

**“How would you deliver a New Garden City which is visionary,
economically viable, and popular?”**

The Audacity to Dream of Better

Wolfson Economic Prize 2014

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Non-Technical Summary

Vision

The Garden City offers an opportunity to create a settlement that is self-contained and encourages an urban way of life in a rural setting. The Garden City provides for the natural development of space which can be created through a polycentric village centre approach that facilitates easier phasing to the development. This avoids creating another soulless commuter town which lacks purpose and identity. Our suggested site in Bexley¹ provides for the integration of transport and the utilisation of an already established transport network of road and rail and with the opportunity to innovatively harness the potential of the River Thames. Importantly, the Garden City creates a place that is natural and possesses an identity, both for the individual and the community, overcoming our recent history of building characterless and monolithic developments.

Economic Viability (and thus governance)

Long term, cost effective and sustainable financing is systemic to the economic viability of the Garden City. It is our suggestion that the primary stage to creating the Garden City should be through forming a long term partnership with the landowner and entering into an agreement of mutual benefit. This will enable the developing body to avoid incurring up front purchase costs prior to the granting of the planning permission and to subsequently deliver the project through a phased and sustainable delivery. Following the establishment of such an agreement and the subsequent granting of planning permission the developing body can approach the debt capital markets to provide finance to purchase and develop the land. It is our intention that such capital should be raised by both conventional listed notes and sukuk. Importantly, the notes should be issued in a low denomination to encourage an element of ‘Crowd Funding’ to create vested interests in the creation of the Garden City. Furthermore, the Garden City should be entirely self sufficient for its own energy needs. It is our suggestion that the Garden City could construct green infrastructure by utilising feed-in-tariffs to issue notes to raise finance for this purpose. It is evident that the economic viability of the Garden City can be greatly enhanced by utilising already established infrastructure to cause significant cost savings. As such, we believe that our suggested site can significantly boost the economic viability of the Garden City since it is already surrounded by a strong network of roads and rail and can utilise the River Thames as a direct link to Central London.

The governance of the city should be rooted in localism and self governance. It is our suggestion that property owners of the Garden City should be issued with equity in the

¹ See Annexe 1

governing/management company who will run the Garden City following its construction. This will enable the residents to control and dictate the governing of the city. Furthermore, the Garden City should be given the ability to control its own finances and offer preferential rates to attract business and generate jobs within the Garden City to ensure its economic viability and self functioning.

Popularity

The popularity of the Garden City is fundamental to its legitimacy and success. As such, there should be extensive consultations with all the parties affected by the project from its launch and a clear effort for the benefits created by the Garden City to diffuse into the surrounding areas. This will naturally take place through the creation of jobs and boosting the area's socio-economic conditions. Furthermore, the opening up of green spaces through the creation of communal parklands and gardens for the enjoyment of all will fundamentally alter the quality of life for those that reside in the Garden City and for those that surround it.

Chapter 1 | Introduction

‘It is difficult to underestimate the importance or enormous influence for the good, of beautiful surroundings and the degrading influence of ugly surroundings’. Raymond Unwin’s comments at the turn of the 20th century resonate just as powerfully today. Where ‘space, community and engagement’ lay at the heart of the Garden City Movement of 19th and 20th century this might be embellished with the requirement to alleviate the pressure on the supply rather than relieving the overcrowding and unhealthy airs of Industrialising Britain.

When Frederick Osborn rebuked Ebenezer Howard on his rash purchase of the land for Welwyn Gardens, Howard sceptically remarked that if Osborn waited for the government to take action on making Garden Cities progress he would ‘be older than Methuselah before they start’ (Alexander: 2009, p.63). This issue remains and the opportunity to present the Wolfson Economics Prize with this paper hopes to provide a viable, insightful and exciting opportunity on how to deliver a New Garden City.

Unwin found that ‘people tend to flock together in village or towns that they may enjoy the advantages of social intercourse with the wider opportunity for pleasure and culture that spring from it’ (TCPA:2012, p2). Chapter 1 will set out a broad vision for how such an exciting development might take form. Finding a site will set the context around which a successful scheme will be taken forward and establish the viability of any scheme. Ownership, economics, stimulus, green belt issues and context all influence schemes dramatically and will be covered in our analysis of this issue. The use of a hypothetical site near in the Bexley² area of the Thames will provide an opportunity to focus some of these ideas in greater focus. As mentioned by Howard a future development cannot rely on the government. Despite the unquestionable help they have provided to stimulate the recent boom in house building and help the UK emerge from the recession, it would be foolhardy to rely on continued developments. A New Garden City is likely to outlast multiple governments and so it is essential that a landowner with vision can be found and a source of funding sought that does not fall to the mercy of changing politics. Failure of so many of the New Towns of the mid-20th century lay in the speed with which they were forced through or the inability to take a long term focus. The approach to address the economic strategy is set out in chapter 2. Finally chapter 3 will address the fundamental stumbling block of such a scheme setting out how we feel it will be possible to bring on the local support and integrate their ideas to give ownership and help build the identity for this New Garden City.

The original growth of Garden Cities was a reaction to the stifling environment of concentrated industries and the desire to provide new better homes and quality of life. Industrialisation has

² See Annexe 1

now been replaced by globalisation. Global wealth growth has driven a rift in urban centres across Britain. Burgeoning external wealth and the ongoing population growth and urban migration is leading increasing polarisation for local residents and younger generations unable to afford to live close to their places of work. The Mayor of London's Opportunity Areas provide guidance on where new developments of this nature might be embraced, providing large enough areas to satisfy the holistic approach to Garden City developments that are necessitated by a critical mass to ensure suitable community integration can be achieved. While removing government support financially is an aim of this competition, it is recognised that the government and local authorities will play a defining role in determining the future Garden City that provides a joyous union of town and country from which springs a new hope, new life and new cohesive communities.

Chapter 2 | Vision

The Sustainable Communities Plan set out in 2003 defined sustainable communities as ‘Places people wanted to live and work now and in the future’ that must ‘meet diverse needs of existing and future residents’ and be ‘safe and inclusive, well planned, build and have good services for all.’ This idealistic description is easily attainable through a successfully laid out Garden City.

Architecture plays third string to economics and politics. Buildings help make a place but do not define a place. Communities and the way people use and interact with the built environment, their social movement and grouping defines the place. The architecture of developments provide the pieces that people react to and a successful New Garden City will ensure that there is a clear hierarchy of spaces. People do not live in plans, they live in the three dimensional reality of these plans. Therefore it is not just the size of the houses but the elevations, the wider composition and the spaces between buildings that give people an opportunity to make a place theirs; to create an identity that can be nurtured and developed.

The original principals of the Garden Cities do still remain however there must be some development or refinement if these new towns are to survive. New houses and new green space are not sufficient. Without a gainful source of employment and community buildings there becomes a risk that this nascent town becomes another commuter ghost town. The Garden City offers an opportunity to provide a settlement that is self-contained, stopping inward movement, that encourages an urban way of life in a rural setting.

Structure of the New Garden City is imperative. Gone are the days of cul-de-sac routes, so familiar to the streets of the 1970s-90s where the car dominated. Indeed the drive to bring the house closer to the street represents a fall back to the footprints of the industrial era. Long rows of monotonous poorly detailed houses line streets. Wind tunnels and parks developing over acres of tarmacadam surfaces waiting barren for the car to arrive.

On a macro scale development of a New Garden City should aspire to find space for 3000 houses. In this event it becomes possible to develop a momentum and meet a critical mass to support and justify, not only educational establishments but a polycentric village centre approach that facilitates easier phasing to the development. Taking reference from Sir Christopher Wren’s Masterplan for the City of London it is immediately clear that even 400 years ago the benefit of developing an area with key points of focus with linking roads between and a network of secondary roads worked best. At times it is not necessary to reinvent the well-established principals, it is necessary to ensure that as these large developments that grow over ten or even forty years, will change. Views on living styles will change and technology will continue to grow. It is therefore important to view what are the key aspects that need to be adaptable. The blocks

into which house can be set out is relatively easy to establish as will be seen in due course. The sprawl that blights so many outskirts is made more pertinent by the lack of focus to routes. They amble without purpose and of course often to a dead end. The masterplan of this New Garden City would ensure that there was activity and stimulus enthused through careful placing of civic buildings, high streets and pocket centres.

Currently cars look to be here to stay however the sustainability responsibilities remain and integrating both cars, cycles and pedestrian movement across the scheme is imperative. This would be possible through utilising the main roads as a feature rather than a necessity. Shared spaces, road materials and providing an environment to return common sense to those road users will make for a safer environment. Slow a car down to a speed where it forces the driver to make eye contact and cut down traffic jams by keeping traffic moving and reduce the risk to those who share this space. Line the streets with trees, utilise deep pavement zones if not raised then separated and again an aesthetically pleasing environment is developed. Reducing the impermeable miles of tarmac with permeable material may come at an initial cost however when these are considered from the start and services are all coordinated to run, not in the centre of roads, but along the pavement zones to the side it is possible to integrate and connect into the existing system as the New Garden City evolves and grows without disrupting the faster moving traffic. Considering the size of a block establishes the likely loading of waste, water and services. Understanding that this masterplan needs to be future proofed from the start ensures that routes are provided within these dedicated service routes that can be easily accessed as the requirements or technologies change.

Ensuring the success of this New Garden City will require careful response to the site. As stated in the brief it is keen to look at innovative solutions to transport. The UK has a network of transport into its cities which rivals many in Europe. Careful consideration on siting, as suggested by our focus on the site in Bexley provides such an example. Dartford provides a high speed link to the middle of London. The River Thames provides a route with an unrestricted speed limit into the City, or beyond, in the comfort of an uncluttered Underground. How these key interchanges are integrated and embraced into the scheme will not only provide a positive selling point to local businesses and residents but also provide the necessary encouragement to provide stimulus to areas of cities that currently do not benefit from such integration. Going further, when these are embraced into the masterplan of this New Garden City it is possible to develop foci of different influences, whether it be connections ‘to the river’, ‘to the trains’, or ‘to the high street’. These major centres set out the axis from which the rest of the development follows. With such focus it becomes possible to encourage private enterprise to provide financial impetus to the scheme and develop other enabling infrastructure along these routes.

The grain of blocks in plan often only tells half the story of a place but it does quickly give you an indication of the feel. Whether it is the cul-de-sacs of suburbia or the terraced rows of mining towns there remains a narrative, a narrative that does not encourage the development of communities or interaction between the inhabitants. Worse still are the seemingly arbitrary

arrangements of houses without logic that have led to areas without character, without identity and without any feeling of place.

FIG 1: The grain of the city |

Top to bottom:

Arbitrary suburbia

Cul-de-sac

Mining terraces



Unwin's publication 'Nothing Gained from Overcrowding!' sets out a vision that should be re-recognised and adapted for today's New Garden City. The arguments of efficiency in the blocks set in larger blocks where buildings are set back from the road to provide a soft barrier, as a garden, with larger gardens and communal spaces behind. Long streets lead to greater inefficiencies as seen in the figured drawings (Fig 2) adapted from Unwin's paper. Corners become wasted spaces. The last thirty years of urban planning has seen houses being brought closer and closer to the street fronts. The streetscape becomes dominated by the architecture leaving little space for those living there. Roads have no return value, as a house might, and by embracing these larger footprint of blocks it is possible to reduce the amount of roads required whilst not losing too much of the density to make it unaffordable.

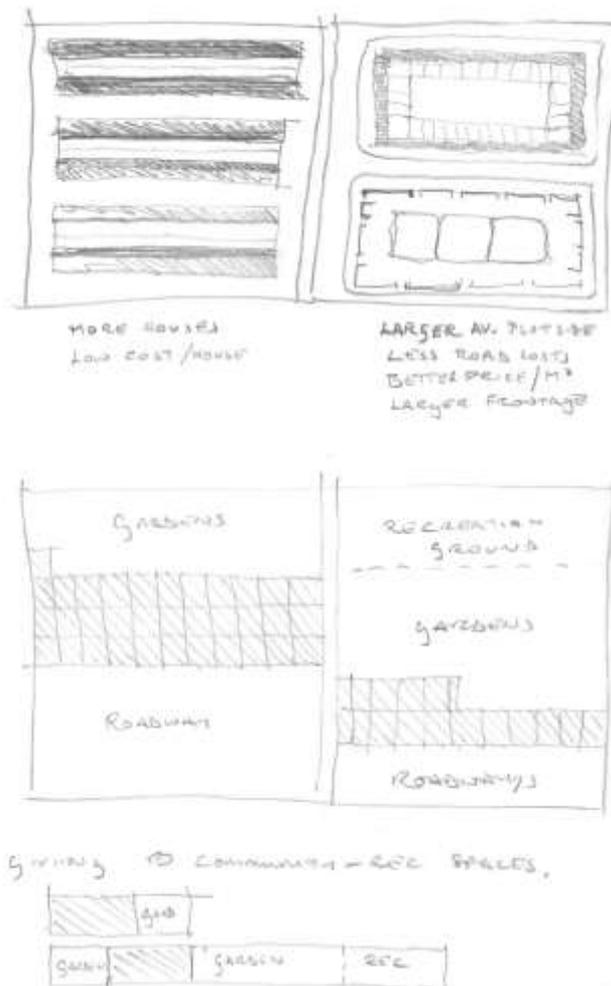
By focusing both on the threshold of the public domain, the streets and roads, with a buffer of private garden provides space were residents can safely remaining but have the option to be seen. Streets in this way begin to have some logic, a hierarchy with tree lined streets of varying sizes; it becomes possible to introduce variation and rhythm to give houses architectural interest. These houses do not need to be bespoke but rather have a coherence and consistency. It has been found that people like to be able to feel comfortable in their surroundings, founded in the recognisable style of the house but with the ability to identify which is their house through some small idiosyncrasy. Turning inside the longer gardens backing into community pocket parks, community sports facilities or recreational gardens. In all events these then become places that

encourage areas of safety, privacy and with the right quality – a sense of community. It encourages those who live around those street blocks to interact not only with their neighbour, a feature that is missing often from even the modest town terrace, to those who live on other streets. It helps to return these micro centres into their own communities with their own manageable blocks. Social cohesion can be encouraged through support from different demographics from this block. As idealistic as this may be it is often the smallest stimuli that are required to engender such interaction.

These large communal areas may seem economically inefficient uses of the land, however if the market view is altered slightly, these larger plots can be marketed to the benefit of the development. Establishing the initial market value of surrounding properties in the area can help ensure that the architects of the scheme are designing to a level of affordability from the start, working with the developers rather than as part of a chain or hierarchy and recognising the importance and value of each area of expertise. Eliminating ego and focusing on the final result is vital if the New Garden City is to be realised.

Either for a modest increase in the price the vendor can sell these as large plots. Unwin and Howard argued that though the density was reduced and therefore the return per acre was reduced (due to reduced dwellings) it was possible to look at this reduction in two ways. Firstly they argue, and we support, that it is better to be able to sell two houses at £350 or struggle to sell one at £500, and secondly would it not be easily argued that the vastly improved quality of life of the New Garden City and the additional space justified a higher price.

Fig 2.



So far the general architecture has been set out and while these blocks and infrastructure are vital in such a long term scheme that will need to adapt, it will be imperative to ensure that the principals of what happens within each of these areas matches the necessary ideals to make the Garden City work. Employment, house sizes, and the space between all must be considered in equal focus.

For each house there should be the ability to provide a place of employment. Whether this is in the construction, services, supply of the scheme or the associated businesses that are required to support a new settlement of 3000 homes it would be possible to ensure that these new homes would not place additional pressure on the surrounding areas and indeed provide new opportunities to embrace local skills. The employment aspiration would be met through careful zoning of the masterplan. As with Wren's masterplan of London or Howard's ideal Garden City the plan should identify centres within the development. From here there should be a defined centre, either around a piece of architecture such as a religious building or a park green, it would be hoped that these would be accessed on foot within easy walking distances creating 'walk-to-work' neighbourhoods.

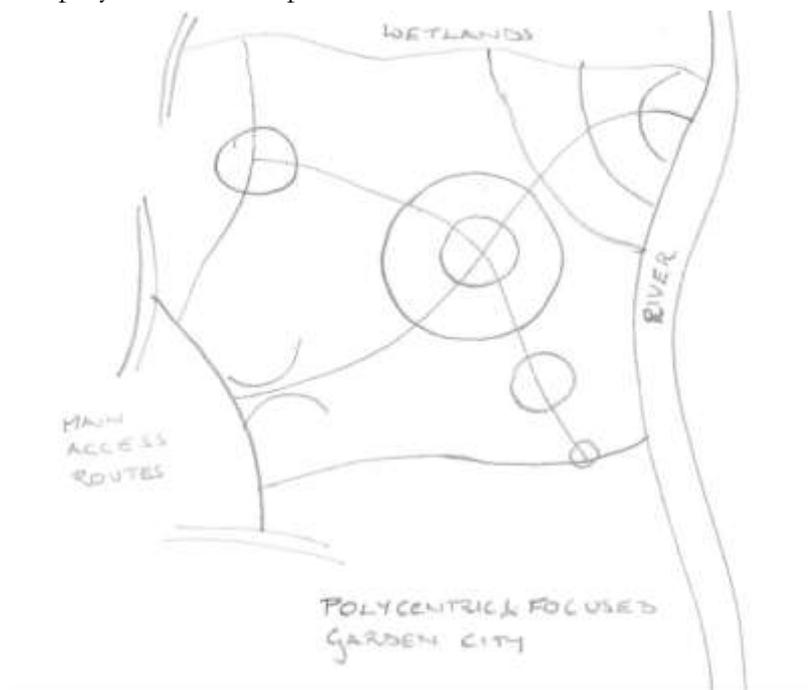
Houses and buildings are fundamentally simple objects; a roof, four walls and some openings in these walls. The quality however derives from the detail; the detail at the junction between these parts and around the openings. Care in consideration of proportion to suit each of the buildings is simple in principal but then so should the architecture. Simplicity is far harder to achieve than the far-fetched concept yet time and again this simplicity prove to provide the most satisfactory houses. The size of these houses must meet local demand and not just pander to the potentially more lucrative larger dwellings. The Tudor Walter's Report of 1918 still holds lessons that should be applied today; it was their erosion by successive post war governments, encouraging developers to build, that led to the loss of the inherent internal qualities of space that make houses a home.

As has been already set out the public spaces and green spaces have a huge part to play in the vision of the New Garden City. Community parks and open space certainly helps improve the quality of life that is lacking in many of the New Towns and suburban sprawl of our cities. However there is an opportunity to go further. With well-planned civic spaces it is possible to do more for these communities. Green spaces do not just have to be grass but could be parks or wildlife meadows that help preserve the buffers of the green belt. They could provide spaces for allotments or community orchards that encourage a return to the rural ideals of the original Garden Cities. These allotments could be adapted to provide playgrounds, integrated in to these areas thereby embracing the realities that those using the allotments may well have children who can then play safely and encourage an ideal of an agri-culture. Of course it should also briefly be

added that such spaces have the additional benefit of reducing hard surfaces thereby reducing heat islands, providing increased natural drainage and maximise the ecology benefits possible with developments.

To control this vision it would be intended to bring on board a group of house builders onto a framework agreement. In this fashion there would be a team who would be signed up to a shared ethos and vision for the development. All purchases of land pockets would be on an open book policy so that when the landowner released each pocket of land for development it will be possible for each house builder to ensure they only pay the going rate based on the past sales of land. In this fashion it then becomes in the interest of all the developers to maintain the quality of the building to bring the market value of each successive pocket increases and their returns can thus increase. By setting a series of building codes at the start that take precedent from the local area and ensuring that a design covenant controls what can and cannot be done to houses retains some control of what variations happen to the built architecture.

Fig 3: Conceptual polycentric masterplan with clear focus for routes



Chapter 3 | Economic Viability (and thus Governance)

The economic viability of a Garden City has two evident stages; firstly the initial funding stage and secondly the ongoing finance and governance of the Garden City once the construction stage has been completed. The underlying principal to both these stages should be long term economic sustainability.

This essay will largely focus on the initial funding stage since it is believed that the second stage will develop organically if the concept of localism is allowed to sufficiently fulfil itself.

Stage 1: Initial Funding

It is evident that a long term and cost effective funding model is systemic to the economic viability of creating the Garden City. Such a model will be dependent upon mutual partnership and long term vision.

Agreement of Mutual Benefit with the Landowner

Our suggested site in Bexley is owned by a single landowner who has consistently attempted to develop the proposed area and from preliminary talks is enthusiastic towards the idea of building a Garden City. This situation will allow for an agreement of mutual interest to be entered into between the landowner, the developing body and any potential developers. The establishment of such a relationship would enable the developing company to form a long term partnership with the landowner to minimise the upfront costs of purchasing the land and facilitate the sharing in the capture of value from the granting of planning permission. This would enable the developing body to avoid incurring any up front purchase costs prior to the granting of the planning permission and so maintain the economic viability of the project from its birth. The land could then be purchased in phases in an open and transparent manner from the landowner at pre agreed prices and time over the course of the development. Again, this would facilitate the spreading of the land purchase cost over a number of years and so minimise the overheads of the development in the crucial stages.

Additionally, such an approach would enable organic and sustainable growth of the Garden City by creating a series of separate urban villages which could come together to form one polycentric city. It is clear that this slow release mechanism would not only increase the economic viability of the Garden City, but would also make it a better place to live, allow the creation of naturally distinct neighbourhoods and avoid the creation of “New Town Blues”. A similar approach and the benefit of an established relationship with a single landowner can be seen from the Duchy of Cornwall development of Poundbury, Dorset.

This route would also make it unnecessary to utilise a Compulsory Purchase Order (CPO), which are unpopular since they restrict the landowners ability to benefit and impose an unnecessary financial burden upon the local authority. Additionally, it is evident that a Garden City is financially preferable to a landowner and the other parties involved and so will encourage them to enter into the agreement of mutual benefit rather than opting for an undesirable monolithic development (ICPA: 2012).

Furthermore, phased delivery would facilitate the opportunity for self funding the development of the Garden City after the initial stage. The completion and subsequent sale of the first stage of the development would release capital for the repayment of borrowings and funding of the subsequent stage. Such a process could then be repeated until the completion of the whole project.

Moreover, the establishment of such a partnership of mutual benefit would allow funding to be sought once planning permission has been granted and so would reduce the risk of the project and therefore the cost of funding.

Issuance of Notes – Utilisation of Debt Capital Markets

Following the granting of planning permission the development body can approach the debt capital markets for financing the acquisition of the land and the construction of the Garden City itself. Our suggested funding options would be divided into Construction Notes and Infrastructure Notes:

Construction Notes

The Construction Notes will consist of the issuance of conventional listed notes and sukuk. The logic behind these two funding options is to maximise the access to low cost funding for the development of the Garden City and so guarantee its economic viability. Both the conventional notes and sukuk will be issued by a Special Purpose Vehicle (SPV) established as a subsidiary of the developing company created for the development of the Garden City.

These will be made by way of a public issue on the London Stock Exchange (LSE),⁴ rather than a private placement. Whilst a public issue is more costly than a private placement, we are of the opinion that the Garden City's popularity can be assisted by enabling all to benefit financially from the successful development and so would like to allow all potential investors, rather than just institutional investors, to buy into the story. To this end, we would like to encourage an element of 'Crowd Funding' to be obtained from the current local residents surrounding the suggested site (who will benefit from the area being improved) and the to be residents of the Garden City once it is completed. This will create vested interests in the project. As such, the notes should have a low minimum denomination of £50 or £100 in order to allow all to partake.

It is suggested that the above mentioned phase delivery would be reflected in the issuance of the notes which would be issued in different tranches or drawn down from a programme for the various development stages. The note would then be repayable upon the completion of construction and the sale of the properties of each phase. However, as also mentioned earlier, it would be possible after the completion and sale of the initial stage for self funding which would make it unnecessary to seek further funding from the debt capital markets.

In light of the capital requirements as a result of Basel III, the need for low cost long term sustainable financing and the desire to create vested interests, we believe that the issuance of notes rather than traditional bank lending is the most viable economic solution.

Conventional Notes

As mentioned in summary above, the conventional notes will be issued by a separate subsidiary SPV as a retail offer listed on the LSE (i.e. in a denomination of less than Euro 100,000). These

⁴ The listing of the notes will provide liquidity of the notes and so assist in lowering the cost of funding.

notes will be secured over the land which is to be developed so as to reduce the risk of the notes and so the coupon amount and be RPI linked (so as to avoid any devaluation with inflation). Obviously, the notes will be rated by a rating agency (Standard & Poor's, Moody's Investor Services or Fitch Ratings). As noted above, the notes would be repayable upon the completion of construction and the sale of the properties. It is therefore difficult to currently suggest an accurate maturity date, however, as an estimate the maturity date would be expected to be a minimum of tens years from the date of issue (with the ability to redeem the notes at an earlier date with a low cost of redemption). At current market rates a coupon value of less than 5% would seem feasible and appropriate. Such a coupon value would represent a low cost of funding for the project, but clearly offer those investing an appealing return when contrasted with the current Bank of England base rate of 0.5%.

Sukuk

The demand for Islamic finance currently outstrips the supply of suitable investment opportunities which are *Sharia* compliant. The Islamic finance market is currently \$1.2 trillion (it is predicted to reach \$2.6 trillion by 2017) and is growing 50% faster than conventional banking.⁵ As such, utilising this market would be key to the financial viability for the construction of the Garden City. Islamic finance has traditionally been attracted to 'trophy assets' which a Garden City would clearly represent.

The above mentioned SPV would issue an asset based sukuk in order to finance the acquisition of the land and the development along side the conventional notes.⁶ A sukuk is distinct from conventional notes in that there is a prohibition of *riba* (interest) and instead the sukuk holder is entitled to a proportionate share of the returns generated by the underlying asset. Clearly, in the development stage the project will not have a revenue stream from which the sukuk holder can take a share of the profits. However, it would be permitted for a payment of a rental stream from the developing body for the use of the land purchased using the sukuk during the development stage to the SPV which will in turn be passed onto the sukuk holders. As mentioned above, the sukuk certificates would be listed on the LSE. Sukuk would also be an apt source of ongoing finance in the post construction period.

Compound

It would obviously be preferable that money due under the Constructions Notes be compounded and accumulated over the course of the construction phase and the amounts only becoming due and payable upon the completion of the project. However, it seems overly idealistic to think that investors would be willing or able to lock up their money for a period of several years (even with phased delivery) without receiving any return during this period. Whilst it would be possible to persuade investors to take a long term view and share in the upturn of the value of the land, it is evident that this would not be a viable option for many intuitional investors (e.g. pension funds) who require a steady and reliable source of income on their invested capital.

As such, it is suggested that a separate tranche of notes could be issued to investors who would be willing to postpone a return on the notes in lieu of a higher effective rate of interest (or in the

⁵See *The Economist* article in the 1st November 2013 issue:

<http://www.economist.com/blogs/schumpeter/2013/11/islamic-finance>

⁶ These funds could obviously not be utilised for the non *Sharia* compliant purposes, for example, the construction of public houses, betting shops etc.

case of sukuk a higher apportionment of the profit) which would only be paid on maturity of the notes.

Infrastructure Notes

These notes would be issued by a separate orphan SPV to the Construction Notes so as to ensure insolvency remoteness from the Construction Notes and a strong credit rating. The idea behind the issuance of these notes is to finance green and sustainable energy solutions for the Garden City. It is our intention that the Garden City should be entirely self sufficient for its own energy needs and not put any pressure on the surrounding infrastructure.

Whilst we are conscious that the project should not rely on a single penny of public money, we do believe that it would only be prudent to utilise the various green energy incentives currently on offer to finance the construction of the Garden City's energy infrastructure. To this end, it is suggested that feed-in-tariffs (FITs) revenues are secured to finance the construction of the various suggested renewable energy solutions. The current FIT rates are guaranteed for twenty years and so provide a stable and reliable source of finance.⁷ The Infrastructure Notes would take the form of a standard securitisation of the FIT revenues which would then be used to service the coupon and repay the principal upon maturity. It is suggested that the coupon should be lower than the Construction Notes due to the lower levels of risk as the FITs provide a guaranteed revenue stream. As such, a coupon of around 3% at the current market rates would seem appropriate. The maturity date should be upon the expiration of the current FIT rate regime, so currently twenty years from 1 April 2014.

The notes would be secured over the lease granted by the developing body over a separate demarcated green energy part of the site (which would be different to the area for the above mentioned Construction Notes), the right to the FIT payments and the equipment purchased from the Infrastructure Note proceeds. It should be noted that it is also intended that separate sukuk could also be issued for the raising of the necessary energy infrastructure capital.

Our suggested site would be suitable for using photovoltaic cells (solar), wind and anaerobic digestion. The site could also be suitable for other alternative energy solutions, for example tidal, but we have yet to further explore these opportunities. It seems evident that anaerobic digestion is a particularly economically viable option with a short pay back time of approximately 6 years. Moreover, anaerobic digesters provide a unique opportunity for the self sufficiency of the Garden City since it can effectively fuel itself from its own organic waste. The Garden City will be able to utilise its own sanitation and other organic wastage (as well as potentially taking additional organic waste from the surrounding area) as a constantly available food stock for the anaerobic digesters. For example, one cubic metre of input food waste can produce 6 kWh of electricity, this is in the region of 1.6 times a house's daily energy requirements for heating and electricity.⁸

In addition to disposing of the Garden City's organic waste materials and fuelling the city through the production of biogas, anaerobic digesters also produce digestate which can be used as a fertiliser. This can be applied to the growing crops in the surrounding area to assist supplying the Garden City with locally produced food products.

Crucially, our suggested site requires minimal further infrastructure investments due to the strong network of road and rail which already surround the area. Again, this is fundamental to

⁷ See <http://www.fitariffs.co.uk/eligible/levels/>

⁸ Information obtained from discussions with Agrivert Ltd: <http://www.agrivert.co.uk/>

the underlying economic viability of the Garden City since the already established infrastructure will represent a significant cost saving. However, we suggest that the sites proximity to the River Thames should be exploited by extending and improving the current River Thames transportation network. A high speed river connection would provide an enjoyable and efficient method of reaching central London and would fit well with the Mayor of London's intention to expand the River Thames transport network.⁹ Additionally, the River Thames could conveniently connect the Garden City with the proposed new airport on the Isle of Sheppey in Kent and so internationally link the Garden City.

Forward Selling Leases/Property

Evidently the forward selling of commercial leases to future business residents would provide a viable source of working capital to the Garden City during the construction phase. By offering preferential lease terms to such entities the overall risk of the commercial sites remaining unoccupied upon completion will be reduced. Clearly, this option could also be easily extended to residential property by offering the to be property owners an overall discount on the purchase price if they provide a deposit during the construction phase. Clearly these options will assist the funding of the project, but alone are not sufficient to provide the appropriate level of finance. Due to the constraints on this essay, this will not be further explored here.

Stage 2: Governance and Ongoing Finance

The popularity, viability and success of the Garden City is strongly rooted in localism, vested interests and self governance. As such, it is suggested that the developing body be converted into a governing/management company once the Garden City has been substantially completed. The people and entities who purchase property in the Garden City will be issued with an equity holding in this governing/management company.

This will allow the residents to control the policies and board of the governing/management company. The holding of equity will ensure the residents have control over the Garden City and ultimately dictate the way the city is managed. Such a structure will create a democratic approach to the running and governing of the Garden City. Furthermore, the requisite shareholders agreement between residents will contain certain covenants in respect of the common aspirations and minimum standards of the Garden City.

It is suggested that certain elements of the Canary Wharf development could be utilised to promote the success of the Garden City. Notably, the Garden City should be given the ability to offer preferential tax and business rates to companies to encourage them to locate to the new city. This would crucially attract business and generate jobs within the Garden City to ensure its economic viability and self functioning.

The large areas of communal parkland and recreational space envisaged will obviously have notable maintenance costs associate with them. It is for this reason that the forward selling of taxes was not suggested as an appropriate funding option in the initial stages since these funds will be required for the up keep of these areas in the post construction period. In such light, it is important to the economic viability of the Garden City that it controls its local tax revenues so that they can be appropriately deployed and used for the benefit of the Garden City. As mentioned above, residents can use their equity holding to dictate how their money is spent. This will maintain efficiency and legitimacy to the Garden City's local tax system.

⁹ For example, see: <http://www.tfl.gov.uk/assets/downloads/river-action-plan.pdf>

Chapter 4 | Popularity

The defining challenge of the current generation is to provide enough homes to begin to address the chronic shortage that is driving locals from areas they have lived all their lives and stopping the next dynamic generations from starting on the property ladder. Dr Patrick Clarke noted ‘we need to find new ways of creating high quality and sustainable houses at a price people can afford and in neighbourhoods where they want to live’ (Alexander: 2009, p.31). When this challenge is also faced with the reality that developments so often face; ‘everywhere but nowhere’ it becomes abundantly clear how important it is to win local communities’ support.

As has been already mentioned, many of the sites suitable for these developments are going to lie in areas dedicated at Green Belt. Inner city sites, like Earl’s Court, now command exorbitant land prices that force the starting rents to the wrong end of the intended market. The proposed density would be inappropriate with the grain of the city and are likely to be the exclusive ownership by the affluent businessman; landowners find it easier and more profitably to sell the land to the highest bidder. When Sir Patrick Abercrombie first set out the Green Belt and New Towns in his Greater London Plan in 1944 the Green Belt was established to limit sprawl and limit the loss of identity of towns and villages, subsumed by expanding cities. City sprawl really began when Dr Christopher Addison was replaced by Neville Chamberlain as Minister for Planning in 1923 who opened up the construction of homes to private builders as well as local authorities. Private builders were paid by the government to build which lead to rapid growth in the sector as builders could not build fast enough. This unrestrained growth not only led to the increased sprawl but also to the attention to detail. Indeed research carried out suggested health was suffering as greater proportions of incomes were spent on commuting rather than food and time for families was reduced as people spent more time and energy making these commutes.

The issue of sprawl was aggravated by the post war attitude became to just get the buildings complete and out the door. It is felt that this attitude has returned which has resulted in just resistance to new schemes that lack character or lasting quality. As set out in the vision above, ensuring both aspects of this are realised lies at the heart of this proposal. Much of the initial aspiration for the post war new towns were well founded however speed and finance meant that important details were cost engineered out. Now the issue is the margins that house builders and developers are striving to make at the cost of the overall quality of designs. Margins, economics and value are important but again it is felt that by focusing on affordability and key areas of quality the buildings have no reason to end up being more expensive and indeed should be designed to last longer.

Ebenezer Howard saw the Garden City as an option to unrestrained urban growth. Careful masterplanning, controlled use of agricultural land as buffers and provision of the needs and employment for the community, held the growth to the area of the site. This vision remains

unchanged. What has changed however since Abercrombie's plans is the state of many of the areas of Green Belt across the country. New roads, railways and other developments have left pockets of land that are closed to the public, often in a state of high neglect, degrading in visual as well as ecological quality. In the case of the site mentioned this has happened if the approach set out was taken on many other such sites it is felt that many of the issues of finding exceptional circumstances to develop in these areas. With local backing it has been proved on numerous planning permissions that it is possible to improve these areas deemed Green Belt. Indeed the nature of our vision to include areas of agricultural land and open parks would ensure that the principals of limiting sprawl are maintained.

This development needs to embrace the local businesses, communities and residents from the beginning. The successful precedent set of 'Enquiry by Design' provides a robust example of how it is possible to achieve incredibly productive consultation. Through a series of workshops, with different community groups, religious, health, education and social groups ensures that the main bodies can provide focused input. They draw together the views of their members allowing for more people to be consulted and focused input to the scheme to be maintained. Providing opportunities to present the schemes at the earliest stages to the public ensures that their concerns are heard, responded to and shape the design. This importantly begins to give them ownership of the scheme and therefore a vested interest. Inevitably there are recurring concerns and by notifying, informing, consulting, measure and analysing the results and then focusing the design around these comments as well as the wider vision set out above it is possible to minimise or eradicate the opposition prior to submission of planning.

Addressing employment prospects, emphasising the important points of the vision regarding provision for the community, the benefits of improving the area of land around their area, establishing the focus on public and civic spaces all go a long way to persuading the local residents that it will be possible to keep the community in place. Understanding that the requests might be large and small including provision for station parking, national cycle routes, river crossings, new footbridges, wildlife trails, secondary schools, tennis facilities, parenting course, or how heritage assets are to be retained/reused ensures that the design team and the landowner can take the best ideas and improve their scheme further. Understanding ecological sensitivities and integrating at the earliest opportunity strengthens concerns on green belt and local interests.

By carrying out consultation it is also possible to establish what the local residents' perception of the area is. It may well be that they feel that the area they are in lacks certain design elements and these two can be integrated. Traffic issues that do not show up on modelling by engineers often manifest themselves through dialogue with residents. Inspiring a community deal with affordable housing and improved local facilities will improve the likelihood these schemes will succeed.

Douglas Jay, the then Economic Secretary to the Treasury questioned Lewis Silkin's , Minister for Town and Country Planning, policy on New Towns suggesting that Letchworth, Welwyn and Slough had intensified unemployment in the North East as it provided more space near London.

Employment is likely to be a natural concern to locals, especially if areas are already experiencing high levels of unemployment. It is hoped that the vision above clearly demonstrates recognition of this issue and how this would be nullified and improved. The housing will provide a stimulus to employment rather than the other way around.

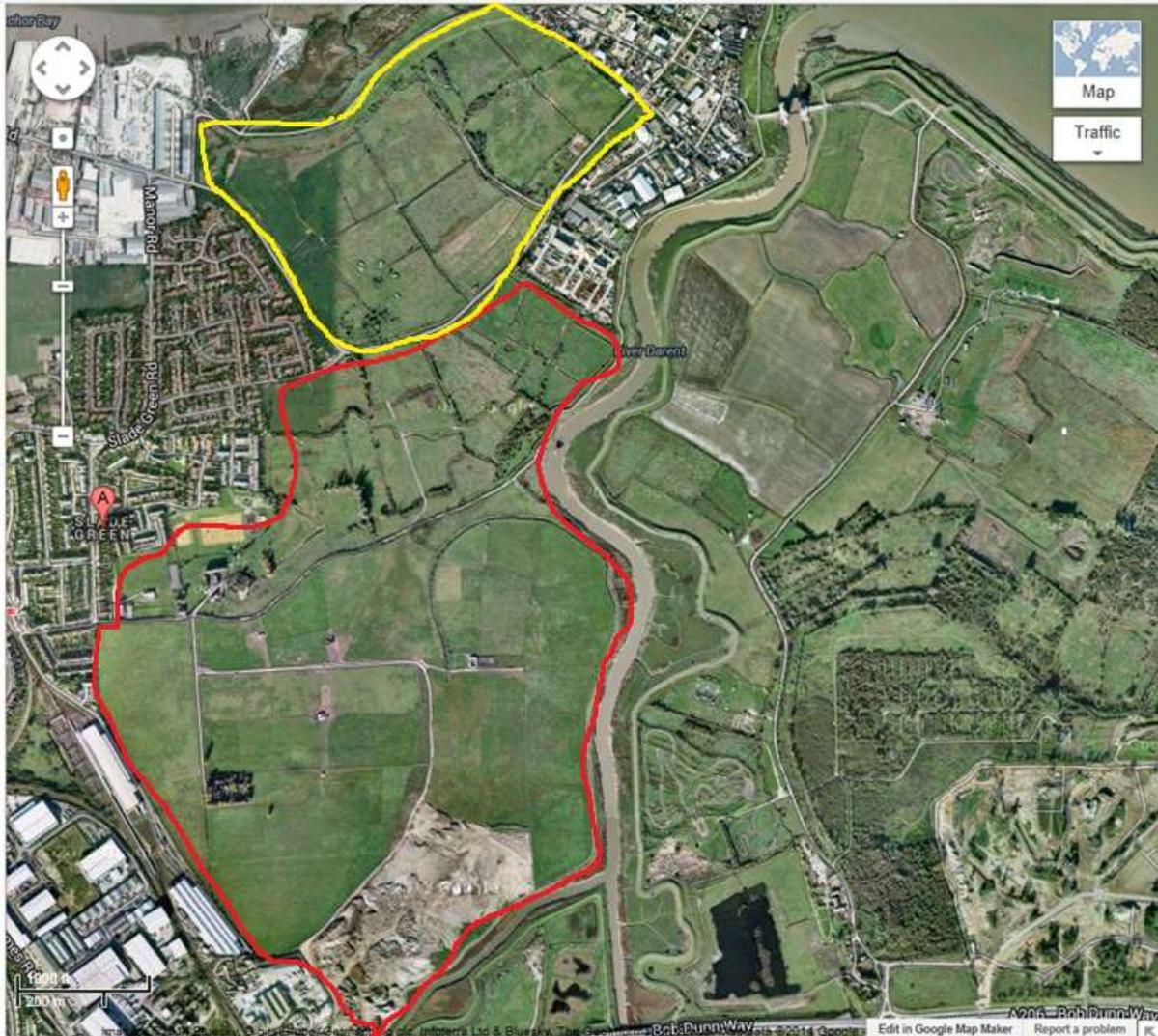
Chapter 5 | Conclusion

This Garden City that might be best named *Ambition*. The vision sets out an opportunity to improve the quality of life through numerous arms whilst reducing pressure on houses. New opportunities are presented to improve local infrastructure and most importantly local communities and neighbourhoods. The vision of the masterplan provides for long term adaption ensuring the proposals remain viable and suitable up to the point they are completely built out, enriching the area at each stage with minimal disruption.

The decline of many of the urban centres is at the heart of many of the social issues today and the Garden City offers an exciting opportunity to return families and communities to the centre of the debate on architecture. It is hoped that by returning to the ideals and interaction between different sectors of society, old and young, of different races and cultures will enrich the community. It would be an exciting result if communities could once again reconnect with their neighbours and help garner safer places for future generations.

The Garden City Movement transcends design. The ego of architecture must be removed and the input of local groups used to shape the scheme. Requirements of space and use of the space between the buildings will be strongest if those developing *Ambition* can embrace ideas of others into a framework that will engender an identity to be proud of and own.

Annexe 1



Source: www.maps.google.com

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