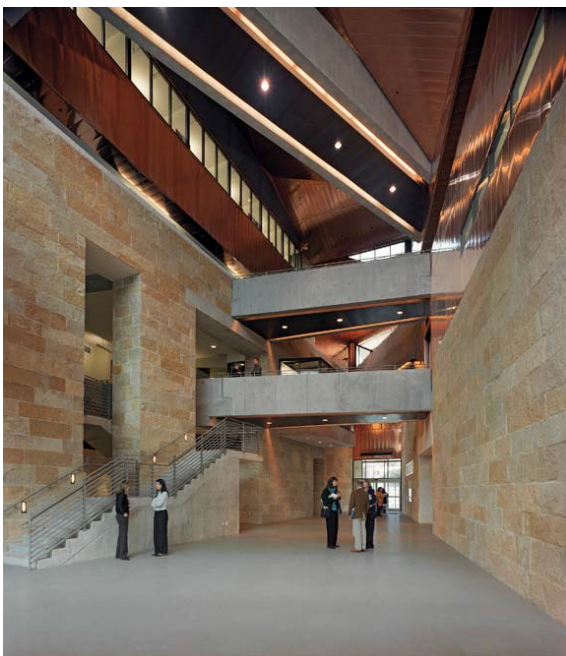


AUSTIN CITY HALL: A Green Building Analysis



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INTRODUCTION

Despite its location in the middle of a sprawl-filled state, Austin, Texas, has conscientiously worked to become one of the nation's hot spots for sustainable design. Officials are striving for Austin to become the "clean energy capital of the world," according to the Sierra Club, and recent awards prove the city is well on its way. Ranked the 13th most sustainable city out of the nation's most populous 50 places by SustainLane, Austin began setting trends in green building in the 1980s by introducing its own green building rating system. Austin Energy, which oversees the program, also holds public workshops and publishes numerous manuals on sustainable building design.

City officials upped the ante in 2000, when they made Austin the nation's first city to legislate that all new public projects greater than 5,000 square feet be certified as sustainable through the Leadership in Energy and Environmental Design program administered by the U.S. Green Buildings Council (Schwartz). At the same time, officials were already planning for a new city hall building. They decided to combine provocative civic design with a push for LEED's silver rating, ending up with an even stronger LEED gold rating and accolades all around. Some Internet bloggers derided the building's cost and "weird" look, with its sharp angles and platform jutting above the street. Indeed, many more sustainable features could have been added to justify the \$56 million price tag. But other critics have embraced the building's uniqueness, harmony with nature, and value to those who use the space. Also, the building scored 40 points, allowing the city to beat its goal of achieving a silver rating by two points.

SUSTAINABLE SITE

The city surprisingly only scored five points out of 14 in this category, despite its ability to probably come very close to meeting some of the nine other criteria. The new building is located on the edge of the city's warehouse district, along a Second Street waterfront corridor that is transforming into a tight grid of restaurants, nightspots, housing, and mid-rise offices (Antoine Predock). The community meets the average density of 60,000 sq. ft/acre required for a compact urban setting (City of Austin). This combination of activity allows the building to fit well into the city's push for a redeveloped, mixed-use, Second Street district.

The government provides a shower and locker rooms in the building to encourage employees to bike to work rather than drive (City of Austin). The building should have also gained points for having public transportation lines nearby, since it is so close to the urban core.

While the designers do not appear to have attained the 25 percent open space footprint needed for another LEED point, there is a large amount of open space. The spacious south-side plaza and 12,000-square foot green roof contain native species that respond to local ecosystems. (Hydrotech) The soil on the second-floor roof of the four-story building is up to 5 feet deep in some spots, allowing nature to flourish (Green Roofs for Healthy Cities). Shade, another component of the Sustainable Sites category, is provided by a trellis over the main plaza and through the use of mature oak trees rather than new trees (Green Roofs). In all, a whopping 1,500 plants are used on the site (City of Austin).

The city likely did not receive a point for reducing parking requirements, because it built a 750-car, four-level underground parking garage. This simply encourages more people to drive rather than use transit, bike, or walk. Another point that would seem perfect for a city agency to meet was to provide fuel-efficient vehicles for employees, although it is understandable that the city should not replace its fleet if the vehicles have not exhausted their usefulness.

WATER EFFICIENCY

The city hall scored two out of five possible points in this category. The designers turned a problem into a positive when they hit an underground water system during building excavation (Antoine Predock). Instead of pumping the water to somewhere useless, they directed it to irrigate the property's landscaping, reducing the amount of water needed for the plants by 50 percent (City of Austin). The water is also used and continuously recycled for an outdoor feature where it runs between boulders. Some of that water also comes from condensation from air conditioning system, which amounts to about 486 gallons per day in the blazing summer heat (City of Austin).

While the outdoor water use is quite sustainable, the same cannot be said for indoor use. The city could have spent just a bit more money to install only water-efficient fixtures, such as toilets and sinks. To its credit, the city did use automatic flushing and hand-washing sensors, which prevent anyone from leaving the water running. But it seems that overall, money may have been spent on water efficiency only because they had to in order to protect the building foundation from groundwater. Easier water efficiency tactics were not employed for physical human use of water.

ENERGY AND ATMOSPHERE

The design team pulled together an amazing feat in energy conservation, which – because of Austin Energy and attention the hot climate brings to energy use – has always been the city's strong point.

Some of the building's energy comes from photovoltaic (solar) cells on the trellis over the main plaza. The 9 kilowatts of energy per day is enough to power two Austin homes on a hot summer day (City of Austin). Additional energy comes from wind power, allowing the building to meet the LEED requirement of having 50 percent or more of energy coming from a renewable source.

In addition, massive floor-to-ceiling windows, including in city council chambers, allow for maximum daylighting and minimum artificial light use. The same principle is behind the four-story skylight in the building's lobby (Hunter Douglas). Because sunlight coming in can easily heat up the rooms, miniature black dots on the large windows act as shade and reduce the need for air conditioning (CNet).

The building also taps into Austin Energy's large downtown cooling storage system, which makes ice during the night when energy is cheapest. The ice produces chilled water for the next day and also cools air pumped into buildings, promoting energy efficiency (City of Austin).

The designers seem to have nearly maximized their capabilities in this category, with 13 of the possible 17 points achieved.

MATERIALS AND RESOURCES

The building scored 6 of 13 points in this category, performing quite well but missing all opportunities associated with reusing an existing structure. The new civic building was constructed on the site of the city's municipal annex, which was small and demolished instead of completely incorporated into the new building.

The construction crew did, however, divert more than 80 percent of construction debris from landfills, instead sending it to local artists and schools (City of Austin). An incredible amount of materials used to construct the building were made from recycled content, including 99 percent of the reinforcing steel, 90 percent of the sheetrock, 82 percent of copper and 45 percent of the concrete masonry (City of Austin). Today, copper is an unusual material in building. But 66,000 square feet of it (or what would otherwise be 12 million pennies) was incorporated into the unique design due to its availability as a recycled product. Sixteen copper "clouds" that improve sound projection hang in the city council chambers, and it is used as a veneer over other, less aesthetically pleasing materials.

Much of the building material also came from the region, reducing the need for transporting goods while also playing into the architect's desire of "mediating between this busy city grid and the natural realm" (Antoine Predock). Limestone is used heavily in walls, terraces, footbridges, and the outdoor

plaza, helping to “echo the region’s hilly terrain and balcone overhangs” (Hunter Douglas). Also, all 369 doors use local pecan wood and some furniture includes a pecan wood veneer that contains compressed straw (CNet and City of Austin).

INDOOR ENVIRONMENTAL QUALITY

The city earned 9 of 15 points in this category, which it deemed “savings that cannot be quantified” (City of Austin). Materials such as carpets and paints have little or no volatile organic compounds, which reduces potential allergens for employees and visitors (City of Austin).

As mentioned earlier, floor-to-ceiling windows and skylights provide a generous amount of daylighting as well as views out to the river and the surrounding cityscape.

INNOVATION AND DESIGN PROCESS

Little information was available on how exactly the building earned all five possible points in this category. The applicant must submit essays describing why points are deserved for creativity. But the architects clearly fit their vision into Austin’s culture and motto of “Keep Austin Weird.”

“This has been a challenging job. Our building is not typical,” Deb Ebersole, of Cotera+Reed Architects, told the City of Austin. “We’re trying to blend the image and ideas of the design architect with real construction and the LEED’s standards, and we’re lucky because our design architect has been conscious of that” (City of Austin).

CONCLUSION

The architect may have made some design decisions that are less aesthetically pleasing but more sustainable. The use of limestone and concrete masonry for a large portion of the façade makes the building look more modernist on its sides, espousing a less welcoming feeling even though Predock wanted to display a transparent, welcoming aura. This aura does come through in the four-story glass lobby and long windows, as well as technology such as plenty of video screens in council chambers (even if it doesn’t add to sustainability).

And there were certainly some missed opportunities, as mentioned earlier, such as not reduced auto-dependency even more, reusing the municipal annex that already existed on the site, and installing simple water-saving fixtures that are prevalent in modern buildings.

But the design team certainly succeeded by surpassing its goal of attaining LEED silver and earning LEED gold. The design has earned plenty of attention and awards, including the 2008 Award of Excellence from the Green Roofs for Healthy Cities organization. In July 2008, the National Wildlife Federation declared the building a “certified wildlife habitat,” noting that the native plant species, water, and significant green cover allow songbirds, butterflies and other wildlife to flourish (City of Austin). The architect, Antoine Predock, also received the high distinction of an American Institute of Architects Gold Medal, awarded previously to well-known designers such as Frank Lloyd Wright and Louis Kahn (Hydrotech).

This warm reception from the design community, as well as the unanticipated success of the sustainable features included, have made the building an inspirational model for designers and officials around the country to emulate and improve upon.

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