Super high-rise wind turbine power generation

Having a far distance from the ground levels exposed to turbulent wind conditions, tall buildings have the potential of generating wind energy. However, there are many challenges to incorporating wind ...

This study uses data from a wind tunnel test on the flow pattern above the roof of high-rise buildings to estimate the potential yield of small wind turbines installed in various configurations. The data are ...

Future tower innovations could make higher hub heights more attractive. In a tower cost-bounding scenario, where we apply a fixed $200/kW tower cost for each turbine at all hub heights, we see an ...

The impeller of a single unit of the project can generate about 8.6 degrees of electricity in one rotation, and the annual power generation of the entire project can reach 320 million degrees.

Designs that incorporate wind turbines are increasingly being seen on the drawing boards for skyscrapers across the globe. The project forms a testing ground for new architectural strategies for ...

In this study, by implementing the concept of prefabricated UHPC segmental assembling technology and external prestressing system, the durability, ductility, and overall structure ...

Wind energy harnessing on tall buildings in urban environments is a rapidly developing renewable energy technology. It is influenced by the terrain type, local wind characteristics, urban ...

The efficiency and energy generating capacity of wind turbines increases as they become larger and are installed on taller towers. For example, an ultra-tall 140-meter tower can increase ...

Based on this approach, this chapter presents design strategies from the literature to integrate wind energy to tall buildings using computational fluid dynamics (CFD) simulation.

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The objective of this study is to evaluate the wind speed amplifications in the tunnels for wind-power generation through the installation of wind turbines and to gain a better understanding of ...

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