

Chatnam Lee_MRP_01092019

by Chatnam Lee

Submission date: 01-Sep-2019 10:11PM (UTC+0100)

Submission ID: 110425804

File name: 64225_Chatnam_Lee_Chatnam_Lee_MRP_01092019_1212390_1546411311.pdf (11.59M)

Word count: 16045

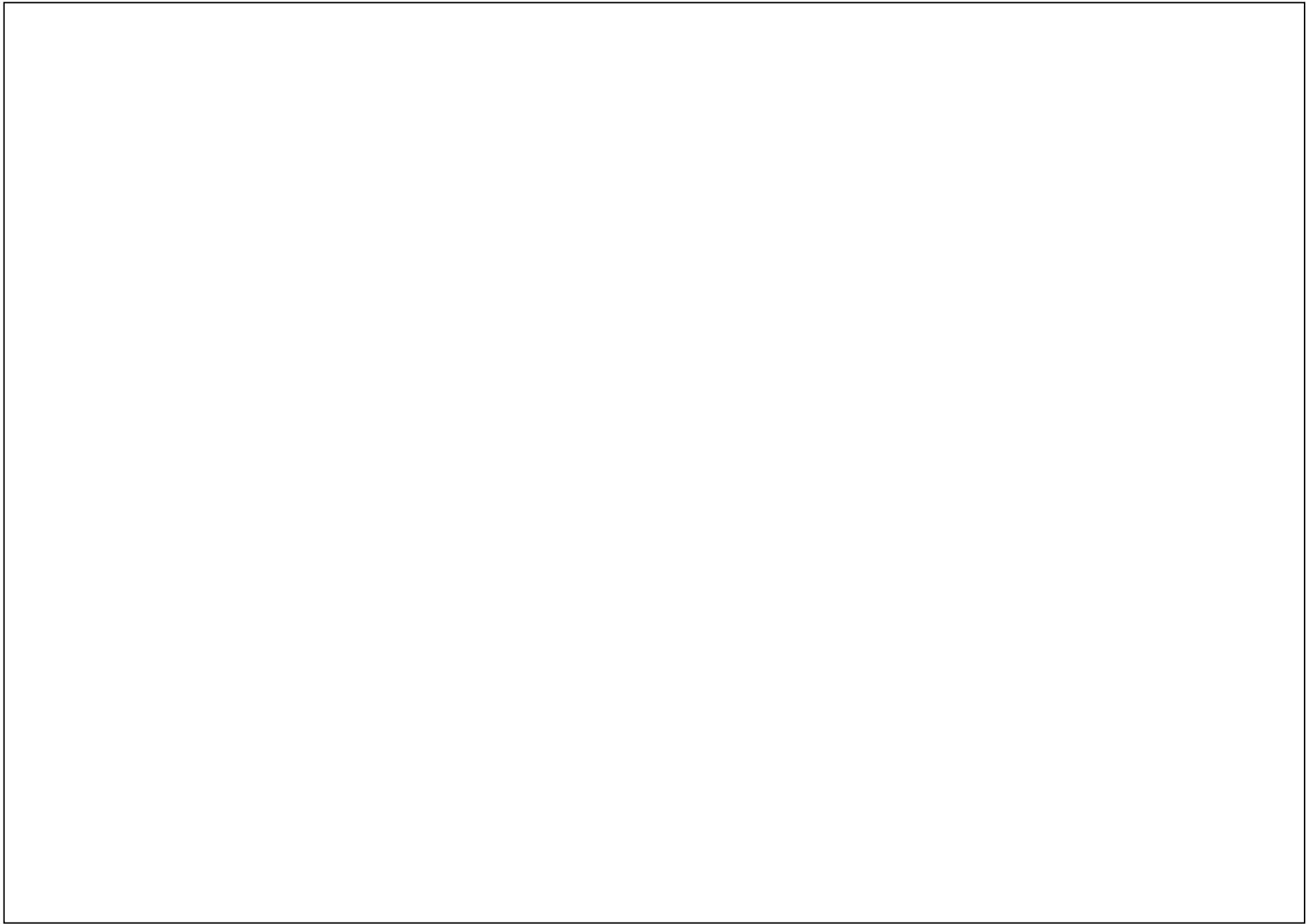
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EDIBLE POPLAR

*Retrofitting Underused Urban Spaces in
Poplar with Community Urban Farming to Nudge
Sustainable Urban Living and Empower Communities*

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BARTLETT SCHOOL OF PLANNING

MAJOR PROJECT:

Edible Poplar

*Retrofitting Underused Urban Spaces in Poplar with Community Urban Farming
to Nudge Sustainable Urban Living and Empower Communities*

CHATNAM LEE

BA Planning, Geography & Environmental Policy

*Total Word count: 10,897 - within 10% allowance
(Main Text: 8,720 + Visual Material: 2,177)
Appendix: 1,246*

Being a Major Project in Urban Design and City Planning submitted to the faculty of The Built Environment as part of the requirements for the award of the MSc Urban Design and City Planning at University College London,
I declare that this project is entirely my own work and that ideas, data and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

Signature:



Date: 1/9/2019

Acknowledgements

Firstly, I would like to express my gratitude to my supervisor - Dr Elanor Warwick for her continued support and reassuring guidance throughout this major research project. Her expertise and insights on community development has inspired me immensely through my research and design process. It is my absolute pleasure to be supervised by Elanor for my final design project at the Bartlett.

I would then like to thank the teaching staff at the Bartlett School of Planning for their support during projects and valuable insights into the built environment profession.

Last but not least, I would like to thank my friends from the MSc Urban Design and City Planning Class of 2019. Thank you for the friendship that you have given me and company during the long nights in the studio, making this a fruitful and unforgettable year.

And finally, I would like to dedicate this project to my parents and Faith who have always believed in me and their loving support throughout every season of my academic life.





Abstract

Many inner-city neighbourhoods are challenged with social deprivation and poverty induced food insecurity, where local communities' access to affordable and healthy food is increasingly limited due to rise in food prices associated with long supply chains. Consequently, the practice of Community Urban Farming becomes an essential remedy for urban food insecurity in many cities, including London, which has a well-established yet fragmented network of urban food growing projects. Community Urban Farming simultaneously acts as a driver for social cohesion and sustainable living patterns in urban neighbourhoods through promoting a more localised food system.

Despite the many benefits, there are a number of challenges that threaten the survival and the upscaling of Community Urban Farming – including lack of secure land tenure, inconsistent funding and insufficient support from local authorities to help sustain Community Urban Farming activities. These are all stemming from a gap that exists between theory and practice of urban farming in the built environment profession, as well as a failure to reconcile urban planning objectives with those of food system planning.

Through exploring the factors that resulted in the successes of urban farming precedents across the UK and other countries, this research project aims to develop a toolkit for sustainable Community Urban Farming, and “Edible Landscapes” in various urban settings. The toolkit will include management and design principles that local communities, planners and local authorities can apply to the development and upscaling of Community Urban Farming across London. Furthermore, the toolkit sheds light on ways to secure the necessary recognition by local policies that is crucial to maintaining the long-term sustainability of Community Urban Farming. The toolkit will be applied to Poplar, London, for testing of its feasibility and to demonstrate its potential in delivering an array of community benefits.

Table of Contents

01 Introduction

1.1 Project Background	p.1
1.2 Research Questions and Objectives	p.3
1.3 Methodology	p.4

02 Literature Review

2.1 Historical Transformation of CUF	p.7
2.2 Typologies of CUF	p.8
2.3 Positive Outcomes of CUF	p.9
2.4 Barriers of CUF	p.11
2.5 Food Sensitive Planning and Urban Design Principles	p.12
2.6 Characteristics of Successful Community Urban Farming Projects	p.13
2.7 Conceptual Framework	p.14

03 Case Study Analysis

Case Study Analysis Methodology	p.17
3.1 Incredible Edible Todmodern	p.18
3.2 Growing Communities Hackney	p.19
3.3 Princess Garden Berlin	p.20
3.4 Urban Harvest St Louis	p.21
3.5 Draft Toolkit	p.22

04 Site Analysis

4.1 Overview of Chosen Site - Poplar	p.24
4.2 Demographics of Poplar	p.25
4.3 Policy Background & Justification of Study Area	p.26
4.4 Hierarchy of Open Spaces	p.27
4.5 Existing Community Urban Farming Projects	p.28
4.6 Food Desert Mapping	p.29

4.7 Accessibility	p.30
4.8 Refining the Toolkit	p.31
4.9 Identifying Potential Sites	p.32
4.10 Overview of Selected Sites	p.37

05 Application

5.1 "Union Kitchen Garden"	p.40
5.2 "Mayflower Veg Patch"	p.43
5.3 "Newby Apothecary Garden"	p.46
5.4 Management Framework	p.49

06 Conclusions

Project Reflection, Transferability & Limitations	p.52
Bibliography	p.53

07 Appendices

Appendix 1: Case Study Network information	p.55
Appendix 2: Political and Social Development of Poplar	p.56
Appendix 3: Poplar's Land Uses	p.57
Appendix 4: Management Strategy - Funding Trajectory	p.58
Appendix 5: Interview Consent Forms	p.59

List of Figures

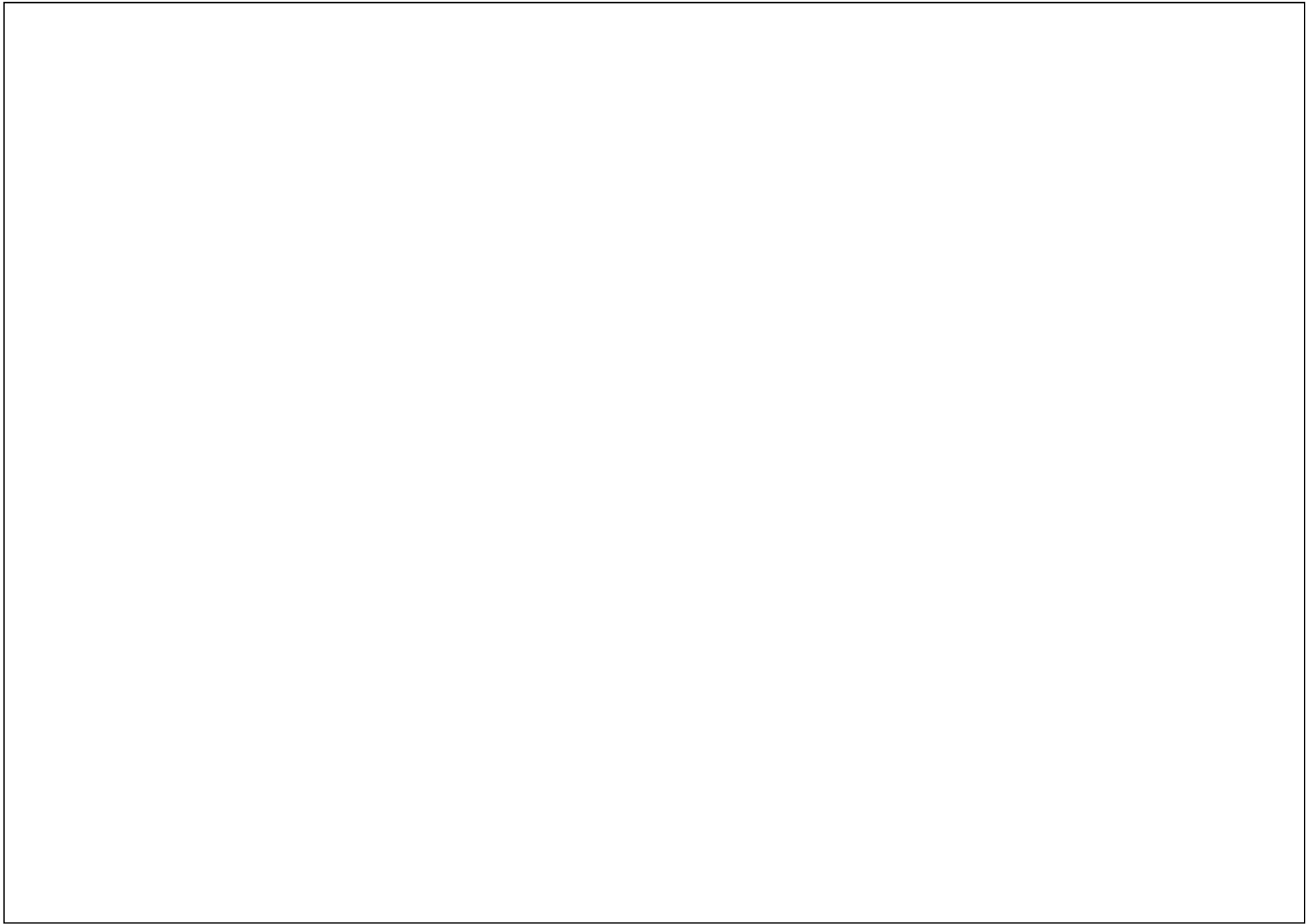
All figures are author's own work unless stated otherwise

Figure 1 London Policies	p.1	Figure 35 Poplar's Wider Spatial Context	p.24
Figure 2 CUF in London	p.1	Figure 36 Poplar's Demographics	p.25
Figure 3 Project Rationale	p.2	Figure 37 Policy Hierarchy	p.26
Figure 4 Contributions to Practice	p.2	Figure 38 Chosen site boundary	p.26
Figure 5 Research Questions and Objectives	p.3	Figure 39 Bartlett Park - currently undergoing regeneration	p.27
Figure 6 Methodology	p.4	Figure 40 Lansbury West Estate - underused open space in front of estate	p.27
Figure 7 History of CUF	p.7	Figure 41 Roaside liminal space adjacent to an inactive frontage	p.27
Figure 8 Typologies of CUF	p.8	Figure 42 Open Space Map	p.27
Figure 9 CUF Environmental Outcomes	p.9	Figure 43 Silver Gardeners Rooftop Garden	p.28
Figure 10 CUF Societal Outcomes	p.10	Figure 44 Devitt House Community Garden	p.28
Figure 11 Threats of CUF	p.11	Figure 45 Brownfield Estate Community Garden	p.28
Figure 12 FSPUD Key Principles	p.12	Figure 46 Poplar's Existing CUF	p.28
Figure 13 Successful CUF Characteristics	p.13	Figure 47 Chrips Street Market groceries hub	p.29
Figure 14 Summary of Literature Review	p.14	Figure 48 Convenience Stores (Source: Google Maps Streetview)	p.29
Figure 15 Case Study Methodology	p.17	Figure 49 Unhealthy fast food and takeaways	p.29
Figure 16 Polination Street (Source: Incredible Edible Todmodern, 2008)	p.18	Figure 50 Food Desert Map	p.29
Figure 17 Raised beds outside of Todmodern Police Station (Source: same as above)	p.18	Figure 51 Pedestrian alley connecting Poplar DLR with Poplar High St.	p.30
Figure 18 Todmodern Health Centre Apothecary Garden (Source: same as above)	p.18	Figure 52 East India Dock Road (A13)	p.30
Figure 19 Growing in school yards... (Source: same as above)	p.18	Figure 53 Local road beside Bartlett Park	p.30
Figure 20 Clissold Park Market Garden (Source: Growing Communities, 2011)	p.19	Figure 54 Road Hierarchy	p.30
Figure 21 St Paul's West Hackney Vicarage Garden (Source: same as above)	p.19	Figure 55 Refined Toolkit	p.31
Figure 22 Growing Communities Veg Scheme (Source: same as above)	p.19	Figure 56 Potential sites locations	p.32
Figure 23 Stoke-Newington Farmers Market (Source: same as above)	p.19	Figure 57 Potential sites assessment methodology	p.32
Figure 24 Brownfield site at Marienplatz prior... (Source: Prinzessinnengarten, 2009)	p.20	Figure 58 Bartlett Park Aerial View	p.33
Figure 25 Transformation of site into CUF garden (Source: same as above)	p.20	Figure 59 Park is largely unprogrammed playing fields...	p.33
Figure 26 Using recycled materials... (Source: same as above)	p.20	Figure 60 Poplar Union	p.33
Figure 27 Cafes built out of retrofitted and upcycled... (Source: same as above)	p.20	Figure 61 e5 Roast House Cafe	p.33
Figure 28 Flea Market (Source: same as above)	p.20	Figure 62 Outdoor seating providing passive surveillance...	p.33
Figure 29 Experimental playground built from recycled timber (Source: same as above)	p.20	Figure 63 Trinity Garden Aerial View	p.34
Figure 30 Food Roof Farm (Source: Urban Harvest, 2011)	p.21	Figure 64 Site is characterised by overgrown shrubs	p.34
Figure 31 Shaded community hub space... (Source: same as above)	p.21	Figure 65 Set back from East India Dock Road...	p.34
Figure 32 Fance School Garden (Source: same as above)	p.21	Figure 66 Park is used as thorough by parents...	p.34
Figure 33 Yoga classes on Food Roof Farm... (Source: same as above)	p.21	Figure 67 Many parents are seated outside school gate waiting...	p.34
Figure 34 Draft Toolkit	p.22	Figure 68 Chrip Street Market Aerial View	p.35

Figure 69 Marketplace providing local residents...	p.35
Figure 70 Planters with seating at the entrance...	p.35
Figure 71 More planter boxes throughout market...	p.35
Figure 72 Newby Place Aerial View	p.36
Figure 73 Centrally located GP practice along East India Dock Road	p.36
Figure 74 Well-maintained planting, monument at centre of site...	p.36
Figure 75 Site faces onto Newby Place and All Saints Church...	p.36
Figure 76 Selected sites for application	p.37
Figure 77 Union Kitchen Garden Site Plan	p.40
Figure 78 Retrofitting with surroundings (Bartlett Park)	p.40
Figure 79 Union Kitchen Garden envisaged transformations	p.41
Figure 80 Raised beds retrofitted into Oxbow Park, Seattle... (Source: Hou & Grohmann, 2018)	p.41
Figure 81 Clissold Park Market Garden (Source: Growing Communities, 2011)	p.41
Figure 82 Union Kitchen Garden illustrative section	p.41
Figure 83 Union Kitchen Garden Potential Stakeholders	p.42
Figure 84 Mayflower Veg Patch Site Plan	p.43
Figure 85 Retrofitting with surroundings (Trinity Garden)	p.43
Figure 86 Mayflower Veg Patch envisaged transformation	p.44
Figure 87 Dalton St Mary's Primary School Food Garden... (Source: Royal Horticulture Society School Campaign)	p.44
Figure 88 Flance Early Learning Centre Food Garden, St Louis (Source: Urban Harvest, 2011)	p.44
Figure 89 Mayflower Veg Patch illustrative section	p.44
Figure 90 Mayflower Veg Patch Potential Stakeholders	p.45
Figure 91 Newby Apothecary Garden Site Plan	p.46
Figure 92 Design retrofitted with surroundings (Newby Place)	p.46
Figure 93 Newby Apothecary Garden envisaged transformation	p.47
Figure 94 Urban Physics Garden (Source: Wayward, 2011)	p.47
Figure 95 Todmodern Health Centre Apothecary Garden (Source: Incredible Edible Todmoder; 2011)	p.47
Figure 96 Newby Apothecary Garden illustrative section	p.47
Figure 97 Newby Apothecary Garden Potential Stakeholders	p.48
Figure 98 Upscaling roadmap	p.49
Figure 99 Land Bank Strategy	p.50

Abbreviations

CUF - Community Urban Farming
LBTH - London Borough of Tower Hamlets
THLP - Tower Hamlets Local Plan
THGGS - Tower Hamlets Green Grid Strategy
GLA - Greater London Authority



0 | Introduction

1.1 Project Background

Rapid urbanisation continues to challenge the provision of affordable food in cities, making food insecurity increasingly prevalent in low income and socially deprived urban neighbourhoods (Cabannes & Marocchino, 2018). Rise in food prices in urban areas from long supply chains of multinational grocery chains is frequently seen in cities such as London. It was estimated in 2017 that 50% of food consumed in the UK was imported from the EU and worldwide (DoEFAR, 2017).

Encouraging the practice of Community Urban Farming (CUF) is one remedy for urban food insecurity, particularly in socio-economically deprived neighbourhoods that are often food deserts with limited access to fresh food (Ackerman et al., 2014). However, research shows that CUF isn't only an end to providing a local source of food but also fosters community cohesion (Glover et al, 2017 & Tomaghi, 2017). Many CUF sites are simultaneously community focal points that encourage other forms of social co-production, as well as a place for communities to learn about the food system and to reconnect with nature. Nevertheless, the expansion and sustainability of CUF is under threat. The most profound barrier is the disconnection between food system planning and urban planning practice, stemming from lack of research into this relationship. Consequently, a gap remains between theory and practice of CUF in cities which leads to its lack of acknowledgement in local policies, where planners fail to recognise CUF as a formal land use.

Such trends are observed in London where there has been a long history of community gardening and allotments. Figure 1 shows that the recent London Plans show increasing effort put towards encouraging more CUF across the city. However, policy aspirations from both London Plans remain vague in outlining implementation at local level. As a result, these policy aspirations are not consistently transposed into local policies to guide implementation at neighbourhood levels. This is reflected in Figure 2, which highlights the unequal distribution of CUF across the city. In boroughs that have more CUF projects, these are either supported by local policy guidance (e.g. Good Food for Camden) or well-established CUF organisations (e.g. Growing Communities in Hackney). As a result, CUF tend to be under-represented in areas of London that lack these types of local support, demonstrating the importance of policy support and multi-stakeholder involvement to deliver sustainable CUF.

Figure 1 London Policies

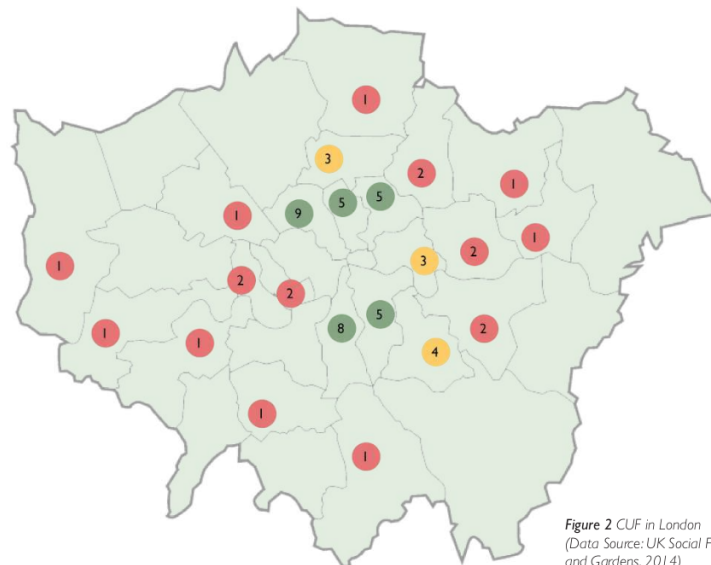


Figure 2 CUF in London
(Data Source: UK Social Farms and Gardens, 2014)

Therefore, it is the aim of this research project to bridge the gap between theory and practice of CUF, by examining its benefits, different typologies and barriers that hinder its sustainability. This knowledge will be gathered into a toolkit to provide design and management guidance in transforming underused urban spaces into sites of CUF. By identifying and concentrating on Poplar in East London, this study presents a contextualised toolkit and relevant case studies that could form the basis of local Supplementary Planning Guidance to fit within current planning implementations across the borough. Furthermore, the practicality of the toolkit will be tested through engagement with a key local stakeholders from the local housing provider Poplar Housing and Regeneration Community Association (HARCA) - making this a viable and implementable project.

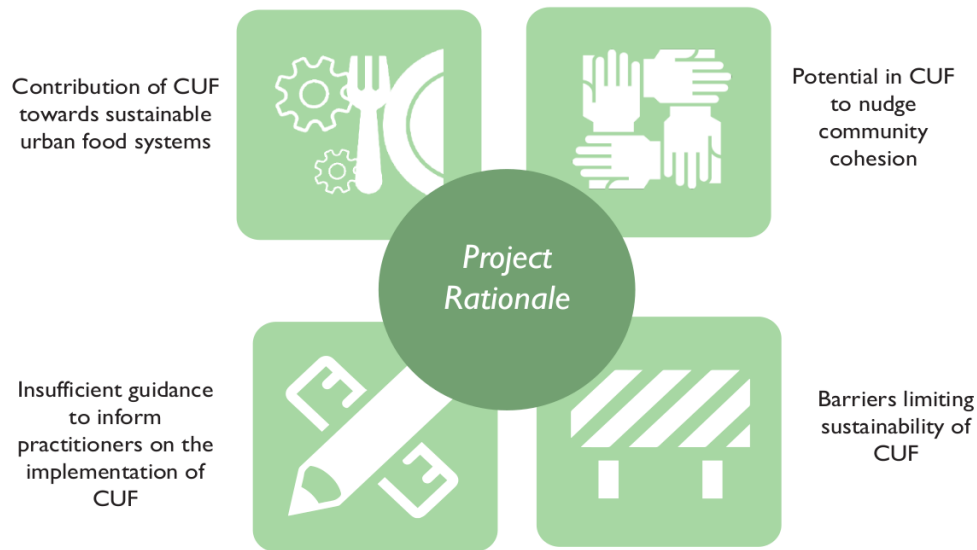


Figure 3 Project Rationale

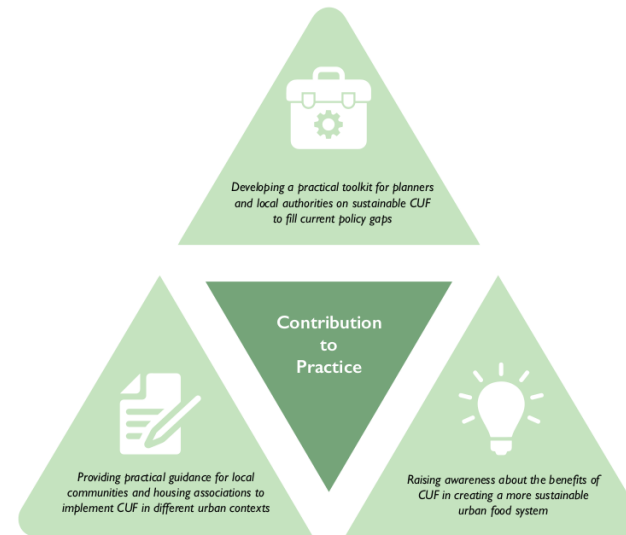


Figure 4 Contributions to Practice

1.2 Research Questions and Objectives

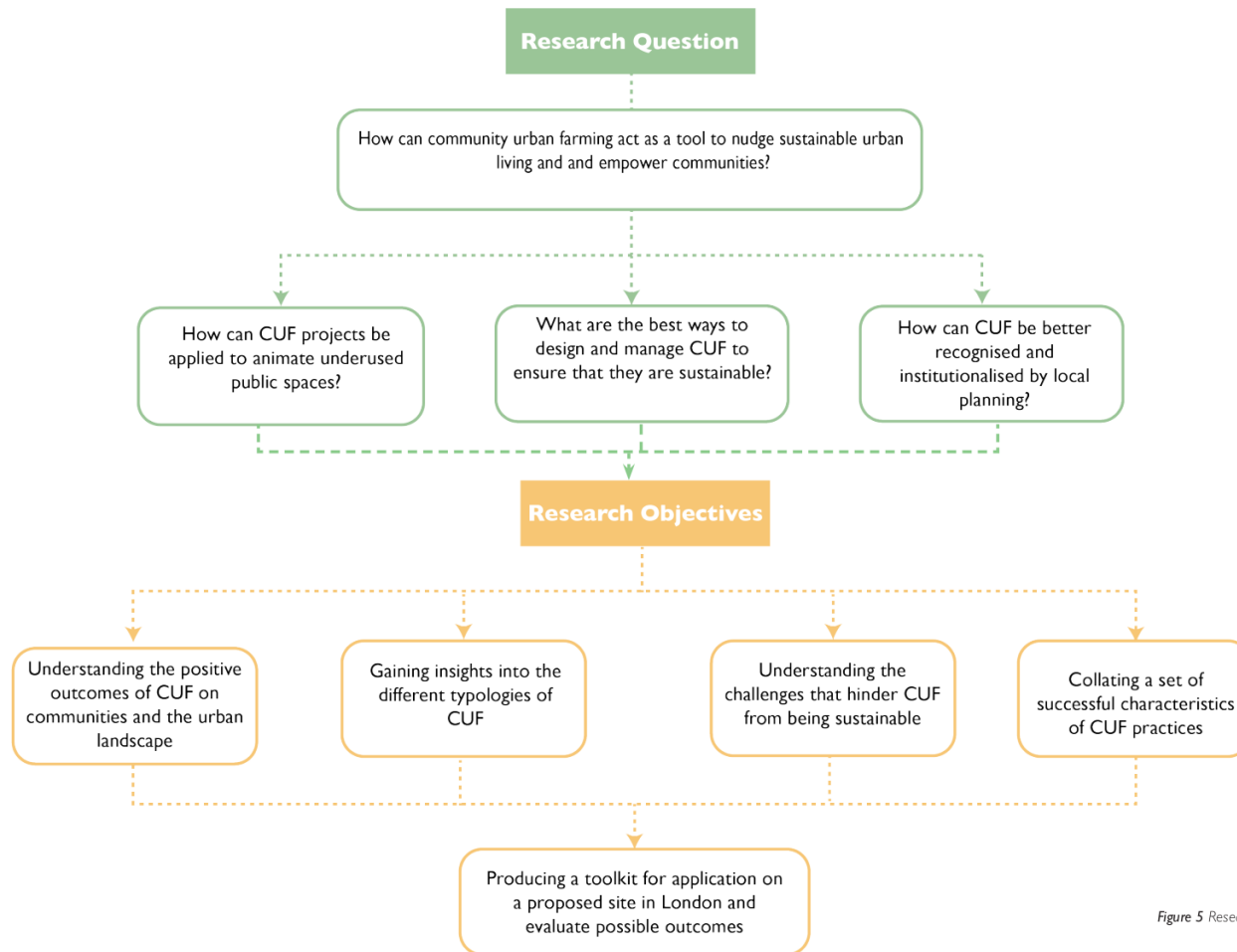


Figure 5 Research Questions and Objectives

1.3 Methodology

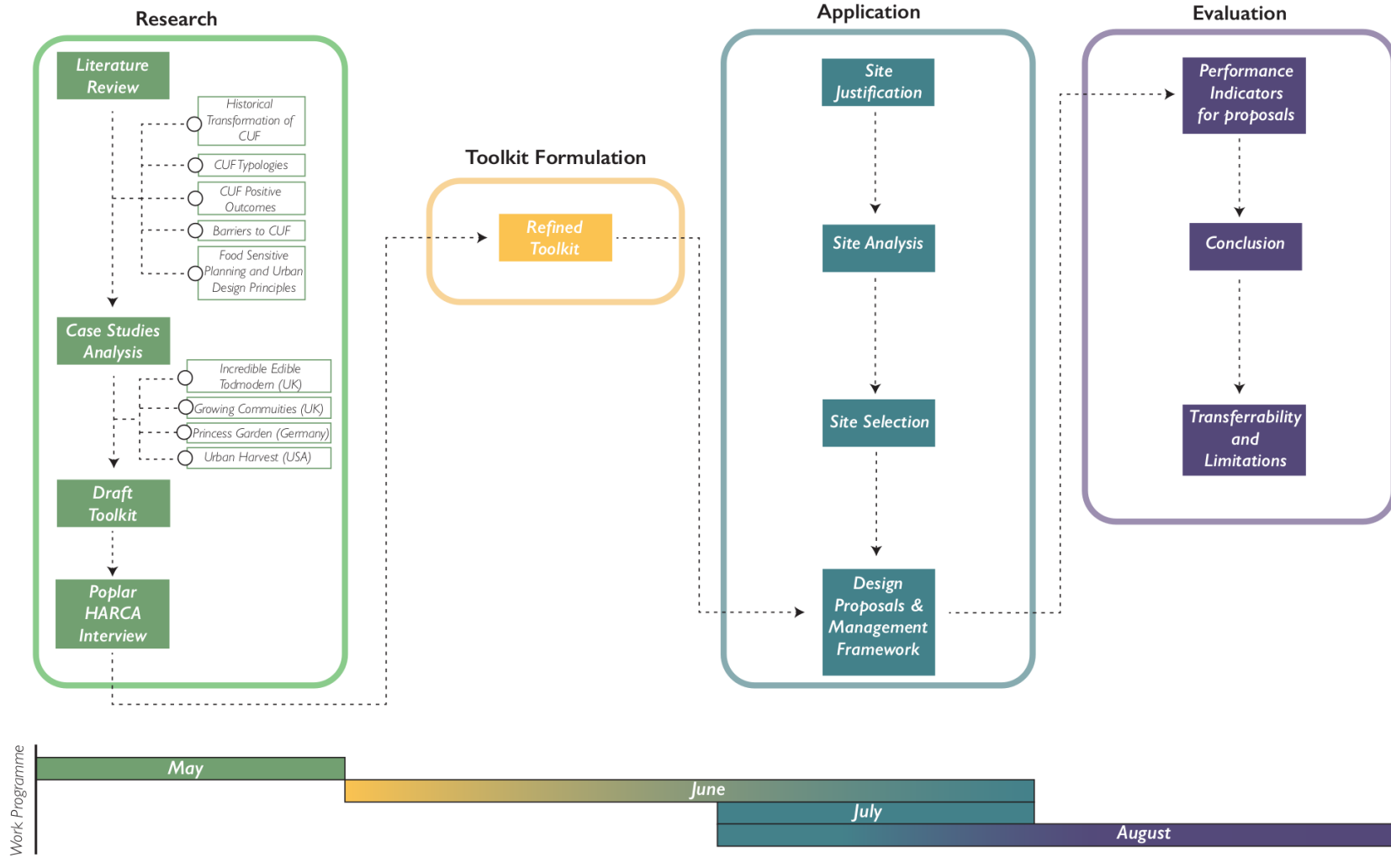
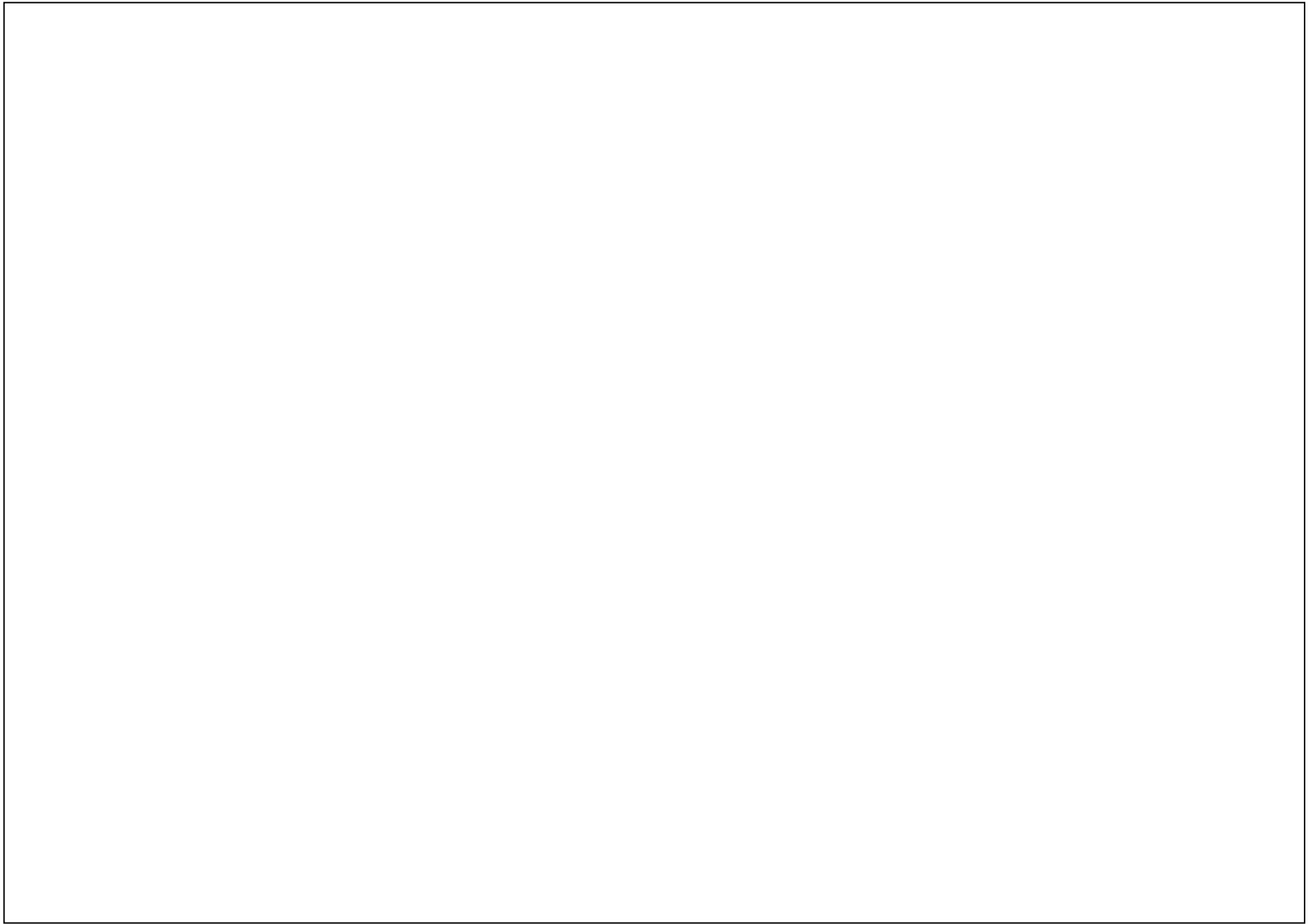


Figure 6 Methodology

02 Literature Review



2.1 Historical Transformation of CUF

The earliest form of organised CUF can be traced to the 19th century, when surges of rural migrants arrived in cities for employment. To compensate for low working class wages that made it difficult to afford urban food prices, they grew food in kitchen gardens and reared animals around housing tenements as their main source of food (Bell & Cerulli, 2012).

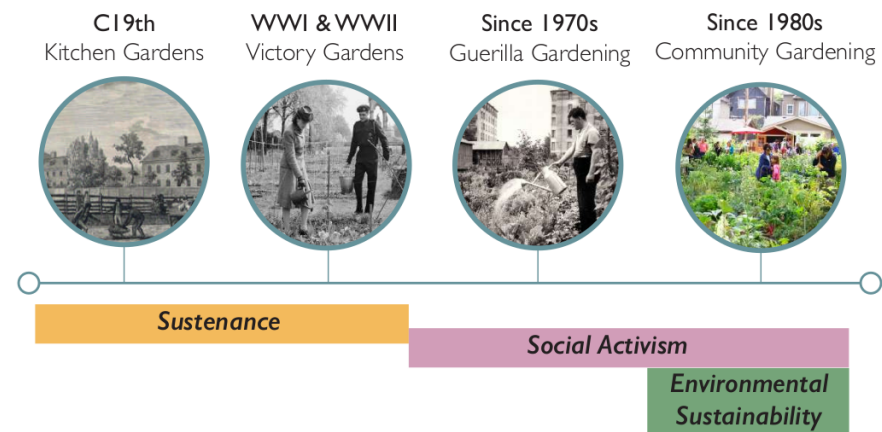
The importance of CUF continued to gain traction, especially during World War I and II when urban food supply was scarce. Food production shifted to urban areas to compensate for the reduction in import and rural food production for the production of war supplies (Bell & Cerulli, 2012; Pudup, 2008). Victory gardens thrived as important social structures within war-torn societies, whilst providing up to 42% of the national vegetable production in the US during WWII (Horst et al., 2017; Lawson, 2004).

Post-war redevelopment shifted CUF's focus towards "civic beautification", such as suburban gardening clubs and school gardens of the affluent (Lawson, 2004). Demand for CUF dropped from the 1950s onwards as land value rose and many sites were removed to make way for more lucrative economic uses (Schelmzkopf, 2002). Whilst city gardening has always remained, it wasn't until the 1970s that CUF started increasing exponentially and became a social movement, advocating for the reclamation of land and community empowerment in blighted urban neighbourhoods. "Roll-back" of the welfare state led to the resurgence of urban food security in socio-economically deprived neighbourhoods that experienced disinvestment - leading to their reduced access to fresh food outlets. CUF and guerrilla gardening soon became iconic symbols of resistance against marginalisation (Pudup, 2008).

Nowadays, interest in CUF remains strong but focus has shifted towards promoting its significant public health and educational value (Pudup, 2008). Many seek innovative solutions for urban food insecurity, climate change-induced urban problems and new permaculture practices. Others embrace the social responsibility to provide affordable food for low income households and the establishment of growing-to-sell social enterprises (Horst et al., 2017).

Although the role of CUF has evolved (Figure 8), it still remains an important community asset for many urban neighbourhoods. Yet, the continuation of this historical success is endangered by competition with other profitable land uses.

Figure 7 History of CUF



2.2 Typologies of CUF



Figure 8 CUF Typologies

The popularity of CUF is seen in a wide range of urban and social contexts, serving communities with different needs and aspirations. This resulted in the emergence of different typologies, utilising different types of land available to carry out different scales of CUF (Horst et al., 2017).

Rooftop farms are becoming increasingly prevalent, especially in high density urban areas where space for growing is limited and semi-private rooftops are converted for food growing. Plots on these sites are normally shared amongst residents living in the same block who manage the site in conjunction with housing associations (Sustain, 2014). Those who practice this type of CUF tend to have secured long-term permission. Similar to rooftop farms, CUF sites are also common in **open spaces within housing estates**. These spaces often begin as underused or derelict plots which are transformed into community allotments by residents. Short term leases or longer term agreements to grow are sought from housing associations or local authorities. This is one of the most popular typologies in London, especially in socio-economically deprived neighbourhoods that double up as food deserts (National Housing Federation, 2014).

Institutional CUF refers to food growing attached to community functions and institutions in a neighbourhood, such as school grounds, health centres, community centres or churches (Horst et al., 2017). Compared to rooftops and housing estates, this typology engages the community through volunteering. **Urban parks** are also common places to be retrofitted with CUF, managed by community groups in partnership with local authorities that provide long term leases. Similar to the institutional typology, this is a more public form of CUF. However, Hou and Grohmann (2018) mentioned that food growing activities in parks could be in conflict with other park uses if not adequately coordinated.

CUF could also be a **meanwhile use** on public or private temporarily vacant land, until development opportunity arises. Yet, this typology struggles to secure long-term permission under strong urban development pressures (Crane et al., 2012). **Edible Landscape** - "guerrilla gardening" within the urban fabric (e.g. roadsides, bus stops and street verges) involves the use of edible street trees and shrubs species (e.g. fruit trees and herb shrubs) as landscaping elements to create an aesthetically pleasing yet productive urban landscape (Tornaghi, 2017). Local communities are strongly encouraged to participate in these publicly located growing activities to foster a sense of responsibility in caring for their neighbourhoods; produce is made available for all to consume in return (Bhatt, 2011).

2.3 Positive Outcomes of CUF

An array of positive outcomes associated with CUF continue to motivate more participation in this form of food growing. Positive outcomes can be separated into Environmental and Societal Outcomes.

Environmental Outcomes:

1. Transforming underused urban spaces

Under the influence of public disinvestment and urban decay, cities are blighted with vacant and derelict spaces leading to unattractive public realms and hotspots for crime. Yet, CUF has potential to reclaim these underused urban spaces - transforming them into valuable community gathering spaces (Cumbers et al., 2018; Bell and Cerulli, 2012). Cumbers et al. (2018) found that the recovery of such spaces allow communities to reclaim a sense of belonging towards their neighbourhood. Positive benefits arise where local residents invested time, labour and emotions into transforming some "long-neglected parts of the urban landscape" that weren't previously accessible. Introducing more active uses into the urban fabric encourages more "eyes on the street" to passively survey urban neighbourhoods and steer off crimes (Jacobs, 1961). Furthermore, this type of physical transformation challenges the hegemonic urban regeneration agendas of privatisation and gentrification, by advocating for more positive and collective uses of outdoor spaces (Cumbers et al., 2018, National Housing Federation, 2014).

2. Contribute towards urban ecosystem services

CUF serve as important green infrastructures in cities, offering more ecosystem services that are beneficial for wildlife and humans alike compared to typical open spaces that exhibit low levels of native biodiversity (Lin & Fuller, 2013). Fragmented urban landscapes are also re-vegetated by CUF, restoring biodiversity, especially in community gardens growing a variety of cultural vegetables and herbs. More flowering plants are introduced to prolong the nectar season and pollen supply for pollinators (Lin et al., 2015). Additionally, CUF is important in providing climate regulation, such as mitigating against urban heat island effects, attenuating rapid stormwater runoff that leads to localised flooding and acting as carbon sinks (Ackerman et al., 2014). Furthermore, the mental health and wellbeing of local residents are enhanced by direct contact with nature whilst engaging in CUF.

3. More sustainable food systems

CUF is fundamental to developing a local food system, encouraging local production, distribution and consumption of food. Peters et al. (2009) suggests that a localised food system results in reduced "food miles" by closing the physical proximity of producers and consumers, reducing the cost of transit and hence lowers food prices. Reducing food miles also lowers transit energy consumption and greenhouse

gas emissions (Holland, 2004). Moreover, reduction in distance food travels effectively minimises urban food loss and waste due to spoilage. A localised food system can also be a more sustainable one, enabling nutrient recycling via organic composting and rainwater recycling for irrigation (Ackerman et al., 2014; Bell and Cerulli, 2012).

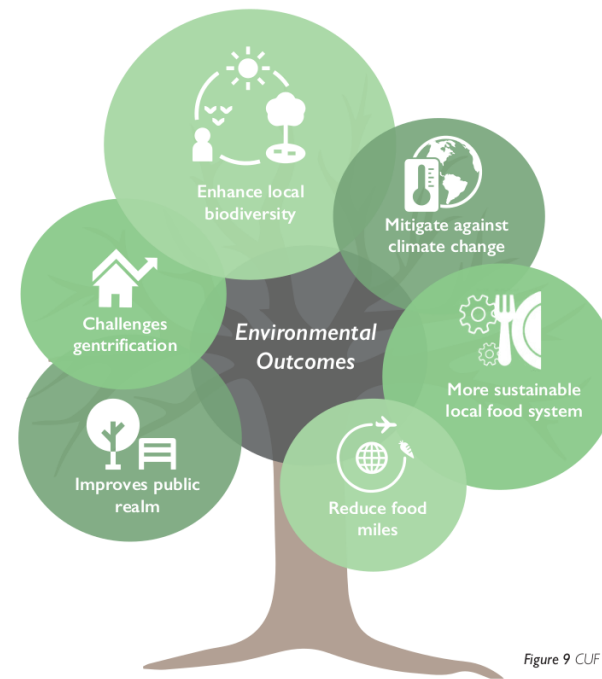


Figure 9 CUF Environmental Outcomes

Societal Outcomes:

1. Remediating urban food security

CUF produce contributes significantly towards urban food security of socio-economically deprived households, whose access to fresh foods can be difficult due to high urban food prices and neighbourhoods in food deserts (Cabannes & Marocchino, 2018). Through engaging in CUF, household spending on food can be significantly reduced (Cumbers et al., 2018). With 21% of the population in London reported to have very low or low food security and 44% of these fall within the lowest income quintile (annual income below £15,000), CUF proves to have potential in improving these conditions (GLA, 2019). Literature is demonstrating that many beneficiaries of CUF extend beyond households and communities who are directly involved with the growing. These extended beneficiaries are accessed through harvest donations to local food banks and community kitchens to feed the homeless or vulnerable (Bhatt, 2011; Horst et al., 2017; Cumbers et al., 2018). Many of these schemes are key to enhancing food literacy in deprived communities, educating them on the food system, healthy eating and gardening practices through becoming a part of the local food system as producers (Peters et al., 2009).

2. Encourage social exchange and co-production

Many CUF schemes are simultaneously sites of food production and community hubs bringing urban residents together from diverse backgrounds for more socially cohesive communities (Saldivar-Tanka and Krasny, 2004). Social interaction from participating in the co-production of food engenders a greater willingness of community sharing (e.g. sharing of harvest or gardening skills) - strengthening existing social capital to expand social networks (Pudup, 2008; Tornaghi, 2017). As CUF projects expand, they often branch out to create more collective learning and community outreach opportunities - such as community cooking and gardening/DIY workshops (Glover et al., 2017; Saldivar-Tanka and Krasny, 2004). It is the diversity of social outputs generated by CUF that sustain its popularity amongst local communities. CUF areas are important sites of multicultural exchange in ethnically diverse cities like London, providing a space for different communities to grow crops that are staple to their diets and to learn about each other's food cultures (Cumbers et al., 2018; Raja et al., 2014).

3. Foster bottom-up and grassroots interventions

CUF projects exemplify a form of grassroots intervention and bottom-up solution towards sustainable development. Whilst fostering communal stewardship of public spaces, the management of these sites exhibit cooperative decision-making, encourages social inclusion and democratic engagement in community matters by developing "local solutions for local problems." (Horst et al., 2017; Holland, 2004). Cumbers et

al. (2018) recognised that the active reclamation of derelict land for food growing demonstrates a way to exercise "Right to the City". Hence, CUF is engendering a paradigm shift towards a "more distributed and locally-responsive" form of governance and bottom-up control over land use (White and Stirling, 2013).



Figure 10 CUF Societal Outcomes

2.4 Barriers of CUF

Despite the many benefits of CUF, barriers still present which hinder the implementation of these aspirations. There are 3 principle barriers that have the most profound resistance towards sustainability of existing CUF projects and establishment of new ones.

1. Availability and Security of Land Tenure

It is rare that community groups can afford land for CUF, so leases for CUF are sought from local councils, housing associations or private landlords. However, most leases are temporary until land value rises making the plot desirable for more profitable uses; this has led to the unfortunate destruction of many community gardens (Horst et al., 2017). High urban densities add to the complexity in securing land for CUF due to the area's inherent lack of open spaces or vacant sites - particularly illustrated in different parts of London (White and Stirling, 2013). Furthermore, Becker and Von der Wall (2018) observed that current planning regimes hinging on brownfield sites redevelopment to meet housing objectives and speculative development demands could further diminish the likelihood for CUF activities to secure long-term security of tenure. Community groups seeking land to grow with a commercial purpose (e.g. grow-to-sell social enterprises) also struggle to secure land tenure, because of their contested profit-generating nature.

2. Funding

Securing initial funding is crucial for starting a CUF project as well as to ensure its long-term sustainability. Large funding bodies in the UK that support the start up of CUF projects include Big Lottery Fund, the Local Food Fund and more recently Capital Growth which supports many London-based projects (White and Stirling, 2013). Drake and Lawson (2014) observed that the presence of these funding bodies means securing initial funding tends not to be the problem. However, funding remains as one-off capital investments rather than the ongoing support that most community groups need. Ongoing funding is crucial for the survival of CUF projects to pay for essential materials such as soil, gardening tools, compost and water supply and trainees who manage the sites full time (Baker, 2004). To overcome this, many community groups engage in fundraising events and collaborate with existing community groups to secure ongoing support and funding to extend the lifespan of their growing projects (Egli et al., 2016).

3. Lack of support and awareness

A lack of political will to develop CUF as a community amenity reflects that it is not considered a planning priority, leading to insufficient funding allocation or difficulty to secure land tenure to expand CUF (Cabannes & Marocchino, 2018). Its limited competitiveness compared to housing and infrastructure provision reflect little recognition in the importance to develop local food systems through planning mechanisms at local level. Ultimately, the failure to reconcile urban planning and food systems planning objectives result in the fragmented implementation of CUF and limited support offered in aid of their survival and further expansion (Donovan et al., 2011)



Figure 11 Threats of CUF

2.5 Food Sensitive Planning and Urban Design Principles

"Food Sensitive Planning and Urban Design" (FSPUD) is an approach endeavouring to reconcile the goals and aspirations of urban planning and design with those of food system planning, to ensure that urban landscapes are designed to facilitate the production, distribution and equitable access to food (Donovan et al., 2011). The approach encourages built environment practitioners to:

- take the food system into consideration during decision-making
- reconcile competing priorities of development with food production
- designing landscapes where both can coexist and thrive
- materialise urban food system visions into masterplans, zoning regulations and local policy

However, considering this is a relatively new concept, literature surrounding the testing and application of these principles are still very limited. Some key principles, that are relevant to reinforcing and promoting community urban farming activities across London, have been summarised in Fig 13. It is an objective of this research project to test and explore the application of some of these principles in the context of London (Figure 5).

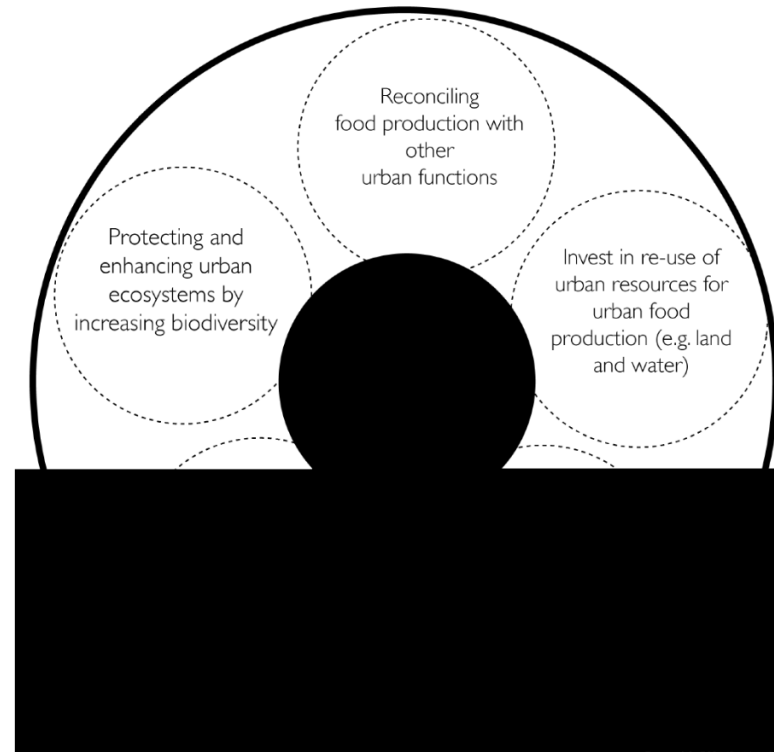


Figure 12 FSPUD Key Principles
(Donovan et al., 2011)

2.6 Characteristics of Successful Community Urban Farming Projects

From reviewing literature into the topic, a set of characteristics have been identified which are frequently exhibited by most successful CUF projects. These are therefore key considerations for future CUF projects and would form the underlying principles for application during the design stage of the research project.

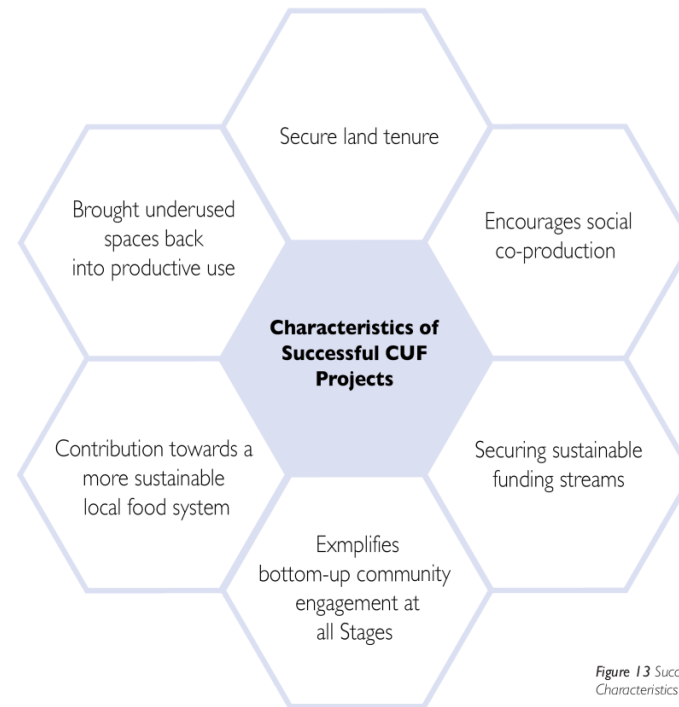


Figure 13 Successful CUF Characteristics

2.7 Conceptual Framework

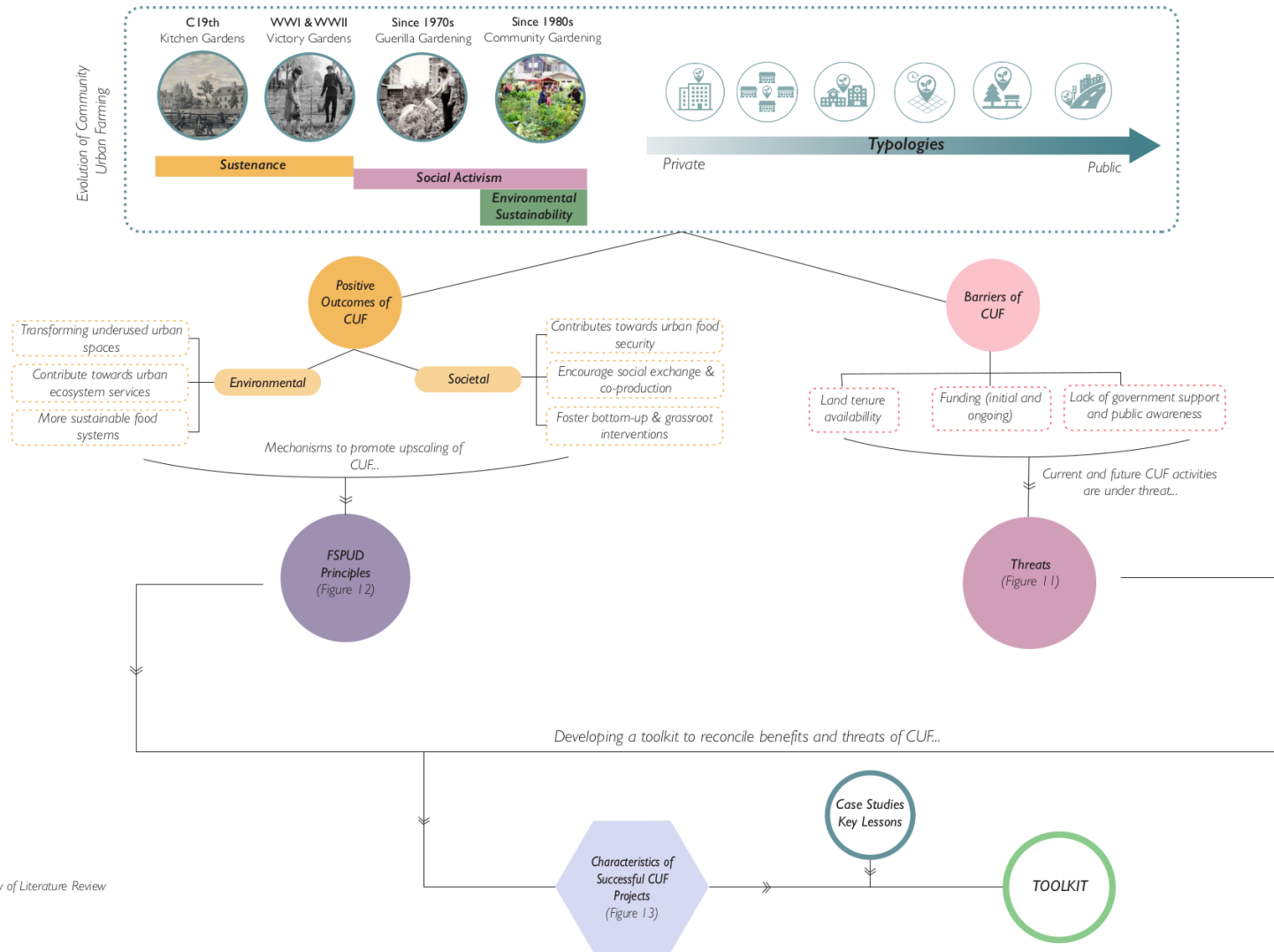
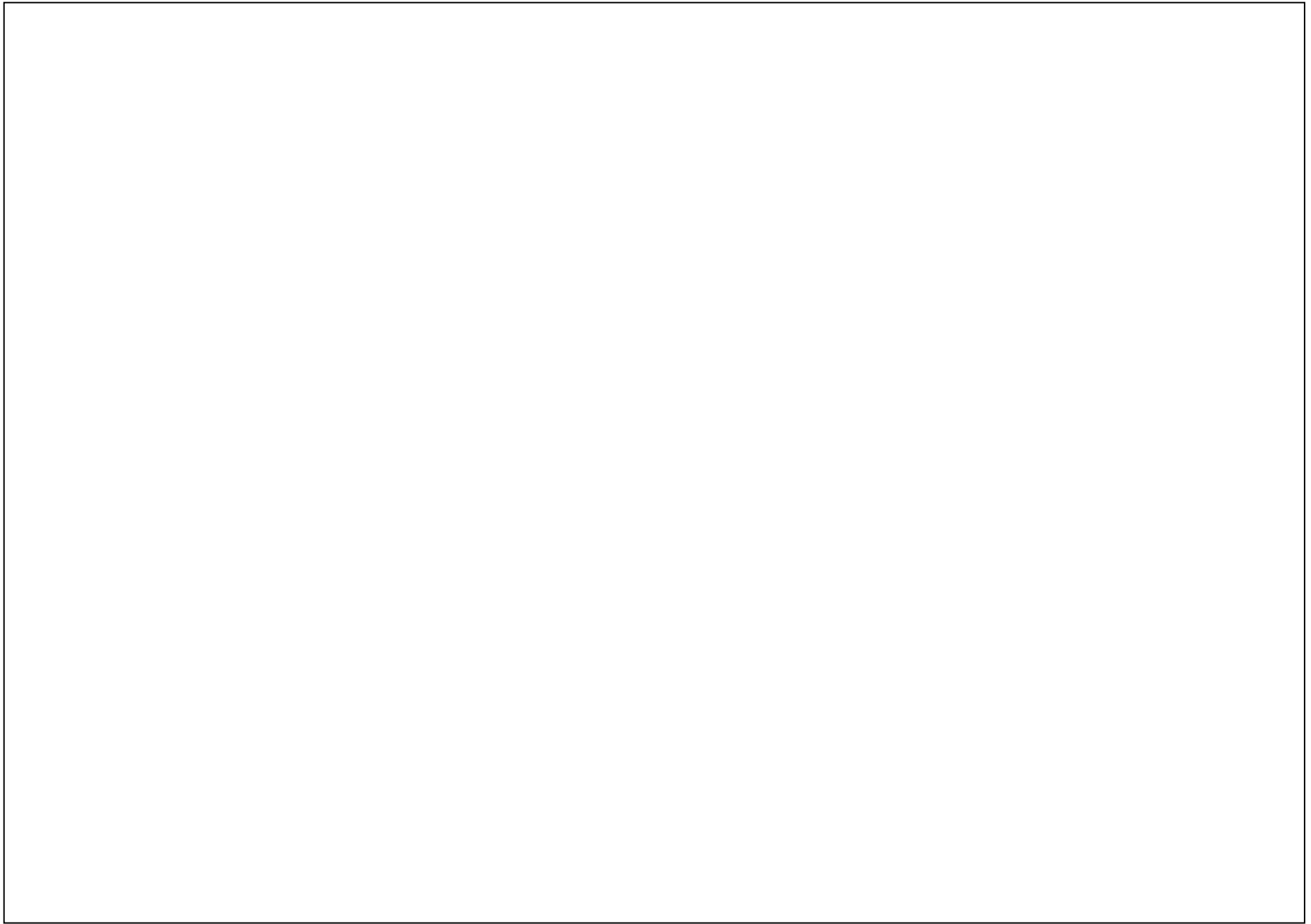


Figure 4 Summary of Literature Review







3.1 Incredible Edible|Todmodern

Key Project: Todmodern Health Centre Apothecary Garden

Location: Todmodern Health Centre (Carpark), West Yorkshire

Size: 15sqm

Established: 2009

Funding: Initial - Northern Gas Networks, NHS, B&Q, Garden Centre and Calderdale Council // Ongoing - Community donations

Stakeholders: Local community volunteers, health centre workers, Calderdale Borough Council

Output:

- **Design:** Transforming an underused patch behind health centre into a therapeutic herb garden; planters fitted with seating - functional recreation feature
- **Community Impact:** scheme connected local communities and centre workers in constructing and maintaining the garden
- **Local Food System:** scheme connected local communities and centre workers in constructing and maintaining the garden



Figure 16 Pollination Street - edible streetscape as wayfinding to connect carpark with local market



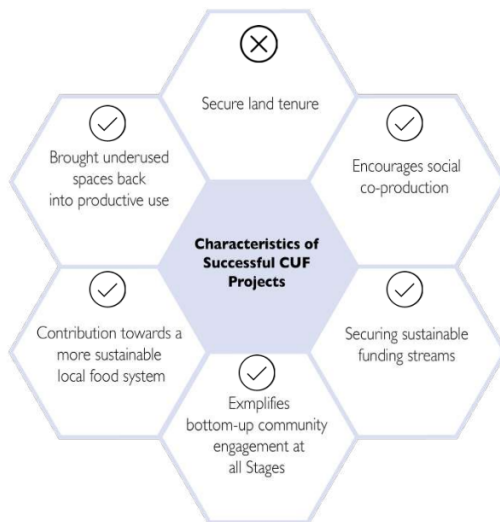
Figure 17 Raised beds outside of Todmodern Police station



Figure 18 Todmodern Health Centre Apothecary Garden



Figure 19 Growing in school yards across Todmodern, aiming to engage and educate children and their parents on food growing and healthy eating



Key Lessons Learned:

- Building highly visible propaganda gardens in small, underused public spaces to increase public awareness – “Edible Streetscapes”
- Started with small but highly replicable actions to compensate for a lack of funding
- Mobilised a large body of local community volunteers (across all ages and ethnicities) to run growing projects and green route tours
- Making use of social media and local newspapers to publicise projects
- Using signage to educate public of food being grown
- Guerilla style gardening and occupancy of public spaces meant limited security of tenure for some projects

(Source: Kirkbride 2014; Incredible Edible 2008)

3.2 Growing Communities| Hackney

Key Project: Clissold Park Market Garden

Location: Clissold Park, Stoke Newington

Size: 50sqm

Established: first "Patchwork Farm" to be set up originally as a demonstration garden, re-established as a market garden after Park's refurbishment in 2010

Funding: Initial - Pioneers self-funded// Ongoing - Big Lottery Fund from 2016-2018, Veg scheme, weekly farmers market, selling produce on site

Stakeholders: Julie Brown (Pioneer)// local communities// volunteers

Output:

- **Design:** Located in a popular park on a highly visible site// Secured by open-linked fencing and padlock gate// Rainwater harvested onsite for irrigation and organic waste composting
- **Community Impact:** Involvement of local community volunteers in construction and operation, providing local residents across Hackney with fresh sources of food
- **Local Food System:** Direct selling of harvest on site makes up 15% of total sales of Growing Communities, harvest supplies local restaurants and veg scheme

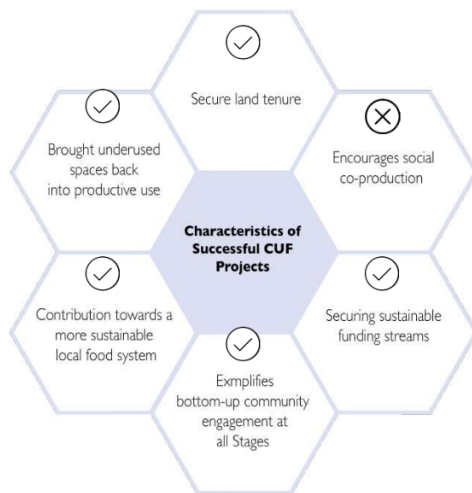


Figure 20 Clissold Park Market Garden - old butterfly tunnel converted into greenhouse for winter growing



Figure 21 St Paul's West Hackney Vicarage Garden - a micro-site of Growing Communities



Figure 22 Growing Communities Veg Scheme - sourcing from its market gardens and other local producers, 15 collection points across Hackney



Figure 23 Stoke-Newington Farmers Market - weekly farmers market selling market gardens produce

Key Lessons Learned:

- Demonstrates a successful model of growing-to-sell, contributing towards a more sustainable local food system
- Diversified local distribution methods to cater for different local needs (veg Schemes, Farmers Market, onsite selling etc.)
- Weekly volunteering days, garden tours and gardening workshops to effectively publicise market gardens and educate local communities on food growing
- Siting growing sites in publicly accessible yet secure locations allow the scheme to thrive with other park use and secured long term tenure
- Scheme only focuses on food growing but has led to few community activities or other forms of social co-production

(Source: Growing Communities, 2011)

3.3 Princess Garden |Berlin

Project Details:

Location Berlin, Moritplatz (land leased by non-profit organisation Nomadic Green)

Motivations: aims to transform an urban wasteland for over 50 years into CUF site, educating local communities on sustainable consumption and lifestyles

Established: 2009

Size: 3409 sqm

Funding: *Initial* - Nomadic Green// *Ongoing* - On-site cafés providing delicacies with ingredients sourced from garden's raised beds and flea markets

Stakeholders: Nomadic Green, Robert Shaw (pioneer), Local communities

Outputs:

- **Design:** use of upcycled materials to create raised beds and converted shipping containers as cafés and workshops // transformed a derelict site at the heart of the city into a community hub
- **Community Impact:** Experts and local interests groups provided with a place to experiment with permaculture techniques, upcycling and provide DIY workshops for local communities// summer camps in conjunction with local universities and art schools to educate youths on food growing// a place to allow migrant communities to integrate with local communities
- **Local Food System:** Garden with vegetable raised beds producing a wide variety of vegetables for local communities to share and onsite community café



Figure 26 Using recycled materials (e.g. wooden crates and old tyres) to plant crops to keep them mobile



Figure 27 Cafes built out of retrofitted and upcycled shipping containers - a main source of income to sustain activities in the garden



Figure 28 Flea market - selling upcycled clothing, second-hand home appliances and DIY products from community workshops



Figure 29 Experimental playground built from recycled timber by community volunteers - a form of community co-production alongside food growing



Figure 24 Brownfield site at Moritplatz prior to Princess Garden (2006)

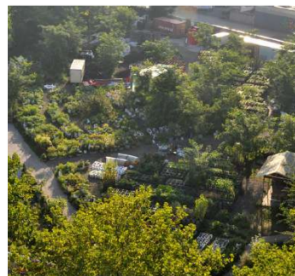
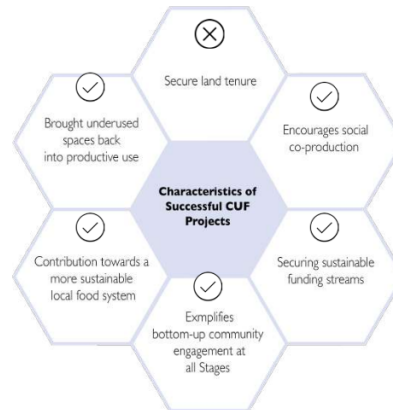


Figure 25 Transformation of site into CUF garden by local volunteers (2010)



Key Lessons Learned:

- Design of the site provided for food growing and sharing, as well as a multi-functional space for social interactions of visitors, local residents and migrants
- Started off as a food growing project but sparked other community-led co-production workshops - led to profound positive impacts to the local area
- Mobile raised beds meant that planting isn't restricted by security of land tenure or soil contamination
- Project's bottom-up design and limited restrictions by formal regimes created a space for developing grassroots innovations
- Long term security of tenure not yet guaranteed, scheme could be threatened to move when development opportunities arise

(Source: Prinzessinnengarten, 2009)

3.4 Urban Harvest |St Louis

Key Project: St Louis Food Roof Farm

Location: St Louis, Missouri, USA

Size: 790 sqm

Established: 2015

Funding: *Initial:* Income generated from previous projects// *Ongoing:* Environmental Protection Agency Federal Grant

Stakeholders: Local communities, HOK Architects, Hanging Gardens (Green Roof Designers) Mary Ostafi (Pioneer)

Output:

- **Design:** A space for urban farmers to experiment with innovative growing techniques most suitable for the microclimate in St Louis (e.g. hydroponics and vertical farming) // Fitted with rainwater harvesting system and a greenhouse// Experimenting with green roof as a solution to mitigate against urban heat island effect and stormwater treatment// Shaded and multi-functional community hub space
- **Community Impact:** Act as a community green space and education centre with gardening workshops, cooking demonstrations and wellbeing classes// local residents are involved with growing and maintaining the garden
- **Local Food System:** Produce sold to the local St Louis Metromarket and transported by "Veggie Bikes"// regular collaborations with local chefs to host "Happy Hours" on rooftop community kitchen teaching local communities new recipes using produce onsite



Figure 30 Food Roof Farm - first rooftop farm in St Louis situated at the heart of its dense urban core, roof is fitted with raised beds and other forms of growing



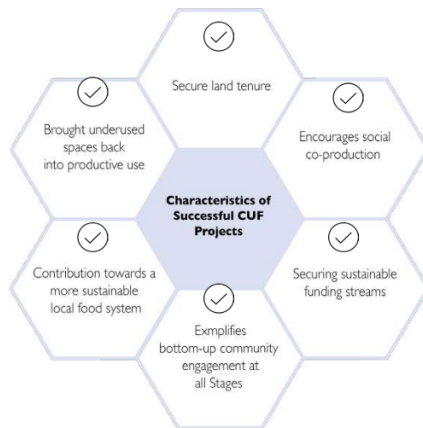
Figure 31 Shaded community hub space with movable furniture, kitchen sinks and countertops - used for community "Harvest Dinners" and cooking/DIY workshops



Figure 32 Flance School Garden - 20 raised beds fitted into underused plot adjacent to school, providing interactive opportunities for children and their parents to learn about growing and the food system



Figure 33 Yoga classes on Food Roof Farm as part of the weekly "Fit and Connection" Programme - demonstrating a diversity of community activities that take place alongside food growing



Key Lessons Learned:

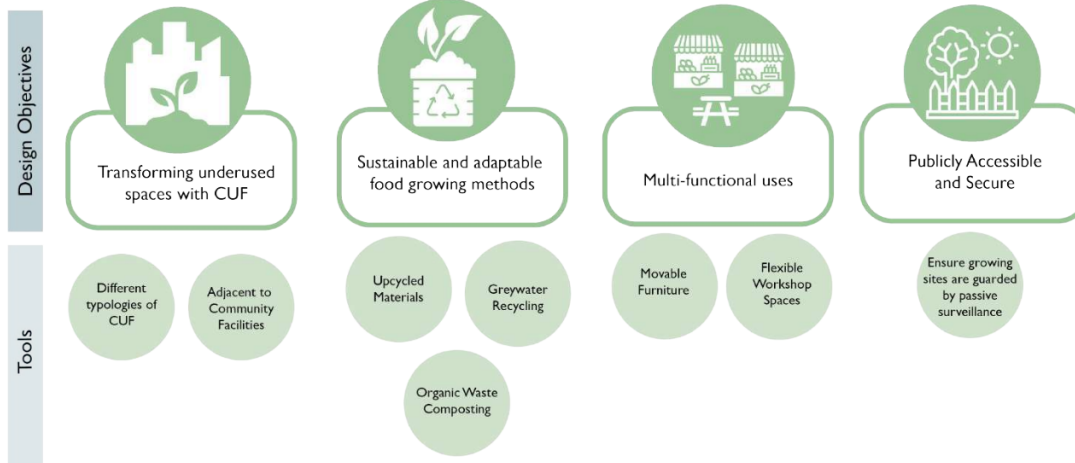
- Scheme successfully engages a range of local volunteers by partnering with local schools, community groups and local families, through gardening and cooking workshops, aiming to extend the conversation on food access, equity and production at the forefront of the community
- Established a model to promote and educate on the contribution of the local food system to healthy eating and community well-being, through a weekly programme of nutrition and fitness classes as part of the "Fit and Food Connection" Initiative
- Retrofitted bus used as the mobile St Louis Metromarket - an innovative way to provide neighbourhoods in a food desert like St Louis with a source of fresh food
- Produce from various Urban Harvest growing sites are distributed to local restaurants, school cafeterias and food banks - tapping into the local food system

(Source: Urban Harvest, 2011)

3.5 Draft Toolkit

A draft toolkit has been formulated based on the literature review key findings and the lesson learned from case studies to inform the development of future CUF projects. The toolkit is separated into two sets of principles - Design Principles and Management Principles. Design principles are focused on delivering guidance for physical aspects of the urban farm that would make it operate successfully. Management principles focus on the longer term maintenance and sustainability of the scheme and considers the community context that the scheme is located in.

Design Principles



Management Principles

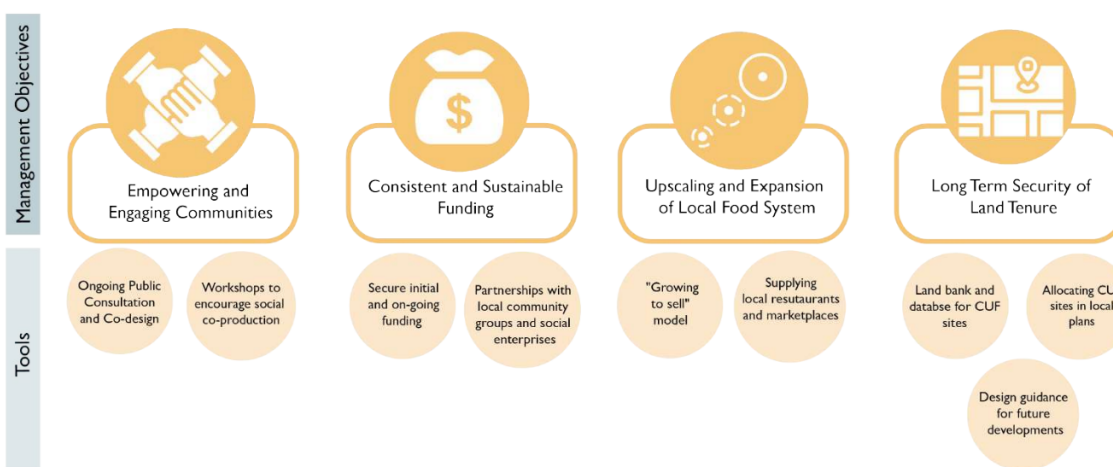


Figure 34 Draft toolkit

04 Site Analysis

4.1 Overview of Chosen Site - Poplar

The chosen site for the toolkit's application is **Poplar**, located in the **Borough of Tower Hamlets** and situated in Lower Lea Valley of East London. Poplar is made of two wards - Lansbury and Poplar - two of the most densely populated wards in Tower Hamlets and is at close proximity to other major centres such as Canary Wharf, Stratford and Greenwich. In recent years, much of Poplar has undergone residential regeneration which has brought new, higher density housing stock as well as improved connectivity with surrounding urban centres and the City of London. However, regeneration has neglected the provision of some services and amenities, such as grocery stores and healthy food outlets. As a result, Poplar became one of the largest food deserts in East London.

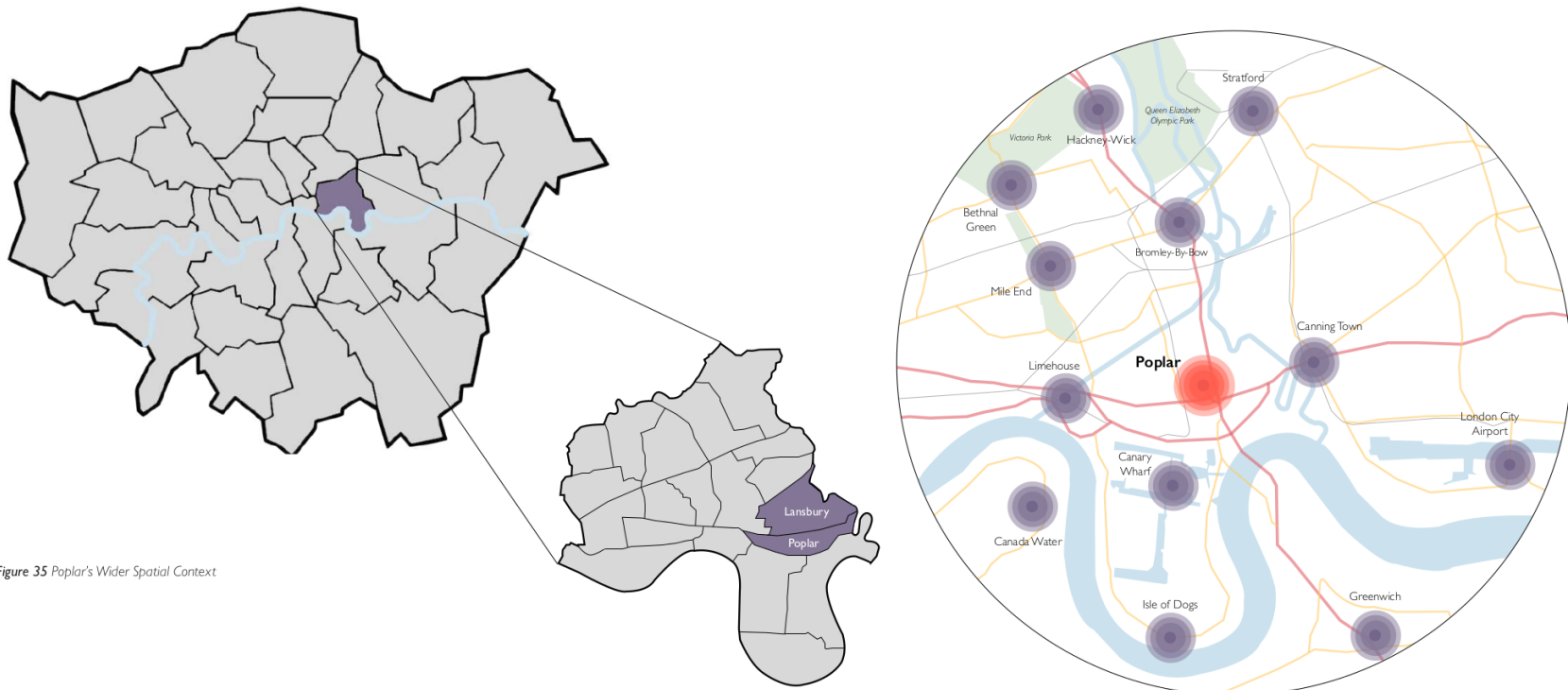


Figure 35 Poplar's Wider Spatial Context

4.2 Demographics Profile of Poplar



Figure 36 Poplar's Demographics

Data Source: LBTH (2014) - see Appendix 2 for an overview of Poplar's political and social development

4.3 Policy Background & Justification for Study Area

Development trajectories for the past decade is characterised by residential regeneration, led by the Lower Valley OAPF. Regeneration focuses on freeing up traditional industrial land uses to provide housing, and to improve the connectivity of Poplar's green spaces with the East End Green Grid (GLA, 2007). The Isle of Dogs and South Poplar OAPF proposes a similar trajectory, with a focus on the transition between Poplar and Canary Wharf (GLA, 2018). At the borough level, the current Tower Hamlets Local Plan (THLP) focuses on regeneration around neighbourhood centres, such as Chrisp Street Market, and improving the accessibility and connectivity of major open spaces (e.g. Bartlett Park) with Poplar's urban fabric (LBTH, 2010a). Priority is given to housing provision and the connectivity of city-wide green infrastructures, rather than facilitating for CUF. These observations correspond with key findings from literature, where the success of CUF is hindered by their lack of priority over other urban agendas (see pg. 11). The lack of high level policy provisions for CUF are somewhat compensated for by the Tower Hamlets Green Grid Strategy (THGGS) - a programme for implementation of green infrastructure development in the borough. This is the sole policy document that acknowledges the need to integrate urban farming activities into underused spaces of Poplar's and the borough's urban fabric (LBTH, 2010b). Nevertheless, at local level, a policy vacuum persists. Drafting an Area Action Plan was delegated to Poplar HARC and scheduled for 2012 (LBTH, 2010a) was never delivered. Accordingly, residential and open space regeneration have been in a piecemeal and sporadic manner; and there is no programme of delivery for CUF projects intended by the THGGS. Therefore, the policy context of Poplar makes it an ideal study area to investigate ways to better institutionalise urban farming activities into local policies, through toolkit application.

To further justify choosing Poplar, observations during site visits are paired with desktop analysis to form a comprehensive site analysis. Considering Poplar HARCA's long-standing role as an advocate and facilitator for the social and community development of Poplar, a semi-structured interview was conducted with Poplar HARCA's Community and Neighbourhoods Team to better understand the food growing culture and social context in Poplar. Some of the key points of justification include:

1. Abundance of green spaces across Poplar; but are fragmented, inaccessible or underused
2. Existing CUF projects in Poplar reflect community aspirations to partake in urban farming
3. Poplar is currently a food desert - fresh and affordable food supply is limited
4. Large amounts of social housing stock and primary schools reflect a youthful population and many socio-economically deprived families in Poplar
5. Large scale regeneration has brought new residents - potential for urban farming activities to act as a catalyst for community cohesion

Figure 37 Policy Hierarchy

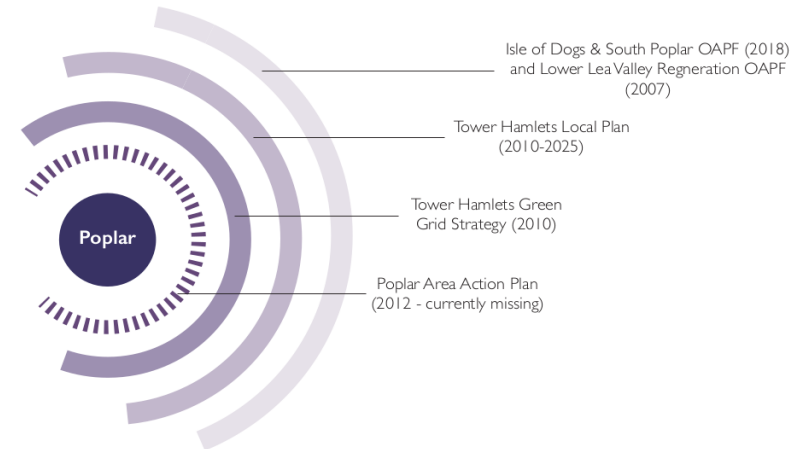


Figure 38 Chosen site boundary

4.4 Hierarchy of Open Spaces

There is an abundance of green spaces in Poplar providing amply for the enjoyment of residents, yet many spaces remain fragmented and poorly connected to the wider urban fabric. Six public parks of varying character serve as primary recreational amenities. However, most of these are designated playing fields lacking a range of facilities to encourage different uses - resulting in underuse. Exceptions are Poplar Recreation Ground, Trinity Garden and Church Green which are better managed and installed with amenities such as playgrounds, seating and attractive landscaping. There are key aspirations in the THLP (LBTH, 2010a), operationalised via the THGGS (LBTH, 2010b), to improve the quality, diversity of uses and accessibility of these green spaces. Ultimately, the goal is to create a connected green network across Poplar that links with the East End Green Grid. Investment into revitalising Bartlett Park towards the northern end of Poplar, aims to improve the park's connectivity with existing street networks by realigning entrances and introducing more uses - e.g. an inclusive playground and dog walking area (LBTH, 2012).

Aside from public parks, there are more open spaces attached to housing estates. Some are equipped with playgrounds, decorative planting and raised beds, others remain as grass patches with limited maintenance. Often inaccessible, liminal spaces exist across Poplar and are attached to roadsides or housing estates. Where most of these spaces are located along the Green Grid Routes proposed by the THGGS (LBTH, 2010b) Borough investment will focus on revitalising and transforming them into pocket parks or spaces for food growing where appropriate. Ultimately, the Green Grid and funding allocations represent high level political will to introduce more CUF into Poplar, however, a specific and localised action plan is still currently lacking to operationalise these aspirations - which is a gap that this study is aiming to fill (Figure 3).



Figure 39 Bartlett Park - currently undergoing regeneration



Figure 40 Lansbury West Estate - underused open space in front of estate



Figure 41 Roadside liminal space adjacent to an inactive frontage

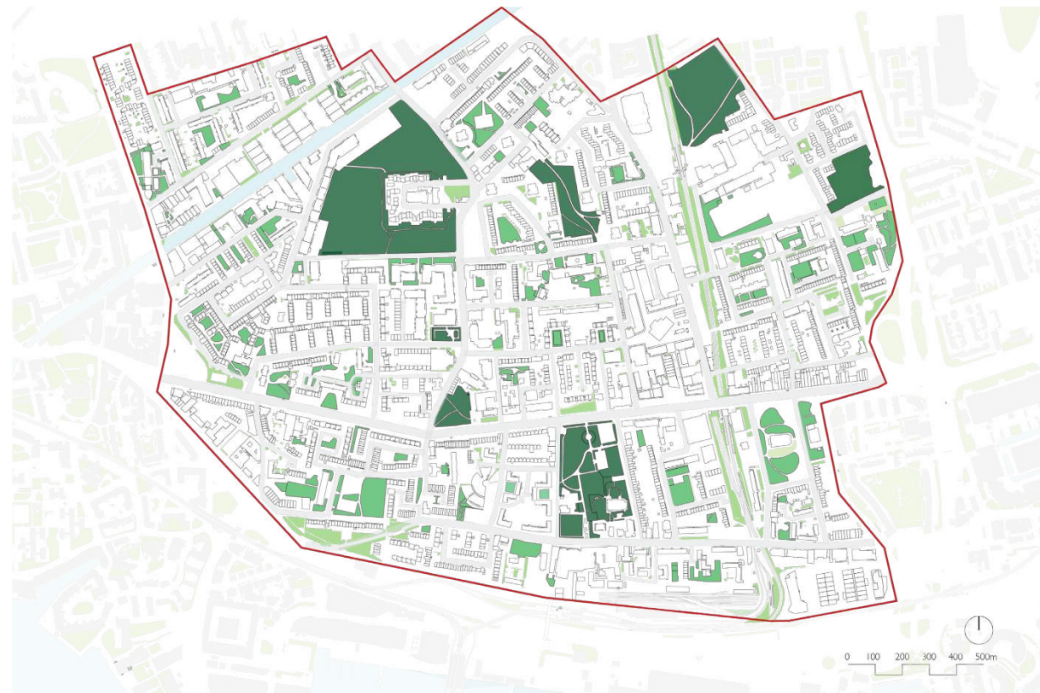


Figure 42 Open Space Map

- Public Parks
- Housing Estate/ Institutional Open Spaces
- Liminal Spaces

4.5 Existing Community Urban Farming Projects

Rooftop



Most are installed with beekeeping hives and raised beds for growing. However, Poplar HARCA reflected that many communities have experienced health and safety hazards (e.g. leakage) when growing on rooftops of older buildings, which resulted in their ultimate relocation. This proves that the typology might not be ideal for Poplar where much of the housing stock dates back to the 1950s. **[Future Potential: 3/5]**

Housing Estate



This is the most popular typology in Poplar; with liminal spaces in housing estates transformed into food growing sites. However, this is not always feasible when food growing is in competition for space with other community amenities. Furthermore, Poplar HARCA has reflected that these schemes can reinforce estate-bound isolation. Not every resident is guaranteed a plot due to limited space and people keep to themselves and rarely interact with others due to distrust. Poplar might benefit from another typology with a stronger emphasis on collective growing. **[Future Potential: 3/5]**

Institutional



This presents one of the most successful food growing typologies in Poplar. Most schemes successfully engage locals from different age groups and ethnicities in workshops and events to learn and participate in food growing and community dining. There is potential to expand this typology and explore the co-location of food growing with more community functions in Poplar, to reach a wider audience. **[Future Potential: 5/5]**

Park Retrofit



This typology is not currently practised in Poplar. However, given the vast number of underused public parks there is scope to experiment as a way to revitalise parks by introducing designated food growing site alongside other park functions. **[Future Potential: 4/5]**

Meanwhile



Food growing is not widely observed in Poplar. This could be due to high development pressures and widespread regeneration in this part of East London, meaning most vacant sites are currently sought for development. Hence, there might be little scope to develop this typology further. **[Future Potential: 1/5]**

Edible Landscaping



Landscaping is seen along some routes in Poplar; however, very little of these are fruit-bearing species. By replacing conventional street trees and shrubs with fruit-bearing species, it could encourage the public to engage with food growing on a daily basis through coming into contact with Edible Landscaping across Poplar, as well as enhancing the character of the current unattractive public realm. **[Future Potential: 4/5]**



Figure 43 Silver Gardeners Rooftop Garden



Figure 44 Devitt House Community Garden



Figure 45 Brownfield Estate Community Garden

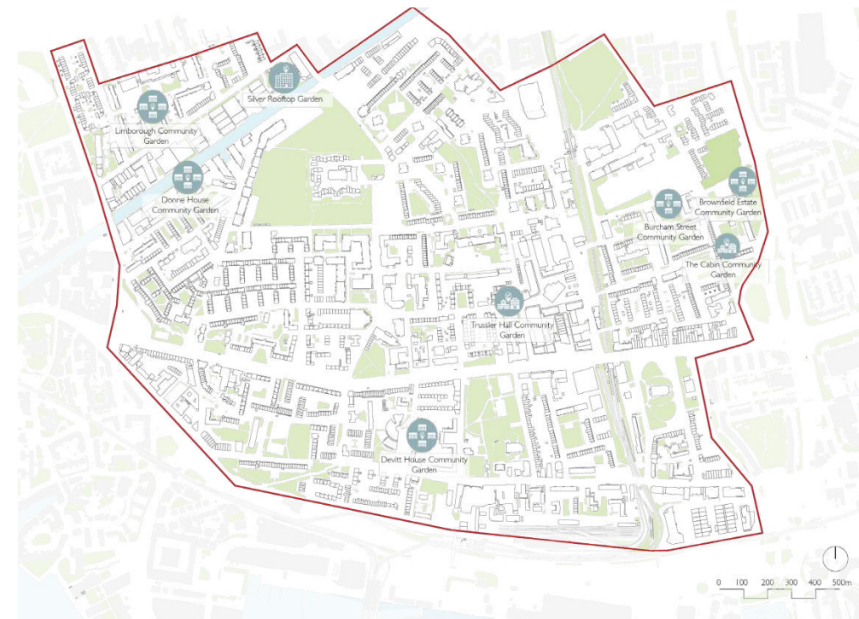


Figure 46 Poplar's Existing CUF

4.6 Food Desert Mapping

To gain further insights into the food environment of Poplar; a food desert map is produced based on a similar methodology to the Bristol Food Plan (Carey, 2011). The food environment in Poplar is limited and can be considered a food desert - "an area with little physical or economical access to foods needed to maintain a healthy diet, yet served by plenty of fast food restaurants" (Cabannes & Marocchino, 2018). The main groceries hub is formed by Chrisp Street Market and its surrounding area along East India Dock Road. This hub is the main source of affordably priced fresh food, matched to the income level of Poplar's local residents - who are amongst the top 5% most income deprived areas in London (GLA, 2015). Local supermarkets in the form of ethnic groceries stores are over-represented compared to chain supermarkets, with only two budget supermarkets located in Chrisp Street Market. Most of these ethnic groceries stores are of Bengladeshi descent, providing a source of ethnically appropriate foods (e.g. Hallal) for the local Bangladeshi residents - making up 40% of Poplar's population (see pg 25).

Much of Poplar's neighbourhoods fall outside a 5 min walking radius to the main groceries hub. Although some of the neighbourhoods further from the hub are serviced by convenience stores, few of these supply fresh food so contribute little to day-to-day diets of local residents. Aside from that, Poplar is also populated by masses of fast food restaurants that contribute to its unhealthy food environment, resulting in a 25% child obesity level - exceeding the London average of 22.5% (LBTH, 2014). It is therefore a policy objective in Tower Hamlets to rectify the unhealthy food environment by limiting the number of takeaways to no more than 5% in each defined centre (LBTH, 2011). Overlaying Figure 46 to Figure 50, it is evident that some of the existing community urban farming projects have potential to contribute a fresh source of food to neighbourhoods that fall outside of the 5-mins catchment of Poplar's groceries hub, and by introducing more would help to narrow the current food desert.



Figure 47 Chrisp Street Market groceries hub - Poplar main source of affordable fresh food



Figure 48 Convenience stores - widely seen in Poplar, mostly selling food on the go, home appliances or serving as off-licence



Figure 49 Unhealthy fast food and takeaways along East India Dock Road - mostly independent chicken shops

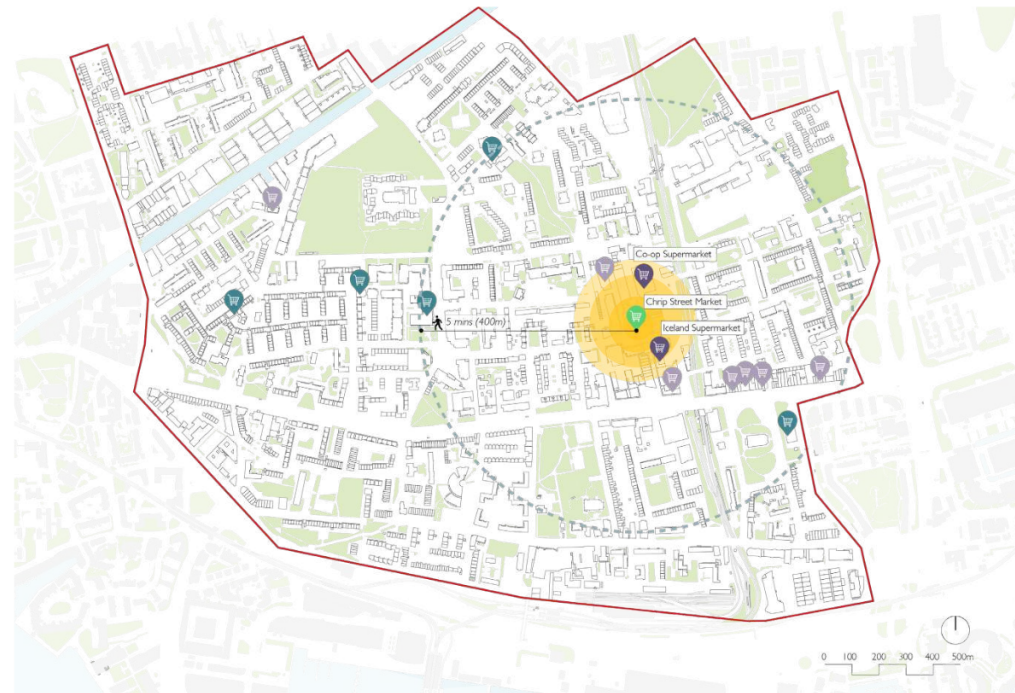


Figure 50 Food Desert Map

-  Marketplace
-  Supermarket (Chain)
-  Main Groceries Hub
-  Convenience Store
-  Supermarket (Local)

4.7 Accessibility

The street pattern in Poplar produces a largely impermeable network, which can be attributed to its residential character (see Appendix 3 for detailed land use analysis) resulting in a majority of roads being local distributor roads that lead into housing estates arranged around cul-de-sacs. Considering much of the open spaces are attached to housing estates (Figure 42) and that many of the existing CUF sites are located within housing estates (Figure 46), cul-de-sac layouts could cause these to be inaccessible and not visible to the public. This was particularly evident when carrying out observations on site where some of the CUF sites were difficult to reach and hardly visible.

There is also insufficient north-south connections across Poplar, particularly towards the south where connections are poor between Poplar DLR station and the rest of Poplar. Access is currently facilitated by a narrow alleyway leading towards Poplar High Street. Consequently, this connection is identified as one of the Strategic Projects where investments are targeted for visual connectivity, legibility and wayfinding improvements in the THGGS (LBTH, 2010b). The strategy aims to include more biodiversity elements to create a safer and stronger visual route guiding pedestrians towards Poplar High Street - a designated Green Grid Route. Hence, this type of location could hold potential for the application of Edible Landscaping elements (e.g. fruit trees).



Figure 51 Pedestrian alley connecting Poplar DLR with Poplar High Street- unattractive streetscapes with inactive frontages



Figure 52 East India Dock Road (A13) - primary connector with heavy traffic flows



Figure 53 Local road beside Bartlett Park - significantly quieter with low traffic flow and pedestrian walkway along Limehouse Cut Canal towards Bromley-by-Bow



- Primary Road
- Secondary Road
- Local Distributor Road
- Cul-de-sac

Figure 54 Road Hierarchy

4.8 Refining the Toolkit

Following the interview with Poplar HARCA, the draft toolkit has been refined to further contextualise it within Poplar's local context and food growing experiences. The newly incorporated design principle and design tools respond to risks of vandalism in some of the existing gardens. They also aim to raise public awareness of future CUF projects, which is currently lacking and has led to low participatory rates in existing gardens.

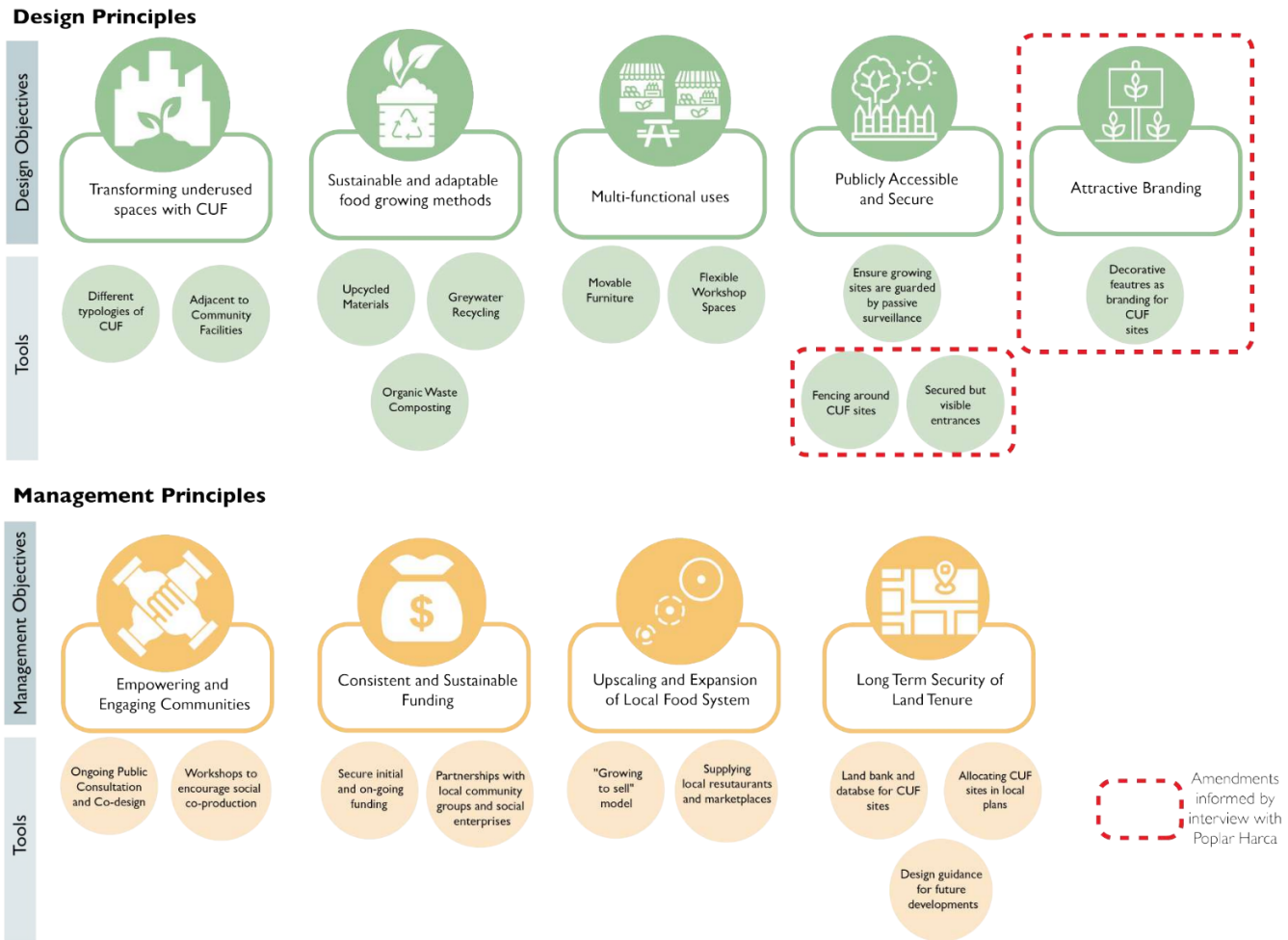


Figure 55 Refined toolkit

4.9 Identifying Potential Sites

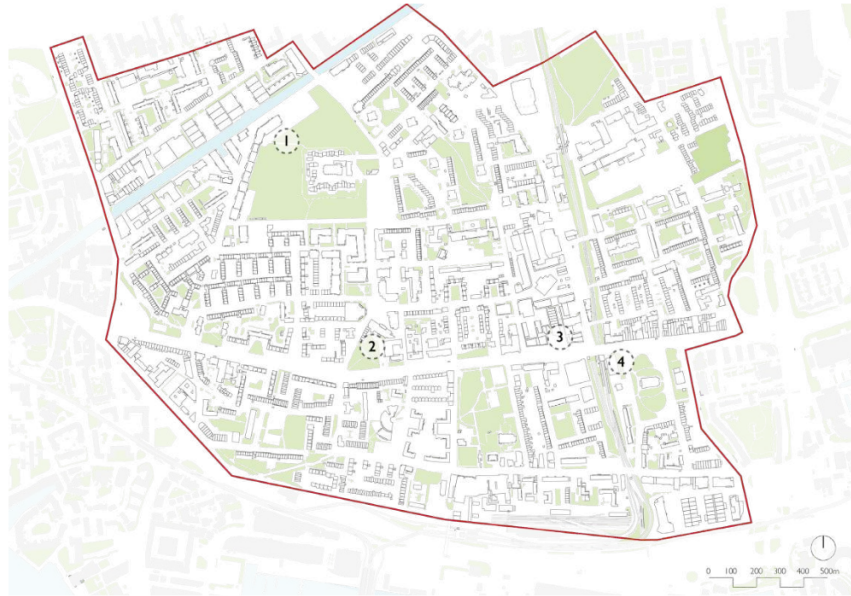


Figure 56 Potential sites locations

A selection of sites have been selected as potential locations for the application of the design and management toolkit. The selection process is informed by site visits and observations in Poplar and relevant policy documents. Additionally, an interview with Poplar HARCA also provided insights into specific sites in Poplar that could benefit from CUF. These are:

1. Bartlett Park
2. Trinity Gardens
3. Crisp Street Market
4. Newby Place Health and Wellbeing Centre

Potential Sites Assessment Methodology:

1. Alignment with targeted sites in the THGGS



(Source: LBTH, 2010)

2. Selecting from the top 3 typologies with the most potential to be implemented in Poplar:



Institutional



Park Retrofit



Edible Landscaping

3. 3 key principles drawn from the toolkit in relation to site selection:



Transforming underused urban spaces with food growing



Located close to other community functions



Location that can provide security of tenure

Typology of the site and its fulfillment of the above key principles will be shown as a "filled-in" icon like above, if not icons will show inverted colours.

Figure 57 Potential sites assessment methodology

Option 1: Bartlett Park



Figure 58 Bartlett Park Aerial View



Figure 59 Park is largely unprogrammed playing fields with poorly designed access routes



Figure 60 Poplar Union - community centre established in 2017, only active ground floor frontage in park

Current Conditions:

- Designated as a "Green Grid Open Space" in the THGGS - investments to focus on diversifying its functions
- Currently undergoing regeneration to improve the facilities and access routes - but no spaces dedicated for food growing in the final masterplan despite Poplar HARCA's request
- Bartlett Park could provide potential security of tenure as it is a designated public open space

Proposed Changes:

- Park can be retrofitted with a communal food growing space outside of Poplar Union to serve nearby residents and to add to the park's diversity of functions
- Event spaces in Poplar Union can be used to run gardening workshops, cafe can be used as a communal kitchen

Assessment:

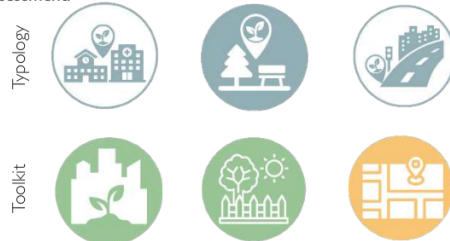


Figure 61 e5 Roast House Cafe - a community cafe at Poplar Union, functions as a flexible community event space



Figure 62 Outdoor seating provide passive surveillance to park and proposed CUF site, locating food growing in

Option 2: Trinity Garden



Figure 63 Trinity Garden Aerial View



Figure 64 Site is characterised by overgrown shrubs



Figure 65 Set back from the East India Dock Road and street trees offer buffering from noise and pollution

Current Conditions:

- Designated as a "Green Grid Open Space" in the THGGS
- Adjacent to East India Dock Road, a primary school and church
- Park has a playground and playing fields, but remain largely underused

Proposed Changes:

- Similar to Option 1, a section of the park along the edges of the primary school could be retrofitted with food growing to diversify the park's uses whilst gaining potential security of tenure
- This space can also function as an outdoor classroom for primary school

Assessment



Figure 66 Park is used as a thoroughfare by parents and students during drop-off and pick-up, activity remains low outside of these hours



Figure 67 Many parents are seated outside school gate waiting to pick up their children - the proposed CUF site can encourage parents to participate in growing

Option 3: Chrisp Street Market



Figure 68 Chrisp Street Market Aerial View



Figure 69 Marketplace providing local residents with affordable daily necessities



Figure 70 Planters with seating at the entrance of the market serve as nodes of social gatherings

Current Conditions:

- A long-established community hub and retail core of Poplar
- Regeneration plans for Chrisp Street Market approved in 2018 will expand the market, regenerate housing and improve public realm around market

Proposed Changes:

- A potential site to introduce edible landscaping into the public realm of the market
- However, commencement of regeneration work could hinder security of tenure, unless incorporated into the landscaping strategy of regeneration plan

Assessment

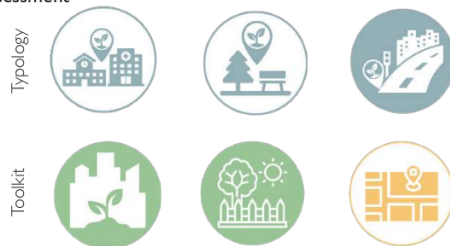


Figure 71 More planter boxes throughout market, currently serviced by Poplar HARCA estates team

Option 4: Newby Place Health and Wellbeing Centre

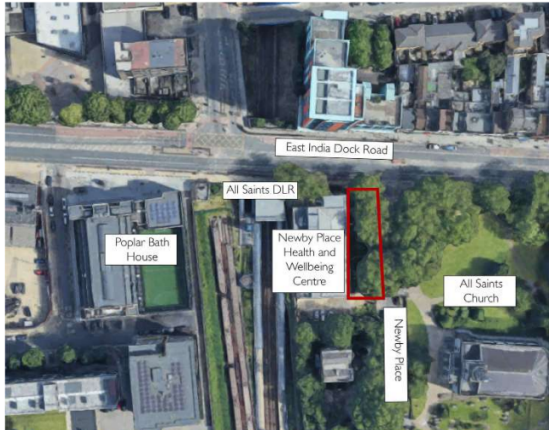


Figure 72 Newby Place Aerial View



Figure 73 Centrally located GP practice along East India Dock Road, attaching growing activities here could provide potential security of tenure



Figure 74 Well-maintained planting, monument at centre of site can be incorporated into the site's design to enhance its character

Current Conditions:

- Located along a green route in the THGGS aiming to connect Poplar High Street and Chrisp Street Market
- Proposed improvements include diversifying planting and functions to add visual interest along route
- Yard space behind health centre is currently underused and consists of decorative planting

Proposed Changes:

- Transforming space into a CUF site with therapeutic plants (e.g. lavender and camomile)
- Provide an alternative form of therapy for mental health patients and educate communities on healthy eating

Assessment

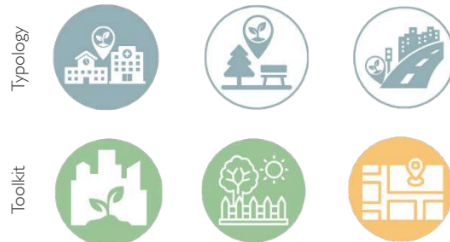


Figure 75 Site faces onto Newby Place and All Saints Church grounds - providing a tranquil setting suitable for an apothecary garden

4.10 Overview of Selected Sites

3 of the 4 options are identified as the most suitable for implementation and all are within close proximity with each other. These are:

Option 1 - Bartlett Park

Retrofitting a CUF site in between Bartlett Park would be a valuable addition to the functionality of the currently underused park and is likely to provide secure tenure, and would serve as an important node for community engagement in CUF.

Option 2 - Trinity Garden

Trinity Garden is ideal for a CUF site to educate students about food growing and healthy lifestyles. The publicly accessible yet secure location of the site also encourages surrounding residents to participate.

Option 3 - Newby Place Health and Wellbeing Centre

This site behind Newby Place Health and Wellbeing Centre proves a good opportunity to explore a unique typology - CUF with therapeutic functions to contribute to the health and well-being of local residents. The orientation of the site away from the busy East India Dock Road makes it less affected by noise and pollution.

Design proposals for each site illustrated in the following section demonstrate application of the Design Principles from the Toolkit. Since a community-led co-design process is centre to implementation of the schemes, site plans and renders have been kept simple to show an indicative vision of each scheme. Similar for stakeholder maps, these are parties who might be interested in participating but communities are encouraged to identify relevant stakeholders during the consultation process.



Figure 76 Selected sites for application



05 Application

5.1 “Union Kitchen Garden”

Site Plan and Application of Toolkit:

Approximate Size: 1500m²

Figure 77 Union Kitchen Garden Site Plan



- This proposal aims to provide CUF attached to Poplar Union community centre in Bartlett Park
- It acts as an extension to the community centre by introducing another form of social co-production to foster more social interaction amongst residents
- Food growing plots and harvest to be shared amongst participants and contributors towards maintaining the garden or provided for the e5 Roasthouse Cafe.
- An adaptable outdoor workshop space can accommodate a variety of community events alongside food growing.

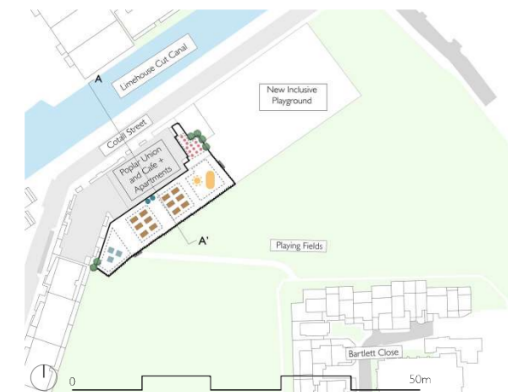


Figure 78 Retrofitting with surroundings (Bartlett Park)



Figure 79 Union Kitchen Garden envisaged transformations

Precedents:



Figure 80 Raised beds retrofitted into Oxbow Park beside playground, Seattle



Figure 81 Clissold Park Market Garden, Stoke-Newington (see pg. 19 for details)

Section AA'
1:250

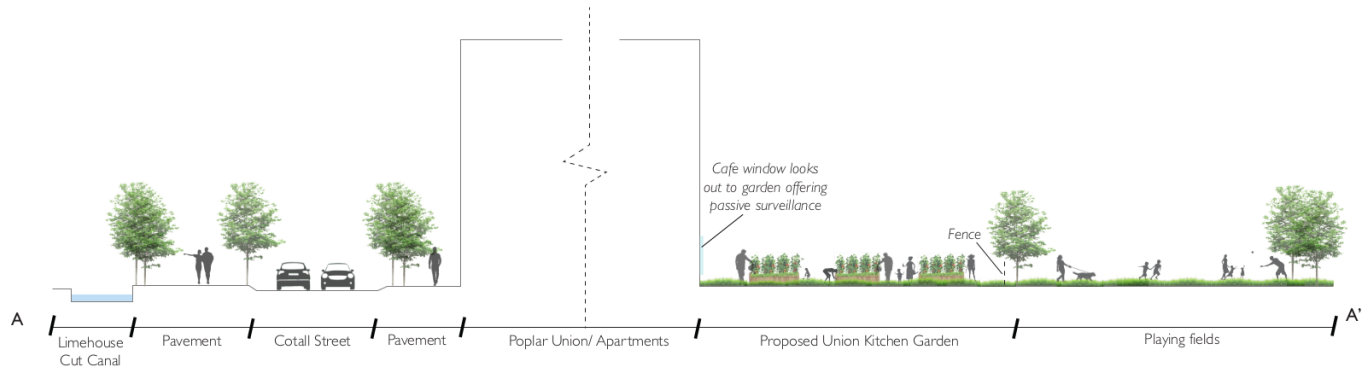


Figure 82 Union Kitchen Garden illustrative section

Potential Stakeholders Contributions and Rewards:



Figure 83 Union Kitchen Garden Potential Stakeholders

Performance Indicator:

Food Output:



Education Value:



Community Empowerment:



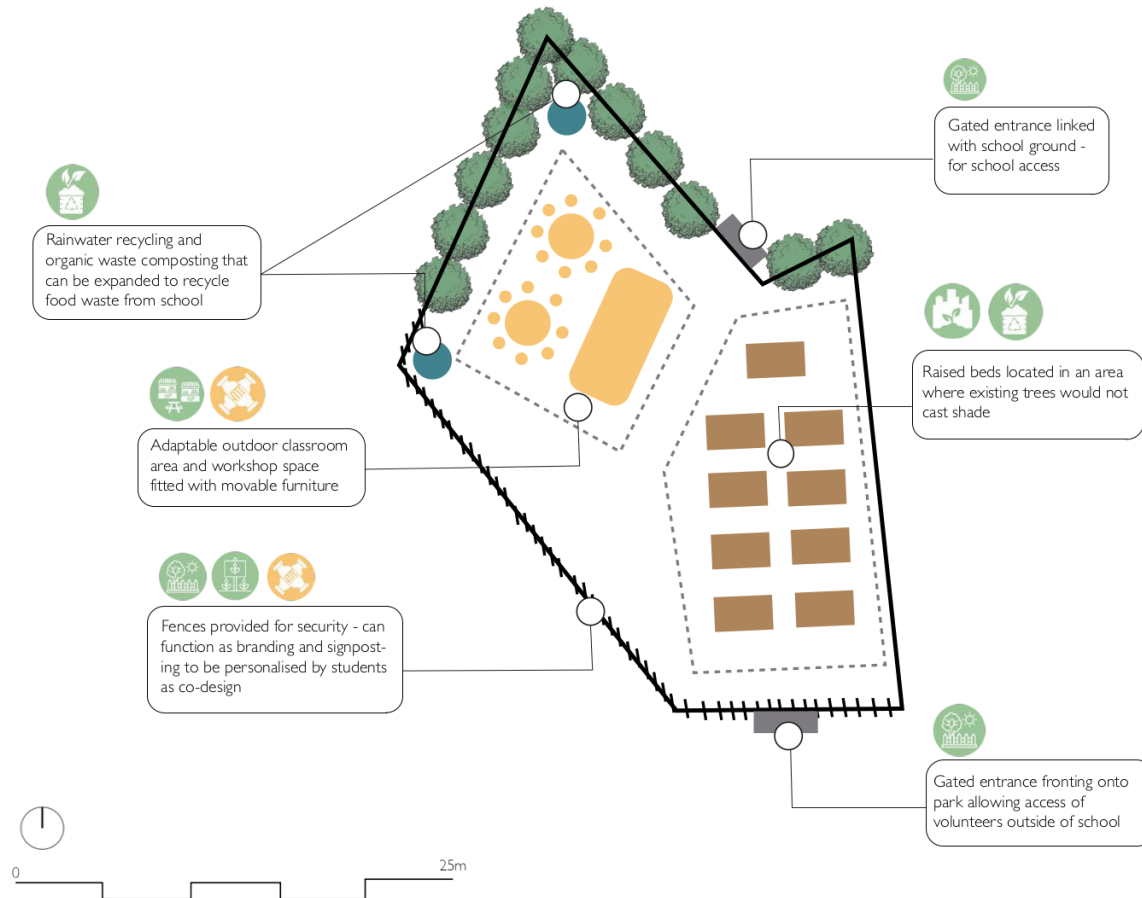
- Food output would be the highest of all three for its size and primary aim to encourage more interaction amongst local communities via food growing
- Situating in the ethnically diverse Lansbury neighbourhood, the scheme would attract a wide range of participants so would achieve effective community education and empowerment
- Poplar Union will be managing operation of the garden and other events on site

5.2 “Mayflower Veg Patch”

Site Plan and Application of Toolkit:

Approximate Size: 800m²

Figure 84 Mayflower Veg Patch Site Plan



- Design aims to encourage students from Mayflower Primary School to explore food growing learn about the food system through engaging in gardening (e.g. after school gardening club)
- Provides a learning opportunity for parents and allowing them to socialise and connect with one another
- Produce can supply for the school canteen and educate on healthy eating
- Design allows efficient use of an otherwise underused section of the park to compensate for the lack of space in the school grounds - a challenge faced by many urban schools.
- It also provide an opportunity for interaction amongst parents as they wait to pick up their children



Figure 85 Retrofitting with surroundings (Trinity Garden)



Figure 86 Mayflower Veg Patch Envisaged Transformation

Precedents:



Figure 87 Dalton St Mary's Primary School food Garden, Crumbria, running an intergenerational community



Figure 88 Flance Early Learning Centre food garden, St Louis (see pg. 21 for details)

Section BB'

1:250

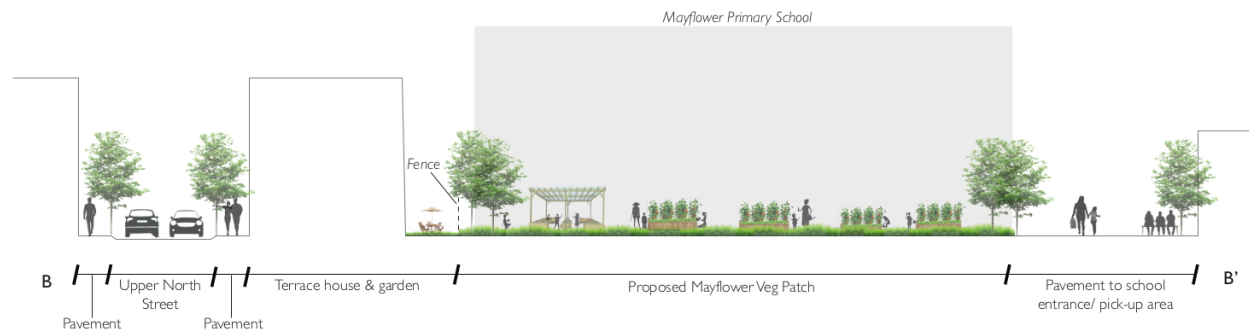


Figure 89 Mayflower Veg Patch illustrative section

Potential Stakeholders Contributions and Rewards:

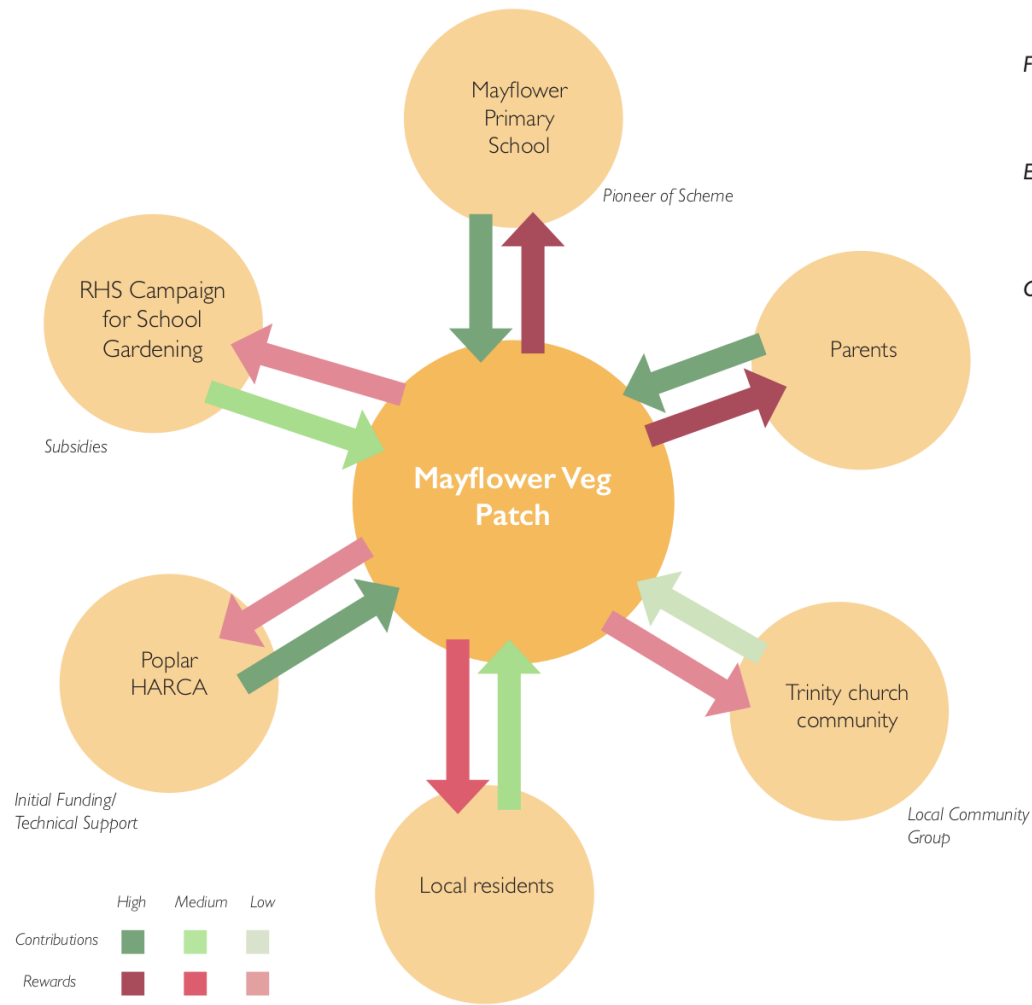


Figure 90 Mayflower Veg Patch Potential Stakeholders

Performance Indicator:

Food Output:



Education Value:



Community Empowerment:



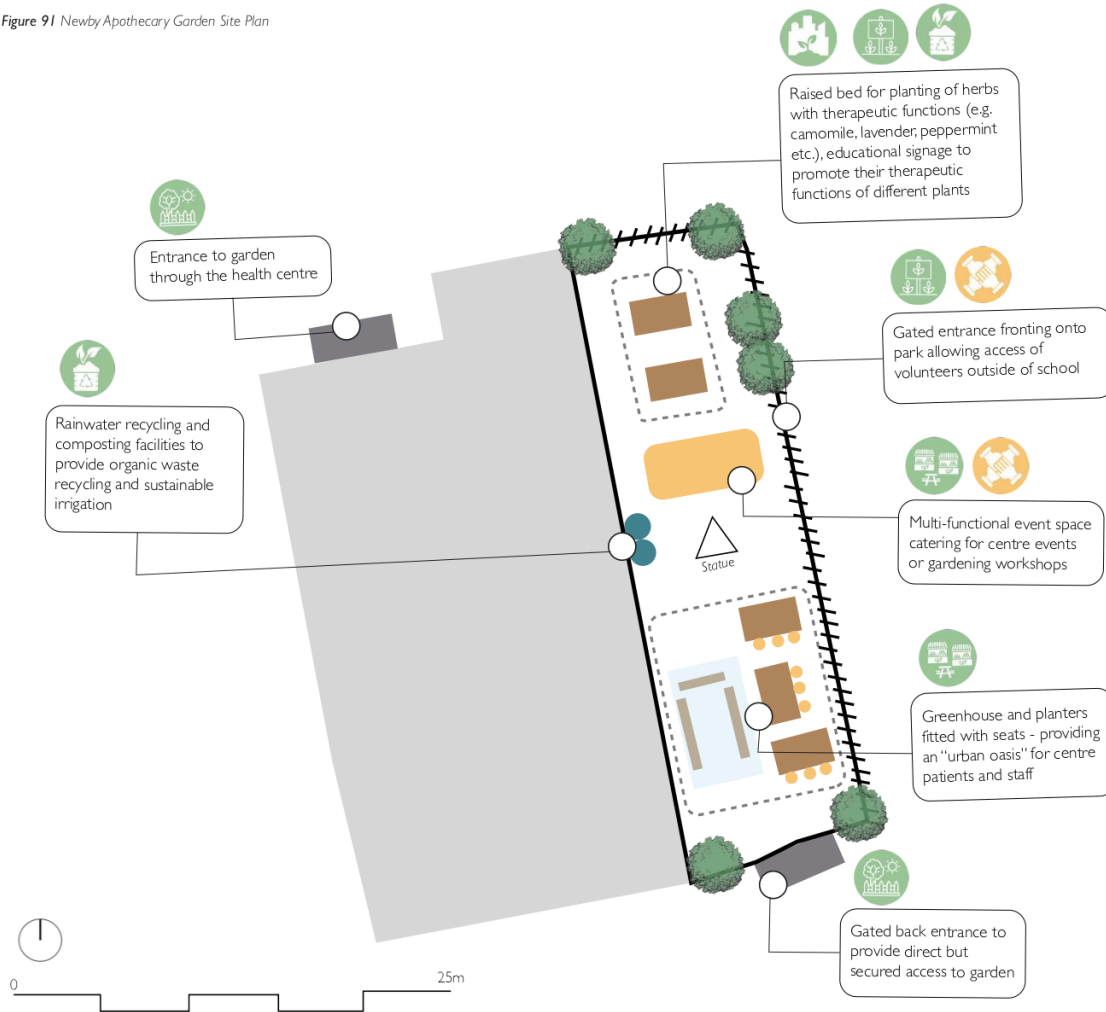
- Beneficiaries would extend from students and parents to local residents and church communities - so has great education and community empowerment contributions
- Scheme has great potential to empower and connect different age groups via intergenerational food growing and related events
- Food output would only be moderate due to space limitations and scheme being a taster patch to introduce children to food growing

5.3 “Newby Apothecary Garden”

Site Plan and Application of Toolkit:

Approximate Size: 400m²

Figure 91 Newby Apothecary Garden Site Plan



- Design envisioned to transform an underused patch behind the health centre into a therapeutic garden
- Providing an alternative form of treatment and stress relief for patients and to educate local residents
- Plants and herbs with therapeutic value are grown - plants can be sold for income, especially herbs that are normally expensive to purchase
- Garden also provides a break area for centre staff

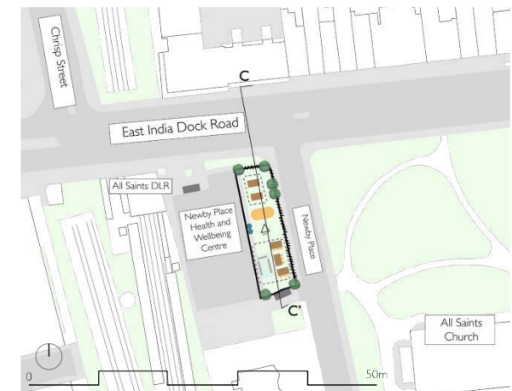


Figure 92 Design retrofitted with surroundings (Newby Place)



Figure 93 Newby Apothecary Garden Envisaged Transformation

Precedents:



Figure 94 Urban Physics Garden - therapeutic themed temporary garden in Southwark



Figure 95 Todmodern Health Centre Apothecary Garden (see pg. 18 for details)

Section CC'
1:250

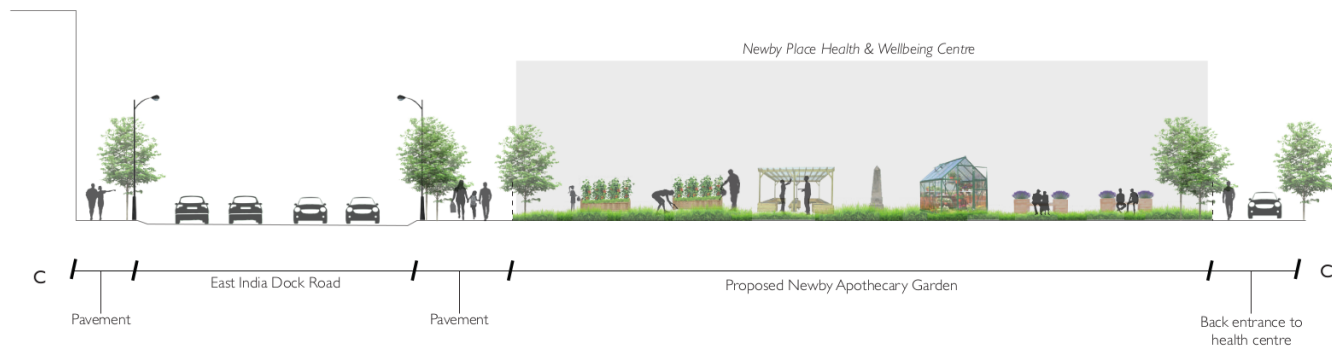


Figure 96 Newby Apothecary Garden Illustrative Section

Potential Stakeholders Contributions and Rewards:

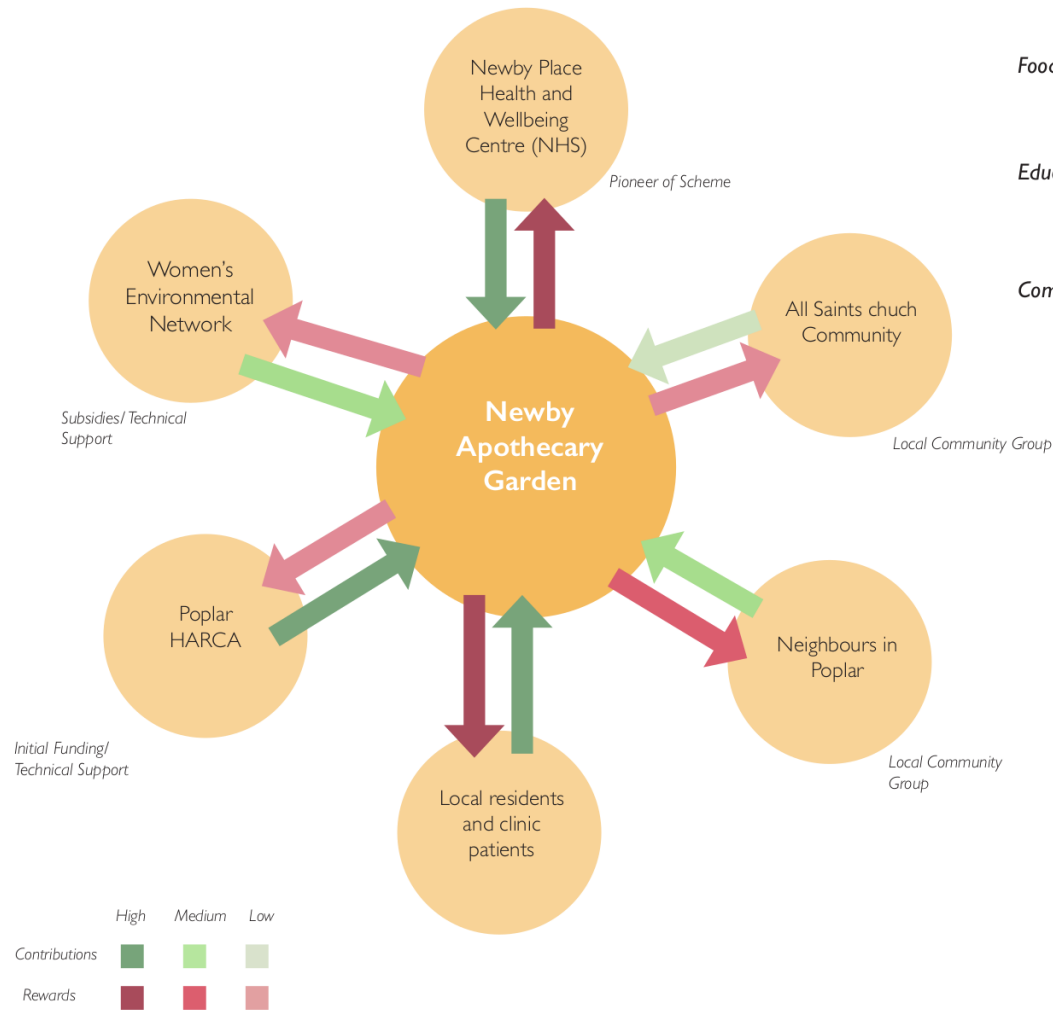


Figure 97 Newby Apothecary Garden Potential Stakeholders

Performance Indicator:

Food Output:



Education Value:



Community Empowerment:



- Health and wellbeing promotion for patients and communities through CUF is the main aim - hence a high education value and contribution to community empowerment but food output would not be significant
- The scheme aims to engage stakeholders besides patients and local residents (e.g. church communities and Neighbours in Poplar - a senior citizens community group)
- Women's Environmental Network (WEN) who are heavily involved with CUF across Tower Hamlets will also provide funding and support

5.4 Management Framework

Poplar Food System Expansion Roadmap



The following strategies demonstrate how to harness and combine existing community assets in Poplar with new CUF projects for more social co-production and a sustainable local food system in Poplar:

1) Establishing a Co-design and Co-operative Model

Steering committee to run existing and new projects - harnessing existing funding partners and identify new streams (see Appendix 4 for funding bodies suggestions)

Ongoing community-led consultation and co-designing



Establish an operation framework (e.g. division of plots, water and harvest rota)

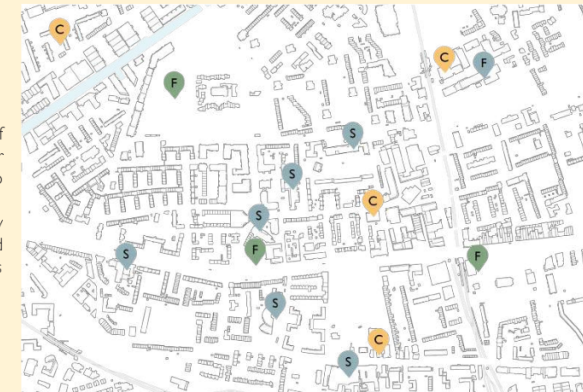
2) Fostering Community Collaboration via Food growing

- Educational workshops to train and upskill local communities
- Community activities to encourage social interaction and learning amongst residents across different growing sites
- Community managed newsletters or social media page to promote food growing sites across Poplar - connecting all local growers



3) Community Outreach

- Securing a consistent base of volunteers through regular collaboration events and tap into other community funding flows
- Encourage pioneering community groups with experience to lead set up of new food growing sites



C Community Organisations S Schools F Proposed Food Growing Sites

4) Establishing a "Growing-to-sell" model

- Selling excess harvest on site to promote urban farming in Poplar
- Selling of excess harvest to eateries to encourage local sourcing of ingredients
- Setting up stalls at Chrips Street Market to promote the "Poplar Brand"



Figure 98 Upscaling Roadmap

Poplar Land Bank Strategy



The proposed Poplar Land Bank Strategy aims to help local growers gain security of tenure through establishing a database of current and potential growing sites. This database should be incorporated into local planning policies to institutionalise food growing as a land use in Poplar. Here are some steps to achieve this goal:

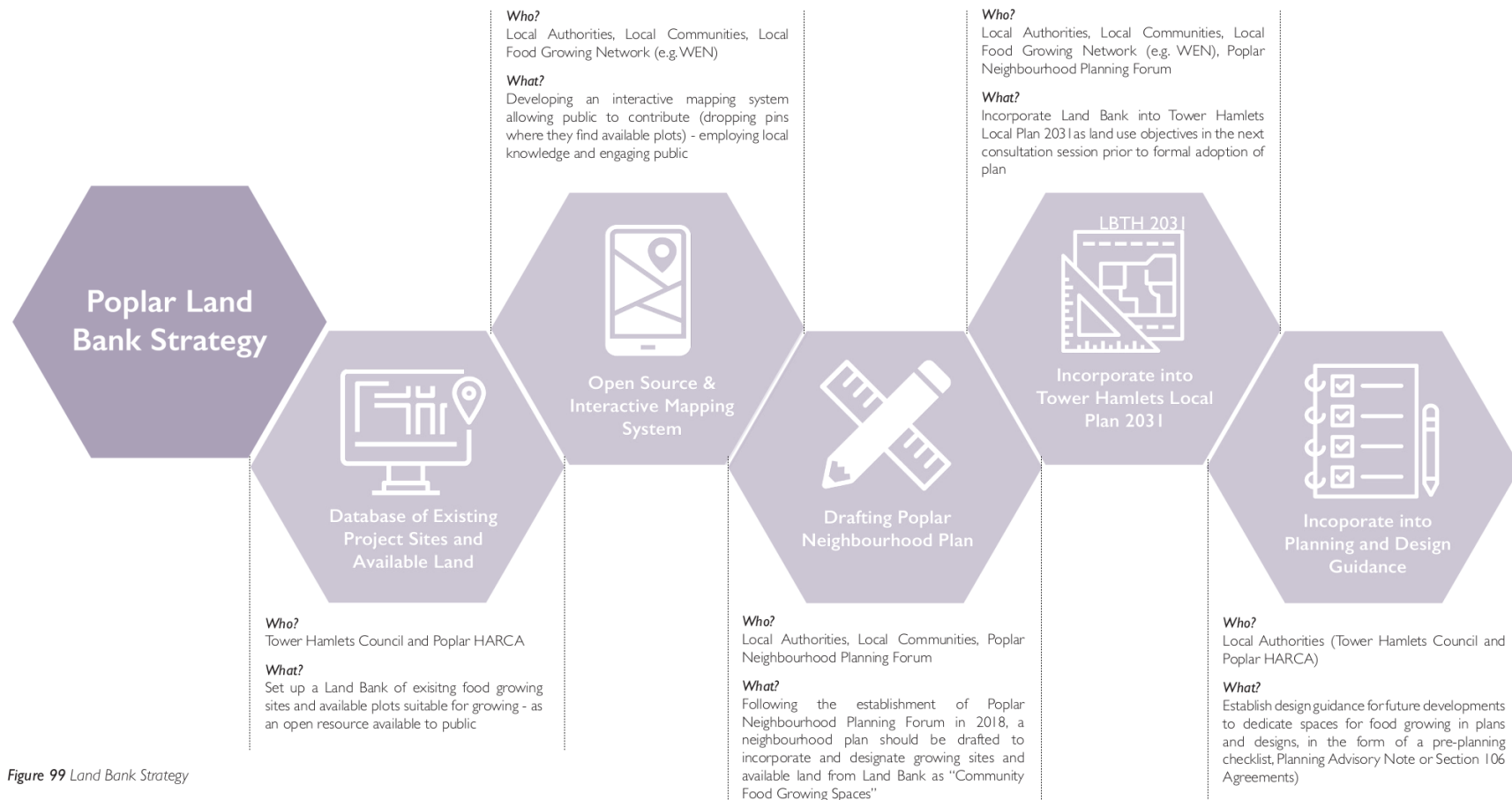


Figure 99 Land Bank Strategy

06 Conclusions

Project Reflection

There is growing interests and appreciation of integrating urban farming into planning and design practices amongst built environment professionals and local authorities. However, a gap exists between theory and practice of urban farming which can be attributed to policy incoherence, and the relationship between urban planning and food system planning is an emerging one so remains as an under-researched area. Consequently, the importance and benefits of linking up the two types of system planning is not fully recognised by planning professionals. This is reflected in the case of London, where higher level policy aspirations to increase urban farming opportunities has not always been transposed into local policies, leading to fragmented implementation across the city. Analyses of key literature and case studies fleshed out some of the benefits and best practices of urban farming, as well as key challenges that threaten the sustainability of existing and new urban farming projects - such as lack of secure land tenure and development priority in planning.

With this knowledge, a toolkit has been formulated to provide design and management principles, targeting local stakeholders, offering guidance that can help overcome some of the common barriers in practice. The toolkit is applied in Poplar, East London upon extensive research into its site context and background. Indicative design proposals for three selected sites were made to demonstrate possible transformations for underused urban spaces within Poplar's landscape through urban farming, and how these activities can contribute towards enhancing Poplar's community cohesion. A contextualised management framework is designed to enhance the future sustainability and resilience of urban farming activities in Poplar. This includes a roadmap to guide their upscaling in Poplar through tapping into its food system and community network, and a landbank strategy that nudges the acknowledgement of urban farming as a formal land use by institutionalising it into Poplar's local policies (e.g. Tower Hamlet's 2031 Local Plan). Ultimately, it is envisioned that sustainable urban living will be nudged by encouraging local sourcing and production of food and to empower communities. These sites can simultaneously act as nodes of social interaction to contribute towards Poplar's wider social cohesion, which is threatened by regeneration and gentrification.

Project Transferrability and Limitations

Informed by a range of literature and international case studies, the toolkit has been holistically designed through adopting key lessons learned from both. The toolkit was further refined to retrofit with the context of Poplar, through detailed site analysis and an interview with Poplar HARCA, demonstrating its high level of transferrability. However, due to time constraints, only a limited number of case studies were reviewed and it was also difficult to arrange interviews with pioneers of each scheme, with very few responses from those approached. The project would also benefit from a greater breadth of case studies with different site contexts and the first-hand experience of those who pioneered the schemes. Furthermore, since co-design is a key principle of the proposed toolkit to maximise community engagement, design proposals have been kept simple and only serve as indicative visions of how each site can be transformed. Design details are intended to be determined by community stakeholders

as part of the co-design process. Furthermore, performance of the toolkit and designs are hard to be determined as there was insufficient time to pilot the schemes. Given there was more time, presenting the final scheme to Poplar HARCA retrospectively and other stakeholders in Poplar would further enhance the quality of designs and could offer an indication of the toolkit's successes.

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Appendix I: Case Study Network Information

Incredible Edible, Todmodern

Network Descriptions: community-led social enterprise in Hackney established in 2010

Motivations: aims to create sustainable and re-localised food systems to feed urban communities as an alternative to the currently damaged food system

Outputs:

- A network of local good growing on micro-sites and small market gardens// Patchwork farms made up of 9 growing sites across Hackney and Dagenham Farm
- Box scheme and farmers market selling locally harvested produce to harness community's buying power; eventually expanded network to include small-scale farmers who produce sustainably
- Developed a Start Up Model in collaboration with Capital Growth to help interested groups to set up community-led box schemes based off the Growing Communities model across the UK

Growing Communities, Hackney

Network Descriptions: community-led social enterprise in Hackney established in 2010

Motivations: aims to create sustainable and re-localised food systems to feed urban communities as an alternative to the currently damaged food system

Outputs:

- A network of local good growing on micro-sites and small market gardens// Patchwork farms made up of 9 growing sites across Hackney and Dagenham Farm
- Box scheme and farmers market selling locally harvested produce to harness community's buying power; eventually expanded network to include small-scale farmers who produce sustainably
- Developed a Start Up Model in collaboration with Capital Growth to help interested groups to set up community-led box schemes based off the Growing Communities model across the UK

Urban Harvest, St Louis

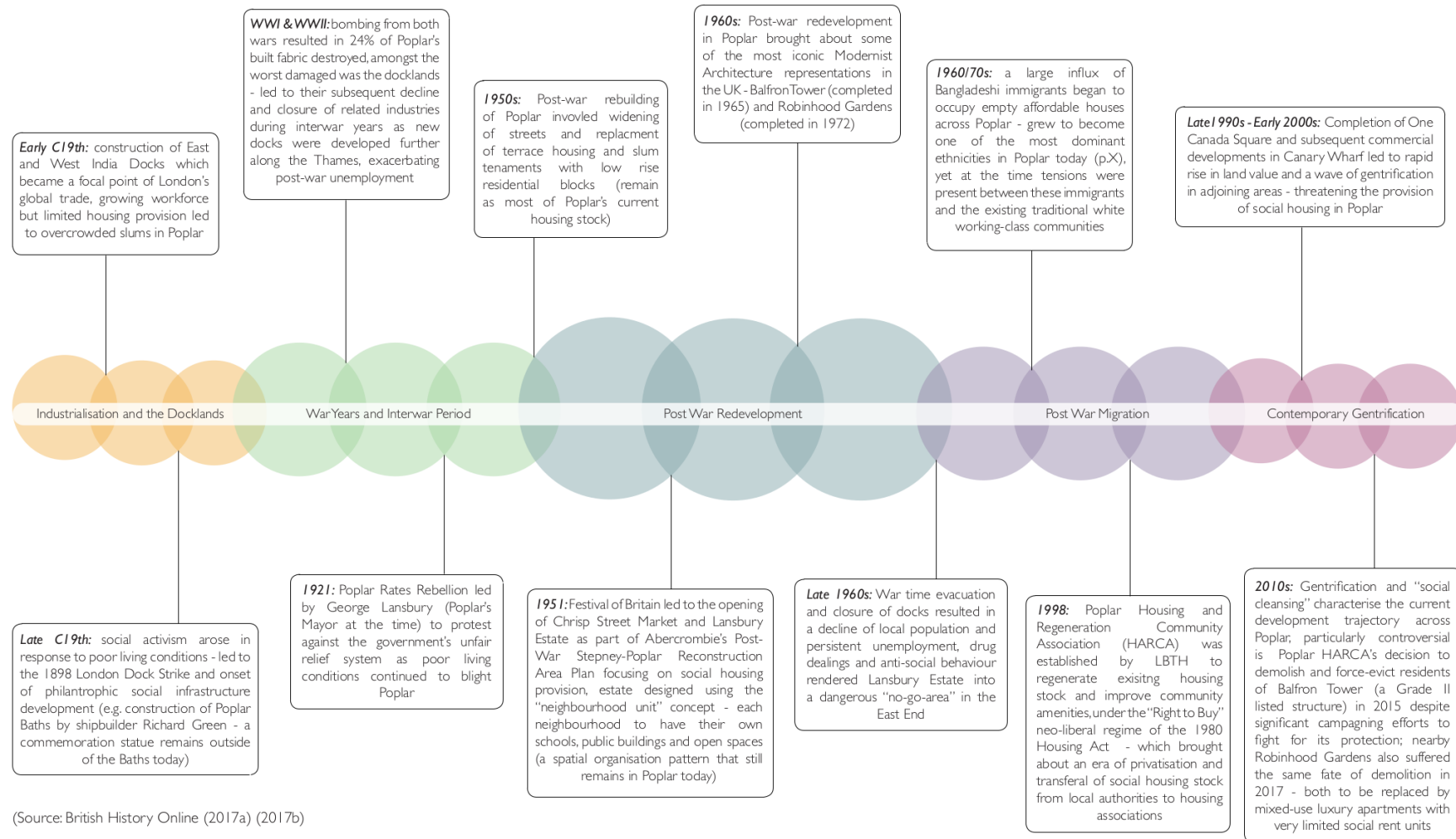
Network Descriptions: Non-profit social enterprise in St Louis, Missouri established in 2011

Motivations: Tackling widespread food insecurity in Missouri (ranked 6th most food insecure state in US) with food growing projects on underused lands and rooftops to create resilient and localised food systems

Outputs:

- 7 organic food platforms across the city of St Louis, all of which are community-led and maintained
- 3 rooftop farms, 2 ground level farms, an urban orchard and a rooftop garden on a stadium
- Made donations to local food banks and collaborate with early learning centres by setting up schoolyard gardens to educate children
- Provide free nutrition cooking, gardening and fitness workshops regularly for local residents

Appendix 2: Political and Social Development of Poplar



(Source: British History Online (2017a) (2017b))

Appendix 3 - Poplar's Land Uses

Predominantly residential in character; a majority of Poplar's housing stock can date back to the 1950s post-war regeneration in the area - e.g. Lansbury Estate (see pg. 24). As housing-led regeneration continues across Poplar, mid rise residential developments will continue to replace much of the older low-rise housing. Although Tower Hamlets have put measures into maintaining supplies of social housing in Poplar (LBTH, 2010) as regeneration takes place (e.g. restricting all new developments to adhere to a tenure split of 70:30 in favour of social rent), gentrification is becoming an inevitable reality of Poplar (see pg. 24). As land value continues to be brought up by regeneration, existing residents are faced with increasingly unaffordable rents which in turn reduces their purchasing powers for daily necessities (e.g. food). Furthermore, the bidding up of rent associated with regeneration would also marginalise local businesses (e.g. ethnic groceries stores) that supply for the staples of local residents at affordable prices.

The anticipated increase in density associated with regeneration would place higher pressure on current community amenities and open spaces. Regeneration has also brought new residents into Poplar; interview with Poplar HARCA also reflected that estate-bound isolation exists in Poplar where existing residents struggle to integrate with new residents. Hence, the promotion of community urban farming activities can provide a platform for more social interaction of old and new residents - contributing towards community cohesion across Poplar. It would also provide an affordable alternative food source for local residents as food becomes increasingly unaffordable in Poplar in the future.



Lansbury Lawrence Primary School in the Lansbury Estate



New Apartment blocks around Bartlett Park - mid/high rise residential blocks dominate the housing typology in Poplar, new developments tend to be of higher density



Low rise housing stock with ground floor retail along East India Dock Road



- | | |
|--|--|
| ■ Terrace Houses | ■ Mid/High Rise Blocks |
| ■ Schools | ■ Mixed Use Residential (with ground floor retail) |
| ■ Community Facilities | ■ Employment/Industrial Uses |
| ■ Others | |

Appendix 4 - Management Strategy: Funding Trajectory

Securing Initial Funding

Identify funding bodies in London and Poplar:



LOTTERY FUNDED



TOWER HAMLETS



Morgan Stanley

On-going Funding

Collaborating with local community groups, local social enterprises and local schools



POPULAR HARCA

Self-Sustaining

Establishing a model of "Growing to Sell" and the "Poplar Brand" and contributing to local food system



Appendix 5 - Interview Consent Forms

Following research ethical guidelines, prior to conducting the interview with a representative from Poplar HARCA, this information sheet and consent form was presented to the candidate and has been signed in agreement to the ethical guidelines. Due to protection of privacy, the interviewee has been kept anonymous and signatures and names have been removed from the forms attached below.

LONDON'S GLOBAL UNIVERSITY
The Bartlett School of Planning



CONSENT FORM FOR RESEARCH STUDIES

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Study: Edible Poplar: a Design Toolkit for sustainable "Edible Landscapes"
 Department: Bartlett School of Planning, University College London
 Name and Contact Details of the Researcher(s): Chatnam Lee (chatnam.lee.19@ucl.ac.uk)
 Name and Contact Details of the Principal Researcher: Pablo Sendra (pablo.sendra@ucl.ac.uk) Filipa Wunderlich (f.wunderlich@ucl.ac.uk)
 Name and Contact Details of the UCL Data Protection Officer: Lisa Fernand. Fernand, lisa.fernand@ucl.ac.uk

This study has been approved by the UCL Research Ethics Committee: Project ID number: _____

DESCRIPTION OF RESEARCH:

This research is for a Major Research Project for the MSc Urban Design and City Planning at University College London. The project is being developed by the student Chatnam Lee. The program director and module coordinator responsible for the student's studies is Pablo Sendra and Filipa Wunderlich.

This major research project studies how underused urban spaces can be retrofitted with different typologies of community urban farming as a means to make sustainable urban living and empower communities. As food insecurity exacerbates to affect both developing and developed cities in the world, urban farming is widely seen as a remedy for urban food insecurity, particularly in socio-economically deprived neighbourhoods by providing better access to fresh sources of food in these urban areas that are often food deserts and have limited access to healthy food. Many community food growing sites are simultaneously community focal points that encourage other forms of social co-production, as well as a place for local communities to learn about the food system and to reconnect with nature. However, despite the many environmental and societal benefits that inspire the transformation of these aspirations into actions, barriers are present that hinder the expansion and sustainability of urban farming activities in different urban settings: such as the lack of connection between food system planning and urban planning practice, which results in a gap between theory and practice of urban farming in cities that has a lack of local policies to operationalise these aspirations. These trends are observed in London where there has been a long history of community gardening and allotments, and particularly in the selected project site – Poplar, London Borough of Tower Hamlets.

Therefore, it is the aim of this research project to bridge the gap between theory and implementation of urban farming in planning practice by examining the benefits of urban farming, different typologies of urban farming and the types of barriers that hinder it from being sustainable. One of the methods to gather this information which is specific to Poplar is through unstructured interviews with relevant stakeholders (e.g. Housing association/neighborhood association representatives in Poplar).

BPLND052 Major Research Project proposal

Thank you for considering taking part in this research. The person organizing the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

I confirm that I understand that by ticking/initialing each box below I am consenting to this element of the study. I understand that it will be assumed that unticked/initialled boxes means that I DO NOT consent to that part of the study. I understand that by not giving consent for any one element that I may be deemed ineligible for the study.

		Tick Box
1.	*I confirm that I have read and understood the Information Sheet for the above study. I have had an opportunity to consider the information and what will be expected of me. I have also had the opportunity to ask questions which have been answered to my satisfaction.	<input checked="" type="checkbox"/>
2.	I understand that I will be able to withdraw my data up to the 16 th August 2019.	<input checked="" type="checkbox"/>
3.	I consent to participate in the study. I understand that my personal information, name and place of work, will be used for the purposes explained to me. I understand that according to data protection legislation, 'public task' will be the lawful basis for processing.	<input checked="" type="checkbox"/>
4.	Use of the information for this project only *I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified (unless you state otherwise, because of the research design or except as required by law). Anonymity is optional for this research. Please select from the following 3 options: a. I agree for my real name and role/affiliation to be used in connection with any words I have said or information I have passed on. b. I request that my comments are presented anonymously but give permission to connect my role/affiliation with my comments (but not the title of my position). c. I request that my comments are presented anonymously with no mention of my role/affiliation.	<input checked="" type="checkbox"/>
5.	I understand that my information may be subject to review by responsible individuals from the University for monitoring and audit purposes.	<input checked="" type="checkbox"/>
6.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason. I understand that if I decide to withdraw, any personal data I have provided up to that point will be deleted unless I agree otherwise.	<input checked="" type="checkbox"/>
7.	No promise or guarantee of benefits have been made to encourage you to participate.	<input checked="" type="checkbox"/>
8.	I understand that the data will not be made available to any commercial organizations but is solely the responsibility of the researcher(s) undertaking this study.	<input checked="" type="checkbox"/>
9.	I understand that I will not benefit financially from this study or from any possible outcome it may result in in the future.	<input checked="" type="checkbox"/>
10.	I agree that my anonymized research data may be used by others for future research. [No one will be able to identify you when this data is shared.]	<input checked="" type="checkbox"/>

BPLND052 Major Research Project proposal

11.	I understand that the information I have submitted will be published as a report and I wish to receive a copy of it. Yes/No	<input checked="" type="checkbox"/>
12.	I consent to my interview being audio/video recorded and understand that the recordings will be: <ul style="list-style-type: none"> Any audio or video recordings will be destroyed after the data has been transcribed Until then, the recordings will be stored anonymously, using password-protected software and will be used for training, quality control, audit and specific research purposes. To note: if you do not want your participation recorded you can still take part in the study.	<input checked="" type="checkbox"/>
13.	I am aware I should contact Pablo Sendra (pablo.sendra@ucl.ac.uk), the director of the program the researcher is enrolled in, if I wish to lodge a complaint.	<input checked="" type="checkbox"/>
14.	I voluntarily agree to take part in this study.	<input checked="" type="checkbox"/>
15.	Use of information for this project and beyond I would be happy for the data I provide to be archived (anonymized according to the option chosen in point 4) at University College London Bartlett School of Planning Library. I understand that other authenticated researchers will have access to my anonymized data.	<input checked="" type="checkbox"/>

If you would like your contact details to be retained so that you can be contacted in the future by UCL researchers who would like to invite you to participate in follow up studies to this project, or in future studies of a similar nature, please tick the appropriate box below.

<input checked="" type="checkbox"/>	Yes, I would be happy to be contacted in this way	
<input type="checkbox"/>	No, I would not like to be contacted	

Name of participant _____ Date: 22/7/2019 Signature _____

Researcher: Chatnam Lee Date: 22/6/2019 Signature: C.Lee

Responsible for the student: Pablo Sendra Date: 12/08/2019 Signature:

Nick Gallant Date: 23/08/19 Signature:

Head of the Department Date: _____ Signature: _____

