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INTERVIEW WITH

TOSHIKO MORI

Toshiko Mori Architect Offices

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Toshiko Mori Interview

Pg.2

QUESTION:

01:00:39;25 Thanks for doing this. We appreciate it, and hope to have a little bit of fun here. I'll tell you, a lot of people always wonder how people get started. How do you become an architect? You start out, you're a little girl somewhere. Just give us a little story about how you started, why you became an architect. What attracted you to it? Maybe who inspired you.

TOSHIKO MORI:

01:00:57;09 I started being an artist. And I went to Cooper Union. Before I went to Cooper Union, I studied art history in Florence. And an opportunity to meet a gentleman named Leonard Meiselman, who went to architecture school, and he's an architect-artist. And Florence is a perfect city to study both art and architecture.

01:01:22;24 And while I studied art school, it was in the back of my memory, how that integration of art and beyond paintings, and beyond isolation of being an artist is a bit lonely business. To venture into something different. And Cooper Union has art school, engineering, and architecture schools. And architecture school was just ground floor below, so I used to go in there, and got there.

01:01:52;08 And one of the collective project I did with my colleagues in art school was, at that time was '70s, early '70s, and by environmental art,

Toshiko Mori Interview

Pg.3

installation art, that was beginning of it, was three of us got together and decided to paint a corridor of architecture school all white. That was event. And lo and behold, at the end of architecture school, there was John Hejduk, who was very well known as white architects along with other architects, such as Richard Meier, Peter Eisenman, Charlie Gwathmey, and so that's was coincidence.

01:02:29;05 And he walked up and he says, "What are you doing" We're artists. He says, "Event, this is insulation." And we're just painting a long corridor white. And he said he liked it. In retrospect, I thought he was very generous, because it's close to vandalizing an environment. But he kind of let us do it. And I looked at projects other architecture students were doing. I thought it was a little more socially engaging. And there are a lot of collaborative aspects that I liked.

01:03:02;08 I just talked up the dean's office. I said, "I'm very interested in switching to architecture." He told me to bring in your portfolio, which I did. And he is very interesting, idiosyncratic, amazing visually, architect on his own. And probably one of the most significant architectural pedagogue in this country, 20th century, for sure. He died in early 2000, July 2000.

01:03:32;28 And he said to bring in your portfolio. And in my drawing portfolio. He basically looked at it, and he said, "Architect who can draw. You're in." And that's it. I don't know if it was kosher or not. I did have, you

Toshiko Mori Interview

Pg.4

know, high school as in sciences and math. And I'm you know, it was okay.

01:03:52;04 So I got into architecture school, switched it. And I just loved it. And kept studying. I think five years I spent at Cooper Union School of Architecture, still to me, is one of the most exhilarating, amazing, happy experience. Highly challenging. And that's one of the reasons why I still do practice and teach. And he always told me teaching is a birthright of an architect. It's a social contract. You build for the society, but at the same time, you have to do work to cultivate next generation coming up. So that's always very deep in my mind. So that kind of set a path for me.

QUESTION:

01:04:37;11 And what was the first architectural project you actually worked in, other than the white hallway?

TOSHIKO MORI:

01:04:43;02 In school, or outside of school? Like, in school, he had a very, I would say, strict pedagogy called nine square grid. You set up a nine square grid. And you work with abstract shapes and so forth, since its formal spatial explorations, to learn about scale, learn about proportions, sequences. And also relationship of one object to the observation, relationship within a frame of one thing to the other.

01:05:17;26 And also, it's scales. It's a 12 foot grid, quarter inch scale. So one is

Toshiko Mori Interview

Pg.5

always conscious about human scale. So, human bodies work within the shapes and sizes object work in. So that's actually the first exercise you work on as a student.

QUESTION:

01:05:36;07 Now, was he the one that was part of that New York Five school?

TOSHIKO MORI:

01:05:38;08 Exactly.

QUESTION:

01:05:38;26 I've always wanted to know. How do you become one of five? Why aren't there six? How does that work in the architectural world that you become this five with the Texas Rangers?

TOSHIKO MORI:

That's he is a Texas ranger, yes.

QUESTION:

How does that work? I mean, the people, a lot of people don't understand how that works in the art world, the architecture world.

TOSHIKO MORI:

01:05:52;24 I think it's just a coincidence. There are a group of people who are in Texas, teaching together. And then, they came up with a similar idea, ideas or ideology. And about ideas mostly. And I think also, you could say styles and manifestos. That's Texas Rangers.

01:06:17;19 And then, in terms of New York Five, again, five like-minded architects

Toshiko Mori Interview

Pg.6

got together and decided to approach it together, and publish a book together. So that's kind of collaborative way of working together. I think number is probably more accident.

QUESTION:

01:06:34;27 Yeah, good point. Now, so, a lot of architecture, it's thinking, it's philosophy. But some people might think it's drawing and building. So how do you develop your own sort of philosophy of how you're going to approach the world of architecture? Where's that come from?

TOSHIKO MORI:

01:06:48;19 That's a very important question. Because very few people think of architecture relating to philosophy. And strangest thing about is my choice, was going to study art of French philosophy, French literature. And I was very much interested in philosophy. In high school, I read a lot. I still do read a lot.

01:07:12;03 And the reason I was really attracted to architecture is not only it was artistic discipline. I was also interested in sciences and technologies. So it intersected, arts and sciences. But also, it had philosophical underpinning. Because the way you think of the world, the way one will construct a thinking process, is like architecture. You're building logically, rationally, how you think of society.

01:07:40;20 So, in a way, we do buildings, but buildings do influence the way people behave and think. So one has to be very conscious about how

Toshiko Mori Interview

Pg.7

you place buildings, how you design it. But really, go back to what is the idea, what's the philosophy you're proposing?

01:07:58;23 But type of life, how people will think about you know, how the future would be like, or the present and so forth. That's a very, very important part of it. And I think I would say every architect that I know is a philosopher on his or on her own. I mean, not be as orthodox or academic as true philosophers are. But there's a discipline in the way we have to think about logics of thoughts. And the process is probably as rigorous as the way we put physical materials together to make buildings work.

QUESTION:

01:08:46;12 Now, I read something you said, that when you get a project, the first thing you do is you start doing research.

TOSHIKO MORI:

01:08:52;19 Right.

QUESTION:

01:08:52;29 Now, that's obviously part of your style, your philosophy. Why do you tell us how that works.

TOSHIKO MORI:

01:08:57;21 Well, I think one of the reasons and joy of architecture is that every project is different. Client is different. Problem is different. Location is different climate. So it's fun to enjoy having something fresh. And

Toshiko Mori Interview

Pg.8

you start from zero, but then you do cumulative studies. 'Cause I'm really a student, perpetual student. And I think all every architect is want to be a student. Because one is always learning something, and that's part of the excitement about it.

01:09:27;10 And then, one would always discover something you haven't known before. And then, about sight, especially with culture. And in your mind, you start to put pieces together, to come up with geography or mapping in your own mind how these disparate elements can come together, so that one can, in my mind, I mean, to weave a tapestry, like. And then, coming up with the big picture that has a narrative to it.

01:09:57;12 So, in every architecture and creative process, there is a story. But since architecture involves so many different people, one has to come up with a very strong point of view, as well as narrative, to let other people participate and understand. And then, make it into a building process.

QUESTION:

01:10:19;16 So when you work with your patrons, you need to be able to tell that story, to draw them into this thing you've created? Tell me is it always easy to convince them that if a certain philosophy or narrative or how does that work, when you're working with people?

TOSHIKO MORI:

Toshiko Mori Interview

Pg.9

01:10:30;29 And also in architecture, it's a social art, meaning it's not as if artist is isolated in a studio, making a painting, meaning you have to interact with clients and engineers and design processes, lots of collaboration that takes place. But also, with clients, community group, communication is essential in their work. So that you have to have many people get excited, buy into the whole idea. And even engineers who are doing air conditioners, they have to understand ideas, philosophy, why we're doing it.

01:11:09;09 I would show example, one modern house. Mechanical engineers understood, all of a sudden, that quality of sound in space is essential. Just because I was telling a story, this is about the visitor center in which people will come in, and they will contemplate very quietly, by observing the masterpiece of Frank Lloyd Wright, experiencing from outside a building before they go in.

01:11:37;11 So when I tell a story like that, engineers are human. They experience, they understand. And they made a very elaborate plan under the floor, so that you don't really have environmental air noise. I didn't tell him how to do it. But he figured it out, because he understood the narrative and ideas behind the design.

QUESTION:

01:12:01;01 It's because actually, as you said, they experience these buildings from spaces, don't they?

Toshiko Mori Interview

Pg.10

TOSHIKO MORI:

01:12:05;22 Right.

QUESTION:

01:12:07;10 Now when you said, you know, you started out, you became the architect. But you developed a certain style. There are certain things that you work with more, like materials, I know, is a thing you're really into. Tell us how you sort of moved into that so much, and why that's so important in the way you work.

TOSHIKO MORI:

01:12:26;12 That has a very long history for me. Because when I grow up in Japan during, when I was born, Japan was occupied by U.S. military. Because I was there, I grew up and the childhood was very scarce in materials. Every city was bombed. There's not really a distinction between poor and rich. None of the kids had toys. There's not toys being sold. So we learned to make our own toys. Or my grandmothers would make clothes for me, dolls. We made do with whatever we had.

01:13:07;13 But I think my friends, all my generation, we never have felt poor as a result. We just never felt we are materialistically challenged. And that kept in back of my mind about the wisdom of and creativity of dealing with scarce resources, and how one can bring into richness in life.

01:13:33;25 So in a sense, it's a sense of frugality, a little bit. And sense of

Toshiko Mori Interview

Pg.11

necessity. But then, I think I grew up being told to be very careful about use of materials. And every piece of paper, wrapping paper, was cut up and made into my drawing paper. And we kept reusing it and reconstructing it. So my interest in materials, in a long story, comes from that tradition. And of course, being Japanese, we inherently had that attachment to materials as a culture, also. So doubling that.

01:14:14;03 So that's a continuation to a lot of extent, in my use of materials, and having certain affinity, and having certain quality the material can give. Again, going back to the experience of it. So it doesn't matter how expensive materials or inexpensive materials. Some of them are highly utilitarian, industrial. But there are certain aspects of it one can learn to enhance it. It comes naturally as an architect. Because material is what we use. For painters, it would be colors and palettes, and things.

QUESTION:

01:14:49;19 But haven't you said that architects need to pay more attention to materials. They don't do that? And what's that all about?

TOSHIKO MORI:

01:14:58;20 Well architects, especially the way in the profession I think it's overall. We have more other specifier. We pick materials and apply it. That's the way how profession has been really run. 'Cause it's kind of in your

Toshiko Mori Interview

Pg.12

design, materials come first. So if anything, in terms of pedagogical invention I did, is to integrate material as a part of studies, not as something which is applied after.

01:15:36;00 And even a little bit of critique of education that I had, was more formal. You come up with the shapes and forms, and you don't come in to terms with use of materials, the property materials until much later. Also, master architects such as Louis Kahn, Le Corbusier, Mies van der Rohe, always integrated it. So was bit of my critique for professional critic's way it's been told.

01:16:01;13 So that's something I kind of brought in, especially when I went to teach at Harvard, where it was incredibly formalistic education. And I sensed there's a sense of a deprivation in education of architects that was greatly missing. And especially at advent of digital, meaning computer use, one is farther removed from physicality of materials.

01:16:28;17 But at the same time, computation and digital, invention of, in architecture and design, it made activity much more relevant. So, as you know, there's all was a counter reaction to it. So I think when I arrived there in '95 that was something everybody was craving for. It became very much of something everybody embraced as an interesting direction to go into.

QUESTION:

01:16:59;02 You said that you think the architect should be more into the

Toshiko Mori Interview

Pg.13

fabrication as well, correct? Is that another thing you thought it was people had been too removed from it?

TOSHIKO MORI:

01:17:08;14 Well, that's too removed. But also, when you work with computer, which is a very precise tool, or using computer to precisely calibrate, because it's not like a freehand drawing. You're inputting numbers to make it. So it's mathematics, quantification of it. And computers are really not a design tool. But it's inherently a fabrication tool, which means it makes fabrication much closer to the process of design by using computers than ever before.

01:17:42;21 So it has a very strange one is removed from actually making it, hand making it. But one has to be more informed about fabrication process, in order to use computers well. It's too precise for design. And then, it's perfect for assembling buildings together. Because it's coordination, it's close, it's precise, and so forth.

01:18:05;02 So I saw the two needs coming together. One is the understanding of the weight of materials how things are made traditionally, handmade. And of course, mechanical production, which is made in factories as a result of Industrial Revolution. But now, digital production is something else. It's at the time when you can work on computer, and then, you design something, and it just pops up in the other end. That's can fabrication is very close. So it's more than ever, architects

Toshiko Mori Interview

Pg.14

have to know fabrication process much more sophisticated process than ever before now.

QUESTION:

01:18:44;28 So as the world changes and the tools change, you have to constantly learn more and more, don't you?

TOSHIKO MORI:

01:18:49;10 Right, right. Constantly. But it's also going back to middle ages, too. The close relationship of crafts, the direct relationship of design making process, ironically was made evident by the computer, introduction of computer into design process.

QUESTION:

01:19:07;27 An example would be the...

QUESTION:

01:19:23;19 All right. We can start back in there. We were just talking about the old style middle ages and the digital computers. And I thought maybe weaving was an example of something. Tell us a little bit about your examples of weaving, and how the digital age and the hand age have sort of come together.

TOSHIKO MORI:

01:19:37;24 Come together? I'm very much interested in weaving as a fabrication process. And in fact, I'm supposed to do a book. I actually have a book called *Textile Tectonics in Architecture*, which I'm working on.

Toshiko Mori Interview

Pg.15

And I applied for a grant to do further research next year. 'Cause more and more, I looked at it in terms of material. It's really the future material. It's in medical and also aeronautical, as well as in structural. It's really coming to force. It uses materials very efficiency. And it takes a weaving as a different patterning to enhance a performance. You can change a pattern from one space to the other, so that you can optimize a performance. One can give it layers, or one can combine different materials. It's a very ancient technique. It exists in every culture, every civilization. Usually it's made by a woman, and sometimes prisoners and marginalized population.

01:20:48;14 But then, in Mesopotamia and Egypt, it became a major production for industry. In New England, it's the same way. Woman has made weaving and quilting and all that, to make certain cottage industry going. So there's that, interesting to me that feminization technology part about it.

01:21:11;26 And also, it can be produced in three mode of production, which is handmade mechanical production, and also digital production. And because it's weaving is a binary process, like on and off, electric circuit, the traditional loom can be plugged into computer right away. And as some of original FORTRAN pattern books are really from a weaving pattern. So there's a really close relationship in which this is one technique in which if I can come up with fabrication process, it can

Toshiko Mori Interview

Pg.16

be done by underdeveloped countries, or a medium mechanical production factory, or highly sophisticated production using computers.

01:21:59;12 So it's very few techniques and fabrication processes that can straddle those three mode of production. The next project is ceramics. But that's another thing. It's very interesting that both ceramic and weaving are both ancient crafts. They can actually able to bridge between three mode of production.

01:22:18;25 And also, flexibility is interesting. That's another study I'm doing with weaving, which is technologically speaking, instead of conceiving structure as something static, which resists the force like, you have to have a very big column to hold up the buildings, because you're really going against the force.

01:22:45;16 But textile has a way to translate forces. So it dissipates the forces. Like, if you have a light material, because it has fibers, it distributes the forces. And therefore, you don't need as much mass of material to act more effectively in structures. It's called dynamic way of structural engineering. Which means that you can do much more efficient way of resisting earthquakes, for example. Because only thing it does have to do is just get the force, and to be able to distribute.

01:23:21;27 Hurricanes, they already using textiles to protect the houses in Florida against hurricane. Because it let the winds through, and it can be flexible, but it can actually prevent houses to be hit by some hard

Toshiko Mori Interview

Pg.17

materials, like rocks and some flying object, and so forth.

01:23:43;00 And also, it could be layered, so that it could be densely woven, layered. It could be waterproof, but it can let the air through at the same time. What I call is multi-functioning properties it can have. And, it could be highly insular too, meaning to have thermal properties, as well as it could be fireproof, because of fibers you can do. So it has an amazing potential.

01:24:15;00 And one of the research I'm trying to do is to really use a textile tectonics as a new way of fabrication to enhance the performance of buildings. So it's a very big agenda I have. And what's nice about it is you could have the same results by refugees' hand weaving in refugee camps, to have some efficiency built in. And it's a technique, you can just give a diagram. It's like knitting. Some *Ladies Home Journal* has knitting, embroidery patterning. And that's all you have to give to have things is a visual way of communicating matter of technique.

01:24:56;15 So, for all these reasons I just have to have one year, a couple of more years to go into potential of weaving. But also, weaving, knitting, crocheting, braiding, as techniques of fiber arts as next step in coming up is techniques in material.

QUESTION:

01:25:19;29 So you actually run the experiment somewhere in a laboratory?

TOSHIKO MORI:

Toshiko Mori Interview

Pg.18

- 01:25:24;13 I have to be collaborating with a very high tech laboratories. There's a lot of laboratory along New England. It's interesting, New England textile mills, but now, a lot of military, medical experiments are being done. So they actually can fabricate some of it. But I think what I'm trying to do is a technological transfer. The problem with architecture and building arts is that it lasts longer than, it's not a really not a consumer product at all. So that research for new materials are very rare. Military, they have to save lives.
- 01:26:07;05 Medical research, it's very expensive. But it's inexpensive compared to what they have to do with remodel human muscles, and so forth. If they have a little lace doilies they can implant in human body, that's much easier way. And it's a value attached to it.
- 01:26:27;12 But architecture is built to last for a long time. So what I have to do is to collaborate with the people who have techniques and technologies, to transfer the techniques to use of architecture. And I work with boat builders a lot, because boats such as America's Cup boat, the boat's hull is all fiber, carbon fiber, fiberglass Kevlar. And interesting thing, of its easy, because they construct a shape. And they work with nautical engineers in terms of resisting the forces of water when they're sailing.
- 01:27:05;11 But forces against boats go sideways, lateral force, which is same force as wind forces or hurricane forces that we have to deal with. So

Toshiko Mori Interview

Pg.19

when you translate into a formula, you can quantify it a similar way. It could be water, it could be wind, it could be earthquake, it could be gravity. So one can translate the calculations they do for boat building to structural engineering fairly easily. They can exchange files.

01:27:33;00 I've done staircase in Florida using a technique a boat builder. And it met the Florida code, just because they could exchange files and formulas, it meets standards. So that's the kind of thing I'd be looking for. 'Cause it's very difficult to invent new materials. It usually takes 15 to 25 years to invent a new material, technique, get it tested and passed the code, and all that stuff. So it's easy way out. But it's available. It's just not used for building.

QUESTION:

01:28:06;25 So this whole, this is a pretty innovative process...

TOSHIKO MORI:

01:28:10;00 Yeah.

QUESTION:

01:28:10;14 ...that you go through. Is that some you do this all by yourself, or do you have a group of people that work with you? And you manage them and try to just keep these processes going? How does that work?

TOSHIKO MORI:

01:28:19;07 Well, I have a group of collaborators, loose network of friends and

Toshiko Mori Interview

Pg.20

likeminded people who are interested in it. So I have a lot of conversation with engineers in Stuttgart, Germany, especially. There's an institute of lightweight structures one I saw back. It's founded by Frei Otto, who has done Munich Olympics and a lot of fabric structures. And they're really dedicated to making least amount of materials who use the strongest. And they do analysis of what you call dynamic forces. So ingenious, I work with.

01:28:56;09 And then, some material scientists I know in MIT that I can work and collaborate with. And industries, people in industries. So it's really a loose-knit group of collaborators. Again, architecture is not like a medical school, in which we can have a credible institute. And as you know, research money is not a lot here. So I have to be very inventive, in a way, to have a collective to do resourceful way of research, more than anything else.

QUESTION:

01:29:27;28 And does everybody do it for the pure joy of research, or 'cause they think they're making the world better? Or there's some payment coming? Or what's the motivation to continue?

TOSHIKO MORI:

01:29:35;08 Well, motivation for industry is they can find a different use and different market for something they already invented. Which is a very big plus. And they think they have put in already resources into

Toshiko Mori Interview

Pg.21

making something. They thought it just for medical use.

01:29:54;00 But then, if I can say that could be used for interiors of buildings, or to safety knitting for the hurricane, and if that's a huge market. Even insect netting. And in combining textile for insect netting, so that it can double as a protection device. So it's kind of inventive combination and collaboration, is quite attractive to many industries. That's how I get them to come on board.

QUESTION:

02:00:07;23 Tell us a little bit about Chris, it's Bangle, right?

TOSHIKO MORI:

02:00:10;18 Chris Bangle. BMW, yeah.

QUESTION:

02:00:13;07 Tell us how you work with him and what you guys are doing together.

TOSHIKO MORI:

02:00:15;29 I met him at Davos. And then we started talking. He's an innovative car designer. And he's experimenting with this textile called Gina, which shapes the exterior of automobile. And it performs kind of a similar idea. It kind of inflates and flaps up. And you can make a cuts that appears and disappears. So it's a very surreal idea, we're using textile as an optimum material to work with a high standard of performance of something like a high speed automobile and so forth.

02:00:58;21 And then we were talking about that. And then I asked him, when I

Toshiko Mori Interview

Pg.22

was chair, he was probably one of the last person to ask to come and teach students in architecture. So he did that last semester, with two German architects. And they're using this particular textile idea to do a house. So how do you translate technology of automobile design and then technology of building house. And how this particular material they have invented, that responds to fabric and textile for a building design.

02:01:31;28 That's exactly the kind of technology transfer. Of course, in terms of houses, it's too expensive. I mean, this is really a sleek thing. And I think it's just very expensive, one-of-a-kind automobile design. But it's, again, I think no matter what, initially innovative materials are expensive. But usually, used for leisure uses or, you know, automobile driving and yachts and things like that. But eventually, once it's done, it kind of comes down to prices and so it's really a matter of inventing different use and then see how and other uses, and see how pervasive that kind of idea can go through. So.

QUESTION:

02:02:16;10 So you think down the road, here, you know, decade, two decades, whatever, that a lot of these materials, things you're working on, will become standard building blocks of our buildings in our culture?

TOSHIKO MORI:

02:02:26;06 It will be efficient, inexpensive. Some of them, maybe, even portable.

Toshiko Mori Interview

Pg.23

And flexible. One thing that concerns me, I think houses are too expensive. And then some of them I think some of the way we build will stay. But is there any way of more flexible uses that adaptability, more responsive? And I think with textile, it could be more environmentally responsive.

02:02:57;02 And then if it could be made out of recycled materials, it could be recycled back. And many textiles can be taken apart, reused again. And that type of resource, I just think we just have to come up, invent a different way of making buildings. So that's our traditional way of building stays. I don't think it's going to change. But it seems as if we have to figure out another way.

QUESTION:

02:03:25;17 Here, let me kind of switch gears a little bit here. We always sort of ask this question. Is this a tough business to be a woman in? Are there barriers to entry? I mean, back at the time you were going to school, I mean, was it tougher? Were there gender imbalances, et cetera? Tell us a little bit about that.

TOSHIKO MORI:

02:03:41;26 I went to Cooper Union and Dean Hejduk always called us by our last.

TOSHIKO MORI:

02:04:02;03 I went to Cooper Union. And when I started, it was Dean Hejduk. And all the professors, they always called us with our last name. So we, as

Toshiko Mori Interview

Pg.24

individuals, had no notion of gender differences at all. I think that's strange, it's that way. And we were just educated to be individuals. So once I'm out of school, I realize there's a gender gap in my profession.

02:04:26;08 And it was very interesting because first job I got, I was immediately put into Interiors department. Who's [was] helping a wife of the architect, picking colors, but I like the materials. I didn't mind it. So there's prejudice existed and does exist today about the role of women in architecture. But soon it's a very competitive business, no matter what. And you have to be an individual before you're a woman. You have to have an individual vision. You have to have a particular niche or the way you go about you know, establish one's identity quite quickly.

02:05:13;08 So soon afterwards, it really didn't become a lot of an issue. At my firm, we have many women working. And they make joke about my office because all the women, they're the ones who go to job site, construction site. And the men in our office are doing little models and little fancy drawings. And it's usually the reverse of other office and the women in my office are tougher ones.

02:05:42;24 But I think it's probably, maybe, a subconscious, unconscious way that I'm encouraging younger women to be really active. And then not be afraid and just claim the role that way. Maybe. I think that maybe. I

Toshiko Mori Interview

Pg.25

just encourage them to really follow through in construction site and have boots and just get your hands dirty and work with the contractors. And work through the environment.

02:06:06;12 But it turns out to be women are better in construction sites than men. First, they don't have ego problems. They don't get into fights with each other. And then I have to say, still, typically, more collaborative, team workers. And they tend to have a clear goal and don't really have issues with who's better and just get things done. So every single job I have, clients really praise project architects where women, as somebody who's been very helpful to resolving conflicts on the job sites.

QUESTION:

02:06:44;28 Take me through, sort of, a process. Somebody comes, they want a building. They meet with you, then you come up with ideas and talk to your staff? Or is it a collaborative? How does the flow of how that work, that process?

TOSHIKO MORI:

02:07:00;05 Well, the clients come. And I think what we mutually seek is that we have a same goal. We have a very good understanding, chemistry. And we share the similar quality that we're looking for. And I usually oversee all the designs. I assign a project architect and associate architects within the team.

Toshiko Mori Interview

Pg.26

02:07:23;16 And we work as a team all the time. I have ideas and then everybody comes into ideas. And then have client always as a part of a dialog of a design. It's time consuming, but it's much better to have clients involved in bit of details. Because, for them, many of them, at times, is learning process. But they will be much better informed if they are part of a process. Not just presented with finished product drawings and models and so forth.

02:07:54;19 There are certain things that they feel they may not want to know. But it's a difficult process. And it involves money, it involves safety, it involves the fact that they are schools, they are houses of families. Museums. How will their communities they represent can work with? So for them, working with architects there's a risk factor involved.

02:08:24;24 What we try to do is try through a dialog to communicate as much as possible. So that they are kind of buying in to the concept we are presenting with. So I think throughout, we work collaboratively. And also, my firm is not very big. And I have been lucky that I have only had clients who share the same goals and ideals. It's just maybe it's just mutually, we influence each other. By the end, we share the same thing.

QUESTION:

02:09:04;18 And then, how do you keep your staff motivated to constantly perform at a high level. Is that a challenge or does that just happen?

Toshiko Mori Interview

Pg.27

TOSHIKO MORI:

02:09:10;20 No, I think they are, like, excited about it. I think our firm, we have a different type of project, different locations and different sizes. Institutional, residential. And some of them are large master plan projects. So they're very excited about the variety. And they're excited about challenges.

02:09:31;12 And they work long hours, sometimes. And we ask, "Why do you want to?" But they would want to accomplish. And I think a key for me to motivating them is they are constantly learning something new. And they're constantly challenged. And they have a sense of accomplishment. In that they're part of that team to make something come true.

02:09:54;20 So it has to take somebody who share that goal. If it's somebody who just want to make a lot of money, it just won't work. But architects in general, their goal is quality of life. Goal of achieving something they believe in. I think that they have to come in with more idealistic mindset. We should be paid more.

QUESTION:

02:10:24;20 Is that what drives you, a passion for improving the world

TOSHIKO MORI:

02:10:28;23 Oh, yeah, right. Right.

QUESTION:

Toshiko Mori Interview

Pg.28

02:10:30;01 Tell me a little bit about that.

TOSHIKO MORI:

02:10:31;24 Improving the world?

QUESTION:

02:10:32;24 No the passion that drives you.

TOSHIKO MORI:

02:10:35;16 Oh, I definitely I think one of the pleasure of architects is that if you build, and hopefully everything I build is of a quality, and there's a lifetime joy to people who live or work in it. And that's a daily thing that people experience. And if I get it just from feedback I got up this morning and I felt great in the house. Or, like, I look forward to going to work in your building.

02:11:05;05 I mean, that's very small. But, to me, that's better than getting a huge amount of money. Because that gives me more value for sustaining me as an individual than money I'm probably stupid by saying so, but I mean, that's what sustains young architects who work for me. That they make a difference in the world. And it's always about humanity. Contribution to humanity to a certain extent.

QUESTION:

02:11:37;10 So when you're teaching at Harvard, I mean, can you look and say here are 20 people, these ten are architects and these ten are gonna change they're gonna do something else? Can you tell what's driving

Toshiko Mori Interview

Pg.29

them? Is it obvious when they're first starting out?

TOSHIKO MORI:

02:11:51;18 I think most of them have these ideals. These days, some of them switch from different disciplines. Economists, financial sector, even medical doctors. As a medical doctor, you save lives. Why? Then they say it's like they want to do something a little more lasting. It's about environment.

02:12:14;02 So the ones who already invest to come to schools have thought about it. And have thought about challenges. And other consequences that goes with it. But life of an architect is in one sense, very blessed because I think we always, it's much more forward looking, proactive and creative process we go through. Which so every project we get, we kind of consider a great gift. Then it's just matter of having to, you know, give back something better to the community. So that kind of high ideals drives us and gets us going.

QUESTION:

02:12:59;01 Well, what are some of the things that you've done that you're most proud of? You've done a lot, but I mean, are there two or three things that stick out?

TOSHIKO MORI:

02:13:06;14 I can't, it's like every child. I did a house for a woman who's about 81, 82 years old. And she had somebody who's older, you think it's,

Toshiko Mori Interview

Pg.30

you know, short time to look ahead. But the process in which we worked together gave her immense idea of changing the way she looks at life. Not as an end in itself but as beginning of all that.

QUESTION:

02:14:11;23 Okay. Tell us about the house you designed for the 80-year-old woman. And you were gonna start, tell us that story.

TOSHIKO MORI:

02:14:16;25 Right. Well then I think the idea of working with her, we realized that there's issues of isolation in old age. In which I think one is always suffering. Which I didn't realize at all. And then work through this house in which she is alone, but she can have a company. But then always she...

TOSHIKO MORI:

02:15:05;11 And I just working through with her, that something very simple about views from the house and how views from a house will connect her directly to the nature. And idea of natural light importance. I'm not sure, very fundamental aspects of it. But we had worked it through. And idea of natural ventilation. This really was house became a very sustainable house in terms of orientation to maximizing sunlight.

02:15:35;20 And especially in the winter and fall. And enough shade for summertime. And for her to be able to manipulate the house and maintaining it very simply. So that she has an autonomy,

Toshiko Mori Interview

Pg.31

independence. She doesn't feel she's depending on other people to operate within it. So self-sustaining for herself. And also, the house itself. Which is very economical in terms of fuel and so forth. It's very easy to maintain.

02:16:04;10 All that kind of issues came together. And it's somewhere she was able to live alone for a number of years. And now she's about 86 or 87. But about five years of her life, this is where she revived quite a bit in terms of how she was engaging to nature and people. And then I realize that it does small things we think about part of life does have a direct effect on human life. I was able to see that. So that was a joyful thing.

02:16:41;16 And another project, it's nearing completion, is Darwin Martin House visitors center in Buffalo, New York. I'm proud of it because it came from a completely grassroots movement of people in Buffalo. Just regular citizens wanting to preserve Frank Lloyd Wright's masterpiece. Organized fundraising and restore the house, rebuild elements that were destroyed. Put together properly. And completion was held to have a visitors center to take care of a crowd that comes in to see it. And to have exhibition and so forth.

02:17:20;21 So it took a long time. And from completion to completion about five years. But they have put together, and Buffalo is not the wealthiest place. Nearly more than \$30 million they have raised to completely

Toshiko Mori Interview

Pg.32

restore, rebuild and build a visitor's center. It's a civic moment of preservation. And everybody who was involved, amateur preservationists and work with historians, University of Buffalo. So I'm proud of that project because it's really, it came from heart of citizens. And it's not institutionalized effort. And I keep telling them, "You have to make this particular project known to other people because other communities can organize themselves to do such a thing." It's a victory of community organizers. Before our current President.

QUESTION:

02:18:26;21 Let's talk about some of these principles when you're an architect and how you apply them to a couple of your projects on these models. And so we'll just follow you. Just tell us about Poe House. How that came about and some of the features of it.

TOSHIKO MORI:

02:18:37;25 All right. This is in Poe Park in Grand Concourse in Bronx. And it's for parks department. It was a result of competition. And this is a very big park. Grand Concourse is right here. And there's a very large park in front of it. And what's interesting is there's a very big band shell on this site, which is very active. They have a jazz festival like nearly night in the summertime. And also, there's a market there.

02:19:09;01 Now, this site is a little cottage which was the last residence of Edgar Allan Poe. And this is a house not at that location. The location was

Toshiko Mori Interview

Pg.33

slightly on the other side. It was relocated. But this is the exact house where he had written *Annabel Lee*. And this was where his wife died. And so afterwards, he kind of went back to Baltimore and kind of died immediately afterwards.

02:19:33;06 So there's a historical house is there. With his furniture still intact. And it's quite an amazing, interesting house. So this was a parks department idea of a community, small community center, but also takes of Bronx Historical Society in terms of historical archive for Poe House. So that there's a large window in here which perfectly frames the Poe House here.

02:20:06;25 And this is also, is directed toward a band shell. And then parks department building is really celebrated public bathroom here. But it really takes care of big crowds that gathering. So its intersection is very two different type. One is introspective, contemplative idea. One is much more public gathering idea. So they kind of come together from two different perspectives, but sharing a function together.

02:20:34;07 And this is more of an urban façade that you can slip into. And then this is more of a park in which people play together. So it has two entries. And then two other orientations. So in a sense, this particular building confluence of two different communities and two different uses together.

02:20:55;14 But reference to me was I did a lot of reading of Edgar Allan Poe. And

Toshiko Mori Interview

Pg.34

what's interesting about it is he has two aspects. One is called arabesque and one is grotesque. More people are more familiar with his grotesque part. Which it's more of a daily issues in some of the areas in which some terrible aspect of humanity is manifest.

02:21:20;12 And arabesque is he probably is one of the founders of science fiction. Or fantastical ideas. More dream like. So in a way, based upon that, his body of work has posed two opposing facts. So my plan is bent, but it doesn't quite come together. It's sliding into each other. So the entry, so that one will slip through this way. One would slip through that way.

02:21:49;00 So in a way, that his work has a very opposite side and this park has opposite side. And there's a flow of people who are coming together. So that's kind of, in terms of Edgar Allan Poe, his work has slightly uncanny. There's a way of not very direct, but through reading through it, you discover some unusual aspects and a little bit of surprise.

02:22:16;12 So you really don't know exactly where the door is, but you will find in by let's through it, find out a surprise. And material here, because it's a parks building, has to be durable. And instead of using bricks or concrete blocks, what I'm applying is using roof shingles. Slate, roof shingles. And so that it's a traditional material, but used on wall clotting instead of roof. Traditional New England material.

Toshiko Mori Interview

Pg.35

- 02:22:51;18 Also durable, but also has a texture of feather-like. And one of the parks volunteer group's name is Ravens. Like Raven. So in a sense, metaphorically, a shape of a building is both like a rising and falling ravens. And it's in a suspension. And we have installed lights at the very bottom of a roof. So that at nighttime, the building is very quiet and dark, but the roof itself is lifted.
- 02:23:25;22 So in a sense, it's kind of floating in a landscape. Has a little bit of raven silhouette. So concept of building is that functionally, it takes care of two opposing sides of it. But as a building it, symbolically, somehow, in a state of suspension somehow. Be in a reality, in a fantasy. That kind of a balance.
- 02:23:48;23 And it's a dark building. Black building. And it blends into it, but we don't want to be too much related to darkness. I think some balancing a darkness and then life of Poe itself. So it's a very difficult building in terms of research, to come up with this balance. So we don't want to make it like, you know, Halloween central per say. But at the same time, understanding through that.
- 02:24:21;15 In the bathroom, we have digitized portraits of Poe in it. So once you enter into it, you really don't realize it because it's just a pure pattern. Because when you step back, you see the Poe's apparition appearing in it. So it's kind of a very subtle way of figuratively telling that's to do with Poe. But in a way, it doesn't say a lot about Poe.

Toshiko Mori Interview

Pg.36

02:24:46;28 But my experience, my intent as an architect is to kind of get into the understanding of this optimistic and pessimistic point of view. And at the same time, serving the community and public use. So in terms of materiality, I think this texture and also slate is long lasting, durable. It's a traditional material. And some of them are recycled roof use. They often recycle used old slate to be used in exteriors. So in a sense, that kind of have this nice history, too, and weight in texture and material itself.

QUESTION:

02:25:31;17 So when you come up with this, this story you've just told us, does it take you, like it sounds like it would take ten years to come up with that whole story of all the I mean, what's the process? How do you know when it's time to stop researching and reading and start drawing and designing? Is there like a thing like a writer who's trying to figure out what's the next page of the story and do you not start until the story's complete? Or how's that work?

TOSHIKO MORI:

02:25:53;12 No, I think it was putting together different ideas. What has an opposition, which is I started by reading lots of Poe. And I really started understanding where he is in terms of literature, traditional literature. And this poet at University of Pennsylvania, who wrote a book called *Poe, Poe, Poe*. It's about literary criticism. His name is

Toshiko Mori Interview

Pg.37

Daniel Hoffman.

02:26:18;17 And one of his essays about this arabesque and grotesque, in which analysis of a contrast Of a tone, is his texts. And that kind of click. I think usually one finds something that really engages you, as something very strong idea that can relate to architecture ideas. And it has a broad enough concept and philosophy behind it. But it could be very specific in applying it. So that's kind of, one is looking always looking for that kind of a moment of gelling of ideas. And one can kind of architecturalize it.

QUESTION:

02:26:53;23 And then once they start building, is it locked in? Or do you change it as you're building it?

TOSHIKO MORI:

02:26:58;00 I can't. It's a city project. We have a contract. We have a set budget. Set schedule. So once you're locked in it, we can't change it.

QUESTION:

02:27:08;06 But do you ever like, halfway through, say, "Boy, I should've done this"?

TOSHIKO MORI:

02:27:12;27 Always that. Yeah, always that. But you know, I think there seems to be something. Maybe I should've tilted a little bit. And there's always that doubt. Yeah.

Toshiko Mori Interview

Pg.38

QUESTION:

02:27:24;21 So you never really get perfection. Like all arts, there's never perfection, is there?

TOSHIKO MORI:

02:27:29;08 Yeah. I mean, I think we are demanding of ourselves. So I'm always, like, it could always be improved. Of course.

QUESTION:

02:27:38;11 Tell us about this next model over here.

TOSHIKO MORI:

02:27:41;25 There's a very rough model. This was competition for a visitor's center for Darwin Martin House by Frank Lloyd Wright. Built in 1904, 1906 in Buffalo, New York. It's probably one of the three most important houses by Wright, Fallingwater and I think Fallingwater, Darwin Martin House and then Robie House in Chicago, I think, to me, is one of the three most important houses.

02:28:12;07 It's all horizontal. But Darwin Martin House was probably the largest, most expensive house at that time. And has very intricate. And in terms of detailing. And it was the most intimidating prospect to be able to build a building next to Frank Lloyd Wright masterpiece. And I think I have more nightmare about this than reading Edgar Allan Poe, in retrospect.

02:28:41;24 Because I always imagine what he would have done. And also, one

Toshiko Mori Interview

Pg.39

could never imitate Wright because he will always do it better than you do. And so I came up with strategies of opposite. And it's unfortunate there's not Darwin Martin House to illustrate it, but it has a hip roof so that I proposed a reversed hip roof for two reasons.

02:29:05;19 One is to notate that it's a public building. Not the residence.

Welcoming it. But also, in a very interesting way, that it's holding a snow. Buffalo has a lot of snow. And one of the principles of Frank Lloyd Wright has always been organic architecture. And relating nature and artifice and building in nature. But when you really apply his principles to today, it's integration of technology and engineering.

02:29:41;09 So he has deployed a lot of sustainable strategies such as natural ventilations, shading, eaves and opening up the corner for a view and light. And so this building is quite sustainable. I mean, we didn't go for the LEED because those engineers and clients, we working with wanted to go beyond LEED. We wanted to do something very specific for this site.

02:30:09;02 So the idea is that snow is one of the best insulator. So when there's a snow, if the roof can hold the snow, it helps to insulate the building. And exterior of Darwin Martin House is brick.

QUESTION:

03:00:04;02 Define what LEED is, and then tell us about the reverse hip roof.

TOSHIKO MORI:

Toshiko Mori Interview

Pg.40

- 03:00:09;04 A LEED is the process of being certified for certification to sell our gold platinum for the degree of environmental sustainability, energy efficiency of a building process itself. So instead of 'cause it has a very broad criteria. But this building was very specific to the site and climate.
- 03:00:30;09 So, what we try to do is to optimize the climatic condition very specific to it. And sometimes, it might not meet some LEEDs. We think its actually beyond the certification it is. It has triple glazing glass. So, an incredible amount of insulation property, and heating and cooling, is radiant heating and cooling embedded in the floor. And there's no ductwork at all.
- 03:01:00;17 They're called displacement ventilation. So, air movement by pure air convection. So, the hot air rises, and therefore, it's in terms of quality of environment, it's very much comfortable. Not as if cold air is hitting on you. And sustainable aspect of this is that since this is the height, we are the issues of comfort, it only has to be comfortable where human bodies senses it.
- 03:01:33;19 So, high above in the ceiling, it really does not. It could be too cold, too hot, it really doesn't matter. So, a lot of systems try to make entire environment be the temperature, which is comfortable, which is really not a greatest way. With this convection, basically air will be retaining an optimum temperature of a human body, at the level

Toshiko Mori Interview

Pg.41

where human experiences it.

03:01:59;08 So, as the fresh air is coming, so there's very much of savings in terms of circulating air. But you feel good, and then there's a fresh air coming through. And also, the angle of the underside or ceiling is bouncing off a natural light. So during the use of the building, like 10:00 AM to 4:00 PM from April to November, they don't need artificial light at all. Only at nighttime will you need it.

03:02:31;27 And again, with a glass building, there's a heat gain when there's a snow, because snow bounces off. When you go skiing, you get a suntan and so forth. Same way. And then sunlight is very low. This is south, east, and north. So, you can actually harvest solar gain in the middle of the winter. And by lowering a temperature in radiant floor system, it can absorb, and it can store the heat. And then, it gets heated. It uses that particular heat to heat up the environment at nighttime, when they really need it.

03:03:07;05 So, there's that kind of specific secret features of this building. Which we thought Frank Lloyd Wright would definitely focus on, in terms of organicity of a building, and the environmental. And this is very close to Great Lakes. And there's only a prevailing wind from the west. So wall on west side is all masonry to take care of and shield the building. And, in fact, entire compound against prevailing wind for the entire

Toshiko Mori Interview

Pg.42

property.

QUESTION:

03:03:41;07 Now, was there an ah-ha moment here, when you know, figuring out what to do? Like you said, with the Poe building that contrast hit you? Was there a one moment when you said, "Oh, now I know exactly what I want to do," or?

TOSHIKO MORI:

03:03:54;11 That definitely was completion. So, when I was working, I had a completely different scheme. And about three days before it's due, we threw out the whole thing. And then, went to this. Simplified it. We felt simpler the better. And the moment was focusing on the roof, 'cause Frank Lloyd Wright is very well known about eaves and roofs.

03:04:16;02 So, use that as a theme. And using four columns here, there's a pier system. Pier has big columns, which is in his building, and there are no walls. It's in architecture terms, it's called open plan, which is very progressive in 1906. So, that you will go through the spaces without having doors or walls at all. So space is implied by placement of columns, relationship to exterior. So, the only columns we have are these four piers. And they take care of our drainage, and they take care of the major structure of this big room.

03:04:58;20 And they're quite an invention in terms of structure of this building, too. Again, in terms of efficiency, which is the columns are here. But

Toshiko Mori Interview

Pg.43

mullions, which are very small of stainless steel is every seven feet. And they also act as a structural element to both in terms of weight, and both in terms of wind forces.

03:05:27;06 And it looks as if in reality, it will look as if there's a huge candy bar here. And you will look as if the glass is just you can see right through. But in fact these stainless steel small mullions behind it is doing all the work. But it's just perception of nearly invisible columns. And so, it looks like interesting idea of how to work out structures with using an unconventional method of understanding forces. So, when I talked about dynamic forces, that's this is a kind of manifestation. We're using conventional technology, but engineers used lot of simulation, using computer modeling for the formation, and talk. And we arrived at the sizing of our columns and so forth.

QUESTION:

03:06:18;11 And then, if I understood better which I would after I took your class would I start to see a style amongst the things you design?

TOSHIKO MORI:

03:06:25;09 I don't know.

QUESTION:

03:06:25;16 'Cause there's

TOSHIKO MORI:

03:06:28;09 Well, these in particular have yeah, some similarities because of issues

Toshiko Mori Interview

Pg.44

of roof and both of them are my community buildings. So, there is some similarity between them. And both of them are kind of different sized pavilions.

QUESTION:

03:06:43;13 And there's different sort of systems? Like we have the Dymaxion House at the museum. And that was a system where the heating was I don't really understand what I'm talking about. But the heat came down. So, when you were mentioning that, I was thinking he had a certain style.

03:06:58;25 And then you talked about the organic style of Wright. I'm wondering do you have something? I mean, you talked about the weaving thing before. But is there something that sort of would characterize your style and relationship to those kind of things?

TOSHIKO MORI:

03:07:07;11 No. I think if anything, all the organicity in these systems are quite concealed. I think it doesn't have to be expressed architecturally. If there's any style that I have, it's probably very simple and minimum. And I try to use least amount of material possible in a simple and simplify the whole thing.

QUESTION:

03:12:00;10 Tell us what's going on here.

TOSHIKO MORI:

Toshiko Mori Interview

Pg.45

- 03:12:04;28 Oh, okay. This is a building for Center of Excellence for energy and environmental systems for Syracuse University. And this building is in downtown Syracuse. And it is comprised about of 15 federation of different universities and companies, like Korea Air Conditioning, United Technologies, Cornell University and Rensselaer.
- 03:12:27;15 So what they do, it's a loud building, but they're testing environmental quality, especially indoor environmental quality. So, what's happening on the top three floors, what's interesting is that there's an interstitial floor here. Which is they bring in different type of system, so lighting, ventilation systems, air condition system. It plugs into floor above and floor below. This floor is above is testing a human comfort level. And what's interesting about this research is that they are convinced that if you would do sustainable building, energy efficient building, which improves indoor quality, improve human productivity. Which does translate into increase of revenue for the business.
- 03:13:14;24 So, currently we scientists, environmental scientists are studying indoor air quality, environmental air issues. Do not have a lot of incentives. We don't have a policy in place now. Hopefully, this current administration will do it.
- 03:13:30;03 But, in fact there are not too much study done about the quality of environment. They are talking about energy use, carbon and

Toshiko Mori Interview

Pg.46

everything else. But fundamentally, a quality of life, and quality of environment increases. So, that's a focus of this. And below here is also a series of testing labs, to test the performance of furniture related to and also subsystems that's related to the machines that can be there. So, in a sense, this is more hard lab testing, and this is more soft lab testing human performance.

03:14:07;21 And here, as a headquarters in classrooms, so that students from Syracuse University campus is way up on the hill. They will come down here. The idea is that they'll will come up here, and so walk into the roof, and they will go into a classroom here. Come up. This is kind of an urban campus for them.

03:14:27;01 Site is a contaminated site. So, that we have to do all the reclamation at the same time. Now, the tail of this building, that's where the hardcore lab is. They are testing assembly of building materials. They have a water channel, testing like a wind tunnel. But also they have a series of, like this is actually testing site for different solar panels. And this is also solar panel testing, too. And this is a green roof. They'll be testing different specimens to see which does better in their testing, in terms of what kind of drainage it has as a result. And also, it will test about which species would better in different exposure and so forth.

03:15:13;25 So, the building itself is conceived as a living laboratory of energy

Toshiko Mori Interview

Pg.47

efficiency, environmental quality and machinery. So and the building itself, this is the platinum and beyond in this one. University, we gotten, we are in the process of getting certification.

03:15:33;06 And some features like this, which is a chimney, which is helping to ventilate lab, and labs generally considered as a energy guzzling facilities. They use at least 30 percent more than any other facilities. And this particular element reduces a use by about ten percent. But 30 percent or ten percent is quite a lot in terms of helping with natural ventilations and so forth.

03:16:00;13 Also here, in the lobby, there's a little bit of mezzanine spaces which a public can go through above to see what's happening in the lab. So, that idea for this building is that to communicate to a public what the type of works they do, how they're testing it, and educating and informing public about energy efficiency, conservation, alternative energy.

03:16:28;10 With this building, we did a lot of testing to come up with, again, the best and most efficient systems. And we have done a testing in which if we had a snow storage shed here, and it's quite a lot of snow storage shed. We would discover that the snow can cool everything throughout the year to cool completely. And a bent of a system is so that it's optimum direction to catch the wind coming from Great Lakes. And some wind turbine is also used. And in this lab is a bio fuel

Toshiko Mori Interview

Pg.48

facility. In which if it's a 100 percent active, it can supply about 99 percent of electrical use.

03:17:11;05 It has solar panel in it. And the double façade here, which also, in terms of efficiency of getting the best solar exposure but able to dissipate excess heat, and then have the excess heat stored in the system. So, it's a demonstration facility. And it's functional in terms of different type of invention of sustainable strategies that comes through that they can be tested.

03:17:40;07 Even we have elevators. We're testing elevators. We have two different kind of elevators with different speed, again, to see the procession of people. They like to get to some places very fast. But if there's a lot of vibration, it's unpleasant. That kind of testing. Site is so that there's a big highway here, a lot of noises here. That's why the other site is more opaque, this is open. And as a building, it's also being monitored.

03:18:12;02 Which is that we have to be able to monitor the metrics of how it's performing. And so that if there's a bad air quality, computer screens in each worker's place, it shows that it's not a good time to open windows. But when the air quality is better, it just has a green light on, so people can open the windows. And this facility can be naturally ventilated completely when the air quality is better.

Toshiko Mori Interview

Pg.49

03:18:40;20 And it's also constantly monitoring which system of air conditioning is more efficient use and so forth. And what kind of use of electricity, lighting is used. So, it's really like a machinery, but we had to use a very simple existing materials and techniques. Nearly everything is off the shelf to show that you could build an energy efficient building of a high performance which can be very accessible to a lot of people. So, it's a lot of this is under construction. We'll finish in September.

QUESTION:

03:19:18;24 So, in the architectural, is this quite an innovation?

TOSHIKO MORI:

03:19:23;01 I think so, yeah. I think there's a lot of work down with collaboration with scientists who are the scientists at Syracuse University. Because they really have a lot of information and data requirements. And working with engineers, structural mechanical engineers. And then, architecturally, all the materials. All recycled materials, and idea of a green, safe materials use. That kind of thing is all embodied in it.

03:19:48;13 So, in terms of yeah, I think this is probably, in terms of innovation or program, it's probably the only place which is really testing environmental quality. There's a lot of buildings that can talk about energy efficiency, but human factor even in this case, says that psychologists from Cornell is involved about view. And skylight kind of direction. What type of light will affect human. And I think that also

Toshiko Mori Interview

Pg.50

working with different colors, and all that type of human reaction to environmental changes.

03:20:23;22 Humidity. But what they want to do is that they're very much interested in what you call micro-environmental control, which is that human comfort level is very different. From what I feel comfortable may be different from what another person can be.

03:20:40;04 And if they're able to control, because there is data that if one person if they can control environment individually, idea of comfort level increases. It's just idea of control, but at the same time, the one can gauge colder, warmer, that kind of thing. So, they're working with the thesis of how to have optimum micro-environmental control. Immediate human body level, but at the same time, balancing the top down. Meaning the entire building can be energy efficient. So, that's the goal of this particular research facility.

QUESTION:

03:21:22;02 Let me ask you a couple of questions. These are a little bit of switch of gears.

QUESTION:

03:22:13;03 Let me ask you this question. You've done a lot. You're successful at this. And very interesting things. The future unfolding. If we had a bunch of school kids here, what would be your advice to them, as they're looking toward the future, where the whole world needs to be

Toshiko Mori Interview

Pg.51

redesigned we're apparently we're learning. What would you say to them?

TOSHIKO MORI:

03:22:31;09 Well, I think to me, they really should think of next generation. Not just themselves, what they want to do. They want to think of the kids they're friends with. And the kids who have brothers and sisters, and then what the kid, what the future kids would be living in the environment. And try to not to do things that they would feel sorry for.

03:22:54;19 At the same time, I think really thinking about what they want to, how they want to live, and how they want others to think. And what's interesting about this young generation, what you call youth generation, they want to share a lot.

03:23:10;07 And they want to innovate. Which I know because I teach with them. And they want to collaborate. And it's very different from a generation slightly older than to them. And also, characteristics is they're very civic minded. If you can, I think President Obama has benefit from this generation of really coming in, and you've been telling mom and dad to vote for him and so forth. But their interest in the environment, this idea of sustainability is a concern of them.

03:23:40;05 Conservation. Nature of conservation extinction of species is a concern for them. Resources of water, live as a fish that broader

Toshiko Mori Interview

Pg.52

thing, have really are a huge concern for them. So, I think this generation, I trust them. But I think what's interesting for me is what can we do for this generation coming up, so that they don't get settled with the debt we are incurring today. And that's a long range planning we have to do.

QUESTION:

03:24:13;01

Let me ask you this. I mean, we're talking about, you know, you build a building and it lasts I won't say forever, but for a long time. The principle is to go on for a long time. Do you ever think about what you're doing as gonna 100 years from now, people are gonna be looking at this building, and they're gonna be talking about the way we talk about Frank Lloyd Wright? I mean, what if you could actually talk to those people, which you can do through this interview, 'cause they're gonna preserve this for a long time, what would you say to that, you know, a couple of generations down the road? Any sort of message you'd like to send them?

TOSHIKO MORI:

03:24:39;26

Well, as an architect, it's integrity question because after we die, our building will stay. So, the idea is to bring together certain type of legibility. So, my ideas are clear. And something as simple as making this building transparent labs are not transparent. And luckily, it's more of a human resource type of lab.

Toshiko Mori Interview

Pg.53

03:25:02;02 It's an idea to be able to have access to have a lab, and then having a building, which is accountable and transparent to this issue of environmental sciences. And I think that's an attitude. And I think that's probably the message that people visit will understand it. So, for me, luckily, a lot of buildings will survive even after we die.

03:25:28;11 And that's why we kind of intensely engage the process of designing so that the message is embedded. And there's a certain quality of intention that's certainly there for people to kind of understand. I think you know, buildings will have its own life. And they're going to be speaking on its own. So, hopefully, that survives.

QUESTION:

03:25:49;28 Let me ask you this. This innovative work that architects do, and scientists, do you think innovation's a system that people can learn and be taught, or is just some god-given gift? Or is it something that could be moved through organizations? Just what's your whole sort of attitude toward innovation, the process of it?

TOSHIKO MORI:

03:26:05;23 Innovation is a combination of creativity and imagination. And I think there's a moment in which when you really have your mind freely circulating, and not really narrowing down. I think broad analogy is important. And also, idea to imagine different circumstances and different alternative.

Toshiko Mori Interview

Pg.54

03:26:26;17 And I think for us architects, it's always visualization. And visualizing different circumstances. And all of a sudden, these ideas come together as something innovative. I don't think we're constantly trying to make something innovative. But we are always trying to look for challenges.

03:26:42;22 So that, whenever you actually look at the challenges, one has to go beyond what we all already know. You have to push beyond the boundaries. And that's so, in a sense, one is a discipline in rigor. Another one is drive, and creativity, imagination. I think those to me are ingredients that can drive innovation.

QUESTION:

03:27:03;08 And do you think that's translatable, if there's such a word, to other businesses or industries? Could we who are not in the architectural field look at what you folks do and translate some of those principles?

TOSHIKO MORI:

03:27:14;24 I think totally. Totally. I think maybe very small things, like you can innovate the way you enter the house. You can innovate the way to secure the house, or the way you look out the window could be the window itself can be more sustainable, but you have a very beautiful view framing. I think innovation might start from something very small. But really improving on what anyone has into even small steps. So, it doesn't I think it's just pervasive. I think innovation is

Toshiko Mori Interview

Pg.55

pervasive.

QUESTION:

03:27:50;26 And another question. Is there another thing you're going to? Are you going to stay here and then retire? Or do you have another goal down the road? Evolving to something what's next for you? Sort of is there a big project or? It's an open ended question.

TOSHIKO MORI:

03:28:03;11 Well, I always traditional office with projects ongoing and so forth. But there's this one thing. I want to create a social enterprise, which connects many different designers and architects. And I kind of started to plant a seed. And what's necessary in the world is power of visualization.

03:28:25;08 And if you can imagine the kind of catastrophe we have today in the financial sector, the environmental sectors, people can't visualize not very simply what's happening. And I think as designers, that's our gift. We can visualize, imagine, and in this case in the buildings, we can test it out. And we can predict the failures, monitor the performance. Somehow, that's really not done very well. And with a very sophisticated computer programs, or even very simple mapping process, I think we could probably help negotiate those differences. I think I'm trying to create this little social enterprise to do this visualization projects.

Toshiko Mori Interview

Pg.56

QUESTION:

03:29:11;26 You really do want to change the world, don't you?

TOSHIKO MORI:

03:29:12;03 Yes.