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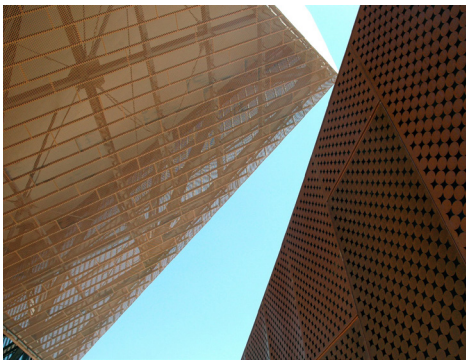
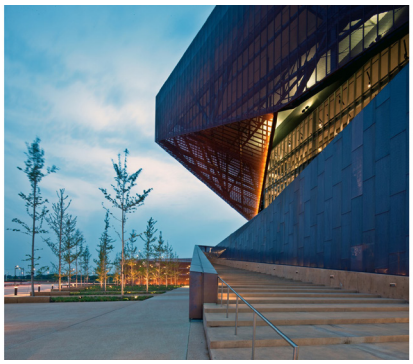
ARCH 633

Environmental Systems - Assignment 5

Building: Irving Convention Center
Location: Irving, Texas





The Irving Convention Center is located just outside of Dallas, Texas near the Dallas-Fort Worth International Airport. The terrain is very flat, but particular areas range in elevation from 500 to 800 feet above sea level. Since Dallas is located in Northern Texas, and has a latitude similar to that of South Carolina, the city actually experiences a variety of different temperatures and conditions. Precipitation ranges, with the region typically experiencing anywhere from 20-50 inches of rainful. Winters are relatively mild but the summers are typically very hot with temperatures exceeding 100 degrees regularly. Air conditioners are recommended in both homes and automobiles for maximum comfort.

One of the Irving Convention Centers primary environmental building design features is the perforated copper skin used on the building's exterior. The LEED Silver building uses the copper curtains as a way to block the sun's rays on the very open and somewhat desertic-like site. This helps with the heat flow of the building by reducing the degree to which the temperature fluctuates in the space during the day when the sun is shining on the structure, and also reduces the dependence on air conditioning.

Another environmental design feature of the Irving Convention Center is the integrated parking. Parking is attached to the west facade of the building, despite the ample space around the site for open air lots, to reduce the amount of asphalt required, which in turn reduces the amount of heat generated around the building from the sun. In addition, the roof of the building is almost white, helping to further reflect the sun's rays and reduce the heat that is generated around the building. In turn, this reduces the amount of energy required to cool the building in the hot Texas summers.

In terms of how to improve the building's overall design, I think that there could still be more done to deal with the pedestrian experience around the building in terms of the climate. While the building seems to do a lot to protect the exterior from feeling the heat of the sun, I wonder about the adjacent sidewalks and grand stair up into the building. They're not really protected from the heat and I think that more share could have been adding to make walking around the bulding more pleasurable. However, I do think that using this copper facade as a "cooling cushion" was inspiring and a unique way to mitigate the impact of the sun and wind.