

URBAN RESORT HOTEL



School of Future Environments
Built Environment Engineering
ENBU896 FY Industrial
Project/ Construction
Integration Specialization
Project 2020 Department

SUCCESS- BUILDING GROUP

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The Urban Resort is on this beautiful land, 7 Ngataranga Road, Devonport. There are 41 rooms in the resort, 3 of single level chalets and double level chalets all of which can be used for long-term residence. The leisure facilities in the resort are very complete, Parking lot, entrance plaza, then swimming pool, BBQ area, waterfront plaza, and walkway connecting to the villa, and then golf on the far left. In the green season, you can enjoy the beautiful scenery and feeling the fresh green and fresh air.



Hotel Master Plan

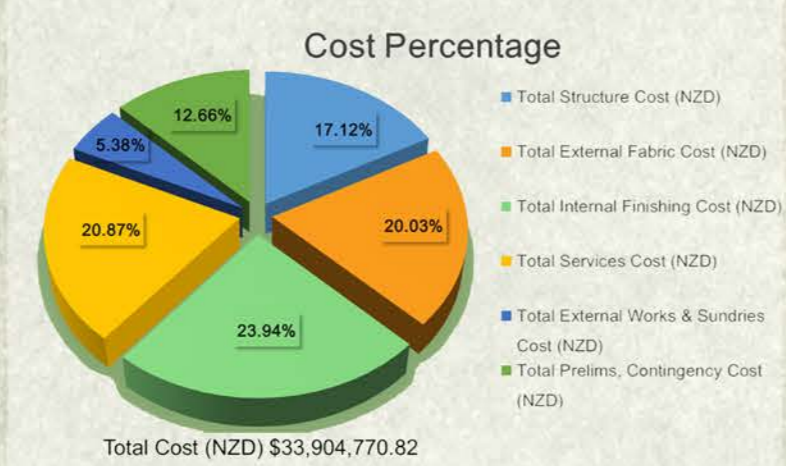
Elevation

Sun Path Diagram

Project Planning



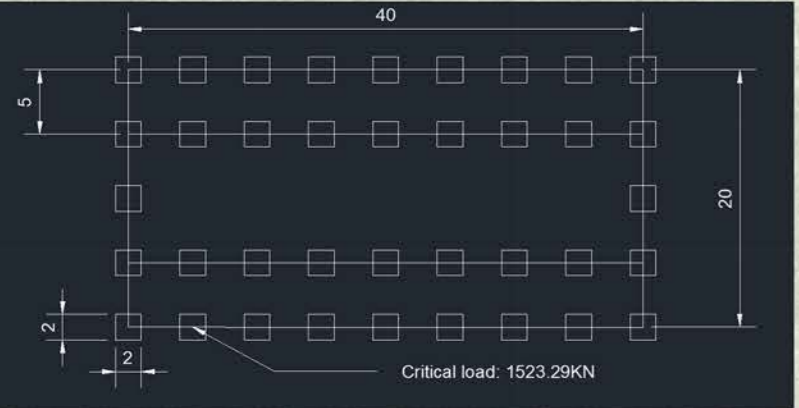
Project Cost



This project total need 521.5 days to complete. The project design part needs 137 days. The project procurement part needs 53 days. The infrastructure part needs 21.5 days. The foundation part needs 21 days. The substructure needs 80 days. The superstructure needs 207 days. The project closes out part needs 2 days.

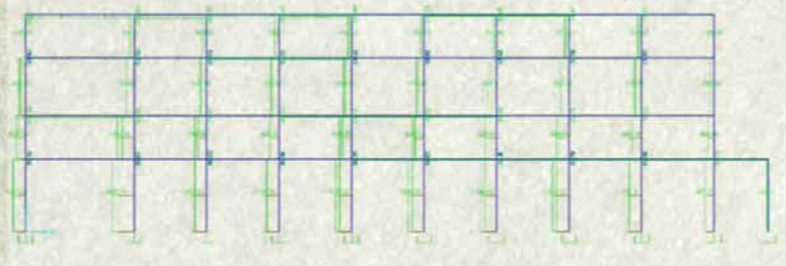
The final total cost of the project after reduction requirement is 33.90 million NZD.
-Four-storey hotel cost: 21,596,589.60 NZD
-Single-storey chalets cost: 338,195.87 NZD
-Double-storey chalets cost: 1,056,359.09 NZD

Foundation

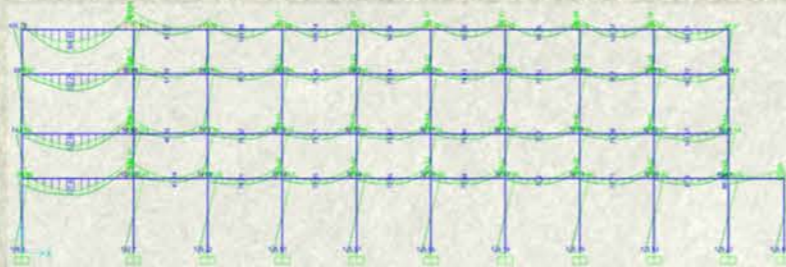


Structure Analysis

SAP2000 Axial load diagram



Bending moment diagram

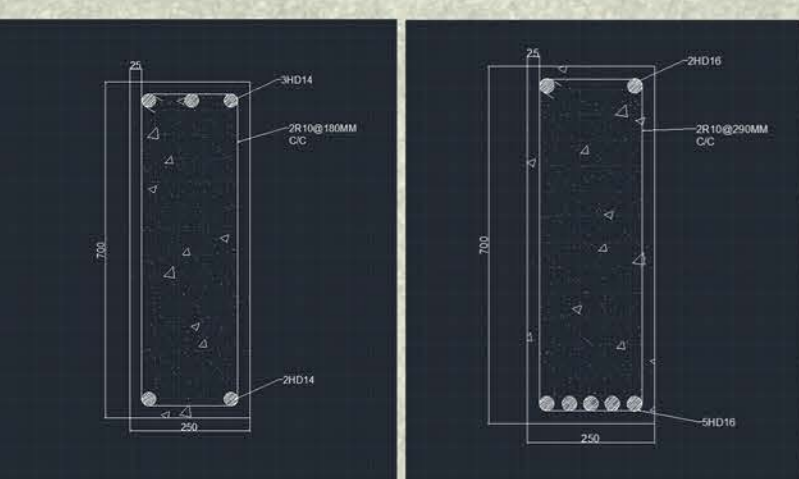


Shear force diagram

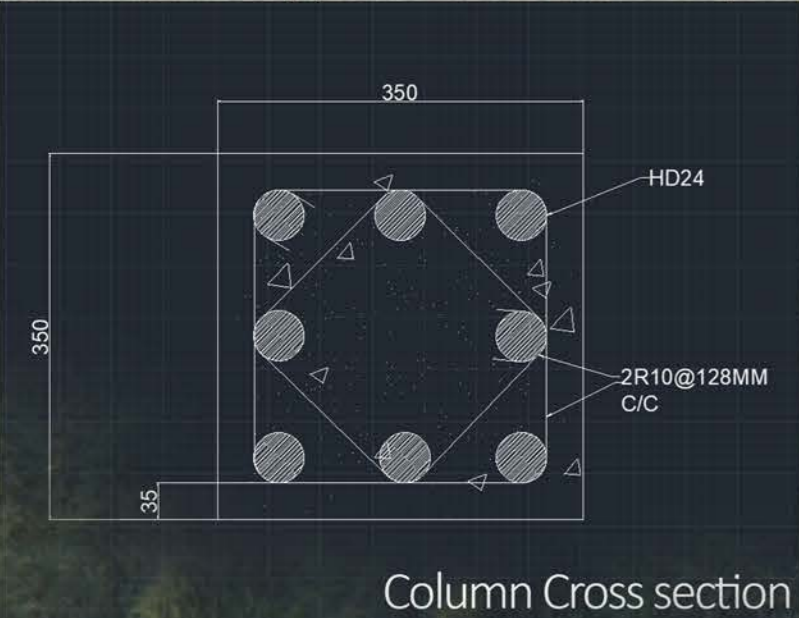
By applying structural analysis, the maximum axial load was calculated as 1523.29 KN where acts on second column from left hand side. Simple pad foundation has been designed as 2m*2m in depth of 2 meters to overcome structural load in vertical direction. Factor of safety of this foundation has been calculated as 4.93 which is greater than 3 as minimum requirement. Foundation settlement of this building is less than 2.5 cm. All foundation design satisfies New Zealand Building Code compliance.

Structure calculation refers to the New Zealand concrete standard NZS 3101:2006. As a result, the beam section and column section as shown in detail.

Recommended size of Beam&Column

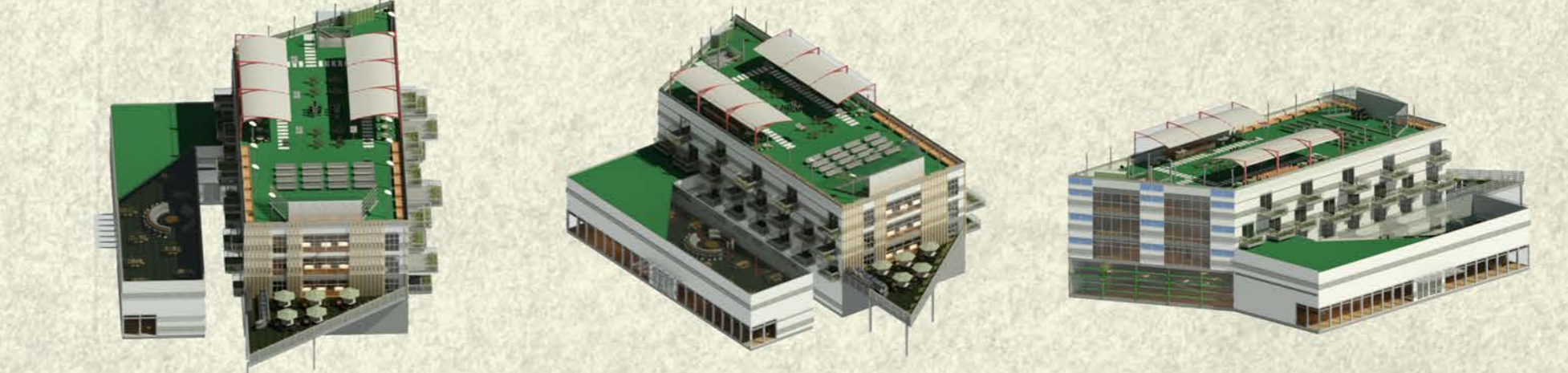
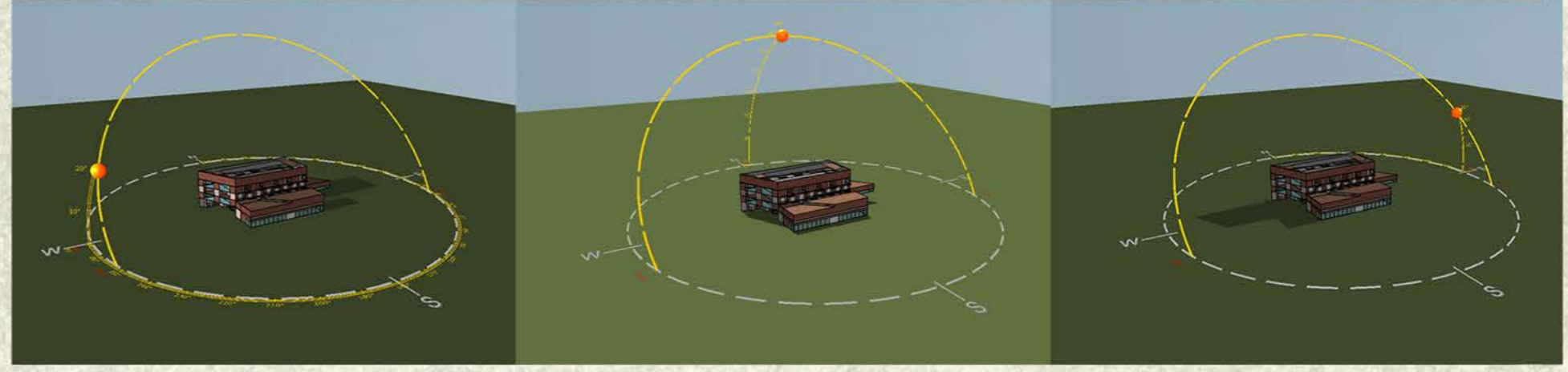
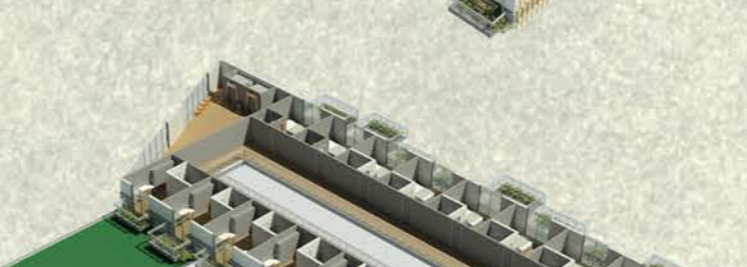
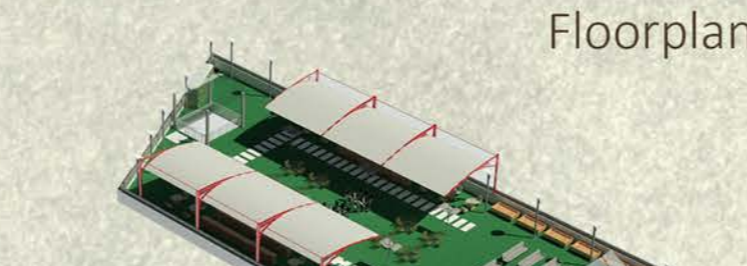


Beam Cross section view close to support view of the mid-span



Column Cross section

Beam and Column modelling refers to the New Zealand concrete standard NZS 3101:2006.



Exterior 3D View



Interior Perspective

