

REBUILDING THE HEART OF ELEPHANT AND CASTLE

One of Europe's largest ever regeneration programmes is underway in the run-down district of Elephant and Castle in southeast London. Aiming to create a whole new sense of place through innovative, high quality design, proposals include the Eco-towers – a vibrant, vertical village.

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In the 1930s Elephant and Castle was a thriving urban centre. However, extensive bomb damage during the Second World War and restrictions in the area's design limited its ability to evolve over time and as a result it fell into disrepair. Now an ambitious £1.5 billion redevelopment plan aims to return the heart to Elephant and Castle and create a place where people travel to, not through.

The redevelopment will transform over 170 acres into a dynamic quarter where forward-thinking design, the latest technology and integrated infrastructure combine to create an enjoyable, healthy living environment for the 21st century. The urban design focuses on attracting people back by creating pleasant green spaces, including a new pedestrianised town centre and market square, new homes and jobs plus easy access to transport, and modern, striking yet people-friendly buildings.

Master plan for people, not cars

By 2014 Southwark Council, the programme leaders, envisage a dramatically improved physical environment. The current blight of the area, the heavily-used road, will be closed and north-south traffic re-routed below the development, making the public domain more pleasant and safe for the high proportion of local non-car users.

In its place will be a new civic piazza; a 24-hour pedestrian-only square with trees, fountains, a covered performance space, cafes and bars. Entrances to the retail and leisure centre and the transport interchange will lead directly off it.

Flanking this meeting point will be the Eco-towers providing apartments alongside a

range of mixed uses, such as restaurants and nightclubs, drawing street life up towards the sky gardens and greenspaces, and creating a vibrant, vertical village.

Eco-towers: a city-in-the-sky

The design brief for our client called for three Eco-towers for residential use, above a retail and commercial area. Eco-towers takes the model of a general geographical area of a city, with its inherent systems, zoning and social



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infrastructure and inverts it into skyscrapers. This concept provides for a healthy mix of residents within the same building. Through 'vertical zoning', resident types are grouped according to accommodation preferences (single units, family units, luxury apartments), yet common facilities, such as parks, shopping streets, etc. are shared. Basic amenities, such as the local grocery store, postal boxes, and chemist are all located within the ground development and/or within the towers.

The development incorporates housing, retail, leisure, communal facilities and commerce on the retail levels and up the towers. The location of housing in close proximity to employment, retail, leisure and community facilities will reduce reliance on public transport. The towers' occupants can opt to take the lift directly to the platform level of the transport interchange; emerge in the rooftop park or at street level; or continue down to pick up a car from the car-pool.

The design seeks to re-create conditions on the ground, with features such as an entrance lobby, light wells and balconies for every unit and shared secondary and tertiary landscaped open spaces and sky pods within groups of housing.

Urban connectivity is a key concept in the design proposal. There will be a high-level bridge over the proposed railway station and direct connections onto the garden terrace and into the retail zones.

Environmental sustainability

A holistic approach has been taken to environmental sustainability. The site is essentially a devastated ecosystem with

little of its original topsoil, flora and fauna remaining. To increase biodiversity and organic mass, revegetation is addressed by provision of a park over the land and the adoption of a system of continuous planting up the towers (as vertical landscaping).

Sustainable materials such as timber, metal and glass will be used and the 'intelligent' buildings will focus on energy-efficiency, future adaptability and maximising the benefits of IT.

The four levels of internal environmental operational systems are:

- passive mode (low-energy design without the use of any electro-mechanical systems)
- mixed mode (partially electro-mechanically assisted systems that optimise other ambient energies of the locality)
- full mode (active systems, with low energy and low environmental impacts)
- productive mode (systems that generate on-site energy, e.g. photovoltaic systems).

The design strategy is to maximise the use of passive-mode systems, with the remaining energy needs to be met by mixed-mode

systems, only using full-mode and productive-mode systems where affordable.

Passive low-energy use

The design optimises all the passive-mode opportunities (i.e. optimising the use of ambient energies of the locality) in relation to the temperate climate. The building is configured as two blocks with a weather-protected central landscaped core. The building has been orientated to maximise solar gain into the interior spaces in winter and mid-seasons, and to maximise solar shading in the summer months. During the winter months when the sun is low, the central landscaped circulation area and southeast units receive maximum solar gain. Communal sky courts and pods are positioned to catch the south sun.

Vegetation and landscaping within the private gardens and sky parks in the buildings act as a wind buffer while giving users a more humane environment. In summer, vertical landscaping acts to obstruct, absorb and reflect a high percentage of solar radiation, thus reducing ambient temperatures. The

damp surfaces of grass and soil will also contribute to a cooler and healthier building.

The buildings have been strategically pierced to allow views across the city in all directions. At the same time, these openings provide passers-by at street level with refreshing glimpses of the parkland above.

The master plan maximises the benefits of this fantastic location at the southern heart of a world city to redefine urban living, combining the pleasures of dynamic, high-density city life with spaces of calm greenery and enhanced opportunities for community interaction.

Details of the Elephant and Castle regeneration can be found at www.elephantandcastle.org.uk and information on the Eco-towers is at www.thamzahyeang.com.



Cross-section of proposed Eco-towers for Elephant and Castle urban development.



Model of an Eco-tower.