



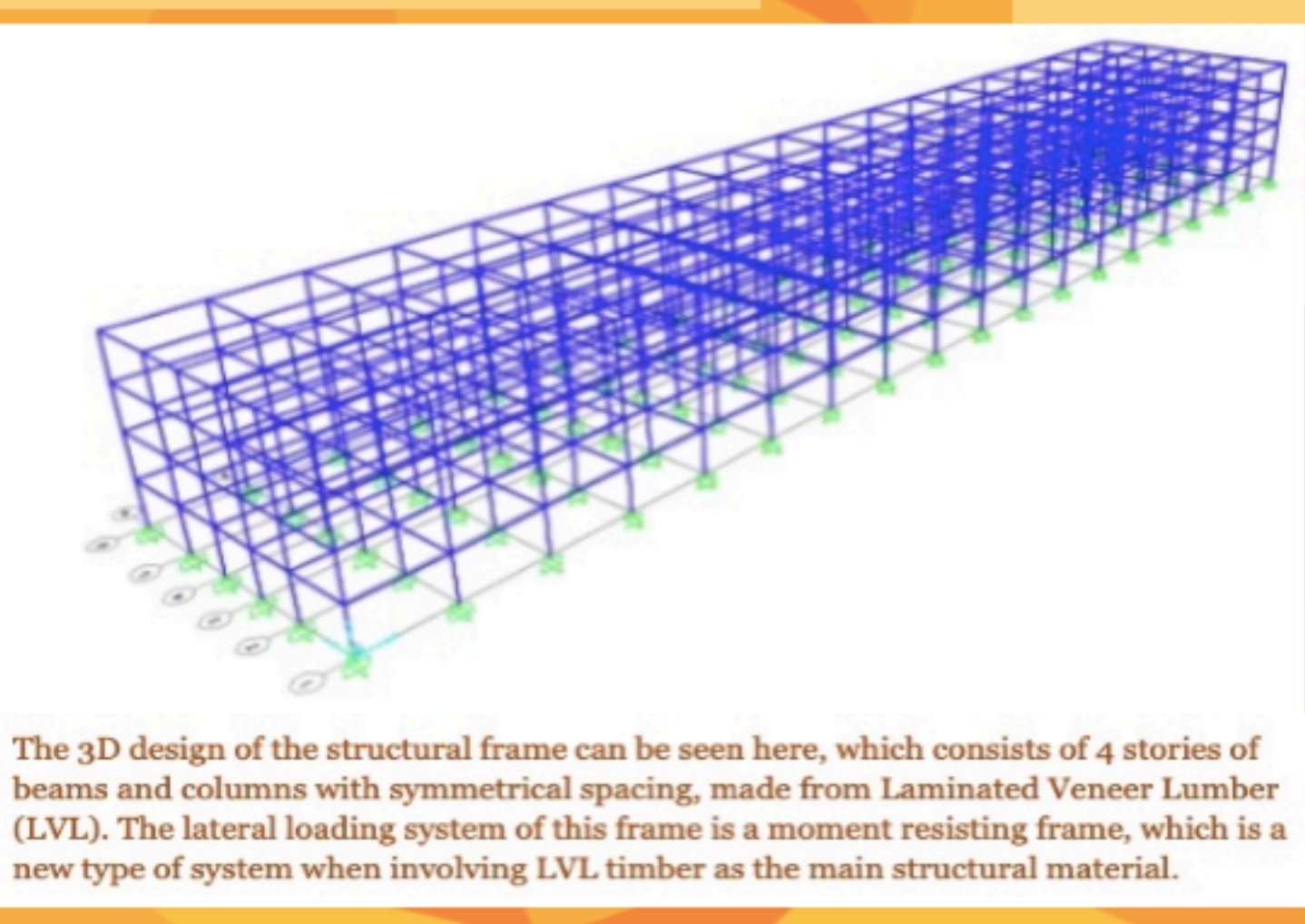
Urban Resort



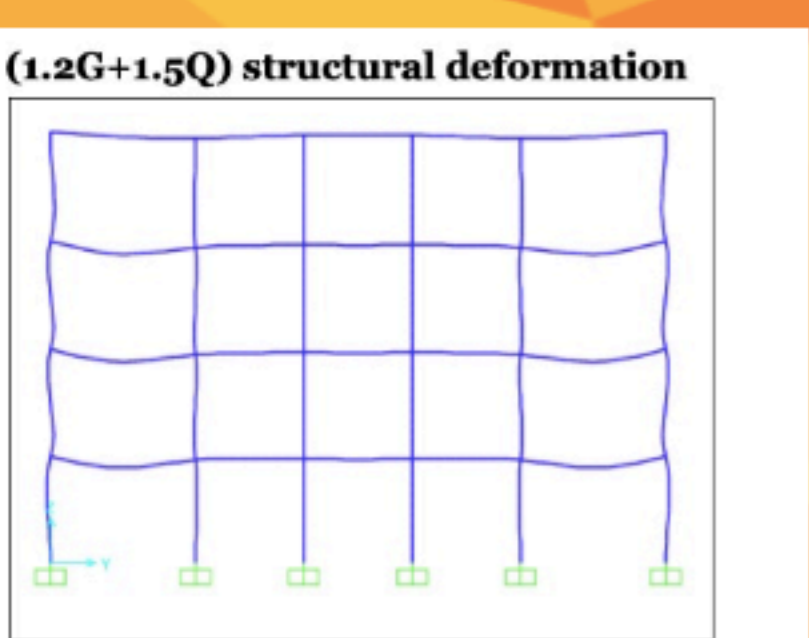
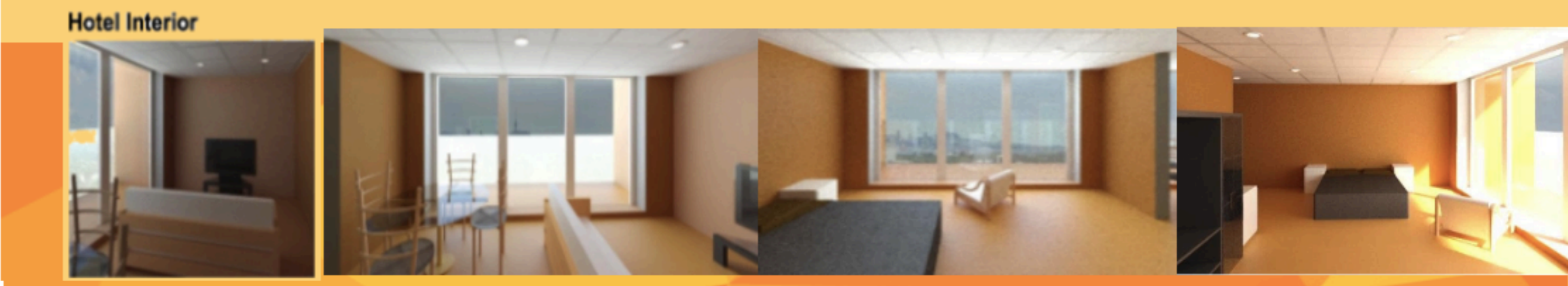
Ryan Advincula - BE (TECH) Building Engineering
 Senoj Fernando - BE (HONS) Construction Engineering
 Rajav Bala - BE (TECH) Building Services Engineering
 Ben Turpin - BE (HONS) Construction Engineering

Structural Analysis

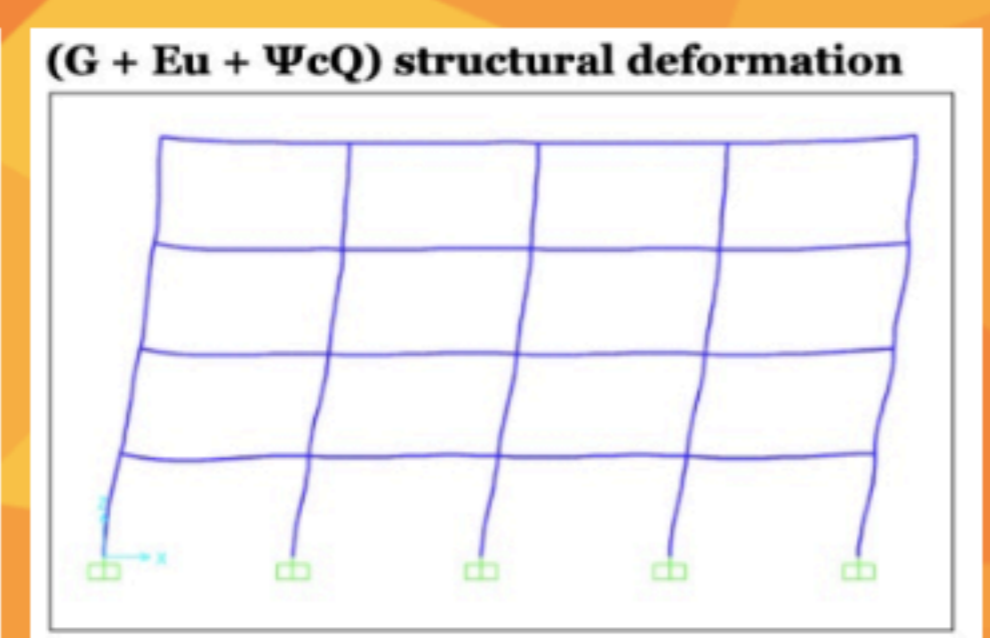
Structural frame



The 3D design of the structural frame can be seen here, which consists of 4 stories of beams and columns with symmetrical spacing, made from Laminated Veneer Lumber (LVL). The lateral loading system of this frame is a moment resisting frame, which is a new type of system when involving LVL timber as the main structural material.

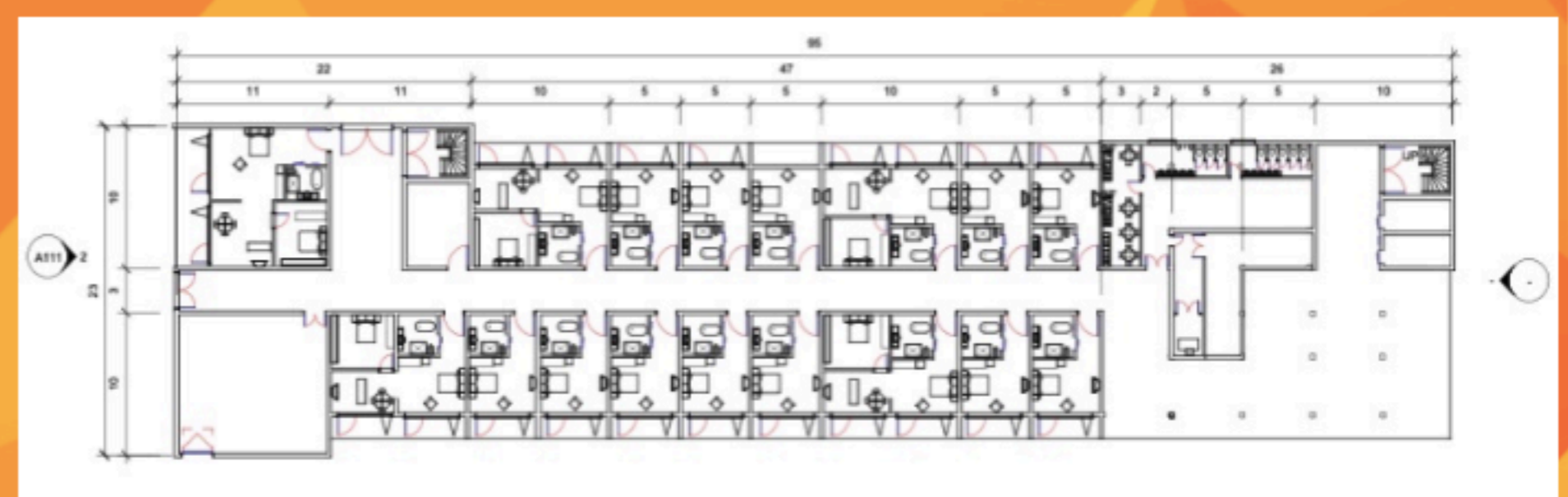


Here is the structural deformation from the dead and live load combinations which are imposed onto the buildings frame. It can be seen that the outer columns and beams undergo the largest amount of deflection caused by the load.



Here is the structural deformation of earthquake loadings which are imposed onto the buildings frame in the X direction only. The figure displays the building's maximum deflection caused by an earthquake.

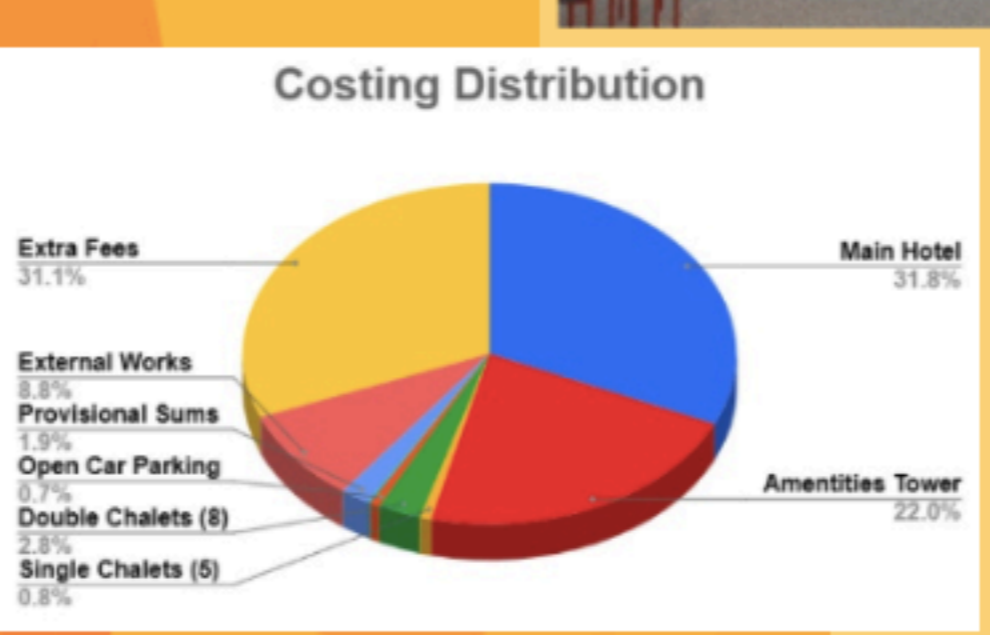
1st floor layout of the 4 story hotel



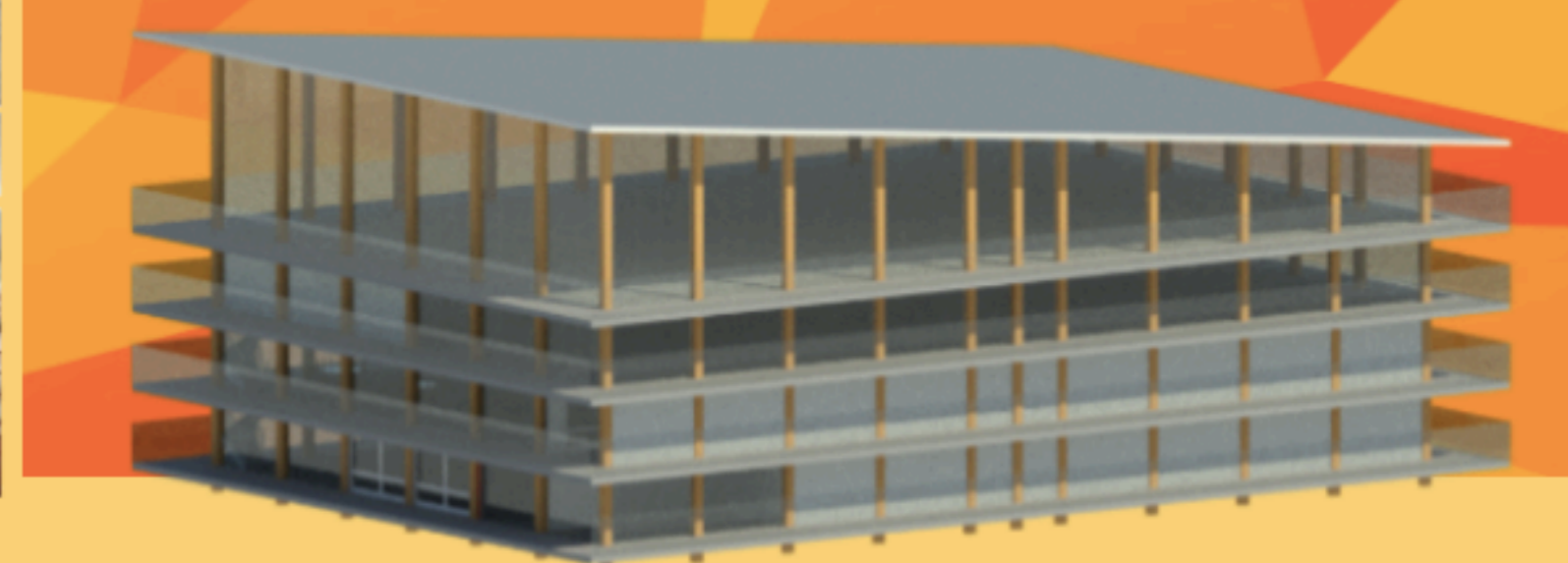
Detailed Costing Element

Element	Total Cost
Main Hotel	\$ 24,394,182.97
Amenities Tower	\$ 16,899,833.29
Single Chalets (5)	\$ 580,568.13
Double Chalets (8)	\$ 2,149,744.09
Open Car Parking	\$ 501,652.15
Playground	\$ 156,180.00
Provisional Sums	\$ 1,442,955.00
External Works	\$ 6,771,974.10
Extra Fees	\$ 23,862,847.28
	\$ 76,759,937.01

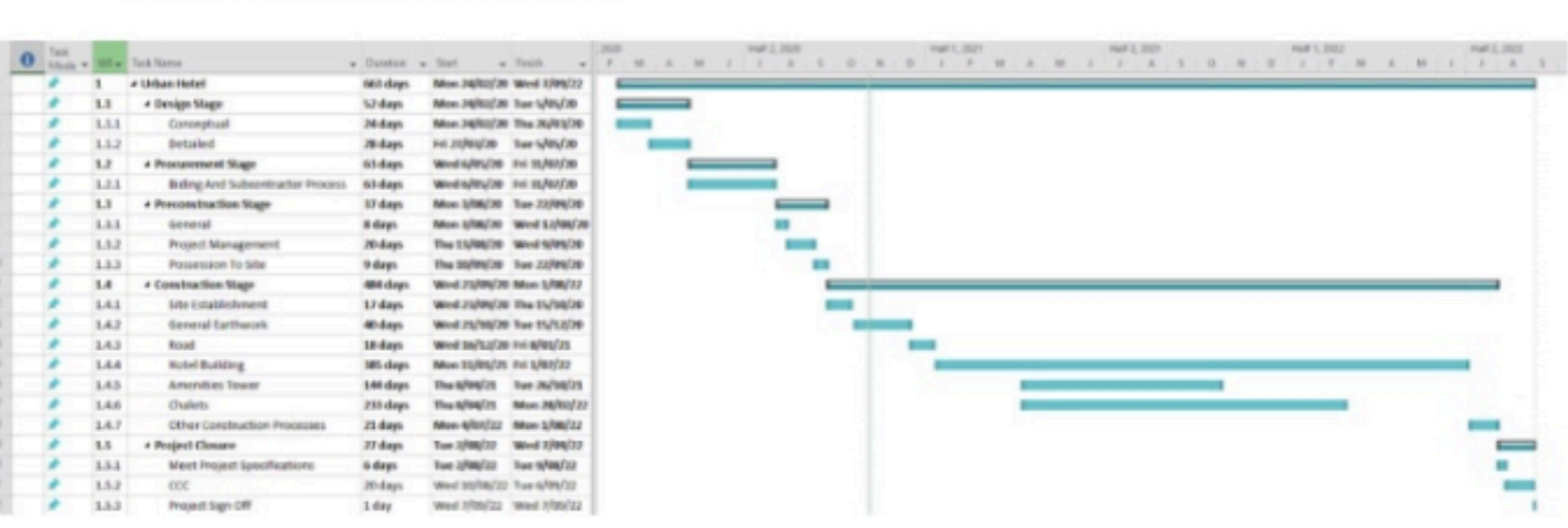
This Pie chart displays the distribution of total construction costs involved with the resort. It can be seen that the main hotel is the largest portion of the total cost, with extra fees (contingencies, preliminaries, margins, tax, etc) not being far behind. All other sections of the resort are compared together. The original total construction cost of the resort came to be \$76,759,937.01.



Amenities Tower Interior

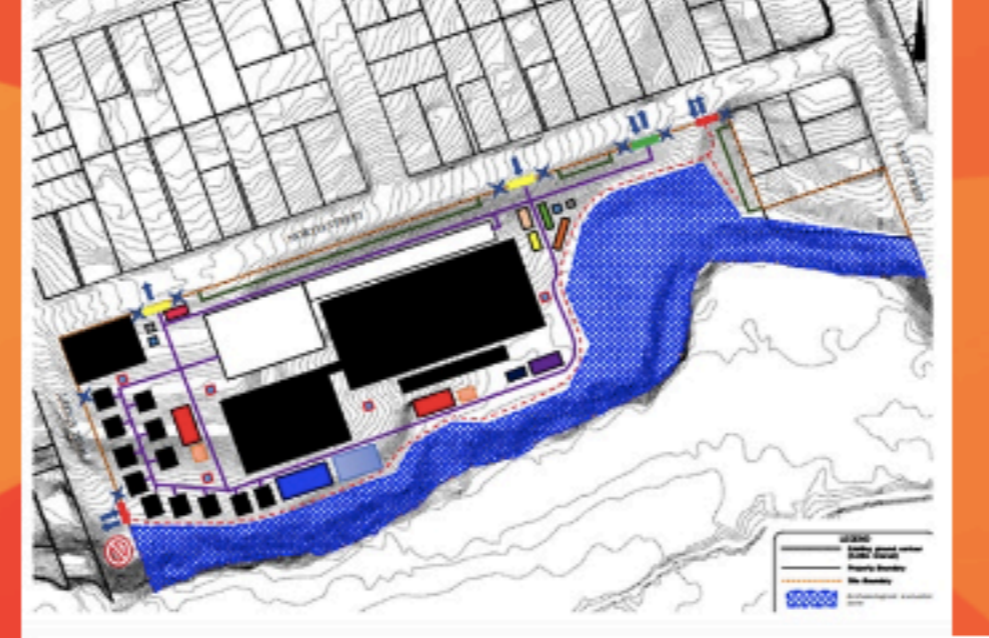


Construction planning



From looking at the master schedule, the Urban Hotel will take 663 days to fully complete. The start date is 24th February 2020 and the end date is 7th September 2022. The major milestones are design phase, procurement phase, pre construction phase, construction phase and project closure. Each one of those milestones have sub tasks related to it which shows the project completion in more depth.

Site Layout

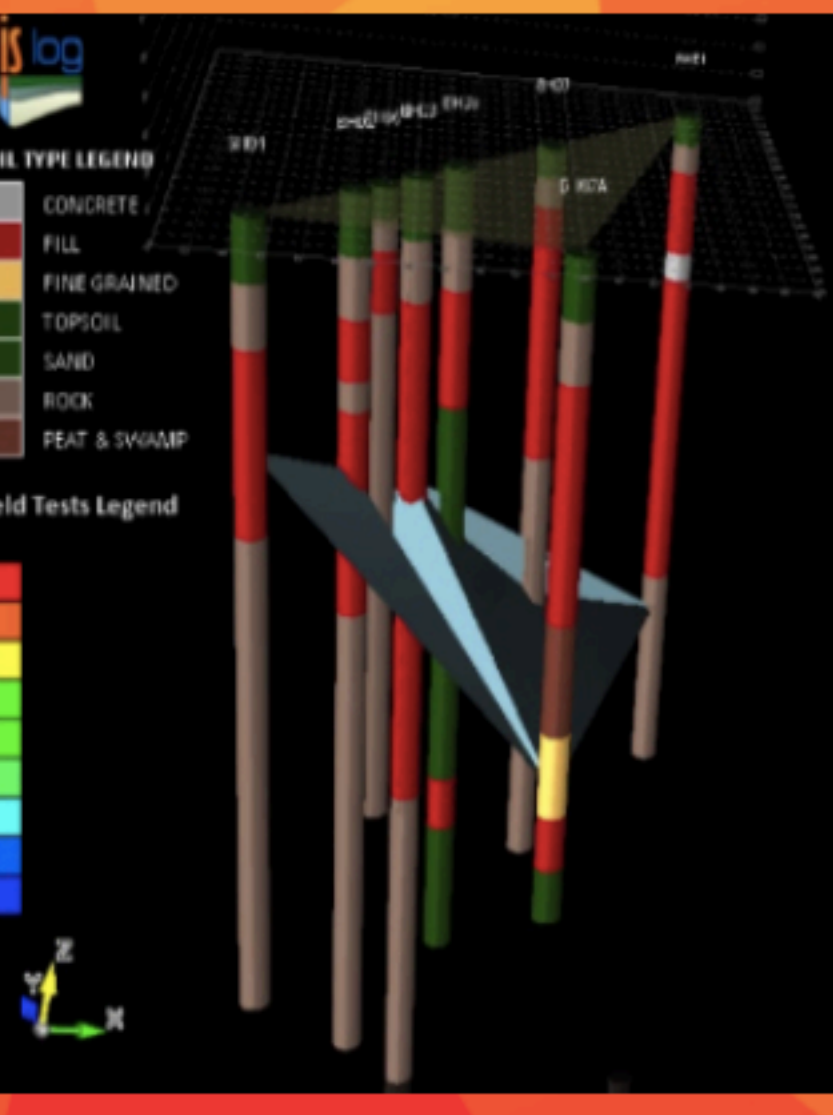


- Construction area
- Parking
- Washing facilities
- On-site toilet
- Crane positions
- Wheel washing facility
- Off-loading facilities
- Waste management and recycling facilities
- Storage area
- Mock-ups testing facility
- Sub-contractor facility
- Site office
- Site canteen
- Changing room and locker
- Facility for rest
- Training and induction facility
- Heavy vehicle entrance/exit
- Light vehicle entrance/exit
- Pedestrian entrance/exit
- Exit
- Entry
- Warning signs
- Emergency evacuation
- Road
- Plants
- Pedestrian walkway

Chalets Interior

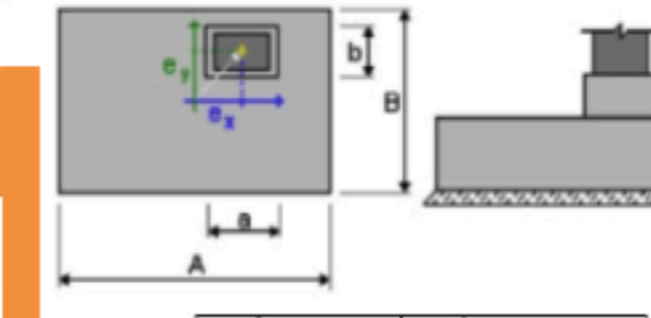


Whole site layout



This is the site geotechnical model, the site investigation results were used was the borehole information. The software used to make the model was Vislog from Novotech Software. The borehole that is on the main building of a 4 story hotel is BH07 and BH07-A.

Final Foundation design



A	1.30 m	a	0.20 m
B	1.30 m	b	0.20 m
h1	0.30 m	e _x	0.00 m
h2	0.16 m	e _y	0.00 m
h4	0.05 m		

The final foundation for the 4-story the hotel is square pad footing with a quantity of 28.