

NEW HOMES ON PANKHURST AVENUE: SUSTAINABLE ASSETS

12th July 2013

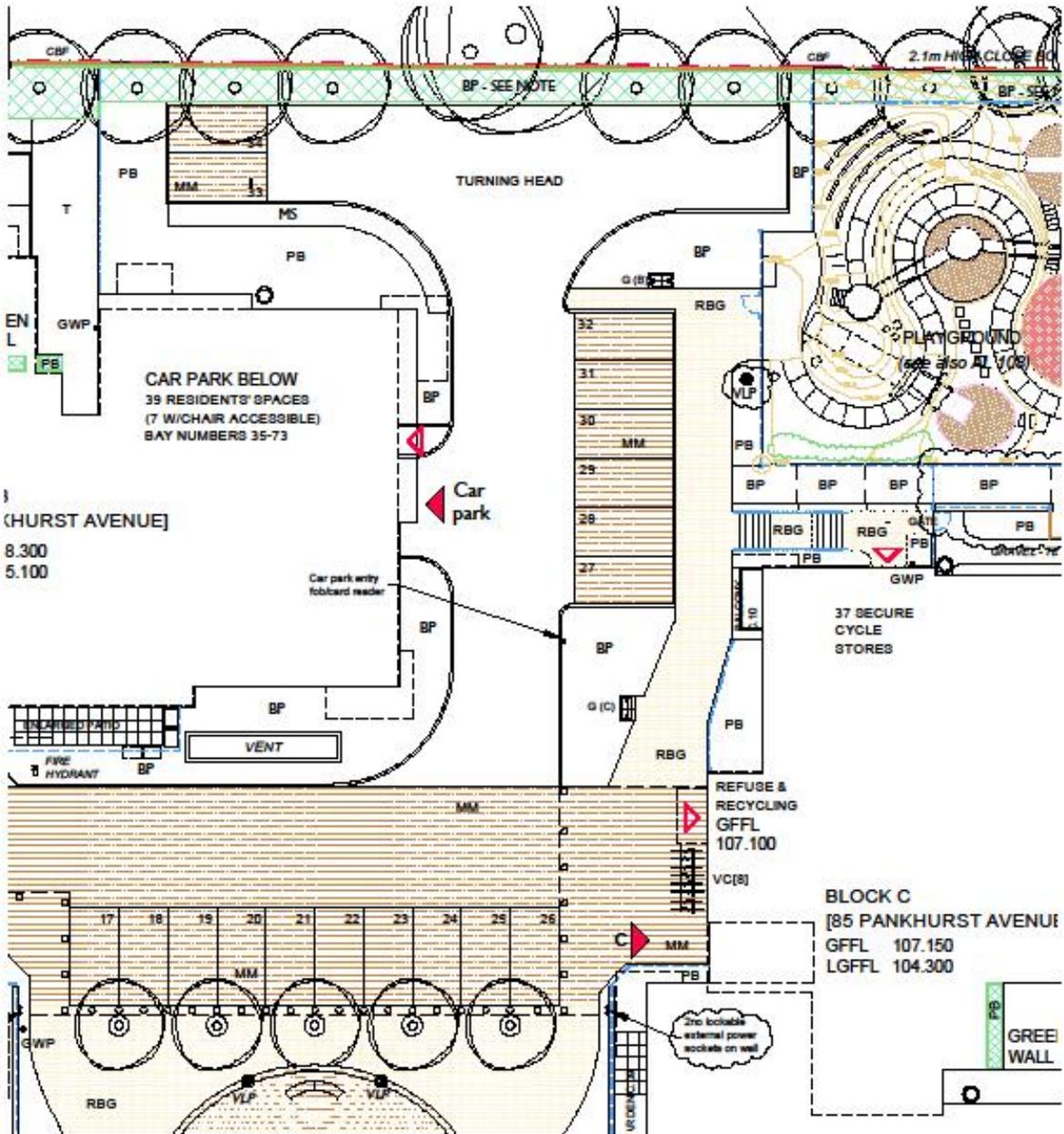
Designers & project architects: Miller Bourne Architects, Hove
Main contractor: Denne Construction
Client: Southern Housing Group

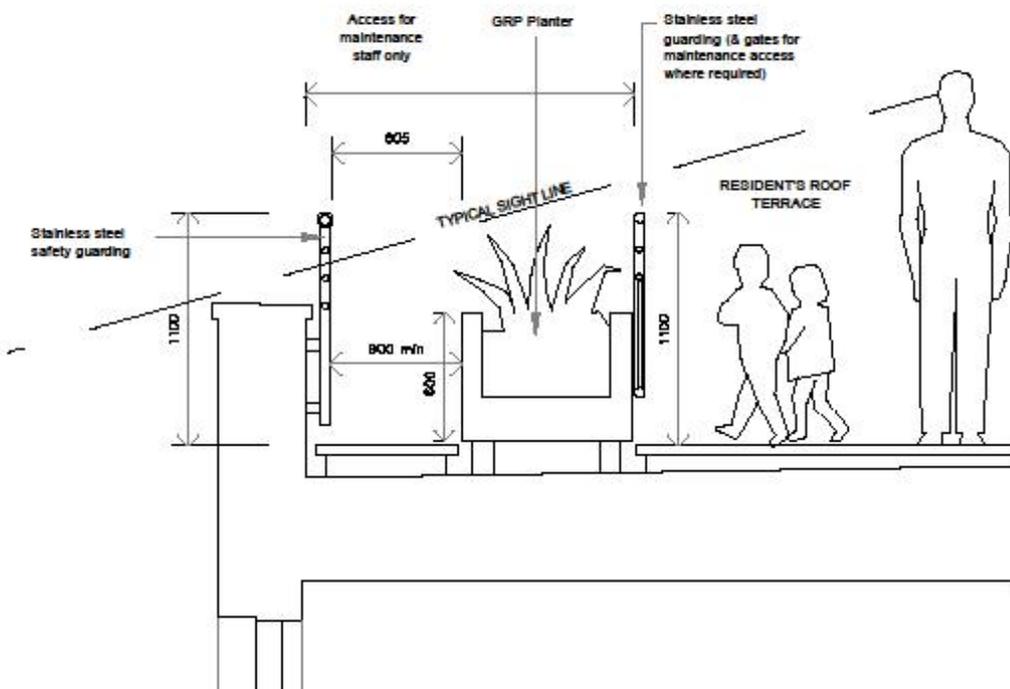


We are building 95 flats and a community hall, with landscaped gardens and terraces, on Race Hill, Brighton. This is a summary of the sustainable features which exceed the minimum required by statutory regulations, or might otherwise be of interest.

Comparisons are made throughout with the landmark Crest Nicholson / Feilden Clegg Bradley scheme at One Brighton (henceforth OB) in the city centre New England Quarter . This was a benchmark for us during the design process, within the cost constraints which our (totally “affordable”) scheme had to accept. While we have not been able to match many features of OB (eg the triple glazed windows – regrettably) the specification and design compare well, and the accommodation provision at Pankhurst Avenue (henceforth PA) is of course substantially more generous, as would be expected from a less profit-driven development.

OB is of course also a larger and more complex scheme – 172 dwellings and 2000m² of office and community space, which together with the very restricted site presents difficulties PA did not have to face. (GIAs are closer, PA is 10,500m², DB estimated 13,000m² approx)





ENERGY USE

Highly insulated building fabric

Typical average U values are 0.19 w/m²/degC for walls and 0.15 for roofs (37% and 25% above current Building Regulations minimum requirements) and 1.53 for windows and doors(cf 2.0) The building fabric has been designed to be airtight to an APR of 5m³/hr/m².

These values compare with 0.21 for walls and 0.19 for roofs at OB, whereas the triple-glazed windows achieve 1.4. The design APR is the same at 5, but OB's use of thin bed blockwork for the inner skin may have made it easier to achieve this in practice – something that should be determined when we carry out air pressure testing..

Communal heating system

Just 3 boiler rooms heat the whole development. Each resident has an “interface unit” which allows them to draw down heat and hot water as they need, and bills them accordingly.

“Whole-dwelling” ventilation

A single unit provides constant background ventilation, plus boostable extract ventilation for kitchens and bathrooms, which is supplemented by normal openable windows under residents' control. 86% of living rooms have openable windows on 2 sides allowing good cross ventilation. SHG were keen to keep natural ventilation and a simple to understand mechanical system, though using MVHR as at OB would have achieved better energy savings.

Daylighting and sunlight

90% of flats are dual aspect, and windows are larger than average – the smallest habitable room main window is 1.1m wide x 1.9m high – which helps reduce lighting energy use and promotes psychological wellbeing, as well as animating the elevations at all times of day and night.

Renewable energy

262 rooftop PV panels should provide an annual total of 56,250 kWh of electricity, which contributes to the landlord's supply for lifts and lighting and power to communal areas. This compares with 7,600 kWh/yr from OB, which achieves the bulk of its renewable energy requirements by using a biomass boiler to provide heat, and buying green electricity (and back-up gas) from off-site. Feedback from residents at OB suggests that fabric insulation (and heat retention via the MVHR) is so good that some have gone for weeks if not months of the winter without drawing heat.

TRANSPORT

Bus and pedestrian links

The development is sited on a minor bus route but near 3 others, which between them give access to the city centre, secondary shopping areas & schools, and surrounding villages. On buying the land from the NHS, SHG secured agreement to a new pedestrian right of way through the hospital grounds to Elm Grove, to reach the city centre bus stops (100m), as well as local shops and other amenities (see below).

An easy and wheelchair accessible pedestrian route runs across the development, from Pankhurst Avenue, to the gate exiting to Elm Grove – this can be used by other local residents during daylight hours, which will improve natural surveillance and neighbourhood integration and ownership.

Similarly the new community hall, playground and town square which will be available to the wider community (see below) either form part of the pedestrian route or are easily visible and reachable from it.

Cycling

Lock-up cycle stores are provided for every dwelling, sited in dedicated rooms off the common entrance areas, and designed to be open, well-lit, and easily policed – for example by having windows to the building approach or from the entrance hall. These lockers only take one cycle per typical flat, however, hallways have been designed to be large enough to accommodate additional cycles. Further cycle stands for visitors are provided immediately outside flat block entrances.

(There has been much discussion as to how much cycling will take place, given the development is sited at almost the highest point in Brighton, and the average gradient of the ¼ mile long hill is 1 in 13. A “paternoster” ski-lift for cycles would definitely be a future asset)

Local amenities

The development is sited between 2 local primary schools, Elm Grove & St Lukes Junior (750m and 520m respectively from the site)

A small selection of shops, pubs cafes, takeaway food outlets and a workingmen's club can be found on Elm Grove, with more on Queens Park Rd, and of course the hospital is currently adjacent, albeit without A & E. There is a swimming pool (St Luke's Baths) at 520m (next to the primary school). Queen's Park, with a good selection of play and sport facilities, is at 630m, but for this reason the playground is being equipped to LEAP standards.

Extensive allotments are very close at hand, on Tenantry Down Rd (600m) – some former residents have already moved there (see below).

MATERIALS

The main external cladding is a terracotta clay tile which while high in embodied energy will last in the order of 100 years, with no noticeable deterioration, and with individual tiles replaceable. The light colour will enhance daylighting within flats and in public spaces, and help to reduce excessive solar gain.

The concrete frame provides some thermal mass and heat storage capacity, with heating distribution pipework running in ceiling voids. The frame has been very economically engineered – typical floor slab thickness is 225mm – but it is working very hard to accommodate the site geometry and conflicting design requirements, eg ground level common facilities with larger flats jutting out above.

ECOLOGY & WATER

Landscaped gardens and terraces generally

The development is set in intensely landscaped gardens, including roof terrace planting. The previous buildings on the site had a footprint of 2310m², with an approximate planted/unpaved area of 3000m². The scheme we are completing will have a footprint of 2340m² with a total planted area of 3500m². Garden provision is described in more detail under “Wellbeing” below.

Existing and new trees, native woodland and hedgerow planting

10 substantial existing trees (7 Elms) together with 6 minor ones, have been retained and protected. 25 new trees will be planted, including one elm to reinforce the existing copse at the scheme entrance, a plane tree which will provide a focus for the town square, birches and cherries to act as ornamental trees in paved areas, and native trees including fruit-bearers such as crab apples, in backland areas where they can provide habitat and nourishment for birds insects and small mammals including bats.

The run of native trees along the western boundary of the site (100m long approx overall), which separates it from neighbouring back gardens, will be reinforced with native woodland underplanting, including dog violet, meadow buttercup and thyme, to enhance this habitat. Meanwhile native hedgerow plants (ie not expected to grow to full tree height – eg dog rose, blackthorn, foxglove) will be planted along the entire northern boundary (80m long) and part of the eastern boundary with the hospital (on which side it is protected by a traditional flint wall).

Rainwater

None of this will flow into the public sewer system. Most will be collected in soakaways, with some areas having permeable surfacing to allow drainage directly through into the chalk hillside. A small proportion will be collected in the 6 rainwater butts sited at strategic points around the buildings, to allow use for garden watering.

Wildlife

Slow worms were found living on the site prior to demolition works. These were captured and relocated by agreement with Brighton & Hove City Council to the nearby allotments.

10 bat boxes are being provided, sited in established mature elm trees. 10 bird boxes are also being provided, in these trees and mounted on the more private areas of the buildings. In addition, 5 swift boxes are being mounted on the topmost roofs – these are specially designed so it is easy for swifts to fly into them, but hard for other birds – in an attempt to start up a new swift colony.

In the event of nuisance caused by seagulls or pigeons, it is currently anticipated that part of the solution will be the use of hawks periodically to act as deterrants. The hedgerow and woodland planting referred to above will also provide corridors permitting wildlife to move more freely around this area.

Green walls and green roof

Green walls – climbing wires with varied strains of clematis trained up them – are being created on the lift towers of 2 blocks. It is not known how well these will fare but similar arrangements have achieved 2 storeys or more of growth. They will provide further habitat and CO2 reduction, as well as visual and olfactory amenity.

In addition, an area of green roof (60m²) is being provided on one of the non-resident access roofs. This will provide additional and relatively undisturbed habitat for birds and insects.

Composting

A compost store is to be sited near the entrance from Pankhurst Avenue, where residents can leave suitable waste and the resulting compost be made available for use in planting beds. There seems to be a thriving compost scene in Brighton which this heap may become part of - <http://www.brighton-compost.coop/index.html>

Refuse and recycling

While this provision is standard, the store locations have been carefully designed to make it as easy and comfortable as possible for all residents to use them.

HEALTH, WELLBEING & HUMAN SUSTAINABILITY

Flat areas are well above average even for affordable housing:

	PANKHURST (min)	HQI min	ONE BRIGHTON (ave)
1 bed 2 person	51m2	45m2	43m2
2 bed 3 person	65m2	57m2	65m2
2 bed 4 person	76m2	67m2	
3 bed 5 person	98m2	75m2	NA

The mix is also quite thorough, with 68% 2 bed and above, and 10 flats specifically for wheelchair users. All flats have the generous built-in storage provision which is required for this type of affordable provision.

Other features which we hope will contribute to the quality of life here include:

- Naturally lit and generous common areas
- Double height entrance halls with public art – sheer walls of slate with coloured LED lighting keyed for the different blocks of flats.
- A mixed community overall
- Balconies patios or gardens for every flat
- Roof terraces for residents use with wonderful views over Brighton, the South Coast and the Downs (on a clear day you can see the Isle of Wight)
- Landscaped walking routes and sitting areas
- A “town square” with public art : a central mosaic circled by reclaimed Victorian street lamps with coloured LED light fittings. The lighting carries the theme of the entrance areas outside, and brings the mosaic to life; the mosaic tiling also refers to the original Victorian Mayor Pankhurst, who made a hobby of collecting everyday ceramics. Benches sit between the lamp posts, other benches and planting beds surround the square.
- A community hall including an all-purpose space suitable for meetings, fitness or other social activities, a kitchenette, office and stores for user groups.
- Cycle stores (see above)
- A spectacular playground exploiting the 5m drop in levels across its site, using towers bridges and slides including a tunnel slide.

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