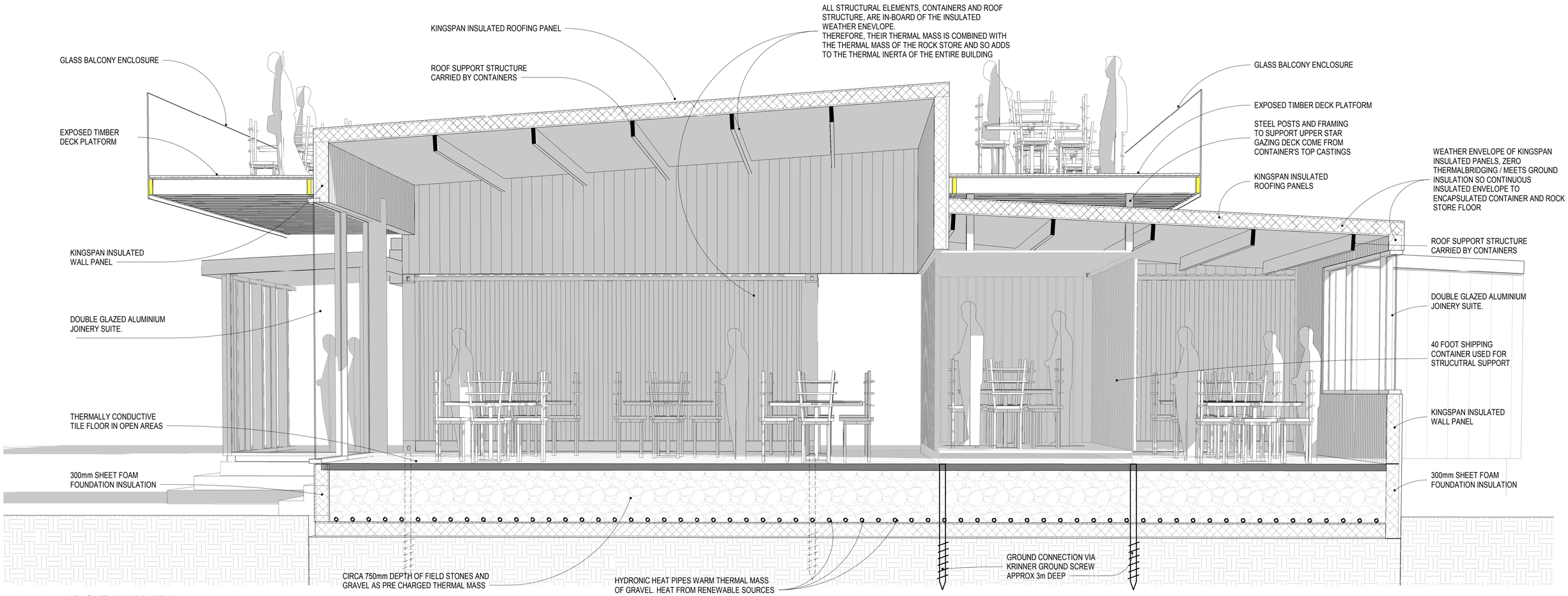
The Restaurant at LandEscape Farm



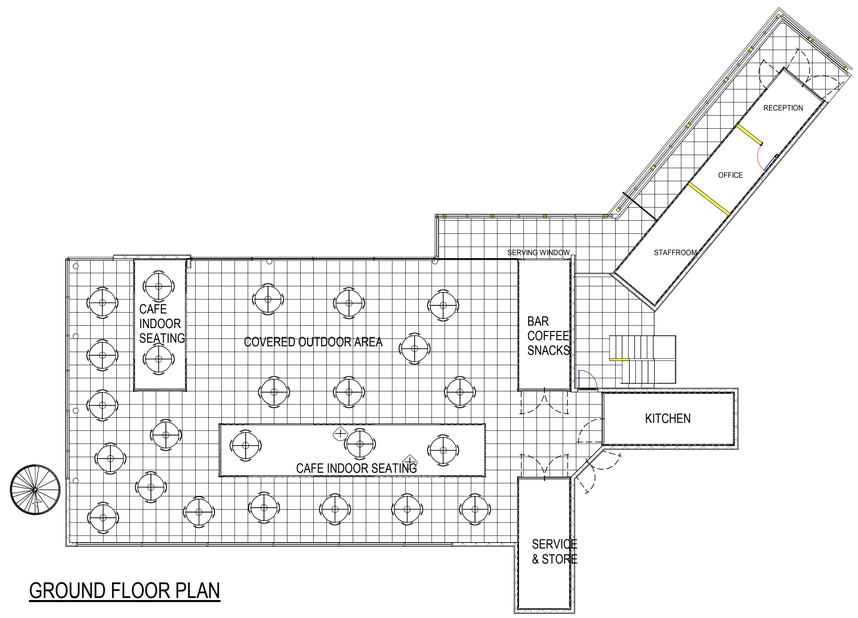
3D CUT AWAY VIEW

RESTAURANT BUILDING HEATED BY THERMAL COMPONENT ACTIVATION

HOW IT WORKS

Shipping containers are to be used as the basic structural framework of the building and they will be ground connected with large seismically resistant ground screws. The containers sit atop a substantial thermally activated rock store that is gently warmed by hydronic pipes under the thermal mass of the rocks and gravel of the store and above the sub-surface thermal insulation layer. This rock store, covered with thermally conductive ceramic tiles or pavers, makes up the floor of the building and it is the thermally activated component that heats the building. It need only be heated to 3ºC above the targeted night time internal air temperature so overheating during the day is not an issue. During a warm summer day the perimeter glazed walls can be opened up completely for comfortable flow through ventilation and an outdoor feel.

When the sun sets and the 10ºC Otago evening temperature drop hits we can simply close up the building and radiant heat from the pre-warmed floor will immediately warm the building to 22.5ºC and directly heat the occupants without the need for further energy inputs or heating systems. The thermal energy to be put through the hydronic floor heating will be sourced from a combination of Solar Thermal Collectors, a Wood Gasification Boiler and/or a Ground Source Heat Pump running on Photo-Voltaic sourced Electricity - 100% renewably heated and powered. The large amount of thermal energy contained in the rock store will carry the building through several days of low insolation. The upper stargazing balconies will be steel structures cantilevered from the corner castings of the shipping containers in the manner of containers stacked twelve high on a ship at sea.



GROUND FLOOR PLAN