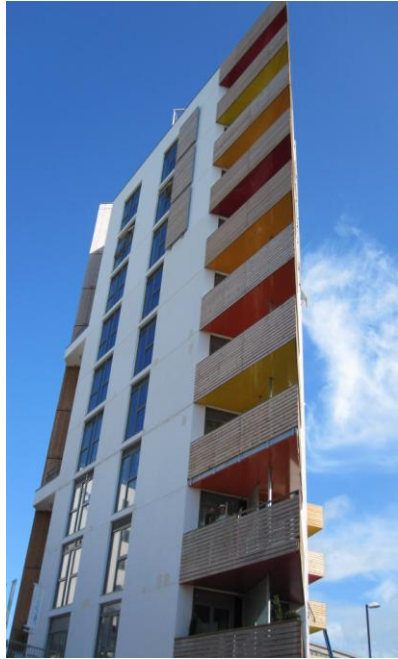


one brighton

A Sustainable Community development by Crest Nicholson BioRegional Quintain LLP



One Planet Action Plan Annual Review 2010
A report produced by BioRegional Quintain Ltd



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Foreword

"We are delighted to see the completion of One Brighton, and particularly so today as we have news that the last residential unit has now been sold. This has come after some nerve-racking moments following the collapse of Lehman Brothers, a day that will go down in financial infamy, and which occurred in the middle of the marketing and construction of this project. It would be hard to have purposely designed a stress testing model of our development concept that could equal the dramatic and volatile circumstances that we were faced with, and yet it has emerged, some might say against the odds, as a notable market success.

Yielding a sound financial return - as well as having been adopted by the people and politicians of Brighton as their own - One Brighton has exceeded what we thought was possible when we first took on this narrow and constrained site right opposite the fading New England House.

Whilst the development fundamentals for this project are undoubtedly sound and there remain areas which remain to be fully bedded in (such as the ESCo), there is also no doubt that our rigorous and determined approach to the integration of a huge range of sustainability measures - through the adoption and implementation of the One Planet Living principles - has given the project a basis for competitive advantage. The project team have taken an unpromising part of Brighton, and produced an award-winning development, offering residents, visitors and stakeholders alike the potential for truly sustainable lifestyles - including the prospect of greater health, wellbeing and happiness.

This document sets out in what we have achieved with regard to sustainability, including what has worked and what has not. It is a testament to the dedication and skill of colleagues and our professional team, both designers and constructors, that this project has now reached completion in such a positive way. I firmly believe that One Brighton has set a new standard for sustainability for projects of this scale and that it will take its place as a seminal project, as well as acting as an exemplar for what is possible."



Pete Halsall
Managing Director
BioRegional Quintain Ltd

October 2010

Key Entities

- **Crest Nicholson BioRegional Quintain LLP**, known as CNBQ, is the joint venture development company behind the One Brighton development.
- **BioRegional Quintain Ltd**, known as BQL, is working towards creating sustainable communities across the UK through the application of the One Planet principles to encourage a dynamic and innovative approach to property development.
- **One Brighton Neighbourhood CIC**, is a dedicated Community Interest Company established by BQL to promote sustainable living within the One Brighton development as well as the surrounding neighbourhood.
- **One Brighton Energy Services Ltd**, known as OBES, is the community energy services company established to operate and maintain the on-site renewable energy infrastructure at One Brighton, as well as providing zero carbon energy to all residents.

Summary of Progress

With construction at One Brighton nearing completion and the first residents in their homes, the vast majority of the construction phase targets committed to by Crest Nicholson BioRegional Quintain (CNBQ) in the Sustainability Action Plan have been met. A 500kw bio-mass boiler has been installed and targets to construct using green concrete (50% cement replacement with 100% waste aggregate and locally sourced sand) and natural clay block have been met. Approximately 1,300 people working in the project have been put through a One Planet induction.

Looking forward to the full occupancy of One Brighton, significant design measures are now in place that should make it easy for a resident in achieving a sustainable one planet lifestyle by 2020. Comprehensive recycling facilities are easily accessible; there is secure cycle storage and a car club for vehicle sharing with a significant discount for residents; secure storage for local food box deliveries and a green caretaker to lead on ongoing site management issues such as composting and refuelling the biomass boiler. A sustainability charter has been incorporated in to leases and key management documentation.

The aim now is to ensure that the momentum established on sustainable lifestyles is built on. The community web site, the on-site community centre and the creation of One Brighton Neighbourhood Community Interest Company together form an excellent basis for ongoing communication about one planet living and for the fostering of a sense of community. CNBQ is donating £15,000 to the Community Interest Company (CIC) to support promotion of activities linked to sustainability and on the basis that this will be match funded through resident and stakeholder fund raising. Other areas of work will be explored such as helping commercial tenants develop a clear strategy for waste reduction and recycling.

The development has set a new benchmark in the UK and is receiving widespread recognition.



Zero Carbon

- CO₂ reductions on track to meet the One Planet Living "Zero Carbon" definition
- 500kW biomass-fuelled boiler installed and producing heating and hot-water
- 9.52kW_{peak} photovoltaic array installed
- Community Energy Services Company (ESCO) established to manage the sustainable energy infrastructure and services

During construction, site cabins were energy efficient and signs were posted to encourage energy use reduction (i.e. reminders for operatives to switch off lights). Training on the One Planet concept was provided to all senior managers and operatives. Overall 54,000 litres of bio-diesel from locally-sourced waste cooking oil (plus 34,000 litres of red diesel) were used for the on-site generators. Early problems with bio-diesel

were experienced particularly in cold weather which meant that either red diesel or a blended diesel fuel had to be used, but we were pleased to achieve over 60% use of waste cooking oil.

A high level of thermal performance has been delivered in the building and consequently One Brighton is on track to achieve the Zero Carbon target, with a reduction of 67% CO₂ as built (specific to Carbon Trust methodology), significantly above the 57% reductions predicted at design stage. Heating load tests demonstrated ample capacity to meet peak and diversified loads. Working with the Good Homes Alliance and University College London, BQL has tested the building fabric post completion (including the use of co-heating testing and thermographic photography) and further detailed studies are planned. To support this, applications made by BQL for addition funding to the Technology Strategy Board are currently being considered to facilitate the rolling out of monitoring to a larger number of homes.

The zero carbon energy generation strategy has been initiated with the installation of the 500kw biomass boiler which has been producing heat and hot water for the development. Teething problems with the auger and agitator arm of the fuel feed system have been experienced but have been rectified. As this report is published, issues with smoke ingress into the woodchip store are being investigated and a simple solution is being implemented. The boiler runs on locally-sourced woodchip. It is clear though, in the UK that biomass systems and supply chains are not yet 'off-the-shelf' technologies, although the industry is embedding knowledge and learning, and we have little doubt that in the near future a reliable supply chain will emerge.

Photovoltaic panels with a peak generation of 9.52kW_{peak} are installed and have generated more than 7,000kWh of electricity within the first 12 months since commissioning. The planned small-scale building integrated wind turbines were not installed because of more recent evidence suggesting they are not effective and instead the same money was used to increase photovoltaic capacity. BQL are investigating opportunities to locate a larger wind turbine(s) to meet the rest of the buildings energy demand, and two potential local sites have been identified. Currently all electricity used at One Brighton is purchased in bulk by the Community ESCO from certified renewable sources and distributed to residents via a private wire arrangement.

Originally it was planned to install clothes drying spaces which would have gained a credit towards the EcoHomes rating. However, these were not fitted and all flats have had a combined washer/ dryer installed. This may result in consumption of additional energy (though it is renewable) but it was felt that this would be a better option for the occupants due to usage of space and the likelihood of residents installing their own dryers. Initially corridors were also overlit and so a number of lights were disconnected to save energy.

The ongoing management strategy for energy provision involved the establishment of an Energy Services Company (ESCO) – called One Brighton Energy Services Ltd (OBES).

Feedback has been, and will continue to be, given to residents on how much energy they are using compared to the UK and One Brighton average – encouraging them to take up energy conserving habits. OBES has held a plant room tour and a number of drop-in surgeries for residents to ask questions and learn more about the systems.



Zero Waste

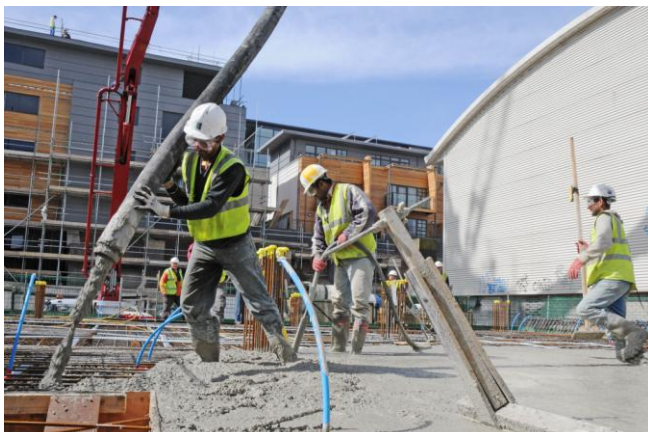
- Construction waste segregation implemented
- Residential recycling infrastructure for four waste streams installed
- Big Hanna in-vessel composter installed

With construction activity recently completed, data on construction waste recycling will be published in the next annual review however, waste segregation has taken place.

An eco-points competition and suggestion box encouraged site personnel to think about how waste could be reduced in their day-to-day work and suggestions including toner cartridge recycling and where to locate bins to make recycling easier were implemented and helped contribute to the high recycling rate achieved. The eco-points initiative was devised and implemented by BQL working with the main contractor (Denne Construction) to promote and embed a broad and comprehensive sustainability ethos on site.

The recycling and composting infrastructure for residents has successfully been installed and the Big Hanna composting system is operational. Where the resulting compost will be used is still being explored because of regulatory restrictions on taking composted material off site.

Ongoing engagement with residents about waste reduction and how to use the recycling and composting facilities correctly will be undertaken to help ensure the long term effectiveness of the waste strategy. The role of the on-site green caretaker will have a significant impact in this regard.



Sustainable Transport

- Successful sales of an essentially car-free development
- Establishment of city car club with incentives for membership
- Deposit of £5,000 for cycle club into Community Interest Company funds
- Community web site set up with real time public transport information

One Brighton's city centre location, adjacent to Brighton train station, has enabled the adoption of a strong sustainable transport strategy. Consequently, there is only parking for registered disabled drivers and car club vehicles. The car club contract with the developer specifies that cars must be low carbon (band C or better) and membership incentives for residents were negotiated.

Further measures to encourage walking, cycling and use of public transport include a Community web site where information on public transport and discounts for local cycle repair companies are posted. A walking club is planned in future. There are also excellent and plentiful secure cycle storage areas. The contribution of £5,000 to the Community Interest Company for a cycle club will act a significant incentive for residents to adopt greener methods of transport.

Reducing the need to travel in the first place is important. The location and mixed-use nature of the development goes some way to addressing this, by providing community facilities including adult education and (proposed) café. The wider New England Quarter area has a hotel, supermarket and eateries and the welcome pack outlines where the services such as schools are located and how they can be accessed by walking and cycling. Drop-off points for shopping ordered online can also help reduce trips.

During construction, car sharing for site operatives was encouraged, and the provision of showers in the welfare facilities may have helped to increase levels of cycling.

Sustainable Materials

- 47% of construction materials content (by mass) was from recycled sources
- Substantial amounts of timber used achieved maximum credits under BREEAM and EcoHomes standards
- Concrete used consisted of 50% Granulated Ground Blast furnace Slag (GGBS) used as a cement replacement

Whilst the results of the calculations detailing the embodied energy of all materials used during construction (including transport details) and the overall carbon audit of the construction process are still to be completed, it is clear that One Brighton has pioneered in this respect.

Supply chain connections were made to a local wood recycling project, circa 100% of wood was FSC or PEFC certified, and low temperature fired blocks were used throughout the development with wood fibre insulation in the external walls. Windows are all high-performance triple-glazed aluminium clad timber composite units.

Metal studs were employed for internal partitions rather than timber to enable both space saving and avoid excessive installation costs despite the likely higher embodied energy content.



Local and Sustainable Food

- Green canteen introduced for the construction phase
- 28 mini rooftop allotments constructed (UK first for new apartments) with high uptake from residents
- £5,000 deposited in Community Interest Company fund earmarked for training in sustainable and local food preparation

The measures taken encourage local and sustainable food production and consumption amongst residents at One Brighton include mini-rooftop allotments which have proved extremely popular with 20 of the 28 being taken by the first 55 residents. Apartment balconies have edible planters, there is an area next to the green caretaker's office for organic produce box deliveries, and money has been provided by the developer to the Community Interest Company fund sustainable food initiatives.

The construction workers canteen provided a healthy range of meal options, with one of the most popular selections proving to be the vegetarian Greek salad happily breaking with stereotype. Residents received a welcome gift of Fairtrade chocolate and local Sussex wine.

BQL ran workshops at the BedZED eco-village where the potential for incorporating the One Planet principles into kitchen design discussed with designers and suppliers. The incorporation of compost storage in the kitchen is one area of notable success at One Brighton.

It is hoped that the proposed on-site community café, an initiative by the community centre operator, will be able to further promote healthy, low meat and dairy diets by providing sustainable options and cooking classes. The early cultivation of relationships with local organic farms is also being continued through the green caretaker. There is also the opportunity to provide more resident food production by working with the neighbouring New England Quarter stakeholders to introduce edible landscaping to the greenway adjacent to the site.



Sustainable Water

- Installation of dual flush toilets and aerated taps and showers in all apartments
- Installation of water efficient washing machines in all apartments
- Construction site offices fitted with water efficient appliances
- Rainwater harvesting installed for irrigating planters

A number of measures to increase the ease with which residents can save water were undertaken in the apartments at One Brighton. These include the installation of 6:3 litre toilet flushing, the absence of power showers, water efficient washing machines and low flow water appliances.

Monitoring of water usage is undertaken for billing purposes and the data will reveal the extent of the impact of the above measures in reducing consumption.

In terms of rainwater collection, plans for the collected water to be used in the community facilities were not implemented due to a lack of roof space available for collection. However, a rainwater storage tank is used for allotment and landscape irrigation. It is important to note that the change in approach was due to the roof scape being used to host an extended photovoltaic array, mini-allotments, a roof garden and several communal balcony gardens.

One Brighton has a significant area of porous paving and all surface runoff goes to a soakaway meaning that no runoff is sent to the sewer system and there is no additional demand put on the municipal water treatment system.

Land Use and Wildlife

- Ecological assessment of site undertaken by qualified consultant
- Brown roofs planted with a "Brighton seed mix" and green walls installed
- Construction workers received presentation from local wildlife trust to increase awareness and about wildlife and other issues such as bees in urban areas

An ecological assessment of the One Brighton site conducted by an independent consultant established that the site had little ecological value before construction began so One Brighton is anticipated to increase the net ecological diversity of the area through a number of measures including: the seeding of brown roofs using a local seed mix; the installation of mini-allotments, balcony planters and communal outdoor spaces; and the provision of bat and bird nest boxes and feeders.

Construction workers received a presentation from the Sussex Wildlife Trust and a second on urban beekeeping as part of their 'toolbox' training which was intended to ensure their working practices were not damaging to the existing habitat.

Work to apply with "land use and wildlife" principle shall continue in different and broader ways once construction is fully completed. The discussions with the New England Quarter steering group regarding the development of the greenway adjacent to the site is being progressed and opportunities for edible landscaping, food production and resident involvement in developing and maintaining the greenway will be explored.



Culture and Heritage

- Community consultation to understand local priorities for the development
- The consultation process introduced several significant initiatives and measures which the developer implemented
- Link established with a local art gallery to have changing selection of artwork on display in the reception area
- The main contractor conducted tours for school, universities and other groups
- Community web site established

The community consultation conducted at an early stage of development proved hugely valuable. For example, the mini allotments, the idea for which originated from the consultation, became a design feature and have been very popular with the first residents to move in. This level of engagement with the residents and the wider community will be maintained, for example via the community web site and the green caretaker to ensure that ongoing site management reflects their priorities.

During construction, One Brighton hosted a large number of visitors from schools, universities, and planning departments amongst other interested groups. This outreach and dissemination role will be focused on an ongoing basis through the proposed One Planet information boards, housed in the community centre.

A key part of the One Planet Action Plan was the establishment of a community body. CNBQ established a Community Interest Company - (CIC) One Brighton Neighbourhood CIC - so that its assets are locked for the benefit of the community and it can be used as a vehicle for fundraising for future sustainable lifestyles and community events. CNBQ has kick-started funding by depositing a total of £15,000 with various sums earmarked for initiatives related to sustainable food and transport. The CIC also receives an income from the One Brighton Management Company. Membership will ultimately be open to stakeholders within the wider local community as well as One Brighton residents.

The CIC will write a One Planet report annually and BQL will support this in the first year.



Equity and Local Economy

- Secure by Design principles were in used to inform the design
- Employment of green caretaker
- All apartments achieved the Lifetime Homes standard
- Contractor maximised apprenticeship opportunities and was part of the National Skills Academy
- 54 social housing homes and 19 eco studios built, providing affordable housing

Site personnel received training in a number of areas including a One Planet induction, and several apprenticeships were undertaken. Links were made to the local supply chain during the construction phase with waste timber went to a local timber recycling project. Furthermore, the employment of a green caretaker demonstrates a strong commitment to the importance of good ongoing site management for achieving lasting sustainability.

The community web site contains links to local shops and it is hoped that the Community Interest Company in conjunction with BQL will be able to develop further local links.

The EcoStudios, with open plan living room, kitchen and bedroom, proved extremely popular and provide a welcome affordable entry option into the city centre property market.



Health and Happiness

- First large scale use of breathable clay block and wood fibre insulation in the UK
- High levels of sound insulation achieved
- Construction personnel fishing trip by main contractor (Denne Construction)
- Completion of communal areas including sky garden, mini allotments and communal balconies
- Established community web site

The design of One Brighton has resulted in low noise pollution levels (because of the high insulation levels), lots of daylight, excellent ventilation, high standards of indoor air quality, and very good access to outside communal space including terraces, mini allotments and a unique sky terrace looking out towards the sea. These are all features which will go a significant way to making One Brighton a healthy, happy place to live.

The community centre provides a meeting point for residents and the wider community. The interesting mix of social change organisations based at the centre includes one offering courses to encourage active, engaged and sustainable lifestyles. The community centre operator hopes to establish a community café in the near future.

The residents' web site contains a wealth of information on living a healthy lifestyle including information on diets and sports in the local area. It also provides a virtual forum for neighbours to interact and hopefully lead to increased face-to-face contact. The Community Interest Company will also engender in the community an important sense of ownership and community spirit.

All of the above measures and initiatives should lead to a more connected community at One Brighton, reducing isolation and bringing the potential mental health benefits of having a close support network.

A high score was achieved under the Considerate Constructors Scheme and all personnel received above average CPD and there was fishing trip with the catch cooked by the site canteen. The "eco points" competition also encouraged site operatives to engage with the One Planet principles and suggest sustainability measures.



Outreach

BioRegional Quintain's Managing Director, Pete Halsall, sits as Vice Chair on the board of the Good Homes Alliance (<http://www.goodhomes.org.uk/>). Through this position BQL has been able to significantly influence UK-wide policy and provide advice to the Department for Communities and Local Government on the Code for Sustainable Homes, the water calculator and advances in renewable energy provision with One Brighton being used as a supporting case study.

In addition, regular and maintained engagement with Brighton and Hove City Council has had a significant impact on the expectation of the planning department with regards to new developments, for example Shoreham Harbour development, and indeed their developers. More widely, planners from a number of other local authorities, local councillors and engineers have taken tours of the site, ensuring that the lessons learned are disseminated beyond Brighton.

BQL has publicised the One Planet programme locally – for example by talking at the Brighton Science Festival. Likewise the contractor Denne has undertaken a significant amount of work with schools.

There will be a One Planet Centre at One Brighton, though due to the relatively small size of the development this will be limited to a wall in the community centre containing some displays about One Planet Communities.

Finally, CNBQ's partnering with Brighton and Hove City Council in commissioning and part-funding BioRegional Development Group to do a One Planet Plan for Brighton makes a valuable start in work to help address the contribution of shared services and infrastructure to an individual's ecological footprint.



Looking ahead

The upcoming year should see One Brighton achieve full occupancy and indeed be the first in the One Planet Community network to do so.

The next year with full occupancy will be the first test in terms of building performance and there are several monitoring, analysis and learning programmes in the pipeline.

We also look forward to a year of continued and deepened engagement with residents and commercial tenants on the topic of sustainable lifestyles.

With the Community Interest Company established we would hope to see the residents securing grant funding to match the earmarked funds donated by CNBQ and developing a plan for expenditure that would further the local community along the path to achieving a one planet lifestyle.



