New Zealand Arthropod Collection

Special Design Considerations

Collection vault

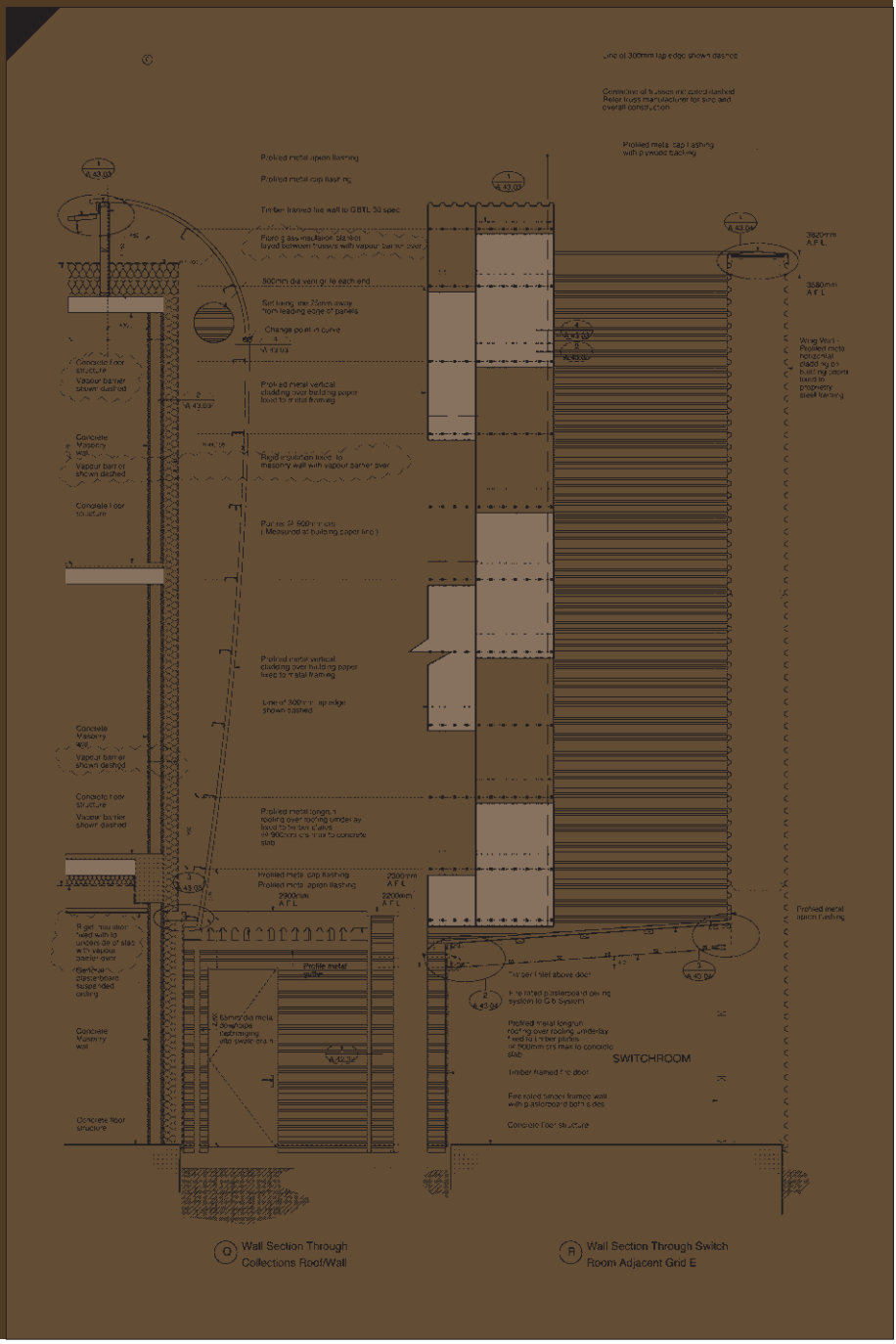
- south facing
- minimal temperature gains / losses to the outside
- multi-layered walls and roof with high performance fibreglass insulation
- concrete walls, floor and ceiling provide internal thermal mass and fire protection.

Low impact technology

- chilled-water cooling system with spare back-up unit
- gas fired heating to drive off moisture with backup dessicant dehumidification air when cooling load is low
- heat recovered from freezers for re-use elsewhere
- R 404A refridgerant used (this is the most enviro-friendly available).

Fire protection

- 4-hour fire rating for concrete walls, floors and ceilings
- 2-hour fire rating for doors (automatically closed when fire alarm triggered)
- argonite gas flooding system inside vaults (water or powder based systems would be too damaging to specimens).

Earthquake protection

- heavy, raised concrete vaults will move during earthquakes
- seismic gaps in floors larger than usual to permit flexing.