11 COOPERS ROAD ESTATE: REGENERATION

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DESIGN TEAM

Client	The Peabody Trust
Architect	ECD Architects
Landscape Architect	Coe Design Landscape Architects
Services Engineer	Max Fordham LLP
Structural Engineer	Price and Myers (Phase 1) Brand Leonard (Phase 2)
Quantity Surveyor	BPP Construction Consultants
CDM Co-ordinator	Philip Pank Partnership

Key Project Information

Programme	Residential and community centre
Site Area	1.69 ha
Dwellings per hectare	138
Habitable rooms per hectare	615

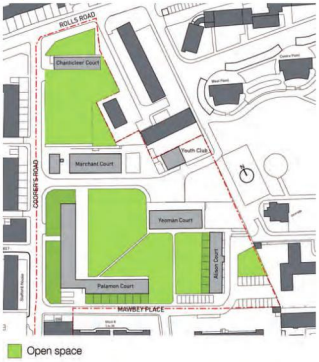
Introduction

Coopers Road was a failing 1960s estate in need of considerable investment; the high-rise deck-access blocks lent themselves to anti-social behaviour and the open space between buildings was poorly used and lacked surveillance (see Figure 11.1). In 1999, in consultation with the residents, Southwark Housing made the radical decision to demolish the estate and re-develop it in partnership with the Peabody Trust. ECD Architects were appointed in 2000 to engage in a process of consultation and prepare a masterplan that would address the key urban design issues of scale, identity, security, ownership of public space and relationship with the surrounding areas. The regeneration project is progressing in four phases (see Figure 11.2). Phase 1 – completed in December 2005 – consists of 74 dwellings for rent. Phase 2 – completed in May 2008 – consists of 80 dwellings, including 33 for shared ownership. Phase 3 (Success House) will provide 46 flats and maisonettes for sale (including 14 shared ownership) and a Youth Club for the use of the local community. Phase 4 will provide a further 50 dwellings for rent. The overall density is 138 dwellings per hectare (615

11.1 Aerial view of the existing site.

11.2 Phasing plan.

11.3 Existing site green space diagram.



11.4 Consultation with the local residents.

habitable rooms per hectare), similar to the density of the original estate, but in a low/medium rise form. In addition to the new-build housing, the adjoining Kent House has been refurbished by the Peabody Trust. Coopers Road, when complete, will be a model of sustainable urban regeneration providing modern, energy-efficient homes in a secure and attractive environment.

Site Context

Coopers Road is located off the Old Kent Road in south London, a short bus ride from the Elephant and Castle and close to the Bermondsey Spa Regeneration area. Local amenities include a Tesco supermarket and Burgess Park. The surrounding area is dominated largely by council housing estates, with the London Borough of Southwark Astley Cooper estate to the west and the Corporation of London's Avondale Estate to the east, with its three distinctive high-rise towers. The Old Kent Road itself is a busy thoroughfare, effectively the main road into the capital from Europe, bounded, for the most part, by an assortment of undistinguished retail buildings.

The original estate (now demolished) consisted of 196 dwellings in five blocks, varying in height from three to eleven storeys. The existing open space consisted mainly of grassed areas with a few trees. There was no sense of ownership of these large spaces, they provided little amenity value, were intimidating and under-used (see Figure 11.3). The play areas were not well maintained and had limited equipment. The adjoining site, Success House, occupies the site of 419–423 Old Kent Road, adjacent to two existing Peabody buildings, Kent House South and Kent House North. The building which previously occupied the site (office and storage space) was three storeys high with a footprint of 600m².

Project Brief

All homes for rent were to be designed to Lifetime Homes Standards,[1] with some provision for full wheelchair accessibility. The scheme was to be built in phases to allow the gradual decanting and demolition of existing blocks. The client for Phases 1 and 2, the Peabody Trust, required an EcoHomes rating of 'Very Good'.[2]

Consultation

The original estate had a strong sense of community, and its preservation was seen as an important ingredient for the long-term success of the project. The tenants formed a Steering Group with representatives from the Peabody Trust and Southwark Housing, and were closely involved in the development of the masterplan through a series of meetings and workshops.

At key stages during the design process, larger events were held to involve all the returning residents. Tenants were encouraged to record their desires and dislikes on Post-it notes stuck to posters in a mobile 'office'. This wish list informed the initial masterplan proposals which were then presented to the estate at a number of 'fun days' (see Figure 11.4). Neighbouring estates were included in these events to encourage local awareness and good relations.

Areas in which the tenants influenced the design included the choice of heating system for the scheme and the layout of the homes. When asked to choose between individual boilers or a central heating system for the whole estate, the tenants favoured a system similar to their existing district-heating system, the view being that any faults would be repaired quickly as they affect a number of people, not just an individual. The comments received on the plans meant a change to the proposed layout of the two-bedroom dwellings, as it was suggested that the occupants would benefit from separate WCs and bathrooms.

The consultation process has continued through the detailed design and construction phases of the project, and will address future management as well as design issues.

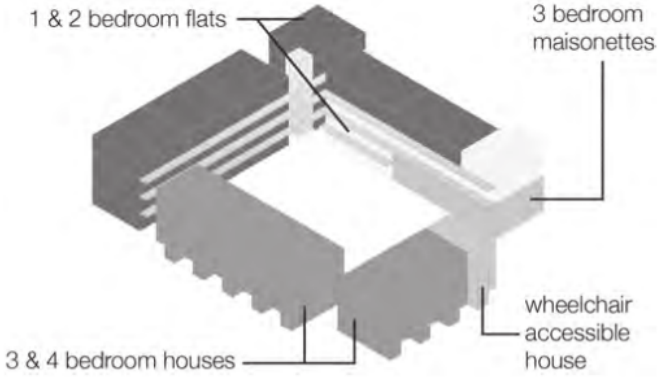
Design Strategy

The new housing is designed around four courtyards (see Figure 11.5). The courtyard form, which evolved through consultation with the residents, encourages a sense of community and engenders a strong sense of identity. Courtyards create a clear hierarchy of private, semi-private and public spaces and provide a good model for urban regeneration.

Each courtyard consists of approximately 40 homes in a mixture of one-, two- and three-bedroom apartments and three- or four-bedroom family houses, providing a balanced community within a composition

11.5 Figure ground of the proposed estate.

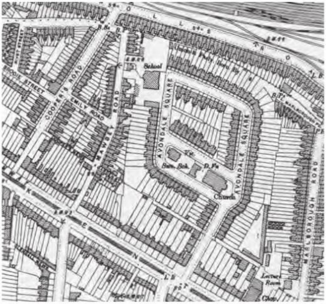
11.6 Different unit types make up the courtyard community.



of four-storey flatted blocks and three-storey houses (see Figure 11.6). This arrangement has been designed to be flexible and in order to meet changing needs and future developments in living patterns.

11.7 Integration of landscape and architecture.

11.8 1896 plan of the local area.



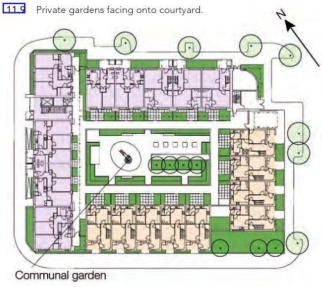
The main design principles were:

1. to restore the fabric of the city, with streets, courts, mews and gardens. The form of the courtyard housing continues an urban design theme from the nineteenth century, when local maps show a pattern of streets with houses grouped together in short terraces (see Figure 11.8).

2. to integrate architecture and landscape and so provide attractive, legible and easily maintained private and public spaces. Large- and small-scale vegetation is located in response to the surrounding architecture, while robust materials are combined with generously planted semi-mature trees to create a sense of greenness across the site (see Figure 11.7).

3. to develop a sense of community ownership, individual houses and ground-floor flats have gardens to the front and rear, which create well-defined private space. The rear gardens face on to the larger communal garden, which measures 21m x 34m, comparable in size to a small London square (see Figure 11.9).

11.9 Private gardens facing onto courtyard.



Landscape

The aim of the landscape design is to create both a physical continuity between the four new courtyard blocks and a highly legible space that is easy to 'understand'. The grain of the new estate allows long views and an ease of orientation that creates a sense of physical security. The landscape scheme provides the essential contact with the natural world and the changing seasons, and promotes a sense of well-being.

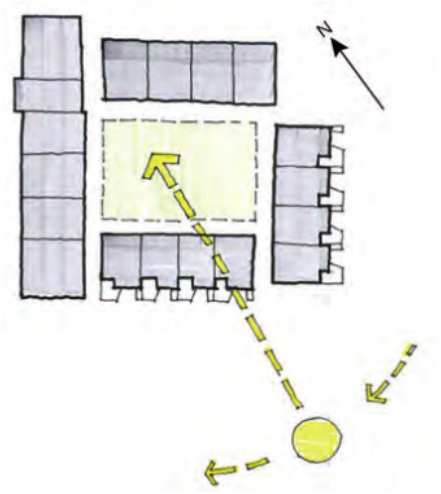
Within each courtyard all the properties at ground-floor level have a small patio garden, which opens onto a communal garden for the use of the courtyard residents only. Over time, residents will become involved in the design and management of these spaces, and it is hoped that they will become a focus for community pride. All of the properties above ground level have generous balconies overlooking the courtyards (see Figure 11.10).

Access roads are designed as 'Home Zones' to emphasise their use for pedestrians and not vehicles. The 'Home Zone' roads allow the pedestrians and cyclists to reclaim the streets as they have priority over vehicles which are restricted to just 20mph (32kmph). The roads are designed in short runs, intersected by squares and traffic-calming measures. They are envisaged as secure and well-used outside spaces, and as a focus for community life (see Figure 11.11).

11.10 Residents overlook the communal garden.

11.11 Community streets.

11.12 Solar access into the courtyards.



Many of the tenants have lived on the estate or in the neighbourhood for 40 years and, for them, access to private amenity space was a high priority. The communal gardens are secure spaces, each one devoted to its own courtyard block. Gardening clubs and workshops are being organised to encourage and assist tenants who, until now, may never have tended a garden. Within the communal gardens there are places for gardening, cycle storage, composting, children's play, seating and picnics. It is interesting to learn that, in practice, the communal cycle stores have not been popular, and residents have preferred to store bicycles on their private balconies.

Sustainability

From the outset, both client and design team shared a commitment to make Coopers Road a model of sustainable urban regeneration. This meant designing a scheme which would provide good quality appropriate accommodation, not just in the immediate short term but 100 years from now.

Orientation and solar access were foremost in the consideration of the planning of the Coopers Road courtyards (see Figure 11.12). The lower three-storey houses are placed to the south of the higher four-storey flatted blocks, and the roofs are designed to face south wherever possible for the future retro-fit of photovoltaic (PV) panels. By maximising the daylight penetration into the homes, the demand for artificial heating and lighting is reduced.

Flexibility and adaptability have also been key issues for the design team. For example, service risers are located on the outside of the building for ease of access and have been oversized to facilitate the installation of future technologies, such as PV or rainwater recycling, when these become economically viable.

In addition to this, our sustainable strategy is focused on six key areas:

- energy and CO_2 emissions;
- water conservation;
- materials sourcing;
- waste management;
- transport and car use;
- social well-being.

Our aim was to design the buildings in such a way that it is technically feasible to achieve zero CO_2 emissions by 2020 without major modifications to the fabric, services or infrastructure. The first priority was to reduce the demand for energy on site. We then needed to select an efficient system for delivering energy, and finally we had to devise a strategy for the gradual phasing in of renewable supplies so that our target of zero CO_2 emissions could be achieved.

Building strategies

Reductions in CO_2 emissions

Reducing energy demand is principally achieved by good daylighting, passive solar gain, detailing to reduce air infiltration, and high standards of thermal insulation. We considered very high standards of insulation but these proved prohibitively expensive. Instead we adopted a standard which anticipated the 2002 revisions to the Building Regulations (wall U-value 0.3 W/m²K, roof 0.25 W/m²K and windows 2.0 W/m²K). With some additional financial assistance from London Electricity (now EDF Energy), residents have also been encouraged to use efficient A-rated appliances. CO_2 emissions are estimated by SAP calculation 4 to be less than 25kgCO_2/m.yr.

On-site power generation

Community heating with combined heat and power was selected as a suitable way of providing heat and electricity while reducing CO_2 emissions. A detailed feasibility study carried out by Max Fordham LLP (described in Chapter 6) concluded that, despite the higher initial

capital cost, the payback period for the system would be less than ten years. The gas-fired CHP engine provides 11 per cent of the heat demand and 12 per cent of electrical demand (see Figure 11.13).

One of the main advantages of a central boiler plant is that it allows future changes of fuel supply. A switch to biomass within the next 10–15 years could significantly reduce CO_2 emissions; so too could a client/community decision to purchase 'green' electricity.

Water conservation
Mains water is conserved by installing low flush WCs, and spray taps in the kitchens. A rainwater harvesting system filters the water which is stored and then used for flushing WCs. Rainwater butts are also provided to some properties with gardens.

Selection of materials
Materials were chosen for their low embodied energy content and impact on the environment when disposed. This meant preference for timber and masonry rather than plastics and steel. In addition, the contractor was encouraged to source materials from within a 50-mile (83 km) radius wherever possible in order to minimise CO_2 emissions released by transport. Construction waste was minimised by the prefabrication of window/cladding elements and the standardisation of components.

The contractor experienced difficulties in sourcing FSC-accredited timber, thereby losing the project EcoHomes credits. However, more suppliers are now adopting the scheme and other timber certifying agencies are now recognised by the BRE, for example CSA and PEFC (see Glossary and Chapter 7).

Recycling
All dwellings have a bin within a kitchen unit, designed to facilitate the separation of household waste, and recycling facilities are provided on site to store the waste from the flats. All houses have an external shelf adjacent to the refuse enclosure for the storage of recycled materials.

Landscape strategies
Soil remediation
A site investigation revealed a low level of site contamination and so the private and communal gardens were excavated and replaced with neutral imported topsoil. The new 300–500mm depth of topsoil was sufficient to satisfy the remediation requirements.

11.13 On-site power generation with CHP engine.

Water conservation
Porous paving was chosen to allow rainfall to percolate through the sub-soil, allowing a degree of natural drainage. The site is both conventionally and naturally drained. The central courtyard gardens and surrounding porous paving act as natural sumps within the core of the site. About half the area of circulation, such as parking bays, uses porous paving, while the tarmac roads are conventionally drained.

Composting and recycling
Residents are encouraged to recycle kitchen waste, which is collected and composted in the communal garden areas. Leaf collection, prunings and grass cuttings from the gardens are also composted and returned to the estate grounds as a soil ameliorant.

Habitat creation
A hedge of native species – willows, elder and hawthorn – is planted adjacent to the eastern and northern boundaries as cover and food for birds and insects. Stands of trees – multi-stem birch and hazel – frame the hedge and generate more cover for the mini-habitat. Standard trees – the native gean (or cherry) – are included within the hedge.

Green environment
Trees are planted within the streets and define the edge of circulation spaces, home zones and car parking. Their location, to the northern

11.14 Future-proofing the scheme with photovoltaics.

side of the blocks, prevents overshadowing and does not limit the passive solar gain to the south-facing elevations. However, the roads and pavements are beneficially shaded during summer months. The street trees have been selected from native species or cultivars of indigenous species, such as hornbeam, ash, pear, and sorbus. Fruit trees and useful plants that attract wildlife are planted in the back gardens and courtyards.

Trees absorb carbon dioxide, emit oxygen, filter dust and contaminants, and support a range of wildlife species, particularly birds and insects. The building elevations and garden walls form a protective edge to the streets and are formed into 'green walls'. Climbers planted at the base of gable walls act as a deterrent to graffiti artists.

Front gardens are planted with a protective hedge to each boundary. Borders are a mix of hardy, drought-tolerant perennials. Dense ground cover is planted at low-level under windows, combined with a mulch layer over the topsoil to help conserve moisture.

Selection of materials

Both materials and planting in the communal gardens have to be robust to withstand year-round use. Within the communal gardens the environment is enhanced with the use of natural materials. The main components of the garden are timber: seats, bollards, planters, tables, decks and edges, either made of sustainable heartwood, green oak or douglas fir. All timber, with the caveat above, is from certified and sustainable sources. Garden boundaries are made from woven willow panels, supplied from long-established willow beds in Somerset.

Resident Feedback

Elaine Davis, tenant of Coopers Road and also Vice Chair of the Coopers Road Consultation Group, wrote the following summary of her experiences of the project:

> *Our old flats were completely run down both structurally and environmentally. We had a high level of deprivation, anti-social behaviour*

from the youth and a general feeling of depression in and around our Estate.

We realised early on in the project that attempting to replace our old flats with just new housing was not going to be enough of a change. We had to work on the total regeneration of our environment and that is the way in which we took our project forward. We managed through the process to create a community and that, in our opinion, is the basis for all that we have achieved so far and continue to strive for in the ongoing development of our new homes and community.

The architects, the landlords, the builders and our whole team, which every step of the way has had tenant/resident involvement and representation, all worked closely together and in partnership to create a new and vibrant community, which we are all really proud of. This is still a work in progress but our feedback so far through our monthly meetings is one of positive response from our old and new tenants and residents alike.

We feel secure and safe in our new homes. We researched the design and layout of our courtyards extensively, security was obviously a priority for us because of our old problems with the immediate area, and the problems of anti-social behaviour including graffiti, drugs and general nuisance associated, unfortunately, with inner city living. We are also in the process of working towards providing our new Youth Club, which we hope will be inclusive not just for our youth but people of all ages and we know this will be very warmly received in our area.

This project for me, my family and the entire tenants and residents of Coopers Road, old and new, has transformed our lives. We now know each other personally and socially – this was not the case before the project began. We are no longer isolated or alienated; we are a community and care for each other and our environment.

Conclusion

The aim of the project was to provide a model for sustainable development in an urban context that would be both affordable and replicable. The buildings are capable of developing over time and the servicing strategy is simple, robust and designed to accommodate change. As a theoretical exercise, future-proofing of the scheme (Phases 1 and 2) was tested by calculating the potential contribution from roof-mounted photovoltaics (see Figure 11.14). The potential area of south-facing roof is 450m^2 which, based on the use of monocrystalline PV panels, could generate 45,000 kWh/yr and reduce carbon emissions by 18,900 kg/yr.

Some key points are:

- mixed-tenure sustainable urban regeneration;
- a model of good community consultation;
- courtyard buildings enclosing communal gardens;
- community heating and CHP;
- design strategy to achieve zero CO_2 emissions by 2020.

Further reading

Evans, B. (2005) 'United Estate: AJ Building Study', *The Architects Journal*, 28 April, pp. 26, 34.