Green Walls in High-Rise Buildings

For centuries, green walls have been used to shade building walls and atriums, to shield buildings from wind, and to cultivate agricultural plants. Now, as the world population urbanizes, green walls have become a significant tool in the quest for greater sustainability in the tall-building field. The latest CTBUH technical guide, Green Walls in High-Rise Buildings, provides a thorough investigation of the methods used around the world for implementation of vertical vegetation at height. In commemoration of the release of this important guide, Tall Buildings in Numbers profiles the 18 case study buildings included.

To purchase your copy of Green Walls in High-Rise Buildings visit: https://store.ctbuh.org

Location of Case Studies and Size/Percentage of their Green Coverage

- Bosco Verticale
  - Milan, 2013
  - Building Height: 112 meters
  - Stories: 27
  - Total surface area of green coverage: 10,142 m²
  - Largest green coverage on a single façade: 1,735 m² (47%)
  - Green coverage of total façade: 22%

- Hotel Intercontinental
  - Santiago, 2016
  - Building Height: 129 meters
  - Stories: 30
  - Total surface area of green coverage: 221 m²
  - Largest green coverage on a single façade: 221 m² (100%)
  - Green coverage of total façade: 1%

- One PNC Plaza
  - Pittsburgh, 2009
  - Building Height: 129 meters
  - Stories: 30
  - Total surface area of green coverage: 221 m²
  - Largest green coverage on a single façade: 221 m² (100%)
  - Green coverage of total façade: 1%

- Athenaeum Hotel
  - London, 2009
  - Building Height: 48 meters
  - Stories: 9
  - Total surface area of green coverage: 1,590 m²
  - Largest green coverage on a single façade: 1,590 m² (100%)
  - Green coverage of total façade: 9%

- Consorcio Santiago
  - Santiago, 1993
  - Building Height: 58 meters
  - Stories: 17
  - Total surface area of green coverage: 2,293 m²
  - Largest green coverage on a single façade: 2,066 m² (49%)
  - Green coverage of total façade: 22%

- B3Hotel Virrey
  - Bogota, 2011
  - Building Height: 30 meters
  - Stories: 9
  - Total surface area of green coverage: 264 m²
  - Largest green coverage on a single façade: 264 m² (100%)
  - Green coverage of total façade: 15%

- The floors with green walls at Consorcio, Santiago, Chile, use 35% less energy than the floors without green walls in the same building.

- The agriculture and greenery in Pasona Headquarters, Tokyo, Japan, has been attributed to 12% productivity gains and a 23% reduction in employee absences due to ailments.

- Singapore's Parkroyal on Pickering provides 215% of the greenery that existed on the site before the building was built.
The Bosco Verticale, Milan, Italy, has the largest total percentage of green coverage in the guide, at 42%, and the largest total surface-area coverage at 10,142 m². The tallest green wall in the guide is at The Met, Bangkok, Thailand, rising about 200 meters in a thin strip. The building’s overall green wall coverage is about 14%.

Across the 18 case studies, there are four different types of building functions. Green walls are thus clearly applicable across multiple building types and functions.