The following text reflects the conversations held with the lead architect in charge of the museum's design, Jean Nouvel, and also with the architect Hala Warde, his Paris partner for the Abu Dhabi Louvre museum, and consulting engineer Matthias Schuler.

When you began to work on this project, you did not know that it was for the Louvre Abu Dhabi. How did things begin?

I was presented with the overall urban strategy for Saadiyat Island and an empty site. I was given the site because it was part of the overall Master Plan. It was important to understand the place and the goal to create something completely unique. We sought to establish a cultural complement to the contents and mission of the museums themselves. We knew that the Sheikh Zayed National Museum would come after this one. I also knew that Frank Gehry was working on the Guggenheim Abu Dhabi.
As I approached the site, close to the water, I considered its condition on an island and sought to create a kind of ‘island building’. I think that it is very important when you build in a city to form a relationship with the structure of that city. In this way, I try to be a contextual architect. I have also raised issues about the function of the museum and city. The 20th century has created so many museums. But to me, a lot of these museums are only single buildings, requiring you to climb stairs and enter through a door. However, I would like a museum to be part of the city – a place for gathering, for different people, with different ideas, different cultures …

If you consider the Quai Branly Museum I designed in Paris, it is a place with a big garden. I created a museum with an urban garden, so that you can enjoy it before entering the museum and have continuity of space leading to the entrance of the building. Therefore, it is a place where you can go and stay even if you do not want to visit the collections. You can sit on the terrace, and visit the restaurant or bookshop, as these facilities are important, too.

So, in Abu Dhabi, I also decided to create an urban place – a little ‘cultural neighbourhood’ within the larger Saadiyat Cultural District. It is separated from the neighbourhood behind it and becomes a specific place in the landscape. And also to have the city of today to identify this building as a mysterious light or a spot of light that you can imagine belonging to the Arabian culture. Therefore I chose to use the idea of covering it with a great white or silver cupola which would also establish a microclimate to provide a comfortable place in such a hot and severe climate. This would be done by creating a large shadow, but shadow at this scale is not darkness, of course. It is always a question of balance; through the varying qualities of light you need to be able to establish different ‘feelings’ or atmospheres and also to maintain an idea of urbanity. It brings to mind images of souks with rays of light in the middle.

It also brings back memories of my work on the Institut du Monde Arabe in Paris. The decision was to use geometry and light – two of the greatest elements for me of Arabian architecture here. I designed a Parisian building, even if it was in homage to Arab culture. It belongs to the urban structure of Paris with perspectives formed in relation to this city and continuity with other buildings.

Specifically, the museum is a series of individual pavilions that are connected by
transitional spaces. The large dome above seems to give unity to the whole complex. How did you arrive at this idea?

In Abu Dhabi, I wanted to establish urbanity related to an Arabic system. So we employed the idea of very simple white volumes or small buildings of varying widths with different sizes of spaces or 'streets' between the buildings. The microclimate is established by putting a large part of the museum below the grand cupola, which is 180 metres in diameter. Again, I wanted to play with geometry and light and organise it into what I call 'rain of light', and I tried to imagine something scenographic, but it would also have a relation with art. It is a series of patterns that could create, through a system of perforations, an effect of a shower of droplets or spots of light.

It is also fair to admit that I wanted to design a system or concept for a building where, if the programme developed for it was modified, I could change the proportion, the shapes, and the organisation without changing the entire project. If you look back at the initial programme, we have changed almost everything, yet the overall concept is still strong.

HW The museum is really a series of 40 galleries or little buildings. The permanent galleries are formed by a series of about 25 little buildings. The temporary gallery is a 2000-square-metre space that can be divided into two or three exhibitions if it is needed. Its location is very good because it is where you have the water that goes below the dome, and above it is the VIP zone that also has a very nice view over the water at the edge of the dome, with large, oversized glass which gives the impression of a completely open building. Every gallery is, in reality, a room and visitors proceed from one room to another through a transitional space. The transitional spaces are always somehow connected to or related to the exterior, by a window or skylight or door. What is very important in our concept is the relation between exterior and interior. You always have a feeling that you are in a specific place.

Please explain more about the dome. How does it work and what is it made of?

The cupola is a layered system with patterns made by perforations of different shapes and sizes. The geometry we have used is rather abstract and complex and therefore results in a random geometric pattern produced by rotations. By rotating or shifting the layers, different densities in the pattern are created through the way the layers are superimposed. The aim is not to have uniform light, but to have richness of light. We built a six-metre diameter model in Abu Dhabi to gauge the exact results in the natural light of the place. You know that the sky there is very white and special. It has nothing to do with the light of Paris or other places. I was often reminded by the engineer Matthias Schuler that in order to make the ‘rain of light’ you need dust in the air. It is natural and part of the local identity.
There are five layers below the structure and five layers above. We have also designed the structure as a layer too. So, it is basically 5 plus 1 plus 5 and all the layers contribute to creating a pattern to produce the rain of light that we are seeking to achieve. We have tested a mock-up of the dome in Abu Dhabi and have also undertaken testing in China because the constructor is a Chinese company. As we tested materials, it became obvious that it had to be stainless steel. We considered how it behaved in terms of light, how it would age in its specific climate, and how it can be cleaned, because this is important, too. There were questions about dangers to birds, possible security concerns, maintenance needs as people had to access it, etc. It was important also to study how the cupola could be built, how to make the transition between patterns and the way the edge is handled. The edge is like a flat ring where there is a superposition of different patterns and it is only nine metres above the ground. It is really a work that needs to be tested and a computer model helps, but testing in reality shows things that no computer model can achieve.

In the past journalists have called it a floating dome. Why this phrase?

I believe they say this because you cannot see where the support is, because we have only four points. They are resting on the buildings underneath only in four places that are not visible, so with the special lighting, especially at night, it looks as if it were floating. Of course without the technology of today it could be very difficult to achieve this effect.

The idea for the museums is quite fluid; with spaces that can be used in various ways, it is possible to visit the museum exhibitions and follow several different itineraries, and even interrupt them to go outside the pavilions.

The dome seeks to create outdoor spaces that can be used for much of the year, in spite of the extreme heat. It forms a microclimate, not only in terms of providing shade from sunlight, but also in terms of temperature. As surprising as it may seem, we will be cooling the floor. While spaces under the dome are open, we have developed a system based on a natural cooling source, which is the Arabian Gulf. This body of water is very shallow – only 30 metres deep – and there is not much exchange with the Indian Ocean. It is also very high in salt content, about 30% higher than other oceans. This means that it has great temperature swings – up to 35°C in summer, but down to 15°C and even 13°C in winter. So we have created a huge geothermal cooling system. We will charge it with cool sea water in the wintertime by depositing water in the earth where it remains cool and then bringing it up for use in the cooling systems when we need it in the summer.

We work very closely with the museum curators and professionals to see where the inside and outside can work in perfect continuity. It is very...
important to feel that the outside goes inside and vice versa – the ceilings, floors and the external materials. You know that Jean Nouvel looks at every detail, because this contributes greatly to the quality of the building.

We are using high performance concrete for all the buildings below the dome. It is used in a very special way to lend nobility to the finishes. The very large modules make it look as if it were constructed with very large stones. On the one hand, it gives a very rich texture as stone, but on the other, it can be used in very thin layers and with angles that give a sensation of solidity. All of the buildings will be made of this, using a very specific pattern and with the integration of some lighting, handrails, and other elements within the component panels.

We have used an oblique pattern for the floor because the buildings are organised in different directions. The idea was to establish one floor pattern to extend throughout the whole public space.

Visitors pass through transitional spaces to go between pavilions to access outside spaces. A glimpse of the exterior is often present via a window, skylight or through a screen – a type of moucha-rabieh through which you can see the water, the vibration of the natural light, the sky – themes we use in many different buildings throughout the museum.

Building on Saadiyat Island must be very challenging. It seems as if you are being asked to create a new city in a short period of time.

It must be remembered that this is not a new city, because the city already exists. It is, however, a new development on an island and therefore a new territory. It is very important to see the skyline of Abu Dhabi across the water. Saadiyat Island gives us an opportunity to have a new perspective of the existing city and also to see the new, large scale cultural developments along the island’s edge. This situation makes sense, for example, when you are on a bridge, on a boat or near the water. We will create a prestigious foreground on Saadiyat Island through the new museums being reflected in the water. Of course, my goal is to contribute to the local culture and to assist Abu Dhabi in creating something of lasting value. The goal of the architecture should be to create the right conditions, to evoke the right emotions, establish the correct scale, and grant meaning to the building.