MIGUEL COLINA
/ PORTFOLIO 2012-2018

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1488 ALBERNI

/ VANCOUVER, BRITISH COLUMBIA

In the summer of 2017, I worked for three months as an intern at Robert A.M. Stern Architects in New York City. My internship at RAMSA has been my most fulfilling experience in architecture to date. It was a great opportunity to work with incredibly talented people.

1488 Alberni, the project I mostly worked on, is designed to reconcile residential high-rise buildings with typical townhouse architecture, thanks to its townhouse-like shaft. They aim to enhance the neighbourhood at the pedestrian scale while participating in the Vancouver skyline.

RAMSA
ROBERT
A.M.
STERN
ARCHITECTS

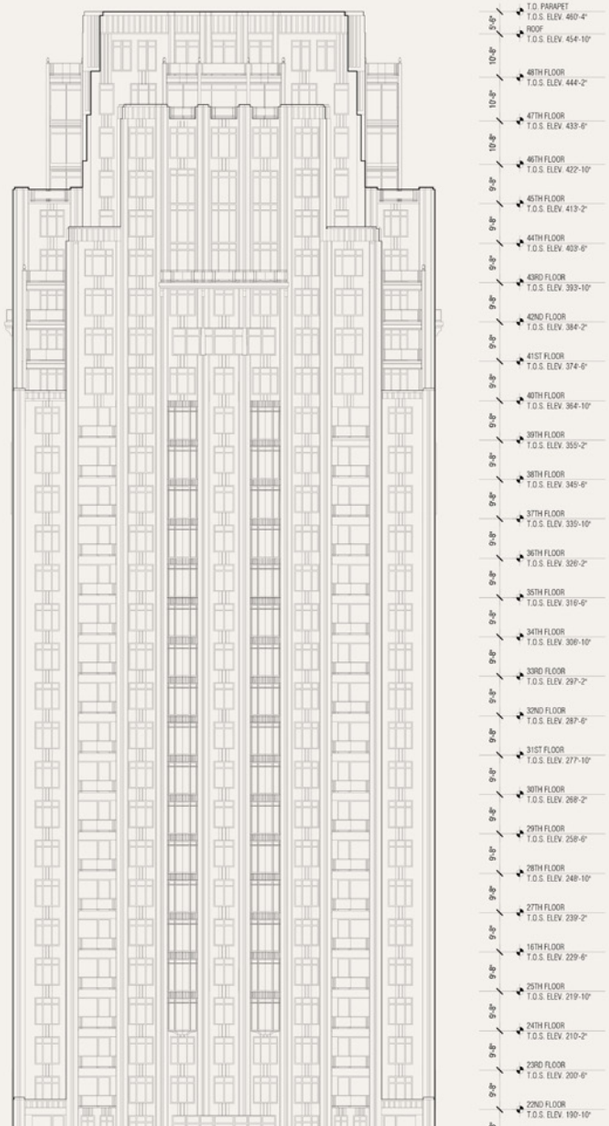
WHAT I DID

/ SKETCHUP

Working with the project's large-scale 3d model by using components, allowing for collaboration and future changes.

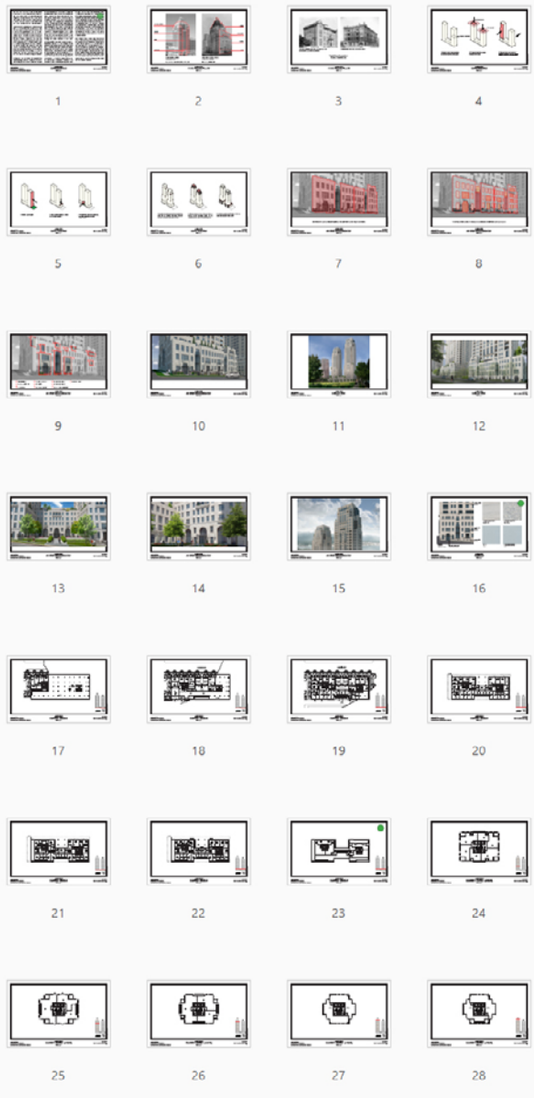
/ AUTOCAD

Drawing full CAD elevations of the building and continuously adapting them to suit program changes and redesigns.



/ INDESIGN

Creating a full 50-page presentation with specifically-made diagrams that was later submitted to the city.



/ V-RAY + SKETCHUP + PHOTOSHOP

Multiple render visualisations had to be presented to the partners as the design of the towers changed.

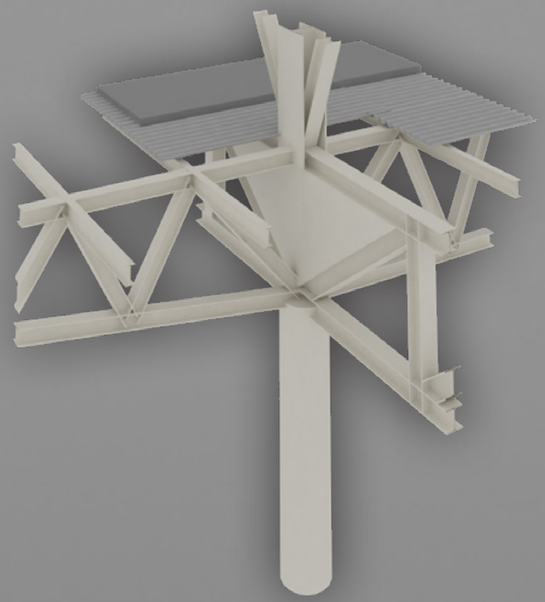
CENTRO BOTÍN - RENZO PIANO
/ A STRUCTURAL ANALYSIS

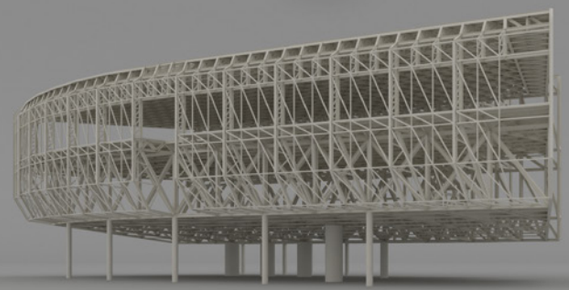
For my final thesis on my last year at school, I made an in-depth structural analysis of Renzo Piano's new building in Spain, Centro Botín in Santander. I have always been passionate about the design, understanding and analysis of structures.

CENTRO BOTÍN

/ STRUCTURE MODELING

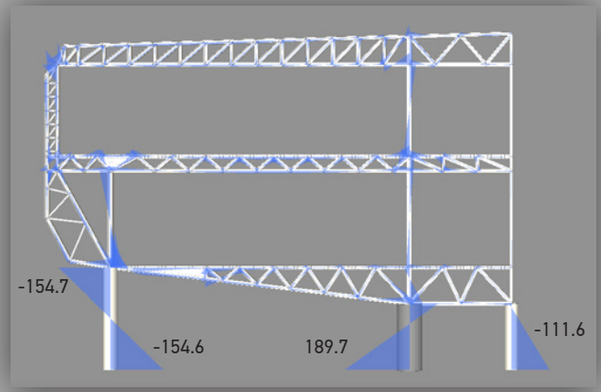
Modelling of the structure using AutoCAD in 3D and using lines to represent metal bars. Most of the heavy work came from looking at pictures and using intuition to recreate the structure, as accurate drawings were not available.

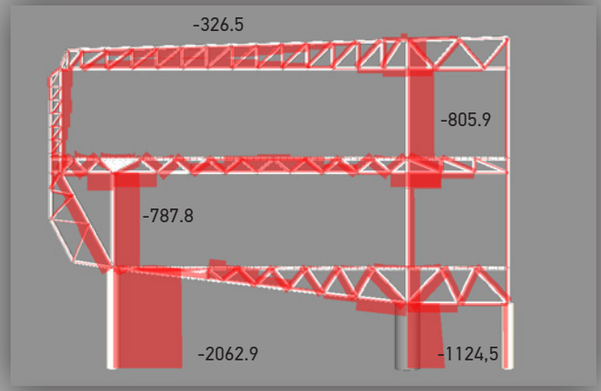


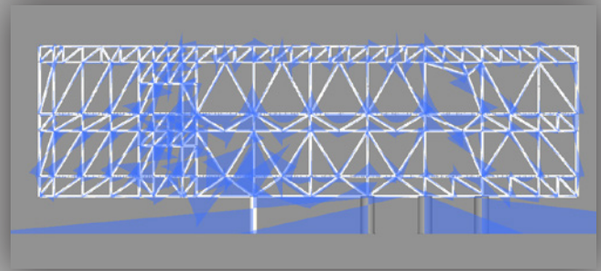


/ TENSIONS DIAGRAMS

Using specialised software, I was able to calculate the loads and tensions of the structure and created diagrams.

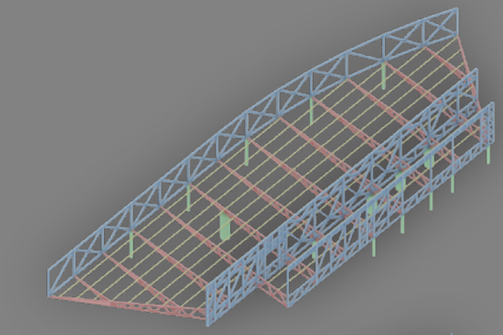


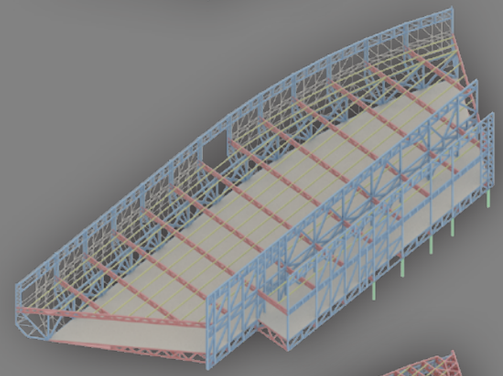


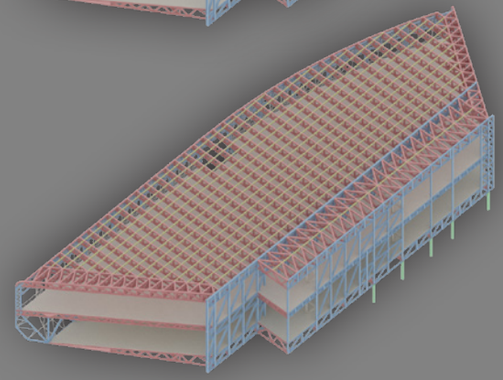


/ UNDERSTANDING THE BUILDING

The structure at Centro Botín is rather complex, which is intentional in order to create large cantilevers. After understanding its behaviour, I created these diagrams to help explain how it works.

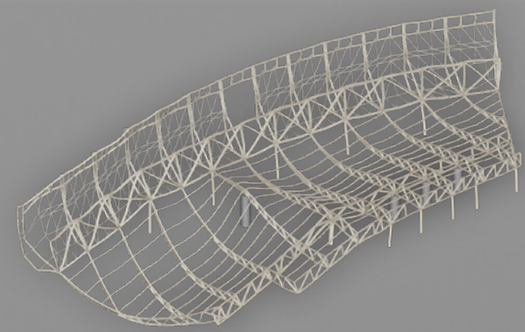


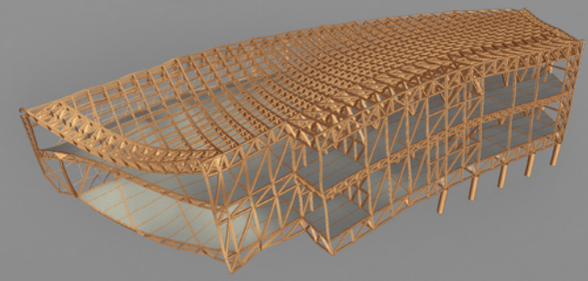


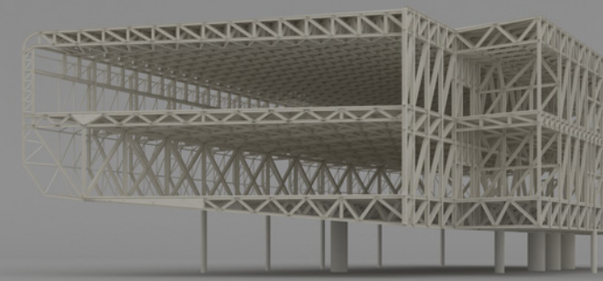


/ DEFLECTION BEHAVIOR

Finally, I made a simulation of the structure's behaviour. I also detected a pathology in one of the pillars that punches though the floor slab, which led me to believe it is a false pillar, being used to pass systems and plumbing through.



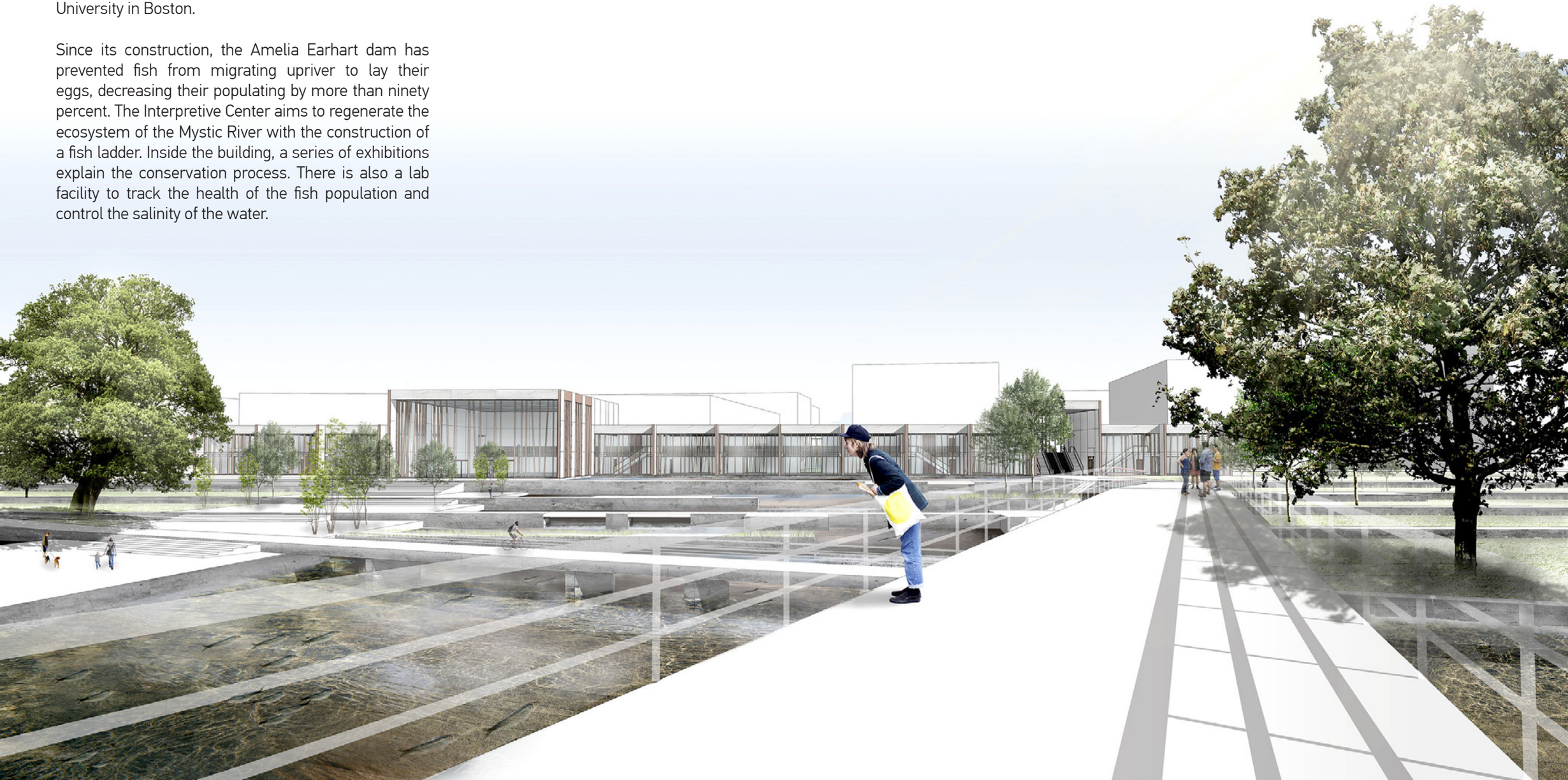




INTERPRETIVE CENTER
/ BOSTON, MA

When I was on my fourth year, I was awarded a scholarship for an exchange year at Northeastern University in Boston.

Since its construction, the Amelia Earhart dam has prevented fish from migrating upriver to lay their eggs, decreasing their populating by more than ninety percent. The Interpretive Center aims to regenerate the ecosystem of the Mystic River with the construction of a fish ladder. Inside the building, a series of exhibitions explain the conservation process. There is also a lab facility to track the health of the fish population and control the salinity of the water.



HOUSE IN VALENCIA

/ VALENCIA, SPAIN

Two-bedroom house for a family in Spain to spend their vacation in Valencia. The project aimed to create an interior space that connected with the exterior while it acted as a shelter from the heat. The structural design creates a particular contrast between the thick concrete walls, which enclose storage space, and the slim roof slab, The envelope permits a direct ventilation to cool the house and combat the climate.

This was my first V-Ray visualisation, back in my second year of School. It took me about a month to learn to use the renderer from scratch up to this level.

FIRE LOOKOUT TOWER

/ SIERRA CALDERONA, SPAIN

Sierra Calderona, like many of Spain's forests and Natural Parks, is highly prone to wildfires. To detect and prevent them, a set of watchtowers will overlook the area while the operators inside control flying drones looking for possible fires. This tower elegantly claims the territory and looks not menacing but in control. Its envelope is designed to combat the harsh climate conditions. Clear concrete walls reflect solar radiation, and a specially designed sandwich-panel adds insulation layers. The large openings accommodate movable shading devices that make it possible to block the sun rays.

PHOTOGRAPHY

/ OTHER INTERESTS

Thank you for your consideration

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