



Hess Tower

Houston, Texas

Though the Hess Tower may blend seamlessly into the skyline of downtown Houston, it stands head above the rest with its durability and dedication to environmental efficiency. With its tall, stretching rows of reflective window paneling, the structure seems an extension of the yawning, blue Texas sky.

Ten wind turbines are housed atop the building, which was designed to capture windflow to power the building. The obvious energy efficiency of the 10 wind turbines compliments the surrounding architecture and the adjacent 12-acre park and wading pool. The area is quickly being surrounded by residential high rises, restaurants, hotels, arenas, and other amenities meant to bring downtown living to Houston.

This 774,000 square foot office building is designed as an extension of the landscape, clad in a combination of stone and glass and supported by hot-dip galvanized steel. The developers of this project embraced the concepts of low environmental-impact living, implementing design and city planning efforts that could influence the design of similar structures in the future. Operating under the assumption people want to live, work, and play with little or no automobile travel, as well as desire to see energy efficiency and cost-effective design at work, the Hess Tower hopes to set a new standard for sustainable building.

Galvanized steel contributes to these principles through the accumulation of LEED® points, sustainability, and low-maintenance durability – all providing benefits passed along to the consumer. The project took a sustainable approach to building construction, using the wind farm located on the roof of the building as a primary feature. Hot-dip galvanized steel braces and columns support the wind turbines, which help supply power to the 30-story building.

All structural steel used for bracing of the roof-mounted wind turbines and HVAC equipment were galvanized – a total of 350 tons. →



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The tower is supporting the energy efficiency movement with a number of conservation methods to obtain the LEED® Gold certification. HDG contributed to the certification by providing two points under *Materials and Resource Credit 4: Recycled Content*. Not only do the galvanized elements of the structure take advantage of the sustainable nature of natural, highly recyclable zinc and steel, the inherent maintenance-free nature of galvanized steel means no waste or emissions will be expended on routine maintenance.

Though the galvanized framing and supports are constantly exposed to the corrosive urban wind and humidity of the tropical marine climate of Houston, the zinc coating life predictor indicates the structure will last 75–100 years before any maintenance is necessary. At that point it could be painted for extra protection without any deterioration on the substrate steel.

Low maintenance means low costs over the life of the project. While the initial cost was competitive, as well, it was the life-cycle cost of hot-dip galvanized steel that made galvanizing the clear choice. Low initial and life-cycle costs, paired with durability and sustainability, made galvanizing the ideal choice for corrosion protection in this environmentally efficient project. ↶



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