



# Lusail City

*Qatar Aims to Score on the World Stage with Grand Project*

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With an ever-expanding world population, civilization has been pushing the envelope to develop locations for domestication and commerce on lands previously considered undevelopable. The world has seen massive scale development in the name of progress countless times before. As a species, in many ways it is what we do.

It is possibly no surprise that these developments often have dubious construction and sustainability track records, and there are countless examples around the globe, where we have stepped over a line or lines of what is acceptable, all in the name of progress. Add the numerous repercussions of warming marine environments to this mix, and massive construction and development projects in increasingly sensitive natural environments become a questionable endeavor.

### New development, similar challenges

One of the newest and most ambitious locations being developed is in Qatar, on the Arabian Gulf, a place where civilization is stretched to its limits, due to the existing hot and arid climate. Qatar's new coastal development project, Lusail City – just north of the capital city of Doha – is a new city being built along the coast, with a planned population of 450,000. With the aggressive goal of hosting the FIFA World Cup in 2022, construction of new waterways, land transportation and infrastructure systems, and residential, commercial, and entertainment areas are in an enormous all-out effort.

*The Goal is Sustainable Development, not just FIFA World Cup 2022*

Satellite imagery detailing almost a decade of development. Turbidity monitoring is an essential part of the Lusail project. Photos: Lusail.com

However, the project also faces numerous water-related issues, including the extensive dredging and disruption of the surrounding marine ecosystems, as well as drinking water and water treatment. Desalinization, a common practice in the Arabian Gulf, can oftentimes adversely affect an increasingly fragile marine environment. With this type of project, there is no action without a repercussion.

### Competing resources

Other than the minimal border it shares with Saudi Arabia, Qatar is a peninsula, completely surrounded by the waters of the Arabian Gulf. The government of Qatar has established a Qatar Marine Zone (QMZ), which encompasses its entire 350 miles of coastline. Qatar marine life is notable for its active though tenuous coral beds, dugong (a manatee relative) and whale shark populations, as well as other marine life and habitats. When it comes to modifying these coastal areas (a key component of the Lusail City endeavor), marine environments and ecosystems need to be continuously monitored, in order to observe and address any changes that take place as a result of the human disruptions.

Fisheries have been stressed for many years in Qatari waters, but traditional methods are allowed, as they are viewed as sustainable for this ideally renewable resource. Oil drilling and natural gas extraction, the latter of which Qatar is the world's third largest producer, ultimately drive the development economy here. On the strength of these varied and competing resource environments, and major commercial and residential developments, Qatar is continuing to establish itself as a world economic player.

Lusail stadium - a modern indoor sports arena in Lusail. Photo: Philipp Lange





A series of monitoring systems commissioned by the Environmental Agency in Doha. Photos: Hassan Al Salem

**Smart and Sustainable**

The Lusail City development project, which intends to be a new “smart” city of over 450,000 residents, is requiring massive coastal changes, the norm in the Gulf region’s new super cities and commercial developments. The coastal modifications will entail marine and earthworks changes in the realm of dredging and excavation of nearly one billion cubic feet of gulf bottom, reclamation and land filling of over 700 million cubic feet, and creation of 6.2 miles of block walls, 13 miles of rock revetments, and 2.5 miles of 19 new beaches. It’s a feat that is enormous and stunning from any perspective.



Additional water quality data such as pH, temperature, and turbidity is uploaded to the Environmental Agency in Doha. Dredging contractor Al Jaber Engineering and agency personnel review and assess the data, and feed back to dredging equipment operators to adjust progress and direction as needed. It is a feedback loop that ensures the sustainable viability of the project, and a critical step to minimize the impact on the fragile marine ecosystems in the QMZ.

**The Gold Standard**

As civilization marches on, the practice of utilizing once-marginal land and locations to support ever-burgeoning populations will continue at the same pace. Given this trend, establishing and following progressive and sustainable development procedures – to monitor the impact as it’s taking place and making corrective adjustments accordingly before proceeding – should be the new paradigm for contractors and developers. Lusail City is being billed as the high-tech smart city of the future. It seems to be very appropriate, then, that Qatar is taking steps to make the construction and development of Lusail equally smart and sustainable. Qatar should be proud of their progressive monitoring and development practices for Lusail, as they exemplify a significant step in the right direction for this type of development on the world stage – perhaps even the gold standard by which all future construction and development projects should hope to emulate.



The Qatari government and its construction partners, to minimize environmental impact of the Lusail project as much as possible, took it upon themselves to adopt the Global Sustainability Assessment System (GSAS) and the internationally recognized LEED (Leadership in Energy and Environmental Design) standards for green and sustainable building development for Lusail City – a positive step on the world stage of supersized projects.

To adhere to the oversight requirements, and as part of the coastal dredging for new waterways, marinas, and island development, 50 monitoring stations including 8 anchored buoys are monitoring and reporting dredging progress in real-time. These stations and buoys constantly monitor water conditions, as high sediment concentrations can lead to reduction in DO, negatively affecting marine life.



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