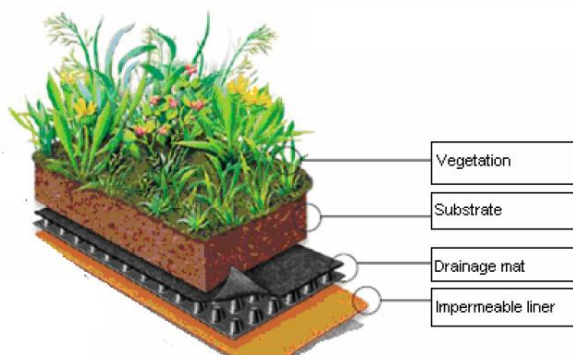


**Project Title: Green Roof Technology – New Eco-Engineering for the Christchurch Rebuild**

Green roof technology is emerging internationally as a low impact design (LID) for stormwater management in dense urban centres. Rooftops comprise a large proportion of the total impervious area in urban settings and also contribute substantial contaminant loads to drainage systems. Significant opportunity exists to reduce runoff and contaminant volume and peak flow by retrofit of existing and in newer buildings with green roof systems. A particular benefit is that these can be constructed on an otherwise unusable space (rather than valuable ground space).

Green roofs have been successfully operating in other parts of New Zealand, especially Auckland, for a number of years but have not yet been trialled in Christchurch. The University of Auckland’s Engineering Building has been operating a green roof for 5 years. It recently emerged from the Christchurch Expo that residents strongly expect Christchurch to be rebuilt as a more sustainable and ecologically connected city – something that is afforded by including green roof systems.



***Design requirements:***

- Mixed materials properties
- Base course drainage
- Structural loading calculations
- Hydraulic control
- Vegetative growth
- Building code compliance
- Stormwater treatment

In late 2011, Christchurch’s first green roofs will be trialled at the University of Canterbury campus on the newly constructed ‘Oval pods’. This research is being supported by New Zealand’s leading green roof experts from the University of Auckland and the Christchurch City Council. The research will investigate the best technical designs and preliminary performance of pilot-scale green roofs under Christchurch’s climate. The work can extend into Masters research opportunities for 2012.

A student interested in this research should ideally have a solid foundation in engineering sciences including hydrology, design, mechanics of materials and some structures. Ecological knowledge is not required although an interest in ecosystems and water chemistry would enhance the project.

*This opportunity is restricted to enrolled UC students having completed ≥200 year papers by Dec.*



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