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The input parameters for each scenario are carefully selected according to their unique features. The framework for designing and forecasting the demand of a zero waste low-carbon precinct is developed, based on input/output material flow of products before they turn into the waste throughout the chain to disposal. An integrated carbon consequence in each scenario is generated as the final indicator. This methodology framework gives an in-depth evaluation of the total waste and resource throughout the material flow chain. The findings provide an inventory of leverage points, such as when and where (which stage), how, and to whom, which helps the policy-makers design waste policies and allocate the resources effectively, with minimum the environmental impact and optimum social costs. It also helps planning professionals and business decision-makers better understand the cost and benefit of different waste alternatives and scenarios to achieve a low-carbon zero waste precinct.

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**I Can See the Light: Climate Based Daylight Modelling to Improve the Public Realm**

Through the centuries the use of light has been fundamental in the design of cities and buildings. Filtering daylight into buildings, alleys and courtyards providing pleasant spaces as well as ensuring safety and maximising the functional use of public and private space. In the built up urban fabric, with hard solid surfaces of buildings and infrastructure, increased lighting means increased heat gain within the space, resulting in the overheating of buildings, as well as the increase of the urban heat island effect.

This paper investigates the application of a Climate Based Daylight Modelling (CBDM) process that instead of using Standardised Sky factors applying the Climate Data based model for daylighting within internal and external buildings, and urban spaces. This technique is used to highlight and maximising daylight within the design of the public realm spaces in an urban environment, considering the integrated connection of internal and external spaces within buildings and the outdoor environment.

This use of actual climate data means that as cities are transformed from a carbon intensive to low or even positive carbon environments, CBDM can be used to show where energy generation can be optimised on buildings through to where it might be possible to install urban food production, and where public realm gathering spaces can be located.

Using selected spaces in Melbourne as a case study, this paper will show through the use of these techniques how internal and external spaces can be transformed to help develop a low carbon city and a more productive, pleasant and functional urban environment.