B A T T L E M c C A R T H Y©

Consulting Engineers & Landscape Architects

PROJECT:
TEL AVIV UNIVERSITY, ISRAEL

CLIENT:
Undisclosed

ARCHITECTS:
Pringle Richards Sharatt Architects

BM SERVICES:
Sustainability and Environmental Design

VALUE:
Unknown

DATE OF COMPLETION:
Design Competition - Ongoing

DESIGN BRIEF

Battle McCarthy has supported PRS Architects in the environmental design and landscape architecture of the Tel Aviv University project competition in Israel.
towards achieving exemplar 'high-end' sustainable residential architecture with the least financial outlay

DESIGN APPROACH

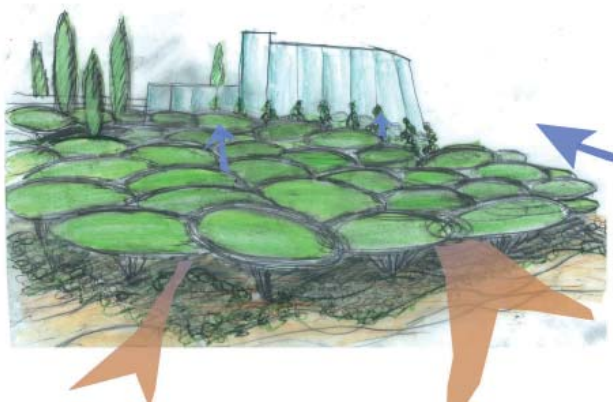
Sustainable design is not about applying global solutions to every project, it is instead about taking time and effort to understand the constraints and opportunities of each site, the desires of the occupants and the requirements of the surrounding community. Only through this understanding can ultimate value be derived by choosing systems and technology that work with the site, that maintain comfort for the occupants, that meet the expected targets without excessive financial burden. These are the underlying principles which determined the following Key Sustainable Targets and Strategies adopted for the Tel Aviv University

KEY SUSTAINABLE TARGETS

Ultra Energy Efficient: Exceeds expectations in energy and carbon by more than 25% less energy than ASHRAE

Towards Carbon Zero: Additional 50% in CO_2 reductions through Renewable Energy Systems and Low Carbon Technologies

Climate Sensitive Design: Selecting design solutions which respond to the local climate.



London UK Office
T: +44 (0)20 7440 8282
F: +44 (0)20 7440 8292
E: admin@battlemccarthy.com
www.battlemccarthy.com

Towards Water Neutrality: No net increase in potable water use

Environmental Landscape: Sustainable & Environmental approach to Landscape

High Environmental Quality: he Design will exceed internal and externalhigh environmental quality to ensure maximum comfort of its users

Environmentqal Benchmarks: USGBC LEED Platinum & Israeli Green Building Standard 'Distinction'

SUSTAINABLE STRATEGIES

The University is committed to achieving LEED 'Platinum' and SI 5281' Green Building with Distinction Level and will review best in class benchmarks and set new best practice standards. Low energy façade, systems, controls and monitoring will produce a building that consumes approximately 25% of the energy allowed in ASHRAE, with an aspiration to achieve 30%.

A south facing atrium acts as a thermal buffer to the working areas of the building, providing air circulation during summer and insulation during winter. The elevated site, its orientation and the prevailing on shore wind, together with the natural buoyancy of warm air and the height and tapered form of the atrium produce a compelling alternative to mechanical ventilation.

Planters along the internal elevation provide shading and introduce the necessary much needed humidity. Blinds and slide-aside doors along the façade of the working areas provide further shading and the opportunity to allow warm air onto the floors during cold periods.

Good daylight and view out has been maximised through designing shallow floor plants thus reducing the dependency on artificial lighting.

An earth tube will pre- cool the intake air and a high efficiency chilled floor system will enhance this as required. Pre-cooled fresh air will be drawn through a hypocaust floor and introduced into the occupied spaces via floor outlets. As it warms it rises and is expelled at high level into the atrium or windows on the north elevation.

Shading and adequate U-values will avoid solar gains in summer and heat losses in winter and good air tightness will prevent thermal losses. Elevating the building provides a direct route for the air from beneath the surrounding tree canopy to the air handling plant and earth pipes.

The provision for the installation of renewable energy systems (wind turbine, solar thermal collectors and photo voltaic cells) to provide 50% of the energy demands of the building will be made. Photovoltaic panels along the south facing bridge will provide the opportunity for manufacturers to demonstrate their latest technology and performance while providing shade for those using the bridge – a working demonstration of the power of solar energy and the output various manufacturers achieve.

The exposed thermal mass of the structure will provide a heat sink and thermal stability by moderating temperature fluctuations. Night ventilation of the building will pre-cool the exposed structure

Potable water use will be minimized through the specification of aerated taps and showers, water less urinals, low water WC's, the monitoring and leak detection systems and the recovery of rain water and recycling of grey water for WC flushing and irrigation.

A Construction Management Plan will be implemented to avoid the use of toxic materials and ensure the re use of waste material as part of the landscape proposals. Materials and components will have a high recycled content and be specified with a view to their in turn being recycled. Rapidly renewable materials will be used where possible.

We would seek to utilize the skills and natural resources of the local area where possible and choose materials for efficient use of embedded energy in combination with their technical performance

The development is committed to provide a solution that is Ultra Low Carbon and Carbon Negative in construction