

# Architecture III: The Surreal

## Musical Waterfall

**MARK FULLER:** Ramin was here, you know, before we started this.

**RAMIN DJAWADI:** I went to Dubai with him.

**MARK FULLER:** We were having, we were eating at one of the restaurants in the Dubai Mall.

**RAMIN DJAWADI:** I almost forgot about this actually, yeah I'm glad you reminded me. We were...

**MARK FULLER:** Talking about the different music and it was one of the restaurants, I don't remember the exact name, but where the chefs, you know, toss things around, and make music out of the pots and the utensils and stuff.

**RAMIN DJAWADI:** And there were these two drummers that were going around from table to table and they were playing these drums and engaging the guests.

**MARK FULLER:** And he says, "I just got a great idea for one of the pieces."

**RAMIN DJAWADI:** And I looked at Mark and Mark looked at me and immediately we said, "We need a piece that is very drum based." Right there, we knew we needed yet one more piece that's very focused on drums.

**RAMIN DJAWADI:** It's very exciting. And it just drives, you know, with the waves coming down, it's just waves are so powerful, obviously. Right? And it's almost intimidating when you see this coming at you. So I thought with these drums, you kind of want to keep up with that power, right.

**MARK FULLER:** You take the most simple stimuli in life. If you're creative, like Ramin is, or like we do with water, when you see a splash on the driveway and it gives you the idea to make it a thousand times bigger into a public experience.

And that's the way a lot of this evolves.

**NOON SALIH:** This is Mark, the president and CEO of WET which is a water feature and fountain design firm based in Los Angeles. His firm is the one behind the iconic Bellagio hotel fountains in Las Vegas and the famous Dubai Fountain next to Burj Khalifa.

And he was having dinner with Ramin Djawadi, the renowned composer whose incredible compositions include the scores for shows like Game of Thrones and Westworld and films like Iron Man and Eternals.

The two creatives joined forces to create *Surreal*, a bedazzling water feature at the centre of Expo 2020 Dubai. In this third segment of our series on architecture, we're diving deep into how Surreal came to be and the splash it created with Expo visitors.

I'm Noon Salih, and this is Inside Expo, an official podcast of Expo 2020 Dubai, where history is being made.

**[Intro sting]**

**NOON SALIH:** The story of Surreal starts with Ahmed AlKhatib.

**AHMED ALKHATIB:** I'm Ahmed AlKhatib, I'm the Chief Development and Delivery Officer. I've been looking after the delivery of Expo physical site from, you know... since it was a camel farm and a couple of gaf trees, an empty site, until what you see today.

**NOON SALIH:** As the blueprints of the site were being drawn up and the master plan starting to bloom, the three districts of Expo 2020 Dubai – opportunity, sustainability and mobility – became petals that unfurled from the central Al Wasl Dome.

And in between each of those petals, there were three plots. One side was taken up by the main Al Wasl avenue leading from the metro station, one side was the home for the elegant UAE pavilion and the third space, well... Ahmed explains.

**AHMED ALKHATIB:** You know, the master plan reached a stage of details that actually might sound crazy, but you feel the master plan talks to you when you place something in the wrong position, it tells you like, don't build me.

And then the question was like, what can we do in that plot, that actually, becomes another destination, another area for visitors to enjoy and relax.

And accordingly, we started thinking about having a water body there.

**NOON SALIH:** The team at Expo thought about having a lake there or perhaps some dancing fountains. But the brief was to create a place where families and visitors can relax in a quiet oasis away from the hustle and bustle of Expo.

**AHMED ALKHATIB:** So we found one of the best designers in the world in water features, which is WET design from Los Angeles. And we work closely with them to come up with just a place to come and chill and relax and interact and laugh.

**NOON SALIH:** And that's when Mark and his team were brought on board.

**MARK FULLER:** I'm Mark Fuller. I'm the president and CEO. And at my company that stands for Chief Excellence Officer of WET. We are a company that creates engaging entertainment experiences – some of them interactive, some of them presentational, around the world, really primarily with water, although with other elements of the world, fire and wind.

The initial brief for us was a garden, a place where people could go sit, relax the sounds of water of some type or another, some, some type of fountain, if you will.

**AHMED ALKHATIB:** So at the beginning, we actually started with about six different designs of features that involves water. We challenged the designers to make it more and more complex, more and more, mega but in a very human scale as well.

**MARK FULLER:** And each time we went a little further and a little further, and then I just felt that we had an opportunity to do something that would really be spectacular here, but also accomplish those goals, being refreshing and relaxing and different. And that's what we ended up with, what we now know as Surreal.

**AHMED ALKHATIB:** Because, you know, the main objective was nothing to be at Expo that didn't have a meaning. Everything had to have a meaning and a reason why it looks like this, why it's placed like this, why it's located in this area.

**NOON SALIH:** And so when the water feature was being designed, they decided to position it below ground level. It became an architectural balance: the sunken bowl of the water feature contrasting with the dome of Al Wasl Plaza right next door. Half a sphere above ground, half a sphere into the ground. Sort of like a ying yang.

Now before we continue, it'll be helpful to describe what Surreal looks like for those who haven't seen it yet. Here's Mark:

**MARK FULLER:** The fountain Surreal is like a coliseum really. It's 80 metres or so across. And you come in, you go down one of three grand stairs. And when you're at the bottom, you're in this circular plaza and there's these curved walls. It's like you're in a giant, giant punchbowl, so to speak, they go up four or five stories high and they're black stone textured pebbles.

And at the top of those in metre wide increments, we can release whitewater waves. Just tiny trickles or big, huge crashing waves that come down so powerfully that if you're standing at the bottom near the base, it can practically blow the head off of your head. This rush of wind. And those are choreographed to give these different visual experiences.

We developed this idea of doing something very different than, well, then let's say fountains where water starts at the ground, right. It shoots up in the air and then

falls back down. Why don't we start with the water already up in the sky? And then the entire experience is about the water falling.

**NOON SALIH:** The size of the Surreal water feature is truly impressive. Rising four storeys high, the water comes crashing down from all around you. But just as the waves reach the bottom of the curved walls, they disappear into the ground.

**MARK FULLER:** And one of our ideas was at one point, well, how about if we just let them wash all across the Plaza? So when some have to let people know, they either have to have very, very disposable shoes or bare feet and then the waves washing across like the beach.

**NOON SALIH:** But that would mean you have to take off your shoes when coming into the space and might turn away some visitors.

**MARK FULLER:** So that's when we came up with the idea of making the last metre or so of this waterfall permeable. So the water would disappear *just* before it hits your feet.

**NOON SALIH:** It's a very serene space. The benches in the centre of Surreal are an opportunity for people to sit, meditate, enjoy and immerse themselves in the energy and tranquillity.

When planning and designing all this, the team at WET started with a few mockups. The initial prototypes were small, something that would fit into a garage. But with each iteration, the team went bigger and bigger until they created a full life size section of the water feature in their studio backlot in Los Angeles. The site kind of

resembles the set of a movie studio where engineers and architects worked together to test out the design.

**MARK FULLER:** We have a real amazing cast of talent and characters. Pattern designers, architects, landscape architects, chemists, optical engineers, choreographers, musicians, academy award winners, astronauts.

**NOON SALIH:** Ahmed AlKhatib went out to LA to see these prototypes as the fountain started taking shape. There, the engineers worked with a sophisticated system of pumps and sensors to understand the movement of the waves and how the water can be controlled and choreographed. Depending on the choreography, oxygen is pumped into the water to create white coloured waves that cascade down. At other times, a series of projectors kick in and give the waves different colours.

**MARK FULLER:** I think we spent the longest time wrestling with what should be in the centre of this. I mean it's a circle. It's very, very, symmetrical. And we had a lot of different ideas. We didn't really want a dominant structure there because you want to see across.

**NOON SALIH:** There was a lot of back and forth about this specifically. Some early designs included an empty pit in the centre that would have a big column of mist rising into the sky. But then... it clicked:

**MARK FULLER:** Well, this is all about water. What is the opposite, antithetical force to water in life? Well, it's fire. I mean, water puts out fire, destroys it, right? And fire does the same to water, boils it away into nothingness. So I had the idea of let's use those opposites and play them off against each other.

So we built these six towers. We call them fire spires and on cue again, in the shows they burst forth these huge balls of fire that rise into the sky.

**NOON SALIH:** What makes these balls of fire unique is how they fit into the sustainability element of the Expo. The gas that's being burned is hydrogen - which does not create carbon dioxide. Instead, when burning hydrogen, the byproduct of that is water!

**MARK FULLER:** So how great is this? We didn't think of it in advance, but when we did it, we thought, my gosh, we have a flame that actually produces water and water is the substance of the fountain. So it's kind of a circle of life thing with nature's elements.

**NOON SALIH:** And while a hydrogen flame burns clear - it's not yellow - tiny amounts of environmentally safe salts are injected into the flame to give the fire balls different colours: some red, some orange, some green.

In that sense, this magnificent fountain brings together water, fire, colour and light.

**MARK FULLER:** We look at the elements really as creative partners that we work with and we sort of tell them what we'd like them to do. And then we see how they interpret those instructions as they bring their own life into our creations.

And then we thought, we can do waves, but can we choreograph them? And if you look down on this fountain and every metre is a segment that can drop a wave on cue from the choreographer. So it's kind of like a circular piano where you could play all the keys around and around in different notes.



From the very beginning with this, I felt that we had to have an original score.

**NOON SALIH:** For many fountains that Mark and his team have worked on – like the Dubai fountain or the one at the Bellagio in Las Vegas – they begin with an original piece of music that they interpret with the movements of water.

**MARK FULLER:** And I reached out to the composer Ramin Djawadi, who is, I believe the most in demand, popular, composer in Hollywood, just a fantastically gifted musical composer. And we met and I said, “Ramin, how fun would it be if we tackle this project where you're used to working with fixed visuals and I'm used to working with fixed music and we co-compose, we co-create the music and the visuals together, each one inspiring, and we go back and forth.”

**RAMIN DJAWADI:** So my name is Ramin Djawadi, I'm a composer. And I was blown away because it's a completely different world; I'm used to working with a story that preexists pretty much.

**NOON SALIH:** Mark and Ramin would meet at the office and collaborate together. Mark would show models of what the designers and architects were working on. Even making a small section of the fountain to see how the water would react.

**MARK FULLER:** We have this very large mock-up full height and not the full circle of course, but a good piece of it in our back lot. So Ramin would come out and watch that and we would show him the different modes, the sizes of the waves, the timing, and so he could see and sense in real life.

**RAMIN DJAWADI:** And then just based on that is where I just started writing music and I just try to imagine what is the story that we need to tell, the music needs to convey? So yeah, we were pretty much working in parallel.

**MARK FULLER:** And then we'd video different parts and he would go to his studio and there's a big old screen up in front of him and it's where he composes and watch that and come up with a piece of music and then we would go there and listen to them. So it was a really rich back and forth.

**NOON SALIH:** There are nine original pieces composed for Surreal: some are more orchestral, some are more pop, some are more electronic while others are traditional with world instruments.

**RAMIN DJAWADI:** There were no boundaries, I felt that it was a lot of fun to create. The overture of the beginning of it, actually, if you just listen to the opening. It sounds like a wave. It's just how it started. It just, the whole feature comes alive. And that, that was always the idea of how this overture starts.

It's just before you even have a melody you feel it come alive.

And with this water feature, because it even has colours, but even during the day, it's just white, but it's just the way the shape of the waves differ, it's different every time and for sure that's something that, that influences me in the way I write music and I feel like it's a painting. You create a painting.

Then the strings and the solo violin enter with the melody and then it kind of goes from there, the orchestra comes in.

It uses a variety of ethnic instruments: there's an oud, there's a duduk, there's a tabla in there. So there's quite a mixture of things.

Djembe, ethnic percussion, darbuka, and the full orchestra and even choir at the end, it just kind of grows and grows and grows and there's a breakdown section.

There's some electronics and then the orchestra comes back in.

And then, I was just so excited. I kept writing and I said, "You know what? We need one more piece. We need one more. Now I want to write a waltz. And now I want to write something with vocals." I just kept going. And again, I was just so inspired.

**RAMIN DJAWADI:** Then there's *Desert Drive* and that's fully electronic. That one is very much, it's a completely different turn and into different a direction. That's just the very electronic piece.

It was simply that we said okay, we have the *Overture*, that's very organic and orchestral and now let's do the complete opposite. And so that's how that came about.

**MARK FULLER:** And if you'd stand there and I didn't tell you anything about it and asked you what made you feel like, especially in the evening. I think you'd feel like you were driving on a long road, perhaps across the desert and there wasn't another car in sight. It has this lonely calling to it.

And then every so often, just as you would pass something or other, it gets more vibrant and back. And it's a very emotional piece for me.

And then Ramin composed, to me, the most beautiful waltz I've ever heard.

**NOON SALIH:** While Ramin composed a total of nine pieces for Surreal, they all have their own choreography with the water. It was a unique project for Ramin. When composing for films or TV shows, Ramin can refer to a script for the emotions of a scene, or visit the set to see how the actors are interpreting a specific part or even watch an early cut to understand the mood. For Expo 2020 Dubai, it was more abstract than that. What's more, there was the added sound of the waves crashing, so Ramin had to take that into consideration when composing so that the music and the waves complement each other. The final pieces were then recorded at Abbey Road studios in London with members of the London Symphony Orchestra.

**RAMIN DJAWADI:** Both Mark and Ahmed, they were saying: "Look, we can only describe in words what we feel or what we should achieve, the notes you need to figure out, you know, you're the composer.

So you need to put that into notes what we're describing." But there were these bigger terms of inspiring, and I want to say even spiritual, even though it's not necessarily meaning it should be religious, but it's just, we really want it to touch people's hearts.

And that was the key thing of really getting to the core emotionally of every person that will walk through this and, and just, you can just stand there and get lost. That's what we wanted. And that's what I had to achieve somehow.

**MARK FULLER:** If you think of a circular piano, how it would be, and you just went note to note, to note, around, you'd get a travelling wave, but we can split it and play it and then crash them all at once.

We wanted a sea of sound to fill this coliseum of water. Just as much as the waves do around the outer rim. And so we have these speakers that radiate sound out around them and as you walk around, if you were to close your eyes, you couldn't tell where the sound was coming from. It's just everywhere. And it makes it that much of a richer experience.

**NOON SALIH:** Unlike some of the other fountains that Mark and his team at WET have designed before, Surreal doesn't separate the visitor from the water. There's no handrail - you can stand right up the edge of these pebbled walls, take off your shoes and enjoy the water washing over your feet.

That's part of the excitement: as magical and moving as this feature is, it's also tangible.

**MARK FULLER:** When we started the project, we immediately realised we wanted to make this as tactile and as approachable as possible.

We knew the little kids would love to do it, but there are big kids and adults and people standing in there. I think most people like to have their photographs taken at any time, just as one of those waves just crashes and disappears right at their feet.

**AHMED ALKHATIB:** You go and stand there. You feel the energy of water. You feel the power of water. You'll appreciate water in a different way. It sticks to their memory.

So people, they just love to walk and take their shoes off and actually just come and interact with water and just the splash of water, the energy of water, once falling down and you feel the wind. It's so refreshing.

**NOON SALIH:** Whenever you step into Surreal, you see people frolicking in the water: kids playing around, adults splashing their feet, families spending quality time and photographers snapping that perfect Instagram shot.

All the while, the splashes of water play as an instrument in Ramin's beautiful compositions.

**MARK FULLER:** We work with real elements, real water, real fire, real wind, and that's why I think people enjoy our creation so much. In this world of synthesis and, and it's fun, I mean, I love computer games and all that movies and so forth, but there's something about the real that we connect to right to our inner souls. And that's what Surreal is all about.

It starts with that word real and then takes it beyond. But it is very real. And I feel that that's the singular accomplishment above all else that we created here.

**NOON SALIH:** One of the reasons visitors keep coming back is that Surreal has different compositions and 'personalities' as Mark describes.

**MARK FULLER:** Now Surreal has two very different personalities: one in the daytime and one at night. And in the daytime with those crashing amounts of tumbling white water, she's great at capturing the sunlight and that's the source of elimination. But at night when it's dark, we illuminate Surreal ourselves.

Sometimes in white light and sometimes with amazing colour.

**NOON SALIH:** And it's at night that the fountain starts its magic. The central spiral structure spews balls of fire and the waves dazzle as they come down, sometimes white, sometimes coloured by projectors.

And that's when the gravity-defying illusions are turned on: if you look closely, the waves appear as if they're moving up the walls, flowing upwards.

**MARK FULLER:** As many features do, many fountains, I should say, they start with a generic title though. The expo water fountain. I think it was known as for a long time.

And we came up with the word 'Surreal' which is a difficult word to define. And I understand it's exceptionally difficult to find an Arabic equivalent, but in English, I think it means beyond the real, just something more, something special, something perhaps even magical.

**NOON SALIH:** And that's how Surreal came to be. As one of the highlight attractions on the Expo grounds, Surreal brings together an intricate system of engineering with an ambitious architectural design and beautiful musical compositions in one piece. And it continues to attract, amaze and entertain visitors every day.

**MARK FULLER:** You know, when you see an evening in particular, when you watch the waves fall and they fall, of course, at the speed of gravity, crashing down the walls and orchestrated to the music. And then at some point, if you look closely, it appears that the waves stop and these are big old waves. And then they reverse and go back up and some people ask me, “Well, how do you do that illusion?” And I have to reply, “What, what makes you think it's an illusion? I mean, do you not believe in magic?”

**NOON SALIH:** You can listen to the magic of Ramin Djawadi’s compositions for Surreal on all music streaming platforms.

Inside Expo takes you behind the scenes at Expo 2020 Dubai, sharing our stories and others across the 170-year history of this global event. Learn more by visiting [VirtualExpoDubai.com](https://VirtualExpoDubai.com).

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