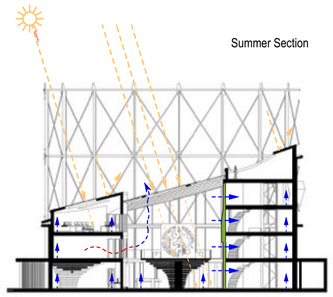
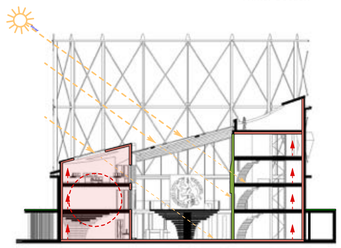
ENVIRONMENTAL & SUSTAINABILITY

Summer Section



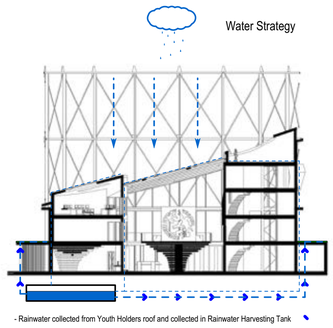
- Natural Daylighting (providing natural light wuth UV filtered Solar Photovoltaic Glass)
- Cross ventilation natural air from ground floor
- Cooling from floor vents through mechanical ventialtion (Powered by Solar PV Glass)
- Atrium providing ventilation through thermostat controlled electric rooflights
- Permeable Climbing wall allowing cross flow of air / light

Winter Section



- Natural Daylighting (providing natural light wuth UV filtered Solar Photovoltaic Glass)
- Heating from floor vents through mechanical ventialtion (Powered by Solar PV Glass)
- SIP panel construciton providing sealed temprature controlled rooms
- Reduction in energy construciton

Water Strategy

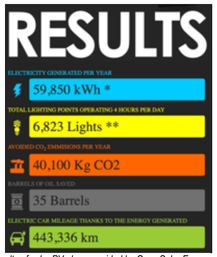


- Rainwater collected from Youth Holders roof and collected in Rainwater Harvesting Tank
- Green roofs water through rainwater harvesting tank using a leaky pipe system

SOLAR PHOTOVOLTAIC GLASS

- Solar Photovoltaic glass (ONYX SOLAR) to atrium roof and others providing clean energy all year round.

- PV Glass is an economic solution for green technology with only a marginal increase in cost compared to conventional glass



Results of solar PV glass provided by Onyx Solar Energy simulator

Examples of ONYX Solar glazed atrium roofs

SIP PANEL CONSTRUCTION

- SIP Panels provide an air tight construciton free of drafts and cold areas

- Energy bills are reduced by up to 50 - 60 percent in buildings constructed in SIP Panels

- Reduced labor costs comapred to traditional framing

- Faster Construction compared to traditional framing

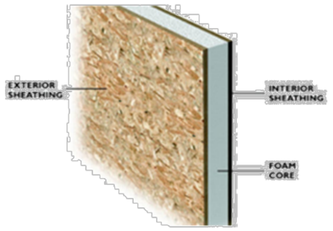
- SIP Panel roof systems eliminate trusses allowing increased head room

- SIP Panel buildings are considerably quieter and provide a high level of soundproofing perfect for a Youth Centre.

- OSB skin to SIP Panels are envonrmentally friendly utilising small diameter trees harvested from plantations using even the smallest scraps of wood eliminating waste.

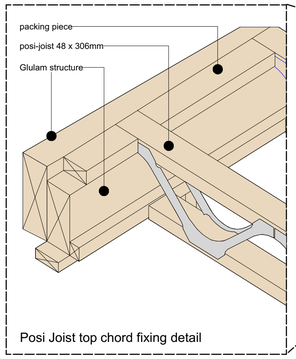
- EPS Foam insualtion is a recyclable material completely inert in the environment, requires minimum energy to produce and contains no CFC's

- SIP Panles release no volatile organic compounds a large benefit for any person suffering from environmental or chemical allergies.



SIP Panel Diagram

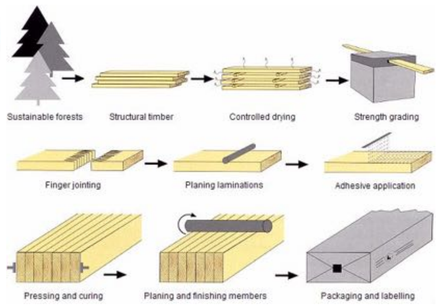
3D model of Glulam frame

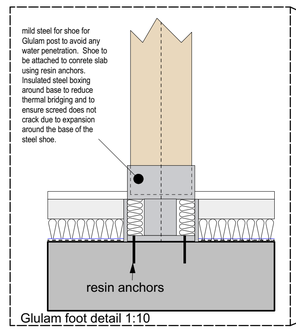


Posi Joist top chord fixing detail

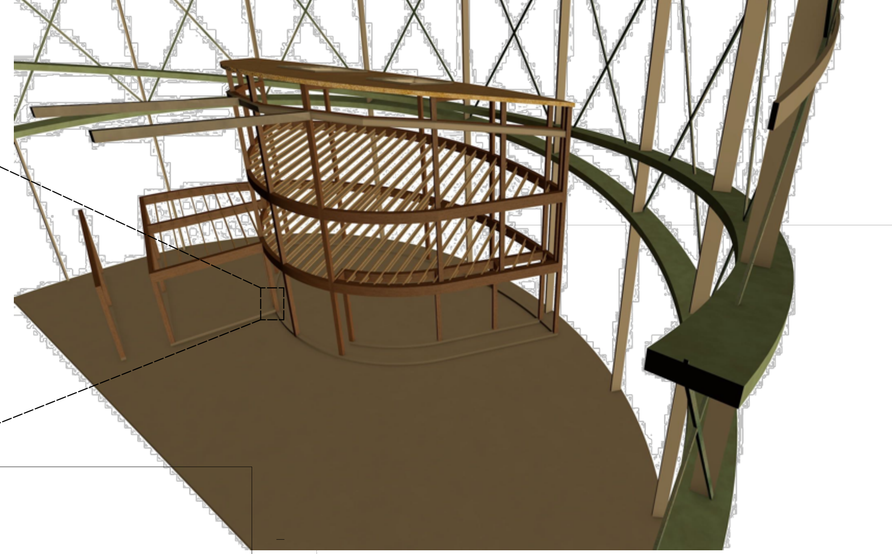
Glulam Structure

Glulam Preparation Diagram





Glulam foot detail 1:10



3D model of Glulam frame

The building utilises glulam as the key material for this projects substructure for the main reasons highlighted below -

- Well suited for long spans and curved designs due to its lamination process glulam is inherently flexible and can be produced anywhere from 45mm x 45mm up to 1800mm x 30m long. Glulam is put through a mechanical presses allowing glulam to be configured to make complex curved shapes. Each of the three pods has a custom curve over long distances ranging up to 30m in length.

- Aesthetic appearance - Glulam is often preferred over steel for its appearance and it aids in creating a warm and comfortable feel to a building.

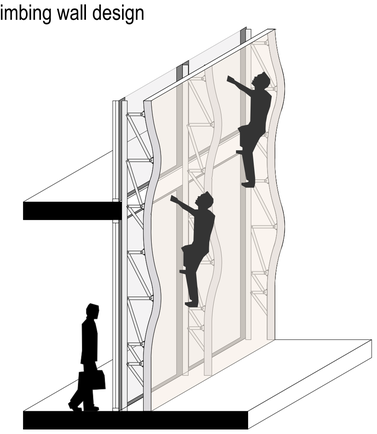
- Durability - Species of the timber, type of glue and preservative type and application are all factors in the durability of glulam. The correct specification can be used in the most harshest of climates, which due to Jerseys high level of salt content in the air glulam can last for decades with minimal maintenance.

- Reduces thermal bridging - Due to its strong thermal performance it heavily reduces thermal bridging providing a much more thermal efficient structure when compared to steel.

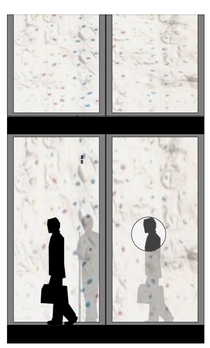
- Stronger resistance to fire than any other structural construction material due to the thickness of the glulam timber chars at a known rate and does not deform like steel.

- Environmental Performance - Glulam beams are very efficient to produce. The amount of energy required to produce a glue laminated glulam beam is a fraction of the energy required to produce steel or concrete.

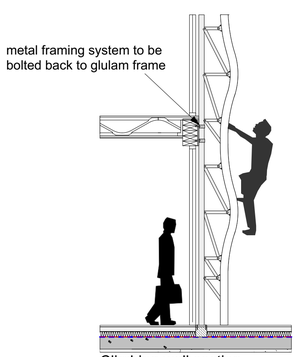
Climbing wall design



Climbing wall axonometric



Climbing wall elevation



Climbing wall section