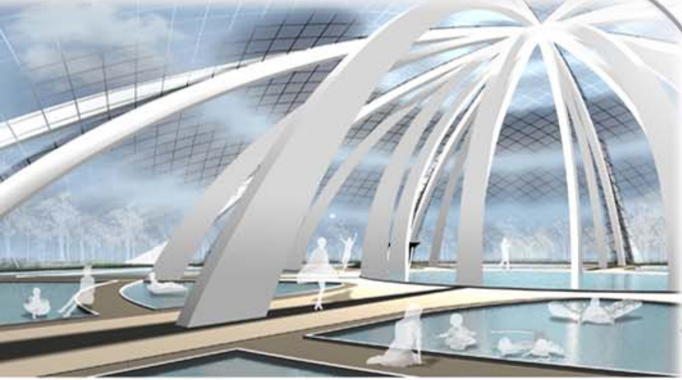
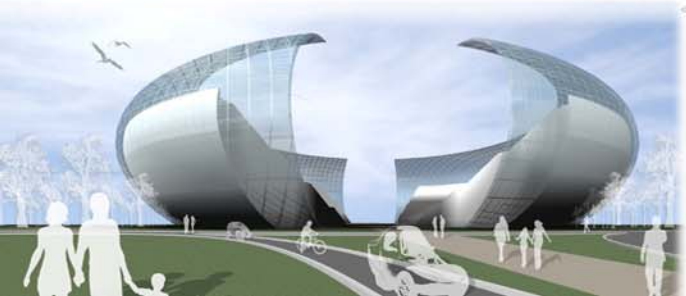
SKY-TERRA

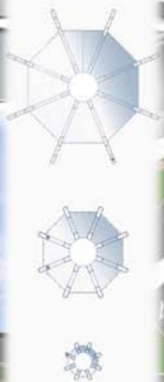
PLAZA

PLAZA
WITH POOLS & BATHS

PLAZA
WITH AMPHITHEATRE







SKY-TERRA

Creating a Green New Layer of Urban Life for Tokyo

Introduction

[illegible]

What is Sky-Terra?

[illegible]

Sustainable Features

[illegible]

Structure and Circulation

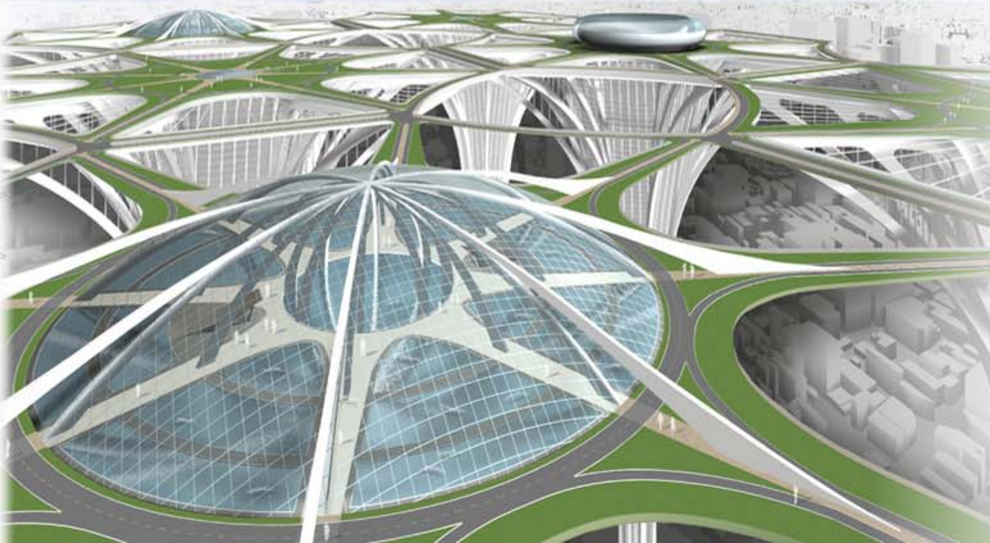
[illegible]

Pools & Baths and Amphitheaters - New public spaces within Sky-Terra

[illegible]

Important Inspirations

[illegible]



SKY-TERRA

Creating a Green New Layer of Urban Life for Tokyo

Introduction

Every metropolis, regardless of its location in the world, at some point during its existence runs into the same problems: lack of free space, human congestion and air pollution. Ironically, large metropolitan cities, such as Tokyo or New York, are often populated by many with increased health awareness; people jogging or biking around tiny city parks and busy streets is a much more common sight than in smaller towns. Unfortunately, research has shown that increased activity within urban development, such as jogging on busy streets along side traffic, increases our chance of breathing harmful particles associated with car fumes and other toxins in the air. The recommendation is simple: continue to exercise, but away from the streets. However, this is easier said than done in places like Tokyo. What is the answer if we can not move streets and radically change the existing urban landscape? We can create a new city within the existing one; a new public green layer for the existing metropolis.

What is Sky-Terra?

Sky-Terra, elevated 1,600 feet above ground, is a new level for the city with plazas formed by the roofs of individual skyscraper building units that join and structurally support each other. This structural system also allows for their narrow bases. The building itself becomes a modular element that can be reconfigured in a variety of urban mega-structures with the potential to be implemented in any existing metropolitan environment.

Sustainable Features

Sky-Terra bridges over the existing high-density urban structure of Tokyo. While beneath may be a loud and polluted conglomeration, the Sky-Terra level above is free of any ecological concerns. Everyone can enjoy clean air while using a sustainable transportation system in this virtually endless park in the sky. Sky-Terra's transportation system located at the plaza level is designed exclusively for pedestrian, electric car and bicycle use. Every skyscraper unit has a green roof which creates a net of interconnected plazas. Some of these plazas are designated as city parks only; others partially host public buildings, such as the Sky-Terra Pools & Baths and the Sky-Terra Amphitheater. The plaza level reclaims rainwater and uses it for landscaping. Every piece of space at plaza level that is not a pathway or road is designated as landscaping to reduce heat island effect (see 'Structure and Circulation' below). The building units are created out of modular elements which can be efficiently mass-produced conserving energy and resources. Sky-Terra is itself also created by the repetition of its skyscraper units which additionally contributes to the idea of using modular elements.

Structure and Circulation

Each building unit consists of three elements: a core supporting vertical circulation, office space that is bound by structural 'fins' and the plaza. These fins also act as the main support structure for the plaza level. They are designed to be a continuous structure anchored to deep foundations underground for stability. The buildings are designed with floors that increase in size with the height of the building, thus maximizing the highest value office space. The core of the building has a system of elevators and additionally two separate escalators that serve only the plaza level. The system of plazas is connected by two types of circulation: pedestrian path ways and narrow four foot wide roads. The latter are designed for non-pedestrian traffic: electric cars and bikes only. Because of their small size, electric cars require only four-foot lanes versus typical six-foot lanes for standard automobiles. This system of transportation is very ecological because it limits the amount of unnecessary paving in order to maximize green space and reduce heat island effect.

Pools & Baths and Amphitheatre - New public spaces within Sky-Terra

Creating new public gathering spaces for the community is an essential role of a modern urban planner and it is not an easy task in existing congested cities. Two examples developed for Sky-Terra are the Pools & Baths and Amphitheatre. Located at the plaza level, they are designed to instill and promote the quality of public social life. Public pools and bathes throughout history have served as places for people to rest and socialize. The ancient Romans knew how important public bathhouses were; this is where politics and business were in fact taking place. The Romans understood that these places were essential for the well-being of the city and built thousands across the Roman Empire. The amphitheater located at the plaza level elevates performance and sporting events to a new height of experience. The structure of Sky-Terra allows the development of a variety of public gathering spaces to suit the individual social needs of any given city.

Important Inspirations

In the 'micro' scale, Sky-Terra was inspired by neuron cells that create a mutually connected system in which each cell depends on as well as sustains another cell.

In the 'macro' scale, Sky-Terra was inspired by the structural column system that supports an individual building. Another important 'macro' scale inspiration was the layout of paths throughout the gardens of Versailles in France; the sense of multiple public centers where the pathways intersect was a strong influence for this project.

Sky-Terra - Project Narrative:

Introduction

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Sky-Terra Project Facts Sheet:

Project Type:
Conceptual Project

Project Name:
Sky-Terra

Location:
Tokyo
(Representing a sample congested metropolis)

District:
Roppongi Hills

Use:
Public Recreation/Park/Office

Stories above Ground:
100

Structure:
Steel/Concrete

Max. Height:
Approximately 1600 Feet (Approximately 488 m)

Parking Lots:
Parking is not in the scope of this project

Exterior Finish:
Curtain Wall System

Completion Period:
Not Applicable (Conceptual Project created for eVolo 2009 Competition)