
A study of the function and value of small-scale urban agriculture and its potential implementation across Britain.

MA Landscape Architecture Thesis

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This thesis investigates urban agriculture on a domestic and community level. It is apparent today that within the last decade small-scale urban agricultural methods in a British urban context are becoming ever more popular, providing not only food but other incentives and benefits.

This thesis will focus on small-scale techniques exploring the options available to people and communities alike. Although the emphasis will be on how Britain can adopt urban agriculture, an insight into places around the world, for example Cuba, will be explored to understand the past and existing attitudes towards urban agriculture.

As global concerns relating to resources and prices become noticeable throughout the UK and the rest of the world, this topical issue of small-scale urban agricultural processes could open up opportunities across multiple sectors of the British population.

Urban agriculture has always been an umbrella term for a huge variety of activities embodying various scales but quite simply “Urban agriculture can be defined as the growing of plants and the raising of animals within and around cities.”¹ Although this appears to be a relatively simple understanding of what urban agriculture entails, its ambivalence directs us to delve deeper into an exploration of the technicalities and processes within this form of urban agriculture.

Andre Viljoen, the editor of *Continuous Productive Urban Landscapes (CPULs)* states that urban agriculture is “Agriculture which occurs in the city, in most cases yield market gardens for fruit and vegetable growing and found on the ground, on roofs, facades, fences and boundaries.”² This again defines the proceedings in a simplistic format but equally starts to consider where urban agriculture can actually function as well as outlining that production is predominantly a main objective and outcome. Locating where urban agriculture exists or could potentially exist starts to highlight the opportunities within urban agriculture especially on a small-scale.

This thesis will look closely at several urban agricultural situations and attitudes and expand on the function and value of small-scale urban agriculture relating directly with domestic and community processes.

It has already been outlined that urban agriculture can exist on all levels and scales; from micro farming on roof tops and in containers, community gardens to allotments, institutional gardens within schools, churches and businesses, to even larger more commercial and agro-enterprises.³

The vast subsections within urban agriculture mean that this dissertation can only challenge one single aspect, an ever growing aspect; the contemporary movement towards self sufficiency and sustainability. It will focus on a number of small-scale approaches which most people can directly relate to in life. The phrase ‘small-scale’ has an instant connotation of limits. However, its very nature is such that it becomes ideal to an urban context; with all it’s limits and boundaries. To explore these methods is to raise awareness of how this type of agriculture, which is readily available to whoever wants to realise it, can be more than simply a food

¹ *Resource Centres on urban Agriculture and Food Security (RUAF) www.ruaf.org*

² *Viljoen. A, 2005, Continuous Productive Urban Landscapes (CPULs) Designing Urban agriculture for Sustainable Cities, Elsevier, Oxford, UK*

³ *www.slideshare.net/femkehoekstra/slideshow-of-urban-agriculture-types*

productive practice in that at the same time it offers itself as economic, environmental and social values to peoples' lives and lifestyles.

Today, with our unstable financial situation and economic uncertainty in the UK, it is new types of productive methods within small-scale urban agriculture to which we as individuals and communities can turn, in order to provide our own fruit, vegetables, herbs and other fresh produce. Using techniques on a small agricultural scale in and around the domestic environment and community, for example orchards, allotments, roof gardens and container gardens would inevitably spark economic, social and environmental benefits which are vital formulae in a contemporary urban society and context.

With sustainability and environmental issues being evermore paramount to global discourse, it is justifiably imperative that people start to consider innovative, creative and fresh ideas about urban food production;

Cities are the most likely to feel the effects of any food shortages and in [the year] 2000 consultants at *Best Foot Forward* estimated that Londoners consumed 6.9 million tonnes of food, of which 81 per cent came from outside the UK.⁴

This article continues in suggesting that the transformation of cities from consumers to generators of food provides not only food security but contributes to sustainability, improved health and helps to alleviate poverty.⁵

Positive attitudes towards organic food production are steadily developing and have done so over the past decade. People are becoming increasingly aware of the organic agricultural benefits but it is still clear within British cities that there is a lack of creativity or willingness to commit to a self sufficient way of life unlike other major cities across the world for example, Havana and St Petersburg as discussed below. The opportunity in this country to grow fresh produce domestically and communally is vast and it is perhaps example set by the likes of Cuba and Russia which Britain ought to build on to operate successful small-scale urban agricultural methods domestically.

As stated by Barbara Segall; 'Whether you have a small front or back garden, rooftop or patio or even just a window box, the opportunities for growing fruit, vegetables and herbs are endless.'⁶ Urban dwellings, whether it be a house or apartment often lack large amounts of outdoor space which possibly explains why most people do not attempt to grow their own produce. However, it can be achieved and even in small, tight, shaded restricted spaces the options to grow a wide range of fruit, vegetables and herbs are there. Segall highlights that "the only way to be sure you are eating freshness and quality is to grow your own and this does not mean you have to own acres of land or spend hours working at it."⁷ It is understandable that

⁴ <http://www.buildingcentre.co.uk/LondonYieldsUrbanAgriculture.pdf>

⁵ *Ibid.*

⁶ Segall. B, 2002, *Practical Kitchen Gardening: A growing guide to produce in small urban areas*, New Holland, London

⁷ Segall. B, 2002, *Practical Kitchen Gardening: A growing guide to produce in small urban areas*, New Holland, London

people feel growing their own produce is costly in terms of both time and space, but the reality is very much that neither these have to be an issue, but rather that careful planning results in a cost-effective outcome. The whole concept of grow your own and eating organically is a notion which people are much more aware of in today's society but it is our perception of the process and methodology of growing which has to date prevented us from reaping the benefits of fresh, high quality and low cost produce.

Jim Doherty asserts that quite simply the possession of a back garden increases productivity significantly and with little careful planning you can grow a great deal of food on even the smallest of patio.⁸ This idea is supported by Hugh Fearnley-Whittinghall, a writer and broadcaster and a 'real food' campaigner who states that;

“Many people, even with small gardens can produce enough fruit for a whole year. With the simple help of storage techniques such as freezing, bottling, juicing, drying or jamming he says that fruit can be made available when it is even out of season.”⁹

The organic movement which is directly linked to small-scale urban agriculture was in full swing in the early 20th Century as a forward-facing initiative, seeking the means to provide healthier and more satisfying lives for all. As Fearnley-Whittinghall mentions when talking about an organic lifestyle; “this must be one of life's biggest satisfactions, not only does the fresh produce taste better, it is also more economical.”¹⁰ As a 'real food' campaigner this opinion about organic self sufficiency being of ultimate satisfaction, and best possible solution to life improvement could be seen as a distorted outlook taken by someone with obvious sympathies to such a lifestyle, without addressing any statistical support or evidence. However, he does elsewhere employ research to demonstrate his infatuation; the more people who find out about the way food is produced, the more they choose organic food.¹¹ This might then be argued to be a more credible outlook; suggesting that firstly there is an obvious lack of knowledge within society about how our food is produced and manufactured, limiting our concern and secondly that if we were fully aware about food production, most of us might plausibly turn to organic methods like Fearnley-Whittinghall suggests. It is right to presume that we all want to enjoy life, and it is said that a large part of enjoying life is being healthy, so with the help and guidance of professionals an organic lifestyle is possible through domestic and communal agriculture. With

⁸ Doherty. J, 2011, *A farmer's Life for Me: How to live sustainably*, Harper Collins, London

⁹ Fearnley-Whittinghall. H, 2009, *Home Grown: A Practical Guide to Self Sufficiency and Living the Good Life*, Gaia, London

¹⁰ Fearnley-Whittinghall. H, 2009, *Home Grown: A Practical Guide to Self Sufficiency and Living the Good Life*, Gaia, London

¹¹ Fearnley-Whittinghall. H, 2009, *Home Grown: A Practical Guide to Self Sufficiency and Living the Good Life*, Gaia, London

continuous awareness about self sufficiency and the relating benefits through the implementation of small-scale techniques, the popularity and success of urban agriculture ought to blossom and thrive nationally as the environmentally *du jour* and globally befitting answer.

Around the world we can see evidence of small-scale techniques expanding. Carolyn Steel identifies St Petersburg as a now recognised peri-urban capital of Europe with two and a half million inhabitants engaged in urban agricultural activities of some sort.¹² While this example of a city embracing urban agriculture includes medium to large scale approaches within private and community farms it equally provides example of the application of such urban agriculture in which “plenty of citizens also farm in their back gardens in a sort of popular version of ‘*The Good Life*.’” Thus a positive championing of self sufficiency here might be an assertion of the possibilities yet to be endorsed or wholly adopted here in Britain. As previously touched upon, attitudes towards organic production on a small-scale is very much present in Russia as in Cuba. For example, in 2003, over 200,000 Cubans were employed in urban agriculture and started to realise domestic and self sufficiency in vegetable production, producing over three million tonnes annually.¹³ This scale of urban agriculture engaging such large numbers of a population perhaps suggests that if people carried out domestic and community agriculture on a similar level in Britain, we would contribute largely to an urban agricultural environment which can only spur and generate economic and social improvement. Andre Viljoen and Katrin Bohn, UK based architects say that Cuba’s agricultural revolution has been enough to persuade them that something similar could eventually be achieved in this country. Cuba is a country in which small-scale urban agriculture is witnessed over an extensive landscape; mainly in Havana, for which this is a system rooted years of tradition. For Havana the farming movement evolved as a response, within its wider political context, to the loss of food imports and agricultural inputs which occurred towards the end of the last century.¹⁴ The significant changes within political, economic and social sectors made the agricultural movement the key component to food security. According to recent reports the scale of urban agriculture is so widespread that, over 50 per cent of Havana’s fresh produce is grown within its boundaries,¹⁵ which is a substantial figure when the population of Havana is just over two million. Cuba as the leading nation in small-scale urban agriculture gives us an example and a methodology upon which one might model urban agriculture to a blueprint suitable for British residents to be encouraged to rise to the challenge and possibilities of small-scale agriculture in their domestic environment. In Havana the residents have become

¹² Steel. C, 2009, *Hungry City: How food shapes our lives*, Vintage London

¹³ Steel. C, 2009, *Hungry City: How food shapes our lives*, Vintage London

¹⁴ <http://m.inhabitat.com/urban-farming-movement-sweeps-across-havana-cuba-providing-50-of-fresh-food/>

¹⁵ <http://m.inhabitat.com/urban-farming-movement-sweeps-across-havana-cuba-providing-50-of-fresh-food/>

creative gardeners, planting wherever they can and often on concrete ground; in back yards, disused and derelict spaces, on porches, rooftops and balconies.¹⁶ Cubans make the most of the space they have, one might argue that British people as yet do not appreciate their surroundings to the same degree and it is the rooftops, balconies, yards and disused land which we should also be looking to transform in order to be productive like the residents of Havana. Britain should then, when considering the current national and global climate, maximise space through innovation. To achieve such, when the matter is perhaps less visibly pressing as was the case for Cuba will inevitably take time and commitment, thus the roots for such a trend to take hold are perhaps in the initial encouragement and mobilisation of agriculture on a small-scale.

¹⁶ <http://m.inhabitat.com/urban-farming-movement-sweeps-across-havana-cuba-providing-50-of-fresh-food/>

Agriculture in and around the home may not appeal to general ideas of satisfaction or pleasure but there are simple approaches and tasks which make self sufficiency a pleasurable and fulfilling phenomenon. Across the country, rooftop honey farms, window box herb gardens and vegetable patches are taking root,¹⁷ and with large allotment waiting lists, especially in London, initiatives are being set out to encourage growing within communities, neighbourhoods and in the immediacy of home.

“One of the most appealing aspects of organic gardening is the idea of the garden as a unified whole where nothing is wasted and where all the creatures contribute to its productivity.”¹⁸ Bees are vital to this complete process and Jim Doherty states that, keeping bees is an option for small spaces, and cities and towns are great foraging for these industrious little insects.¹⁹ Bee keeping in London is more popular than ever and now boasts hundreds of rooftop hives, leaving the bees to do their job of producing kilos of honey with very little human input.²⁰ To see this transferred and expanded across Britain is very much a success story that ought to come of such initiatives. These examples of pocketed ingenuity provide the already existent roots and potential of small scale agriculture which ought to be encouraged and maximised. This type of small-scale urban agriculture is idealistic to everyone as a productive process which can be carried out in the smallest of spaces and require little human input. An Article in the Guardian, written by Alison Benjamin who is the co-author of ‘Bees in the City’, explains that, “In just three years, membership for the British Beekeeping Association has doubled to 20,000, as young, urban dwellers transform a rather staid pastime into a vibrant environmental movement.”²¹ Keeping bees does offer even more environmental benefits providing a small contribution to saving the planet. “By keeping just one hive you are immediately introducing 50,000 pollinators into an urban area and that can have a huge impact on the environment.”²² The Chairman of The London Beekeeping Association asserts that “an average hive costs £300 to set up, and requires an

¹⁷ Bone. V, June 2008, *Sowing the seeds of urban farming*, BBC News

¹⁸ Fearnley-Whittinghall. H, 2009, *Home Grown: A Practical Guide to Self Sufficiency and Living the Good Life*, Gaia, London

¹⁹ Doherty. J, 2011, *A farmers Life for Me: How to live sustainably*, Harper Collins, London

²⁰ Doherty. J, 2011, *A farmers Life for Me: How to live sustainably*, Harper Collins, London

²¹ Benjamin. A, 2011, *Why cities around the world are buzzing*, The Guardian

²² Benjamin. A, 2011, *Why cities around the world are buzzing*, The Guardian

hour of work a week. If maintained each hive can produce around 50lb of honey a year and can help increase wild flowers.”²³

Image 1²⁴ Rooftop hives in London



Beekeeping along with many other urban agricultural methods is nonetheless hindered by the lack of education and awareness of people who are not exposed to the possibilities of small-scale practices which can function in limited spatial urban environments. According to Paul Richens, a gardens manager and designer for Global Generation, “Most urban people are desperate to learn but there has been a break in the link of education.”²⁵ Some of his ongoing projects in conjunction with London's *Capital Growth Initiative* outline that diversity of growing can be done on the smallest of scales in London gardens. Thus, if people were to commit to its cause, diverse harvests could be reaped from applied creativity and innovation to just about any sized space.

²³ Prigg. M, 2009, *The high rise hives of East London*, *London Evening Standard*

²⁴ Prigg. M, 2009, *The high rise hives of East London*, *London Evening Standard*

²⁵ <http://www.cityfarmer.info/2011/06/22/video-tour-visit-three-urban-agriculture-projects-in-london-england/>

Image 2²⁶ Spaced Out: Allotments and urban space shortages



An article written in August 2010 reiterates that there has already been some positive shift in attitude towards self sufficiency; “Our currently frosty economic climate, and the start of the Great British love affair with ‘grow your own’ has seen allotments take root like never before.”²⁷ Image 1, a scheme in Brighton developed by Crest Nicholson and BioRegional Quintain shows how rooftop allotments and balcony planters can be integrated into urban residential builds. This as a new development has been able to take resident wishes into consideration and provide a growing space which is to many becoming pleasure and necessity. Why do more people want growing space near their homes? Small-scale agriculture is quite clearly experiencing a positive shift and with an astonishing 200,000 allotments having been lost to other prioritised development over the last thirty years, people within these densely populated cities are once again in a position of needing new space to allow for productivity. The current planning systems controlled and lead by the government arguably fails to as yet prioritise or consider this willing fraction of the population who would otherwise partake in small-scale urban agriculture.²⁸ Peoples attitudes towards urban agriculture is changing and

²⁶ <http://projectdirt.com/profiles/blogs/spaced-out-allotments-and>

²⁷ <http://projectdirt.com/profiles/blogs/spaced-out-allotments-and>

²⁸ <http://projectdirt.com/profiles/blogs/spaced-out-allotments-and>

therefore ought to be accommodated in national planning, and by the outlook of developers, designers and councils alike to move accordingly in the same direction.

The continuing optimism for planting-up small urban spaces ought not, in current circumstance, be restricted to gardens, allotments, yards or rooftops, there is equally then plenty of possibility in the form of containers or windowsills. This can only be a small cog in the system; and might then seem of little significance to any widespread visibility of production within small-scale urban agriculture. However, Fiona Reynolds, director general of *The National Trust* says that in Britain, “we’ve got the equivalent of 344 football pitches worth of growing space right on our windowsills,”²⁹ which immediately suggests that this space counts. As a nation we do not seem to yet appreciate and thus utilise our space productively; even where it is readily available and there are methods which could easily be implemented. *The National Trust* campaign which aims to transform the 600 acres of urban windowsills into vegetable gardens is a great way to communicate to people how accessible small-scale agriculture is and in the midst of price and sustainability concerns its existence is pertinent in that it can only change urban lifestyles for the better.

²⁹ Eifion. R, 2010, *Getting started in balcony farming*, *The Ecologist*

It would seem that some of the most successful cases of urban agriculture come in the shape of community gardens where local people work together, finding a shared initiative and become a productive driving force for small neighbourhoods. Leaf Street, a publicly accessible garden in Hulme, South Manchester is arguably one of the “finest examples of urban agriculture in the UK.”³⁰ This site, previously a road was turfed by the council in 1990 but in 1999, residents began talking about managing the space creatively, as a resource for community use.³¹ Following an enthusiastic consultation about changing the space, it was local initiative that churned idea into reality reconditioning the space to sport “top fruit, soft fruit, herbs, wildflowers and ornamental shrubs”³² In 2002 the community garden lost momentum, becoming somewhat unkept and so action was taken to employ a co-ordinator and gardeners along with additional volunteers to reinstate the space and with money raised the garden started to feature, “good examples of local art and sculpture and create[d] a massive increase in biodiversity of both wildlife and cultivated plants.”³³ Although this scheme initially had set out to produce food as its primary function it inevitably had to adapt to change and local conditions and thus became more of a “recreation and wildlife habitat.”³⁴ This is by no means a wholly negative shift away from urban agricultural initiative. It is still functioning as such today; hosting fruit trees on the site producing apples, pears, plums and berries for the local community. While the so called ‘guerilla gardening’ approach which initiated the garden had to adjust to the context in which it was set, this learning curve can only inspire similar initiatives across the UK.

Guerrilla Gardeners are groups of people imposing themselves on different types of urban space. The term ‘Guerilla gardening’ according to Spatial Agency, was brought about by Liz Christy who was an artist in New York in the 1970’s. Inner city neighbourhoods in New York were in decline, the middle classes had moved to the suburbs and the lack of investment resulted in the steady decline of public spaces.³⁵ In response to this negative impact upon city spaces, people started to plant tomato plants which were seen growing out of

³⁰ <http://www.foodfutures.info/site/index.php?option=content&task=view&id=31&Itemid=53>

³¹ *Ibid.*

³² *Ibid.*

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ <http://www.spatialagency.net/database/guerrilla.gardening>

even rubbish piles. In the same spirit Christy “began scattering seeds in empty spaces and planting up disused tree pits.”³⁶ Eventually community gardens were appearing and in this particular case the garden that emerged on an empty plot of land was granted community garden status protecting it from further development.

Richard Reynolds, London’s best known guerrilla gardener began projects in 2003 saying, “I had no garden of my own but right outside my flat was a grotty bit of public land.”³⁷ The plots he has developed over time are near his house in Elephant & Castle and he can now boast, “six patches, including some raised beds, two roundabouts and several tree pits.”³⁸ Reynolds’ message is simply an encouraging one to the public expressing that, it is not always an impossibility to find unused space to plant and the very theme so intrinsic to guerrilla gardening and makes it part of small-scale agriculture is the optimism to plant and grow produce in the smallest, strangest and most unusual of places. This article captures the very essence of urban agriculture; “London now boasts new varieties of urban gardener.”³⁹ That is to say that there are ultimately few limitations to small-scale urban agriculture and although guerrilla gardening might be the aggressive extreme of such initiative, the growing process highlights the largely untouched prospects within urban agriculture even on the smallest of scales.

Image 3 and 4⁴⁰ A Fragmented Orchard by OKRA Landschaftsarchitekten



³⁶ <http://www.spatialagency.net/database/guerrilla.gardening>

³⁷ Scott, I, 2011, *Gardeners in Crime*, *The Financial Times*

³⁸ Gardner, J and Stewart, V, 2011, *Evening Standard*

³⁹ *ibid*

⁴⁰ <http://www.landezine.com/index.php/2011/06/a-fragmented-orchard-by-okra-landschapsarchitecten/>

A Fragmented Orchard which was designed by OKRA Landschaftsarchitekten is an award winning public landscape design which is based between office buildings in Luxembourg. This is a project implemented for the local community to form cohesion between the building and spaces around them. The relevance this has within small-scale urban agriculture is such that this introduction of urban orchards helps to “create its own atmosphere - but everywhere passers-by are invited to pick the fruit.”⁴¹ This case study does not necessarily promote urban agriculture on any mass production level but that is not here the aim of the scheme. It is also not always the aim within urban agriculture, with the emphasis sometimes being on the creation of social spaces where people can simply appreciate aesthetics and take pleasure from the landscape as is the case with this series of orchards in very particular, carefully designed spaces.

Despite the clear differences in objective, both in terms of functionality and aesthetics within the OKRA case study and the guerilla gardening case studies, they both share the commonality of creating spaces in order to advocate production on a small agricultural level. This is a wholly positive movement and one which ought to blossom more so in its urban lifestyle context. Without public spaces such as these and without gardeners like Richard Reynolds, urban agriculture would not be see such advancement. The challenge remains that people are yet to be inspired by and yet to embrace urban agricultural processes in their own homes and communities which would in turn contribute to both national and global spheres of development.

⁴¹ <http://www.landezine.com/index.php/2011/06/a-fragmented-orchard-by-okra-landschapsarchitekten/>

'The Good Life' is a phrase which has a direct link to the concepts of 'grow your own' and 'self sufficiency' and since the days of the 'Dig for Victory' campaign during the Second World War Britain has not witnessed any such a surge of interest in one growing one's own food.⁴² It is said that 'The Good Life' program which was televised back in 1978 gave people a refreshed impression of grow your own and people started to again realise that small-scale agricultural methods could be fulfilled and become an effective way of life. Today homeowners are in possession of an often disregarded valuable asset, that of outside space and ought to understand that better use can be made of their gardens, yards, roofs and balconies. Jim Doherty explains that, people today can take their first steps towards setting up their very own version of 'The Good Life', whether it is growing their first vegetables, collecting back yard eggs or bottling their first jam.⁴³ It is becomingly increasingly obvious that there are endless possibilities within small-scale urban agriculture and that with a new emphasis and understanding about food production in the minds of designers, gardeners, farmers and communities, the current lack of awareness about this type of lifestyle can be addressed and help British people move forward in carrying out high levels of domestic and communal urban agriculture on a small-scale. Mikey Tomkins, a current PhD student, is a beekeeper and works at Sustain as the Chief Bee Officer -promoting beekeeping in London. He himself largely supports the idea of expanding peoples' knowledge of small-scale urban agriculture. In an interview with Luke Miller Callahan (the founder of internet site; thesocialistcapital.com) on the subject of London's potential for urban agriculture, Tomkins expresses strongly that there needs to be an awareness from people of the importance of being engaged within the food subject and the need to think about the resilience of the cities and their own adaptability of space.⁴⁴

Having gathered evidence about the many opportunities with small-scale urban agriculture and expanding on the diverse range of ideas which individuals and communities alike can apply to their own space, it is important to outline, apart from the obvious benefits, the clear values which urban agriculture on the small scale can offer. The potential for Britain, as a forward-thinking and ever changing nation, to encourage and promote small-scale agriculture is becoming more imperative given that in London alone about "60 per cent

⁴²Beazley, M, 2009, *Royal Horticultural Society; Grow your own kitchen garden year*, Octopus Publishing, London

⁴³ Doherty, J, 2011, *A Farmers Life for Me: How to Live Sustainably*, Harper Collins, London

⁴⁴ <http://www.cityfarmer.info/2011/04/19/london's-potential-for-urban-agriculture/#more-11605>

of all land is green space and at least half of households have gardens”, it makes a great deal of sense for this organic movement to transform these spaces for economic, social or environmental values.

Continuous Productive Urban Landscapes (CPUL's), as Andre Viljoen states, “seek to form a strategy and a vision for the future to generate a healthy place for all.”⁴⁵ This concept does try to tackle the current issues facing the world today like CO2 footprints and food security but one might question whether this is then trying to enforce too much on well-established cities with well-established people inhabiting them. The strategy has its arguments which say that “in the next twenty years and as the global food production increases so does the number of people going hungry especially in urban areas.” This suggests that action does need to be taken and a strategy of some description ought to be implemented.. However, the scale of the strategy can operate initially on a small scale; where people start to take responsibility of their food production, where communities work together to provide for each other and where derelict urban spaces can become productive spaces. All of this cannot be delivered as an overnight operation. Its implementation can only initiate a sense of stability and for this to then strengthen, the communities and neighbourhoods are required to embrace such lifestyle changes. The success of this planting of an idea then has the potential to become the planting of a larger strategy in urban environments across Britain. In this same way, as touched on previously, small-urban agriculture has economic benefits, being in some way beneficial to absolutely everyone. “According to DEFRA 38 per cent of the food we eat in Britain is now imported. The figure includes half of all our vegetables and a staggering 95 per cent of all our fruit.”⁴⁶ This appears even more astonishing when considered alongside the fact that more than half of this food imported “is indigenous food in season; in other words, we could have grown it ourselves.”⁴⁷ It is clearly then not for sake of exotic tastes that this level of importation exists. Economically for Britain it therefore makes a lot of sense for us to consider urban agriculture regardless of scale. These figures are otherwise shameful. The underlying truth is that the country is presented with conditions suitable for growing these basics and as a matter of choice it is rejecting the urban potential. If people turn to organic production methods, our food expenditure will not disappear by any means but will be significantly reduced in comparison with high food prices nation wide which are only going to rise over the coming years. There is little reason for Britain to hold onto such examples of out of date trade.

⁴⁵ Viljoen. A, 2005, *CPUL's: Designing Urban Agriculture for Sustainable Cities*, Elsevier Ltd, Oxford, UK

⁴⁶ Steel. C, 2009, *Hungry City: How food shapes our lives*, Vintage London

⁴⁷ *Ibid.*

The economic benefits while functional in persuading a large amount of people to consider an organic lifestyle, only become significant alongside social benefits; both domestic and communal, which equally might attract people to live by this a productive lifestyle. Socially, small-scale urban agriculture helps bring families and communities together by providing them with one aim which will benefit everyone. In addition to this, urban agriculture at a small scale provides people not only with a direct link to food production but also educates people who, in general, are somewhat removed from food production,⁴⁸ and the awareness of what can be done in an urban context. Mitchell Beazley an RHS author, supports this notion saying that, “Gardeners are not only saving money but are finding that growing fruit and vegetables is a pleasurable and healthy activity and one which the whole family can take part in at home.”⁴⁹ Today people of all ages can become entirely involved in urban agriculture and experience the many values, none more so than

the enjoyment of actually going out there and growing. It is a great way to keep healthy and also a way of preserving community cohesion.⁵⁰

This communal togetherness is something that has come out of most of the case studies explored above and such cohesion appears to be a vital ingredient for the overall success of small-scale urban agriculture.

Perhaps most important in terms of discourse today is to consider the environmental values of small-scale urban agriculture. It is arguable that that if we produce food within our own space and within our own communities we are not only increasing the amount of local produce for a specific area but also decreasing our carbon footprint. According to Andre Viljoen, “CO2 emissions are projected to increase by two thirds in the next twenty years and as global food production increases so does the number of people needing food, especially in urban areas.”⁵¹ It is very much down to the communities in urban areas to therefore take it upon themselves to explore realistic agricultural techniques which are for now can be at the smallest scale. Figures show that, “Food production, processing and transportation is responsible for 8 per cent of the average person’s carbon footprint. We can reduce this by using green space in towns and cities to grow our

⁴⁸ <http://sidewalksprouts.wordpress.com/ua/benefits/>

⁴⁹ Beazley. M, 2009, *Royal Horticultural Society; Grow your own kitchen garden year*, Octopus Publishing, London

⁵⁰ Beazley. M, 2009, *Royal Horticultural Society; Grow your own kitchen garden year*, Octopus Publishing, London

⁵¹ Viljoen. A, 2005, *CPUL’s: Designing Urban Agriculture for Sustainable Cities*, Elsevier Ltd, Oxford, UK

own fruit and vegetables.”⁵² The reduction of food miles is becoming more crucial in today's world with a constant emphasis on greening the city and making sure everything is done to maximise sustainability.

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CABE: <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/sustainable-places/advice/urban-food-production>

The beginning of this thesis set out with specific questions looking to explore the functions of small-scale urban agricultural techniques and what is ultimately the extent of their value in a contemporary context. The objective sought to expose variants of small-scale approaches in agriculture as applicable to British cities, urban environments which might adopt and embrace such methods of livelihood in order to be self sufficient and sustainable in the face of unpredictable futures.

Cuba, as mentioned above is a nation at the forefront of such agriculture and findings show that British cities, whilst they need not be as reliant on the intense urban agriculture understood to exist in Havana, could still certainly adapt to methods of small-scale production and employ them within a British urban context. Having explored its existence in a Cuban setting; their forward thinking attitudes in how to produce food for themselves, their families and communities; it can be asserted that such commitment can have an overwhelmingly positive impact upon British cities. Already in place are the various spatial environments necessary for such initiatives namely; porches, rooftops, balconies, gardens, yards, window boxes to name but the most obvious; which are more than accommodating of productive incentives.

Small-scale urban agriculture can occur in the domestic environment as well as in the community and something which has become apparent throughout this thesis is that in the various referenced case studies, the very sense of community and cohesion between people is intrinsic to such individually lead small-scale urban agricultural schemes and any resulting positive outcome. It seems that although there are viable agricultural approaches for people to utilise within their immediate environments, it is the dominance of a community spirit within urban agriculture which might prove remarkable. Perhaps then one must look to this this 'community' element, the community and individual mindset to allow for the rooting of urban agricultural values in Britain and this thesis would then argue that this smaller-scale agricultural development in an urban setting is that which might prove most effective in a British urban setting.

Both People and organisations will forever compete to create grand strategies which aim to solve problems for entire cities like London. However the reality exists that the individuals within this frame are those who need to find and embrace the styles within urban agriculture that can prove most fitting and flexible to their environments and situations. It is again these individuals who with substantial encouragement, initiative and awareness of what urban agriculture is and offers who will make the biggest differences in society and the

environment around them. CPUL's are just one example of this overall strategic reach which aims to solve many environmental issues facing our cities today but the very concept of making a city self sufficient embodies the essence of grassroots development and therefore individuals can only look to these larger corporations for support and guidance rather than initial implementation.

It is incentives from green campaigners like 'Sustain' which will provide the new awareness and enthusiasm for growing, and the network director of Sustain, Ben Reynolds said in a BBC4 radio show: "What we're seeing at the moment is a real passion for growing more, which is slightly different to situations in the past where urban agriculture has really come through crisis, like Dig for Victory."⁵³ Reynolds goes on to say, "Its going to happen. (Urban growing) More people want to do it, and sooner or later, more people will have to do it as food prices start rising."⁵⁴ Interestingly Reynolds mentions Dig for Victory which is another conclusion which this thesis has arrived at, noticing that a lot of the activities which are classed as small-scale urban agriculture are ones which people actually engaged with in the past. Activities like bee keeping, allotments and orchards are all elements of this new organic movement towards being self sufficient and environmentally friendly but although there are new techniques and modern innovative ways of being productive it is not a newly conceived concept by any means. The task in hand is actually putting the techniques in place. Again these types of processes were important at other hard times for the country but it looks like this time the urban agricultural movement is going to have to be a more permanent one meeting the demand of a growing nation. In London, "Capital Growth offers practical advice and support to communities that want to grow their own food, including getting access to land."⁵⁵ This highlights a definite shift in the way people are thinking and only with more appropriate planning and advice will other communities start to see the what can be achieved through small-scale urban agriculture.

The lack of awareness and education about food production and processes is evermore the missing link. An overwhelming number of urban society remains clueless to the consequence of existing lifestyles. It is therefore arguable that attitudes are deep-rooted and will not embrace aimlessly an unfamiliar lifestyle; that of organic and urban agriculturalists but if the messages about small-scale agriculture can be distributed and successfully conveyed in to urban communities then it is self-evident favour can be found for the prospect of positively changing lifestyle. "People are discovering the brilliant results of produce picked from their own

⁵³ Bone. V, 2008, *Sowing the seeds of urban farming*, BBC News

⁵⁴ *Ibid.*

⁵⁵ CABE: <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/sustainable-places/advice/urban-food-production>

gardens or yards compared with the dull and uninspiring produce we get in a supermarket, as well as the other benefits of saving money, energy and replacing fossil fuels, and generally going green even with a small plot of land or space.”⁵⁶ Another possible hurdle within Britain is then to find means by which people will recognise the overriding benefits of implemented urban agriculture above otherwise stereotypical views of agriculture as beneath them or unnecessary. Traditionally and naturally people relate agriculture to a rural setting because of its vast open space, and suitable conditions. Some would suggest this is the way it has always been and therefore refuse to take the rural process out of its rural setting. The challenge today is to dispel such rigid associations. The boundaries between rural and urban ought to like so many social categories become blurred, with no clear segregating divide of where food production starts and stops across landscape. This aside, whether individuals and families want to turn to small-scale agriculture for economic, social or environmental reasons is ultimately a question of choice and inspirational discussion can only take it so far. The strengths and opportunities of these initiatives are overwhelming but to reap their benefits the individual must find these truths first. Organic is in itself a natural phenomenon and the very nature of ‘natural’ would suggest that its drive must be organic and must derive from the spirit and understanding of those propelling it forward. These changes are significant and inevitably take time to find strength and take hold. It is at least with new awarenesses and growing initiatives in education about the benefits of small scale agriculture that people will get the chance to consider new growing methods before the concept of self sufficiency becomes a fundamental necessity in changing environmental climates and shifting global settings. Although small-scale agriculture has not found backing across Britain and as yet perhaps never will, the future beckons such change. With the support of new incentives and Government backing, organisations and professionals including landscape architects can help guide urban spaces towards as much production as possible and to become valuable assets to not only families and communities but to an ever-changing global setting.

⁵⁶ *McLaughlin. E&T, 2010, Cost effective self sufficiency, F+W Media, UK*

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