

*Spring 2011 Seminar Series*

# CHALLENGES AND INNOVATION IN CIVIL AND ENVIRONMENTAL ENGINEERING



**Bart Sullivan, PE**

*Senior Vice President,  
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WSP Cantor Seinuk Structural  
Engineers*

**Reaching Beyond 1 Kilometer:  
Nakheel Super Tall Tower**

**Thursday, March 31  
3:30pm, 129 DeBartolo**

The design of the Nakheel Harbour & Tower in Dubai, UAE exemplifies the possibilities in building for future urban landscapes. The project in all encompasses more than 270 hectares and includes the Nakheel Tower that reaches over 1 kilometer in height. Nakheel Tower is a model vertical city, accommodating residents in an efficient LEED rated, sustainable building. It is a

truly mixed-use development combining offices, luxury residential and serviced luxury apartments, loft style apartments, super star sky hotel, experience center and observation facilities along with special sky function space – creating a vertical community of over 15,000 people. The tower's structure and architectural form is the result of a convergence of influences which include the Arabic culture, desert environment, wind, light, redundancy, and not least of all gravity. The design provides for an extremely efficient, yet simple structure. It utilizes a mix of construction materials and conventional building techniques applied in unique ways to create the possibility of such a dramatic structure. The lessons learned from the Nakheel Tower hold implications for future super-tall buildings of this magnitude. Though the difficulties associated with such a large project are many, none are insurmountable. This provides optimism for the future of tall building design and demonstrates the possibilities in building towers that reach higher than ever before.

***Mr. Sullivan has spent over 15 years with WSP Cantor Seinuk managing the design and construction of a variety of high rise residential, office, and mixed-use buildings throughout the world. He has been involved for many years with 3-dimensional computer analysis and design of lateral force resisting systems. His experience includes work in new concrete and steel structures, as well as rehabilitation of existing structures. Mr. Sullivan spent two years managing the start up of WSP Cantor Seinuk's Middle East operations at their Dubai office, and is now based in New York where he leads design efforts on domestic and international projects.***