

*Peter Walker*  
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***Two Memorials and A Life in Design***

***Peter Walker:*** All trained designers are made up of a layering of histories—cultural history, art and design history, ecological history among others. We are also developing products of our own professional history. In the following pages I will explain a bit of my personal artistic journey and how it has been the basis of two quite different memorials located halfway around the world from each other: the National 9/11 Memorial in New York City and the Barangaroo Headland Park in Sydney, Australia.

First of all, I'd like to consider the 9/11 Memorial in terms of what went into the design over a long period of time. The 102 minutes of the attack on the Twin Towers at Ground Zero was televised. And then those loops were seen over and over and over again—not just by Americans but by a world-wide audience. For us this meant that in one sense the memorial was a dream commission because everyone knew of its importance. But it also meant that this commission was constantly in the public eye, something of a nightmare. For one thing, the memorial had a complicated structure of clients with different interests that made public observation difficult to understand. With these difficulties in mind I would like to tell the story from the beginning, both the beginning of the memorial and the beginning of my interest in the things that the memorial represents in artistic terms.

I first heard of Michael Arad when he called me one day late in 2003. He was a young architect. He introduced himself and said,

“I’m one of the eight finalists on the 9/11 Memorial, and I would like you to work with me on the team.” All the finalists were young architects and I wasn’t familiar with any of them. And of course I didn’t know which scheme Michael had done. So I said, “Look, I have to talk to my partners. I’ll call you back tomorrow morning.” So we did what everyone does in a situation like this: We went to the website. Surprisingly, and happily for us, Michael’s scheme was the only one of the eight we felt we could make a real contribution to. Looking back, I think one of the reasons Michael chose us is that he had some understanding of what we had been doing over the years.

At the time that he called me Michael’s scheme consisted of two voids. He had broken some competition rules by raising the plaza up to the street level. He explained to me that the jury had asked him to get a landscape architect because while they loved the concept of the voids, as did I, they hated the bare stone plaza and the way it related to its surroundings. Since this is probably the densest neighborhood in all of New York, Michael Bloomberg, mayor at the time and head of the foundation that ultimately provided much of the funding, had said that the space must operate as a public park as well as a memorial. The jury didn’t want these two goals to compromise each other, but to put those two functions together was a sophisticated design challenge.

When I saw Michael’s scheme, it immediately reminded me of Michael Heizer’s work at DIA Beacon. Michael’s scheme is essentially two square holes in the ground. In other words, he was trying to make nothing seem to be something. This required a context, a surrounding—a flat plane that made the nothingness of the voids count visually. It’s a matter of contrast, and it’s a matter with some degree of surprise.

I was familiar with this kind of idea, because for thirty-five or forty years I’ve been a collector of minimalist art—Judd and Andre and so forth. Michael Heizer was very familiar to me as was the idea at the heart of *North, East, South, West* (1967). For example, when I first began collecting, I was very taken with a piece by Carl Andre—*Secant* (1977)—a series of ordinary railroad ties running across a meadow. The meadow was just an ordinary meadow. There was nothing about it that would be seen as

particularly special. But if you ever went into that meadow and saw this piece, you'd never forget it.

One of the things that landscape architects and architects are trying to do is to create something strong enough to be remembered.

I saw another piece by Andre in a little gallery in Portland, Oregon: *144 Blocks & Stones* (1973). It's a series of concrete blocks with different size pebbles placed on their tops. I remember walking into the room and thinking: "There's nothing on the walls. There's nothing standing up. Why is this piece so strong?" And again, it seemed like a metaphor for landscape. As did another Andre. *Steel Magnesium Plane* (1969) is only an eighth of an inch high, yet it defines the space above it much the way a great rug would. It has visual power that is derived by the absence of three dimensions. And yet, even though I saw a metaphorical landscape connection, I didn't see any way to make that kind of space into a garden.

Then, in the summer of 1978 Bill Johnson, who was dean of the landscape school at the University of Michigan, and I took a group of students from Michigan and Harvard on a tour of the beautiful Loire Valley from Tours all the way up to Paris looking at the great chateaux. I remember sitting on the steps at Vaux le Vicomte and looking at Le Nôtre's great work, and suddenly I had one of those little light bulb moments. I realized Le Nôtre had figured out how to make a minimalist garden more than 300 years ago. Three hundred years ago he had realized how to make a space so powerful and so empty that anything you put in it really counts

When I got back to Boston I decided to do some little experiments. Martha Schwartz and I set about making a French garden, in contemporary terms, on the flat roof of a townhouse in Back Bay on Marlborough Street. Following in the footsteps of Le Nôtre we would exploit that flatness, making anything that was placed on it count for more. Two of our explorations involved mirrors and flower pots. We created basins (like the pools in a French garden) out of mirrors; as the shadows came across the roof, the mirrors (like the water in Le Nôtre's pools) held the reflection of the sun. As for flower pots, they come in one-inch-diameter increments. This means that if you line up flowerpots of decreasing diameters, you can create a kind of forced perspective. We also painted the inside of the pots sky blue so that, like the mirrors, they would "reflect"

the sky. In a way. Thus, we discovered that there was a potentially huge vocabulary built up by pop and minimalist artists that we could explore in the design of landscape by placing these effects on the basic armature of Le Nôtre.

We performed the second experiment in 1980 on the campus of the Massachusetts Institute of Technology, where we created a garden meant to last only one day, a garden made out of automobile tires and Necco Wafers, little candies covered in powdered sugar and manufactured in Cambridge. We bought several boxes of these candy discs, and we collected spare tires, which we painted in the same colors as the Neccos. We laid out the Neccos and the tires on a double rotated grid, ready for viewing by the MIT students when they arrived for classes around 9:00 a.m. Many of them were outraged. I remember telling Frank Gehry about it. I told him, "You know, they didn't think this was what a landscape is supposed to be. We're hitting against some kind of norm and that means trouble." And he said, "No, it's not trouble. You're onto something. Keep going." And we did.

Gradually the idea of exploiting emptiness and flatness started creeping into our regular work at PWP. The following projects show three different expressions of the idea.

At the Nasher Sculpture Center in Dallas, Texas, completed in 2003, (Renzo Piano, architect) we made a garden that appears to be absolutely level. Again, think of the metaphor of the rug. Most sculptures play against the idea of balance. Even if they tip, the way a Richard Serra does, they tip away from the normal axis. This balance is made apparent by the flatness on which the sculpture rests. That's why you feel them, and why they hit you so hard. For this reason most sculptors prefer to place pieces on a flat plain.

In practical terms, if you are going to have a perfectly flat lawn outside where it rains, you have to make the water drain down through the soil rather than rely on the use of catch basins and pipes, which require pitched surfaces. To solve this problem we invented a kind of soil that would encourage the water to move freely straight down to the aquifer. This soil also had to be strong. The Nasher Sculpture Garden is a gallery, not a museum. It's a stage on which the sculptures are the actors. And there's only room for so many actors at a time. Of the 600 pieces of the collection typically never

more than twenty-five or so can be exhibited at one time. This means that the soil has to stand up to the trucks that move the art. And it has to withstand the visitors who walk around and look at the art.

We also designed a grid of trees to add to the plane of the grass carpet. They helped provide scale—visitors can judge the size of a tree more readily than the size of a sculpture—and also meaning. The living landscape is in a state of continuous change, in part thanks to the passing seasons. It's important to get people to see this change, but nature is frequently invisible to urban dwellers. Using the flat plane of grass to heighten the presence of the trees produced a much more complicated experience, one that helped make nature as well as sculpture visible to visitors.

At Sony's Berlin 2000 headquarters in Potsdamer Platz (Helmut Jahn, architect) the idea was to make the plaza flat—with very minimal means—and also taut. If you put some kind of pattern on the ground, the surface becomes tense. It becomes a *parterre de broderie*. Again, think of the rug. At Sony the pattern was created by enlarging the drains so that they became metal pavements with contrasting areas of stone cobbles. In order to make the flat surface work at night, we added lights to the paved surface.

The plaza is about 350 feet long with the lobby of the movie theaters below. We cut an opening in the plaza to show what was below, and when you are down in the theater lobby, you can look back up through the opening, which is partially covered by a glass-bottomed pool, and see all the way up to the structure of the great tent that covers the plaza.

Saitama Plaza, north of Tokyo, was created in 2000 to facilitate movement in and out of the old centers of the city. Our scheme centered on a simple grid of zelkova trees—a kind of orchard growing from two meters of soil atop a shopping center with a food court. This plaza is dead flat. It has no pitch at all because half the surface is stone and half is a continuous metal drain, something like a tree grate. The water hits the surface, goes down and is drained at the bottom of the soil. There are no catch basins and no need for a pitch. As you can see, this flatness had over the years become one of our maniacal goals. Working with NNT Architects in Tokyo, we were able to place a column under each tree and a transparent spandrel exposing the band of soil. When you go up and down the stairs or

elevators, you can see the layer of dirt, expressed a little like an ant farm. During the day, the sunlight goes down through glass cylinders to the food court. At night, the electric light from the food court illuminates the landscape of the plaza. A very simple thing, but it took a great deal of effort to get it to work.

It is much easier to do this kind of thing in Japan than in the west. The Japanese have seasonal festivals. They're emotionally and culturally connected to the landscape and nature. At cherry blossom time, everyone goes out under the trees and celebrates. They also are culturally aware of differing times of the year. When you tell a Japanese group, "We're going to express the seasons," they understand, because the poetics of seasonal change are deeply embedded in their culture.

All of these examples are playing with a few simple ideas. We carefully thought them out and then built them and watched to see whether they worked. Each in its way was a precursor of the National 9/11 Memorial.

The jury, particularly Maya Lin, loved the idea of the voids. She thought that it was a poetic way to express the destroyed buildings. It's the scale of the voids and their presence that count. Like the Heizer. There's nothing there but two great empty voids dropping down thirty feet from the plane of the plaza. And when we were asked, we said, "Yes, of course, we would be delighted to join the team."

Over Thanksgiving and Christmas, Michael and I faxed things back and forth—ideas, manifestos, and sketches for the second round of design. Michael's basic idea was strong. What we had to do was convince the jury that we could combine the memorial and park design, that these seemingly opposite functions could work at the same time. I was in Switzerland on a project when I received a call that the jury wanted a sit-down meeting. I flew back to New York and phoned Michael. I said, "We really have to talk before we go into this obviously important meeting." I was staying at the Millennium Hotel on 44th Street, and at 6:30 A.M., Michael brought his drawings to the coffee shop, and we met for the first time, face-to-face. We laid the drawings out on the floor, talked through the design, and tried to figure out what we were going to tell the jury.

When we walked into the meeting, the jury had only one question. It was really a question to me. They said, "We've seen these

drawings and little models, and they're not completely persuasive. The original idea is tremendously persuasive. But what we're asking you is can you do this? Can you make these two functions happen at once and work together so they don't compromise or counter each other?" And as petitioners, we said, "We're sure we can do that."

On Monday, I flew home to San Francisco. On Tuesday, the jury called us and said, "You may have won, but we have a proviso. Neither of you can quit the project and you can't fire each other. You have to stay joined at the hip." Again, as petitioners we said "yes." They sent us a letter of agreement. We both signed it, and we had won.

Then all hell broke loose. The public presentation was scheduled for the following week. It was essentially a huge press conference. We had to have our presentation ready in five days. We needed to have renderings and a model. You must remember that we still didn't have a completed design. We had an idea, but no real detailed design.

What we did is this: We had a hand-drawing that was done at the same scale as the model we were preparing. We laid it on the model and the model-maker brought trees and stuck them into the model right where the dots were. Unfortunately he didn't have enough trees, but he started making trees at midnight and by 10:00 A.M. the next morning, there were enough trees to cover all the dots. We went into the presentation with the model and two perspectives. Then we went on national TV and were endlessly interviewed. I'd never done any of that before.

After the presentation, I returned to San Francisco and started making large models so we could really see what we were designing. The initial problem was that we had no idea of the scale. The voids were each an acre, but there aren't many actual spaces of that size around. Hence the models helped quite a bit in helping us see what we were working with.

One important fact finally changed the scheme: Our client, the Lower Manhattan Development Corporation, was terribly worried about security. To have an explosion, particularly a below-ground explosion that killed 200 or 300 people, would be an unthinkable echo of the original disaster. To assure security for the scheme as it now stood, a visitor would go halfway down the ramps and then pass through an airport-security experience with the puffers and electric screening. None of us could imagine how a successful memorial experience could incorporate this series of precautions.

At this point PWP had been working on the plaza and fountains and Michael had been working on the underground architectural problems for about two years. One day, the client just announced in the newspapers that they were moving the names up to the plaza and placing them around the parapets of the voids. This was a major change. In the current design the visitor came into the park, walked down the ramp, experienced the names, and then returned to the surface. About half-way up the ramp, the visitor would see the sky, a sort of release. This was a classic pattern of the way humans experience grief, mourning, and relief. In the new scheme, the trees became tremendously important because the mourning experience was one in which the visitor entered the park, separated from the everyday world of the city by walking across the plaza beneath the trees, viewed the voids and the names, and then turned around and exited through the woods. The trees now took on the function that had once belonged to the sky. They now provided the feeling of relief, of acceptance of grief, of release. The whole procession we had all been working on for almost two years had been completely changed. This meant we had to completely re-think the design. It was like starting over.

Michael was heartbroken. The underground procession was at least half of his dream. It was at least half of his concept. And no matter what else we could do, it was like cutting off an arm. He was really in bad shape. Finally, Mayor Bloomberg talked to him and said, "We want you to do the names. We want you to focus on the parapet that holds the names." There were, in fact, a lot of problems with the names: who goes where, how you find people, and so forth. Michael worked for almost three years on this, and I think he did a really good job. The rest of the plaza did not physically change that much.

One of the first things that Michael and I had talked about was how to arrange the trees. We started off with a grid. And then we talked about something like beads on an abacus. The trees would be evenly gridded in one direction and irregular in the other. This was kind of a sexy idea. But we weren't sure it would actually work. The idea was that when you entered from the north or south, you would see the park as an irregular woods. And when you turned ninety degrees, the trees would suddenly become colon-



nades. That the trees would have both a natural order and an architectural order playing against each other was a beautiful idea. But we really didn't know whether it would work. To test the idea we made a very large quarter-scale model. And we discovered that our scheme actually worked. It could be clearly seen at that scale.

After we were awarded the commission, we found out that there was, in effect, a seven-story building beneath the plaza. Daniel Libeskind, the author of the Ground Zero master plan, came out to our office in Berkeley and met with Michael and our group. He said that these subterranean spaces were very important. They would contain subway stations, car parks, chiller plants, as well as a large shopping center, and we would have to deal with all the vents and intakes that are always a problem with underground projects. For security reasons, the vents were required to be forty feet high.

At this point we again made another model, and we painted all the vent objects orange. We took it to New York governor George Pataki, who was in charge of the Port Authority. He looked at it and said, "That looks awful." Hence, in our office, this has always been called the "awful" model. He then turned to the engineers at the Port Authority and said, "This is terrible. We can't have this." There they stood, shifting from one foot to the other, and said, "Well, sir, I'm sure we can get rid of a couple of them, and maybe we could have artists decorate the others, and it will be okay." And of course, we the designers were in a state of panic. Pataki turned to them again and said, "No, no, I mean, get rid of all of them." And that's how the west vent structure was created to deal with all the vents of the "awful" plan. I don't know what we could have done alternatively if they had stayed in place.

Governor Pataki wanted the trees in the memorial to come from five states, New York and the four surrounding states where most of the victims had lived. But when we began to search, we discovered that there were only a few random trees in the commercial nurseries. We needed 500 matched trees. Our staff guided by forester, Paul Cowie searched for and found all the trees over a period of months. They came from roadsides and farmers' fields; some of them were given to us by the Public Works Department in Maryland. They were dug and boxed and hauled to a New Jersey site that had roughly the same relationship to the Hudson River as the memorial site.

When we looked at these 500 collected trees we discovered that we'd done a really good job in terms of finding trees with the same shape. But they were all different sizes, some of them as much as ten feet shorter than others. This problem was solved by Bartlett Tree Experts, who hooked up each tree to a separate feeding system. We starved the big ones and fed the little ones, and three years later, at the time of installation, they were as perfect a group of trees as I have ever dealt with in the United States.

The trees were planted in the six feet or so of soil on top of the roof slab. All biological support comes through a system of bands. The wide bands are dirt and the narrow ones are concrete channels that mark spaces where caretakers can move beneath the surface. A system of stainless steel drains runs across the whole site. Water from rain and snow-melt flows into these drains to be piped down seven stories into two 250,000-gallon tanks from which it is recycled in the late summer and fall. Trees also need air, which can be delivered by the same system. The channels also allow root pruning and below-ground feeding. This is probably the most heavily mechanized system we've ever dealt with. It's also the most natural, because it produces a water cycle very much like the earth's. It is certainly the most sustainable system of its kind in New York, maybe in the United States.

The design that results from this banding is a little like an Escher drawing. In some places you feel that it's mostly paved. Other places look mostly green. It's actually about half and half. The trees march across these two conditions and play against both of them to give visitors a changing experience as they move through the memorial.

Other features brought their own design problems, for example, the waterfalls inside the voids. Our office had done a number of waterfalls, but we had never done one that was 1,600 feet long. The problem is that the amount of water that goes across the weir is what holds the falling water together so that there are no dry spots and the water is too heavy to be blown away. The three-quarters of an inch to an inch of water falling over the 1,600-foot weir was so large in volume that it would take a huge amount of electricity to pump it back up so it could fall again, electricity that would cost as much as \$5 to \$10 million a year. Happily, PWP

always works with fountain designer Dan Euser, who invented a weir made of little slots like a comb. Instead of seeing a sheet of water, you see a sheet of little individual waterfalls that look like a sheet, but are very delicate and use about a tenth of the water—and hence the energy—of a conventional waterfall. Without this invention the design would have been completely different.

We also created a glade of approximately two-and-a-half acres at the center of the plaza. It is one of the things that will keep the memorial alive because on every anniversary of September 11 the families gather in the glade to read the victims' names.

Finally we put all these design decisions together in the most elaborate set of working drawings that our office has ever done. We were reviewed by twenty-seven different City, State, Port Authority, and Federal agencies, a process that took almost three years.

Our client decided that they needed to open the memorial by the tenth anniversary of the attack and set the arbitrary date of September 11, 2011. Remember, however, that the memorial sits on top of construction that is not finished, and therefore the memorial is not completed either. We felt that the memorial's mood depends on quiet, and since the surrounding area was still under construction, I was afraid this would destroy this contemplative atmosphere. Some things were in our favor. The contractor had done a beautiful job with the details, which were done to a fair-thee-well. Some parts were truly elegant. They fit together. They really worked. So that part was fine. On the day before the opening on September 10th, there were just a few hard hats, sweeping up and cleaning. Still, I was really anxious because it just looked so big, and it didn't seem to have any life to it. The trees didn't look big enough.

On September 11th, everyone was there—presidents, ex-presidents, senators, mayors, and all kinds of celebrities. But, even so, it was really a day for the families. At the opening there were no speeches. The President just read a poem. He was the first one in, alone. He walked over beneath the trees and looked into the void and at the names. It was a really important moment for us all.

Next came the families and their personal friends. Almost 20,000 people came into the memorial on that first day, but there was surprising little damage. People were very careful as they walked around, finding the names of their loved ones. They stayed

more than half of the day. Of all of our multiple clients, the families had been the most vocal and, understandably, the most emotional. They were looking for closure. And on opening day, the families came up and they were saying, “Thank you. This is really beautiful. This will look beautiful forever.” They were saying all the things any designer would love to hear. I suddenly felt a lot better.

The next day, 1,500 visitors were admitted at a time—about a tenth of those on the day before. The memorial looked pretty good. People were walking around and looking at various things. They were spending quite a bit of time. Although the park was still fenced off, everyone wanted to come and tickets were sold out through Christmas. People are still coming in great numbers, more than 18 million to date, from New York and all over the nation and the world.

The memorial is now almost completed, with perhaps five or six more months of work. The trees are prospering and we look forward to the colonnades that will grow up in a sort of gothic way, reminiscent of the arches on Yamasaki’s original buildings. Much more will happen over time. We have the best system that we could think of to support the trees. In New York, a tree lasts from seven to eight years on average, because they suffer so much strain that they just catch anything—bug or disease—that comes along. We are looking for growth in the memorial trees of more than eighty to one hundred years, a longevity achieved through the quality of the building process. I think that’s one of the reasons we received so much quality through the building process.

Opening day revealed that many of the major design problems had been satisfactorily solved. There had been tremendous controversy about the names. Michael had spent a great deal of time going around talking to people. The names, for him, were like the trees for us. He’d spent more than two years working on the parapet, and it turned out very well. What has really surprised us is how people have used the parapet from the very first day. They leave flags, flowers, and various other things in the cut-out names, a kind of interaction between the victims and their families and friends. A really nice touch.

Other aspects of the design have also proven effective. At night the whole memorial looks soft, thanks to the skill of Paul Marantz, our lighting consultant. You see the bottom of the waterfall as dark

and you see the water as light. It's quite beautiful. After the names were moved up to the surface, the area below became a museum designed by Davis Brody Bond with an entrance building by Snohetta.

We've had our big opening, the press has come from everywhere and now gone back. We're not quite finished, but we're moving along in a good way, still going through the maintenance issues and dealing with all the unpredictable things that always happen.

Afterwards, I felt as if no other project of the size and importance of the memorial was likely to come along. And yet one did, a project of an entirely different character with a completely different set of problems.

In 2010 our office won a competition to do a park on the waterfront of downtown Sydney, Australia. It would replace an obsolete concrete-paved container port that had been there for more than sixty years. Our client, Paul Keating, the ex- Prime Minister wanted us to build a cultural monument to the Aboriginal People, and he did not want this monument to be a white building. He wanted a monumental work of landscape architecture.

The Barangaroo open space is continuous from north to south, with each of the three sections differing in function and, therefore, development of the landscape. To the north is Barangaroo Headland Park, a re-creation of the headland that existed at the time of European arrival. It is designed as a naturalistic headland with a stone edge at the water's edge and a twenty-meter hill reconnecting the water and the old city. It is planted on its eastern, southern, and western sides as an authentic Sydney bushland. Inside the new headland is a huge cultural center one hundred and twenty meters long, fifty meters wide, and sixteen meters tall. Light cascades down the existing cliff, which forms one side of the great hall.

In Barangaroo Central, the park changes in character to a programmed civic urban space in the manner of Bryant Park in New York City. It includes a pedestrian promenade along the foreshore, an open grass activity center, and a pedestrian street separating the park from the retail development to the east. The Sydney Steps and amphitheater connect Miller's Point and the city, twenty meters above, to the body of the park and the waterfront.

Barangaroo South is a dense urban commercial center. There is an open play field along Hickson Road, east of the Crown Casino

and Convention Center and north of three high-rise housing blocks. The shaded pedestrian promenade continues from Central along the foreshore to King's Wharf on Barangaroo's southern boundary. The promenade is lined on its eastern side with retail and residential uses. On the water side, a ferry terminal and public pier are to be built. Within the urban center are a series of walking streets, a small plaza at the foot of the elevator, and a bridge that connects eastward to the Sydney Central Business District.

Over the years, our office has been blessed with a fantastic series of challenging projects that any landscape architect would love to work on. It has been a great privilege to have had these opportunities.

*National 9/11 Memorial*



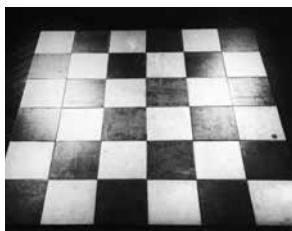
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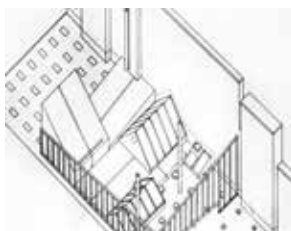
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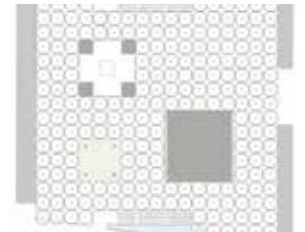
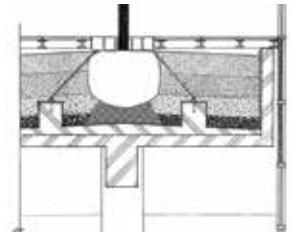




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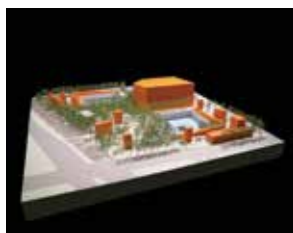
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*Barangaroo - Sydney*























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