

Optimal Wind Effects: The Collaboration of Tall Building Designers and Wind Engineers

Wind is a major concern in the design of tall buildings and is often the dominate issue in determining the structure of a tall building. The impacts of wind on a building are not only technical but can also have major financial implications on the real estate development. Wind is often thought of as only a structural or cladding topic, but this approach misses many design opportunities. Too often the effects of wind are taken as a given by the building design team. Instead, wind effects should be taken as design parameter by the architects and structural engineers. The building shape, orientation and structural harmonics can have a major role in how the building behaves in the wind. This approach requires a close collaboration between wind engineers and the building design team starting from the very early stages of the design.

The presentation will present several built and unbuilt projects where the collaboration of the design team with wind engineers had a major beneficial impact on the final design or in the creation of ideas for future projects. These projects will include the Burj Khalifa as well as some important, but unbuilt building proposals. The evolution of the designs through the interaction of the wind engineers and the design team will be discussed. The importance of considering wind at the early stages of design will be emphasized.