

ENERGY STAR Building Design Profile

Capitol Tower
Houston, TX 77002



SETTING THE STANDARD

Skanska is very proud that their Houston office tower will achieve Designed to Earn the ENERGY STAR. The project's vision of high design and high performance helps reduce energy and CO₂ emissions. More importantly, it indicates that the building intends to belong within the top 25% of the nation's most energy efficient buildings. Gensler is also helping the environment by delivering a low energy design that will set the stage for operating the building to earn ENERGY STAR certification. ENERGY STAR buildings have a proven track record and yield average annual energy savings of 30 percent.

Capitol Tower is located in downtown Houston allowing it to utilize existing infrastructure and benefit from access to multi-modal transportation, reducing the parking scope thereby reducing the carbon footprint of the building users. As far as energy, the building uses 25% less energy than typical baseline buildings and the projected annual energy and CO₂ savings of the design based on results from the Target Finder is 57.7% as compared to the median building. Primary energy saving features include connecting to the district cooling chilled water, installed building level metering to track building and system-level energy use, and an energy recovery wheel.

Additional ways energy consumption has been reduced include the use of daylight harvesting and demand control ventilation. In order to maintain the building's energy performance tenants will be required to have a maximum lighting power density (LPD) of 0.8 W/SF. Automatic daylighting control will be required for luminaires located within 15 feet of the windows and daylighting control via a continuous dimming system (for electric light) will be provided to maintain the designed lighting level. This system will be capable of reducing electric lighting power to less than 10% at maximum dimming. In order to maintain a healthy indoor air quality, CO₂ sensors will be required in densely occupied spaces (based on ASHRAE 62 2010 requirements).

According to the ENERGY STAR Portfolio Manager, a tool that has been significant in informing our design decisions, the project will realize estimated total annual energy savings of 127,086,852 kbtu/yr resulting in an estimated cost savings of \$1,134,032. Capitol Tower's successes as a modern sustainable office building will become a model for all future ENERGY STAR projects.



Architect of Record: Gensler

Engineering Firm: Wylie

Building Owner: Skanska

Design Energy Rating: 96

Percent Energy and CO₂ Reduction*: 62.6%

Design Year/ Estimated Occupancy Date: 12/20/2017

Space Type: Office

Floor Space: 858,308 GSF

Estimated Energy Use Intensity:
[kBTU/sf/yr] **108**

Estimated Total Annual Energy Use:
[kBtu/yr] **93,313,114**

Estimated Annual Energy Cost:
[\$\$] **832,658**

Technologies Specified:

**Building level Metering
Energy Recovery Wheel
Daylight Harvesting
Demand Control Ventilation**

For More Information

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*Percent Energy and CO₂ Reductions are based on comparison to a median building of similar type.