

Civil Engineering and the Future of Our Environment

Our planet is being polluted at an alarming rate and many would argue that the effects of carbon emissions on the environment are irreparable. Global warming has already started to have a significant impact on weather patterns and sea level rise. Extreme storms including the recent Hurricane Sandy and flooding of cities like Venice, Italy are occurring at disturbing rates. The engineering and architectural community has begun to develop new ideas that will act to mitigate impacts on the environment through increased urban density, creative approaches to design, and sustainable district / city-wide developments.

Mark Sarkisian, PE, SE, LEED, Director of Structural Engineering at the world-wide architectural / engineering firm Skidmore, Owings & Merrill LLP (SOM) will present recent work that illustrates these new ideas. Projects examples will include SOM's designs for the world's tallest building – the Burj Khalifa, Dubai, the 415 meter-tall Al Hamra Tower, Kuwait, the Cathedral of Christ the Light, Oakland, California, the Poly Guangzhou Tower, and the Poly International Plaza, Beijing among others. Parametric modeling including concepts that consider genetics and natural growth patterns in the design of structures will be discussed. Several recently developed US patents that provide unique solutions to environmentally responsible design and construction will be presented. Techniques for calculating carbon in structures and futuristic ideas of materials and sensory fields used to anticipate loads will also be presented.



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