The Housing Forum
CONSTRUCTING EXCELLENCE



demonstration project

The bike and bin stores at Angela Carter Close are planted with Lavender

Angela Carter Close - Social Housing Scheme brings Sustainability to the Inner City

Client:	Metropolitan Housing Trust
Contractors:	Sandwood Design & Build Ltd
Architects:	Anne Thorne Architects Partnership
Structural Engineers:	Dewhurst Macfarlane & Partners
Services Engineers:	Turner Wright & Co
Employers Agent:	Andrew Turner & Co
Timber Frame Subcontractor:	Allwood Timber Products
Case Study Ref. No.	316
Project Number:	2940
Publication date:	July 2008
Region:	London
Sector:	Social Housing
Contract value:	£2.2million
Project timescales:	November 06 – March 08
Themes:	Sustainability, Innovation in the Supply of New Homes

Angela Carter Close in Brixton, south London consists of a terrace of nine houses, with three flats in a villa. It was designed to provide affordable housing for local people in housing need, particularly larger families, and was constructed by Sandwood Design and Build Ltd for the Metropolitan Housing Trust.

Lessons learnt

- Finalise the design as early as possible
- Take small steps – don't try to implement too much innovation at once
- Having the same team improves the relationship and thus the quality of the work
- Work with existing suppliers to influence them and take them on the journey with you

One of the main drivers in the construction of the homes was the application of sustainable building practices and materials, leading to the development becoming only the second new-build housing project in the UK to be certified as an FSC mixed-source product, with over 95 per cent of the timber used in this project procured from FSC certified sources. As a result of the use of certified timber, and other sustainable technologies and methodologies, the dwellings have all achieved an EcoHomes rating of Excellent.

All the houses are clad in FSC timber and render and have both front and back gardens. There is also a landscaped external play area and car parking which are communal to the development.

The Project Team

Metropolitan Housing Trust appointed the project team based on the success of Boatemah Walk, also designed by Anne Thorne Architects Partnership and constructed by Sandwood Design and Build Ltd. This scheme was the first new-build scheme in the UK to be certified as an FSC mixed-source product, and the client recognised that there were opportunities to continue the good practices developed at Boatemah Walk on the Angela Carter Close scheme. Post-occupancy evaluation and mapping of energy and water use carried out by the architects at Boatemah Walk greatly influenced the design and technologies that were incorporated into the Angela Carter Close development.

The architect was also challenged with designing the villa housing the three flats in a style that was in keeping with the traditional surroundings of the existing Victorian villas and coach house on nearby Wiltshire Road, onto which the villa fronts. The building has a brick façade, but also combines modern elements such as rendering to create a contemporary interpretation of the classic "villa" style.

Key Successes

- Angela Carter Close significantly exceeds current industry performance in its use of FSC timber, by achieving their target of 95% FSC timber
- The project has revived an area of Brownfield land, creating a unique and sustainable new community development
- The successful integration of the whole team has had a huge impact on the finished quality of the project

Sustainability

It was the commitment of the team to the implementation of sustainable practices that really helped the project to achieve its success. The decision to use FSC timber wherever possible was taken right at the start of the project by the architect, client and contractor. FSC certified timber is sourced from forests which are managed to ensure long term timber supplies, while protecting the environment and the lives of forest-dependent people. The UK is the fourth largest importer of wood products and Metropolitan Housing Trust wanted the scheme to act as a legacy for the rest of industry by calling for the increased use of sustainable timber in UK construction. As there is currently no legislative requirement for constructors to use FSC timber, there is a real lack of knowledge about sustainable timber products across the whole industry.

The houses vary from 4 to 7 person units. They are all designed to Lifetime Homes Standards

The houses are clad in Chestnut and Render

This is where the experience of Sandwood Design and Build Ltd, along with their FSC Chain of Custody status and established and long-standing relationship with a supplier of FSC timber frames brought huge benefits to the project. Their timber-frame contractor, Allwood Timber Products, are a small firm based just outside Exeter who are one of only three timber frame suppliers in the UK that have been awarded FSC Chain of Custody status - the system which traces forest products from the forest through the supply chain to the end user. Furthermore, the early involvement of Allwoods was crucial to the success of the project as they provided a dedicated engineer to get involved in discussions on buildability, therefore minimising any potential problems or delays from the outset.

In addition to the timber-frames themselves, FSC certified and other sustainably sourced materials have been used wherever possible across the whole project. FSC sweet chestnut cladding from Cornwall was chosen for the houses, due to its longevity, durability and resistance to attack from beetles (because of the high levels of tannin in the timber). The kitchens were also sourced from FSC suppliers and the windows are made from sustainable Scandinavian timber.

The long-term energy efficiency of the homes was also a key influence in the planning and development of the scheme, and to this end the team took advantage of a number of innovative and progressive ideas. Work began on site in November 2006, and used an off-site construction process. The houses were made from prefabricated timber cassettes which were brought to site and assembled, and the shells of the houses were erected within six weeks of the floor slab being completed. The partitions were insulated using Warmcell, a product made from recycled newspaper which is pump-filled into the ceilings and walls, and the use of plasterboard offcuts as extra insulation between the timber partitions was another very successful innovation used on the scheme. The roofs were also highly insulated to retain heat, and solar thermal panels were put in place to heat water for the

Environmental features of the houses

- Compost Bins
- 220 litre water butts to collect rainwater from the roof
- Natural paints
- Bin stores constructed from FSC timber
- Dedicated cycle stores clad in FSC timber
- Non UPVC flooring
- Bat boxes
- Green roofs
- Stag beetle habitats
- Over 26 indigenous plant species to maintain and increase diversity
- SUDS paving to achieve 50% permeability
- Dual flush (6/4 litre) toilets
- Water saving flow restrictors on the taps and showers
- Passive ventilation of toilets and bathrooms

homes. Another innovation was the installation of a sustainable urban drainage system (SUDS) which uses a permeable clay block paving system to improve the drainage of surface water.

All the houses have a number of additional environmentally sustainable features and the Angela Carter Close team has recognised that the residents who will be living in the dwellings need to be 'educated' by them about these features to ensure that they reap the financial, social and environmental benefits they offer. Furthermore, they hope to encourage the continued use of sustainable products in maintaining the properties e.g. the use of organic paints, etc.

Integration and Collaborative Working

A key success of this project is the way that the partners all worked together towards a common goal. Real efforts were made at the outset of the project to ensure the successful integration of the whole team, by creating an environment where everyone was comfortable in putting forward new and innovative ideas. Because of their small size, Sandwood Design and Build Ltd were able to use the same construction team throughout the duration of the job, and they used a lot of staff from the local area to further maintain the continuity.

Due to the significant sustainability requirements of this project, the majority of the big decisions needed to be made ahead of schedule, prompting the early engagement of a number of the project partners. The architect, Anne Thorne Architects Partnership, was nominated by the client based on the success of their design of the Boatemah Walk scheme, and Sandwood Design and Build Ltd worked at risk prior to appointment to input into the design. This involvement was crucial to ensure that the project came in on budget, whilst allowing for the increased costs associated with using FSC certified timber, which is estimated to add about 7 per cent to build costs.

> *"There was more pressure on the architect to get this development right first time. There was also a financial motive behind ordering the right amount of material. In the end, we did just that, and there was negligible waste."*
>
> **Ray Hards**
> **Site Project Manager, Angela Carter Close**

Angela Carter Close has been designed to fit in with the surrounding area

One of the biggest challenges to the project came from some late changes to the design. About halfway through the build, the London Borough of Lambeth advised the team that there was funding available to fit renewables on the scheme and that they wanted to push ahead with this. However, planning permission was required for the renewables which meant the submission of revised plans. Initially these new plans were rejected by the authority's planning department, and even when they were approved, there was still some discussion between the planners as to the most appropriate location for the solar thermal panels. This delayed things considerably and also meant that Sandwood had to re-cover the roof twice. However, apart from these planning issues, Lambeth Council was fully engaged with the Angela Carter Close team throughout the project, and the regeneration team within Lambeth Council attended all the project meetings. This had a positive impact on progress, and minimised any potential delays elsewhere in the project.

Conclusion

The Angela Carter Close project was a great success, displaying how the application of the principles of integration and collaborative working can have huge benefits. Not only have they realised the targets the team set at the beginning of the project – to use 95 per cent FSC timber and achieve an EcoHomes Excellent rating – they have also seen the creation of an outstanding social housing development that leaves an environmental legacy to both the residents and also the construction industry as a whole.

What is FSC certified timber?

To carry the FSC label, timber and products made from timber have to be recognisable as coming from a certified source at all points in the supply chain. FSC Chain of Custody certification is required for every stage in the manufacture of a timber product; from the forest to a sawmill, to a timber merchant, to a manufacturing plant making components, to the factory finishing the product, to the wholesaler selling the product, to a retail company. Each stage must be inspected and certified.

What is FSC Chain of Custody?

FSC Chain of Custody is an information trail about the path taken by products from the forest or, in the case of recycled materials, from the reclamation site to the consumer including each stage of processing, transformation, manufacturing, and distribution where progress to the next stage of the supply chain involves a change of ownership.

Any change of ownership in the supply chain requires the establishment of effective Chain of Custody management systems at the level of the respective organisation and their verification by independent certification bodies, if the organisation wants to make an FSC claim about their products.

Developing and implementing Chain of Custody management systems is a way for organisations to effectively control their processing system and show their customers the origin of the material in their products. FSC certification of such management systems is designed to provide a credible guarantee to customers, whether business, government or end consumer, that products which are sold (i.e. invoiced and possibly labelled) with a specified FSC certificate code are originating from well managed forests, controlled sources, reclaimed materials, or a mixture of these. FSC Chain of Custody certification thereby facilitates the transparent flow of goods made from such materials through the supply chain.

An FSC Chain of Custody certificate provides information on the evaluated sites, processes and product groups from which such products may originate, and references the Chain of Custody standard(s) used in the evaluation by an FSC-accredited certification body. Compliance with this standard provides a consistent, international basis for independent, third party verification of claims about the sourcing of wood/fibre material and products. It enables suppliers to demonstrate compliance with public or private procurement policies and specifications.

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