

MS PEARL TANG:

Good evening everybody. I am really glad to be here. My name is Pearl Tang and I am going to try to share my experience in the past 10 years of architecture in the next 10 minutes with you. I started my first architecture degree in the Chinese U here in Hong Kong in 1996. It is really great from my experience to see you kids because when I joined the department it was like a really relatively young department, and then it was funded by Professor Tony Lee and then also faculty hired from all over the world. Since it was a really fresh department and everybody was really enthusiastic in making the department and the studio a very connective place to be and then with really keen exchange of ideas. We are all friends. The department is relatively small. We have 40 people a class, and the department is about 150 people in total. The teachers and the students are all very close.

I think I learned from my teacher it is not only just about architecture knowledge but more about how to -- I am actually more inspired how to be dealing with the training of architecture as a person, how to approach problems and how to constantly think about what I am doing. They also encouraged me to go out of my boundaries and try different things, which helped me a lot when I continued my studies and work overseas. After my three-year bachelor of architecture in Hong Kong, I went to MIT in Boston for my masters degree program. It is a two-and-a-half year program and then the first year we take studios and classes like Hong Kong, and then we do our thesis project in the final half year.

I think what is special about that program and also United States education in general that we mentioned before is that the school really encourages you to take classes in other disciplines as well as classes that are in our own departments. In a lot of cases this crossover really helped students in finding their own interests by creating their own curriculum and also to feel like members of the society.

I think it really helped me in the way that it constantly forced me to think about what I really wanted to do and then as I was going along, I developed a very keen interest on how technology can help in architecture in generating geometry and also in generating components plyometrically, which can be easily moved in tune to respond to the environment.

That interest later on actually brought me to the office where I am working in now, Foster & Partners in London. Over the years, the office did very good researches on geometry and sustainability and that is why I think it really fits my interest and then I joined the office.

As you can see it is a really big office. There are about 600 people. I was seriously overwhelmed when I started. As I was going along I got used to it and then I just really found my way in working in such a respected environment. The office is actually divided into six groups and then each group is focused on a particular region in the world.

The group I am working on is mainly focused in the Asia Pacific area including Hong Kong, China, Singapore, Malaysia, and the Middle East. Some of the projects that they have done ranging from a very different scale. It is also a very international office, which is currently working on projects in 53 countries and also my colleagues are all from 39 countries and 47 languages are spoken. Luckily they all speak English as well so we can communicate.

Some projects that I have done in Hong Kong, which you might know, from the very first project Hong Kong Bank through KCRSC to the Hong Kong Airport. We actually shaped the Hong Kong infrastructure. Currently we are working on the new terminal of the Beijing Airport, which is going to be the new gateway for the Olympic Games in 2008. You might be interested to know that there are actually 32,000 people working on the site 24 hours a day in two shifts.

This is a picture of the studio. We have architects, we have interior designers, we have space planners, and also

all the groups that actually support us like model makers, graphics, visualization, publishing, document control and accounts. There is no division of departments in a sense because everybody just sits together in a very big open studio. You can see the row here is actually model makers in here and then just across the table from the other side is architectural stuff, and then at the end of the table is our boss, the group leader. You can see everybody just sitting next to each other and then idea exchange is really great.

Apart from this group supporting us, we also learn a lot from these specialist people as well. The great thing about it is that no matter what sort of experience you have or how young you are on the team, everybody just really gets a chance to do something in various different medias like whether it is computers, whether it is models, whether it is sketches. It is really great.

On the left-hand side here is the entrance reception of the office and then you can see where a lot of people are. This is actually the bar where people usually have lunch and breakfast and everything. It is also a very great chance for people to meet each other in such a big office.

The working method is actually quite a traditional means, the conventional sketches and the working with computers. I think the interesting bit is it actually sees technology as the key enabler. When you start a project it is not just working on, say, 2D. We also work on 3D and use the 3D model as a device to test our ideas and also geometry, how it works with environmental issues and also construction issues.

We also make physical models. We work with the industry to make full size mock-ups. Once every two weeks we have a design review with Norman and also the design committee in the office, which makes sure we are going in the right design direction.

This is another picture of the office that is from

higher up so you can really see the size of the office and the people sitting next to each other. This is a bit of an old picture, so you can see big computer monitors. They are all gone now. They are all flat screen monitors now.

Afterwards I am just going to talk about two of the projects where I am part of a team, which I have been working on for the last three years in the office. In the year 2003, we were invited to an international competition to design a new terminal for the Beijing Airport, and then we won the competition and subsequently within three months we started to design and now it is in construction.

This is the image showing the image that we actually submitted for the competition, and you can see the red one is where you approach the first terminal, where you approach the building. That is the international terminal and further out the yellow one is the domestic terminal within China. That is a plan view of it. The total area is a thousand and sixty thousand square metres. As I said before there are 33,000 people working on site at the moment.

The idea of it is apart from the streamlined form that we are trying to create and also it resembles the Chinese character for "people", if you can see one terminal is actually the character of the people. Also we are trying to play with colours.

This is showing an animation that I have done to show how the roof is generated. It is generated by a set of parameters instead of being drawn manually. You can see the parameters actually drive the sections all the way along, and then it generates a surface itself and then generates the actual plan shape required and then also generates all the node points which later we can use for space frames.

I guess this one actually shows how scripting and computer technology actually helps in saving a lot our time in drawings. As I said before, another objective of the project is trying to play with colours to introduce the colour

in traditional Chinese architecture into the terminal building.

On screen there are a few pictures of Chinese palaces in Beijing and other cities. What we are trying to create, we actually see the new terminal building as the People's Palace, so the palace is not just for the imperial family in the later days, but it is also for the people going in and out of the gateway of Beijing.

This is like a colour scheme that we are trying to create, fading from the international terminal from red to orange and then into yellow in the domestic terminal. In order to test all the right colours, I guess there is nothing better than doing it physically and seeing it physically, so we have set up colour palettes in the office and then, of course, putting them everywhere in the office to test out different lighting conditions, how we think they will look and then in the car park and the outdoor conditions.

At the very beginning stage we felt we painted space frame with the different colours and also the colours would be helped with the colour of the uplighting, and we made physical models to make sure how it comes together as a colour palette. This is a view from above. We were also concerned about how the lighting would perform with the skylights because the lighting would make a serious inference on the colour and the interior, how they would express themselves.

On the bottom here is testing out different versions of the skylight and then just to test out the different options to see how much daylight level we get in the interior. As you can see in this graph, option 5 is the only option that is giving us the lighting level that we need for the minimum design target, so that became the final version that we went for.

We also think about how the skylight could work with the colour, could enhance the colour that we wanted to achieve. Instead of doing a solar panel, we used the PVB colour glass. It is sort of like a tinted glass that is like a sandwich,

like a colourful sandwich within two pieces of glass. When sunlight goes in, it just goes in during the early morning or late afternoon. It just goes in as pure sunlight. Also it can go in from the clear glass area from above and then also when it actually shines through the coloured plate area it gives the colour of that particular region. It helps with the colour. At night it would reflect the uplighting down and also that shade would bring the colour that we want as well.

The number of skylights we need compared to London's Stansted Airport and Hong Kong Chep Lap Kok Airport. Therefore, the number of skylights we need in different patterns as an option.

The next thing we did was we were trying to see what would be the best skylight arrangement to give us the best distribution of skylight. On the top right-hand corner here, that is the skylight arrangement we had in the competition scheme, which you can see is not a very good lighting situation there because we have a lot of overlap, and we have a lot of blank area that is not lighted. It sort of changed. You can see some of the skylights shifted to in between rows and then afterwards it becomes a more evenly -- it would give a much more satisfactory lighting performance in the space.

Finally the surface lights are also shaped in a way that you can help in reflecting light in all different directions so as to create a more even glow of uplight to the other side of the building. These are more physical model pictures. That is the building site. It is quite finished now. You can see the roof is all up and the space frame is all up. That is with the finish. You can see the skylight works quite well.

This is before we have uplighting. Ideally when we added uplighting, the lighting situation would be more even.

I guess my time is up so thank you for coming and thank you for listening. Thank you.