

LZ CARBON PROFILE

Profile: 011
June 2009



Adelaide Wharf

Ecohomes Excellent

Developer: **First Base**
Architect: **Allford Hall Monaghan Morris**
Completed: **October 2007**
Location: **Shoreditch, East London**

Adelaide Wharf is a development of 147 mixed tenure apartments, in one 6-storey block, ranging between one and four bedroom flats, and 700 m² of office space. There are 73 flats for private market, 41 shared ownership for key workers, and 33 social rented.

Typical office building technologies have been utilised with a concrete frame clad with a unitised cladding system, which was craned from delivery trucks directly on to the building without the need for scaffolding. Pre-fabricated bathroom pods, plant rooms, balconies and dry lined internal partitions were also used. The developer calculates the project's design efficiency saved six months of construction time.



Low Carbon Approach

Fabric A concrete frame construction was used with insulated unitised cladding panels interlocked to provide a high level of thermal performance, reducing energy consumption.

Heat and power generation A centralised gas-powered heating system, using gas condensing boilers, provides energy-efficient heating and hot water for each apartment through localised heat exchangers.

Outline energy strategy

The design involves reducing energy demand through improving building fabric performance and the use of energy efficient heating, lighting and appliances to improve on current Building Regulations.

Envelope

Walls $U = 0.23 \text{ W/m}^2\text{K}$
187mm rigid insulation is integrated within the cladding panels.

Roof $U = 0.12 \text{ W/m}^2\text{K}$
A reinforced concrete flat slab with hot-applied bituminous membrane and 140mm of rigid insulation held down by ballast (and a brown roof to one wing).

Windows $U = 1.3 \text{ W/m}^2\text{K}$
Powder coated aluminium-frame double glazing.

Airtightness Range of 4 to 7 $\text{m}^3/\text{m}^2/\text{hr}$ at 50pa depending on apartment.

Using prefabricated insulated cladding panels and attention to workmanship on site has maximised airtightness.

Low carbon heat and power

Communal heating system

A communal heating system has been installed that is run off two high efficiency gas condensing boilers. The boilers are located on the roof of the development. The system provides low temperature hot water (LTHW) to the flats heating circuit.

Electricity is supplied from the grid and no microgeneration technologies are included in the development.

Contacts

Developer: First Base
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Acknowledgement

This LZ Carbon Profile has been prepared for the Zero Carbon Hub by BRE

Low energy alignment with Ecohomes (Design Stage)

Energy Area	Credits awarded
ENE 1 CO2 Emissions 19.54 $\text{kg}/\text{m}^2/\text{yr}$	8 of 10
ENE 2 Building Fabric 57.98% improvement in average U-value	5 of 5
ENE 3 Drying Space Credit not sought	0 of 1
ENE 4 Eco-labelled Goods No white goods were provided but information provided on purchasing energy efficient white goods	1 of 2
ENE 5 External Lighting Space light fittings with compact florescent lamps and energy efficient and sensor controlled security lighting	2 of 2

Total 16 credits*

* out of a maximum of 20 credits for the Energy Category

Construction type

Foundations: Concrete piled foundations.

Walls: Concrete frame with flat slabs and blade columns clad with vitreous enamel, unitised cladding system and timber cladding panels.

Ground floor: In-situ concrete slab.

Roof: Reinforced concrete flat slab with 140mm insulation. There is also a brown roof on one wing to encourage local biodiversity.

Learning from Adelaide Wharf

Construction efficiency The developer has estimated a 20% cost and delivery time reduction due to using modern methods of construction (MMC)

Cost and quality Saving money through value engineering in the project design and planning stage meant high space, quality and environmental standards could be met.