



Building Background

ARCHITECTURE

The Helena is a modern apartment building design of concrete, floor-to-ceiling glass, and wrap around windows. Perhaps the most interesting and striking aspect of The Helena is the green design that was put into the architecture and which anticipates to receive a gold Leadership in Energy and Environmental Design (LEED) rating. From bottom to top, The Helena is filled with green designs which will make it more environmentally friendly and self-sustaining. A 10,000 square foot green roof will top off the structure. The reasons for going with this design are to help lower energy costs by reducing heat gain as well as act as a rainwater retention system that will funnel water to the building's cooling system and also help reduce water runoff into the streets. Solar panels on the roof structure will help to draw sunlight and convert the solar heat to electricity which will be integrated into the electrical manufacturing plant in the building to lower overall energy costs. A black water treatment plant housed in the cellar helps re-use the water in the building and incorporates the water caught in the green roof. Part of the building's exterior skin, high-performance glass will be used to help reduce the amount of energy transmitted through the glass to help reduce energy costs and allow for more efficient air heating and cooling.

BUILDING ENVELOPE

The envelope of the building is supported by a reinforced concrete frame made up of a 45% furnace slag concrete mix. Attached to the outside of the frame are floor-to-ceiling windows featuring high performance glass. Atop the building, the mechanical equipment is housed inside of an area clad with solar collection panels. The building is a defiance of the typical building formula of exposed concrete slabs, masonry, and through-wall air conditioning units.
