

Finding Suitable Land for Self-Building on Public Housing Estates

William Hodgson w.hodgson@ucl.ac.uk

Bartlett Faculty of the Built Environment, University College London, London, UK

Abstract

London is experiencing a serious housing crisis with excessive demand for homes and prices rising at around 10%¹ per annum. Yet many Inner London housing estates, owned by local authorities, often contain under-used parcels of land: air-rights above single-storey garages, left-over corners of undefined public space, or buildings whose function has long since ceased or are under used such as first-floor playgrounds above former car parks.

This research aims to establish the potential for these small unused or under-used sites on public housing estates to become locations for community self-build housing projects. The objective is to build such a project and test its viability in practice. To arrive at that point, however, new techniques will be needed to explore sites in my selected case-study area, Hoxton, in order that the data found can be recorded digitally in a coherent manner which is scalable and potentially parametric.

The scalable processes will identify and catalogue unused and under-used spaces on council estates, including the analysis of significant data such as site area, potential height, and property adjacency. Until now, this kind of investigation has generally been carried using only two-dimensional information such as plans, estate agents web sites, or by wandering around streets in hope of finding something suitable. The proposal is that by adding detail such as height and geometry to maps, new sites can be detected which would otherwise be ignored or missed out. Furthermore, by developing an interactive form of 3D-mapping, this will allow local residents to discover and influence where new housing insertions might best be placed. Software will thus be developed to contribute to the finding of potential sites, while also involving vital community factors such as the 'right to light' of neighbouring properties.

Public engagement projects to test the willingness of Hoxton residents to participate in community self-built housing are an important feature of this doctoral thesis. These events will also be used to present my research outside the university environment, thereby helping to foster connections between University College London (UCL) and a wider audience of residents and potential house-builders in London.

Building proposals are being developed for selected sites which can be used to test various hypotheses including financial viability, building methods and the likelihood of obtaining development control consents. One project will be built by a group of future occupiers and the experience used to further test the viability of the self-build idea.

Keywords: Self-Building, Urban Sites, London, BIM,

Introduction

In March 2016 Chair of the London Housing Commission Bob Kerslake stated that *'The [London] housing crisis will not solve itself, and radical measures...will go a long way to delivering the volume of*

*quality, affordable homes that the capital desperately needs.*² Today the city has a rapidly expanding population, a situation which was not true as recently as twenty years ago, and housing being provided too slowly and sometimes reluctantly. Again much can and has been said elsewhere about the reasons for reluctance and tardiness in the supply of new homes. It is probably enough to say that certain political interests are served by a combination of rapidly rising house prices for those fortunate enough to be homeowners and the increased value of land for those commercial builders who can control the release of newly built homes.

London Borough Councils, like many public sector bodies in the UK are the owners of large amounts of the land in the capital city. It is however often tied up in housing that is in poor repair, and which the Council cannot afford to redevelop, or is in small parcels of land, or is subject to politically complex reasons why it cannot be redeveloped.

Although fashionable self-building is not specifically seen as an ingredient in housing supply in the UK today. It is not entirely surprising given that it often takes much longer to build and is potentially more complicated to do so. The argument in this thesis however, is that self-build should be part of the mix and that it has a role where redeveloping sites may be uneconomic in more straightforward terms or where such development may be otherwise unpopular.

Research Methodology

Establishing a suitable site finding methodology has occupied a considerable time in the early phases of this research. The initial investigations focussed on using existing methodologies that were common to GIS systems and property gazetteers.³ As noted the area chosen for study was Hoxton in the south of London Borough of Hackney. There are numerous sites worthy of examination and an initial sample set was collected and photographed. What was quickly identified was the need to collect the data in a way which followed an industry standard methodology and was above all three-dimensional. The proximity of neighbouring buildings of varying heights, with windows and gardens subject to 'rights of light' has informed this view.

The process of establishing a good data collection method has been explored during the early research. Of paramount importance is to make use of readily available datasets provided by the UK Ordnance Survey⁴ as the basis of the three dimensional model and augment them with site detail. This provides a dimensionally correct complex model which is geo-referenced to the UK National Grid which allows other mapped data to be easily aligned.

The relatively recent process of Building Information Modelling (BIM) has produced computer software which is designed to model and contain data rich three-dimensional objects and record their properties on associated schedules. Different BIM software has therefore been evaluated as part of this thesis to establish its suitability as a container for the data, with promising result so far. Images can be included potentially, thus allowing links to scanned archive drawings of the nearby buildings.

Findings and Discussions

After initial disappointing results using simple CAD software and attempting to gain access to the National Land and Property Gazetteer; Revit, an industry standard BIM Programme, began to produce some useful results shown tabular in Figure 1 from the model shown in Figure 2. Once a site is

2 Building a new deal for London: *ibid.*

3 About the National Address Gazetteer, Geoplace 2016

4 Digimap Ordnance Survey Collection, www.edina.digimap.ac.uk (Accessed April 2016)

identified, either from visual ground level surveys or from examining the 3d digimap data, a simple mass model can be added to the model representing a volume which appears feasible. This gives a relatively accurate estimate of the available area. This method compares favourably to the types of approach used in the London Plan, largely based on proximity to transport nodes. It is however in large part qualitative when sites are selected taking account of local factors and the researcher's experience as architect and planner. Further iterations could attempt to include rights to light and other algorithmic height limits based on neighbouring features.

Mass Schedule above 500 sqm									
Site Address	Description of site	Street Name	Postcode	Gross Floor Area	Floor Height	Number of Floors	Area per floor	Building Height	Potential Dwellings (based on GLA 2b4p and 80% net/gross)
Garages Nr. Clunbury Street (West of 63-106 Crondall Court)		Buckland Street	N1 6TR	511 m ²	2.70 m	5	102 m ²	13.50 m	5
Garages at Burtt House adjacent to St Monica's School		Fanshaw Street	N1 6LD	525 m ²	2.70 m	3	175 m ²	8.10 m	5
199 Kingsland Road	Vacant site between housing estate block and terraced shops with flats above	Kingsland Road	E2 8AN	596 m ²	2.70 m	5	119 m ²	13.50 m	5
Garages Rear of 100 Hoxton Street		Stanway Street	N1 6SA	629 m ²	2.70 m	4	157 m ²	10.80 m	6
Garages Vince Court nr. Old Street	Space above garages	Charles Square	EC1V 5EY	733 m ²	2.70 m	4	183 m ²	10.80 m	7
Land at the rear of 47-49 Pitfield Street		Haberdashers Square	N1 6HT	737 m ²	2.70 m	3	246 m ²	8.10 m	7
Above St Johns Community Hall		New North Road	N1 6JE	749 m ²	2.70 m	5	150 m ²	13.50 m	7
Above Arden Community Centre	Space above existing community centre	Regan Way	N1 6PH	752 m ²	2.70 m	4	188 m ²	10.80 m	7
Land Adjacent to Sara Lane Garages		Stanway Street	N1 6RL	953 m ²	2.70 m	4	238 m ²	10.80 m	9
Rear of 179 - 207 Hoxton Street		Regan Way	N1 6PJ	961 m ²	2.70 m	4	240 m ²	10.80 m	9
Garages adjacent to 63-106 Crondall Court		Buckland Street	N1 6TR	972 m ²	2.70 m	5	194 m ²	13.50 m	9
Garages Adjacent to 1-44 Crondall Court (West side)		Buckland Street	N1 6TZ	1016 m ²	2.70 m	5	203 m ²	13.50 m	9
Rear of 200 - 242 Crondall Street		Crondall Street	N1 6JQ	1053 m ²	2.70 m	2	526 m ²	5.40 m	10
Playground next to Geffrye Community Centre		Falkirk Street	N1 6SA	1076 m ²	2.70 m	6	179 m ²	16.20 m	10
Garages adjacent to 1-44 Cherbury Court (West side)		Cherbury Street	N1 6TL	1197 m ²	2.70 m	6	199 m ²	16.20 m	11
60-178 Stanway Street	Walled market stall site adjacent to street	Stanway Street	N1 6RG	1243 m ²	2.70 m	5	249 m ²	13.50 m	11
Garages adjacent to 1-31 Buckland Court		Buckland Street	N1 5EP	1306 m ²	2.70 m	4	327 m ²	10.80 m	12
Above Geffrye Community Centre		Falkirk Street	N1 6SA	1314 m ²	2.70 m	5	263 m ²	13.50 m	12

Figure 1 Typical tabular output from the BIM model



Figure 2 Typical three dimensional output from the BIM model

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