



View of library and public space

Waitakere Central Library & UNITEC Facilities

The mission statement of the Waitakere Library is to provide open access to leisure and recreation opportunities, and to high quality information and knowledge, in an equitable way.

Designed by Architectus Auckland in conjunction with Athfield Architects, this project consists of the new Waitakere City Central Library, which also integrates the UNITEC collection, and new teaching facilities for the UNITEC Institute of Technology.

Sited adjacent to the existing UNITEC building in Henderson, the two buildings (and a third, attached car parking building) are arranged around a new pedestrian street and urban square to form a new civic precinct. Part of a building programme that includes the nearby Waitakere Civic Centre, the project is intended to act as a catalyst

for the future development of the Henderson CBD.

The Library is the largest in the City, with a depth of collection and a range of services greater than any of the city's other libraries. The collections available include a specialist collection for the entire library system, an extensive New Zealand and Pacific collection and a developing corporate library service.

The general health collection of the adjacent UNITEC Nursing and Health Studies faculties have been integrated with the public collection while the specialist textbooks have a separate

section for staff and students on the upper floor of the library.

The new UNITEC building accommodates general teaching, laboratories, lecture and student facilities and administration.

Project Details

Client: Waitakere City Council / UNITEC
Location: Auckland, New Zealand
Approx. Value: \$35.5m
Floor Area: 8000m²
Completion: February 2006

Contact

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Awards

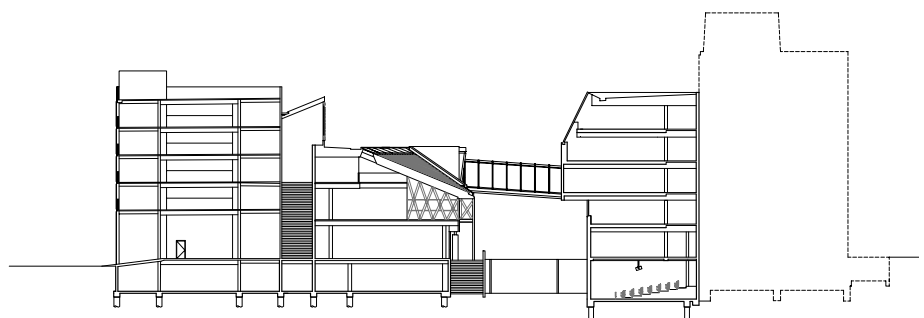
NZIA Resene Local Award for Architecture 2006



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Waitakere Central Library & UNITEC Facility

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Section



View from Ratanui Street

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The previous Henderson Library was one of the most highly used public buildings in the central business district with just on a quarter of a million visits per annum. The new building provides a greater range of services as well as providing for future growth.

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View of Public Space

Sustainable Building Initiatives

Process and Procurement

- The Council's Design Brief and Better Building Code outlined sustainable building priorities.
- Stakeholder involvement in the project brief and design development from the outset.
- 3-D thermal, daylight and energy modelling of naturally and mechanically ventilated spaces.
- Independent AGBC Greenstar equivalent evaluation.
- An artworks program was integrated into the building project.
- The project combined a UNITEC Departmental Library with the main City Library, economizing on resources.
- A detailed review of the embodied energy of the total building fabric including the 'healthy building' aspect of materials was carried out at the design stage.

- A user manual is being developed for the sustainable use of the building.
- Post occupancy monitoring of energy use and water consumption will be carried out.

Energy Efficiency

- Natural ventilation was used in academic offices, with a sensor controlled occupant based VAV system in the classrooms providing heating or cooling only when occupied.
- The library was air conditioned due to humidity control requirements.
- High levels of thermal insulation (over double the Standard) have been used.
- High thermal mass exposed floor structure used to moderate temperature variations.
- Extensive use of daylighting for staff offices.

- Highly efficient T5 fluorescent artificial lighting.
- Programmable artificial lighting control system with timed, occupancy, perimeter daylight and cleaning cycle control.
- Heating and cooling by air source reversible heat recovery heat pump.
- Solar and heat pump hot water heating.
- Plant controlled via a state of the art building management system.
- Low energy use LCD computer screens and energy star / AAA rated appliances.
- Low rise development with inter-floor connecting stairs and energy efficient machine room less lifts.



Interior View of Teaching Space

Sustainable Building Initiatives

Materials

- The building uses a restricted palette of materials including concrete, glass, plywood and cedar thus making the structure resource efficient.
- The philosophy of the building was ‘what you see is what you get’ (WYSIWIG) using materials in their raw state with minimal applied finishes.
- Only plantation grown or Forest Stewardship Council certified timbers were used.
- Paint certified under the Environmental Choice New Zealand labelling scheme.
- Zero ozone depleting refrigerants.
- Polypropylene domestic water piping systems used in the Library instead of copper.
- Use of aluminium limited to areas requiring a high degree of durability

eg façade joinery.

Water

- Low flow sanitary fixtures including sensor taps and ultra low flow dual flush WCs.
- Low water use native planting used in the landscaping negating the need for irrigation.
- Surface water runoff from ground and car parking areas is taken through rain gardens which filter impurities. The outflow complies with the Auckland Regional Council’s TP 10 standards allowing it to be discharged directly to local streams.

Waste and Recycling

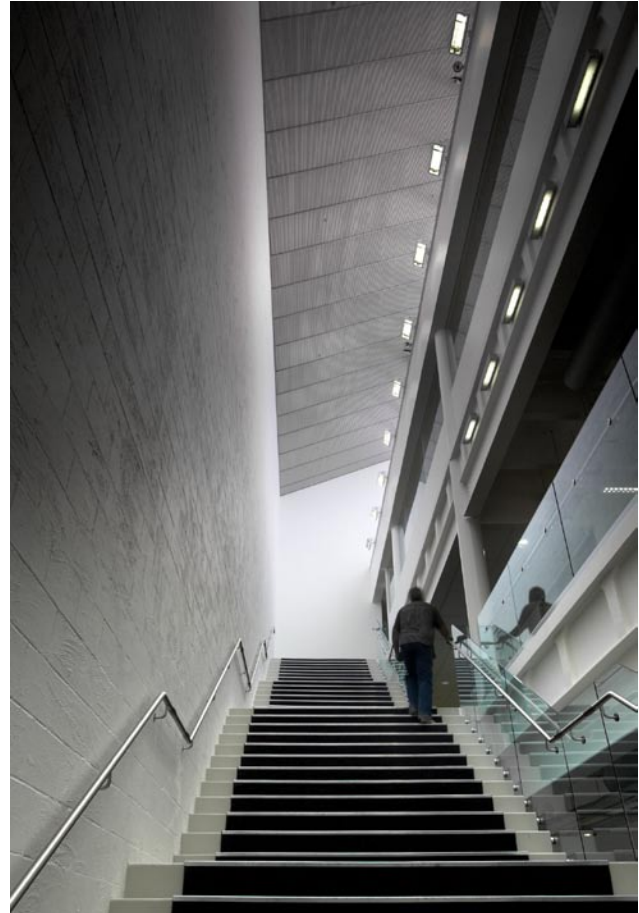
- The approach to waste minimization and recycling concentrated on minimizing the initial use of materials, finishes and their future replacement over the life of the building.
- Some of the components particularly the glass, insulation and

steel inherently have a recycled component.

- Carpet tiles with a high recycled content have been used in the UNITEC building instead of broadloom carpet to allow for selective replacement.
- Extensive use of pre-fabricated components and self finished materials to minimize construction material use and waste.
- The use of whole building lifespan embodied technologies such as façade design and both active and passive use of thermal mass reduces the extent and size of shorter lifespan engineering systems.
- Facility for recycling and storage within the loading bay and within office/café spaces.



View of Library Interior



Main Stair in Library

Sustainable Building Initiatives

Indoor Environmental Quality

- Generous and open connecting stairs in both buildings for inter-floor connectivity.
- High levels of natural light and outside awareness.
- High levels of indoor air quality and ventilation effectiveness are achieved in the administration offices by natural ventilation.
- High standards of air filtration.
- Flicker free high frequency lighting
- The minimum use of applied finishes and associated adhesives and VOCs and the use of water based paints further contributes to indoor air quality.

Site and Transport

- The Waitakere Central Library/ UNITEC project and nearby Civic Centre are intended to act as a catalyst for future Henderson central area development.
- Crime prevention through environmental design (CPTED) principles were followed.
- The Library is located within walking distance of the Henderson transportation hub. Plans are underway to double track the rail line and upgrade the train service.
- A Park and Ride facility for the Henderson transportation hub is planned.
- Bicycle parks (and showers) are provided for staff within the building and externally for the public/visitors/ couriers as part of the external works.