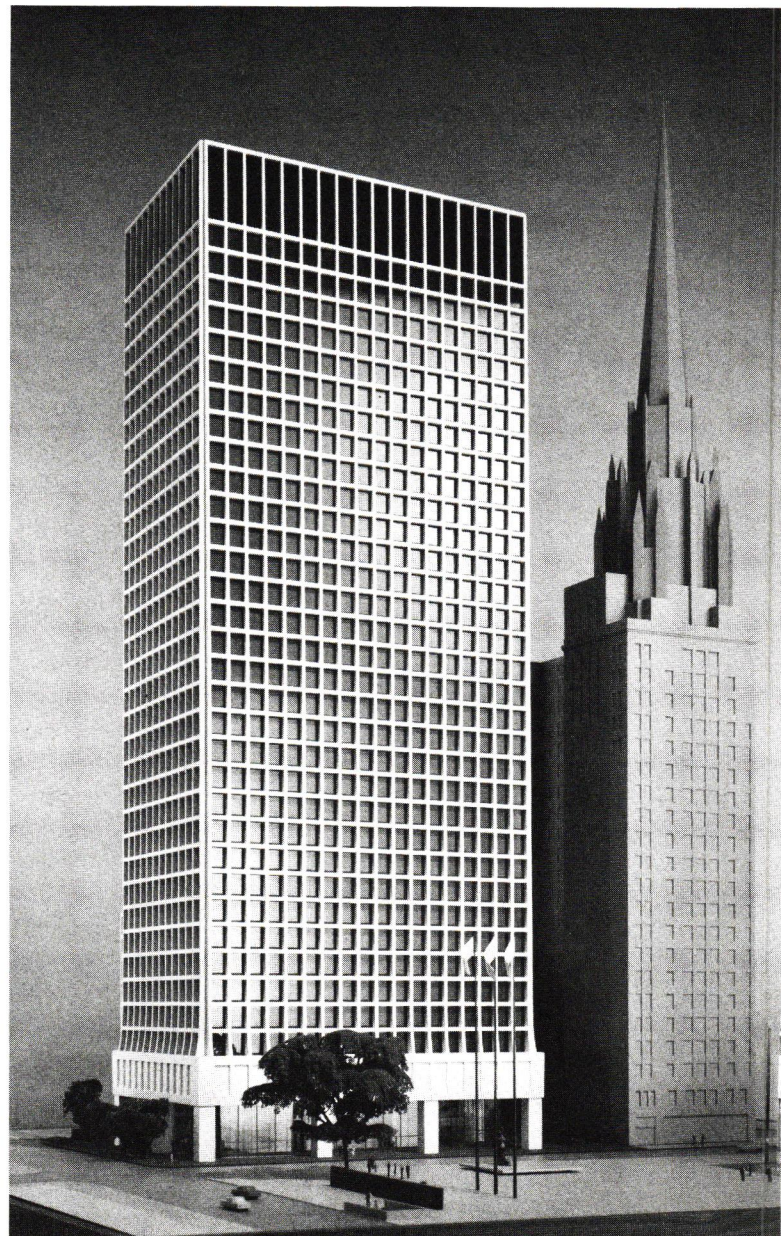
the same time there is clarity — such an impeccable clarity that it almost has a kind of delicacy. The problem of glass walls has been solved by radiation-absorbing glass, i.e., these windows are amber solar-bronze glass, which absorbs a very high proportion of solar glare and some other radiation. The only trouble is, as is well enough known, they've been plagued with cracking of windows as a result of differential expansion following a differential temperature pattern over the windows. What the right hand of technology gives, the left hand of technology sometimes seems to take away in modern building.

The Brunswick Building, the building I want to take as the counterpart of the Monadnock, is and is not a counterpart; in some ways it is so radically different that it's ridiculous to talk about the two; but in other ways they are similar. The reason that the Brunswick is the modern counterpart of the Monadnock is that the wall one sees in looking at the building is a load-bearing wall; it is not a curtain wall, it is not the articulated wall (as that term is used today).

Parenthetically, the Brunswick, as also the Civic, is situated on Dearborn Street, which has become an architectural showplace. The Manhattan, the Fisher, the Monadnock, the Old Colony at one end of the Loop area; the Brunswick, the Civic Center, Marina City, Inland Steel, toward the other end; also the Marquette Building among the older ones. The correlation here seems to me to be quite striking. You look at the Marquette, the Monadnock, the Manhattan Building, and then look at the new ones, and the similarity seems to be there almost to an overwhelming degree. Whether this is the case of an immediate spiritual nourishment or not is something that is subject to discussion. But in any case in these modern buildings you have a representation of something that has become a world movement in contemporary architecture, but with an incisiveness, a finish, a sense of high style (rather than "style" in the historical sense) that one doesn't find anywhere else.

Now to comment briefly on the Brunswick Building. The kind of structure found in the Brunswick is called a load-bearing screen because what you see in looking at the building are load-bearing columns, rather small in cross-sectional area, very closely ranked. (The openings here run about six feet by nine feet). Somewhat as in the Monadnock Building the floor and roof and wind

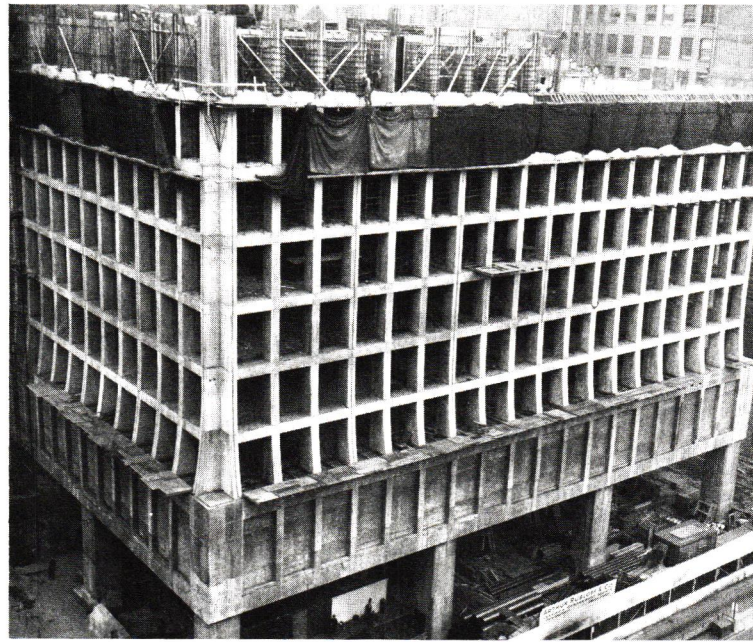
Chicago. Brunswick Building, model. 1963-65. Skidmore, Owings and Merrill. Bill Hedrich, Hedrich-Blessing photograph.



loads are divided between the screen wall that you see and an internal core of shear walls, as they are called, solid concrete walls that surround a hollow core which contains the elevators and utilities. In the Monadnock they are diaphragm walls thrown across the building; in the Brunswick they constitute roughly a square in plan and run as a prismatic box up through the building. Now, the architects were faced with an interesting and complex aesthetic, technical and utilitarian problem here. It was necessary to raise the lobby and to open the span to the maximum degree, partly to balance the Civic Center (this is the aesthetic, the formal element), partly to minimize the number of caissons, and partly to provide an adequate opening, something that suggests a public opening that certainly would not be suggested by the little narrow openings above the third floor line. (One might compare the CBS Building in New York, the structural design of which is very nearly the same; but in the case of Saarinen's building there, which is a very impressive work, the thin columns come right down to the ground. The result is that it is very difficult to find out how you go into the building, and once you're inside, how you get out. You walk round and round, and then it comes to you after a while).

Now, having decided, or realized that this was a necessity (to open the ground floor to the maximum degree), the problem was to find the optimum span, that is the span which would provide maximum opening with technical manageability; and the proportions seen between the large columns at the ground level are those that were fixed on in answer to this multiplicity of needs. To carry the load-bearing wall of thirty-four floors down to the ten huge, widely-spaced columns required a ring girder which occupies the entire height of the second and third floors. This is the equivalent of the massive, immensely thick masonry base of the Monadnock Building. That girder is twenty-four and a half feet deep and seven and a half feet thick, nine thousand pounds per lineal foot. I think it is the largest structural member ever used in a building, and it completes the comparison to the Monadnock Building.

Without taking further time, I will simply say that the buildings that I have shown (and we could pick a great many more in Chicago in the 90's and the early 1900's), strike me as justly deserving the description of the first masterpieces of modern architecture. That's a statement the variations of which have appeared in many European writings; and although one can find the counterparts of Chicago buildings at the turn of the century in



Chicago. Brunswick Building in construction.

contemporary building all over the world, I think that these new buildings in Chicago have a stamp, an expressiveness, a power, that grows out of structural solutions, and that there is more than an accidental relationship here to the work of the past. One could pursue this, for they all bear more than accidental relationship to the revolutionary European work, especially the Eiffel Tower. There is a deep-rooted inner identity here; when you look at the First National Bank Building or the Hancock Building in Chicago, the similarity to structures like the Eiffel Tower is not an accident. Something of the same requirements were present, and something of very nearly the same scientific solutions were necessary.

Sir John Summerson: Well, there, ladies and gentlemen, you have two rather different views. Professor Condit has not proved to me that there is such a thing as a Chicago School. On the other hand, Mr. Weisman has not proved to me that there is not. I have a deep conviction that when one is playing the history game, if everybody's view of history becomes stabilized or crystalized into one pattern, that will be bad history. One's view of history must always be fluid, must be on the move. We have had a useful demonstration of that point today. Perhaps it will be the task of our next two speakers, Allen Brooks and Russell Hitchcock, to take out of this material some conflicting issues for argument; we'll see what they can do with their time. We may of course end up with a purely semantic discussion.

Now may we reassemble at two o'clock sharp, when we shall hear Allen Brooks and Russell Hitchcock. Thank you ladies and gentlemen.

The Other Panelists

Sir John Summerson
Henry-Russell Hitchcock
H. Allen Brooks

The afternoon session opened with Sir John Summerson in the chair as moderator. Professor H. Allen Brooks opened the discussion followed by Henry-Russell Hitchcock. After these papers had been presented, the floor was open for remarks from the audience. Those persons identified themselves prior to speaking and, for the most part, are identified herein. All comments were taped and the speakers were permitted to edit the transcription of the tape to clarify points and correct grammar, etc.

AFTERNOON SESSION

Sir John: On the platform with me, in addition to Messrs. Weisman and Condit, are Professor Henry-Russell Hitchcock of Smith College, Emeritus, and Professor Allen Brooks of the University of Toronto, and I've asked Mr. Brooks to speak first. Mr. Brooks.

Allen Brooks: The humanist scholar must organize a vast inheritance from the past, this in order to judge, evaluate, and interpret the evidence at hand. But how we organize this inheritance inevitably effects how we think about it and this, in turn, will establish how others learn to see it, and how they assess it too. The work of art stands alone; its intrinsic qualities transcend any attempt to fit it into a prescribed mold. Yet in association with other works it gains added relevance. Relationships are perceived which may suggest an order, a significance, a meaning, which otherwise might pass unobserved. This, it seems to me, is the question before us today: how best to organize and to relate a vast number of nineteenth and early twentieth century architectural designs, designs intended primarily for commercial buildings.

The relatively recent past, historically speaking, is difficult to approach. We are too close to it in time, and become blinded by the profusion of seemingly relevant material. Lacking perspective, we begin to perceive it through restricted glimpses. We seek out groupings which eventually lead to larger groupings, until finally our semi-scientific apparatus is abandoned and the work of art assumes its rightful place in the total scheme of things. Today our shortsightedness is indicated by our terminology of isms, schools and styles, such as expressionism, Amsterdam school, shingle style, or that ultimate in self-conscious terminology, *de stijl*. Most of the isms, schools and styles of the past hundred years still stand alone; they have defied any attempt to gather them under a banner more meaningful than that transitory term "Modern Art." Only when we go back to about 1800 do we begin to find the historian abandoning smaller systems for larger ones as a means of organization. In this respect, Henry-Russell Hitchcock's *Architecture: 19th and 20th Centuries* has led the way. His popularization of the broad concept of Romantic Classicism had done

much to overcome that antiquarian fondness for a multiplicity of styles and revivals which until recently has characterized that period — especially in studies of American architecture. The next step is to perceive a larger grouping into which Romantic Classicism will itself be submerged.

This symposium, however, deals not with a cross section of architectural inheritance at some given moment in time, but rather with a particular building type as viewed vertically over an extended period. The type, commercial architecture, is not new — one need only think of the splendid warehouses constructed by the Romans. Yet never before in history has commercial building been so central to the mainstream of architectural development. What, according to 19th century standards of judgement, might be termed commercial building, today includes the most luxurious dwelling units, the most prestigious offices, great city halls, court houses, and perhaps even churches and private homes. The commercial esthetic, once upon a time degraded to an inferior position in the hierarchy of building types, has, in effect, become the style of our time. And it is precisely because commercial architecture once was held in such low esteem that it could readily accept the technology of the industrial revolution. We must remember that, in the very best Ruskinian sense, commercial buildings were not architecture. The new technology, so to speak, had entered architecture by the back door. Once it gained the threshold, it took possession of the architectural house.

Chicago was not the birthplace of commercial architecture, the metal frame, or the elevator. Yet Chicago holds pre-eminence among the cities of the world. For here were built, and often still stand, many of the most brilliant achievements in commercial design. In large measure this occurred because in Chicago architects found an environment more sympathetic and responsive to their ideas than existed elsewhere.

It is precisely Chicago's abundance of architectural riches which brings us here today. Carl Condit, by singling out and isolating Chicago's great contribution to commercial architecture has, by inference if not always in words, focused our attention on the local achievement which, as Winston Weisman so vigorously maintains, thereby

distorts our picture of historical development. The effort of each man to organize, to group, and to interpret, has followed a different course, though, except for certain terms, they are not, I believe, irreconcilably apart. Perhaps Condit's two book titles were the initial "bete noire." *The Rise of the Skyscraper*, in spite of its broad title, was strict in its limitation to Chicago architecture, and thereby inferred that tall commercial buildings were a unique Chicago phenomenon. His *The Chicago School of Architecture* was equally limiting geographically, but chronologically it extended the Chicago School over nearly half a century. Had his books been called "The Chicago Skyscraper," this pleasant symposium-debate might never have been held.

Winston Weisman disapproves of Condit's use of the word "school"; but he would disapprove even more heartily had Condit popularized the term "Chicago style." Yet Weisman himself uses the term "commercial style," and one could argue that the buildings included within this designation are not of a single style. They are, more accurately, a type or a kind of building related as much to function as to form. They are commercial architecture, but not a commercial style. However no term is perfect, and although we can approach we can never achieve the ideal. A term is a useful handle, and the more explicit it is, the more useful it may be, at least in the short run. Few of us, for example, stop to think what Rococo or Gothic mean, yet each term conveys its own distinctive image. At this present moment in time, I personally find it useful to have a term to designate the Chicago achievement that was manifest during the 1890's in tall commercial buildings. But I object to a grouping so broad as to include Mies van der Rohe. The Chicago achievement must be recognized for what it actually was: a particularly vital, vigorous, and fruitful episode in the unfolding history of commercial building. In the future I believe that both terms — Chicago School and Commercial Style — will be displaced by a broader definition, one resulting from the perspective of time. This new term will admit neither to the uniqueness of Chicago nor to the isolation of the commercial achievement. Then, and only then, will these splendid buildings take their rightful place in history.

Sir John. Thank you, Allen Brooks, for that wise and perceptive comment. One thing you said struck me very much, and I think it is something we perhaps might bear in mind. You spoke of the low esteem in which commercial architecture was held and the way in which that very circumstance facilitated bolder and perhaps cruder innovation. This postulates a psychological atmosphere in Chicago, where things

could fuse — a sort of "temperature" not found elsewhere.

Our second commentator is Professor Hitchcock of Smith College. Russell, will you take the mike.

Henry-Russell Hitchcock: Like Allen Brooks I should prefer to go behind the particular dichotomy of Commercial Style and Chicago School. My formula would be: *The Commercial Style culminated in the work of architects practising in Chicago toward the end of the 19th Century.* I would, moreover, emphasize something Mr. Weisman has already stressed: That the early history of the Commercial Style was not associated with Chicago and — even though I think the fact somewhat irrelevant — that none of the great Chicago architects was born in Chicago. It is far more important that they chose to settle in Chicago and clearly wished to be considered Chicagoans! Yet when we think of the great skyscraper-builders of the late 80's and 90's, we certainly must not forget that Sullivan's first skyscraper was in St. Louis and what is probably his finest is in Buffalo; nor that Root's Mills Building in San Francisco was perhaps finer than any of his work in Chicago except the Monadnock Building. As Mr. Hoffmann would wish to remind us, there are also some very fine buildings by Root in Kansas City, and there was one in Topeka that does not, I believe, survive.

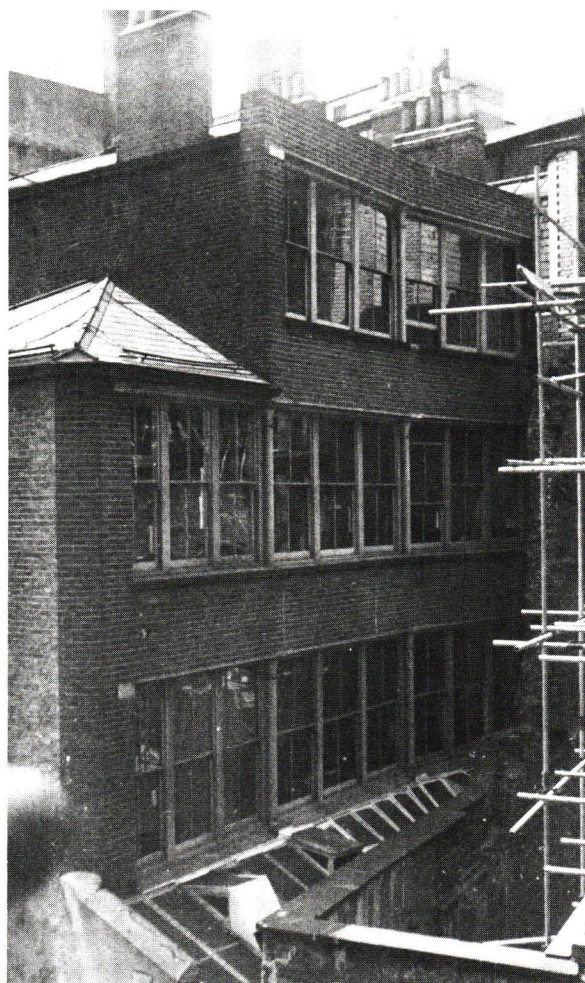
In other words, the true territory of the climactic decade was — what did Wayne Andrews call it? "America West," or something of that sort — at least by no means exclusively Chicago. Furthermore, as we know in the case of at least two of the major buildings of Burnham & Root, the entrepreneurs were Boston capitalists, not local clients from the Middle West. One must, therefore, swallow whole a certain Sullivanian sort of mysticism if one wishes to believe that the Chicago environment was more important to Root in designing the Monadnock Building than the known wishes of his Boston Clients; for the Brooks brothers certainly made their contribution, too, to the resulting masterpiece, as clients have often done.

But in cutting behind this dichotomy, a point I want to make particularly is that we are all concerned, in considering the Commercial Style and the Chicago School, with a major technical development — a technical development that began in the mid-18th century and reached a certain culmination in the 1890's. It has, furthermore, continued ever since. I don't think there is any question that the Metropolitan Tower in New York, for all its design in the form of a Renaissance campanile, is technically more advanced than even the latest or the finest of Sullivan skyscrapers. And this is, of course, even truer of the new bank building across the way from

us here in Evanston.³ Technically there has been continuous advance, because technology is part of science and is therefore capable of long-term developments in which one can definitely say that the conclusion is better than the beginning. This has, however, little to do with architectural quality: Architectural quality is possible at any stage in a technical development.

I was brought up, before I went to college, to believe that Gothic architecture was the culmination of the Middle Ages. Very fortunately I studied at Harvard with Kingsley Porter and soon came to realize that to his taste, and to mine, Romanesque architecture, though technically more primitive, was often finer than Gothic in essential architectonic ways. Moreover, at that time there was generally thought to be a morphological pattern for styles; first youth, then middle age, and eventually inevitable decline. Now I am myself convinced — and began already to be then — that Late Gothic architecture did not by any means necessarily represent a decline, even technically. It accomplished feats of construction, especially in spiral staircases and in various tricky sorts of vaulting of which the 13th century would have been quite incapable. Some of these even carried over into the Early Renaissance.

When we come to the 19th century I think we should consider the technical story of development — not yet surely concluded and ever-changing — in a more sophisticated way than we have hitherto. Certainly concrete (which played, practically speaking, no part in architectural development — at least in commercial architecture — in this country before 1900) is now vastly more important than it was then. And some of the most advanced new skyscrapers, such as the Standard Bank in Johannesburg, by Hentrich and Petschnigg, are of concrete and hung from above into the bargain. Whether this is further *advance* is uncertain, but certainly it is further change and development. When we come to look at commercial architecture — if we are going to consider it as *architecture* and not merely as a branch of large-scale technics — I think we are primarily interested in architectural quality, regardless of whether a given building is necessarily a further step in a particular line of development. For example, Mr. Weisman has, I think very correctly, put some stress on the granite-skeleton buildings of Alexander Parris in New England — at least it was Parris who was responsible for the first ones. But in the next decade there was some change at the Quincy

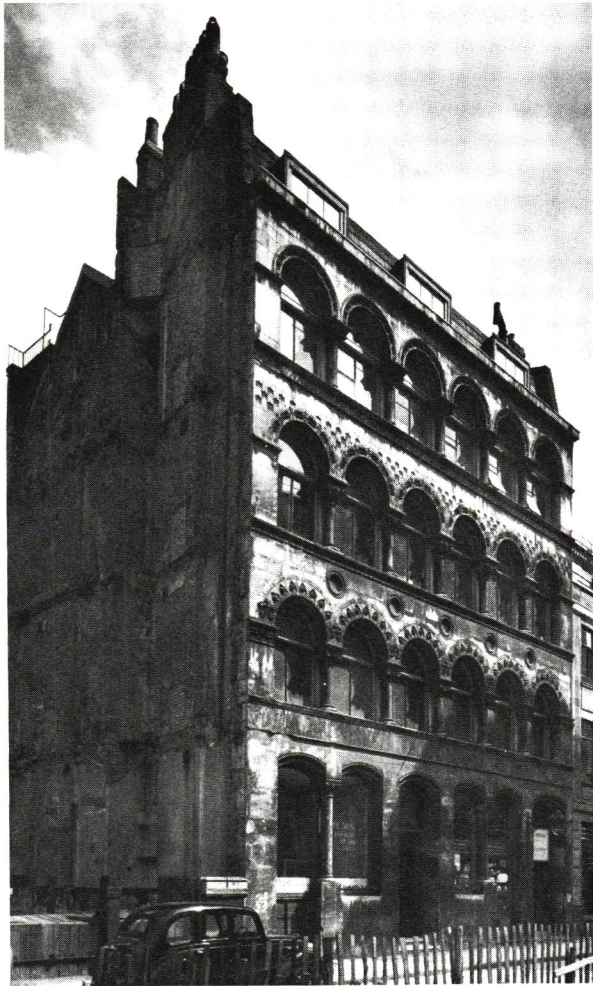


London. 59-61 Mark Lane, rear. 1864. George Aitchison II.

quarries that led away from what might be called the pre-fabrication of the slab-elements that Parris exploited in the facades on North and South Market Streets in Boston and John Holden Green in the Bristol Hotel in Providence. Instead, many great commercial buildings were erected — especially the wharf warehouses in Boston by Gridley, J.F. Bryant and others — of rock-faced ashlar so that they are more Richardsonian than Richardson, one might almost say, and of a physical magnificence that the technically more advanced skeleton construction of Parris not only did not reach, but could not have reached.

So later, in the middle decades of the 19th century there is the rear of 60 Mark Lane in London by the younger George Aitchison, 1864. How he got around the building code of 1844 I don't know, but in this hidden facade horizontal bands of windows were brought out to the plane of the brick spandrels and only iron was used for all the sills, the lintels, and the column-mullions. This is clearly very much more advanced technically than the front

3 The State National Bank, Orrington Avenue and Davis Street, Evanston, Schipporeit-Heinrich, Inc., Architects, completed 1969. — EDITOR, JCW.



London. 59-61 Mark Lane, front.

facade with its stone arcading set in front of the internal iron structure. Yet I would still agree with Ruskin in claiming that the back of this building is "building" and the front, at least potentially, "architecture."

But let us rise one step higher in quality and consider 104 Stokes Croft in Bristol, built by E.W. Godwin probably about 1862, thus two or three years earlier than the Mark Lane Building. I don't even know whether there is an iron skeleton behind it; I don't care, because it is the most superbly proportioned arcaded facade in the Ruskinian spirit that exists. And I think that this distinction is equally relevant even later. It is certainly interesting that what was apparently the second step in advanced skyscraper construction after Jenney's Home Insurance was taken in the court of the Rookery Building where, because of the glass roof overhead, it was in effect invisible except from the offices across the court. That was a major step in the technical story. But the architectural value of the Rookery Building must be determined by other



Bristol. 104 Stokes Croft. About 1862. E. W. Godwin.

aspects of the whole: by that glass-roofed court and by the visible bearing masonry of the exterior walls, especially the enormous granite columns.

The strong emphasis that critics and historians have long put on 19th-century commercial architecture reflected, to begin with, the desire to provide an ancestry for the new architecture of the 20th century. A great many buildings, such as the Crystal Palace, were presented as prototypes of what was happening, or expected to happen, in the 1920's. I have long been convinced on the contrary, that the Crystal Palace, most specifically, was not a prototype of anything; rather it represented the culmination of earlier stages of the development of iron-and-glass architecture.

Furthermore, to come down still later, my generation was brought up first to praise and then to scorn D.H. Burnham and his associates for what they did at the World's Fair of 1893. We have now come almost full circle: If we are not quite as admiring as was his biographer of the later work of Burnham, his early partner John W. Root, thanks



London. King's Cross Station. 1852. Lewis Cubitt.

particularly to Mr. Hoffmann, is certainly coming into his own again. But in considering the World's Fair, attention was for generations focused on those stage-settings in lathe and plaster put together according to the vaguely Classical formulas that were being established by McKim, while little or no attention was paid to the fact that behind those facades were enormous and magnificent iron-and-glass sheds. Those were in the true tradition of exposition architecture that descended from the Crystal Palace and, in Chicago, more particularly from the Paris *Galerie des Machines* of the Exposition of 1889.

We were also brought up to feel, in a Walter Gropius sort of way, that historicism in architecture was so wicked that even a beaded moulding such as Sullivan still sometimes used around 1890 was a lingering symptom of disease. Thus it seems very rarely to have been noticed that, of all unlikely people, it was that architect who is above all thought of as primarily a technical man, thanks to his training as an engineer at the *Ecole Centrale* in Paris, and not at all interested in design, William Le Baron Jenney — who, in fact, usually employed others to design for him, Mundie particularly — who was the only one, in his Horticultural Building at the Fair, to make of his iron-and-glass dome, which dominates the building, an integral feature of the whole Academic composition. Those heavy garlands along the frieze of the lower story apparently

completely blinded later critics to the fact that Jenny's dome was in a very great iron-and-glass tradition, the "bubble" tradition of Burton and Turner's Kew Palm Stove and even of Paxton's earlier Great Conservatory at Chatsworth, not to speak of the latter's finest design, his unexecuted project for an exposition building at St. Cloud in France.

What I am arguing here is, after all, very simple, and I suppose that in my later writings it has always been implicit: namely, that the interest of the work of 19th-century architects is not merely that it provided the ancestry of some aspects of our architecture. Great 19th-century architecture is great architecture, period. It may or may not be part of a technical story; indeed, there are aspects of the technical story which are architecturally hardly worth looking at, just as there are, as I've suggested, some English commercial buildings that have iron skeletons inside, but by law — the building code of 1844 in London — have bearing masonry (though reduced as far as possible to arcaded skeletons) on the outside, at least at the front, but as regards their invisible rears are of very advanced character.

These buildings must be considered in their own particular context. If, perhaps rightly, we consider that there is an awkward lack of relationship between, for example, the sheds of railway stations, including several Chicago railway stations, and their exteriors, — I think particularly of the one by Solon

S. Beman,⁴ this is unfortunate; but it does not mean that the *only* interesting aspect of station architecture is the sheds. Now and again there was such a work as the facade of King's Cross Station in London (not the office part, but the fronting of the sheds) as built in 1852 by Lewis Cubitt, that offered a true expression of the sheds behind. This was somewhat less boldly carried out earlier in the Gare de l'Est in Paris, begun in 1847 by Duquesney. Or again, at the Gare du Nord, where Renaud's engineering in the sheds is somewhat reflected at least in the great lunettes on the front that Hittorff provided.

We should not, I think, stress too much the mere fact that certain materials were relatively new. As you are all aware, the Ste.-Chapelle would fall down but for the iron introduced in the construction; so would the east front of the Louvre if there were not those Z-shaped iron pieces between the vousoirs of the entablature plus the iron rods linking the drums of the column together. I remember — I don't know how seriously this was offered — Kenneth Conant once suggested that the first skyscraper, considered as a tall metal-framed building, was Bernini's baldacchino in St. Peter's, because it is four or five stories tall and entirely of metal; furthermore, it would have been impossible to build it of stone, although it could have been built of wood. But, especially at King's Cross, which is internally as well as externally certainly one of the finest mid-century railroad stations, and of an architectural interest exceeded only by Paddington, the arched principals were originally of laminated wood, not metal — they are of metal today only because the steam from the locomotives rotted the wood and so eventually they had to be replaced with metal. The significant point here is the technical ingenuity with which the several materials were used by Lewis Cubitt. It is doubtless true, moreover, that had Paxton not been forced to provide an arched transept at the Crystal Palace, Cubitt might not have thought of handling his sheds the following year the way he did; and rumor, at least, has attributed the arched transept to Charles Barry rather than to Paxton.

"Chicago architecture" was certainly no monopoly of Chicago. Mr. Weisman, above all, made the point very clearly that such architecture, even considered only in the short term, came late to Chicago, after the doubling of the height of buildings in New York, made possible, not by the interior skeleton of metal at first, but by the elevator. When we face this

fact, however, we ought also to consider whether there were not certain conditions especially conducive to the flourishing of the Commercial Style in Chicago in the 80's and 90's — thanks in part to those Boston capitalists! — and to recall also that commercial architecture there of the previous decade was already extraordinarily independent in character. Freedom from dependence on historic precedent was certainly no novelty in Chicago, and Sullivan was well aware of this when he came there to settle. It was one reason he wanted to come. (The fact that his family had earlier moved there should not, as is often done, be pushed aside, however.) The Chicago scene certainly deserves some especial credit for being the place of the eventual high florescence, though not the place of birth, of the Commercial Style. This is, of course, not always true. The Gothic was evolved in and near the Ile de France and it had its highest peaks of achievement in the Ile de France. Perhaps, however, the Italian Renaissance is such an earlier case. It began in Florence, but its high florescence was elsewhere.

If we are to consider commercial architecture as the typical product of the 19th century and, as Allen Brooks has suggested, in some ways the even more typical product of the 20th century, we must recall that other epochs have had their particular types of building, and even of structure, in which the greatest works were achieved. Roman architecture, for example, used to be scorned because it was imitative of the Greek, but what is imitative about the Pantheon or the Thermae? The men of the high Middle Ages undoubtedly put their best efforts into church-architecture, even specifically into cathedral architecture. Where other types of buildings participated at all in a conscious esthetic program, one finds that the details, at least, and even some of the structural devices, were derived from the churches. Thus also later, in the Renaissance and in the Baroque, although churches continued to be built, the palace, as the specialty of those ages, was more significant, and other types of buildings generally shared in varying degree the characteristics of palaces. So it is not surprising that commercial buildings — skyscrapers — have been the modern cathedrals; that was certainly what Cass Gilbert and his client Woolworth meant when they built what they called a "cathedral of commerce" in New York, a metaphor reflected down through the winning design for the Tribune Tower in Chicago ten years later.

There is a certain primacy in commercial architecture in the 19th century. There were, however, various other types of buildings that were also new. The railway station was one of the most obvious

4 The Grand Central Station, Chicago, 1889-90. Convenient illustrations in Condit, *The Chicago School of Architecture*, figs. 101-4. — EDITOR, JCW.

and most totally novel; but there were also museums, libraries, orchestra halls, and things of that sort designed to serve a widening middle class. Those were all, up to a point, real innovations that reflect a change of social emphasis in the 19th century; but, within the context of the day, they have not, except perhaps for railway stations, induced the particular critical error of confusing technical progress with architectural achievement. We should not, when we look at 19th-century architecture — in pursuit of greatness, shall I say — confuse such remarkable premonitory things as the Royal Navy structures which Professor Skempton, who is particularly interested in technical history as such, has unearthed with buildings that are technically less advanced but that are more completely architectonic entities. There are also certain mysterious situations such as the case of Peter Ellis in Liverpool.

Ellis' Oriel Chambers of 1864 is, frankly, rather humorous as seen from the front or the righthand side. But on the other side and the rear it is technically well beyond the Chicago skyscrapers of the 90's, for it truly has three-bay curtain-walls, that is to say, walls in which the outer plane, mostly of glass, is carried outside the supporting iron members. This was actually extended to four-bay width at the rear, though that portion was all but totally demolished in the War. Oriel Chambers actually overshot the chapter of the skyscraper story that technically reached its first climax in Chicago. Probably the first modern use, i.e. 20th-century use, of a total curtain-wall came not at the Bauhaus, but about 1917 in the Hallidie Building in San Francisco of Willis Polk — of all unlikely people, one might say, for he was the McKim-Mead-and-White-in-one-person of the West Coast — who nevertheless framed his glass curtain-walls, as Beman did twenty years earlier on the second Studebaker Building in Chicago, with Gothic fringes at top and bottom in a very un-Bauhaus-like way!

The buildings of Peter Ellis, not least the other one, at 16 Cook Street, in Liverpool are extraordinarily premonitory of things that were going to happen. They were never published in his own day; moreover, they were referred to with the utmost scorn and disapproval in the architectural literature of the day so that, as far as is known, poor Ellis never had another commission. Are we to suppose that later in the 90's, by some mysterious communication with the dead — if Ellis was dead by then — suddenly the Chicago architects became aware of these English works of the 60's? No. I think it's more like the situation regarding Mies and others of what Mr. Condit has called the "Third Chicago

School." The Chicago work of the 90's is in a different cycle from Ellis' of the 60's. So also, though there are, for example, very considerable similarities between, say, the Promontory Apartments of Mies van der Rohe and Sullivan's Troesch Building, there is no significant line of descent. It is altogether too neat to suppose that Mies, being in Chicago, after the long period during which Sullivan's heritage was ignored, by following a line that Gropius and Meyer had initiated in their Tribune Tower project for Chicago of 1923, finally came back to the "true faith." Actually, the real story seems to be that Mies didn't think much of Sullivan — as is not surprising, for Sullivan was hardly a man to whom "less was more!" Similar conditions, however, similar circumstances, led to similar results. But the virtues of a Mies building are very different from those of a Sullivan building. Whether or not you give, as Sullivan did, great importance to ornament, there is no question that, in the same line technically though they are, Mies was much further along it, while esthetically there is no real relationship between them, for their periods of top achievement were separated by more than fifty years, longer than the three or four decades that lie between, say, Ledoux and Labrouste or Hittorff.

Sir John: Thank you very much Professor Hitchcock. I think you've given us a wholesome warning against confusing the history of technology with the history of architecture as a visual creation. Of course they interlock to a certain extent, but they are different. I think they are fundamentally different; and also there is the danger of attaching too much importance to priorities in the history of technology. The Peter Ellis story is a useful warning there.

Between our last two speakers there seems to be some interesting common ground in the notion of the importance of Chicago as an environment with a climate favorable to change. What had been in low esteem elsewhere — the *mere* commercial architecture — suddenly in Chicago becomes very big and ambitious in a way which wouldn't have been possible elsewhere. If we are looking for the basis of something singular about Chicago, to which we may attach the word "school", this may be it.

It may well be that the first two speakers, Mr. Weisman and Mr. Condit will want to comment further; but I'm hoping very much that we can widen this discussion, and there is still plenty of time. We have a good many experienced senior scholars here, and also, I'm glad to say, many juniors. So now I'd like to open the forum. Would you please, before speaking, give your name so that it can go on the tape.



Liverpool. 16 Cook Street. 1867. Peter Ellis.



Liverpool. Oriel Chambers. 1864. Peter Ellis.

The Discussion— Sir John Summerson in the Chair

Unidentified: I recently read an article published in the autumn issue of *Horizon* magazine; I can't think of the name of the author, but the article was about Antonio Gaudi and Barcelona.⁵ The author pointed out that Gaudi was there in Barcelona at the time that commerce in Barcelona grew very strong, that people gathered fortunes and wanted to show evidence of them in buildings, that the buildings were a result then of commerce and history and what was going on in Barcelona at the time; and I think that the same thing could have been true of Chicago, and that this is one of the reasons that the climate was such in Chicago that these architects had the opportunity to show what they could do.

Hitchcock: I would like to interpolate here the hope that further study will be made of who the clients were and what their actual attitudes were toward their buildings. This is pretty well documented as regards the Brook Brothers, it seems to me. But who was the responsible client — if that can be pinned down — for the Home Insurance Building? Did he know what Jenney was doing, and things of

that kind? Maybe Mr. Eaton, who I know is especially interested in these problems, has an answer.

Leonard Eaton, University of Michigan: Thank you Professor Hitchcock. As Professor Hitchcock has indicated, I have been concerned with the clients, particularly the early clients, of Frank Lloyd Wright; and with regard to the discussion this afternoon I think the point I would make is that this was an entirely different group of people from the ones who built the great commercial structures of the 80's and 90's. The Brooks Brothers, as Professor Hitchcock has indicated (and Professor Condit has treated this in his volume) were Bostonians. Levi Z. Leiter, responsible for two stores was, like the architects themselves, a new arrival in Chicago. About the only link that I have been able to find between the two groups of what I would call great creative patrons, extending over this period of 30 years or so running from the early 1880's up until the time of the First World War, is Edward Waller; and he is a person of particular interest to me. It may be worthwhile just to mention what he was responsible for, both in the 1880's and then, very briefly, what he did for Mr. Wright. In the first place Waller was, like Leiter, an immigrant to Chicago; he was a native of

⁵ Roy McMullen, "Gaudi", *Horizon* X, no.4 (Autumn, 1968), pp. 29-44. I must apologize for being unable to identify this speaker. — EDITOR, JCW.

Kentucky who came to the city during the civil war decade, had a brief fling in the grocery business, and then ended up in downtown real estate. That was the line of work, of course, which brought him into contact with most of the city's financial barons, political spoilsmen, and leading architects. This man was the founder and president of the Central Safety Deposit Company, which was actually responsible for the building of the Home Insurance. For the Central Safety Deposit Company he also promoted the Rookery, one of the masterpieces of Burnham and Root. Further he was the president of the North American Accident Insurance Company and probably as close to the city's business elite as anyone of Wright's clients of a later date. Of course, we know that it was Waller who later on introduced Wright to Burnham; and the three-cornered interview between Burnham and Waller and Wright, wherein the offer of a fellowship to go abroad was made, is pretty well detailed in Wright's autobiography. Further, the Waller family, broadly considered, was responsible for a remarkable series of Wright commissions. These included a housing scheme of the first decade of the century, the quadruple block plan; there was the commission to redecorate the lobby of the Rookery building, which was a superb showcase for Wright's decorative talents in the Loop; one of Waller's sons-in-law was a Roloson, who was responsible for the row housing of the 1890's; and finally of course it was young Ed Waller who was responsible for the Midway Gardens commission of 1913. One has the impression here of really a Medician series of gestures; but Waller is about the only link that I for one can supply between the great commercial clients of the 80's and 90's and the clients who built the Prairie houses of the first decade of the century. Those clients were an entirely different group from the ones whose work we were looking at this morning.

Hitchcock: What about the Ryersons — no, they were only involved in the first group.

Eaton: Yes, they were only involved in the first group; and furthermore one has to be careful which Ryersons one is talking about, the lumber Ryersons or the steel Ryersons. This is a tricky matter, too. There is even some possibility here of the shift in taste which Professor Condit has dealt with in the last chapter of his book; and it is perhaps significant in this regard that when that old Marshall Field partner, J. Gordon Selfridge, went to London he built a department store which was absolutely unlike anything in Chicago; whereas previously, for a period of about six or eight months or so, he had owned the Carson Pirie Scott Store.

Hitchcock: May I introduce a word here. Later, a Waller — I suppose the younger Edward — owned

the Charnley House and lived there. In fact I have a rather charming story about that. Mrs. Kingsley Porter, who was connected with the Wallers — in fact I think that was her maiden name — was coming out to visit them in Chicago once, and she sent her secretary to me and said, "Now you give Natalie a list of things we should see." I made a short list and so, the second morning, they started out from 1365 Astor Street, from the Charnley House, and they started to walk down the street and Mrs. Porter said, "Now Natalie, what are we supposed to look at first?" And she replied, "1365 Astor Street," and Mrs. Porter said, "Well we seem to be on Astor Street." And they began to look at the numbers, and soon found themselves back where they had started from. I won't say that the Wallers were unaware that this was the Charnley House, but evidently they didn't publicize it to their relatives.

Wilbert Hasbrouck: I've made a few notes here as all of you were talking and they're rather disconnected, so if I wander a bit, please excuse me. In regard to this subject of the Chicago School of Architecture and whether or not there is such a thing, I wonder if up until now we have not focused our attention too much on the buildings, that is, the physical buildings, rather than on what I call a school of architecture. A school of architecture, as I see it, really involves much more than just the buildings; it involves the people involved with the buildings — and I am, by the way, convinced that there is a Chicago School, not only that there was, but that there still is. And I believe that it came about, more than for any other reason, because of the great fire in 1871.

I would like to emphasize the method of producing a building. Following the fire there was an enormous demand, a sudden demand, for building. For the first time in history we developed a rather complex building method which involved much more than merely a patron and a designer. The owner-builder stopped being a patron and became an architectural client. At this time also, for really the first time in history, we gained the phenomenon of a developer, that is, a person who brought clients and architects together. And of course there was the architect; and finally there was the ultimate user of the building, who was sometimes, but not always, the client. Often the building was so large the client could not use the entire building, and a third or fourth party (however you want to look at it) would lease a portion of the building and he would have something to say about how the building was to be designed. Sometimes even the contractor had a piece of the action, so to speak.

Another subject that we have not covered at all is what I call the genealogy of architectural firms in

Chicago. I must necessarily simplify here because I don't have a blackboard and two hours. When one looks for the predecessors of today's Chicago School, one finds that it grew essentially from two major firms in Chicago. William LeBaron Jenney was probably the most basic "ancestor" of the commercial architects; and Lyman Silsbee was the basic "ancestor", I feel, of the residential designers. Most of the great people in what Carl Condit refers to as the Chicago School came some way through these two firms; Burnham, Sullivan, Roche, Root, and so forth, were, I believe, in Jenney's office; Frank Lloyd Wright, George Mayer, George Elmslie, and a number of others, were trained in Silsbee's office. And as the years went by, other firms were formed in Chicago, many of which can be traced down to today. I've identified about 20 firms in Chicago which can be directly traced to Jenney and Silsbee (more to Jenney than to Silsbee, by the way).

Looking first at the residential portion of this genealogy, let's talk a little about Wright and relationships to him. He was with Silsbee for a short time and then joined Sullivan, before setting up his own practice. Then at the end of the first decade of the century Wright went to Germany and published his great "Wasmuth" portfolio. I think this publication is one of the links with today's Chicago School. Mies van der Rohe has published the statement, "Wright saves us 20 years," in reference to the Wasmuth drawings. It's interesting that he talked about "us", implying other persons than just himself. At that time I believe he was either with Berlage or he had just left Berlage. That office was then staffed by Mies, Corbu, and Walter Gropius, as I recall; Mies went on to the Bauhaus and later came to the United States; and he has always acknowledged the debt to Frank Lloyd Wright and to the Chicago School. Thus I feel there is a definite link between the early Chicago School and Mies.

Now on the other hand, just to carry it a little further (and I'm not going to cover all of these firms of course), the genealogy of Chicago architecture included Burnham and Root, which later became Graham, Anderson, Probst, and White, which gave birth to Alfred Shaw and Associates, C. F. Murphy, and so forth. All 20 of the firms in Chicago that you can trace directly from Silsbee and Jenney are still operating today. (There are, of course, other firms that we think of as being in the Chicago School today who cannot trace their ancestry this far back: Skidmore, Owings and Merrill really began at the World's Fair of 1933; and the modern firm of Perkins and Will, which is the other very large firm in Chicago, is not really a descendant of Dwight

Perkins, who was of the residential group of the early Chicago School).

Many of these firms have an interlocking relationship today. Present day partners begin in one office, then move to another, then another, and so forth. Still today, more even now than in the 1870's and 80's, we have this complex organization of client, developer, architect, and user; and this is a Chicago phenomenon. It began here. It is used elsewhere, of course; but today this is still predominant in Chicago, and I think it is a manifestation of the Chicago School. One only has to mention buildings like Lake Point Tower, the Tishman complex over the railroad tracks on the west side of Chicago, and so forth. This "system" then led to what we call programmed design, which is the way great buildings are designed today.

As I said in the beginning, I've wandered a little bit, but my ultimate point here is that I will agree with Mr. Weisman that the roots of the Chicago School were elsewhere; but it grew up here and it's still here today. The Chicago School of architecture is alive and well in Chicago.

Condit: A number of ideas have suggested themselves to me as people have been speaking here, too many to take them all up; but there are several that I want to address myself to. I am very impressed by the encyclopaedic coverage of commercial architecture in the eastern United States and in England that Mr. Weisman and Mr. Hitchcock have given us. They are unquestionably broadly and thoroughly learned in the subject, but it seems to me that the essential meaning of this, and the relation of Chicago to it, are in a couple of ideas that I developed in the first two chapters of my book on Chicago architecture and in the chapters I contributed to Kranzberg and Purcell, *Technology in Western Civilization*: [one, that a new commercial architecture grew out of the economic development of western Europe and the United States during the nineteenth century, and two, that the Chicago School represents the achievement of a genuine architectural style arising from this commercial work.] As to the achievement, I'm reminded here of the most sensational statement about Chicago — about commercial architecture in Chicago — that I know. It comes from Rayner Banham, who wrote a few years ago, "For sheer commercial splendor, Chicago rivals baroque Rome." I hadn't thought of it in quite that way, but I have seen the comparable reactions of European visitors over and over again.

I would like to make a final point here by way of challenging a statement which Sir John Summerson made summarizing some of the things that Mr.

Hitchcock said. This was the statement that there is no necessary connection between architecture and technology. I am afraid I must disagree quite radically with that statement. Every art that involves the preparation, reshaping, and transformation of materials, and uses their physical properties, represents the technological fulfillment of a symbolic, mythopoeic, or ritualistic, or simply an esthetic idea. No art, it seems to me, represents this more than the art of architecture, although Vitruvius is extremely unreliable in letting you in on the actual theory of building in the ancient world (I wonder sometimes how much he knew about it). Mr. Hitchcock used the Pantheon as an example. A great revolutionary period in ancient architecture, and one that it took many centuries for Europe to catch up to again, is the period that comprehends the reigns of Nero, Trajan and Hadrian, roughly 60 A.D. to 138 I think. That is a revolutionary period in many ways, in form, in the formal character, in the symbolic meanings of buildings. It occurred because the architects had at their disposal a revolutionary material, hydraulic concrete. (It had been used for 200 years before that time, but nobody had seen its potentialities). But there was a revolutionary material and it made possible the implementation of revolutionary spatial and geometric ideas, which of course grew out of metaphysical and religious concepts. Coming back to Chicago, I was going to try to repeat in a somewhat different way the essential point that I was trying to make here. The reason for a term like "Chicago School" (I think Mr. Hasbrouck wrapped this up very well, but I wanted to extend it a little bit) is that you have a unified body of work carried to a very high state of excellence, in my own view the highest state of excellence in this period of development that we're all talking about here in the 19th century. And that state is something that represents, out of ideas about what a building ought to be and what it can be and so on, a more thorough, more profound exploitation of the technical possibilities, the technical means available, and hence the formal possibilities of those means; so that, whether Chicago can rival baroque Rome or not (it seems to me that I see Rayner Banham's point here), that commercial splendor appeared through the exploitation of this possibility. There is a more searching, more profound, and a more radical exploitation, in the same way that the Pantheon represents something that could not have been done before. It could not have been done until somebody was able to exploit the potentialities, the spatial-formal potentialities, of this material.

Hitchcock: I suddenly realize that in defense of the position that Sir John took, there is a building that

I'm very much surprised that I didn't mention and that is the Marshall Field Wholesale Store, which was not at all advanced technically. There was nothing technical about it that was not already common practice by the 1840's. But I think that it did perform a catalytic service, particularly with Sullivan, not primarily because he imitated it, though he certainly did up to a point imitate the Marshall Field Store in the Auditorium Building. That theme of tall arcades was already quite common, not only in Chicago but generally in American commercial architecture by the time the Marshall Field Store was built; but the qualities, the purely architectonic qualities of scale, of simplicity, of massive proportion, and of exploitation of the particular materials that Richardson preferred to use, those were qualities, I think, from which Sullivan learned something. The stage of direct emulation was particularly apparent in the Walker Warehouse of 1888; but as Sullivan came to use advanced skyscraper construction with the Wainwright Building, at least the obvious resemblance to Richardson drops away entirely. It is only these basic qualities of simplicity and grandeur of scale and unification that survive. But if you think of early Sullivan, if you think of the Rothschild store or the Borden Block, you realize that, in spite of the fact that Richardson had nothing whatsoever to do with the concurrent technical developments, still the presence of the Field store in Chicago, especially during the period of its construction, seems to have had a catalytic effect, not alone on Sullivan, but certainly to some extent on Root as well. And that represented, it seems to me, the triumph of quality.

Sir John: Thank you Russell. Now, of course, the Chairman should never put himself in the position of being disagreed with by a member of the discussion which he is chairing, but I would like to say just one or two things in reply to the criticism that has been leveled at me by Mr. Condit. That is, that I really do think that we should, however artificial it may seem, keep the history of architecture and the history of building technology apart. I know that you can't do that, the separation is hypothetical. But the history of technology surely has one constant criterion, i.e. performance. You can measure pretty exactly by that criterion what is happening. You can go from date to date, from one area to another, and discover pretty exactly what advances are being made to improve *performance*. You can't do that in the history of architectural forms; and although the history of technology and the history of architecture constantly have impact on each other, and although anybody who tries to write about one without knowing quite a bit about the other is obviously no good, still I think we ought to try and keep them

separate, at least when we are approaching issues like those we are discussing here. Do you disagree dreadfully with that?

Condit: I guess not, Sir John. At least I'm willing to go along for the time being. May I say something about the Marshall Field Wholesale Store? I think it's a first-rate example of the technical potentialities of the materials being exploited very effectively. It is a masonry building with external walls of masonry piers and an internal iron frame, and it's a beautiful example. I agree with you of course, Mr. Hitchcock, that it's a superb work.

Hitchcock: I would like to go back to those early centuries, not quite so early as you. You will recall that in the next period following on late Roman architecture, the Early Christian period, the new development did not proceed from Hadrianic architecture at all. Instead the much more primitive form of the wooden-roof basilica was used; that became — at least in the west — the favorite form and lasted for hundreds of years. Now technically this was, I suppose, retrogressive; and, in fact, it has never been clear to me, in spite of reading Krautheimer, just why this shift occurred, why the basilica should have been picked as the model for major Christian churches. And, of course, the question is confused by the fact that there is a central element involved, in the crossing and the apse. But still it is true, as you pointed out, that further development along the line of vaults does not occur for many centuries, except in the east, and when it does occur, concrete was not used. We only got back to concrete vaults again much later.

Sir John: Are there any other speakers from the floor?

Paul Sprague, University of Chicago: I was interested in the comparison between technical and architectonic qualities, because it seems to me that the separation and isolation of these elements from the stylistic and aesthetic aspects of architectural design is the most important factor leading us to divine two schools of architecture in Chicago where in reality only one may exist. I personally tend to doubt the existence of a separate school of Chicago commercial architecture. Where I do see a Chicago School — using the term in the sense Professor Weisman has used it as a kind of thinking together — is in the work of Sullivan and Wright and their followers whose work, taken as a whole, represents to some degree a unified aesthetic viewpoint. Yet, despite this apparent aesthetic unity, we have tended to break their work apart into separate technological and aesthetic manifestations. One talks about the Prairie House versus the commercial buildings that these architects designed; whereas in

fact the works of each of them was aesthetically much the same whether residential or commercial.

This was especially true in the case of Sullivan who did much of his finest work in the category of tall commercial buildings. In his work there is a stylistic quality — an aesthetic concept — that is not necessarily the result of technical factors although these, of course, play a part. Indeed, Sullivan's architectural aesthetic first reached maturity (in my opinion) not in a commercial structure at all but in his Getty Tomb, a building which has precious little to do with new techniques, structural systems, or modern materials. Furthermore, one can see a progression in Sullivan's work leading away from Richardson toward the first flowering of this new architectural aesthetic as it appears in the Getty Tomb. It begins with the final design of late 1886 or early 1887 for the Auditorium Building and progresses through the Dexter Building, Ryerson Tomb, Walker Warehouse, and KAM Temple. The form of the Dexter Building, of 1887, indicates that Sullivan by then had seen beyond Richardson's aesthetic and was moving toward a new vision of architectural form, toward a kind of simplified Romanesque in which he would emphasize simplicity and boldness of surface, an elementary geometrical treatment of the masses, restraint in the use of ornament, and so on. In the Dexter Building, designed in mid-1887, he did this with brick; in the Ryerson Tomb, designed late in 1887, with granite; and in the Walker Warehouse, designed early in 1888, just after Wright joined the office, with limestone. That Sullivan was aware he was on the road to evolving a new architectural aesthetic seems evident from Wright's remark in his *Genius and the Mobocracy* that Sullivan walked into the office, laid the plans for the Walker Warehouse on his desk and said, "Wright, there is the last word in the Romanesque."⁶ This simplified Romanesque continued to provide the dominant note in Sullivan's work during the next several years, until at the end of the year 1890 a new style, a modern style, emerged in the Getty Tomb. It was a style that I believe should be viewed as an American counterpart of the aesthetic modes of Horta in Belgium, Voysey in England, and Gaudi in Spain. It was a style that while related to the technical and functional side of building cannot, in my opinion, be considered a direct outgrowth of these factors.

6 Wright could well be puzzled by this application of a period name to the warehouse. (I assume it was at least partly ironic: *Here's the last of the Romanesque*, or, *Here's what people will call Romanesque*). Later he could disregard the period connection and direct his attention to the form, not the style, and critically. I remember talking to him once — it was at the home of the late Lambert Ennis in Evanston, a prairie-type house designed by his one-time pupil, William Deknatel —

The result of Sullivan's vision was a stylistic unity, modified to be sure by each commission and each architect, running from Sullivan through Wright to their followers. It was an aesthetic system that had an organized integrity of its own and one which — if you see it as I do — was one of the first manifestations of modern architecture in the sense that it was something new and non-historical both visually and aesthetically. It is to this style and not to an imagined functional and technological commercial style that we ought rightly give the name the Chicago School of Architecture. In this way we thus avoid the confusing dichotomy between a commercial school on the one hand and a domestic school on the other and begin to appreciate early modern architecture in Chicago as a single integrated aesthetic movement.

Sir John: Yes, thank you.

James Marston Fitch, Columbia University:⁷ One could spend a lot of time on the semantics of the proposition which confronts us here today — that is, whether or not it would be correct to call the body of work under review "The Chicago School." But all of us would be compelled to agree that, in a couple of decades between 1894 and 1914, Chicago did produce a whole range of buildings which, in stylistic terms, were both authentically novel — in that their likes had not been seen before — and authentically American — in that they appeared here first. As a matter of fact, the whole world realized this quite early. American architectural magazines had seen it as a Chicago phenomenon; Adolf Loos had come from Vienna to Chicago to see Sullivan's work in the mid-Nineties; Berlage had journeyed to Buffalo to see Wright's work in 1908; and it was in Germany, in 1910, that Wright's work saw its first

when he brought up the Walker Warehouse. He chuckled good-naturedly over how Sullivan had goofed in the composition by bringing a pier down right on the axis of the facade, instead of having an arch there (and he sketched the two great arches in the facade to show this). This would seem to be a surprisingly academic kind of criticism to come from Wright, and I wonder if it merely meant disapproval, a disapproval which may have originally come from recognizing the lack of correspondence between form and function here. The two arches might suggest openings for drays to go in and come out (and thus be related to function in the manner of the arches in King's Cross Station, London, suggested by Mr. Hitchcock); but that was not the case; the drays came in at the back; and even the entrances for pedestrians were not primarily related to these arches but were at the corners or scattered along the front. (I believe the plans have never been published. Richard Nickel has photographs of them which he has kindly let me see). — EDITOR, JCW.

7 Professor Fitch's contribution, as extended here, might well have been printed as a separate paper under the title, "On Whether or Not There Was a Chicago School." — EDITOR, JCW.

serious publication in book form. Moreover, the statistical incidence of these new buildings is far too high to assume it accidental that they appeared here and not somewhere else. Thus, whatever name we choose to give to the phenomenon, it is clear that the Chicago of those decades was characterized by a very special kind of architectural activity.

This activity was nourished by a special climate of taste and opinion; and this would have derived in turn from a mix of many new factors, social and technical. Of course, none of these factors could have been the discrete or independent invention of Chicago herself. (After all, she was only sixty-odd years away from her first beginnings as a muddy, insect-ridden trading post). What did happen to create this special climate was this: a whole range of developments which had been nurtured in the East, or even in Europe, spilled over the Adirondack and Appalachian chains into the completely virgin territory of the Midwest. This territory was literally virgin, both physically and ideologically. It had none of the cramping subdivisions, either topographic or economic, which had long obtained on the Eastern seaboard. This absence of traditional constraints made possible a kind of incandescent innovation which would have been simply impossible in the more highly structured East.

Moreover, the conquest of the Middle West, unlike the earlier subjection of the Eastern seaboard, was the accomplishment of the new industrial technology. The locomotive and the mechanical reaper replaced the horse, the ax and the hoe of the earlier settler. Richard O. Cummings, the economic historian, has shown us that Chicago was the actual nexus of this activity.⁸ Here, a whole syndrome of mutually-supporting developments coincided: the mechanical harvester and the mechanical plow; the mass cultivation of feed grains and the mass fattening of cattle; rail transport, refrigeration and the mass slaughter of livestock. All of these different components may have been invented elsewhere; but it was in Chicago that they were put together to create what was really a quite new enterprise.

This enterprise was, at least in the latter Nineteenth Century, fundamentally commercial and mercantile in nature. [It lacked the industrial emphasis of Pittsburgh or the financial concentration of New York.] As the trade and transportation center of the mid-continent, the new enterprise was aimed at satisfying the needs and appetites of a new kind of consumer. (Even the farmers, with their mono-crop agriculture, were part of the cash economy).

8 Richard O. Cummings, *The American and His Food*, Chicago, 1970. — AUTHOR.

In response to such a market, a new kind of production appeared — that of consumer goods and services. The Chicago trading area is the native habitat of the cookstove and furnace companies, the manufacturers of clothes-washers and dishwashers, the mechanical churn and the windmill, just as nearby Grand Rapids became the locus of the mass-produced furniture industry. [In exactly parallel fashion, the world's greatest entrepreneurial agencies, Sears and Roebuck and Montgomery Ward, appeared to expedite the delivery of these new consumer goods to the market.]

Such a summary may seem to make history too pat. Perhaps the historic process is not usually this tidy; but it seems to me such developments led directly to the appearance of The Chicago School of Architecture. They are, in fact, just the opposite sides of the same coin: the new consumer economy was itself the new architectural clientele. It was composed of corporate and private clients who required new sorts of institutional and residential buildings. And their open-minded and liberal attitudes were expressed in such institutional structures as the Schlesinger and Meyer Department store or the Unity Temple in Oak Park, or in such domestic structures as the Robie and Coonley houses.⁹ [Sometimes, the open-minded business executive and the avant-garde citizen were one and the same, like L.L. Bennett in Owatonna, who was so pleased with the radically different bank which Sullivan built for him that he commissioned a house from the same architect.]¹⁰

[The special climate of Chicago at once elicited and supported an authentically new architectural esthetic, one which derived from an understanding of the purely esthetic implications of the new technology. Most American architects, in the decades under discussion, would have been employing this technology — central heating, vertical transportation, electric lighting and plate glass — in their buildings. But no one outside the Chicago area displayed any comprehension of their truly revolutionary implications. Although this regional capacity for the transmutation of technical potentialities into a new esthetic reality is obvious in many of the Chicago buildings (e.g. the Reliance and the

Schlesinger and Meyer skyscrapers), it cannot be visualized as occurring "automatically." On the contrary, history requires real, warm-blooded men to execute its assignments; and Chicago was fortunate in having two men who took their assignments seriously — Sullivan and Wright. The deliberate, self-aware, almost programmatic way in which they set about creating the new architectural esthetic is remarkable. Both men used the pen and the drafting pencil interchangeable. Points which they could not make in brick and mortar, they eloquently drove home in speech and essay.]

This new esthetic reaches its most poetic intensity in private houses, for reasons too obvious to require explication, and above all, in the great prairie houses of Wright. Wright was quite literally the first to comprehend (as I have had occasion to point out elsewhere)¹¹ that a central heating system made possible the open plan and the destruction of the "room as a box"; that large sheets of glass permitted revolutionary new spatial relationships between indoors and out; and that the electric light bulb permitted the unprecedented manipulation of interior space by architect-controlled illumination.

However, Wright's success with the private house was not only based upon his profound mastery of the technological potentials of his day — a mastery which has recently been analyzed by Reyner Banham.¹² It also derived from his finely attuned understanding of the aspirations of the urban middle class American family. Here again he was at the very cutting edge of social development. He built exactly the sort of house Catherine Beecher had called for in her 1869 book, *Domestic Economy*. She had visualized this house in all its concrete details; but it remained for the genius of Wright to match new needs to new means and — in the process — transmute them into noble new form.

Whatever one may think of Chicago today, one cannot deny her credit for having provided the special environment in which this splendid transmutation could occur.

Hitchcock: May I interpolate for a moment here? I'm sure that if we had Peter Banham here he would think that Mr. Fitch was the first speaker who made any sense. But it did recall something a student of mine brought up in a seminar this fall; namely, that while our reason today for being interested in the Home Insurance Building is, primarily and almost solely, the technical development that took place in

9 This clientele was of course not uniformly progressive, as Leonard Eaton has pointed out in his recent study, *Two Chicago Architects and Their Clients: Frank Lloyd Wright and Howard Van Doren Shaw*, Cambridge, Mass., 1969. — AUTHOR.

10 I am indebted to Mr. W. R. Hasbrouck for the opportunity to see the unpublished drawings of this unbuilt house, discovered by Mr. Robert Warn and now in the possession of the daughter of the banker, L.L. Bennett, of Owatonna, Minnesota. — AUTHOR.

11 Fitch, *Architecture and the Esthetics of Plenty*, New York, 1961. — AUTHOR.

12 Reyner Banham, *The Architecture of the Well-Tempered Environment*, Chicago, 1969. — AUTHOR.

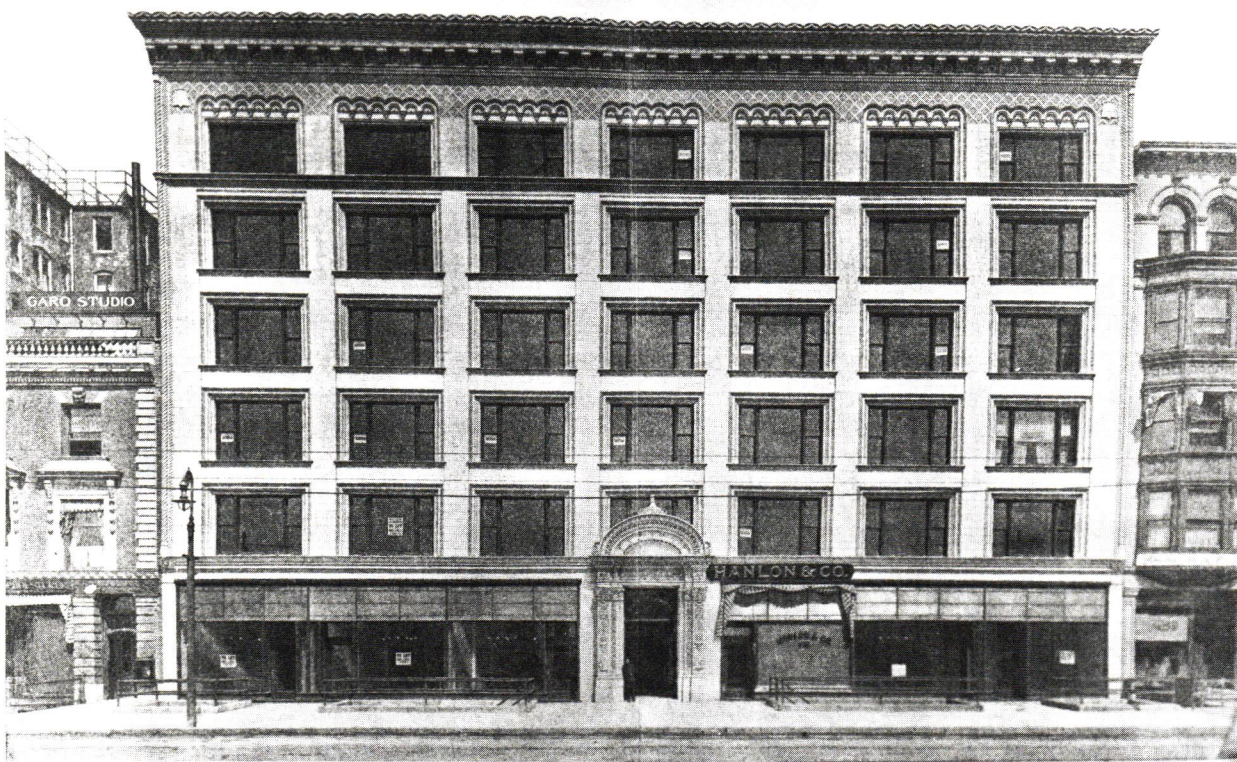
the handling of the structure, its great success at the time apparently — for contemporaries were not immediately aware of the technical advance and certainly not the ordinary possible client — was the fact that it set a new standard of quality for an office building: The offices were better lit; the toilets were more commodious; the elevators may even possibly have moved faster; and all this improvement permitted charging higher rents, an advantage that other clients soon wished to obtain for themselves. I think, allowing for the fact that Mr. Banham went a bit far in putting so much weight on that hospital in Belfast with its proto-air-conditioning, it is true that we have tended to go too far the other way in stressing the purely mechanical — or I mean mechanistic — aspects of technics, and to forget that, for example, the particular importance of Kahn — Albert, I mean, not Louis — lay in the fact that in his development of the automobile factory he actually contributed to the possibilities of mass-production. In other words, just as we may at least assume that the offices in the Home Insurance Building produced more useful paper-work and were not just more comfortable, we know that Kahn participated in the development of the Ford story, and that is just as technical as the evolution of the particular materials and methods with which he built his factories.

Condit: I was just going to add a footnote to what Mr. Fitch said, and it seems to me that what he said is very much to the point and very apt. I was going to add, since there have been many allusions by Mr. Weisman and Mr. Hitchcock to eastern capital's underwriting Chicago building: But of course it was eastern capital, since there wasn't any capital in Chicago. Chicago became a city in 1837; it had 29,000 people in it in 1850; when Gustavus Swift came here in 1865 he had \$13.00 in his pocket. Now \$13.00 in 1865 was worth a good deal more than it is now, it was worth about \$160.00, but even so the man who eventually controlled the price of meat all over the world didn't have a great deal of capital when he arrived (Oh, he had a horse and wagon too, I think). Pullman, on a purely experimental basis, operated a makeshift sleeping car in 1859 and the Chicago and Alton Railroad picked up the check, as there was no money in Chicago; and, when it came to buildings, it had to come from outside the city; but of course increasingly it did come in the city itself. I certainly agree that one can be carried away by a mechanistic and economic and materialistic or deterministic approach to history; I think that these things are all essential and must be given their weight, but I think that one must go beyond all that. The interesting thing about Chicago is that one can go well beyond that, even when

it was a rude town on the prairie, in that period from 1837 to the post-fire renaissance or efflorescence — (I think that's a very good word). The city, if not exactly a cosmopolitan center, (it hardly dared to match Philadelphia or New York or Boston or possibly even New Haven, Connecticut, in that respect), nevertheless had libraries and schools and the beginnings of an art institute, a scientific society, an historical society, the beginnings of a symphony orchestra, and so on. And it had something else that perhaps is more important than these indications of the life of the spirit, of the mind, or esthetic sensibility: A soil that was rather fertile for the planting of new ideas, new ideas of a radical nature, not only in politics, because it was a center of radicalism (by the way, there was a time when the Chicago Tribune called for the nationalization of the railroads, echoing Theodore Roosevelt — I wish somebody would remind them of that sometime), but also radical social ideas, and a center of ideas about the role of art, the nature of art, especially of building and civic art. It was receptive to new ideas. A further illustration of this is the Columbian Exposition. I'm glad attention has been called to this; it's been maligned for too long. That little history of taste about the Fair that Mr. Hitchcock went through I think is a very good thumbnail sketch. First it was thought the greatest thing in the world. Then it was to be condemned as not only bad taste but paranoid, dishonest, disgusting in all kinds of ways. Now we begin to take another look at it and we've begun to see what's there, not only bold and impressive examples of three-hinged arch construction, arch-truss framing that came from the exposition buildings in Europe and also from railway train sheds that were beginning to appear here, but two ideas that were destined to have a tremendous influence in this country. One was the idea of organizing space on the grand scale, which underlies to a great extent the Burnham plan. The other was the idea of designing buildings, public buildings, in such a way that they could handle enormous numbers of people. The two most impressive railroad stations in Chicago (The North Western Station and the Union Station), two of the three metropolitan terminals that were built in the 20th century, are impressive examples of this influence, I think. The World's Fair was something that should have and perhaps was most likely to have grown up in this soil.

Hitchcock: Incidentally, it is worth pointing out that the only large building at the Fair that did not have an iron and glass roof was Adler and Sullivan's Transportation Building, which structurally was a sort of basilica.

Because we are so indebted today to borrowed



Boston. Boylston Chambers. 1902. Clinton J. Warren. From American Architect and Building News, 1902.

British capital — I don't mean financially; I mean Sir John [Laughter] — I would like to ask, since I know that the North Western Railway (it's a railway and not a railroad) is so called, whether it runs its trains on the left-hand side because it was largely built with British capital. Well, long before Pan Am and so forth, since the United States was still, I think, dependent to a large extent on foreign capital in the 80's and 90's, was there any foreign capital here, or did it just come from Boston?

Condit: No, it's not true about the North Western Railway, Mr. Hitchcock. (By the way, you're right about its being a railway, and let no one forget that it's North Western, two separate words, not one word like this university's name). If British capital was responsible for left-hand operation, the entire Grand Trunk System (now the Canadian National) should be operating left-hand, also the Erie, the eastern part of it which was the New York and Erie, and so on. The left-hand operation grew out of the peculiarity that a number of stations in the Chicago area were located on the left-hand side of the track as you face the city; and since you need waiting room facilities when you board a train and not when you get off, the trains were put on that track, the left track when you face the city.

J. Daniel Selig, University of Notre Dame: I just want to ask a short question: Would asking what was the patronage and production of "Chicago School" architects working elsewhere in the United States help to define their work in Chicago? For example, obviously one thinks of the facade of the Bayard-Condict building by Sullivan in New York. But I think even more interesting is the number of

Chicago architects working in Boston. Charles B. Atwood is listed in the Boston Directory for 1871-74, but this really does not count since it is well before his Chicago triumphs. But S. S. Beman worked in Boston, both as architect and supervising architect for the Christian Science Church. His Boston work is pure Beaux-Arts. Clinton J. Warren (whom I believe Mr. Condit pointed to as the finest apartment and hotel architect in Chicago) worked, as I rediscovered by looking in the Boston Directory, in Boston from about, I think 1900 to 1922-24. And of course D. H. Burnham and Company also worked in Boston.

May I just comment on two of the buildings by Clinton J. Warren there. The Iver Johnson Building of 1907, which lamentably will not be with us very much longer (Mr. Hitchcock interposes that he thinks the building is being saved), is rather a Chicago building. I don't think it shows any Boston characteristics at all; although its brick would seem to be Bostonian, it clearly relates to Holabird and Roche's brick commercial buildings in Chicago. But even more interesting is a building which I've recently discovered, the Boylston Chambers of 1902, on Boylston Street between Exeter and Fairfield, in white terra cotta, which is again an immensely Chicago building; it too has very little of Boston. And of course the great Filene Store, William Filene and Sons, of 1910, is by D. H. Burnham and Company. It looks more like Burnham's Selfridge Store in Oxford Street, London, than his own Marshall Field's, or even of course Sullivan's pioneering Schlesinger-Mayer, both on State Street, Chicago. So I'm just wondering again if the work of Chicago architects working outside Chicago, either as to similarities or dissimilarities, would help to

give any indications of Chicagoness in Chicago.

[Professors Condit and Weisman have both used Chicago's commercial architecture to illustrate their arguments. I would like to suggest that an examination of the fine residential work in Chicago of the late 1880's through the 1890's, which still abundantly remains on the Near North, North and South Sides, will show that there are very distinctive interpretations of Eastern themes, sufficient perhaps to warrant the term "Chicago mode," if not exactly "Chicago School". Most of these houses are in quarry-cut stone and follow Richardsonian lines, often introducing 15th century French details. The periodicals made the Eastern prototypes known at the time, but comparison of the Chicago houses with their Eastern counterparts, most notably the houses of Boston's Back Bay, clearly shows distinctively Chicagoan interpretations in details, forms, and proportions. Also the Chicago houses are much freer in their combinations of forms and styles. The following contemporary observation, which I read after suggesting examination of Chicago's domestic architecture, is most revealing: "Along Lake Shore Drive you will find the homes of the great merchants, the makers of Chicago, George Warrington Stevens wrote in 1896. Many of these are built in a style which is peculiarly Chicago's own, though the best examples of it are to be seen in the business centre of the city."]¹³

Condit: Referring to Mr. Selig's question about Chicago architects working outside Chicago, I think you'd have to set the firm of D. H. Burnham aside. Burnham became a national architect. I think it was Will Hasbrouck who said that D.H. Burnham and Company became Graham, Anderson, Probst and White; they were the Skidmore, Owings and Merrill of their day. They got all the big plums; but of course Burnham had the classical vision. But my answer to the question would be, "Yes it does"; one sees the stamp of Chicago work. But I wonder whether we might not refer that question to Mr. Donald Hoffmann, who is here, because he has made a special study of John Wellborn Root, and particularly his work in Kansas City, Cleveland and San Francisco.

Donald Hoffmann, Kansas City: The only thing I can think of offhand in that regard is the change in color scheme and materials in the Mills Building, which I take to be a response to the regional climate and the source of materials, but the form itself would I think support the idea that Chicago buildings can be recognized as Chicago School whether they were built right here in the city or not.

13 Mayer and Wade, *Chicago: Growth of a Metropolis*, Chicago: The University of Chicago Press, 1969, p. 253. — AUTHOR.

There is one thing I've been concerned with that nobody has talked about, which was brought up by Sherman Paul in his book on Louis Sullivan, and that is the idea of the theoretical ferment in Chicago during the 1880's, regardless of what buildings were done or were not done. I find, by going back through the *Inland Architect*, a tremendous concentration on the formation of professional societies, with an equally concentrated cross-relationship in that the same people were in most of the same societies; and the leading spirits were the same men usually, so that in 1883 when McLain started publishing the *Inland Architect* he was already a friend of Root, and he began publishing lectures that Jenney had been giving at the University of Chicago, the old University. Within a few months he began calling for a western association of architects because the Chicago chapter of the AIA had not met for two years. The Western Association was formed in November of 1884; in January of 1885 the Illinois State Association was founded; in February of 1885 the Architectural Sketch Club was founded, which later became the Chicago Architectural Club that Frank Lloyd Wright so well dominated; and in the fall of 1889 the Art Institute of Chicago announced a regular architectural course, with lectures by people of the quality of Root, Burnham, Jenney and Irving K. Pond. Thus within a space of four or five years there were at least five channels formally established for the communication of ideas, and a personal social association of these people. Even without looking at pictures or buildings, I think one could justify the idea of a Chicago School just by the amount of professional activity going on here and the obvious evidence that these protagonists wanted open forums where they could discuss the problems of the day, that is, how to handle the new building type on such an enormous scale. The quality of the articles that appear is uneven; there are some historical feature-type articles that are about the same as you could find in the *American Architect and Building News*; but when you consider that there are articles by Root and Sullivan and Jenney, all appearing from month to month in a journal like the *Inland Architect*, I would take that to be *prima-facie* evidence of a school, not on the basis of stylistic similarity, which they obviously didn't have, but on the basis of a full scale attack on a major architectural problem.

Eaton: One point that might be made here is the following (although I must say, after hearing Mr. Weisman this morning, I don't know whether to use the term Chicago School or not): A number of books that have appeared recently have convinced me that people in places like Detroit and Cleveland

did not like what was going on in Chicago; there is no blinking the fact. Hawkins Ferry's book on Detroit architecture makes it perfectly clear that there was a negative reaction in that city to the commercial architecture in Chicago. One can find a few buildings in places like Detroit or Cleveland, yes, and places like Kansas City, that do stem from the general collection of buildings we've been studying this afternoon. On the other hand, these are isolates; the weight of the evidence in a good many of the cities of the country would seem to indicate that what went on in Chicago, in quantity, was rather a special thing.

Hitchcock: Boston had long led, but Bainbridge Bunting in his book on the Back Bay seems to indicate there was a kind of general loss of nerve in Boston in the 70's and 80's. As Bostonians lost control of the railroads that they had long run, and let the financial power slip away to New York, they began, perhaps only coincidentally, to employ New York architects. We think of Richardson as a Boston architect, but he didn't come to Brookline until 1874. His only connection with Boston when he was first employed in Chicago, for example for the American Express Building, was the fact that his wife came from Brookline and he'd been to Harvard. But on the other hand, he was a New York architect when he first came to work in Boston on the Brattle Square Church, or even before that on the Crowinshield house. McKim, Mead and White began to be employed, and, of course, after Richardson had become recognized as a Boston architect, there is the striking affair of Ames getting plans from Richardson for a house in Boston and then not using them. Instead he had a Francois Premier chateau in the Vanderbilt manner built by Carl Fehme.

Sir John: Thank you, Russell. I think at this juncture I'd like to try to do a little summing up. I feel that this discussion has moved in a very constructive way. We've had all sorts of very different factors coming into the question. We've had the question of patronage, which of course is highly important, and the flow of capital into Chicago; we've had the question of the professional genealogy of the principal participants and their social relationships; and we've had, I think above all, the question of the ideological climate. It is beginning to look as if Chicago has considerable importance in this matter; in fact I would go so far as to say that although there may not be a Chicago School, there is something *very like* a Chicago School! [Laughter.] I'm summarizing just to fix in my own mind what we've got to. If anybody would like to take it further, there is the time and the opportunity.

Condit: Could I ask one question please, putting the shoe on the other foot, directing it to Mr. Eaton or Mr. Hitchcock or both. A Boston firm of architects enjoyed a considerable prosperity in Chicago, having a lot of really big commissions, real plums, the firm that I believe succeeded Richardson, that is, Shepley, Rutan and Coolidge. They designed the Public Library, the Art Institute, and at least half the quadrangles of the University of Chicago. How did this happen?¹⁴

Hitchcock: But also of course Kansas City had an immigrant — I suppose you would call Van Brunt that, wouldn't you? — a Bostonian who settled in Kansas City. He was a Kansas City architect by the time of the World's Fair.

Hasbrouck: Could I say one last thing? I'd like to reinforce what Donald Hoffmann said. The Chicago School of Architecture really is not a series of buildings or any one building anywhere, either here or anywhere in the world. Rather, it's an approach to architecture; it's an attitude. To quote our spiritual grandfather, Louis Sullivan, "If you live

14 The tape is not clear here for a few seconds, but apparently nothing substantial was said to this question. Shepley, Rutan and Coolidge were on the ground at the time of the World's Fair, and designed the Public Library and the (present) Art Institute; and it is perhaps surprising that they were not retained for work on the university then, during the early years of the (second and present) University of Chicago. They had made the plan for Stanford University beginning in 1886, and Julius Lewis suggests it may have had some influence on the lay-out of the Chicago buildings; some of their designs were published in the *Inland Architect* in 1891. However, the local architect, Henry I. Cobb, as is well known, made the general plan and designed many of the earlier buildings for the University of Chicago; and Shepley, Rutan and Coolidge did not get in until 1901. The minutes of the Committee on Buildings and Grounds of the university show that the committee was trying to have that firm appointed architects for Hitchcock Hall in 1900. (However, Mrs. Hitchcock wanted Dwight Perkins as architect; and, despite a somewhat plaintive resolution of the committee on July 17, 1900 asking the trustees to authorize the committee to select the architect, the lady had her way). The first references (early in 1900) are to Coolidge alone; perhaps he had the effective contacts with people of the university such as Charles L. Hutchinson and Martin L. Ryerson, who were officers of the Art Institute and also trustees of the university and were somewhat interested in architecture (they encouraged Cobb to abandon early designs in the Romanesque manner in favor of Gothic), and Hutchinson was a member of the Committee on Buildings and Grounds. Shepley, Rutan and Coolidge received the commission for an entire group of buildings in 1901. (Thomas W. Goodspeed, *History of the University of Chicago* (Chicago, 1916); the same, *University of Chicago Biographical Sketches* (Chicago, 1922); Julius Lewis, *Henry I. Cobb and the Chicago School* (Master's Thesis, Department of Art, University of Chicago, 1954). The minutes of the Committee on Buildings and Grounds are in the University of Chicago Library, Manuscript Department. — EDITOR, JCW.

long enough, you'll see all of your buildings torn down; but after all it's really the idea that counts.

Philip Krone, State of Illinois: I was just going to make a comment on patronage. I think that there is a psychological reason for so many of the buildings that were built in Chicago, especially many of the residences now torn down that were on the near north side or on Prairie Avenue. In New York there were traditional architects such as Hunt; and it was the thing to do to have your home built by Hunt. If people in Chicago with their new money had done that, they would have just been copying New York. It was important for them to hire architects that may have been considered *avant garde*. That's also done today in America; I don't know what the schools are going to be called, and it will be a lot more diverse, it won't be limited to one city; but when somebody amasses a great deal of wealth he sometimes gets an architect who is not so traditional. For instance, if you acquired new wealth today, you would not hire Mies van der Rohe. This is not to argue that Mies van der Rohe was not a good architect, but anybody with money can hire Mies van der Rohe; so therefore you use your wisdom, your patronage, your new *Medici-ness*, to hire somebody who is not as accepted, whether he's good or bad is not the question. So I think one of the reasons Chicago did so well in the last part of the 19th century was because people who had money wanted to do something that was very costly but newly significant and not necessarily a copy of what was fashionable on Fifth avenue.

Eaton: I'd like to rejoin to that in the following terms: that it was precisely the large Chicago fortunes which did not hire the Prairie architects. That patronage came from an entirely different group. The only case that I know of, where Wright broke into that group, was the McCormick commission, which fell through.

Hitchcock: I think the change came a good deal earlier. You will remember that in 1880 Adler and Sullivan built a Borden House on the south side. I think it was five or six years later that Hunt was brought in to build the house on the North side. What has always mystified me was not so much why they brought in Hunt but why they moved from the south side to the north side, because shortly everybody else of that group did too.¹⁵

15 No one commented on this, perhaps because no one can say precisely why something happened in history. With hindsight, we can say that the city was bound to spread all over the area; and the question can be divided into several parts, the simplest of which is, Why did the city begin south of the river? The north side was more wooded (away from the lake) and swamp and sand (near the lake); but doubtless the decisive fact was that the chief roads approached the site from

Sir John: One more speech, one more speech, who'll have the microphone for one more speech?

James Arkin, Chicago: My name is James Arkin; I'm an urban planner of Chicago; and I was pleasantly surprised to hear Professor Hitchcock mention the rear of the structure at 60 Mark Lane, London, which got past the building code of 1844 by means of a perfectly plain surface. The reason I'm surprised is because we have a similar structure here in Chicago: it's the rear facade of a building by L. H. Sullivan, facing an alley, just south of E. Harrison St. on the west side of Wabash Avenue [the Wirt Dexter Building, 630 S. Wabash Avenue, 1887] one of the Sullivan buildings still standing in the Loop area. It is a very novel and innovative expression, even for the Chicago School.

If one makes a tour of the alleys in the Loop and observes the buildings of Adler & Sullivan, one will find that there is a great deal of sensitivity in the rear of these buildings and that either Adler or Sullivan or both expressed a kind of conscious motif with regard to freight elevators. The freight elevator-*hoists*, and the docks attached thereto, usually were carried out in similar designs with a feeling for monumentality.

In reference to the rise of the Chicago School, there was a situation where the city started as a

the south and west (even from the east they had to go around the end of the lake and thus approach from the south). Once established south of the main branch, where the Loop developed, the city naturally grew first toward the south and west. Granted this, one may then ask, Why did not the north side become fashionable before the 80's? There were homes on the north side from an early date, but were west of the area where the later Borden house was built, for instance along Dearborn and LaSalle Streets; but this general area was rather restricted by industrial and slum areas to the west of these streets as well as by the swampy ground to the east. The area just north of the river, at Five Points, called The Sands, had a bad odor that lingered from early days, since it had been the location of a "vice area" so notorious that it was raided and burned down in 1857 by the police led by the mayor. A most important factor, one suspects, was the time needed to get across the river. In the earliest days a "bridge war" complicated the problem, business interests in the south side being opposed to bridges, hoping to prevent the wagons of produce coming from the south from trading with the warehouses on the north bank; and a bridge at Dearborn Street was actually chopped down by a crowd in 1839. After 1840, bridges multiplied, but they were not always as rugged as might be desired; as late as 1865 a bridge (at Rush Street) collapsed under a drove of cattle. Draw and swing bridges were used to allow vessels to pass, but this held up carriages, sometimes interminably, (and the grade crossings of the railroad tracks on the north bank did not help). The tunnel built under the river at LaSalle Street in 1870 was supposed to relieve the congestion somewhat at rush hours and is said to have been used by light carriages; but there must have been a period in the 60's and 70's when this problem was especially

village in 1833 and it grew in a geometric ratio, population grew, income grew, and business grew. Chicago was the center of the railroad industry by 1890, as has been pointed out. But if one observes the statistics of large cities all over the world, the same growth was occurring in other countries. Some examples were Tokyo, Warsaw, Vienna, Berlin, London, and also other cities in the United States, hence we can't ascribe the efflorescence of a new style in Chicago entirely to economic conditions in Chicago. I think it suffices to say there was such an efflorescence here in the 1880's and the 1890's, that it arose, somewhat as the early Florentine Renaissance did about 1420-1450, that it had its ties to the new technology that arose from the Chicago Fire of 1871, just as the Renaissance had its ties to the new Humanities, and that we should let it go at that and be thankful for it. We had this great development, which I don't think is necessarily continuing, any more than the Florentine Renaissance continued in Rome. Today's architecture is much different. The Chicago School was characterized by facade architecture more or less; there are a few buildings that covered an entire block (the Monadnock is a good example); but most of them made their success on the basis of two facades (on a corner) such as the Carson Pirie Scott Building, or with no corner. Today we see the free-

irksome, at least for men who wished to get to their offices promptly. William G. Hibbard, as his daughter remembered it later, absolutely refused to consider the north side, when he built a house south, on Prairie Avenue, at the end of the 60's, because of the time lost in waiting for the bridges; and contemporary descriptions of these traffic-jams make this quite understandable. The remaining question then is, When would the pressure of fashionable demand overcome such obstacles? There must have been some kind of counterbalancing relationship between the distance one might have to go south (the John Borden house of 1880, by Adler and Sullivan, was nearly as far as 39th Street) and the problem of getting across the river to the north side; and these forces must have become more equalized by the 80's. Moreover, the previously fashionable area on Prairie Avenue became less desirable, as time went on, as a "vice area" west of it expanded toward it. Potter Palmer must have been aware of such things when in the early 80's he began to fill in the swampy land nearer the lake on the north side (what had been called "Potter Palmer's Frog Pond"), thus to realize on the capital he had invested in it. That Potter Palmer built his castle on the new Lake Shore Drive in 1882 and William Borden his chateau in 1884, the one designed by Hunt, far from his father's on the south side, would have stimulated others, by social contagion, to consider living in this part of the city. See Andreas, *History of Chicago* (1884-86), I, Indices, s.v. *Bridge*, and II, pp.60-65; Chicago Plan Commission, *Forty-four Cities in the City of Chicago* (1942), Section No. 8; Addie Hibbard Gregory, *A Great Grandmother Remembers* (1940), pp. 26-27; and Homer Hoyt, *One Hundred Years of Land Values in Chicago* (1933), Index, s.v. *Fashionable*. — EDITOR, JCW.



Chicago. Wirt Dexter Building, rear. 1887. Adler and Sullivan.

standing structures with the so-called plaza around it, which is characteristic of new zoning laws and which to my mind represents an entirely different school, if we want to call it a school. So I believe we should be pleased that there was such a development here in Chicago, and look forward to some similar development in future years, whether in Chicago or somewhere else in the world, with new giants in place of Jensen, Adler, Sullivan, Root, Holabird and Wright.

Sir John: Thank you very much, thank you. Now, I've already made some attempt at a summary and I'm not going to take that any further. As regards the main question that has been in our minds, I do feel that sheer habitual usage is going to press us hard towards the continued use of "Chicago School" for the commercial school from 1871 onwards. Of course we haven't said very much about the Prairie houses and all that; but I have a feeling that "Prairie School" is going to be the accepted word for those.

An incident has come into my mind which perhaps is a good one to recall at this point as a closing remark. I remember, in 1937 it must have been, Frank Lloyd Wright was in London, and a group of us had got him to come and spend an evening in a St. John's Woods studio and talk to us. There we were, all fairly young, some of us very young; we grouped ourselves around the great man who sat at the head of the sofa with his splendid head and beautifully profiled face. There was dead silence and then he started to talk and his first sentence was: "It all started in the long grass of the Prairies." [Laughter.] Well, you couldn't ask for better authority than that. Thank you, ladies and gentlemen.

Postscript

It is of course not the editor's place to try to say which side of the question had the better of it; and perhaps Sir John Summerson's witty remark goes as far as one should in that direction: If there was not a Chicago School, there was something very like a Chicago School. The question must now be left for any consensus that may develop; perhaps historians will, in a sense, combine the views and insights of the two sides, and will come to view the architecture of Chicago as an intimate part of a general development rather than as a unique school, but a part in which that general development, because of the presence of certain social and economic factors and certain gifted architects, was carried to a rather high point of significance or excellence.

As a brief summary, and leaving aside the two chief papers, which I shall assuredly not attempt to summarize, the following would seem to be the chief ideas that were brought up in the ensuing discussion:

The capital for the important large buildings mostly came from the east. (Condit, Hitchcock).

The architects were often not native Chicagoans, but chose to settle and work there. (Hitchcock).

The Chicago School (if there was a school) was part of the so-called Commercial Style, which of course did not begin in Chicago. (Hitchcock and others).

There was a certain informality or looseness of law and convention which might have allowed new developments more easily. (Brooks).

There was a business development and a climate of taste and opinion which could serve as a base for something new. (Fitch).

There was a marked activity in ideas and organizations, seen in lectures given and the formation of professional societies in Chicago which could perhaps justify some term like Chicago School. (Hoffmann).

Residential work in Chicago (not of the Prairie School type) differs enough from work in the east to justify some term like Chicago Mode if not Chicago School. (Selig).

It was suggested that perhaps the school should not be based so much on the buildings as on the ideas and the men; and the idea of a genealogy of the architectural firms in Chicago was introduced. (Hasbrouck).

The question of clients was discussed, and material from this area seemed to indicate that there were two groups of clients (supporting the idea of two schools or groups of architects?), since the clients who commissioned the important commercial buildings were in general a different group of people from those who commissioned the houses by Wright and others, Edward Waller being the only important exception. (Eaton).

On the other hand, one participant argued persuasively that it would be better to think, not of two schools, a commercial and a domestic, but of a single development which led to a modern style, an architecture which was new and non-historical in its aesthetic, which unites Sullivan with Wright and his group, and to which the name Chicago School might be given. (Sprague).

The Prairie School was mentioned but not discussed (except by Mr. Weisman in his formal paper). There seemed to be a tendency to agree on using the term Chicago School (if used at all) for the primarily commercial architecture from about 1880, and the term Prairie School for the group around Frank Lloyd Wright, dating this from about 1890 to 1915.

*The question to what extent technology should be distinguished from architecture in discussions of this kind, especially in evaluating achievements, was the most basic issue raised (Condit, Hitchcock, Summerson). Rather than trying to summarize the discussion of that complex question, perhaps I may add a note taken from a European commentator, which underlines (as did the participants) the intimate relationship between the two realms: "The knowledge and skill of the architect have always been applied, utilizing the technical resources of his time, to the problem of spanning a space — and from this he produced a work of art."**

Finally, the last speaker raised our sights pleasantly to the future, with a non-parochial touch, in suggesting that the achievement in Chicago, whatever its exact originality, was an efflorescence of architecture such as had occurred before, and for which we should be thankful, whatever name it is given, and such as we should hope to see occur again, either in Chicago or in some other part of the world. (Arkin).

The conference adjourned, and the chief participants and other notables were entertained by Barbara Wriston in her high-rise apartment, where one could watch the shore and the buildings of the controversial city receding into the darkness, — replaced by the undifferentiated lights that mark any large city at night.

The conversations there were not recorded.

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** La science de l'architecte a toujours recherché, avec la technique de son temps, à franchir une portée — il en a fait une oeuvre d'art — A. Gutton, *Conversations sur l'architecture*, IIIA (1956), pp. 338-39. The immediate context of the remark is found in illustrations of the roofing over of spaces from Greek to modern times. The general context is in Henri Focillon's statements about the leading place held by the technical procedures and the material in the production of works of art.*



From the EDITORS

*The Concora Symposium is over. Whether or not a decision was reached is problematical. But no matter, it brought thoughtful men and women together and stimulated all who participated. We have chosen to end this issue of *The Prairie School Review* with a photograph of the Monadnock Building which, until recently, was thought to be the highest masonry wall structure possible. In a way it was the end of an era. Today, architects and engineers are developing new masonry bearing wall techniques with modern materials which will far exceed the Monadnock, so perhaps it really was the beginning of something its designers never thought possible.*

With the next issue of Volume IX of the *Prairie School Review*, we will return to our regular format and include book reviews as well as letters to the editor. The major article will be on Percy Dwight Bentley. H. Allen Brooks became interested in this little known architect in Wisconsin while he was preparing his book on the Prairie School.

The following books will be reviewed:

Lloyd Wright, Architect, 20th Century Architecture in an Organic Exhibition

Ed. by David Gebhard and Harriette Von Breton

Progressive and Academic Ideals at the Turn of the Twentieth Century, Vol. III of *American Buildings and Their Architects*

William H. Jordy

