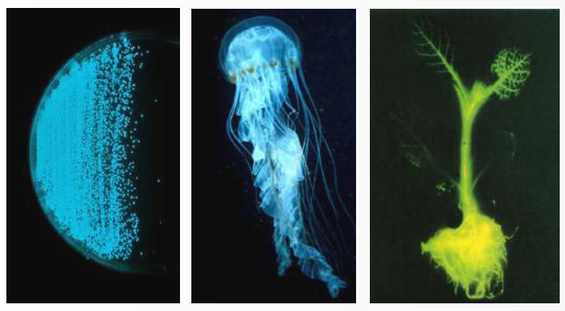
Bioluminescent Exhibition Design
Royal Botanic Gardens, Edinburgh
Temperate Palm House

The focus of the project is to exhibit nature's bioluminescence: revealing a magical event that usually happens in hidden, dark places.

The intention is to create a fantastic journey that shows the beauty of light and the fascination of glowing creatures, that also educates the public on how bioluminescence works and how it can be used.

The combination of living exhibition, science and art will be an attraction to the site, approaching educational matters and scientific developments through an aesthetically appealing design.

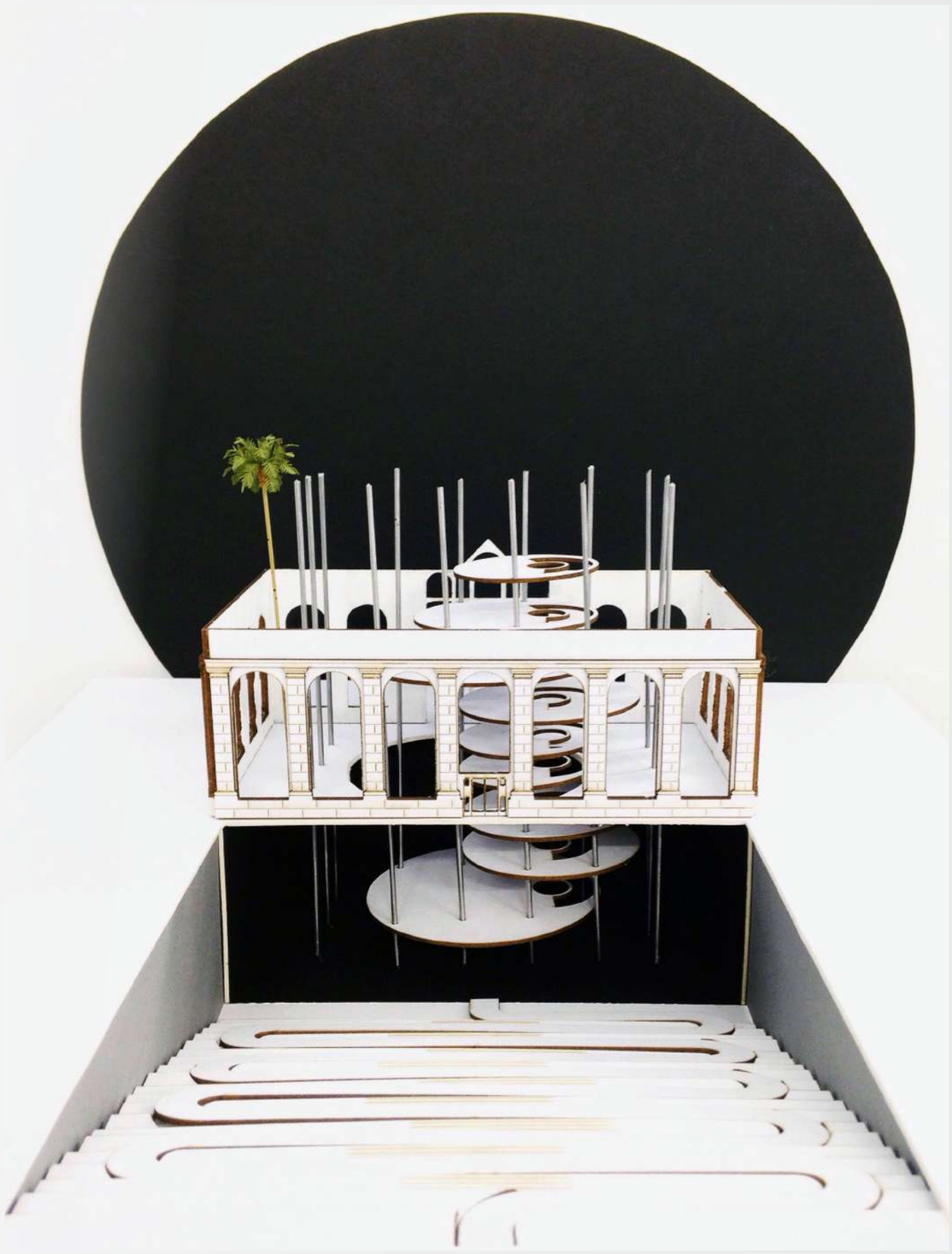


Bioluminescent culture sample, jellyfish and GM potato plant

"Bioluminescence is the production and emission of light by a living organism. Typically, bioluminescence is used to warn or evade predators, to lure or detect prey and for communication between members of the same species.

Scientists have reproduced this process and are making great break throughs in medicine, architecture, textile industry and, of course, design."

National Ocean Service
oceanservice.noaa.gov

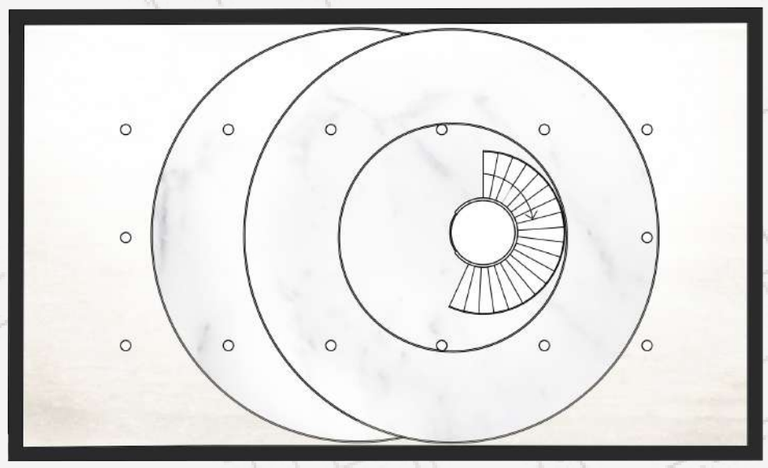


The key design principles of the project follow the main spaces: the bioluminescent life forms exhibition, the art installations, and the science centre. The words that condense the objective of those spaces are fascination, knowledge, and sensorial experiences.

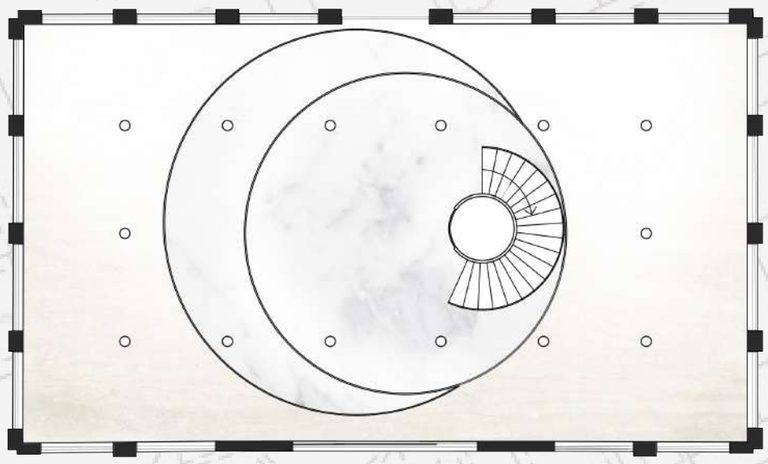
Fascination: Observing the mesmerising glow of bioluminescent creatures will bring mixed feelings in the visitors- curiosity and fascination about life, its complexity and its mystery.

Knowledge: The link between the fascination of bioluminescence and its utility goes through science. Curiosity and sensorial impact make people want to find out how things work: this is the source of constant discovery and improvement of human life.

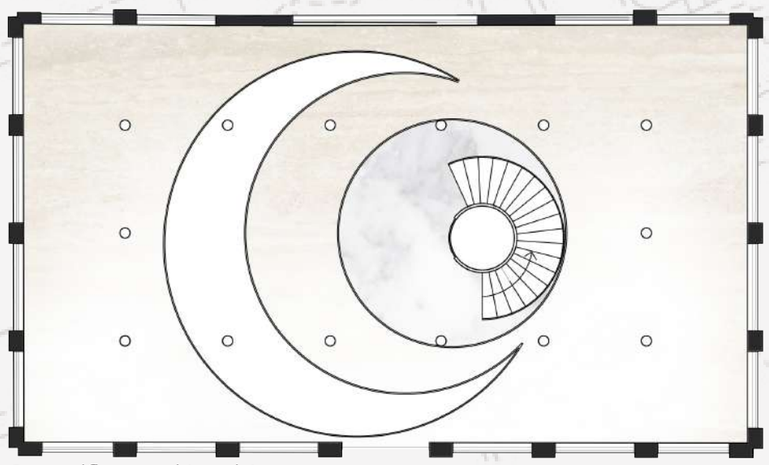
Sensory: The light installations will be a playful and inspirational way of experimenting lights, spaces, colours and senses.



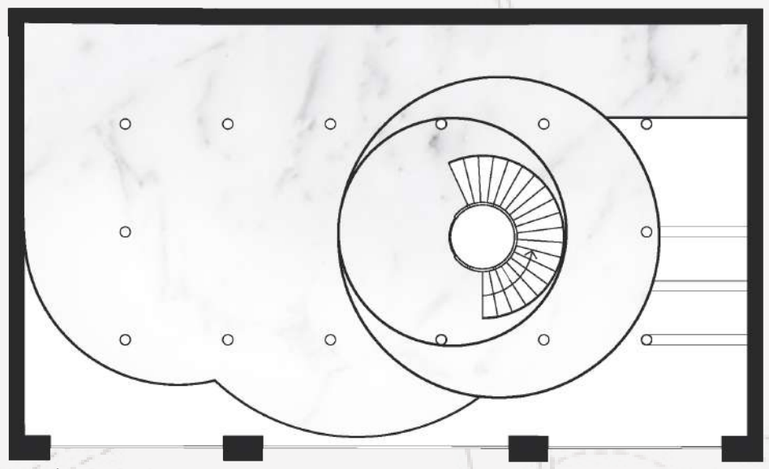
Levels 3,4,5



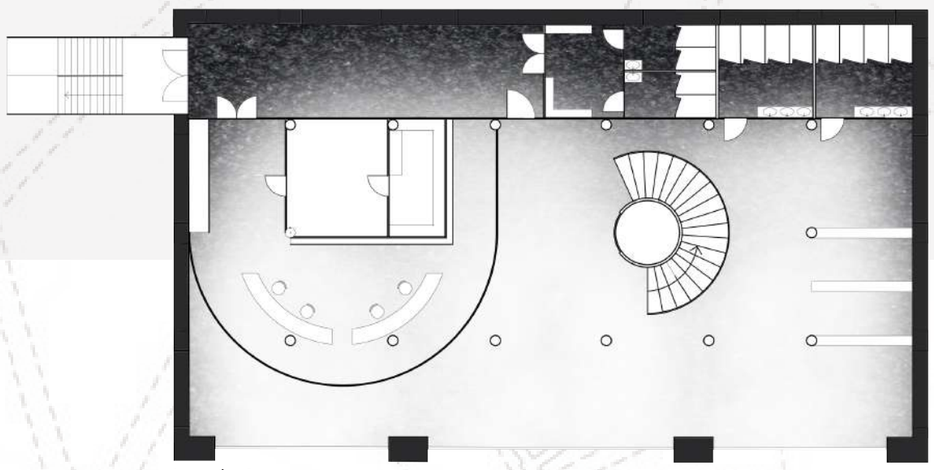
Level 2



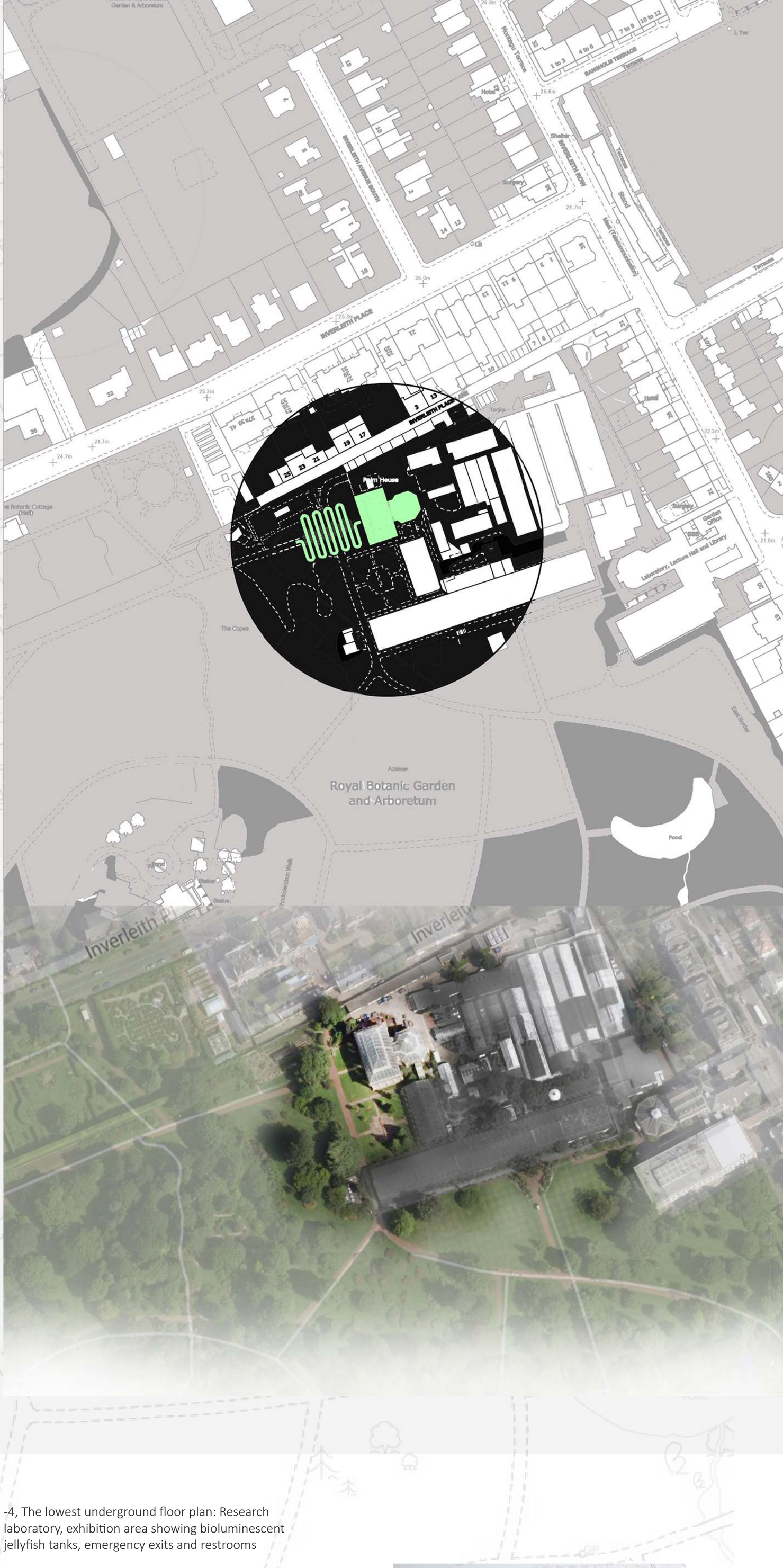
Groundfloor and Level 1



Levels -3,-2,-1



Level -4



-4, The lowest underground floor plan: Research laboratory, exhibition area showing bioluminescent jellyfish tanks, emergency exits and restrooms

Underground levels -3,-2 and-1: Main exhibition area: glow in the dark genetically engineered plants

Ground floor and level 1: The temperate greenhouse: palm trees and tropical plants

Level 2: Palm trees experience and Light Installation Exhibition: temporary art events or light experiments

Levels 3, 4, 5: Temperate plants, Light Installation and top floor Panoramic view of Edinburgh

Above, area site map and detail of the building with new proposed entrance through the underground

To the right, Temperate Palm House original building

Visual of top 2 floors of the greenhouse: the height of the new central sctructure offers visitors a panoramic view experience over Edinburgh and the Royal Botanic Gardens

Visual showing the -3 and-2 floors, with elevator access to the glowing plants exhibition. Perforated metal staircases revolve around the shaft, adding transparency and lightness to the structure

Rendered perspective showing the new exhibition entrance at the lowest underground level. Concrete arches support the original walls, mirroring the window structure above

To the left: Axonometry showing the new internal structure of the building

Light tests in models: natural light on different surfaces, shadows created by repetition of columns and windows.

Artificial lighting of elevator shaft and floors: transmission of light through the flooring

Transparency of textures, bright and dark contrasts, technical details of railway in models

Suggested bioluminescence visual effect in trees in concept model: testing glowing paint

Below: South Section Rendering displaying floor positioning, elevator shaft and building entrance