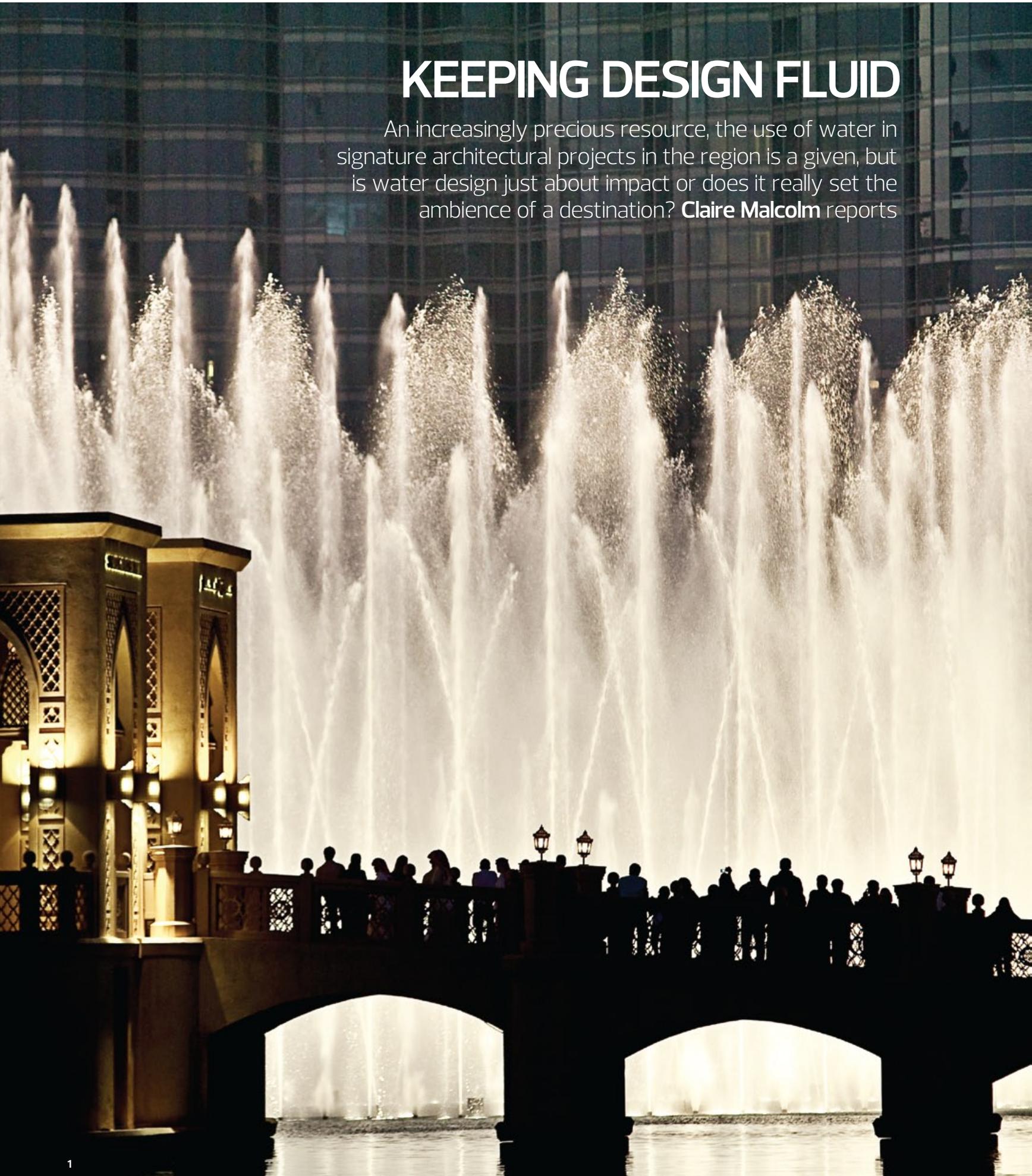


KEEPING DESIGN FLUID

An increasingly precious resource, the use of water in signature architectural projects in the region is a given, but is water design just about impact or does it really set the ambience of a destination? **Claire Malcolm** reports



Water features in the Middle East are either subtle mood enhancers or shoot-for-the-sky showboats; but one thing unifies them – the fact that use of this precious natural resource as a design element is becoming increasingly topical.

From a courtyard fountain in a boutique hotel to large wall features anchoring one wing of a mega mall, the use of water is prevalent in the urban landscape at every turn, yet its impact and relevance within the experiential context is often overlooked.

Michael Denman, director of overseas operations for Canada-based Crystal Fountains, established in 1967, charts the evolution of water as an entertainment medium. "Previously, water features were much more traditional in design. The biggest change has been looking at water from an entertainment perspective. Before it was more about its relaxing, calming properties."

Mark Fuller, chief excellence officer for Wet Design, a California-headquartered company, also comments on the transition of water from decoration to entertainment. He spent the early part of his career working for the Walt Disney corporation where the catalyst for him in taking water design in a new direction was a children's park project in the US, as he explains: "The first fountain we did had streams of water in a park setting where the water jumped over the walkways and people's heads – 30 years ago that was radical.

"The entertainment angle is vital. We work to make water something that you are overtly aware of. We are born of water as human beings and we relate to water, so there is a definite natural bond there."

TRADITION VERSUS TREND

Water features publicly sprang into life as integral components of the overall design process within North America's first large-scale retail developments some 50 years ago, but they have sat at the heart of civic life for far longer.

"From a commercial perspective, the trend in terms of fountains is primarily North American. In terms of retail development, we started getting involved in the early 70s and that's when the enclosed malls hit North America," says Denman.

You only have to marvel at the magnificent fountains and features of Italy's Villa d'Este in Tivoli, or the opulence of the Château de Versailles' garden ornamentation in France, to realise that man has always been fascinated by the dramatic effects that water can deliver.

Says Fuller: "Fountains have been here for thousands of years and, for the most part, not a lot has changed. If you look at The Alhambra in Granada, Spain, for example, it works around a system of water in runnels or on surfaces and water coming out of statuary, such as the mouths of horses; and so the focus is primarily on sculpture with water as a surface treatment. And such striking effects can be created with just a small amount of water."

DYNAMIC MEDIUM

The myriad properties of water, when used to full effect, are limitless and both Denman and Fuller agree that they are vital to setting the ambience of any major project.

"In commercial environments people have realised that water is a great dynamic medium and see the potential to create vibrant spaces by incorporating more animated sequencing of water and music features," says Denman.

"In terms of technology it has been a kind of natural progression, but the idea of doing things with more 'wow' is maybe also a progression in terms of looking at water in a different light," he adds.

Wet Design has harnessed additional resources that play on the natural elements to take the wow factor one step further, utilising not just water but fire, wind, mist and fog to create unique displays. "We focus on the magic of water itself. Everything we do is designed so that people walking by stop in mid-sentence to look at what's going on."



DESIGNS ON ARABIA

The UAE is already home to some exciting public space features, with more under development. Crystal Fountains has been working in this market for the last 15 years, from its debut landscaping project for the Abu Dhabi Municipality along the city's Corniche to the extension of Dubai's BurJuman centre in the early 2000s, which included over 30 water features.

And this market has its own unique requirements, according to Denman. "What is surprising here is that there is more keenness for exterior, as opposed to interior, water displays, which is a direct contrast to Europe or North America."

But regional differences also impact design and implementation. "It is very challenging here due to the heat, so evaporative loss is very significant. It can be as much as one centimetre of water per surface area as a mean, increasing to 2.5 centimetres in summer. Now that water scarcity is becoming a growing concern here, we are being challenged more and more; plus there is movement towards sustainable design," he says.

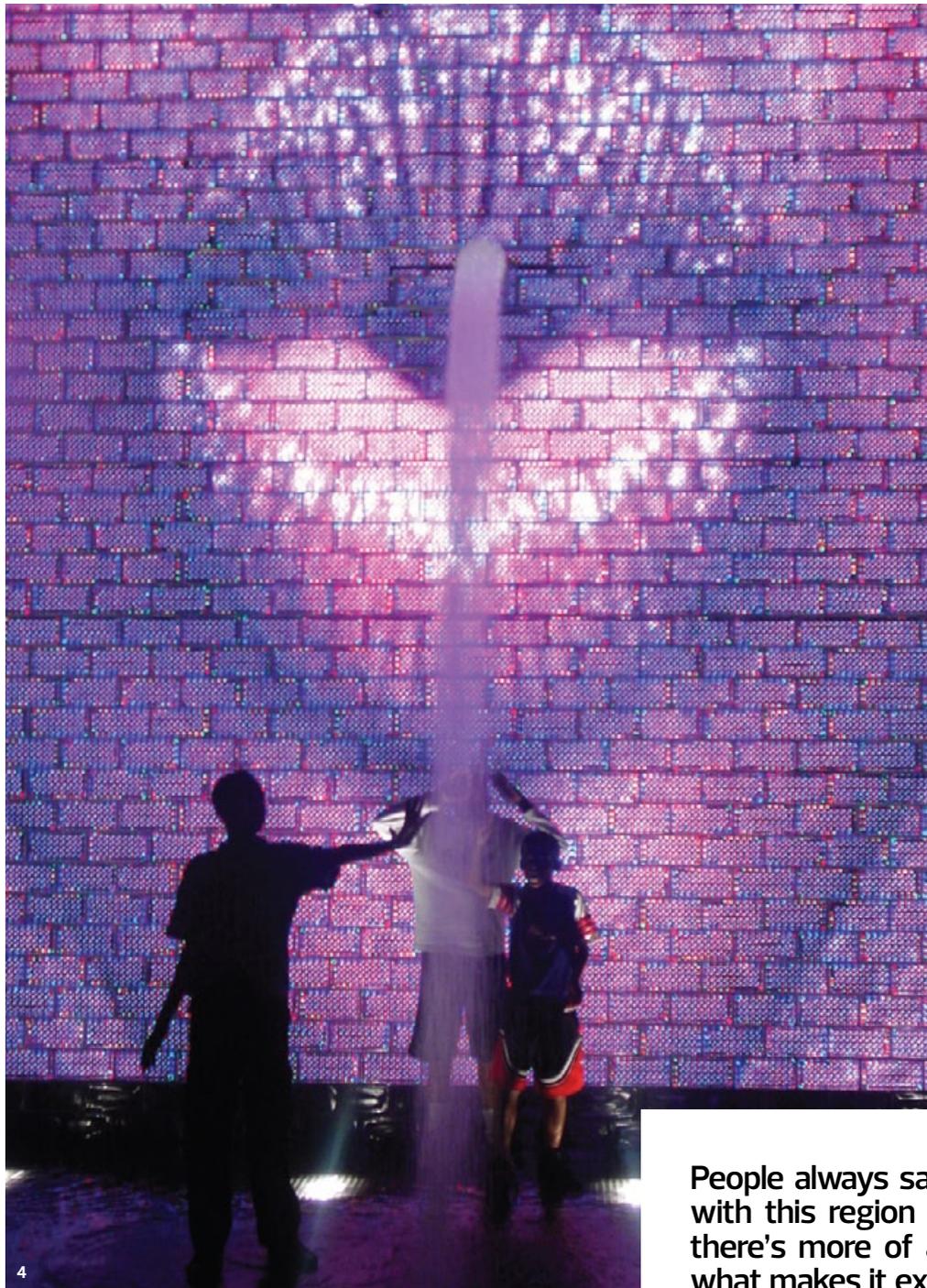
Denman believes that Dubai and the wider UAE's progressive development places it in the mature market bracket but "places like Qatar and Kuwait are a different story."

Fuller agrees and says: "The opportunity to work with a culture that is really excited about doing new things is great, and the Middle East is certainly that way, as is the Far East. We also look for cultures that have a unique bonding with water and certainly in this country, water is extremely precious."

And the Crystal Fountains team is seeing its skills put to the test with its involvement in the World Voices water feature project, which forms part of Abu Dhabi's carbon neutral Masdar City site. Says Denman: "Masdar City is a perfect example. We are looking at designing water features that are energy efficient and consume a lot less water."

"Globally, Masdar has the recognition of really breaking the mould, and for us it's been a very interesting journey. For example, there are restrictions in terms of electrical loading at certain times of the day as the power is basically captured through solar energy, so the way that the fountain operates is dependent on electrical loading at specific times. We have been working very closely with the building engineers to design systems that can actually operate and function in harmony with the rationale. This is a first, and we've never before been involved with that degree of awareness." →

- 4 Crown Fountain, Chicago, USA
- 5 Burjuman Mall, Dubai, UAE
- 6 Madinat Al-Fahaheel, Kuwait



Adds Fuller: "People always say that the word they associate with this region is 'biggest', but I've found that there's more of an interest in 'best'. And that's what makes it exciting."

Wet Design's experience includes translating water entertainment into a reality without necessarily having big pools of water that are open to evaporative loss. "We've used pop jets which pop up a little marble of water the size of a coin, and you can have a group kids playing in an area the size of a field yet all the water that is used wouldn't even fill a drinking glass," he says.

They have also recently commissioned a new water research lab to pursue pioneering goals of reclaiming brackish or grey water and 'polishing' it for use.

For Denman, working with the team at Masdar City has been a sustainability learning curve from day one, as he explains: "We were given some very strict criteria including a cap on the electrical load, which is up to 70 percent less than a normal water feature. When you talk about the Middle East and water fountains 15 years ago, water consumption and electricity were the last things on our minds.

"We have always been aware of looking at how to make systems more efficient but there has never been a real mandate and it does require a lot of research. We're on a great learning curve and there's no silver bullet, it's been a wide range of different things that you need to look at. It's more about changing your behaviour and approach to design."

Fuller uses Wet Design's Dubai Fountain project as an example. "If you look at the fountain you see jets that power up into the air like rocket plumes. They are powered by compressed air, not by pumps. That's a technology that we formulated 12 or so year ago and it uses around 20 percent

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LOSING LIQUIDITY

As water scarcity begins to impact daily life, the indulgent nature of large-scale water features must be an obvious candidate for self-extinction and Denman agrees: "Generally, I believe that we will see less water, as cost-wise it is expensive and developers are generally a lot more cost-conscious than they were before. There is also a greater degree of reality and seriousness now and increasing awareness of the future availability of water."

The bigger and better mentality is still fairly dominant in the region, and again Denman believes that this will change. "I think that's gone. You can still do iconic in very different ways. The Millennium Park in Chicago is a very good example of this, whereby you're creating a totally different experience.

"I don't think that massive water displays is the right direction and I also think that people get fed up of seeing the same thing, so these are exciting times as it challenges us to come up with new and interesting ways to display water."

He says that the application of smaller footprints and tightened operational capabilities will be far more important. "You need to look at using different technologies which will reduce the evaporative loss, and the possibility of playing around with the operating times so it can be running partially dry and still be a water expression. It's all about coming up with more innovative ways on how you can create water features while taking a conservative view on water consumption. And the same thing is applicable for electricity."

energy versus if we had used pumps. So that's an 80 percent saving, plus remarkable efficiency. "At night, the fountain has approximately 6,400 lights and each one is switched on just for the moment that the water is racing by. In your typical fountain the lights come on at dusk and are left on all the time."

Wet Design also created the famous Bellagio Las Vegas feature which has 5,000 lights and uses electronically operated robotic oarsmen. "The cost to operate the fountain was running at approximately US\$54 per day the last time I asked. They are putting on a show for thousands of people every day and that's phenomenally good value," he says.



NEW TECHNOLOGY

Fuller believes that advancements in water related technology have only impacted the market fairly recently, as he explains: "At every juncture throughout history people have employed the latest technology, we just happen to be living in an era where there are fantastic innovations."

"If you look at one of Rome's city fountains, that was powered by the hydrostatic pressure of water, which still manages to showcase gravity-defying displays, and this was the technology of the time."

"The level of construction quality and sophistication is rising exponentially but sometimes you're working right on the edge of that, which has associated challenges. The Dubai Fountain uses 354 moulded-axis robots underneath the lake which are connected to our network and can 'dial home' if there's a technical problem – do that anywhere in the world and it would be a challenge. There are also 6,400 underwater lightbulbs which need to be regularly replaced," he adds.

Says Denman: "Water is a very expressive medium and one of the other huge evolutions for us is LED lighting, which didn't have the same advanced degree of performance three years ago that we have now, and a lot of the projects where we have used it are only now coming on stream."

"Water absorbs a lot of light and you need a lot of power so previously you just couldn't do effective displays using lighting. Now the whole industry has pretty much switched to LEDs."

This also increases the potential to refresh a design according to Denman: "From a programming standpoint there is a way of refreshing them and the interesting thing with RGB is that you have over 16 million colours so you can come back and re-programme. The downside to musical fountains is that people get bored with the same shows very quickly, so unless you are adding new shows every year then the product will wear out very fast. The control and technical side is increasingly important and we are looking more and more at water as an art and sculptural element."

SOURCE MARKETS

Crystal Fountains isn't just relying on the Middle East to develop its international portfolio. "In China we are working on the Four Seasons in Hangzhou. We started in China in 1994/5 and did a fountain for a luxury retail mall in Guangzhou which was both exciting and challenging," says Denman.

He continues: "We've worked in Hong Kong, and in Taiwan we did the feature at the base of Taipei 101 which is a large musical feature with dragons etc. We also worked on the big lake symphony feature at Kuala Lumpur Convention Centre back in 1998 and in Thailand we are involved in a lot of retail projects, including the Science Museum."

"More recently we worked on the Siam Paragon mall which won an ICSC design award. We are also now involved in our first project in Moscow, in White Square, plus work in Moldova and Romania."

WET Design meanwhile has offices in Dubai, Beijing, Singapore and Shanghai. Commenting on opportunities in China, Fuller says: "It's a very exciting and interesting market with people interested in breaking down boundaries and doing new things."

Market differences are not as diverse as imagined, and Denman attributes that to the global reach of the few specialist firms involved in the industry, as well as well-travelled developers. "Investors and developers travel a lot more so they are more educated, and there is that awareness of what exists and new trends. For example, in Poland we were involved in the first western style shopping centre, the Galeria Mokotów in Warsaw in the late 90s, and now every single shopping centre in Poland has a water feature. The same thing happened in Romania where we did a shopping centre called Bukaresti Mall, which was the transformation of one of Ceausescu's former food halls into a shopping mall, so there is definitely a trend there."

Comments Fuller: "The Asian markets are very interested in Feng Shui and the spiritual aspects of water and how it affects things. A lot of it is also determined by what has been done historically in a region. If we go into a country where people have just seen 2,000-year-old traditional fountains then there is a fascination in seeing something different. If it's somewhere where there's been a lot of crazy technologically-driven design we may look at an approach using grandeur as the theme with less emphasis on the strict cleverness of what we're doing."

Crystal Fountains is also looking to Africa. "North Africa is one of the markets we are starting to work in and we are already involved in a large retail project in Cairo called Madinaty Gate. There are a lot of hospitality-related opportunities in Morocco and Syria as well," says Denman.

The small specialist nature of the business means that both companies have survived the economic uncertainties of 2009 and have a tidy portfolio of ongoing projects. With the majority of work coming from referrals, the interest of new markets in sourcing dynamic display expertise means that, for now, water art is riding the development wave. ●

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