

White Pine Middle School SPACE (Scientific Paradise Achieving Community Excellence) Island Essay

For city growth, SPACE Island decided to redevelop a five-acre plot of land. The architectural feat is known as the Aerotech Towers. Aerotech Towers, shaped like a spaceship, will create jobs and revenue, increase land value, and attract tourists. The main tower is 30 stories high, with the side towers containing a hotel and condos 20 stories high. Aerotech Towers is located downtown, on a bay between commercial and residential zoning with a nearby parking garage. However, we expect most guests will arrive via monorail, hover boats, ferry buses, or using the people mover. At the tourist kiosk guests can sign up for hover bus tours, boat and Jet Ski rentals, ferry transportation to Florida, a casino cruise boat, and reservations at our five star restaurant, The Orbit Room. There are four floors of great shopping, two levels of high quality cafes/restaurants, and a day care. NASA built our island, and the main tower contains a museum including a hands-on Children's Museum and memorabilia and exhibitions dedicated to space exploration and SPACE Island. The monorail connects the towers and the rest of SPACE Island. There are also fitness centers, spas, several athletic facilities, a media center, a gallery room, and an I-Max theatre. Guests can see a rotating view of the island from the Orbit Room at the top of the main tower. Civil engineers removed existing masonry and concrete foundations and shipped the recyclable material to local recover facilities. The masonry and concrete was broken down to powder and added to existing aggregates and raw materials to create reworked construction material used to create the foundations of SPACE Island. Materials engineers determined the exact mixtures in curing temperatures needed to create material of the requisite strength.

To clean up the contaminated soil from the abandoned gas station, the engineering firm used "in situ" bioremediation, which means they did not have to excavate any soil. Nutrients and oxygen were applied to bacteria already found at the site, which increased their metabolism. The microorganisms broke up the petroleum into simpler substances- carbon dioxide and water, removing the gasoline. This process took 90 days and was cost efficient. Before and after the cleanup, tests were performed on the soil. The soil had a pH of 6.2, high phosphorus, calcium, magnesium, and nitrogen, and medium potassium.

The water pipes are not polluted and have been cleared along with the soil. Also, the pipe capacity is already able to supply enough water for the people in Aerotech Towers. The average person living/visiting Aerotech Towers will use an estimated 300 liters of water per day. We estimate the number of people to be 5,000; therefore, the flow rate required will be 1.5 million liters per day. The slope of the land is 5% and the five-acre plot is also on the coast. The only place the water can go is to the ocean, which would pollute it. This problem involves many structures on the island, so pumping stations have already been built and installed at other sites away from buildings. At the pumping sites, wastewater treatment facilities clean out the water. Therefore, the city can reuse it, and much of the excess waste is used on farms for fertilizer.

Mechanical and civil engineers worked together to determine the transportation flow dynamics and create a low-population, easily maintained system. Structural supports for the monorails were built using recycled materials and the monorails themselves are powered with

renewable solar energy. The Megarail System is safe, environmentally friendly, cost effective, popular with taxpayers, and is proven because people travel on it daily. Tourists who stay at Aerotech Towers can arrive at SPACE Island's International Airport and take a solar powered taxi to the towers. There is a nearby parking garage for those wishing to arrive by hover car, pedestrians can ride the people mover, and the harbor has a marina for boat travelers. The variety of transportation makes Aerotech Towers easily accessible.

Aerotech Towers is a tremendous asset to SPACE Island. It is an exciting addition to our community for it has improved our local economy and puts SPACE Island on the map!

685 Words.

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