



The Koll Company

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## **Koll Airport Professional Building LEED CS v2.0 IDc1.2 Education Program**

### **Sustainable Design Approach**

#### **Introduction**

Located in the Irvine Business Complex (IBC), the Koll Airport Professional Building is the renovation of an existing 2-story, 62,000-sq.-ft. industrial building into a 40,000 sq. ft. multi-tenant professional office building. Sustainable design was a key driver in the design and construction of the project. The existing building came with a number of sustainable features which included a level of sub-grade parking and access to public transportation. The design team sought to further enhance the sustainability of the project by creating a solution that maximized water conservation and energy efficiency, minimized the need for virgin materials and provided an opportunity for interior spaces that could become healthy and comfortable.

#### **Sustainable Strategies pertaining to Site Design and Selection:**

- Alternative Transportation – a bus stop with multiple bus lines is located on Redhill Avenue within a quarter mile of the project site. Preferred covered parking spaces have also been provided in the sub-grade parking area below the building for fuel efficient vehicles.
- Site Development – Maximizing Open Space – With the sub grade parking area below the building the development footprint of the project has been reduced to a point where the site design exceeds local zoning requirements for landscaped open space by 25%.
- Heat Island Effect – Roof and Non-Roof – The heat island effect is the measurable increase in temperature that can be found in urban areas that are predominantly constructed with dark colored paving and roofing materials. These colors absorb heat and radiate it back into the surrounding microclimate. The elevated building with the sub grade parking area shades a large percentage of the paved site area mitigating the heat island effect. The renovation of the project also replaced the existing roof with a single ply PVC “cool roof” that is white in color and reflects heat from the sun instead of absorbing it.
- User Design and Construction Guidelines – The Koll Company has authored sustainable design and construction guidelines that provide recommendations to tenants and owners who are interested in developing sustainable interior improvements.

#### **Sustainable Strategies that pertain to the Water Efficiency of the Project**

- Water Efficient Landscaping – A high efficiency irrigation system was designed to reduce the requirement for potable water by 50% when compared to a standard office building

- Water Use Reduction – Water efficient plumbing fixtures reduce the requirement for potable water by over 40% when compared to a standard office building. These fixtures include pint flush urinals, low flow toilets, and sensed faucets.

### **Sustainable Strategies that pertain to the Energy Efficiency of the Project**

- Optimization of Energy Performance – The design of the building envelope was a key component of the energy efficient design solution. Louvered canopies, vertical and horizontal sunshades and deep window surrounds all work to shade the building openings from the sun's rays and minimize solar heat gain. Sunlight that does strike glazed surfaces is mitigated through the use of a high performance glass that has a low-e coating. In addition to the envelope design high efficiency lighting can be found throughout the garage level, and building core. Design and Construction guidelines for interior improvements add to the savings by calling for efficient interior lighting and rooftop mechanical equipment. When all totaled the project is projected to exceed California's rigorous Title 24 energy code by over 17%.
- Commissioning- The base building HVAC, lighting, and domestic hot water systems have all been thoroughly commissioned as part of the base building LEED-CS certification process. This process ensures that building systems are operating at the proper performance levels.

### **Sustainable Strategies that pertain to the selection and conservation of materials**

- Storage and Collection of Recyclables – Separate trash and recyclables bins have been provided at the trash enclosure on the north edge of the property. Tenants / owners will be required to provide separate trash and recyclable receptacles in their individual suites as part of their interior improvements.
- Building Reuse – The design solution for the project was carefully orchestrated to reuse 76% of the building's perimeter and structural walls thus reducing the need for virgin materials.
- Construction Waste Management – The project met a City of Irvine requirement which mandates that all construction projects demonstrate that 50% of the construction and demolition waste is recycled or otherwise diverted to non-landfill receiving sites.
- Recycled Content – 10% of materials used in the project are made with recycled content. This includes structural steel elements, aluminum storefront and canopies, as well as the interior restroom finishes in the building core.

### **Sustainable Strategies that improve the indoor environmental quality of the project**

- Environmental Tobacco Smoke Control - Trash/ash receptacles have been provided at the outdoor space located in the northeast corner of the property. This location is spaced at a distance from building openings that reduces the chances of contaminants entering occupied space.
- Natural Daylight and Views - A major design strategy can be seen through the project's approach to providing natural daylight and exterior views. Instead of providing a traditional lobby and interior corridor to connect the tenant spaces a series of exterior "courts" were created to act as the building lobby. The courts which step through the center of the old industrial building add to the exterior perimeter of the new professional office building. These edges are in filled with floor to ceiling glass to allow for penetration of daylight into the project. The courts are then protected with deep overhangs and louvered canopies to provide daylight without the solar heat gain.
- Green Housekeeping - The Koll Company has contracted for "green" janitorial services for the base building. This includes use of low-odor and low-impact janitorial products, as well as janitorial procedures that reduce the potential for creating indoor air quality pollutants.