



ENERGY ANALYSIS REPORT

Apartment Development, Tay Lane, Rathcoole, Dublin 24

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2. Energy and Sustainability

The building will comply with Near Zero Energy Building energy directive as specified in Technical Guidance Document L 2019 (TGD L). Building fabric thermal envelope thermal U-Values and air permeability have been specified well in excess of the default values for Part L 2019 compliance. U-values will be maintained at low levels as will thermal-bridging and air tightness goals as required to achieve an A3 rated BER and compliance with TGD L.

2.1 Space Heating and Hot Water

Several options have been reviewed to provide space heating and hot water to each dwelling, using an 'Own Door' approach. The final design will be based on the most optimum technology from an operational, maintenance and lifecycle viewpoint.

We have provided sufficient roof space for Photo-Voltaic (PV) panels to meet the renewables and NZEB requirements of Technical Guidance Document L in the landlord areas.

The current design preference is to use individual exhaust air heat pumps for heating hot water in the apartments combined with electric immersion top-up to support the Government's decarbonisation strategy.

2.2 Ventilation

It is proposed to use Balanced Mechanical Ventilation with Heat Recovery (MVHR). This consists of a continuously running extract fan extracting air from all toilets, bathrooms and kitchens at a low rate and in turn heating an LPHW circuit providing to radiators. The extract rate increases when the rooms are in use or if high humidity levels are detected.



<p>Exhaust Air Heat Pump</p>	<p>Typically located in apartment utility rooms. Recovers heat from exhaust air from bathrooms/kitchens in order to provide for dwelling heat load and hot water needs.</p>	<p>Increased Capital Costs.</p>	<p>Recommended</p>
<p>Heat Recovery Ventilation – Air to Air</p>	<p>Recovers heat from extracted air, utilizing heat recovered to temper incoming supply air. Long-term saving in running costs.</p>	<p>Minor increase in Capital Cost.</p>	<p>To be considered.</p>

BUILDING SERVICES SYSTEMS			
	ADVANTAGES	DISADVANTAGES	TO BE INCLUDED
Energy Efficient Lighting	Reduces Electrical Consumption for Lighting. Reduces running costs.	Increased Capital Costs.	Yes
High-Performance Air-Conditioning Units	Reduced Energy Consumption. Reduced running costs.	N/A	Air Conditioning not deemed necessary in apartments.
Occupancy and Zone Control Lighting	Reduced Energy Consumption. Reduced running costs.	Minor increase in Capital Costs.	To be considered in bathrooms.
BEMS (Building Energy Management System)	Active Control of all the Building Services Systems. Reduced energy consumption. Reduced running costs.	Minor increase in Capital Costs.	Not suitable. Control issues in apartment settings.