

RADICALLY NORMAL

A RADICAL APPROACH TO
DELIVERING TRADITIONAL
HOMES WITH CONTEMPORARY
DESIGN ON THE OLYMPIC PARK

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EXECUTIVE SUMMARY

London is in the midst of a housing crisis, with demand having outpaced supply for too many years. London's homes are also overcrowded. Building more, larger, family sized homes is one way in which we can begin to solve this crisis. We also need to build quality homes, designed to high environmental standards, in order that London plays its part in mitigating climate change. As this report will show, this needn't occur at the expense of the public purse. In fact, the opposite is true: significant value can be created from designing and building homes to the highest environmental standards, as has been demonstrated at other sites across the country, such as the BedZED development in south London. The 8000+ homes to be built on the Olympic Park over the next two decades represent a generation-defining opportunity to build high-quality family homes and help regenerate this historically neglected part of the city. Done well, the project has the ability to re-define regeneration in London.

The Legacy Communities Scheme – the London Legacy Development Corporation's (LLDC) outline planning application for the Park – is the document that will guide the construction of the new homes and new neighbourhoods. It promotes the future of the Park as one of predominantly family orientated neighbourhoods. Chobham Manor, the first neighbourhood to be built on the park, embodies this vision well: 70 per cent of the homes will be family sized. However across the park, family housing will make up less than half of the total homes. Furthermore, the LLDC's definition of a family home (3+ bedrooms) means that even the biggest homes – likely 3 bedrooms – will be unsuitable for many of the larger families that make up a sizable portion of the community in the surrounding areas. A number of the neighbourhoods - Marshgate Wharf in particular, with its tall towers on dense podium blocks - do not fit at all with this promotional vision of family orientated housing. Given that the master plan has got the basics of the typologies right on a number of the neighbourhoods, it is disappointing that the bulk of the housing will still be delivered in apartments.

Inspiration for how to improve the plans can be taken from ground-breaking schemes from across the country, such as the BedZED development, which will be discussed in detail in this report. However the minute detail of construction methods and building emissions are not the most important lesson to learn from such examples. It is the vision displayed by the schemes and the desire to create a world-beating development based on strong principles. The courage to design houses that look "very, very normal", as demonstrated by the Swindon Triangle development – a radically normal approach – is one that should be emulated across the Olympic Park. Developments on the Olympic Park should be pushing the boundaries of environmental performance, not simply conforming to what will be normal industry standards. Everyone wants the Olympic Park to be a success, not least because we have all paid for it. We should work hard to make it the best it can be. As LOCOG move out the temporary infrastructure that was required for the Olympic and Paralympic Games, and the LLDC readies itself to commence the next stage of construction, this report makes a number of recommendations in attempt to ensure that the opportunity to create a truly visionary and ground-breaking new part of London is not missed:

Vision for the Olympic Park and its neighbourhoods

The LLDC should:

- Publish a clear set of principles outlining its vision for the park, which is easily digestible by those

outside of the building industry.

- Update its definition of family housing to mean homes with four bedrooms or more. It should also have a separate target for five per cent of homes to have five bedrooms or more.
- Work with the chosen developers to ensure that family homes are not located above the fourth floor of a building.
- Re-think its plans for the Marshgate Wharf neighbourhood as the current proposals do not fit with the overall ambitions of the Legacy Communities Scheme.
- Redesign those neighbourhoods that are currently based on a range of housing typologies arranged around courtyards – e.g. the Sweetwater neighbourhood - in light of ongoing criticisms of the Athletes' Village.
- Look to incorporate sporting infrastructure into neighbourhood design - as demonstrated by Salford's Greengate development - to provide a link to the sporting context of the wider Olympic Park.

Housing Design & environmental performance

The LLDC should:

- Re-appraise the headline environmental standards for construction and consider a target of building to Code for Sustainable Homes Level 5, or higher.
- Hold a design competition, specifically inviting submissions from visionary, environmentally sustainable architects and developers to re-design Marshgate Wharf, moving away from the current design of flats in tall towers.
- Push ahead with proposals to split some future developments into multiple smaller phases, allowing smaller, more innovative developers to bid for smaller contracts.
- Designate one, or part of one of the developments as a zero carbon demonstration development, to re-establish the ambitions that were embodied in the now defunct One Gallions scheme. §

*Full references relevant to the Executive Summary are included in the main report.

REDEFINING REGENERATION

When the London Legacy Development Corporation receives the keys to the Olympic Park later this year, it will take on the responsibility for creating “a new quarter of the city in east London.”¹ The London plan states that the Olympic Park and its surroundings is “London’s single most important regeneration project for the next 25 years.”² The validity of this declaration cannot be overstated. However this report will argue that we should aim even higher: not only is it London’s single most important regeneration project, but it can be the project that redefines regeneration in London. With such a large and high-profile piece of London the Mayor must use the opportunity to create a microcosm of the London that his statutory strategies seek to create.

A major part of this transformation includes the building of over 8,000 new homes, on which this report will focus. This report will argue that building the right type of housing is one of, if not the key factor in ensuring the successful development of the park and the convergence of this historically neglected part of the city. However the plans for the Park’s housing, as they currently stand, are not ambitious enough.

1 ‘About us’ <http://www.londonlegacy.co.uk/about-us/> (accessed 26/7/2012)

2 Mayor of London, *The London Plan: Spatial Development Strategy for Greater London*. London: Greater London Authority, 2011.

LONDON’S HOUSING CRISIS: WHY WE NEED MORE (FAMILY) HOMES

London is in the midst of an acute housing crisis. As the Mayor’s revised Housing Strategy rightly points out, “housing supply in London has failed to keep pace with demand for several decades.”³ Politicians from across the political spectrum agree that London’s housing market is in crisis, yet the solutions offered by many - introducing yet more costly legislation to establish rent controls or a public sector letting agency – are flawed. These would more likely have the unintended effect of reducing supply. As Professor Henry Overman from the LSE has commented, “schemes that restrict the ways in which we can use housing tend not to be beneficial to the poor.”⁴ Instead, the solution should address the root of the problem: supply. There is a chronic lack of supply in the housing market, which is driving prices up. We must, therefore, build more homes. The thousands of homes to be constructed in the Olympic Park are, therefore, an important part of the solution.

Lack of supply contributes to a number of problems, not least the exponentially rising property prices, but also to overcrowding. Research published by Shelter last year found that 18 per cent of all rented homes in London are overcrowded. In the social housing sector, this figure is 43 per cent, a figure than has risen by a third over the last decade.⁵ Last year, I published a report looking at overcrowding in London’s social rented housing sector for the London Assembly’s Planning and Housing Committee. The report tested the hypothesis that increasing the supply of larger family homes (with four, five or six bedrooms) would be an effective tool in

3 Mayor of London, *The revised London Housing Strategy*. London: Greater London Authority, 2011

4 The Economist, *Bagehot: Scourge of slums*. The Economist, 14 July 2012.

5 McCann, K, ‘Overcrowding up 43% in London’s social housing sector’, *The Guardian*, 14 July 2011

tackling overcrowding.⁶ The research found that building just one new six bedroom house can remove 36 other individuals from overcrowded accommodation, by creating a chain of families moving into bigger properties. Experts consulted during the investigation agreed that building more, larger homes, is one solution to help tackle overcrowding.⁷

Government figures show that in 2011, there were 56,835 households in London on a waiting list for a property with three bedrooms – 15 per cent of the total waiting list - and over 18,000 households waiting for a 4 bedroom or more property – just over five per cent of the total.⁸ In Newham, over 5,647 of the households on the waiting list in 2011 required a property with three bedrooms – 18 per cent of the total waiting list. Almost 2,000 required a property with four or more bedrooms, representing 6 per cent of the waiting list. In neighbouring Tower Hamlets, the figures are very similar: 7,000 households requiring a 3-bed property and just less than 1,800 requiring a four or more bedroom property.⁹

In order to combat overcrowding, the Mayor's housing strategy states that: "The Mayor is committed to increasing the supply of family-sized affordable homes, with a long term aim for half of all new affordable homes to have three bedrooms or more."¹⁰ Whilst this is a strong ambition, there remain issues around definitions of family housing and the size of houses required in London. The Mayor defines family sized housing as 'three or more bedrooms'. However as identified above, there remains a strong demand for homes with four or more bedrooms. Furthermore, the evidence that the Mayor bases this target on, the Strategic Housing Market Assessment makes a recommendation that the Mayor should establish a target for around 40 per cent of new social housing to have four bedrooms or more, rather than the definition of three bedrooms or more the Mayor has adopted.¹¹

Whilst adopting the goals of increasing the supply of family housing and the specific targets represents a step in the right direction, using the definition of 3+ is likely to limit the number of houses built with more than three bedrooms as developers and policy makers can hit the targets, but make higher returns by only including three bedroom properties as the largest size in their developments. It is unlikely, for example, that any of the 1,838 households on Newham Council's waiting list that require a home with four or more bedrooms will be re-housed on the Olympic Park under its current proposals. Furthermore, decades of not building enough larger homes, and the four or so years since the last Strategic Housing Market Assessment, make the requirement for large family homes even more pressing.

Despite this recognition and commitment from the Mayor, the first neighbourhood into which residents will move into on the Park, the Athletes' Village (now renamed *East Village*), embodies much that is amiss with property development and regeneration. The blocks of flats demonstrate that both the planners, architects and developers who built the village have learned nothing from London's post war housing disaster. Just ten years ago, for example,

6 London Assembly Planning and Housing Committee, *Crowded houses: Overcrowding in London's social rented housing*. London: Greater London Authority, 2011.

7 The experts also recognising that a complex set of other factors influence overcrowding, including money, stock management and housing priorities

8 Department for Communities and Local Government, *Housing Strategy Statistical Appendix (HSSA) – Data returns for 2010/11*.

9 Ibid.

10 Mayor of London, *The Revised London Housing Strategy*. London: Greater London Authority, 2011.

11 Mayor of London, *Greater London Strategic Housing Market Assessment 2008*.

the Hornbeam and Redwood tower blocks were demolished, less than two miles north of where the Olympic Village has been built. The problems of high-rise, high density housing, especially for families, are well understood and the scars of such developments still remain across much of the capital. Low-rise, high density family housing however, offers many of the intended benefits of high rise – such as privacy, good maintenance and shared facilities - whilst negating the well-known problems.¹² The Olympic Village demonstrated that housing supply should not be the only consideration, despite its importance. It is critical to consider what type of housing is required.

¹² Cooper Marcus, C and Sarkissian, W, *Housing as if people mattered*. Berkley: University of California Press. 1986.

WHY WE NEED HIGH QUALITY HOMES

The Mayor is committed to helping London play its part in limiting climate change by reducing the city's carbon emissions. Reducing the consumption of natural resources and boosting our energy security are also increasingly important goals. The Mayor's climate change mitigation and energy strategy recognises this need and commits London to an emissions reduction target of 60 per cent of 1990 levels by 2025.¹³ Buildings are one of our largest consumers of resources and users of energy. The Mayor's Housing Strategy also recognises this, stating that "investment in new homes should contribute to reducing London's carbon emissions."¹⁴

Building quality homes to last for centuries must, therefore, be a priority. Selecting building materials and using construction methods that have a small environmental footprint is also key. However it is not just about protecting the environment. Environmentally sustainable homes also offer a myriad of benefits to the householder, not least in reduced utility bills through design that enables efficient use of water, gas and electricity. At a time of rising fuel bills and continued economic uncertainty, these benefits cannot be overstated. The LLDC has stated that all homes on the Park will be designed to a minimum of Code for Sustainable Homes Level 4 and that they will meet the Government's 2016 Zero Carbon Homes definition. Promotional materials indicated that homes will have green roofs to "keep things cool [and] build resilience against flooding"¹⁵; be connected to low carbon heating distribution systems and constructed of materials with low embodied carbon. More information about the Code for Sustainable Homes can be found in Appendix I.

In the development of the Olympic Park we have a real opportunity to set a new standard for a large-scale, state-led development. London has shown leadership in this area in the past. The One Gallions development in the Royal Docks, which was supported by the now defunct London Development Agency, was designed as a demonstration project to test the feasibility of a zero-carbon development and to set a precedent for highly energy efficient developments in a key opportunity area of the capital.¹⁶ Located at Gallions Reach in the

¹³ Mayor of London, *Delivering London's Energy Future: The Mayor's Climate Change Mitigation and Energy Strategy*. London: Greater London Authority, 2011.

¹⁴ Mayor of London, *The revised London Housing Strategy*. London: Greater London Authority, 2011.

¹⁵ London Legacy Development Corporation, *Your sustainability guide to Queen Elizabeth Olympic Park 2030*. London: London Legacy Development Corporation, 2012

¹⁶ 'One Gallions Zero Carbon Development'

http://www.less-en.org/_assets/client/files/1216-20090629_One_Gallions.pdf

Royal Docks, the development was guided by the One Planet Living principles developed by Bioregional and displayed through the BedZED project. One Gallions was designed to reach Code for Sustainable Homes Level 6 for energy – far in excess of the plans for the developments on the Olympic Park.

However BioRegional Quintain, one of the key development partners pulled out of the One Gallions project last year and has now ceased trading. The development agreement was subsequently terminated by the LDA meaning that One Gallions will not be built. This leaves open the opportunity for a new flagship development to pick-up where the One Gallions scheme left off. The profile of the Olympic Park and the far superior connectivity of Stratford are likely to give the development significantly better prospects than One Gallions had.¹⁷

¹⁷ Gardiner, J, 'BioRegional Quintain to be wound up' *The Guardian*, 11 November 2011.

THE LEGACY COMMUNITIES SCHEME: A NEW BLUEPRINT FOR REGENERATION?

The plans for new housing on the Park inherited by the Olympic Park Legacy Company when it was set up in 2009 left much to be desired. They were similar to that of the Athletes' Village: repetitive blocks of high rise flats. However a re-evaluation of the plans was conducted by former Chair, Baroness Margaret Ford, and former Chief Executive, Andrew Altman, following recognition of many of the problems already identified in this report.¹⁸ Speaking about the re-designed master plan, Baroness Ford stated that, "London is crying out for decent-quality family housing both to rent and to buy and, given the assets here, this is destined to be a park for London families."¹⁹

The Legacy Communities Scheme, the LLDC's re-designed master plan for the Olympic Park, was granted outline planning permission earlier this year. It contains plans for up to 6,870 residential units across five neighbourhoods, to be built out over the next two decades. 35 per cent of the housing will be affordable with a 30:30:40 ratio of social rented/affordable rented/intermediate split.²⁰ Across the whole park, the LLDC will seek to build 42 per cent of the houses with three bedrooms or more. As previously stated, the Legacy Communities Scheme master plan differs significantly from the plans inherited when the LLDC was initially formed and represents a marked improvement. However a number of important criticisms have been made (not least that the definition of family housing that this target is based on is 3+ bedrooms, not 4+ bedrooms, as previously discussed) which chime with the thrust of this report.

In their response to the planning application, the Design Council state that, whilst supporting the application, it lacks "clear strategic principles to guide the planning application through

¹⁸ ECS Committee, 21 October 2009. <http://www.london.gov.uk/moderngov/Data/Economic%20Development,%20Culture,%20Sport%20and%20Tourism%20Committee/20091021/Minutes/Transcript%20PDF.pdf>

¹⁹ 'How the Olympic Park will look in 2030', *Evening Standard*, <http://www.standard.co.uk/news/how-the-olympic-park-will-look-in-2030-6521997.html>

²⁰ Olympic Delivery Authority, *Legacy Communities Scheme Planning Application Volume 1 – Executive Summary of Main Committee Report*. London: Olympic Delivery Authority, 2012.

two decades of delivery...the larger vision of the proposal is not immediately apparent.”²¹ They have suggested that one principle could include “a presumption in favour of family housing blocks against apartments.”²²

The LLDC has promoted its outline plans for the park as one of predominantly family neighbourhoods, designed to – in its own words again - “rekindle the heritage of east London life.”²³ But in reality the family housing will make up less than half of the homes and even the biggest homes will be unsuitable for many of the larger families that make up a sizable portion of the community in the surrounding areas. A number of the neighbourhoods, Marshgate Wharf in particular, do not fit at all with this promotional vision. Again, the Design Council commented on this point, arguing that the suggested typologies for Marshgate Wharf - tall towers on dense podium blocks – are “inappropriate for family accommodation, for the parkland location and for the setting of the Aquatics Centre.”²⁴

Another concern identified in the consultation stages of the Legacy Communities Scheme is the percentage of family units that will be wholly on upper level floors. The LLDC has stated in response that this will be addressed at the detailed design stage of the individual planning applications. It is important that these detailed plans are available for public scrutiny, as the Legacy Communities scheme was. It is dishonest to promote the Park as a family-led development only to end up with three bedroom penthouses at the top of tower blocks, where most parents would not choose to bring up their children.

As previously stated, it is clear that some effort is being made to limit the environmental impacts of the development. Yet building to Code for Sustainable Homes Level 4 is increasingly standard practice and soon to be mandatory for developers, with the zero carbon homes legislation coming into force in 2016. The designs are not pushing boundaries with regard to their environmental performance. If this development is to achieve its full potential, more innovative thinking and design will be required.

The five neighbourhoods, which were named via a public competition, have differing characteristics and will be built in phases. Chobham Manor will be a family focussed development of around 800 homes. East Wick’s 900 homes will be predominantly low-rise family housing with the master plan indicating terraced houses edging onto park land. Sweetwater too will consist over around 650 family homes, but arranged around courtyards. Pudding Mill Lane, another large development will also contain a large number of taller apartment blocks, mixed in with family homes, totalling 1700 units. Given that the master plan has got the basics of the typologies right on a number of the neighbourhoods, it is disappointing that the bulk of the housing will still be delivered in apartments. Furthermore, the strong criticism of the courtyard design of the Athletes’ Village appears to have gone unnoticed in the courtyard-based proposals for Sweetwater. The Olympic Delivery Authority were unable to provide evidence of successful mixed tenure courtyard developments in London, when

21 Design Council, *Response to Olympic Park Legacy Communities Scheme, Hackney, Newham, Tower Hamlets and Waltham Forrest*. <http://www.designcouncil.org.uk/our-work/cabe/services/review/2012-projects/olympic-park-legacy-communities-scheme-hackney-newham-tower-hamlets-and-waltham-forrest/>

22 Design Council, *Response to Olympic Park Legacy Communities Scheme, Hackney, Newham, Tower Hamlets and Waltham Forrest*.

23 London Legacy Development Corporation, ‘The Park: Live.’ <http://www.londonlegacy.co.uk/the-park/live/>

24 Design Council, *Response to Olympic Park Legacy Communities Scheme, Hackney, Newham, Tower Hamlets and Waltham Forest*.

challenged by the London Assembly during the design and build process.²⁵

Research conducted by Design for Homes a number of years ago looked into the experiences of living in a range of housing typologies and different locations of the public realm. The research found that the Georgian London square model of amenity space, rather than the courtyard model is much more successful and desirable for residents for three key reasons: firstly, inner courtyard's, where the majority of bedroom windows are located, are not noisy at night; secondly, sharing space in front of, rather than behind buildings creates a more relaxed environment and the space is used more; thirdly, this has the effect of making the space safer and helping build a stronger community.²⁶ Just as the ODA was challenged to demonstrate successful examples of courtyard typologies, the LLDC should demonstrate how it foresees courtyard blocks – with public space located within the confines of the courtyard, rather than in front of the buildings - will work on the Olympic Park.

CHOBHAM MANOR

Chobham Manor will be the first neighbourhood to be built on the park. It will be a “traditional family neighbourhood of terraced and mews houses, set within tree-lined avenues.” This vision is set out in the design codes and parameters laid out in the Legacy Communities Scheme. Taylor Wimpey has recently been announced as the developer of Chobham Manor. They will work with the social housing landlord London and Quadrant. Taylor Wimpey will now draw up their own detailed planning application for the site, which they plan to submit before Christmas.²⁷ There are however questions to be asked about the environmental credentials of such large developers and the extent to which they can build effectively to high environmental standards. The LLDC should consider encouraging truly sustainable developers to come forward to bid to build the neighbourhoods, rather than established large companies who are more likely to attempt to bolt on sustainability to their already existing practices. One way in which this can be done is to further split the development of the different neighbourhoods so that smaller firms can more confidently bid for manageable contracts; 200 homes, rather than 800 homes, for example.

It is the forthcoming plan from Taylor Wimpey that will be the one to watch, as this will contain detailed proposals and architectural drawings for the units. Within reason, the developer has the opportunity to put its particular slant on the design. It is obviously in the developer's interest, commercially, to maximise the number of units it builds in order to maximise the sales value of the development. However, the LLDC must use its position as both development partner and planning authority to prevent the developer from straying too far from its stated vision for Chobham Manor. The proposed maximum heights for a number of the blocks will be telling. Again, the Design Council pointed to the potential problems, noting that in the outline planning application, for Chobham Manor, “the minimum and maximum height parameters are too broad to ensure that only terraced family housing can be delivered; it appears that there is also scope for apartment blocks to come forward on this site.” There are some indications that the plans will include blocks of seven or eight

25 Warning of “mistakes of past” at Olympic site. http://www.london.gov.uk/media/press_releases_assembly_member/news-andrew-boff-warning-mistakes-past-olympic-site

26 Mullholland, H, *Perceptions of Privacy and Density in Housing*. London: Design for Homes Popular Housing Research, 2004.

27 Gardiner, J, *Taylor Wimpey to submit new Olympic planning application*. Building Magazine, 9 August, 2012

storeys: hardly a return to the “London Vernacular” that the LLDC promised.²⁸

The LLDC hopes that 40 per cent of the homes in Chobham Manor will have gardens and this is an important goal. However it is imperative that this focus is not just on the first development, that will inevitably attract much attention, but also for the four or more neighbourhoods that will follow Chobham Manor. Building homes with gardens need not come at the expense of density, and therefore affect the commercial viability of the scheme, as will be demonstrated by a number of successful examples later in this report.

In summary, the outline plans for the development of the park over the next two decades represent an improvement on those proposed when the Legacy Company was formed. However they do not push boundaries to the extent to which this generation-defining opportunity should be looking to do. Both in London and across the country there are a range of examples that demonstrate how visionary, liveable developments can be constructed economically and in a manner that does not harm the environment. These are the type of developments that are worth studying and drawing inspiration for in order to better guide the development of the Olympic Park. A number of inspirational examples are discussed in the boxes below.

²⁸ Gardiner, J, *Taylor Wimpey to submit new Olympic planning application*. Building Magazine, 9 August, 2012.

OFFICERS FIELD, DORSET

Officers Field in Portland, Dorset, is an award winning¹ 77 home development on the Dorset coast. Led by Zero C, a leading sustainable development practice, Officers Field represents a “modern take on traditional family homes”, and contains a variety of typologies including terraced, semi and detached properties and coach-houses. Built to Code for Sustainable Homes Level 4, it contains biomass district heating, wood pellet stoves and rainwater harvesting technology. Yet the green features are not in-your-face: to the casual observer, there is little indication of the high environmental standards within.² More importantly, the design focused on the social sustainability of the development.³ Importantly, 35 of the 77 homes have four bedrooms, exceeding the standard 3+ family homes definition.⁴ The scheme achieves the right balance of contemporary design that fits within the existing landscape; taking inspiration from history, but not trying to recreate the past. Whilst high-quality developments often have higher than standard build costs, the message from Officers Field is the low build costs achieved by the developer. Build costs were around two-thirds of what would traditionally have been expected from a local authority-led housing scheme: approximately £1000 per square meter, compared to an industry average of between £1,400 and £1,800.⁵ Given the quality of the materials used, especially the local Portland Stone, this is even more remarkable. What Officers Field shows is that good design can add value, despite the difficulties the construction industry was facing at the time.

¹ Supreme Winner of the Graham Pye Award and Richard Feilden Award at the 2012 Housing Design Awards

² ZeroC Holdings, *Officers Field, Osprey Quay*. <http://www.officersfield.com/brochures/Officers-Field-Brochure.pdf>

³ Lane, T, ‘Quality Streets’ In *Building*: 25, 38 – 41 (2012)

⁴ ZeroC Holdings, *Officers Field, Osprey Quay*. <http://www.officersfield.com/brochures/Officers-Field-Brochure.pdf>

⁵ Interview with Kim Slowe. Film <http://www.gdhta.co.uk/2012/06/23/officers-field-weymouth-wins-awards/>

BED ZED

The Beddington Zero Energy Development (BedZED), is the UK's largest "mixed-use sustainable community" located in Sutton, south London.¹ Led by The Peabody Trust and architects ZEDfactory, it is a high-density scheme with 99 homes and 2,500m² of office space.² Despite being completed in 2002 and much discussed, it remains one of the best examples of a truly visionary housing development in London. BedZED sought to offer its occupants a carbon-neutral lifestyle, both in construction and occupancy. The developers worked hard to limit the environmental impact of the construction. Heavy building materials were sourced from within 55km of the site. Recycled steel and reclaimed timber was used in the construction.³ Utility demands of the housing are well below average: the energy demand for heating, cooling and ventilation in a residential unit is 90 per cent lower than the average UK home.⁴ The provision of outdoor space is key feature of the development, reconciling high-density living with amenities that positively impact on quality of life. Every private home has a private garden and those managed by Peabody share a number of communal gardens, thus every dwelling has either a sky garden or terrace.⁵ Traditionally a development at this density would only accommodate units with a small balcony. BedZED has received some criticism for the CHP biomass system initially employed, which used existing local waste – urban tree waste – as a raw material to generate electricity. Problems beset the nascent technology meaning that since 2005, BedZED has not been 'zero carbon', as it was initially conceived.⁶

Compared to comparable conventional developments, the up-front cost of the BedZED design was fairly substantial. Figures from 2003 estimated the overall added build cost of a 6 plot-terrace at just over £350,000 (£58,000 per property).⁷ However the added value from the design of the development has been considerable. The sunlight, outdoor areas and overall spacious feel of the properties are particularly attractive. Savills have estimated that these features add around 20 per cent to the value of the development.⁸ BedZED property values have continually kept-pace with rising house prices in south London and continue to outperform comparable properties in the nearby area. BowZED, a smaller Zed Factory development also displays this trend. The four flats, built to ZedStandards – thus requiring no central heating – were built at a 15 per cent premium compared to a standard design. However the sale prices achieved by the developer were much better than expected and well above local comparable property, demonstrating a healthy appetite for this type of development in this area of east London, close to the Olympic Park.⁹

1 Chance, T, 'Towards sustainable residential communities; the Beddington Zero Energy Development (BedZED) and beyond.' *Environment and Urbanisation* 21: 527 – 544, 2009

2 Ibid.

3 Twin, C, BedZED. *Arup Journal*, 1/2003.

4 Ibid.

5 'BedZED', available at: http://www.zedfactory.com/projects_mixeduse_bedzed.html

6 Chance, T, 'Towards sustainable residential communities; the Beddington Zero Energy Development (BedZED) and beyond.' *Environment and Urbanisation* 21: 527 – 544, 2009

7 Lazarus, N, *BedZED: Toolkit Part II*. London: Bioregional, 2009.

8 Ibid.

9 'BowZED' Available at: http://www.zedfactory.com/projects_housing_bowzed.html

VISIONARY DEVELOPMENT: IT NEEDN'T COST THE EARTH

As the case studies above have shown, ground-breaking, high-quality and environmentally sustainable developments often cost more up-front to build. However the added value of a top-quality development, in the now world renowned Olympic Park, with strong environmental credentials is likely to attract significant interest, with added sales value to match. A series of such developments on the Olympic Park would have even more chance of breaking new ground with the interest the area has received. The LLDC should not dismiss schemes that might have higher up-front costs on the grounds of value for money in construction, since its profit sharing business model means that it will easily make the money back in the longer-term.

This is a point that has previously been made by the London Assembly's Environment Com-

GREENGATE, SALFORD

The residential portion of the regeneration of the Greengate area of Salford, Manchester, is another visionary example of how to design and build affordable and environmentally sustainable family houses in the heart of a city. The scheme, designed by White Arkitekter, takes its inspiration from Scandinavian family apartments with a range of innovatively designed private and shared gardens. Two issues are relevant for the housing on the Olympic Park. Firstly, the housing types will range from one to five bedroom flats, two-storey terraces and two / three-story townhouses. Not only will this make for a visually diverse development, but it also responds to the need for larger family homes, above the standard 3+ bedroom definition.¹ Secondly, the development incorporates a number of sports related features. Phase one includes a running track, phase two a grass tennis court amongst an orchard and phase three, an area on top of the car park that actively encourages ball games.² The “no-ball games allowed” sign is all too familiar in many developments across London. What better way to develop a sporting legacy for the future residents on the Olympic Park than some innovative sporting-inspired architecture?

SWINDON TRIANGLE

The Swindon Triangle has been a much talked about - and criticised³ – environmentally sustainable housing development. Leaving the construction problems aside, inspiration can be taken from the vision and aims of the project. The 44 homes are arranged in terraces and located around village greens. As one critic has noted, “it is striking, with all this ingenuity in the design, how very plain-looking the houses are.”⁴ The architect, Glenn Howells has explained how it took some nerve to do something “very, very normal... The idea of the terrace started a long time ago and it will go on for another 500 or 600 years. It is such a good form. Those to-die-for streets of Islington... are all repetitive.”⁵ This radically normal approach is one that should be emulated across the Olympic Park.

1 Mara, F, 'Greengate residential development, Salford, by White Arkitekter' <http://www.architectsjournal.co.uk/buildings/residential/greengate-residential-development-salford-by-white-arkitekter/8625865.article>

2 Mara, F, 'Greengate residential development, Salford, by White Arkitekter'

3 See Fulcher, M, Kevin McCloud defends architect in Swindon housing storm. *Architect's Journal*, 27 June 2012.

4 Moore, R, “Kevin McCloud’s grand design for the great British housing problem.” *The Observer*, 19 November 2011.

5 Ibid.

mittee. The Committee noted that the LLDC, instead of just looking for value for money, should negotiate hard and “consider that the Olympic Park, with its profile and reputation, and its infrastructure and scale, is in an excellent position to be at the leading edge of the market for low-carbon sustainable homes, rather than a housing development like any other.”²⁹ In a difficult market, new houses must have an edge to attract buyers and the more sophisticated a design, the more chance that it will create a decent return for the developer. The added value of a market-leading design has been shown the case for all of the examples discussed. The Portland development shows how building to Code 4 of the Sustainable homes, even in a modern, yet vernacular style, can be extremely cost effective, when managed well.

Zero-Carbon Hub, the organisation helping developers deliver homes to the zero carbon standard by 2016 have also recently commented on the cost issue: “these costs are becoming more predictable and not as high as originally anticipated when the zero carbon definition was set at the Code for Sustainable Homes Level 6 standard. Then the additional cost of reaching zero carbon was being estimated at around £30,000 extra per unit. However, the revised definition of zero carbon (70% Carbon Compliance plus Allowable Solutions)

29 Letter to Andrew Altman from London Assembly Environment Committee. <http://www.london.gov.uk/sites/default/files/MQ%20AA%20OPLC%20environment%20policy.pdf>

will mean build cost figures in the region of [£20,000].³⁰ The recession and its impact on the construction industry must be viewed as an opportunity, not a barrier. The spotlight on the Olympic Park means that the interest in developments will be substantial. The LLDC is in a very good position to negotiate for high quality housing that need not impact on the returns that it receives. Furthermore, its negotiating hand is significantly boosted by the fact that much of the infrastructure in the park that the houses will require – such as electricity, internet and water – is already in place, significantly reducing the overall costs to the developers.

30 Zero Carbon Hub, *Marketing tomorrow's new Homes: raising Consumer demand For Low & Zero Carbon Living*. http://www.zerocarbonhub.org/resourcefiles/ZCH_Marketing_Tomorrows_New_Homes_Report_Final.pdf

REGENERATION, NOT JUST GENTRIFICATION

Behind the added value and cost of high quality, sustainable housing, looms the spectre that the new neighbourhoods will be out of reach, financially, for many of the existing people of the East End. We must all work hard to ensure this does not happen. A persistent worry by observers of all political colours during the establishment of the LLDC was that lessons would not be learnt from the experiences of previous development corporations. Of particular concern was Canary Wharf. Often criticised as “an island of prosperity in a sea of poverty,”³¹ a Canary Wharf-like cousin on the Olympic Park would be a missed opportunity for the future of the East End. The debate around the perceived success of Canary Wharf is well-rehearsed, but painfully summed up in a quote from a film about the history of the East End. During the film, a resident of the Isle of Dogs, speaking soon after the completion of the early stages of Canary Wharf, says:

“I always saw my future as living round here and when this land was built on, there'd be a house for me, either to buy cheaply or to rent. And I was really shocked [because there were no houses I could afford].”³²

The ambition of Convergence – to give the communities hosting the Games the same social and economic chances as their neighbours across London³³ - on which many of the plans for the Olympic Park are based, is a laudable one and appears to demonstrate that lessons have been learnt from the way in which the Canary Wharf development was managed. However this must not be achieved simply by driving out the less well-off residents already living in the area. This is particularly pertinent given the vocal opinions of the Mayor of Newham, Sir Robin Wales, who speaks frequently about his ambition of reducing the population churn of Newham and making it a place for people to settle.³⁴ Newham should be a place for its existing residents to settle and the Olympic Park and its surroundings must be developed for the existing people of the wider East End.

31 The Economist, *The flows of prosperity: London's distribution of wealth is shifting, again*. <http://www.economist.com/node/21557525>

32 *London on Film: The East End*, Produced by Elaine Shepherd, 2012

33 Convergence Framework and Action Plan 2011 – 2015. http://www.hackney.gov.uk/Assets/Documents/Convergence_action_plan_2011-2015.pdf

34 Hill, D, London Legacy: measuring regeneration. *The Guardian*, 3 July 2012.

RADICALISING THE PLANS: CONCLUSIONS AND RECOMMENDATIONS

London needs more, high quality, large family homes, in order to combat overcrowding. These homes should be built to the highest environmental standards, in order that London plays its part in limiting the impacts of climate change. The development of the Olympic Park represents an unparalleled opportunity to build these types of homes and in doing so, re-define our conception of regeneration. As they stand, the LLDC's plans for the homes on the Olympic Park are not up to scratch. For example, whilst the fundamentals of the design of Chobham Manor are sound, improvements could still be, and should be made to make the scheme more radical. More four and five bedroom properties should be included in response to London's housing need.

The LLDC have mooted the idea of splitting the development of some of the five neighbourhoods into smaller parcels, thus allowing smaller, more innovative developers to bid for smaller contracts. This is a good policy and once that the LLDC should pursue. Where the prospect of 800+ homes is too great, building 200 homes would be more manageable. This will demonstrate the LLDC's commitment to boosting the local economy and supporting small and medium sized businesses

Whilst many of the environmental features of developments such as BedZED will soon be formalised through the Zero Carbon Homes initiative, the minute detail of construction methods and building emissions is not the most important lesson to take away. It is the vision displayed by the schemes and the desire to create a world-beating development based on strong principles. Developments on the Olympic Park should be pushing boundaries, not simply conforming to what will be normal industry standards. As the Design Council has pointed out, the plans lack a clear set of principles to guide the development over its long future. Everyone wants the Olympic Park to be a success, not least because we have all paid for it. We should work hard to make it the best it can be. Based on these conclusions, this report makes a number of recommendations to both the Mayor and the LLDC for how this can be done.

Vision for the Olympic Park and its neighbourhoods

The LLDC should:

- Publish a clear set of principles outlining its vision for the park, which is easily digestible by those outside of the building industry.
- Update its definition of family housing to mean homes with four bedrooms or more. It should also have a separate target for five per cent of homes to have five bedrooms or more.
- Work with the chosen developers to ensure that family homes are not located above the fourth floor of a building
- Re-think its plans for the Marshgate Wharf neighbourhood as the current proposals do not fit with the overall ambitions of the Legacy Communities Scheme.
- Redesign those neighbourhoods that are currently based on a range of housing typologies arranged around courtyards – e.g. the Sweetwater neighbourhood - in light of ongo-

ing criticisms of the Athletes' Village

- Look to incorporate sporting infrastructure into neighbourhood design - as demonstrated by Salford's Greengate development - to provide a link to the sporting context of the wider Olympic Park.

Housing Design & environmental performance

The LLDC should:

- Re-appraise the headline environmental standards for construction and consider a target of building to Code for Sustainable Homes Level 5, or higher.
- Hold a design competition, specifically inviting submissions from visionary, environmentally sustainable architects & developers to re-design Marshgate Wharf, moving away from the current design of flats in tall towers
- Push ahead with proposals to split some future developments into multiple smaller phases, allowing smaller, more innovative developers to bid for smaller contracts.
- Designate one, or part of one, of the developments as a zero carbon demonstration development, to re-establish the ambitions that were embodied in the now defunct One Gallions scheme. §

APPENDIX I – LEGISLATING FOR SUSTAINABLE DEVELOPMENT

Code for Sustainable Homes - The need to limit the environmental impact of new buildings has been codified by the Government through the Code for Sustainable Homes. The Code runs from Level 1 to Level 6, with level 6 representing the most stringent environmental standards. Despite these definitions, due to the difficulty and cost of building to a zero carbon standard (level 6) the requirements that will be placed on house builders in 2016 have been somewhat watered down. Guidance from DCLG states that some developments will only have to achieve a 50 per cent efficiency to qualify as zero carbon.¹

Guidance explains that “The Code takes a whole house approach and measures the sustainability of a dwelling against nine different categories: energy/carbon; water; waste; materials; surface water run-off; and health and well being, which have mandatory performance standards; and pollution; ecology; and management. To achieve the levels of the Code, a number of points must be accumulated across all categories and the mandatory requirements must be met. Depending on the number of points gathered, a star rating is then awarded (one star being the lowest achievable level and six stars incorporating zero carbon).”²

Each star rating or ‘level’ defines the building’s level of energy efficiency as a percentage better than the 2006 Building Regulation standard. For example, Level 1 represents a 10 per cent more efficient home; Level 4, 44 per cent; Level 5, 100 per cent; and level 6 is a carbon neutral home.

Zero Carbon Homes - From 2016, all new homes will have to be built to a ‘zero carbon’ standard. This definition was initially intended to correspond to Level 6 of the Code for Sustainable Homes. However following consultation, and mainly on grounds of cost and the belief that such a stringent code would make too many sites unworkable, the definition has been revised. The current proposed definition – a requirement for houses to be 70 per cent more energy efficient than the baseline, plus ‘allowable solutions (such as off-site community energy schemes) has been drawn up to balance ambition with the technical ability of house builders to reach the target whilst remaining commercially viable.³

¹ Wright, O, “Zero-carbon” homes can still emit CO₂. *The Independent*, 25 February 2011.

² Department for Communities and Local Government, *Code for Sustainable Homes and Energy Performance of Buildings: Cumulative and Quarterly Data for England, Wales and Northern Ireland up to end of March 2012*.

³ Zero Carbon Hub, ‘Definition, What is Zero Carbon?’ <http://www.zerocarbonhub.org/definition.aspx>



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