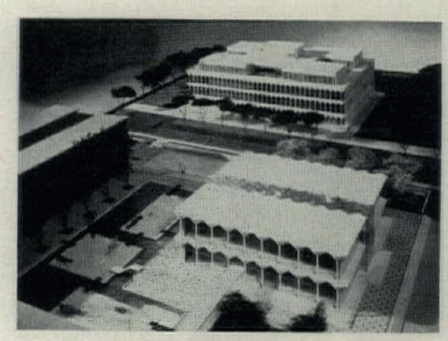
One of today's leading architects reveals the thinking behind his skylit central spaces, his devotion to human scale, and his new interest in precast concrete

A conversation with Yamasaki

Talking to Minoru Yamasaki, one gets the impression that his best-known buildings represent key positions in a personal odyssey. The famed St. Louis Airport done by the partnership of Hellmuth, Yamasaki & Leinweber is a work of anxious and adventurous youth. The McGregor Conference Center at



Wayne State University (foreground, in model above; Education Building in background) reveals a new attitude toward life and a new approach to architecture following his recovery from a serious illness (FORUM, Aug. '58). His latest projected work, notably the new buildings for Oberlin, Carleton, and Wayne and the 30-story headquarters for the Michigan Consolidated Gas Co. in Detroit's civic center (done by the Associated Architects and Engineers Minoru Yamasaki—Smith, Hinchman & Grylls) mark the emerging assurance of a mature artist.

Unlike his contemporaries, 46-year-old Minoru Yamasaki is not frantically widening his range of forms—he is narrowing it, much in the way he has narrowed his activities to concentrate on the buildings themselves. But now, having earned rare freedom and opportunity to select commissions, he faces a new and typically American challenge—a challenge of success. That he is aware of this was evident as he hung up the telephone in his deceptively tranquil office and faced his visitor again:

"This really gets to be silly. That was another invitation to give a speech. One day you are nothing and the next day you are something—and then you don't have time to work. You know, going to dinner and being applauded and that kind of thing is not the joy of architecture. The joy of architecture is walking into the building you've just finished and seeing that somehow it has come off. And this joy means months and months of hard work.

"I suppose this is part of the public's eagerness for architecture. The popularity of the architect tends to go along with it. But there's no point to it if it is just an advertisement. This is something we confuse our youngsters about. So many of them try to do a sensational job instead of seriously attacking the problem as such. They have to go through a period of growing pains such as I have gone through before they can say 'Boy—this is really serious business.'"

Certainly a building of the size and location of the Gas Co. building is serious business.

"And a great opportunity. First of all, this building has the finest site in Detroit—on Woodward Ave. opposite the City-County building and in the center of the open area of the civic center (model photo, page 112). And then, we've got a great client in President Ralph McElvenny—it takes one, you know, to do a good building. Another thing: rarely do you get a chance to do a skyscraper with all four sides exposed. Usually you have to back up to another building.

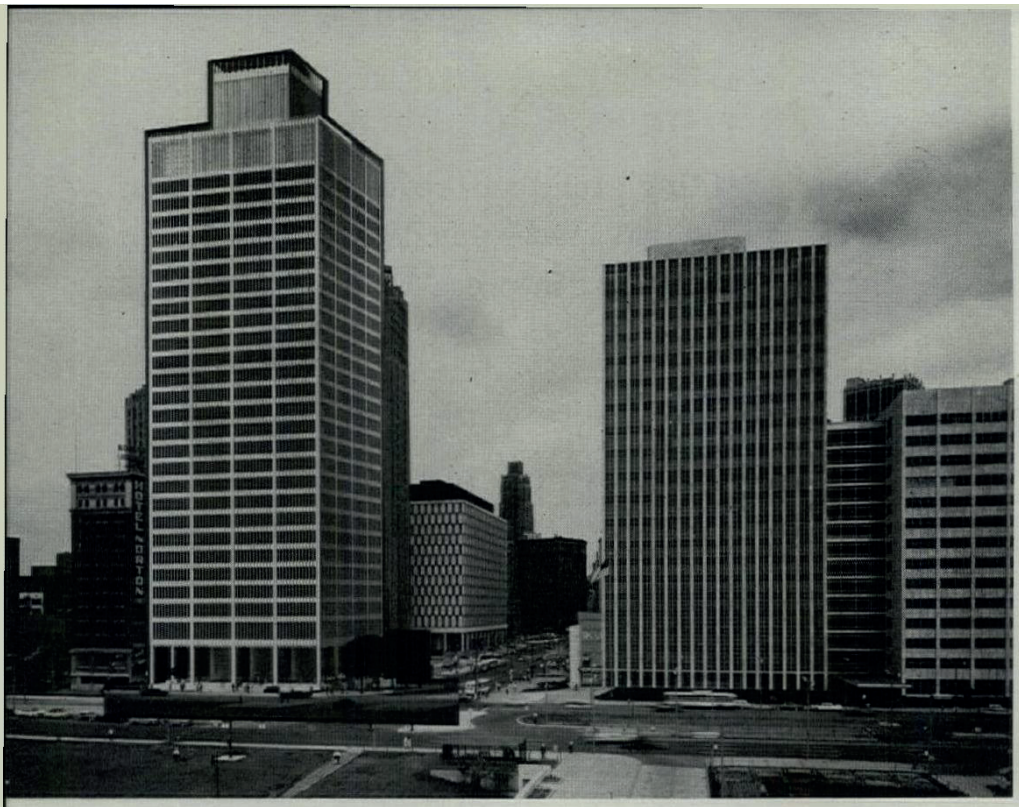
"From the start, I felt that the Gas Co. building shouldn't merge completely with the governmental buildings around it. But if we did a metal building, for instance, in this marble civic center, it would be rather rude to the neighbors. So we wanted to do a white building. Obviously, if we did a white building, we'd do a precast concrete building.

"Being in the center of the civic center, it made sense to be higher than the City-County building, but we had to prove it—first to ourselves and then to others. The proof came when we made models of various low buildings for the site. With those buildings, the Union Guardian building, which is the red brick building behind us, looked like the top part of our building.

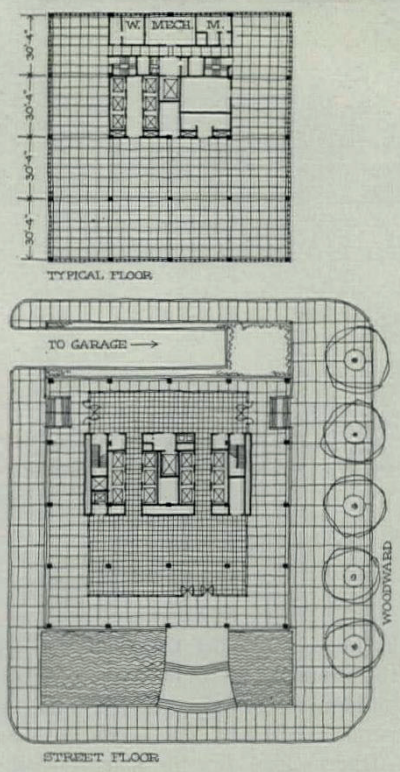
"With our first shaft-type design we had a girdle or porch around the bottom of the building, but then we got floor areas that were too small—the site is only 130 ft. by 160 ft.—and the building seemed complicated. So we finally settled on this tall, quiet shaft."

To my knowledge, this is the first tall building in which the structural column facing and the window panels are the same half-module width. Why did you break the module into two window units instead of one?

"By breaking it up into two units, first of all, we get a slender, vertical look. Personally, I like the vertical line much better than the horizontal because it seems to give an aspirational quality. Incidentally, that's one of the reasons for the angled window heads and sills.



MODEL PHOTO BY LOUIS CHECKMAN ON PHOTO BY BALTAZAR KORAB



Gas Co. building *(model left) will be carefully fitted into a block in the center of the civic center. City-County building is to right.*

YAMASAKI

When you try to emphasize the vertical, any horizontal line seems to interfere. But beyond that, the narrow window gives a much more secure feeling high up because you can hold the sides of the window when you look down. For these reasons we decided that the 4 ft. 8 in. module was too big for the window dimension. We cut it in half.

"Actually, I think the narrower windows give us an over-all feeling of quiet—you know, it looks good from nearby or far away because of the understandable size of the building elements."

What makes an element understandable in size?

"Anything 4,000 yd. wide by 100 ft. high, for instance, can't be appreciated in the same way a single yard can be. So, at Reynolds (photo, page 114) we split the screen into two parts on the second and third floors. We might have divided the pattern into sections which were logical structurally as we are planning to do at the Gas Co. building.

"An understandable element is thus something you can grasp and bring to yourself. In the best terms, it is something you can love. How can you love 4,000 yd. of anything? But you can take a box or piece of jewelry and say 'This is a lovely thing.' It's not simply that you can hold it in your hands. I think we have mental hands which reach out and embrace a building.

"A building should belong to man. Architecture should not be of another scale—it should not be of another world that he's not quite sure of."

Isn't this a relationship to the size of the human being which is, in fact, the basis of all systems of proportion?

"Frankly, I don't believe in systems of proportion or any other kind. A system is just something you disprove by another idea. A man has to rely on his own emotional and creative ability in this field of art.

"One of the sore troubles with society—architectural society that is—is that all young people are trained to design by the module. Recently I watched a young man in the office make up a plan. The first thing he did was set up a module. Then he laid all the requirements into this grid and raised them to an elevation. Where is the creativity in this design-by-system?

"What we've got to do is start out with a concept. We've got to say this is the problem and this is how we meet it. And the devil with the module or the system. An important question to ask is 'What emotional requirements are there in a particular building problem beyond the basic requirements of shelter and function?' This emotional requirement can never be satisfied by a module, yet the enrichment that man gains through his buildings is a needed requirement.

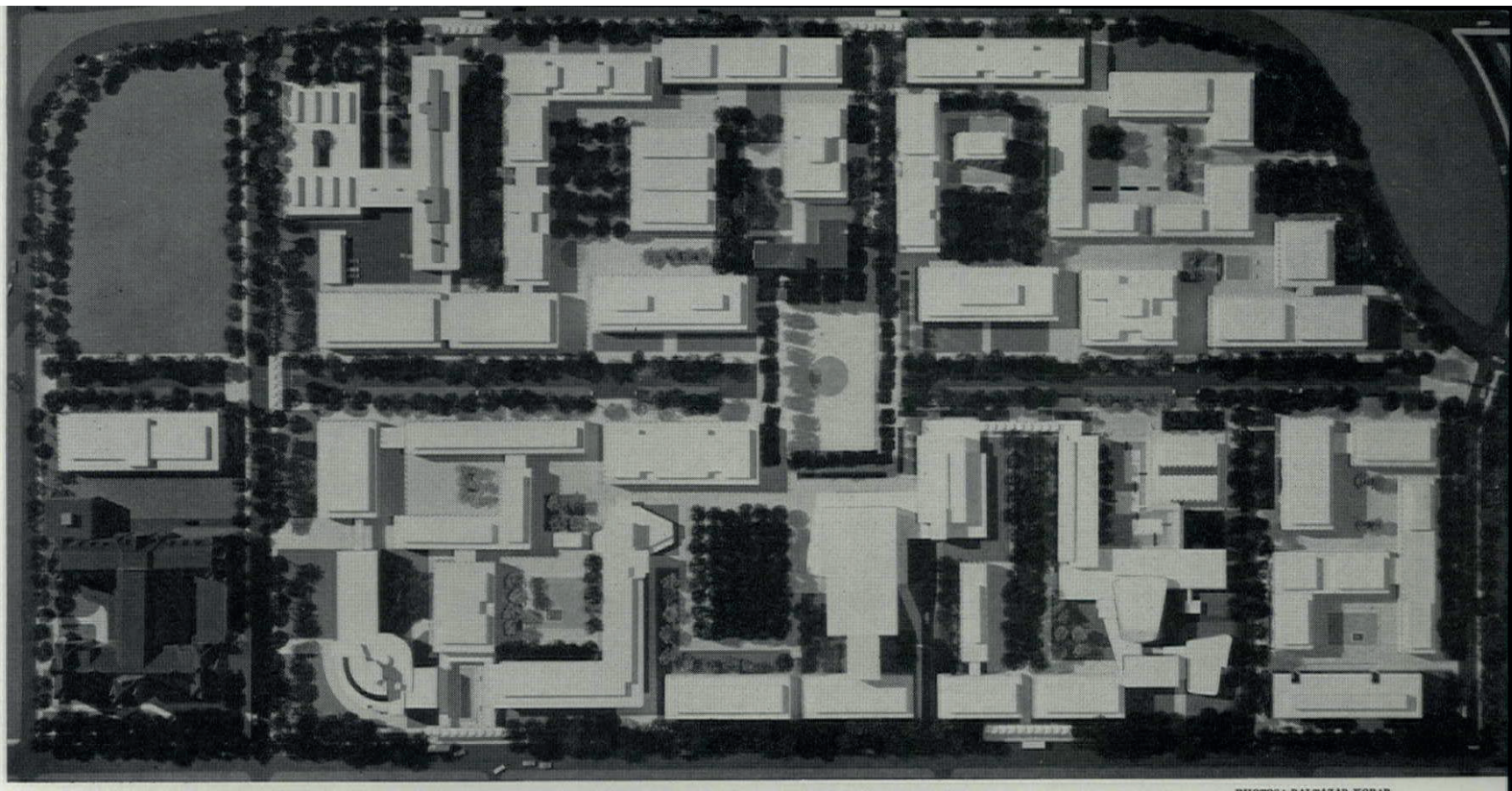
"In each problem we ought to clear our minds of all cobwebs and try to look at the problem as abstractly as possible. We shouldn't say 'Now, you know, I've been wanting to do a shell for a long time'—and then create a building to fit this notion. It's much better to say 'This is a particular problem. How can we best solve it?' "

But the concept in most cases is really a module, isn't it? The Gas Co. building is really a very intensively developed modular scheme.

"Of course. The Reynolds building has a 5 ft. module and McGregor has a 10 ft. module and the Gas Co. has a 4 ft. 8 in. module. Because we are in an age of technology we have to have modules. But you can't start with the module. You must start with the concept and then find the module that fits."

What is a concept?

"I guess what I mean by a concept is an idea for a building which satisfies



PHOTOS: BALTAZAR KORAB

Wayne State University master plan *forms an urban landscape by using a sequence of small courts reaching off of a main spine. Buildings cover 60 per cent of the land. High coverage and a rectilinear court plan fit the large university (37,000 students are expected by 1970) into 63 available acres.*

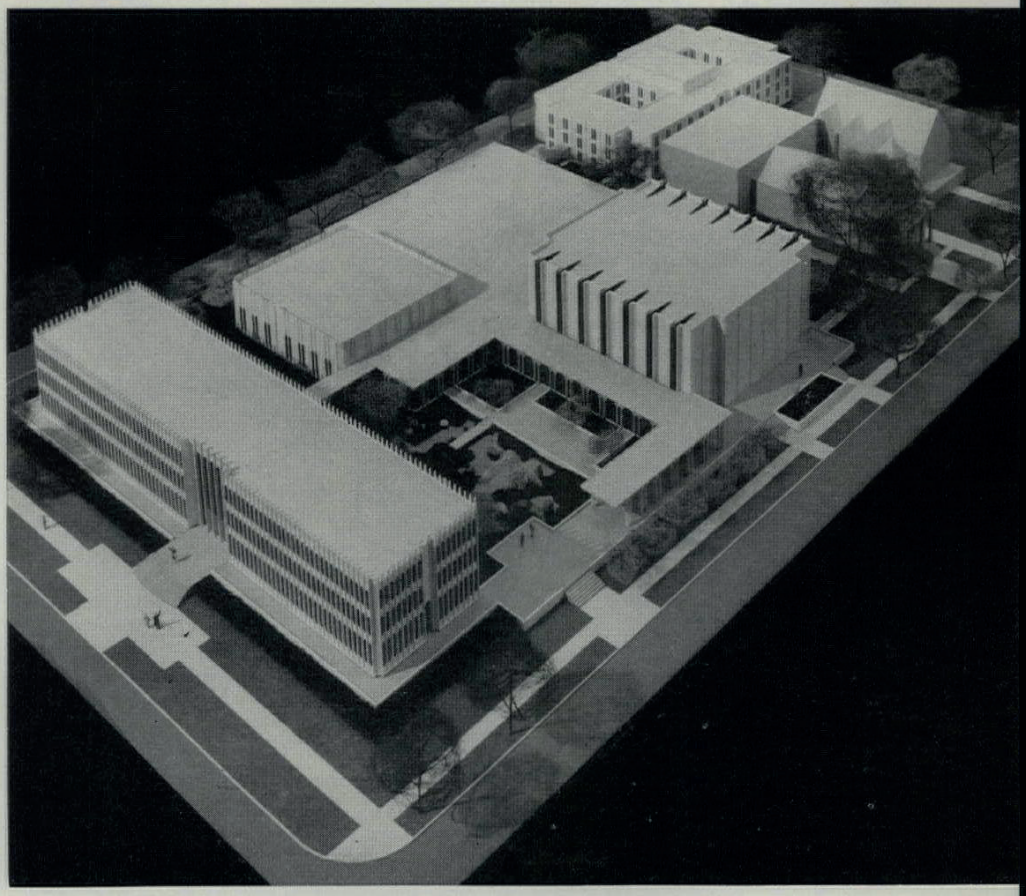
me when I check it mentally against a lot of basic convictions. Every serious architect knows that an honest structure is a very important thing. We know also that we have to be true to technology. All this is second nature. Then, beyond that, we have certain images of beauty which, I suppose, are matters of preconception. For me, these images of beauty have to do with Emerson's notion that a plant is made of only the essentials arranged beautifully. In other words, there's no padding. I believe in thinness—not economic thinness but esthetic thinness.

"And then there is delight within the building—whatever that means. I guess some people would call it a 'space sense.' Every building should have an interior quality beyond good detailing that is, well, call it surprise, call it almost anything. But it is an emotional experience."

How do you get the idea for a building which leads to this concept?

"Well, let me tell you how Reynolds happened. This was one that I worked on by myself for three weeks before I talked to anyone about it. But I just don't sit down and draw all the time. I sit here, or I look at books, or I go for a walk—but at any rate I think about the problem. After three weeks

Music buildings *for Oberlin College are scaled to fit the small-town campus. The large teaching unit faces the town square. Behind the small court is a rehearsal building. At the upper right, behind an existing church, is the practice unit.*



PHOTOS: (LEFT) BALTAZAR KORAB; (RIGHT) RICHARD MILLER

Reynolds Metals building, *now nearly complete, has a gold anodized sun screen broken into panels and separated at the third-floor level to mark the building's floors. Interior is arranged around an open court crowned by a lightly framed skylight. The building, which is opposite Northland Shopping Center, will house Reynolds' Detroit office—and provide a showcase for aluminum in construction.*

of this I was getting pretty frustrated when I went to the office one Saturday to pick up a sweater—the family was waiting for me, we were going someplace—and when I got to the office I thought 'Really I ought to work on this for five minutes.' And I hit it like that —it came very quickly."

How long were the five minutes?

"I guess about an hour. But by then, I had basic drawings and a perspective sketch—enough to know what I was doing. Actually, I work this way all the time. Often I have one of the people in the office working on something for weeks. He does all the space analysis and some basic planning and then I think 'What am I going to do about this?' And at some point I sit down and it hits me. But it's really not a matter of inspiration—it's a whole process of thinking that builds up and finally breaks through."

But with building becoming increasingly standardized isn't there precious little opportunity for that kind of individual problem solving?

"That's one reason why I'm so excited about precast concrete. Here's where the architect gets control again of what goes into a building. As long as the manufacturer is in control the architect can't use his sensitivity. In conventional curtain-wall systems the owner is almost always compelled to choose a stock system because it is dollars cheaper. But in precast concrete, once you cast fifty pieces out of one mold, the mold is paid for and worn out."

Is precasting best done at the job?

"Oh no! One of the reasons I like precast concrete is that we can do it in a shop. I believe in fine finishes, and if you build in a shop you have absolute control of the finish. The work comes out a precision thing—like a piece of steel or plastic. With precise elements you get buildings you love to touch—which is very important."

What about weathering? An argument for cast-in-place concrete is that it's rough to start with and therefore stands up better to weathering.

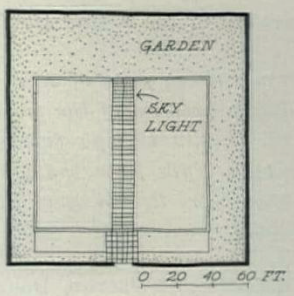
"That's nonsense. Concrete is a highly absorbent material. In the shop, you can produce 6,000 to 9,000 pound concrete, against say, 2,500 to 4,000 pound concrete in the field. If you really shock it, as in the *Schockbeton* process, you can make this strong concrete very dense. And if you set it up so that you have 80 to 95 per cent aggregate surface, you can get excellent weathering. Then, if you use a silicone on top of that, our tests show a 0.6 absorption factor.

"I think it is very important that we move as much of the building process into the shop as possible. From time immemorial good architecture has meant preciseness. Why should we, who are most technologically able to do the precise thing, accept something crude?"

Isn't precast concrete more like steel construction than cast-in-place concrete? It's an affair of joints, connections, and individual pieces.

"I think of it as large-unit masonry. Masonry is also an injunctive material, but it is only available in relatively small units. Consequently, a conventional masonry building has millions of joints. But in the Gas Co. building we'll cast panels at least 12 ft. by 10 ft., and maybe we'll cast them two stories at a time, which would make them 24 ft. by 10 ft.

"Now, we hope to eliminate the masonry joint and replace it with a piece of spring stainless steel in a formed channel between the panels to keep the water out. Then we'll calk behind the spring steel and design the front of the joint so the water can run out. The horizontal joint will be a lap joint. This makes a marvelous system. The



Arts and Crafts Society *in Detroit has a "controlled environment." The building is a "glass box" behind an intricate brick wall built at the lot lines. Space between building and wall (sketch plan, above) is paved with gravel and planted like a Japanese garden. A utilitarian central corridor (below) becomes an elegant exhibition gallery by virtue of a skylight and an open stairway.*

PHOTOS: BALTAZAR KORAB

neighboring panels can move independently without expensive expansion joints, too."

How are the precast members fastened to each other or to the structure?

"There are angles buried in the concrete at critical joints. These are welded to the structural frame on the job."

How do you insulate the panels?

"It really isn't necessary. When you think of all the ¼ in. glass buildings around the country, why should you insulate a 6 in. piece of concrete? All we do is put enough heat on the inside of the wall. I think we have to play it that way, because if you start to make sandwich panels it really gets to be expensive. This is one reason we make the concrete at least 6 in. thick. I'd also be afraid that thinner sheets would crack in an outside wall. Concrete has to have some mass."

It has been said that this is a steel building country. If this is the technological fact, isn't it the job of architects to develop a series of steel systems which could be standard and used for vernacular building everywhere?

"I don't agree at all. In New York, or in a few other big cities, perhaps

steel is predominant. But elsewhere most buildings are more logical in concrete because they're low. The Wayne education building, for example, came in for $19.40 a sq. ft. Certainly you could get a steel and curtain-wall building for that, but our building is going to be a much richer building.

"As for vernacular building, I think this is a real false goal. What we ought to do is to decide what kind of an environment we want in our society and then work toward it as naturally and simply as possible. I think it is quite wrong to say 'Look, this is the way we must all go.'

"At any rate, I don't think we ought to think about the vernacular style until we've got the models for it. We really have only one or two buildings that take the top of your head off. In every other contemporary building we admire the technical details, or the craftsmanship, or the proportions, but never the whole thing. In Rome alone you can wander around and see hundreds of buildings which are really something. The Italian Renaissance was derived from a philosophy and a technology, but within it people like Bernini and Michelangelo could really work individually. That's why I'm so interested in precast concrete. Right now we're fettered by the grid system we've had to work with. With precast concrete much more individual expression can come out."

But do we have room for individual expression in our tightly built cities? For example, don't you wish you could build a city all by yourself? Wouldn't it be a pretty wonderful place?

"I don't think it would be wonderful at all. I think it's wrong for one person or one group to build a city. A city ought to grow naturally with the help of many minds. It ought to represent the fact that we are an individual thinking society. Consequently, I don't think an architect ought to stamp himself all over the city. An architect contributes best when he can do individual buildings or complexes."

Does this jibe with your master plan for Wayne University (photo, p. 113)?

"Actually, I agreed with the university right off that we weren't going to pinpoint or plan every building. All we were going to say was this is *about* the way we should do it. The philosophy we came to is that Wayne, as an urban university, should make intense use of land. The campus is a superblock of 63 acres broken into courts. Some of these courts will have a water floor, some a grass floor. But most of them will have a paved floor because the pedestrian traffic demands will be so heavy that grass would be ruined. We think of this as urban landscape, like an Italian city.

"Before we prepared our plan, the university was thinking in terms of building one square foot of building for every one square foot of land. Averaged over four floors that means 25-per-cent coverage. Now, we've gone two and a half times that, which boosts coverage to 60 per cent. In a campus where the automobile will be excluded, I think that's an advantage. It reduces walking distances and I think spaces are actually nicer when they are small."

The only thing a small court-type scheme lacks is an organizational sense. How do you supply this organization at Wayne?

"We expect to close Second Boulevard, which is the north-south axis of the campus, in a year or two. It will become a landscaped mall which will be the main point of reference, so that the number of courts on either side of it will not be so many that you can get lost. Although we don't intend to connect the buildings with arcades, we do plan that the new buildings will have arcaded first floors as much as possible. So you can use the arcades to walk through the campus. The framed scene that you get as you walk along an arcade is very pleasant, especially when the outdoor spaces are small."

There will be many architects working on Wayne buildings, won't there?

"Yes, with 16,000 students now on campus, and 37,000 due by 1970, they need a lot of buildings. And when there are this many buildings close together in an urban scene, I don't think one architect ought to do them all. Not only does this make the campus monotonous, but a university is a place of many ideas. So why shouldn't there be a variety of the best ideas in architecture as long as they stay within the framework of the master plan?"

From a siting point of view, how did the design problem of the music building at Oberlin College (model photo, page 113) differ from the problem of McGregor or the Wayne Education Building?

"Of course, at Oberlin, Douglas Orr is doing the master plan. But the building design problem we had there was very different from the building problems at Wayne. First, Oberlin is a small town and the campus is on the streets of the town. Land need not be so intensively used. That is one of the reasons why we moved back from the Square with smaller buildings. We didn't want the buildings to overshadow the residences. We needed three units—one for teaching, one for rehearsal, and a practice unit. Since the teaching unit was symbolic of the school and was the largest unit in the program, we located it on the Square.

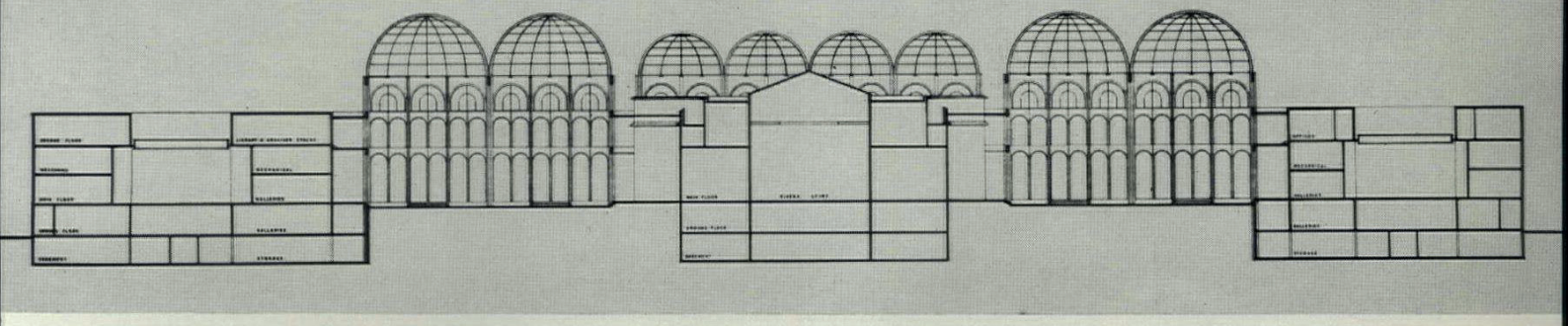
"We wanted to fill in the perimeter of the Square as much as possible. This hasn't been done at Oberlin, and it needs to be done, because Tappan Square is a very large, treed area. If you have more treed areas beyond the Square, then the Square itself becomes nothing—it leaks out to the sides. We also thought that a white building would be very good on the Square because as you looked past the dark trunks of the trees the building would sparkle in the distance."

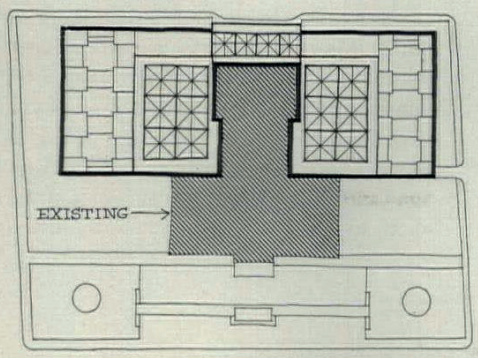
This morning, when you were having a conference on the Butler Library, you talked about the need for a central space. This feeling that you need a central space is very common in your design thinking. Is it because great architecture is really a single room, a temple, a cathedral?

"I'm not quite sure that I like the use of your word 'great' architecture. There's an implication there that everything we try to do is great architecture and that's a wrong premise.

"The reason we want to do this central space in the Butler University Library is this: The library committee, before we were called in, laid out a very practical plan that worked like

DRAWING BY ASTRA HANER





Proposed scheme for an addition *to the Detroit Museum of Fine Arts is organized around two interior courts crowned with glass and concrete domes. Galleries, which will open in clusters off the large courts (160 ft. by 200 ft.), will triple the space available in the present building facing Woodward Ave.*

mad for them. But after looking at this plan I felt sure that we could not translate their plan into an interesting building by just putting a façade around it. I think every building must express the experience a person has in it. When you have read intensively for an hour or so in a library, it's very good to get up and go elsewhere for a change of scene. If this can be accomplished in a beautiful way within the building instead of running down to the corner drugstore for a coke, then the library becomes a more useful instrument for the school. This is what the central space should do. It will be a very different kind of central space from McGregor or Reynolds. I don't visualize it as a grandiose space at all. I visualize it as a very intimate space, a lovely space which is fun to be in."

Of course, at the Arts and Crafts Building (photos, page 115) you have a different kind of central space again. It's really a simple corridor with a skylight.

"Well, the skylight is a feature of many of our buildings. The excitement of coming from a room with a low ceiling into a room with *no* ceiling—which is what the skylight does, you see—is really quite wonderful. In our buildings we try to think of what happens to a human being as he goes from space to space and provide the delight of change and surprise for him. If we can have these totally different kinds of experiences within one framework, then, each time you're in the building it's fun to be there. When you have a monotonous fluorescent feeling for instance, and you're there forever—which as far as I'm concerned is eight hours—then it's real boring."

What if a builder were to walk in here and ask you to do a 1,000-house subdivision?

"A builder did just that and we turned him down. I think that too many architects in our time take on too much. If you take on 10,000 acres to develop, you necessarily, because of convenience in the office, stamp out repeated units. This is the thing that's hurting us most, whether it's the builder or the architect who does it. We have to care more for our environment than to rubber-stamp it."

Of course, you're in a very fortunate position—you have enough work so that you wouldn't have to consider doing that job.

"Yes, we are able to select pretty well what we want to work on. But it's more than that. A long time ago I used to go around ringing doorbells and asking people to vote the liberal way. I spent a lot of time working on the Japanese-American situation. But as I grow older in life I find that it is really better to concentrate on a smaller area. I've been accused of not being interested in the social side of architecture. But I feel that there are plenty of people interested in this—thousands—and there are too few of us trying to create real beauty. And beauty is well worth dedicating a life to. How can you pay attention to every detail and do every piece of a building with loving care if you take on too much? I feel that perhaps we are doing too much."

You apparently feel that beauty is an outcome of infinite love and care. But isn't it also, in part, an outcome of social attitudes and social convictions?

"Everything is, in a sense, intertwined and integrated in life. But supposing I had a wheel that was made up of spokes of things that had to be done in our world. Some people would take half the wheel, others would attempt to deal with the whole wheel. I'd rather concentrate on a few spokes."

Obviously you are a much different person than you were ten years ago.

"Ten years ago I tried to do everything—and I did nothing."

This is youth, isn't it? Would you advise people to try to do everything before they settle down to one area?

"I think people have to grow up themselves. I try to tell my children, 'Look, I think these are the values in life.' And I think that's the only thing you can do. I don't think you can take them by the hand and guide them. I don't think this works at all because pretty soon, if they are lazy, they'll let you lead their life for them, and this is very bad. The most important thing is to bring out the creativity in each person and his ability to think and be an individual."