

Sustainable Urban Design Research Group
LEED ND REVIEW of
St. John's district, Isle of Dogs, London



LEED ND REVIEW of
**ST. JOHN'S
DISTRICT**
Isle of Dogs

-

The Sustainable Urban Design Research Group (SUDRG) is part of Place Research Lab, an organisation based at UEL and dedicated to exploring the complexity of places through an interdisciplinary approach.



SURDG LEED ND REVIEW

St. John's district | London

Author

Michela Pace

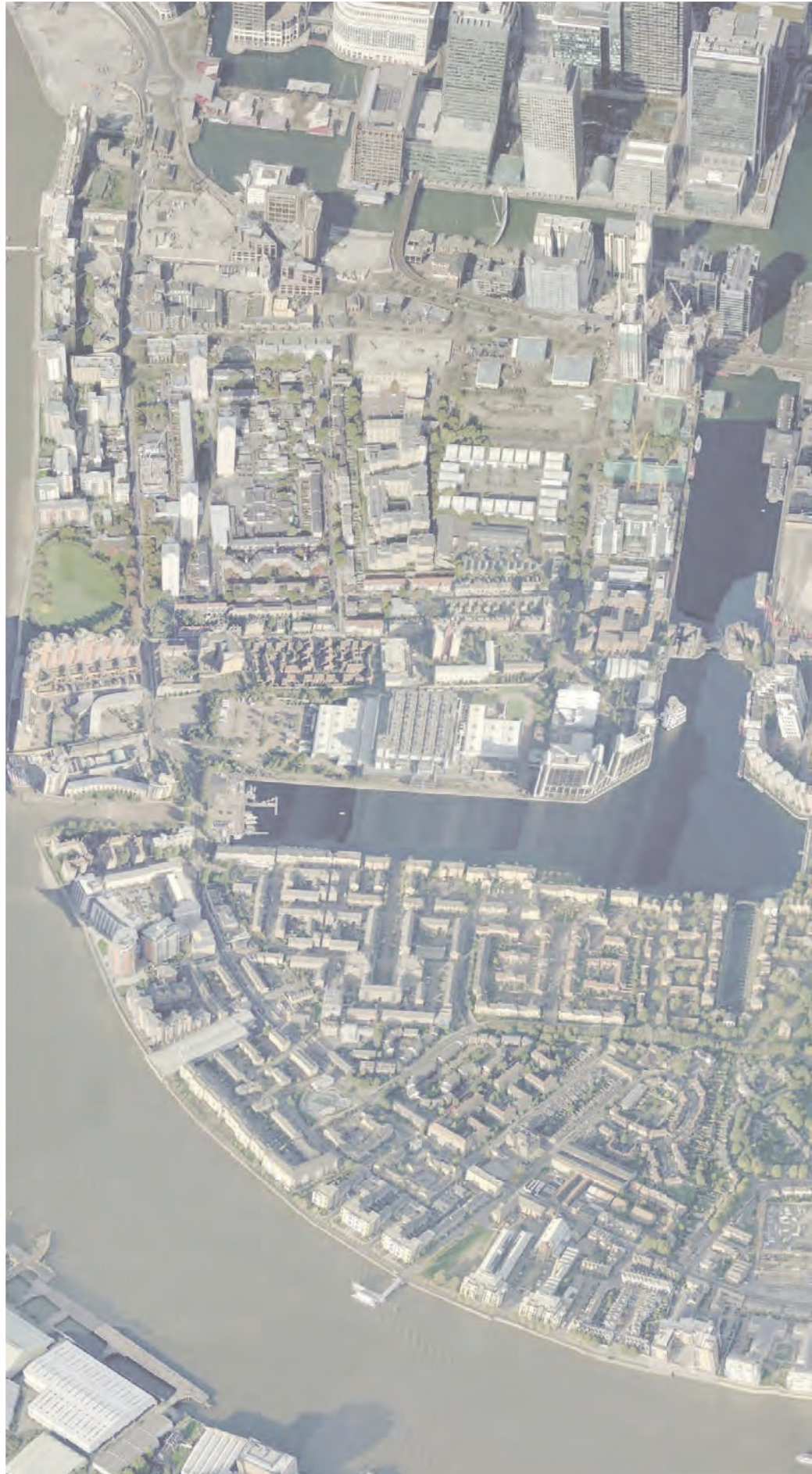
Advisors

Roland Karthaus | senior lecturer at UEL, director of PRL

Alan Chandler | leader of research and knowledge exchange at AVA, UEL

May 2011

1.0 Introduction	6
1.1 Research background and objectives	
1.2 Approaches	
1.3 The Methodology	
1.4 St. John's indicative rating summary	
1.5 Notes on Leed and ND certification	
2.0 Smart Location and Linkage	41
SLL 1, Preferred Locations	
SLL 2, Brownfield Redevelopment	
SLL 3, Locations with Reduced Automobile Dependence	
SLL 4, Bicycle Network and Storage	
SLL 5, Housing and Jobs Proximity	
SLL 6, Steep Slope Protection	
SLL 7, Site Design for Habitat or Wetland and Water Body Conservation	
SLL 8, Restoration of Habitat or Wetlands and Water Bodies	
SLL 9, Long-Term Conservation Management of Habitat or Wetlands and Water Bodies	
2.1 Neighborhood Pattern and Design	57
NPD 1, Walkable Streets	
NPD 2, Compact Development	
NPD 3, Mixed-Use Neighbourhood Centres	
NPD 4, Mixed-Income Diverse Communities	
NPD 5, Reduced Parking Footprint	
NPD 6, Street Network	
NPD 7, Transit Facilities	
NPD 8, Transportation Demand Management	
NPD 9, Access to Civic and Public Spaces	
NPD 10, Access to Recreation Facilities	
NPD 11, Visitability and Universal Design	
NPD 12, Community Outreach and Involvement	
NPD 13, Local Food Production	
NPD 14, Tree-Lined and Shaded Streets	
NPD 15, Neighbourhood Schools	
2.2 Green Infrastructure and Buildings	99
GIB 1, Certified Green Buildings	
GIB 2, Building Energy Efficiency	
GIB 3, Building Water Efficiency	
GIB 4, Water-Efficient Landscaping	
GIB 5, Existing Building Reuse	
GIB 6, Historic Resource Preservation and Adaptive Use	
GIB 7, Minimized Site Disturbance in Design and Construction	
GIB 8, Stormwater Management	
GIB 9, Heat Island Reduction	
GIB 10, Solar Orientation	
GIB 11, On-Site Renewable Energy Sources	
GIB 12, District Heating and Cooling	
GIB 13, Infrastructure Energy Efficiency	
GIB 14, Wastewater Management	
GIB 15, Recycled Content in Infrastructure	
GIB 16, Solid Waste Management Infrastructure	
GIB 17, Light Pollution Reduction	
3.0 Conclusion	120
3.1 Scorecard "LEED FOR NEIGHBOURHOOD DEVELOPMENT PROJECT CHECKLIST by SUDRG"	122
3.2 References and credits	124
3.3 Appendices	126





LEED ND REVIEW of
**ST. JOHN'S
DISTRICT**
Isle of Dogs

1.0 Introduction

1.1 Research background and objectives

This report is part of a broader research programme within the AVA school of UEL under Roland Karthaus of the Place Research Lab, as part of the Institute of Sustainability. The group considers the existing situation of selected residential neighbourhoods in London, in an attempt to analyze their existing and potential as sustainable places. This is understood to involve parameters of liveability, wellbeing, healthiness and environmental performance that characterize each district. This evaluation is made by using the US Green Building Council's LEED (Leadership in Energy and Environmental Design) for Neighbourhood Developments (LEED-ND) as a starting point, revealing the potentialities and weaknesses of an area and suggesting the first guidelines for any possible refurbishment.

As stated in the survey run by the Sustainable Urban Design Research Group (SUDRG, 2010, p. 8), the study conducted on the districts contemporaneously aims to review the content of some credits originally devised for US neighbourhoods, and to suggest a way to adapt them to the UK planning and design context.

The different nature of the sites provides a varied range of cases, testing the LEED-ND document: the obtained outputs can be gathered through time, and form an extensive source of references continuously updating the research's results and the idea of sustainability applicable on the sites. In fact, the mutability of the conditions that regulates urban life and spaces also assures a necessary flexibility to this tool, that can be handled and modified in order to better reflect the complexity of some urban realities and to understand their relation with

the city of London and elsewhere.

Our premise is that every sustainable place will be different and the project attempts to test the limits of how this knowledge can be captured and worked with.

The LEED-ND document can be a very useful tool in this context, because it allows different subjects to use a structured scheme to report their contributions, that become accessible through a shared visual media.

The district presented here is St. John's, located in the central part of the Isle of Dogs, in London's Docklands. St. John's is one of the Millwall's housing estates and it has been chosen because it is recognizable in the functioning and in the form as an old community, sharing the surrounding mile with the newer and contrasting development of Canary Wharf Business District. Other elements of interest are the good connectivity to the public transport system and the presence of public facilities in addition to some large natural spaces. The objective of the research was not only to investigate how sustainable the existing elements are, but how they can work in the future considering, beyond the physical forms, the economical and social processes that shape the spaces and support the community.

1.2 Approaches

The research considered the St. John's district in its existing condition against LEED for Neighbourhood Developments document, v2009, but also investigates the feasibility of a re-development of the area, treating LEED-ND as a flexible tool that needs to be adapted to comprehend the processes that shaped the city of London.

Thus, the US standards are reviewed with a critical approach, and some questions are raised in order to consider the complexity of a different context. To this purpose, BREEAM (BRE Environmental Assessment Method) and CSH (Code for Sustainable Homes) are used as complementary instruments of reference.

The rating approach takes into account the three main categories of the official certification document ('Smart Location and Linkage', 'Neighbourhood Pattern and Design', 'Green Infrastructure and Buildings'). The two additional categories 'Innovation and Design Process' and the 'Regional Priority Credit', are not considered because they relate to new developments and thus their credits are not achievable in this situation. For the reason the maximum achievable scoring has been calculated on a basis of 100 instead of 110.

Within each category, every 'Credit' has a resume of the main actions required to calculate the score: a main 'Intent', at the top of the page, and the technical instruments of evaluation (tables, formulas) to follow. However, a technical instrument is not always the best way to show the functioning of a place also if it is convenient in order to uniform the evaluations. Most of the aspects that shape an area are intimately linked to the character of the place and we can feel them

only through direct experience: a fair assessment should consider not only the physical forms but also the historical, social, economical processes that shaped and keep them alive.

For this reason, significance is assigned to the stated intent in LEED: beyond the differences that exist between the US and UK context and their own referring systems, and beyond the ambiguity that sometimes characterises LEED-ND technical tools, the intent is assumed as the main guideline and point of reference. According to this approach, the Credit has been considered with flexibility, paying attention to the particularities of the site and assuming that similar scores can be earned in different ways.

Moreover, the connection between Credits has been made more visible through explicit references. In fact their relation already exists in the original scheme but it is hardly perceptible due to the length of the document and the rare recalls to the similarities between Credits. Making it clearer is way to stress the potentiality of a broad network: the Credits are connected as sensitive points of a net, where an action on one of them reflects its effects on the others. This image suggests the functioning of the site as a whole and avoid a fragmented reading and comprehension of the reality, with the risk of under exploiting the richness of LEED-ND scheme.

LEED ND Categories

LEED 2009 FOR NEIGHBORHOOD DEVELOPMENT PROJECT CHECKLIST

A

Smart Location and Linkage

27 possible points

<input checked="" type="checkbox"/>	Prerequisite 1	Smart Location	Required
<input checked="" type="checkbox"/>	Prerequisite 2	Imperiled Species and Ecological Communities	Required
<input checked="" type="checkbox"/>	Prerequisite 3	Wetland and Water Body Conservation	Required
<input checked="" type="checkbox"/>	Prerequisite 4	Agricultural Land Conservation	Required
<input checked="" type="checkbox"/>	Prerequisite 5	Floodplain Avoidance	Required
<input type="checkbox"/>	Credit 1	Preferred Locations	10
<input type="checkbox"/>	Credit 2	Brownfield Redevelopment	2
<input type="checkbox"/>	Credit 3	Locations with Reduced Automobile Dependence	7
<input type="checkbox"/>	Credit 4	Bicycle Network and Storage	1
<input type="checkbox"/>	Credit 5	Housing and Jobs Proximity	3
<input type="checkbox"/>	Credit 6	Steep Slope Protection	1
<input type="checkbox"/>	Credit 7	Site Design for Habitat or Wetland and Water Body Conservation	1
<input type="checkbox"/>	Credit 8	Restoration of Habitat or Wetlands and Water Bodies	1
<input type="checkbox"/>	Credit 9	Long-Term Conservation Management of Habitat or Wetlands and Water Bodies	1

B

Neighborhood Pattern and Design

44 possible points

<input checked="" type="checkbox"/>	Prerequisite 1	Walkable Streets	Required
<input checked="" type="checkbox"/>	Prerequisite 2	Compact Development	Required
<input checked="" type="checkbox"/>	Prerequisite 3	Connected and Open Community	Required
<input type="checkbox"/>	Credit 1	Walkable Streets	12
<input type="checkbox"/>	Credit 2	Compact Development	6
<input type="checkbox"/>	Credit 3	Mixed-Use Neighborhood Centers	4
<input type="checkbox"/>	Credit 4	Mixed-Income Diverse Communities	7
<input type="checkbox"/>	Credit 5	Reduced Parking Footprint	1
<input type="checkbox"/>	Credit 6	Street Network	2
<input type="checkbox"/>	Credit 7	Transit Facilities	1
<input type="checkbox"/>	Credit 8	Transportation Demand Management	2
<input type="checkbox"/>	Credit 9	Access to Civic and Public Spaces	1
<input type="checkbox"/>	Credit 10	Access to Recreation Facilities	1
<input type="checkbox"/>	Credit 11	Visitability and Universal Design	1
<input type="checkbox"/>	Credit 12	Community Outreach and Involvement	2
<input type="checkbox"/>	Credit 13	Local Food Production	1
<input type="checkbox"/>	Credit 14	Tree-Lined and Shaded Streets	2
<input type="checkbox"/>	Credit 15	Neighborhood Schools	1

C**Green Infrastructure and Buildings****29 possible points**

<input checked="" type="checkbox"/>	Prerequisite 1	Certified Green Building	Required
<input checked="" type="checkbox"/>	Prerequisite 2	Minimum Building Energy Efficiency	Required
<input checked="" type="checkbox"/>	Prerequisite 3	Minimum Building Water Efficiency	Required
<input checked="" type="checkbox"/>	Prerequisite 4	Construction Activity Pollution Prevention	Required
<input type="checkbox"/>	Credit 1	Certified Green Buildings	5
<input type="checkbox"/>	Credit 2	Building Energy Efficiency	2
<input type="checkbox"/>	Credit 3	Building Water Efficiency	1
<input type="checkbox"/>	Credit 4	Water-Efficient Landscaping	1
<input type="checkbox"/>	Credit 5	Existing Building Reuse	1
<input type="checkbox"/>	Credit 6	Historic Resource Preservation and Adaptive Use	1
<input type="checkbox"/>	Credit 7	Minimized Site Disturbance in Design and Construction	1
<input type="checkbox"/>	Credit 8	Stormwater Management	4
<input type="checkbox"/>	Credit 9	Heat Island Reduction	1
<input type="checkbox"/>	Credit 10	Solar Orientation	1
<input type="checkbox"/>	Credit 11	On-Site Renewable Energy Sources	3
<input type="checkbox"/>	Credit 12	District Heating and Cooling	2
<input type="checkbox"/>	Credit 13	Infrastructure Energy Efficiency	1
<input type="checkbox"/>	Credit 14	Wastewater Management	2
<input type="checkbox"/>	Credit 15	Recycled Content in Infrastructure	1
<input type="checkbox"/>	Credit 16	Solid Waste Management Infrastructure	1
<input type="checkbox"/>	Credit 17	Light Pollution Reduction	1

D**Innovation and Design Process****6 possible points**

<input type="checkbox"/>	Credit 1	Innovation and Exemplary Performance	1–5
<input type="checkbox"/>	Credit 2	LEED® Accredited Professional	1

E**Regional Priority Credit****4 possible points**

<input type="checkbox"/>	Credit 1	Regional Priority	1–4
--------------------------	----------	-------------------	-----

LEED 2009 for Neighborhood Development Certification Levels

100 base points plus 6 possible Innovation and Design Process and 4 possible Regional Priority Credit points

Certified	40–49 points
Silver	50–59 points
Gold	60–79 points
Platinum	80 points and above

LEED ND categories (USGBC, 2011, pp. vii,viii)

SMART LOCATION

ND	
Prerequisite	SLL Prerequisite 1
Points	Required

Intent

To encourage development within and near *existing* communities and public transit infrastructure. To encourage improvement and redevelopment of existing cities, suburbs, and towns while limiting the expansion of the *development footprint* in the region to appropriate circumstances. To reduce vehicle trips and *vehicle miles traveled* (VMT). To reduce the incidence of obesity, heart disease, and hypertension by encouraging daily physical activity associated with walking and bicycling.

Requirements**FOR ALL PROJECTS**

Either (a) locate the *project* on a site served by existing *water and wastewater infrastructure* or (b) locate the project within a legally adopted, publicly owned, planned water and wastewater service area, and provide new water and wastewater infrastructure for the project.

AND**OPTION 1. Infill Sites**

Locate the project on an *infill site*.

OR**OPTION 2. Adjacent Sites with Connectivity**

Locate the project on an *adjacent site* (i.e., a site that is adjacent to *previously developed* land: see Definitions) where the *connectivity* of the site and adjacent land is at least 90 intersections/square mile as measured within a 1/2-mile distance of a continuous segment of the *project boundary*, equal to or greater than 25% of the project boundary, that is adjacent to previous development. Existing external and internal intersections may be counted if they were not constructed or funded by the project *developer* within the past ten years. Locate and/or design the project such that a through-*street* and/or nonmotorized right-of-way intersects the project boundary at least every 600 feet on average, and at least every 800 feet, connecting it with an existing street and/or right of way outside the project; nonmotorized rights-of-way may count for no more than 20% of the total. The exemptions listed in NPD Prerequisite 3, Connected and Open Community, do not apply to this option.

SLL PREREQUISITE 1

SLL Prerequisite 1 and SLL Credit 1 (USGBC, 2009, pp. 35, 85)

Beyond the differences that exist between the US and UK context and their own referring systems, and beyond the ambiguity that sometimes characterises LEED-ND technical tools, the intent is assumed as the main guideline and point of reference. According to this approach, the Credit has been considered with flexibility.

PREFERRED LOCATIONS

ND	
Credit	SLL Credit 1
Points	1-10 points

Intent

To encourage development within *existing* cities, suburbs, and towns to reduce adverse environmental and public health effects associated with sprawl. To reduce development pressure beyond the limits of existing development. To conserve natural and financial resources required for construction and maintenance of infrastructure.

Requirements

Achieve any combination of requirements in the following three options:

OPTION 1. Location Type

Locate the *project* in one of the following locations:

- A *previously developed site* that is not an *adjacent site* or *infill site* (1 point).
- An *adjacent site* that is also a *previously developed site* (2 points).
- An *infill site* that is not a *previously developed site* (3 points).
- An *infill site* that is also a *previously developed site* (5 points).

AND/OR

OPTION 2. Connectivity

Locate the project in an area that has existing *connectivity* within 1/2 mile of the *project boundary*, as listed to Table 1.

Table 1. Points for connectivity within 1/2 mile of project

Intersections per square mile	Points
≥ 200 and < 250	1
≥ 250 and < 300	2
≥ 300 and < 350	3
≥ 350 and < 400	4
≥ 400	5

Intersections within the site may be counted if the intersections were not constructed or funded by the *developer* within the past ten years.

AND/OR

OPTION 3. Designated High-Priority Locations

Achieve the following (3 points):

- Earn at least 2 points under NPD Credit 4, Mixed-Income Diverse Communities, Option 2, Affordable Housing.

SLL CREDIT 1



1.3 Methodology

The structure of the report tells how the site was considered and reveals some methodological guidelines used for approaching both to the site and the LEED-ND document, and for studying their relationship. Particular attention was given to on-site observation and how these find a correspondence (or not) in the technical reprocessing required by LEED-ND system.

A good observation always starts with some questions. Although the questions here presented seem very simple, they give us the opportunity to test our choices and to provide the first explanations in order to better understand the area we are approaching. WHERE is St. John's district? WHY it has been chosen as a study area? WHEN was it born and what is its background? WHAT can we notice and take into account while observing the neighbourhood? And finally, HOW to define the boundary of a neighbourhood and how approach this reality in order to shape our opinion upon the sustainability matter?

WHERE?

St John's district is situated in the middle of the Isle of Dogs, London. It is confined by Manchester Road (East), Manchester Street (South-East), Glenglall Grove (South) and E. Ferry Road (North-West). The district take advantage from some important proximities, in fact it is about 400m far from Canary Wharf and well connected to the city thanks to the near Crossharbour station on the DLR line. Besides that, St. John's is close to some areas with interesting natural connotation: the banks of the river Thames (East), the docklands (West and North), the Mudchute Farm and

park (South).

WHY?

St John's district has been chosen for various reasons, first of all because of its sense of identity. A public sign in Castalia square informs us about St. John's district: the neighbourhood is seen as a unit also if composed by different typologies of buildings and constructed in different years. Here we can notice a concentration of small scale facilities spread near the district and, at the same time, the presence of some attractive areas of larger size. The two kinds of facilities seem to work within different contexts: while the small ones serve the community, the larger ones serve the city. The two networks weave their strings together giving to St. John's a privileged position rich in possibilities, at least at first glance. If we look closely, we see how the parts that compose the area are only placed side by side without having a real relationship: the residential, the commercial, the financial and natural areas are separated the ones to the other and rarely foster a mixing of the occupants, even if they have good physical and visual connections.

WHEN?

We can find a partial answer to the situation pointed out just above by studying the history of the site. The first information we have comes from a map of 1878 by E. Standfor, where a few houses appear on the East side while the main road of the area seems to be already set. Observing the other maps, we can notice a sort of shifting in the weights of the area through time, from the East side to the West, in relation to the movement

of the harbours and the shipyards. In fact, during this century, the houses of the original settlements expanded towards the western free land and new streets appeared, linking St. John's with Canary Wharf's quays and marking the relation with the docks even stronger.

When the harbour has been substituted by the financial area, St John's district was just in the middle: on one side other old residential building, on the other a big concentration of working places in glazed towers. For St. John's, bordering with a renewed area was considered a positive circumstance, at that time: the way Canary Wharf district was conceived and developed during the 80s and 90s was supposed to create positive effects on the nearest areas, which would have the benefit of new facilities. If we look at the maps, many of these assumption are confirmed: when applied to St. John's district, LEED-ND gets a lot of points for the Credits that consider the presence of different services, working places, access to recreational facilities and public spaces. But are the people who live in St. John's really employed in this context? Do they really use the services of the adjacent area? The map doesn't tell us about this.

As Anna Minton analysed in her book *Ground Control* (2009, pp. 3-14), the development of Canary Wharf Estate would have followed the Thatcherian 'trickle-down' process, depending on which a sort of fluid welfare would have come down from the newer, wealthier parts involving the poorer areas. This idea of regeneration would have provided new opportunities for the surrounding areas such as St. John's. Unfortunately, the differences between the new towered district and the old Millwall's housing estate be

came deeper making their proximity a sort of disconnected patchwork. According to Minton's documentation, the people who inhabit the two areas keep their lives separately: none of the workers from Canary Wharf go to the pubs in St. John's, and St. John's community feels a sort of repulsion in going to Canary. There is no mix because the two groups of people feel the other place doesn't belong to them: they prefer using the facilities they find in their place without worrying too much about what happens on the other side of the DLR line, that marks a sort of ideal boundary between the two areas. The level of employment is further data that reveals the distance between the two realities: although the number of working places is extremely high in Canary (and St. John's should get some benefit due to its proximity), unemployment on Millwall was running at 23.5% in 2007. It could be higher today.

We could ask ourselves in what way could LEED-ND take into account the real functioning of an area considering that, in some cases, a 'potential good functioning' is not enough to make things work for real. How should we evaluate a credit that finds its correspondence on paper but not in the reality? To integrate the more technical data we get from the maps with the historical, social, economical levels, such as with our experience on site is not a simple operation, but it could return us a more realistic point of view for a more complete evaluation and proposal.

WHAT?

What we can notice and take into account is a series of quantities and a

series of qualities. Quantities because the district is made by devices, objects, tools and qualities because of the value of these material level in terms of efficiency, sustainability and significance for the inhabitants. How qualities and quantities are related and lived is a central point to be analyzed in this LEED-ND report.

HOW?

All of these issues pertain to the fact that the district is not an isolated object but rather we are observing it in a specific moment on the time line where the spaces as well the relations continuously change. As we are the subject who put the information together, we can't avoid considering our experience, beyond technical and historical aspects.

Our approach to the area is guided both by sensation and reflections that occur in different moments of our experience: our first impressions are transformed in evaluations through a progressive shifting that brings us to provide a scientific outcome. This happens also thanks to the tools we acquire while doing our investigation and how we finally use our sensations to support and delve into particular aspects of the study.

This doesn't mean to simply involve our emotional sphere but rather to reflect on the connections between our on-site experience and the other data through a scientific elaboration. Moreover, as LEED-ND often considers the population point of view and its daily experience, it would be a considerable lack not to consider observation a fundamental tool.

However, the process that we follow shouldn't be too direct, as though we are proceeding from point 1 to 2 on

an highway without exits (Munarin, Tosi, 2001). On the contrary, the process should be guided by an open mind: the aim is integrate into guidelines of the LEED-ND structure some of the questions that are formulated through the investigation and that suggest new attitudes towards key issues.

Photography has been used as a tool to investigate the territory: an extra-eye able to select and give an interpretation of the elements evaluated, with particular attention to their relationship. In St. John's, for example, the obsessive presence of a skyscrapers landscape opens up questions about the scale of the objects and their co-presence, the relation among different realities and users, the permeability or not of some boundaries.

Evidence provided from observations were joined with measurement and information from maps were used (Google Maps, Google Earth, Bing Maps) in order to complete the evaluation through credits. The report is presented arranging every credit on a single page including technical drawings and pictures, which offer a proof of the results and show how sensations and reflections are closely linked. Moreover, every credit presents a 'comment' section at the bottom of the page, where some notes clarify the approach to the credit and open some questions.

Finally, the summary of all the scores is presented through the 'LEED for Neighbourhood Development Project Checklist by SUDRG', which provides the overall result according to LEED-ND parameters.

where?



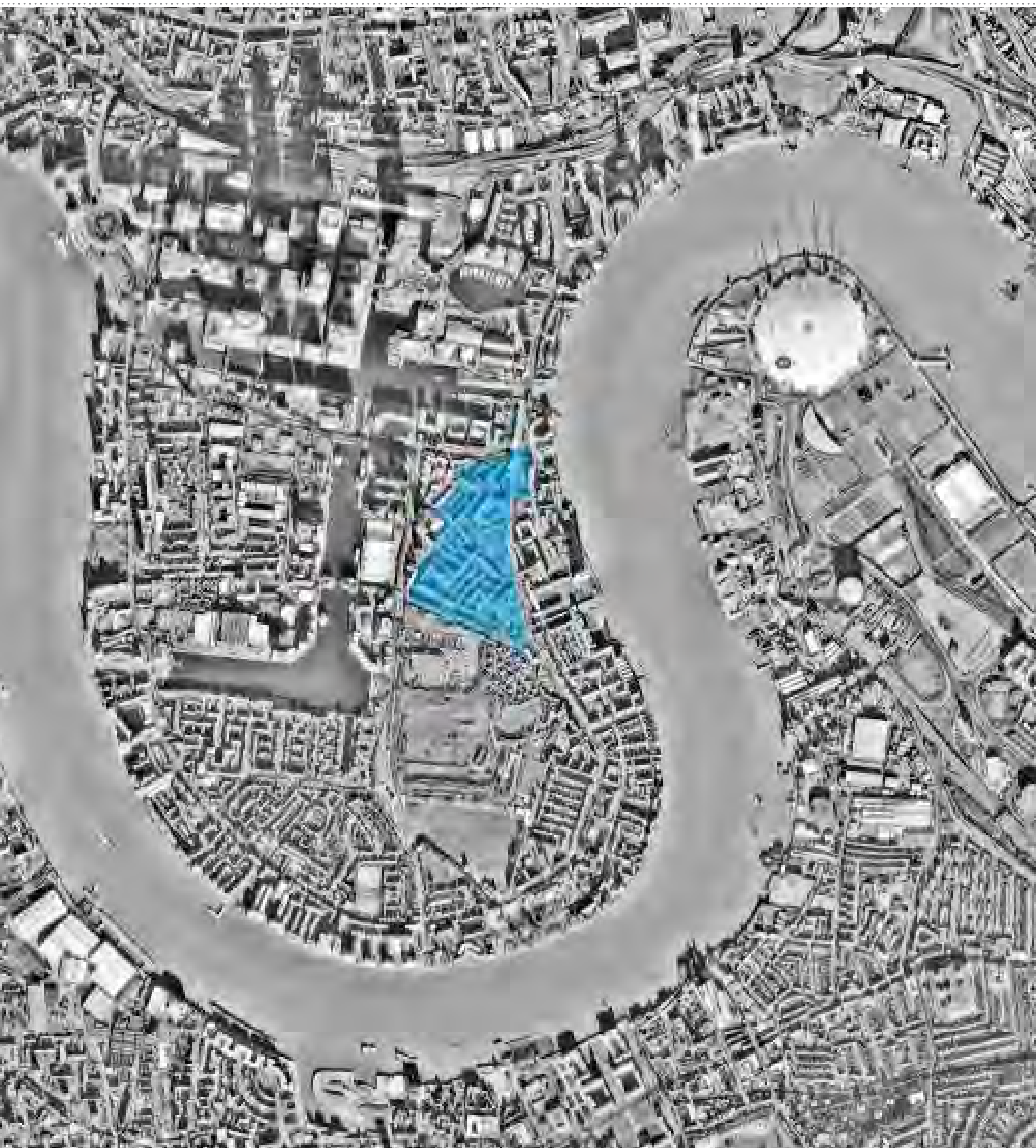
1. POSITION

ISLE OF DOGS, LONDON

Confined by Manchester Road (East), Manchester Street (South-East), Glengall Grove (South) and E. Ferry Road (North-West).

PROXIMITIES:

- About 400m far from Canary Wharf.
- Close to the Crossharbour station on the DLR line.
- Close to river Thames (East) and Docklands (West and North).
- Close to Mudchute farm and park (South).



why?

1. ST JOHN'S DISTRICT

A public sign in Castalia square informs us about St. John's district: the neighbourhood is seen as a unit.

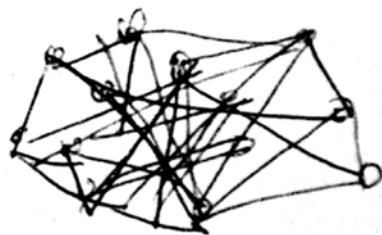


Public sign in Castalia square.

2. FACILITIES

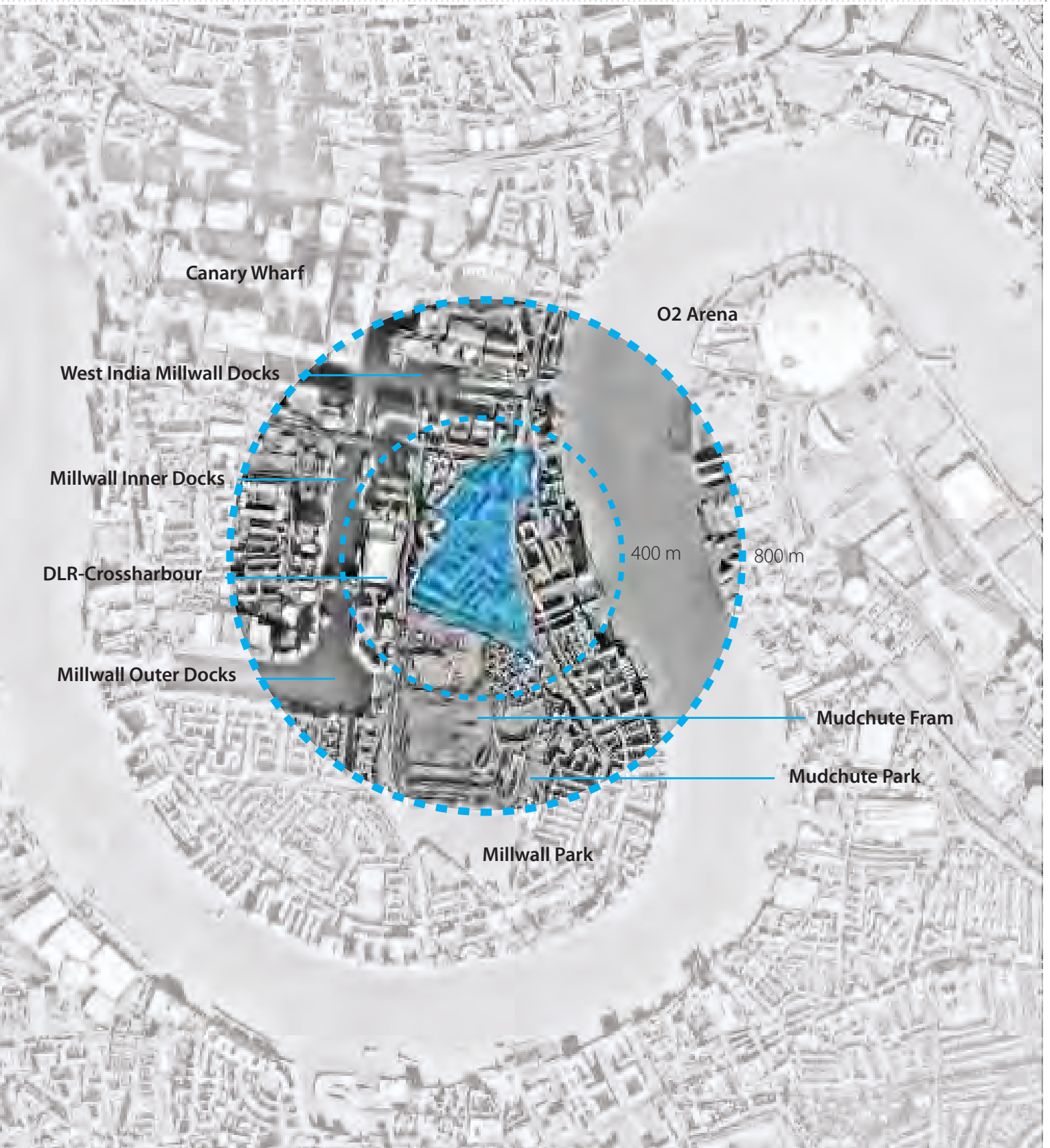
Concentration of small size facilities and big attractive areas. The two kinds of facilities seem to work within different contexts while weaving their strings.

DOUBLE NETWORK COMMUNITY + CITY



Ideogram of the net of human relations.
(Smithson, A. 1968, illus.)

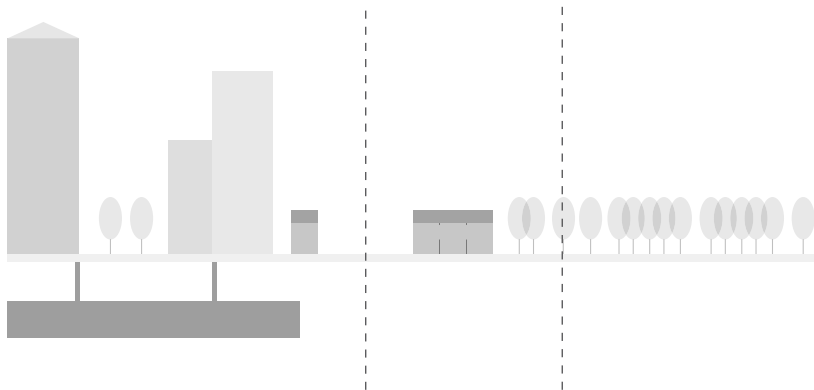




why?

3. UNIQUENESS OF THE AREA

The parts that compose the area seem to be placed side by side without having a real relationship: they are visually and physically well connected but rarely foster a mixing of the occupants and their activities.



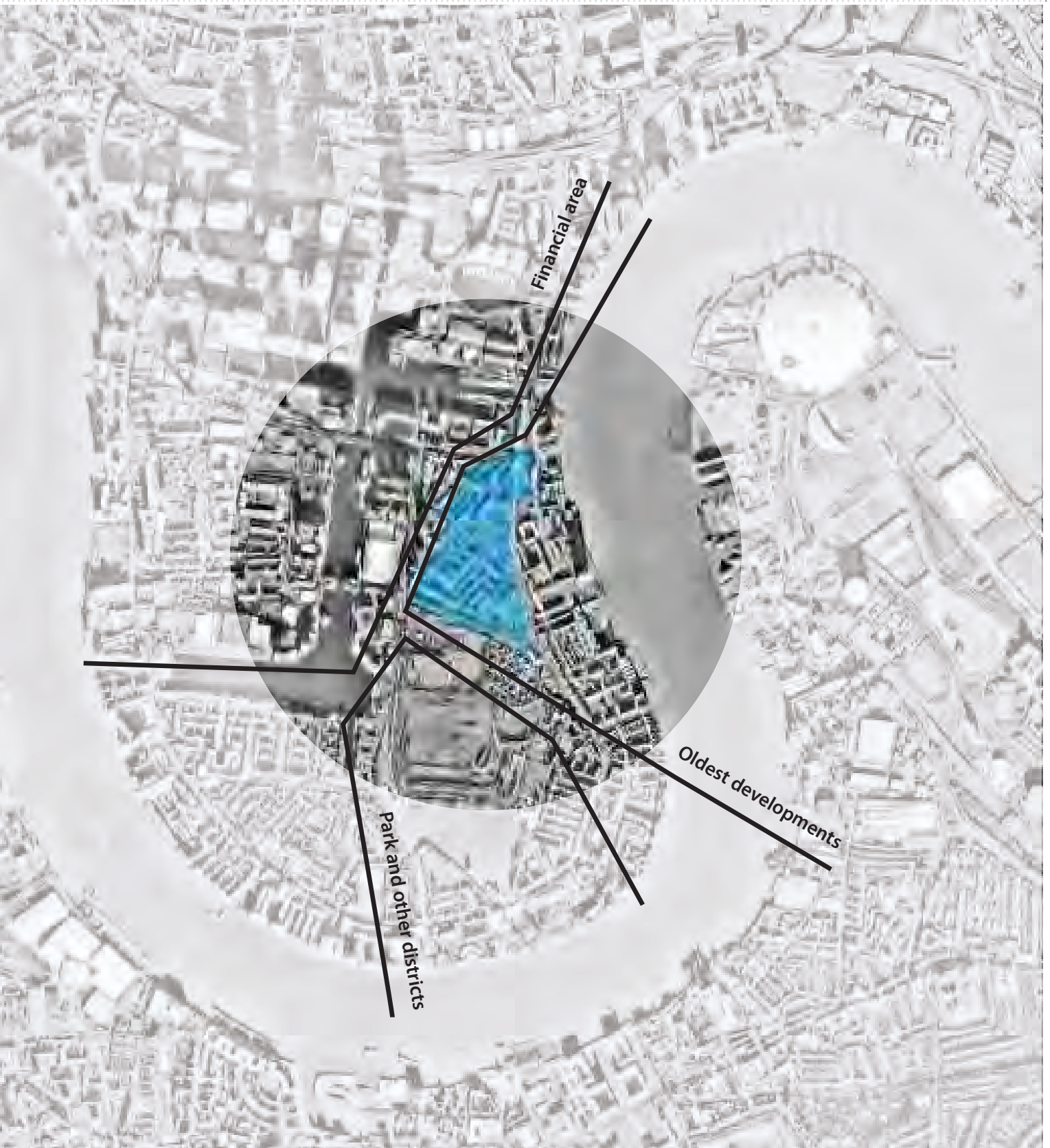
DIRECTIONAL / COMMERCIAL / RESIDENTIAL AREAS:

strong presence
separated and independent identities

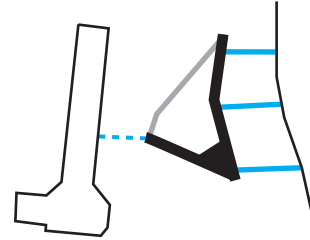
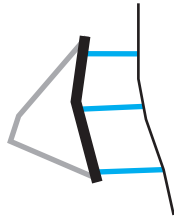
**BUT WELL CONNECTED
VISUALLY + PHYSICALLY**

potential or unchanging condition?





when?



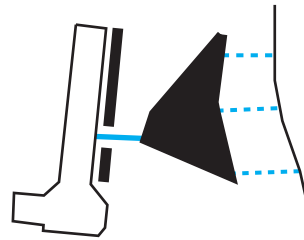
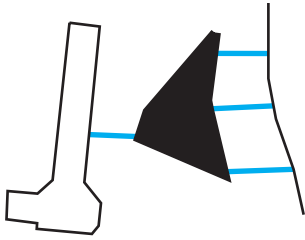
1862
London and its suburbs, particular (Ancestor, online map taken from Stanford, 1878).



1848-1908
Isle of Dogs, particular (Crown Copyright and Landmark Information Group Limited, 2011).

1862

1870



1889
Booth's descriptive maps of London poverty, particular (London School of Economics & Political Science, online map taken from Booth, 1889).



1906-1939
Isle of Dog, particular (Crown Copyright and Landmark Information Group Limited (2011).

1898

1960

2011



what?

QUANTITIES



facilities



public spaces



private houses

QUALITIES

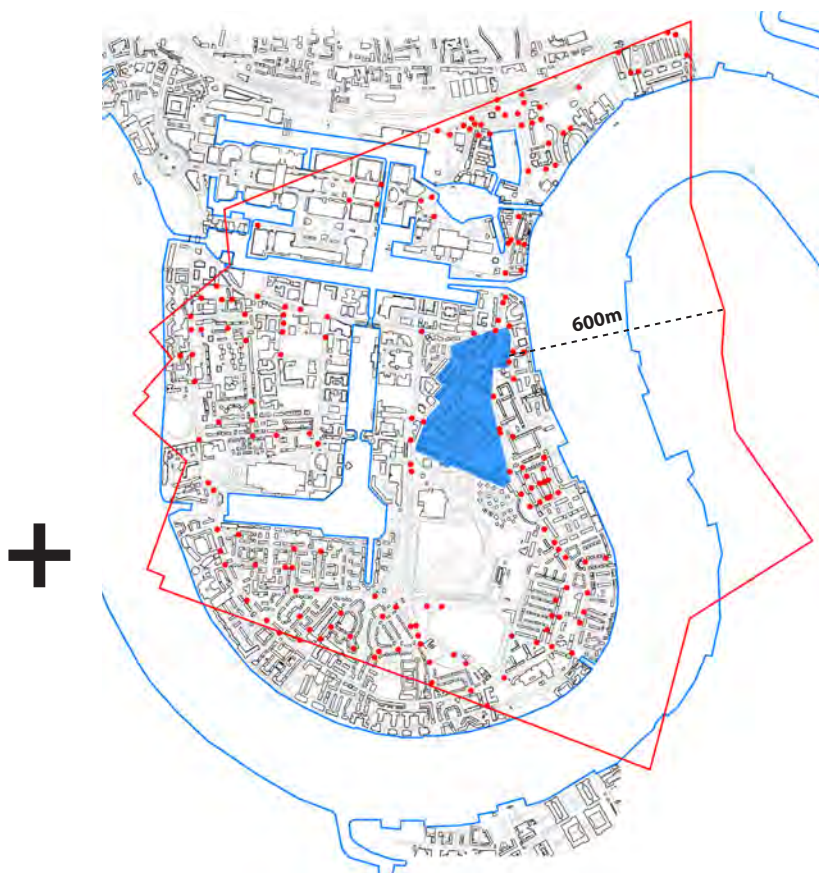
- good connection to public transport -
- natural elements (park, river) easy reachable from the district -
- high number of working places within half a mile from the area -
- mixed-use reality, presence of services -
- good access to public places and recreational facilities -
- sense of community -

how?

1. SENSATIONS + REFLECTIONS



The approach to the area is guided both by sensation and reflections that occur in different moment of our experience: our first impressions are transformed in evaluations through a progressive shifting that bring us to provide a scientific outcome. The explanations come with photographs and maps that intend to prove through evidence, as well as through calculation, the result for each credit.



OPT.1 : Location type:
b. An adjacent site that is also a previously developed site. (2p)



OPT.2 Points for connectivity within 800m of project boundary
Number of intersections needs to exceed 200.



Comments

The number of intersections within 800m of project boundary is 178. Dead end streets and cul-de-sacs have not been considered also if there are many.

Score

2/10

Potential Score

3/10

how?

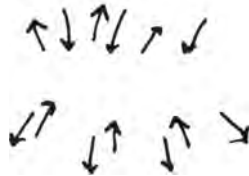
2. CRITICAL APPROACH / DIFFERENT SCALES



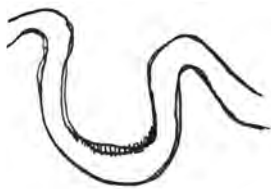
linear proceeding start-end



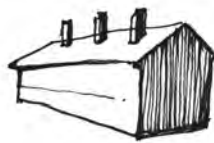
open and critical proceeding



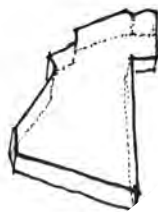
The Credits have been considered together and not separately, paying attention to their relation. This is a way to stress the potentiality of a broad network: the Credits are connected as sensitive points of a net, where an action on one of them reflects its effects on the others. This image suggests the functioning of the site as a whole.



CONTEXT



BUILDING



NEIGHBOURHOOD



INTENT + ?

Achieving these credits

May help earn these credits

SMART LOCATION & LINKAGE		NEIGHBORHOOD PATTERN & DESIGN		GREEN INFRASTRUCTURE & BUILDINGS	
p1: Smart Location		p1: Walkable Streets		p1: Certified Green Building	
p2: Impaired Species		p2: Compact Development		p2: Building Energy Efficiency	
p3: Wetland and Water		p3: Connected community		p3: Building Water Efficiency	
p4: Agricultural Land		e1: Walkable Streets		p4: Construction Pollution	
p5: Floodplain		e2: Compact Development		e1: Certified Green Buildings	
c1: Preferred Locations		e3: Mixed-Use		e2: Building Energy Efficiency	
c2: Brownfields		p4: Mixed-Income		e3: Building Water Efficiency	
c3: Reduced Automobile		e5: Reduced Parking		e4: Water Efficient Landscaping	
c4: Bicycle		e6: Street Network		e5: Existing Building Reuse	
c5: Housing and Jobs		e7: Transit Facilities		e6: Historic Preservation	
c6: Steep Slope		e8: Transportation Management		e7: Site Disturbance	
c7: Design for Habitat		e9: Access to Public Space		e8: Stormwater Management	
c8: Restoration of Habitat		e10: Access to Recreation		e9: Heat Island	
c9: Management of Habitat		e11: Universal Design		e10: Solar Orientation	
		e12: Community Outreach		e11: Renewable Energy	
		e13: Local Food		e12: District Heating & Cooling	
		e14: Tree-Lined Streets		e13: Infrastructure Energy Efficiency	
		e15: Neighborhood Schools		e14: Wastewater Management	
				e15: Recycled Content in Infrastructure	
				e16: Solid Waste Management Infrastructure	
				e17: Light Pollution Reduction	

Credit relationship matrix (USGBC, 2009, p. 7)

1.4 The St. John's indicative rating

The LEED-ND assessment of St. John's suggests that its currently existing situation could achieve a total of 32 points out of 100 which is equivalent to a 'NOT CERTIFIED' rating according to the LEED-ND benchmark (minimum score 40 points). The score is particularly low because of the nature of the already existing buildings that, although well served and connected to the city, are old construction that can hardly meet the requirements for sustainable architecture: the section 'Green Infrastructure and Building' gave a score over the existing situation of just 5 points out of 29.

A second score of 61 points out of 100 would be easily achievable by a potential reasonable re-development of the area. This score is equivalent to a 'GOLD' rating according to the LEED-ND benchmark. Additional credits are quite unlikely to be achieved, as the neighbourhood is an already developed area and some of the characteristics that could give more points if modified are actually unchangeable (different typologies of building, numbers of connections etc.).

What is really interesting though is the relation between the 'NOT CERTIFIED' rating of the existing condition of the blocks and the easily achievable 'GOLD' rating: with some reasonable changes, the points would roughly double giving the district a very good level of certification.

Existing situation scoring

St. John's district scored highly against LEED-ND in the following areas:

- The linkage with good public transport.
- The location adjacent to already

developed areas that can offer as well a high number of job places.

- The mixed use reality existing within half a mile distance from the district.
- The accesses to civic and public places and recreation facilities.

It is worthwhile to note the contradictory relation that occurs sometimes between the characteristics of site and the gained score: as LEED-ND provides general standard indications, at the moment it misses some flexibility in order to consider the particularity of the area.

For example, although St. John's gains the top score for 'Body land and Water Body Conservation' as it doesn't include any water bodies (SLL Credit 7), it would seem appropriate to consider the presence of the river and the docks that surround it, the conservation of such near places and their relation with St. John's. Thus, if considered tied to a larger context, maybe the district wouldn't fulfil this Credit.

On the other side, the document doesn't deem that some elements out of the requirements can't be changed, also if they don't affect the quality of the area as proposed in the main Intention. Some of these credits concern the street network (SLL Credit 1), the width of the sidewalks (NPD Credit 1 j), the design speeds (NPD Credit 1 n, o) and the ground level use (NPD Credit 1 k).

Regarding the street network, the area is close to a park and surrounded by the river Thames and some docks, so it appears obvious that the street network can't be really intense.

However, if referring to the tables, the score would be really low.

Regarding the sidewalks' widths we should consider the position of the development and the time it was con

structed, valuing if the width of the pedestrian paths is sufficient to assure comfortable movements rather than to consider a fixed minimum dimension of 3 meters, most of the times inadequate for historical developments, or simply oversized in some cases.

The same close character of the neighbourhood with very quiet streets, makes it superfluous to consider a dense concentration of road humps or signs.

Finally, the Jane Jacob's assumption that protecting privacy through raising the ground level thanks to some steps is completely missed in this area, so doesn't gain points for this credit. However, entrances without steps make the houses accessible also to disabled persons and parents with babies, an aspect that is never considered in the LEED-ND evaluation but that, on the contrary, represents one key point for a fair evaluation of the life's quality that a building can offer.

More cases are commented in the section at the bottom of the page of each Credit.

Easy-to-win credits

Although at the moment the site is 'NOT CERTIFIED' according to LEED-ND benchmark, a big step could be done through some little changes of a possible future refurbishment, that could bring St. John's to gain the 'GOLD' rating. The credits involved in the re-development are mainly related with:

- Provision of a bicycle network and storage and protected transit facilities.
- Community involvement in the design process of the re-development.
- Local food production or proximity

1.6 Notes on LEED-ND certification

to a local food market.

- Recyclable waste management measures and reduced light pollution.
- New refurbishments that would comply with Building regulations and Lifetime Home standards, involve at least one building to gain green certification and allow for energy and water efficiency.

Besides the changes tied to a new refurbishment, some credits could be easily achieved if LEED-ND is considered in a more flexible way according with London's character, taking into account the particularity of the site while answering to the main Intent.

Certification of all LEED projects and the awarding of individual credits are overseen by the United States Green Building Council (USGBC), who officially administers the LEED program. Full evidence to meet all the requirements would need to be provided according to LEED to an accredited professional. This assessment is indicative only, does not contribute towards a formal assessment and does not provide any guarantee of the final score achievable.

Challenging targets

The challenging targets are mostly related to the possibility to modify the existing buildings providing them with sustainable management of energy and water.

Obviously, we should evaluate if the refurbishment will affect the environment more than leaving the things as they are: the price of the transformations, the problems tied to waste management and the production of new materials could exceed the benefits that the area gets from the changes, and the overall cost of the operation could be recovered in such a long time making it not reasonable to proceed. All the changes indicated can be considered separately as components of a long-term program made by parts that integrates the existing forms and updates their potential (see also the relation between credits).

















LEED ND Categories

LEED 2009 FOR NEIGHBORHOOD DEVELOPMENT PROJECT CHECKLIST

A

Smart Location and Linkage

27 possible points

<input checked="" type="checkbox"/>	Prerequisite 1	Smart Location	Required
<input checked="" type="checkbox"/>	Prerequisite 2	Imperiled Species and Ecological Communities	Required
<input checked="" type="checkbox"/>	Prerequisite 3	Wetland and Water Body Conservation	Required
<input checked="" type="checkbox"/>	Prerequisite 4	Agricultural Land Conservation	Required
<input checked="" type="checkbox"/>	Prerequisite 5	Floodplain Avoidance	Required
<input type="checkbox"/>	Credit 1	Preferred Locations	10
<input type="checkbox"/>	Credit 2	Brownfield Redevelopment	2
<input type="checkbox"/>	Credit 3	Locations with Reduced Automobile Dependence	7
<input type="checkbox"/>	Credit 4	Bicycle Network and Storage	1
<input type="checkbox"/>	Credit 5	Housing and Jobs Proximity	3
<input type="checkbox"/>	Credit 6	Steep Slope Protection	1
<input type="checkbox"/>	Credit 7	Site Design for Habitat or Wetland and Water Body Conservation	1
<input type="checkbox"/>	Credit 8	Restoration of Habitat or Wetlands and Water Bodies	1
<input type="checkbox"/>	Credit 9	Long-Term Conservation Management of Habitat or Wetlands and Water Bodies	1

LEED ND categories (USGBC, 2011, p. vii)

2.0 SMART LOCATION & LINKAGE

SLL Credit 1 : Preferred Locations

CF. SLL 3, 5 / NPD 3, 4, 6

Intents | Requirements

To encourage development within existing cities to reduce adverse environmental and public health effects associated with sprawl. To conserve natural and financial resources.

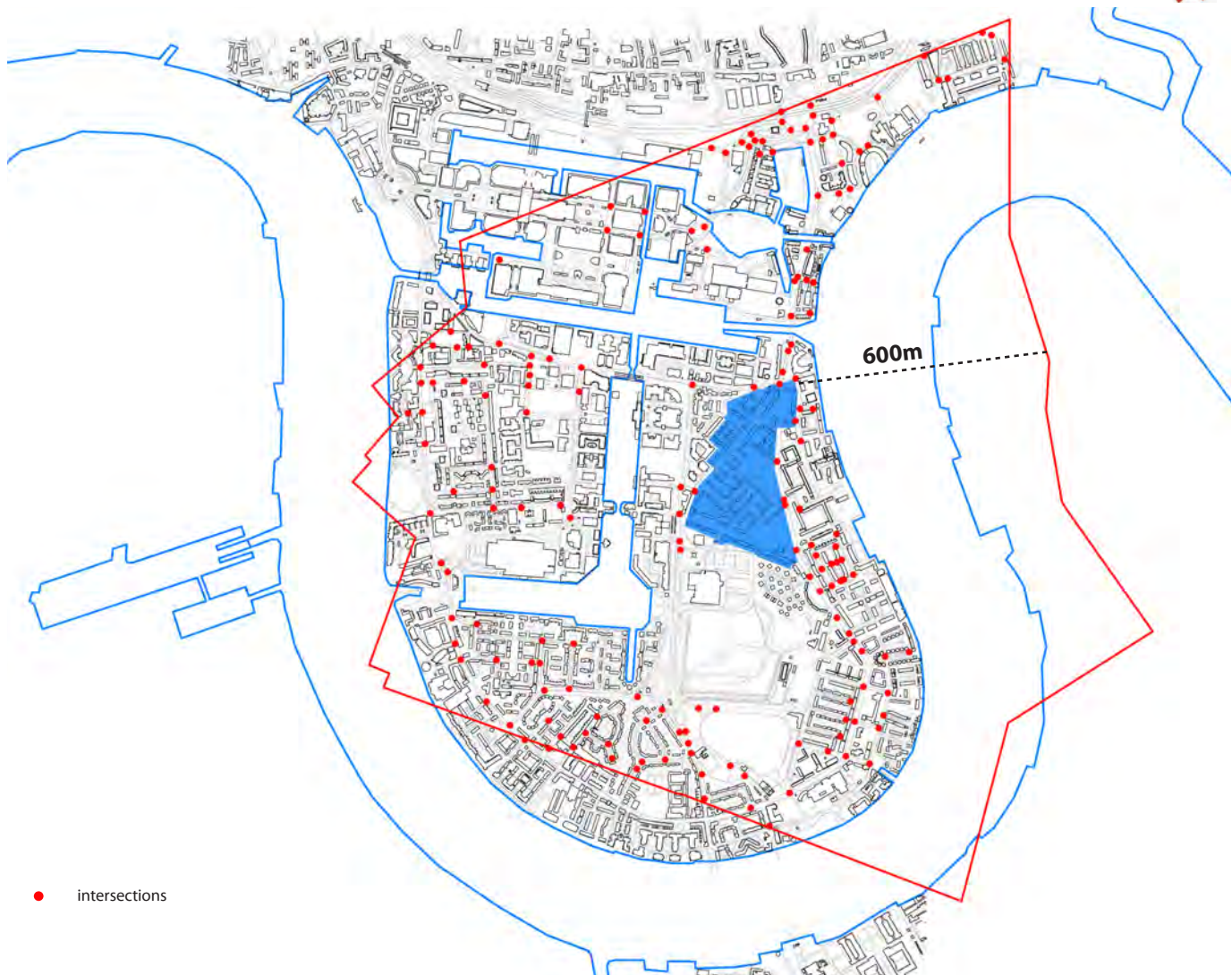
OPT.1 : Location type:

b. An adjacent site that is also a previously developed site. (2p)



OPT.2 Points for connectivity within 800m of project boundary

Number of intersections needs to exceed 200.



The number of intersections within 800m of project boundary is 178. Dead end streets and cul-de-sacs have not been considered also if there are many. In fact, due to the character of the area, neighbourhood access laterally from the main road preserving their privacy.

Moreover, we must consider that there are less intersection on the East side because of the presence of the river. If LEED could consider the presence of a natural element and make a proportion between remaining area and intersections, the site would gain 1 point at least.

Score

2/10

Potential Score

3/10

2.0 SMART LOCATION & LINKAGE



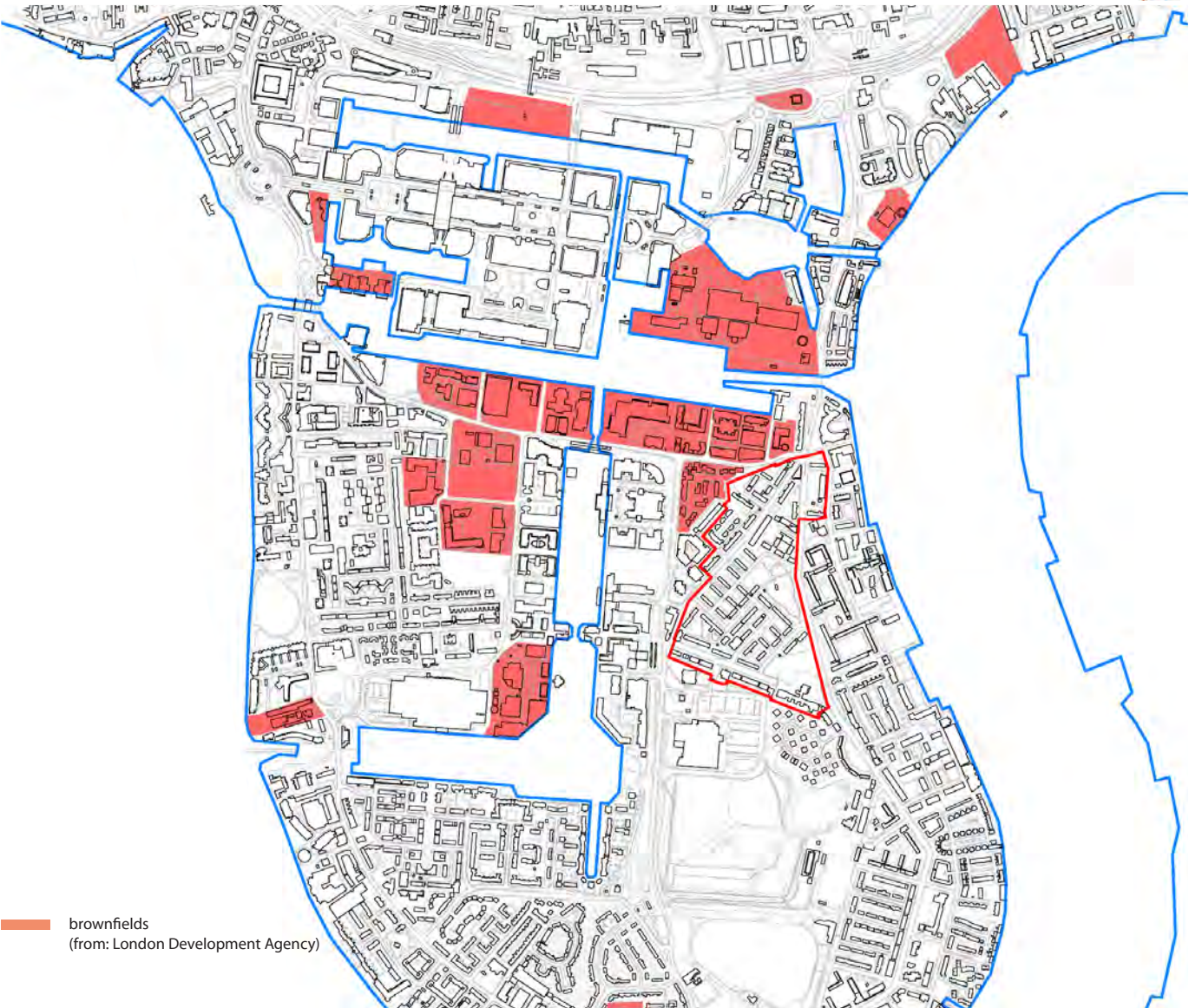
2.0 SMART LOCATION & LINKAGE
SLL Credit 2 : Brownfield Redevelopment

Intent | Requirements

To encourage the reuse of land and reducing pressure on undeveloped land.

OPT.1 Brownfield Site (1p)

OPT.2 High Priority Redevelopment Area + Brownfield Site (2p)



Comments

The site is not a Brownfield site. This credit is not achievable.

Score

0/2

Potential Score

0/2

2.0 SMART LOCATION & LINKAGE
SLL Credit 3 : Locations with Reduced Automobile Dependence

CF. SLL 1, 5 / NPD 1, 2, 7, 8

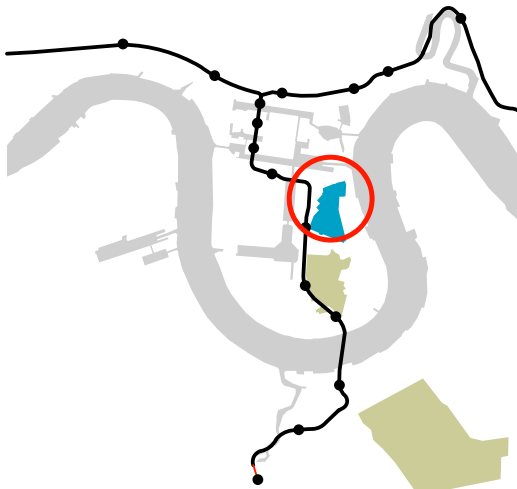
Intent | Requirements

To encourage development in location with multimodal transportation, thereby reducing gas emissions and air pollution associated with motor vehicle use.

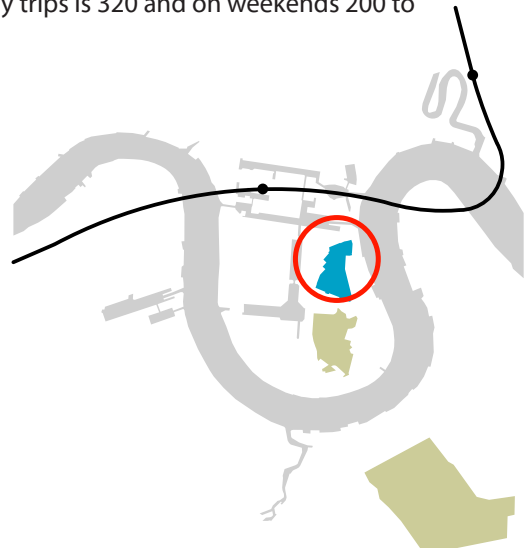
Opt 1 - At least 50% of dwellings and non residential building entrances are within 1/4 mile (400m) walk distance of bus or streetcar stops. Both weekdays and weekend trips to be covered.



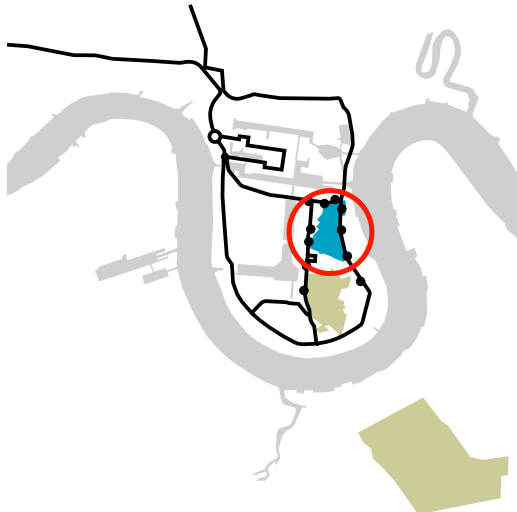
Transit-Served Location based on table 1 (the minimum per week day trips is 320 and on weekends 200 to score 7 credits)



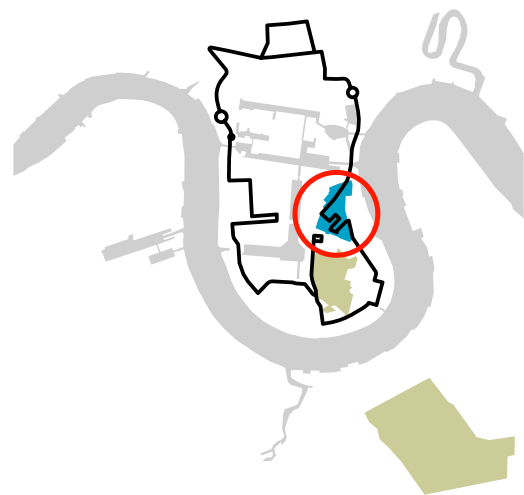
DLR - nearest station Crossharbour



Tube - nearest station Canary Wharf



Buses



Local bus (IoD)

Comments

Although only DLR services but no bus services were measured, the quantity of weekday and weekend trips which pass through Crossharbour Station exceeds the minimum daily transit service requirements for the project.

DRL :
Mon - Fri average 500 trips
Sat 366 trips
Sun 300 trips

Score

7/7

Potential Score

7/7

2.0 SMART LOCATION & LINKAGE
SLL Credit 4 : Bicycle Network and Storage

CF. NPD 4, 8

Intent | Requirements

To promote bicycling and transportation efficiency. Tosupport public health by encouraging utilitarian and recreational physical activity.

Bicycle network proximity AND Bicycle parking and storage capacity.

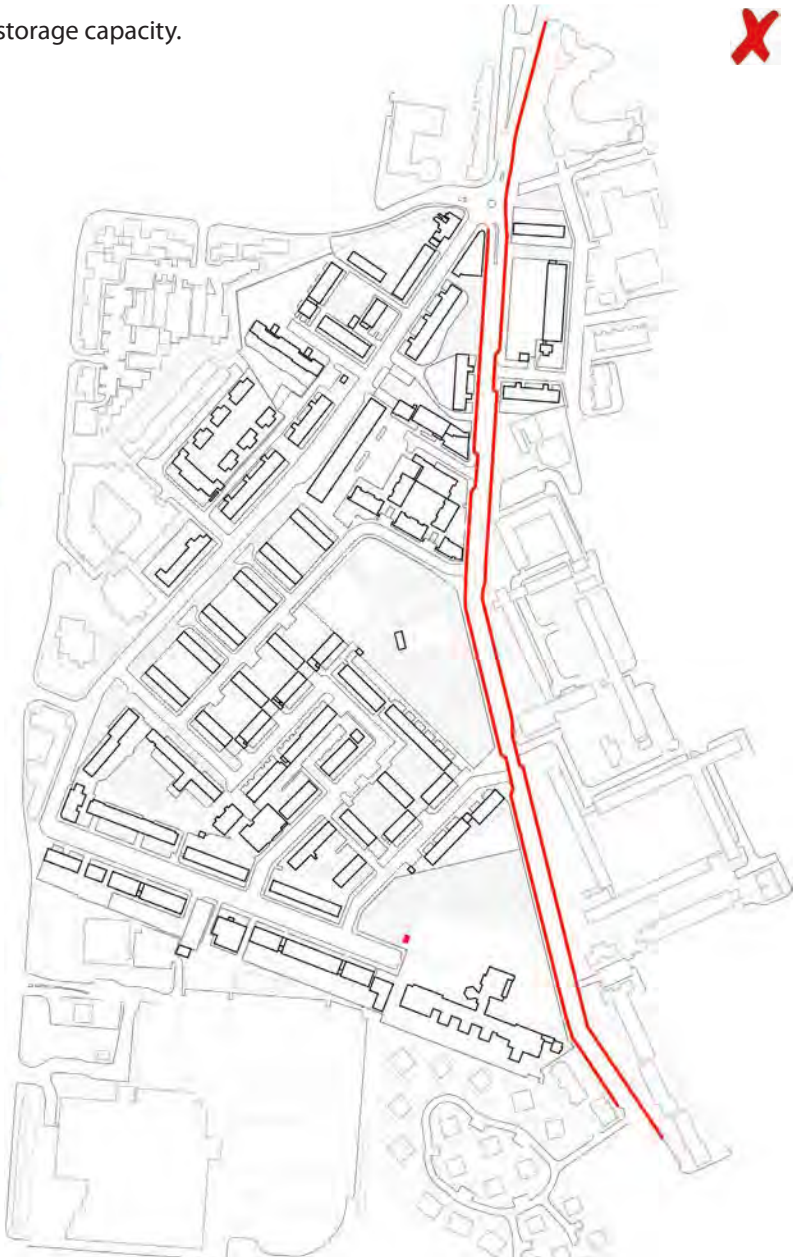


Barclays expansion area (Tansport of London, 2011).



Barclays superhighways (Transport of London, 2011).

bicycle lanes



Comments

Although the East boundary of the area contain a bike lane well connected with the higher “Cycle Superhighway”, there is no public bicycle storage in the area. Parking are private. The only existing bicycle storage is inside the school park. Anyway, it is to be considered that Barclays foresees to expand its activity in the area and the score is easily achievable providing new bicycle parking.

Score

0/1

Potential Score

1/1

2.0 SMART LOCATION & LINKAGE



2.0 SMART LOCATION & LINKAGE

SLL Credit 5 : Housing and Jobs Proximity

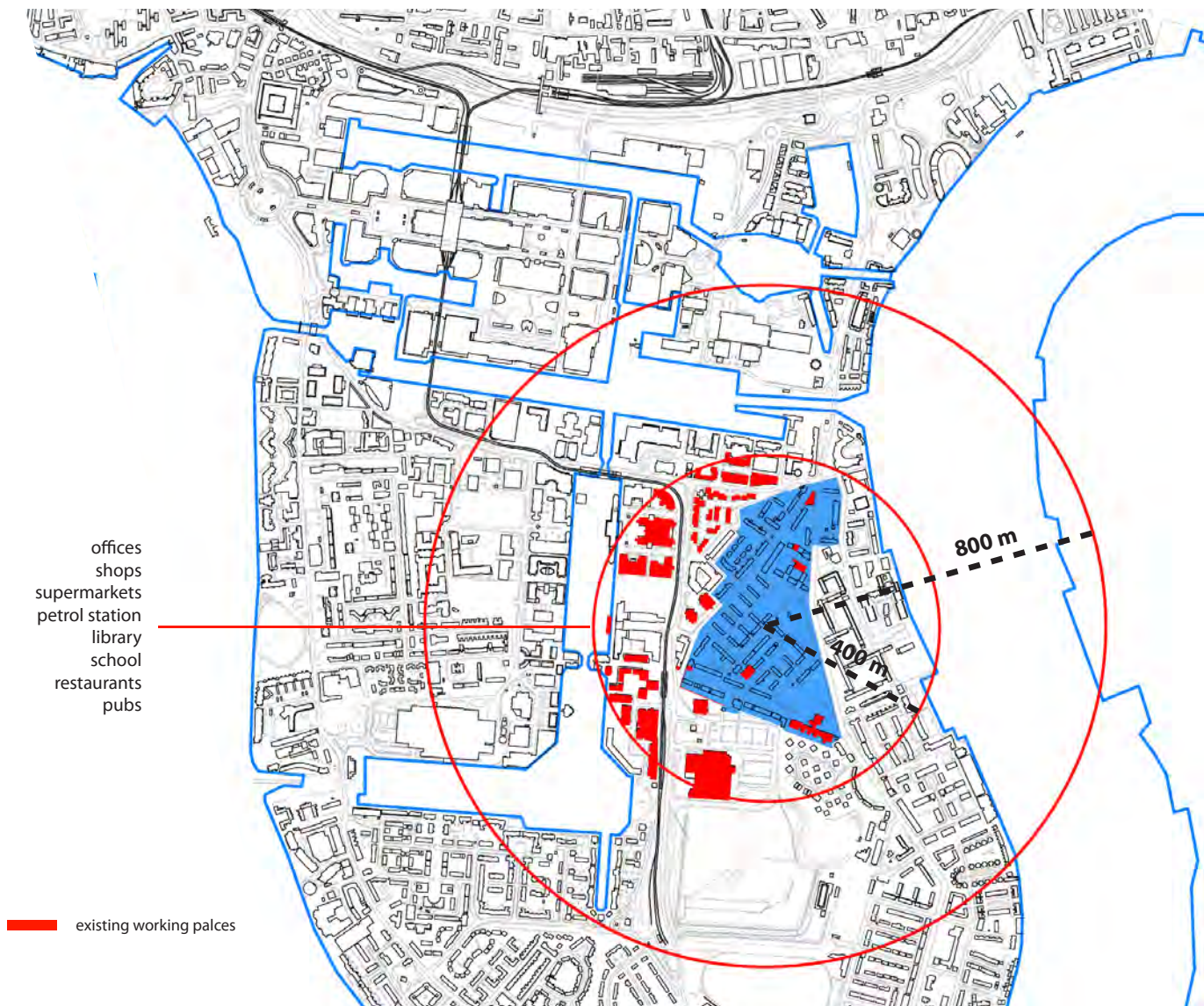
CF. SLL 1 / NPD 3, 4

Intent | Requirements

To encourage balanced communities with a diversity of uses and employment opportunities.

Project With Residential Component (2 pt)

The geographic center of the project to be within 800m walk distance of existing full-time-equivalent jobs whose number is equal to or greater than the number of dwelling units in the project.



Comments

Score

Potential Score

According to the map, the number of the existing full time jobs is greater than the number of the units, although calculated within 400m walking distance of the project. Number of units : 614

2/3

2/3

In order to get the maximum of credits the project has to include affordable housing, which is not easily achievable for the area.

2.0 SMART LOCATION & LINKAGE



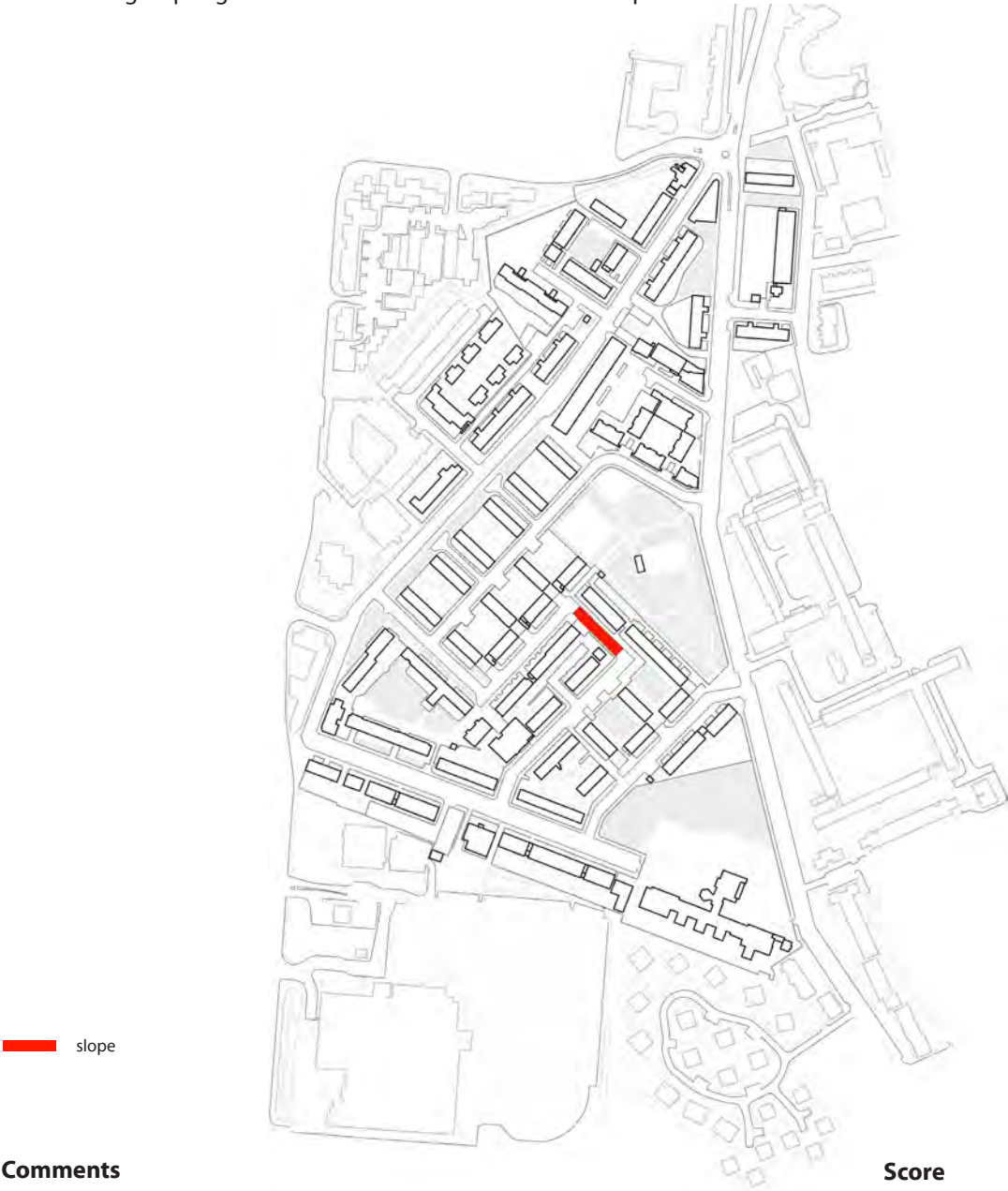
2.0 SMART LOCATION & LINKAGE
SLL Credit 6 : Steep Slope Protection

CF. SLL 7, 8, 9 / GIB 7, 8

Intent | Requirements

To minimize erosion to protect habitat and reduce stress on natural water system.

Locate on a site that has no existing slopes greater than 15%, or avoid disturbing portions of the site that have existing slopes greater than 15% - No disturbance of slopes.



Comments

There's only one street on slope (Galbraith Street - Strattondale Street, North side), but the inclination is really slight.

Score

1/1

Potential Score

1/1

2.0 SMART LOCATION & LINKAGE



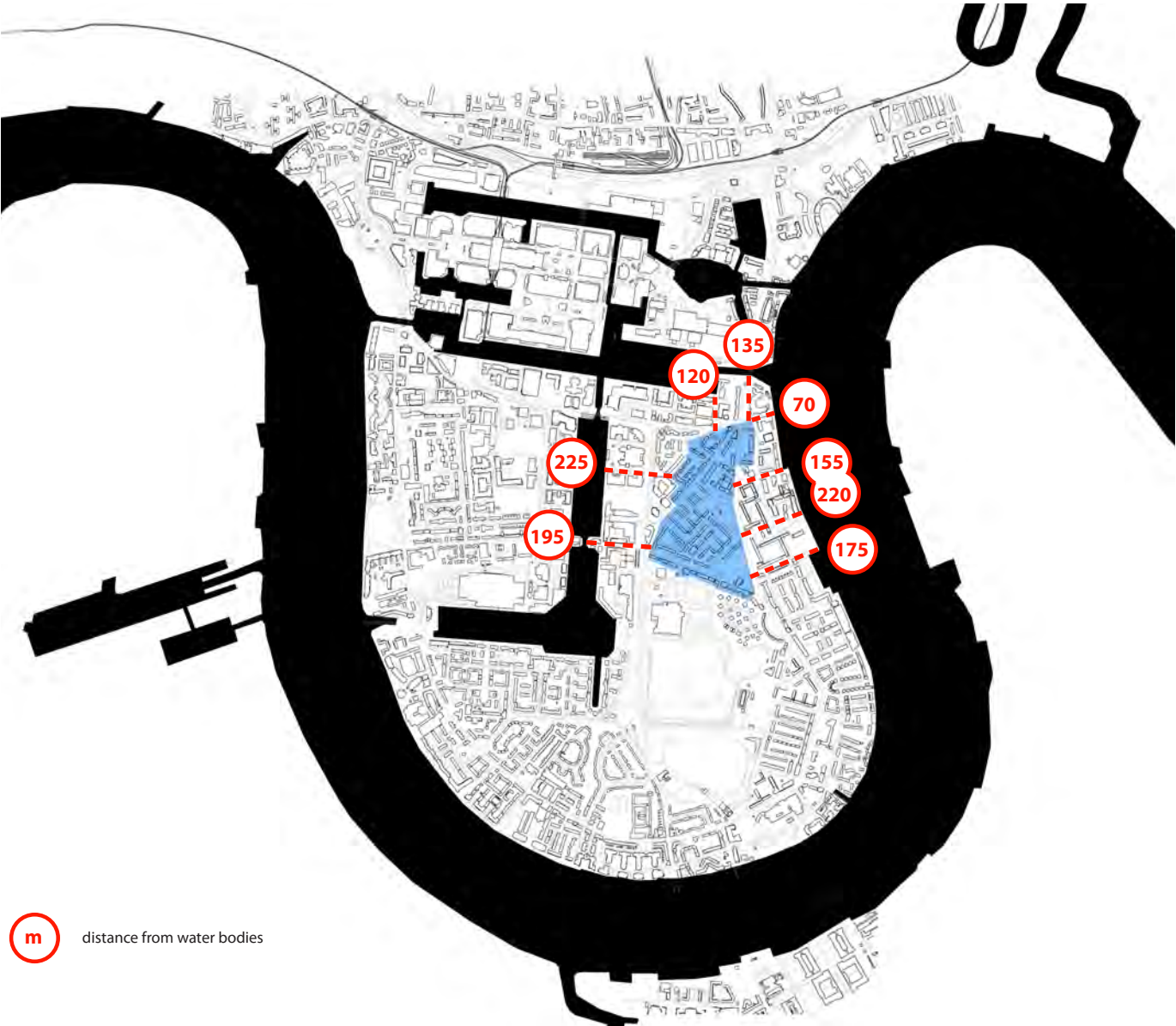
2.0 SMART LOCATION & LINKAGE
SLL Credit 7 : Site Design for Habitat or Wetland and Water Body Conservation

CF. SLL 1, 6, 8, 9 / GIB 7, 8

Requirements | Intent

To conserve native plants, wildlife habitat, wetlands and water bodies.

Opt 1 Sites without Significant Habitat or Wetlands and Water Bodies



Comments	Score	Potential Score
The site doesn't include any water body. Despite that, it is surrounded by water (river Thames and Docks) and its presence is essential to understand the quality of the area (in both term of perception and money).	1/1	1/1

2.0 SMART LOCATION & LINKAGE



2.0 SMART LOCATION & LINKAGE
SLL Credit 8 : Restoration of Habitat or Wetlands and Water Bodies

CF. SLL 6, 7, 9 / GIB 7

Intent | Requirements

To restore area’s native plants, wildlife habitat, wetlands, and water bodies.



Comments

The neighbourhood has a residential character and there are no significant natural elements except for St. John’s park. No habitat or wetlands to be restored. This credit is not achievable.

Score

0/1

Potential Score

0/1

2.0 SMART LOCATION & LINKAGE

SLL Credit 9: Long-Term Conservation Management of Habitat or Wetlands and Water Bodies

CF. SLL 6, 7, 8

Intent | Requirements

To conserve anative plants, wildlife habitat, wetlands and water bodies.

Create and commit to implement a long-term (at least 10-year) management plan for new or existing native plants, water bodies and / or water lands.



Comments

We don't know if a long-term plan is currently active for St. John's Park but, thinking to implement the shadowing of the streets and parking thanks to new trees (GIB credit 9), the score can be easily achieved.

Score

0/1

Potential Score

1/1

LEED ND Categories

LEED 2009 FOR NEIGHBORHOOD DEVELOPMENT PROJECT CHECKLIST

B

Neighborhood Pattern and Design

44 possible points

<input checked="" type="checkbox"/>	Prerequisite 1	Walkable Streets	Required
<input checked="" type="checkbox"/>	Prerequisite 2	Compact Development	Required
<input checked="" type="checkbox"/>	Prerequisite 3	Connected and Open Community	Required
<input type="checkbox"/>	Credit 1	Walkable Streets	12
<input type="checkbox"/>	Credit 2	Compact Development	6
<input type="checkbox"/>	Credit 3	Mixed-Use Neighborhood Centers	4
<input type="checkbox"/>	Credit 4	Mixed-Income Diverse Communities	7
<input type="checkbox"/>	Credit 5	Reduced Parking Footprint	1
<input type="checkbox"/>	Credit 6	Street Network	2
<input type="checkbox"/>	Credit 7	Transit Facilities	1
<input type="checkbox"/>	Credit 8	Transportation Demand Management	2
<input type="checkbox"/>	Credit 9	Access to Civic and Public Spaces	1
<input type="checkbox"/>	Credit 10	Access to Recreation Facilities	1
<input type="checkbox"/>	Credit 11	Visitability and Universal Design	1
<input type="checkbox"/>	Credit 12	Community Outreach and Involvement	2
<input type="checkbox"/>	Credit 13	Local Food Production	1
<input type="checkbox"/>	Credit 14	Tree-Lined and Shaded Streets	2
<input type="checkbox"/>	Credit 15	Neighborhood Schools	1

LEED ND categories (USGBC, 2011, p. vii)

2.1 NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 1: Walkable Streets - Façades and Entries a), b)

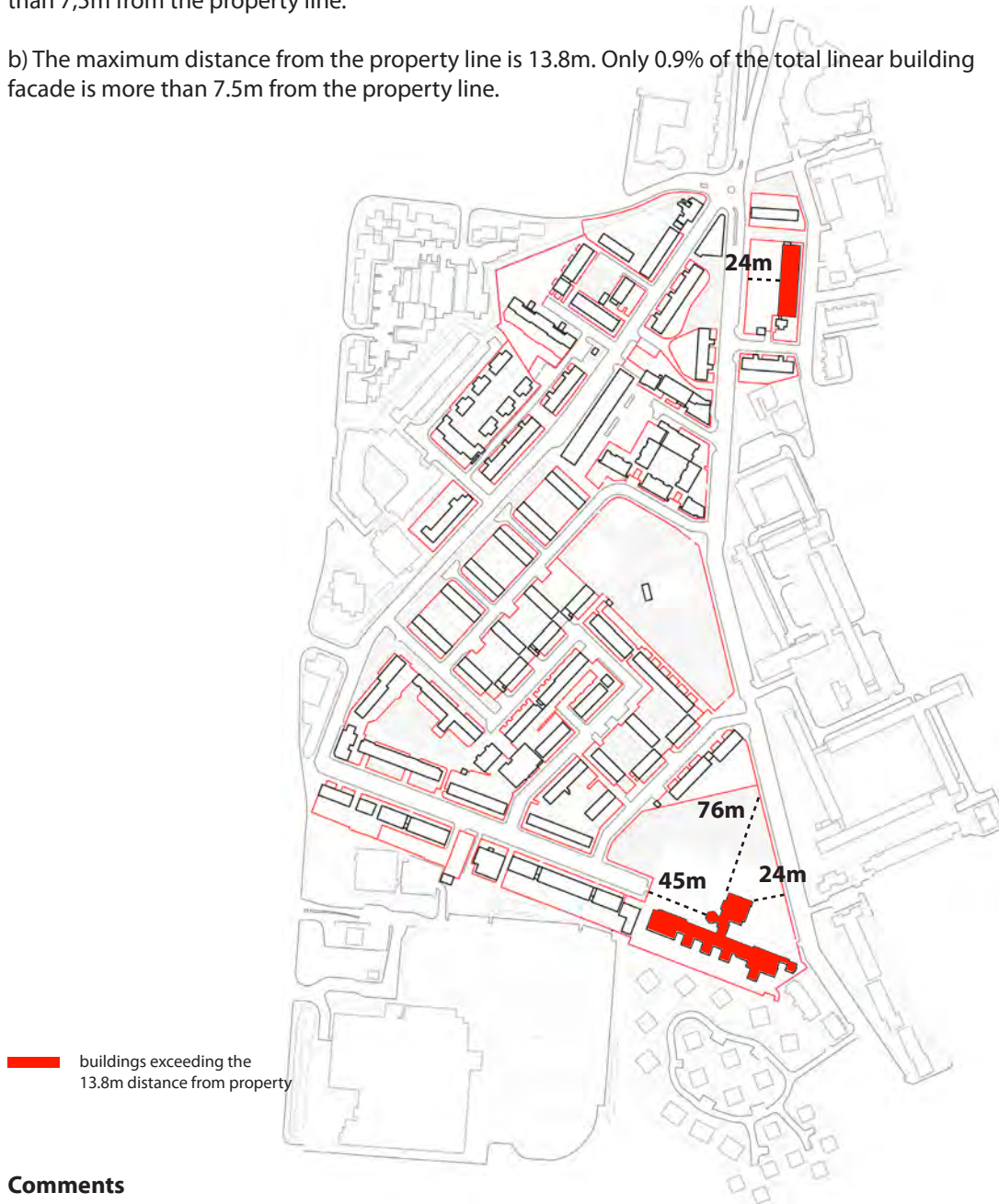
CF.NPD 5, 11, 14, 15

Intent | Requirements

a) At least 80% of the total linear feet of street-facing building façades in the project is no more than 7,5m from the property line.



b) The maximum distance from the property line is 13.8m. Only 0.9% of the total linear building facade is more than 7.5m from the property line.



Comments

The only apartment building that doesn't respect the 13.8m distance from the property line is on the top-right corner of the area. The distance on the left side (24m) is due to the presence of a private parking. The school doesn't respect completely the distance as well, but it can be considered as a particular public building (isolated object in an area).

2.1 NEIGHBOURHOOD PATTERN AND DESIGN



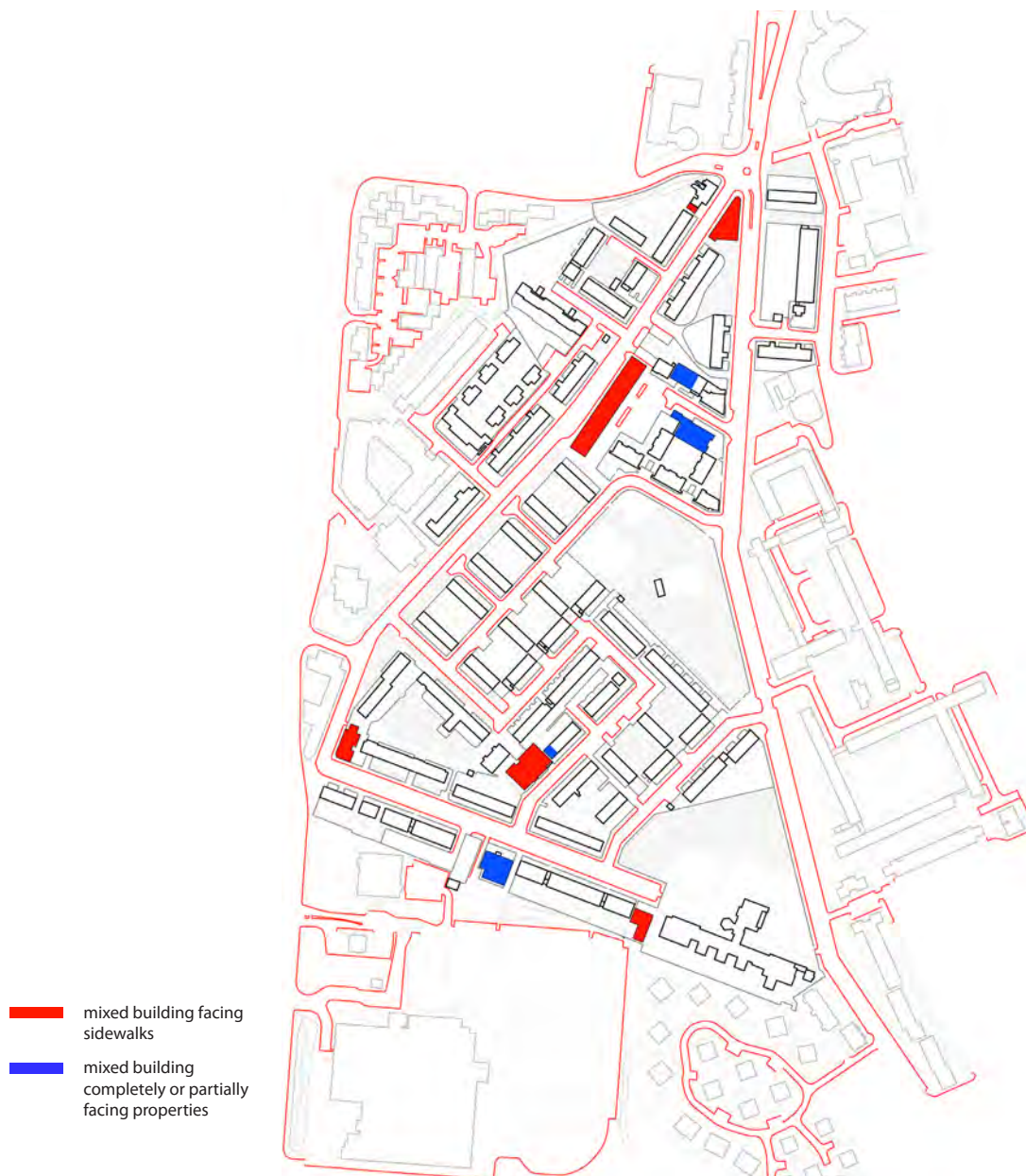
2.1 NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 1: Walkable Streets - Façades and Entries c)

CF. NPD 5, 11, 14, 15

Intent | Requirements

c) At least 50% of the total linear feet of mixed-use and nonresidential street-facing building façades in the project is within 1 foot of a sidewalk or equivalent provision for walking.



Comments

All the mixed building face on a sidewalk except for: Community Centre on South side + Bahngladeshi Centre (facing on property); Community Centre on North side + Medical Centre (partially facing on properties). Despite that their linear extension is less than 50% of the total street-facing façade for mixed buildings.

2.1 NEIGHBOURHOOD PATTERN AND DESIGN



2.1 NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 1: Walkable Streets - Façades and Entries d), e)

CF. NPD 5, 11, 14, 15

Intent | Requirements

d) Functional entries to the building occur at an average of 22.6m or less along nonresidential or mixed-use buildings or blocks.



e) Functional entries to the building occur at an average of 5.15m or less along nonresidential or mixed-use buildings or blocks (items d and e are cumulative).



Comments

The main mixed-use building overlooks Castalia square and it is characterized by a continuous shop façade. The other mixed-use building have only one entry for the uses different from the residential one.

2.1 NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 1: Walkable Streets - Ground-Level Use and Parking f), h)

CF. NPD 5, 11, 14, 15

Intent | Requirements

f) All ground-level retail, service, and trade uses that face a public space have clear glass on at least 60% of their façades between 0.9m - 2.4m above grade.



h) All ground-level retail, service, or trade windows must be kept visible (unshuttered) at night.



Comments

The shops in the area have clear glass on at least 60% of their façades but sometimes they are covered by tents or other tools in order to protect the goods or the clients from sun. Moreover, some shops are shuttered at night for security reasons.

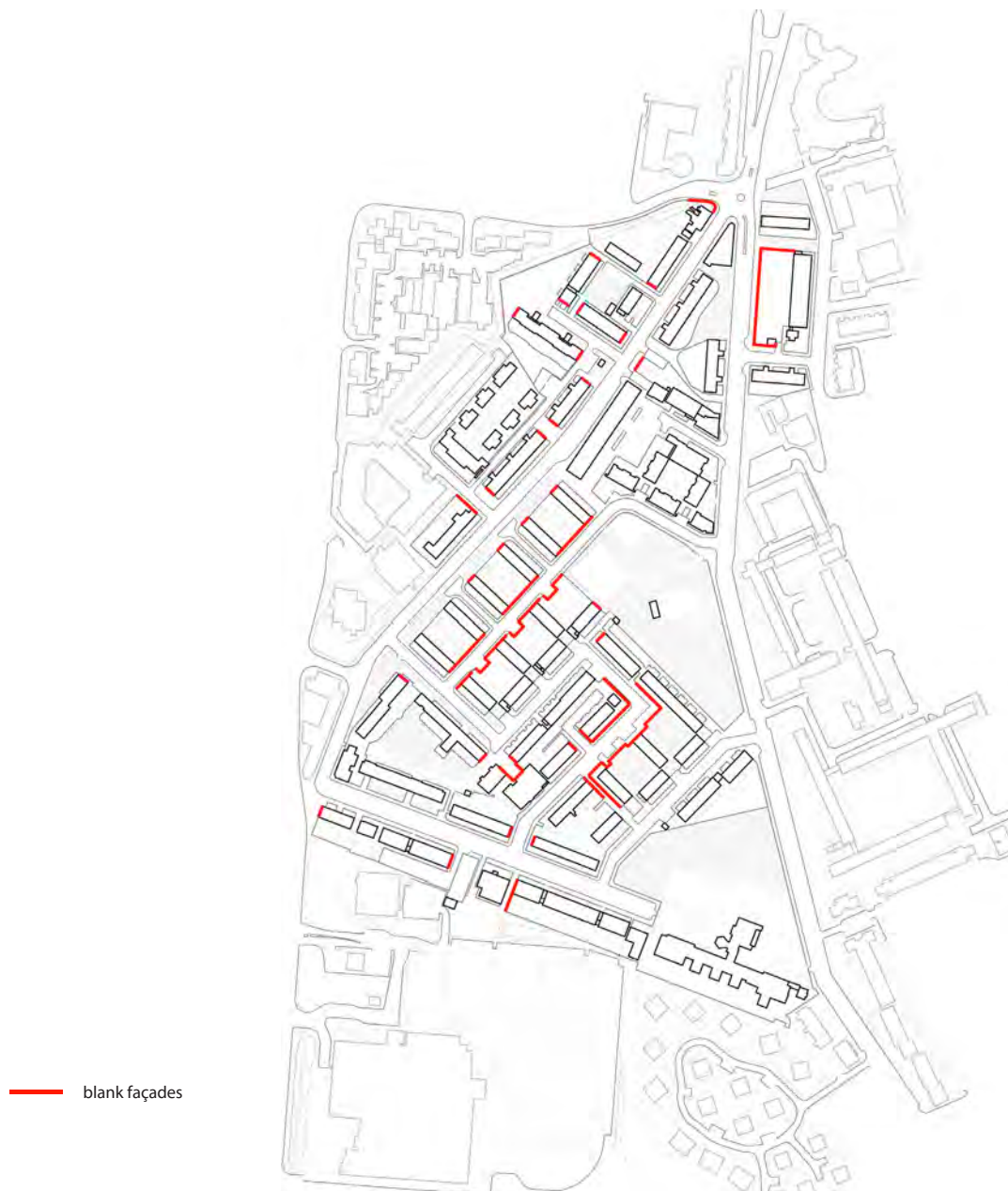
2.1 NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 1: Walkable Streets - Ground-Level Use and Parking g)

CF.NPD 5, 11, 14, 15

Intent | Requirements

g) If a façade extends along a sidewalk, a blank façade must be less than 15m.



— blank façades

Comments

Although the blank façades of buildings don't exceed the 9m of length, there are high, continuous fences that can be assimilated to continuous blank façades.

2.1 NEIGHBOURHOOD PATTERN AND DESIGN



2.1 NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 1: Walkable Streets - Design Speeds for Safe Pedestrian and Bicycle Travel n), o)

CF. NPD 5, 11, 14, 15

Intent | Requirements

n) 75% of new residential-only streets within the project are designed for a target speed of no more than 20 mph.

o) 70% of new nonresidential and/or mixed-use streets within the project are designed for a target speed of no more than 25 mph.



- streets not provided
- road humps / streets provided

Comments

The total length of the streets provided with road humps is 1170m, the length of the streets not provided with is 615m (barely under 70%). Despite that, we can consider that the not provided streets have a very quiet character (they are driven only to access the apartments) and that the main crossing roads are completely furnished.

2.1 NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 1: Walkable Streets - Sidewalk Intrusions p)

CF. NPD 5, 11, 14, 15

Requirements | Intent

p) At-grade crossings with driveways account for no more than 10% of the length of sidewalks within the project.



● functional access ways



Comments

Total at-grade crossings less than 10% of the total length of sidewalks.
Also accesses to parking along the sidewalks have been calculated (see NPD 1I).

2.1 NEIGHBOURHOOD PATTERN AND DESIGN
NPD Credit 1: Walkable Streets - OVERVIEW a) - p)

CF. NPD 5, 11, 14, 15

Intent | Requirements

To promote transportation efficiency, including reduced vehicle miles traveled (VMT). To promote walking by providing safe, appealing, and comfortable street environments that support public health by reducing pedestrian injuries and encouraging daily physical activity.

Requirements

A project may earn a maximum of 12 points according to the schedule in Table 1:

Items achieved	Points
2-3	1
4-5	2
6-7	3 score
8-9	4
10	7
11	8 max
12	9
13	10
14	11
15-16	12

Comments

More points could be achieved if considering LEED ND in a more flexible way, taking into account the private character of the area (n, o and the nature of some buildings (b, k).

Score

3/12

Potential Score

8/12

2.1 NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 2: Compact Development

CF, SLL 3 / NPD 1, 3, 4, 5 / GIB 10

Intent | Requirements

To encourage development in existing areas to conserve land and protect farmland and wildlife habitat.
To promote livability, walkability and transportation efficiency.

Design and build the project such that residential and nonresidential components achieve the densities per acre of buildable land listed in Table 1 (excluding those portions of parking structures devoted to parking).



Number of existing units within the project: 614

Total area of project: 32 acres

Residential Density: 19.2 units/acres

Floor area for Nonresidential units: 1,95 acres

Residential density (DU/acre)	Nonresidential density (FAR)	Points
> 10 and ≤ 13	> 0.75 and ≤ 1.0	1
> 13 and ≤ 18	> 1.0 and ≤ 1.25	2
> 18 and ≤ 25	> 1.25 and ≤ 1.75	3
> 25 and ≤ 38	> 1.75 and ≤ 2.25	4
> 38 and ≤ 63	> 2.25 and ≤ 3.0	5
> 63	> 3.0	6

DU = dwelling unit; FAR = floor-area ratio.

Comments

Score

Potential Score

3/6

3/6

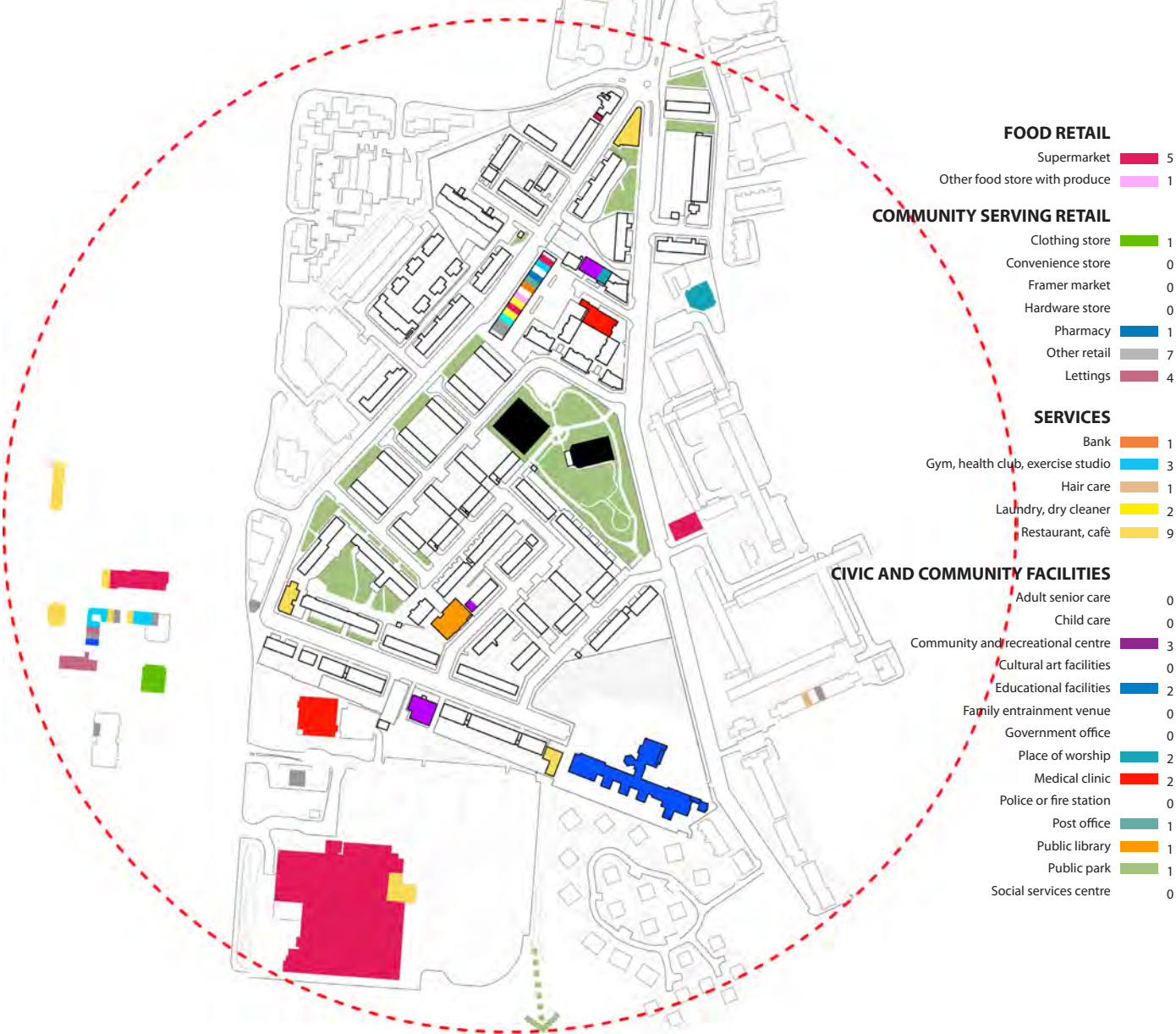
2.1 NEIGHBOURHOOD PATTERN AND DESIGN
NPD Credit 3: Mixed-Use Neighbourhood Centres

CF.. SLL 1, 3, 5 / NPD 1, 2, 9

Intent | Requirements

To encourage walking, cycling and transit use reducing automobile dependence.

Locate and/or design the project such that 50% of its dwelling units are within a 1/4-mile walk distance of the number of diverse uses.



Comments

Considering the variety and the number of services, the credit is totally achieved. Despite that, it could be interesting to consider: playgrounds, access way to bigger parks, and retails as newsagents. Also if examined in other sections they are fully part of the mixité this credit aims to stress.

Score

4/4

Potential Score

4/4

2.1 NEIGHBOURHOOD PATTERN AND DESIGN



2.1 NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 4: Mixed-Income Diverse Communities

CF. SLL 1, 5

Intent | Requirements

To promote socially equitable and engaging communities by enabling residents from a wide range of economic levels, household sizes, and age groups to live in a community.

Opt 1: Diversity of Housing types

Include a sufficient variety of housing sizes and types in the project such that the total variety of planned and existing housing within the project achieves a Simpson Diversity Index score greater than 0.5, using the housing categories below. Projects of less than 125 acres may calculate the Simpson Diversity Index for the area within 1/4 mile of the project's geographic centre. The Simpson Diversity Index calculates the probability that any two randomly selected dwelling units in a project will be of a different type.



And/Or

Opt 2: Affordable housing

Include a proportion of new rental and/or for-sale dwelling units priced for households earning below the area median income (AMI). Rental units must be maintained at affordable levels for a minimum of 15 years. Existing dwelling units are exempt from requirement calculations. A maximum of 3 points may be earned by meeting any combination of thresholds in Table 3.



And/Or

Opt 2: Mixed-Income diverse communities

A project may earn 1 additional point by earning at least 2 points in Option 1 and at least 2 points in Option 2 (at least one of which must be for providing housing at or below 100% AMI).



Comments

Score

Potential Score

Although if the area between 1/4 mile from St. John's neighbourhood includes very contrasting buildings and a high number of dwellings, the development seems to be done for big parts of the same building typology. No points can be scored here due to a lack of a more variety of units and the absence of any affordable housing.

0/7

0/7

2.1 NEIGHBOURHOOD PATTERN AND DESIGN



3.0 Conclusion

In going through the LEED-ND evaluation, it seems important to consider its role as a flexible tool. Our attitude towards it should be guided by an open minded approach able to integrate the technical data with the experience we now have of the site. Both sensations and reflections provide scientific information essential for shaping our knowledge of the area and to reveal the connections between activities and places, as well as their meaning for people.

To define the worth of an object or a device (a sidewalk, a square, a sitting...), that is to say passing from the quantitative to the qualitative data, is a complex operation that requires to see beyond the tables provided from LEED-ND. It is necessary to consider the historical, social and economic that shaped the place in order to understand its functioning and to balance our valuation. These dimensions are often missed in LEED-ND document due to a structure that privileges the focus on single Credits rather overall considerations. If on the one hand this arrangement brings on fragmentation, on the other hand it allows us to handle the Credits separately with a certain freedom. Despite this, a stronger understanding of their relation should be stressed in order to clarify how the accomplishment - or not - of one of them could reverberate its effects on the connected Credits.

This approach is crucial in order to understand how a tool initially devised for American neighbourhoods can be adapted to a different, specific reality and, more generally, how it can change through time. In fact, as we are considering a particular condition of an area along the space and time lines, we are dealing with a changing reality and therefore with a changing idea of sustainability which asks for an equally adaptive evaluation tool.

In this dynamic process, the possibility for different subject to access the document and revise it thanks to their skills and competences, is fundamental: LEED-ND is an educational tool for professionals, developers, planners and residents who can update its contents through time. The format of the document is designed to facilitate the easy reading of the contributions that are communicated thanks to an accessible, uniformed visual media. Besides that, its easy accessibility helps to create profitable dialogues among different parts and their critical analysis can be shared throughout the planning process. This is important in order to evaluate the feasibility of the plan, to level some antagonistic relationship and enable the subjects' proposals to enter the scheme in an understandable way.

Finally, the so defined project can benefit of different contributions made significant through their reference to a recognized national standard document.

In these terms, LEED-ND has a great potential to exploit: its clear structure and applicability, as well as its possible role in participate planning processes, show the opportunity to spread its use and to make it a well known tool to communicate on planning matters.

The St. John's case shows some good examples of a critical approach: sometimes the site could gain the points because it totally respects the main Intent of a Credit without necessary fulfilling all the requirements (e.g. NPD Credit 1). On the opposite side, sometimes the site shouldn't gain the points because, although respectful of the requirements, they don't consider certain important characteristics that could influence the score (e.g. SLL Credit 7).

The overall 'NOT CERTIFIED' rating of St. John's district is mainly due to the presence of old houses that do not meet the current sustainable criteria for buildings. However, a sustainable neighbourhood could be easily a reality in the studied area, and the little changes the district needs to be refurbished actually reveal a good starting situation. Despite the heterogeneity of the parts, and the different times they were constructed, there seems to be a good potential to work on. But always, when considering all these elements, it's necessary to know if the result we find in theory are confirmed by the facts, because a certified neighbourhood on paper is not necessary a functioning neighbourhood.

The awareness of a complex reality should be part of our background in order to shape a plausible proposal for the area and make it understandable also to the people who live there.



3.1 Scorecard

"LEED FOR NEIGHBOURHOOD DEVELOPMENT PROJECT CHECKLIST by SUDRG"

Project Name St. John's district
Date May 2011
Score by Michela Pace

EXISTING SITUATION SCORE	POTENTIAL A (easily achievable)	POTENTIAL B (difficult to achieve)	MAXIMUM LEED SCORE	SMART LOCATION AND LINKAGE (SLL)	
2	3	0	10	Credit 1	Preferred Location
0	0	0	2	Credit 2	Brownfields Redevelopment
7	7	0	7	Credit 3	Locations with Reduce Automobile Dependence
0	1	0	1	Credit 4	Bicycle Network and Storage
2	2	0	3	Credit 5	Housing and Jobs proximity
1	1	0	1	Credit 6	Steep Slope Protection
1	1	0	1	Credit 7	Site Design for Habitat or Wetland and Water Body Conservation
0	0	0	1	Credit 8	Restoration of Habitat or Wetlands and Water Bodies
0	1	0	1	Credit 9	Long Term Conservation Management or Habitat or Wetlands and Water Bodies
SMART LOCATION AND LINKAGE: Subtotal				SLL: GENERAL RECOMMENDATION	
EXISTING SCORE	POTENTIAL A	POTENTIAL B	MAXIMUM LEED SCORE		
13	16	0	27		

EXISTING SITUATION SCORE	POTENTIAL A (easily achievable)	POTENTIAL B (difficult to achieve)	MAXIMUM LEED SCORE	NEIGHBOURHOOD PATTERN AND DESIGN (NPD)	
3	8	0	12	Credit 1	Walkable Streets
3	3	0	6	Credit 2	Compact Development
4	4	0	4	Credit 3	Mixed-use Neighbourhood Centres
0	0	2	7	Credit 4	Mixed-Income Diverse Communities
0	0	0	1	Credit 5	Reduced Parking Footprint
0	0	0	2	Credit 6	Street Network
0	1	0	1	Credit 7	Transit Facilities
1	2	0	2	Credit 8	Transportation Demand Management
1	1	0	1	Credit 9	Access to Civic and Public Space
1	1	0	1	Credit 10	Access to Recreation Facilities
0	1	0	1	Credit 11	Visibility and Universal Design
0	2	0	2	Credit 12	Community Outreach and Involvement
0	1	0	1	Credit 13	Local Food Production
0	2	0	2	Credit 14	Tree-Lined and Shaded Streets
1	1	0	1	Credit 15	Neighbourhood Schools
NEIGHBOURHOOD PATTERN & DESIGN: Subtotal				NPD: GENERAL RECOMMENDATION	
EXISTING SCORE	POTENTIAL A	POTENTIAL B	MAXIMUM LEED SCORE		
14	27	2	44		

EXISTING SITUATION SCORE	POTENTIAL A (easily achievable)	POTENTIAL B (difficult to achieve)	MAXIMUM LEED SCORE	GREEN INFRASTRUCTURE AND BUILDINGS (GIB)	
0	1	2	5	Credit 1	Certified Green Building
0	1	2	2	Credit 2	Building Energy Efficiency
0	1	0	1	Credit 3	Building Water Efficiency
1	1	0	1	Credit 4	Water- Efficient Landscaping
1	1	0	1	Credit 5	Existing Building Reuse
1	1	0	1	Credit 6	Historic Resource Preservation and Adaptive Use
1	1	0	1	Credit 7	Minimized Site Disturbance in Design and Construction
1	3	4	4	Credit 8	Stormwater management
0	1	0	1	Credit 9	Heat Island Reduction
0	0	0	1	Credit 10	Solar Orientation
0	1	0	3	Credit 11	On-Site Renewable Energy Sources
0	2	0	2	Credit 12	District Heating and Cooling
0	0	0	1	Credit 13	Infrastructure Energy Efficiency
0	1	0	2	Credit 14	Wastewater Management
0	1	0	1	Credit 15	Recycle Content in Infrastructure
0	1	0	1	Credit 16	Solid Waste Management Infrastructure
0	1	0	1	Credit 17	Light Pollution Reduction
GREEN INFRASTRUCTURE & BUILDING: Subtotal				GIB: GENERAL RECOMMENDATION	
EXISTING SCORE	POTENTIAL A	POTENTIAL B	MAXIMUM LEED SCORE		
5	18	8	29		

EXISTING SITUATION SCORE	POTENTIAL A (easily achievable)	POTENTIAL B (difficult to achieve)	MAXIMUM LEED SCORE	REGIONAL PRIORITY CREDIT (RPC)	
0	0	0	4	Credit 1	Regional Priority
INNOVATION & DESIGN PROCESS: Subtotal				RPC: GENERAL RECOMMENDATION	
EXISTING SCORE	POTENTIAL A	POTENTIAL B	MAXIMUM LEED SCORE		
0	0	0	4		

EXISTING SITUATION SCORE	POTENTIAL A (easily achievable)	POTENTIAL B (difficult to achieve)	MAXIMUM LEED SCORE	INNOVATION AND DESIGN PROCESS (IDP)	
0	0	0	5	Credit 1	Innovation and Exemplary Performance
0	0	0	1	Credit 2	LEED Accredited Professional
INNOVATION & DESIGN PROCESS: Subtotal				IDP: GENERAL RECOMMENDATION	
EXISTING SCORE	POTENTIAL A	POTENTIAL B	MAXIMUM LEED SCORE		
0	0	0	6		

TOTAL ALL CATEGORIES			
EXISTING SITUATION SCORING	POTENTIAL A (easily achievable)	POTENTIAL B (difficult to achieve)	MAXIMUM LEED SCORE
32	61	10	110
	Gold		Platinum

LEED-ND CERTIFICATION

Certified:	40-49 points
Silver:	50-59 points
Gold:	60-79 points
Platinum:	80 points and above

3.2 References and credits

References

Ancestor 2005-2010, 'Stanford's Library Map Of London And Its Suburbs'. mappalondon [Online]. Available at: www.mappalondon.com/london/north-east/stanfords-map.htm (accessed 01 April 2011)

Great Britain. Department of Communities and Local Development (2006) Code for Sustainable Homes, a step-change in sustainable home building practice [Online]. Available at: www.communities.gov.uk, Crown Copyright, (accessed 01 April 2011).

London Borough of Tower Hamlets (2011). Available at: ww.towerhamlets.gov.uk/default.aspx?page=15132 (accessed 01 April 2011).

London School of Economics & Political Science, 'Booth poverty map'. Charles Booth Online Archive [Online]. Available at: www.booth.lse.ac.uk (accessed 01 April 2011)

Minton, A., (2009) Ground control: fear and happiness in the twenty-first-century city. London: Penguin.

Munarin, S., Tosi, M.C., (2001) Tracce di città: esplorazioni di un territorio abitato: l'area veneta, Milano: F. Angeli

Smithson, A., (1968) Team 10 Primer, London: Architectural Design 1962.

SURDG, (2010) LEED ND REVIEW of a typical Georgian Block in London, Westminster. London: Karthaus.

Transport of London (2011). Available at: <http://www.tfl.gov.uk/corporate/projectsandschemes/18339.aspx>, Transport of London Copyright, (accessed 01 April 2011).

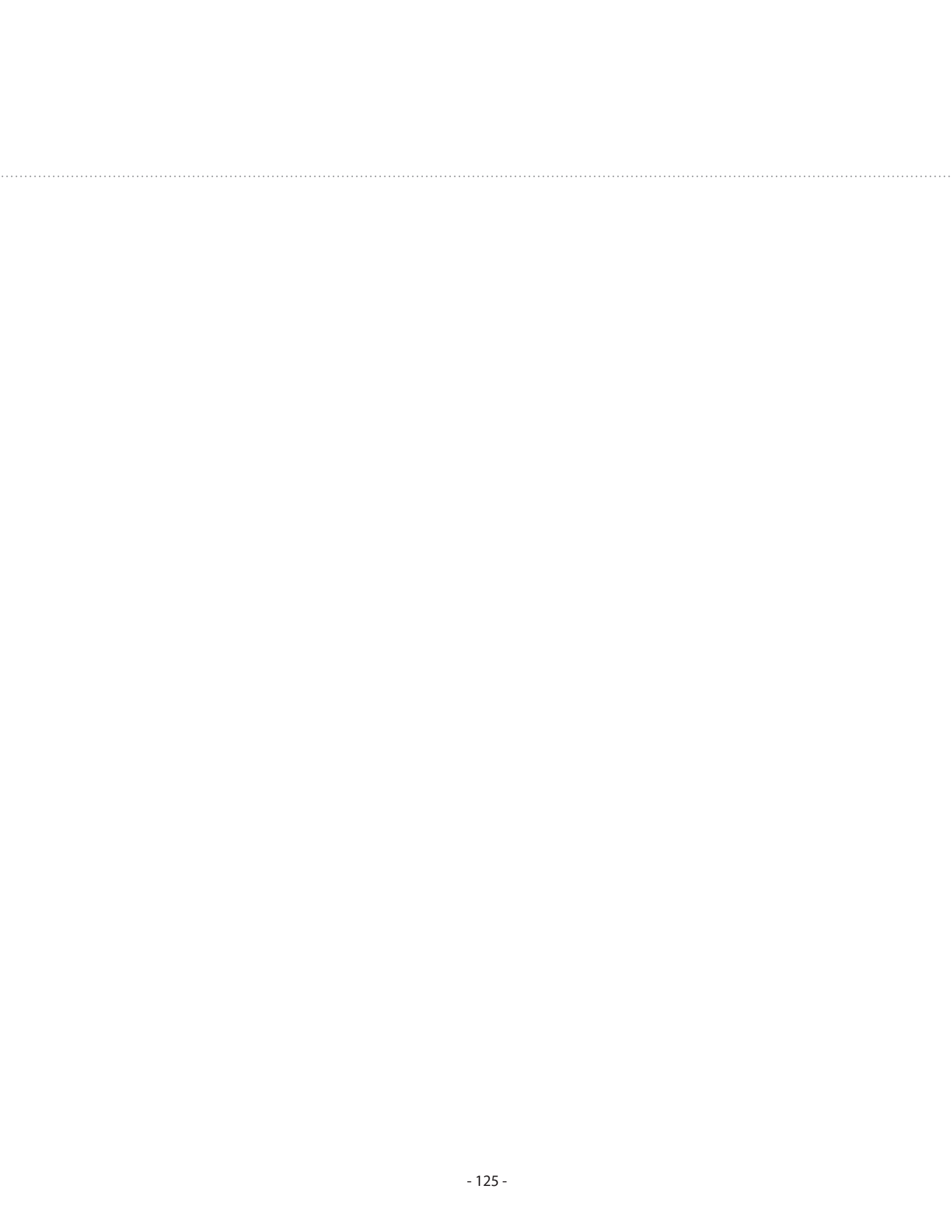
Transport of London (2011). Available at: <http://www.tfl.gov.uk/roadusers/cycling/15832.aspx>, Transport of London Copyright, (accessed 01 April 2011).

US Green Building Council (2009) Green Neighbourhood Development. LEED reference guide for Neighbourhood Development. Washington: USGBC.

US Green Building Council (2011) LEED 2009 for Neighbourhood Development (updated May 2011) [Online]. Available at: www.usgbc.org/DisplayPage.aspx?CMSPageID=148, USGBC Copyright, (accessed 05 May 2011).

Images credits

All images and photographs by the author unless reference stated.



3.3 Appendices

This section refers to the methodology of “Sustainable Urban Design Review for Clay Farm Project report”, as part of the UEL
AVA Sustainable Urban Design Research Programme for PLACE Partners, September 2010 - Issue 1.2 FINAL
SUDRG (2010), *LEED ND REVIEW of a typical Georgian Block in London, Westminster*. London: Karthaus.

<h1>introduction</h1>	
<h2>1.4 The LEED-ND benchmark</h2> <p>The U.S. Green Building Council (USGBC), the Congress for the New Urbanism (CNU), and the Natural Resources Defence Council (NRDC)—organizations that represent leading design professionals, progressive builders and developers, and the environmental community—have come together to develop a rating system for neighbourhood planning and development based on the combined principles of smart growth, New Urbanism, and green infrastructure and building. The goal of this partnership is to establish a national leadership standard for assessing and rewarding environmentally superior green neighbourhood development practices within the framework of the LEED® Green Building Rating System™.</p> <p>In particular, LEED for Neighbourhood Development places emphasis on the site selection, design, and construction elements that bring buildings and infrastructure together into a neighbourhood and relate the neighbourhood to its landscape as well as its local and regional context, according to the principles of NEW URBANISM and Jane Jacob’s, such as the compact development and the walkable streets. LEED for Neighbourhood Development creates a label, as well as guidelines for both decision making and development, to provide an incentive for better location, design, and construction of new residential, commercial, and mixed-use developments.</p> <p>The guidelines of LEED for Neighbourhood Development aim to give useful advice on creating</p>	<h2>1.5 Methodology</h2> <p>The design review was conducted using the LEED-ND v2009 and the BREEAM Communities Technical Manual Guide 2009. Information about the pilot design project was gathered through PLACE, conversations with Garry Colligan and a local survey/visit to the site.</p> <h3>1.6 Methods for reviewing LEED-ND</h3> <p>As LEED-ND is a US rating system, in order to review it against UK standards/ regulations/ general guidelines and publications published by the governmental, national, regional and local authorities or various organizations within UK, there was a need to convert some criteria that cannot be applied in the UK as these contradict local regulations. The conversion was made according to the most equivalent standards.</p> <p>Some credits cannot be converted and so are not available as part of this review. For example, regional, innovation and process credits cannot be simply converted to a compatible standard. A summary of converted credits is given in the methodology section.</p>

Review of the LEED-ND benchmark against UK standards, regulations and general guidelines (SURDG, 2010, p. 15).

SMART LOCATION AND LINKAGE

SLL Prerequisite 2: Imperilled species and ecological communities preservation

This prerequisite refers to US protection agencies. In the UK, the equivalent guidance is provided by the local Biodiversity Action Plan.

SLL Prerequisite 4: Agricultural land conservation

This prerequisite is covered by the zoning in the adopted local plan and would only be an issue in the case of non-agricultural development on agricultural land, which would be against UK policy. In this case, according to Local Framework: Cambridge Southern Fringe Area Development Framework (ADF), January 2006 - The project in Harlow is on land that was originally farmland, but it has been re-designated in the local plan as a high priority development.

SLL Credit 1: Preferred Locations

The credit refers to US-designated high-priority redevelopment areas, which are covered in the local plan (see above)

SLL Credit 2: Brownfield Redevelopment

Brownfield sites are defined in UK planning policy, but not relevant in this case.

SLL Credit 7: Site Design for Habitat or Wetland and Water Body Conservation

The Local Biodiversity Action Plan is the key document for this credit and advice should be sought from qualified ecologists and hydrologists to ensure

compliance.

SLL Credit 8: Restoration of Habitat or Wetland and Water Bodies

As above. In this case considerable work has been undertaken as part of the outline planning consent

NEIGHBOURHOOD PATTERN AND DESIGN

NPD Credit 1: Walkable streets

Item K contradicts lifetime homes standards in the UK which are required for other credits, so this item could not be achieved.

NPD Credit 4: Mixed-Income Diverse Communities

We have followed the standards for Affordable Housing. In this project, 40% of the housing will be affordable and there will be a split between rented and subsidized for sale. As the exact percentage of rented and subsidized for sale units is not known yet, it is not possible to make a straight comparison with the AMI category of the US LEED-ND. However, if we assume the higher bracket in each case, then 25% of rented at 80% and 15% for sale at 120% would give the maximum points. Therefore, the table is converted as shown here. A direct conversion is not possible so we have taken a view on the closest equivalents.

NPD Credit 8: Transportation Demand Management
A TDM program (Transportation Demand Program) to be referred to as a Sustainable Transport Plan.

NPD Credit 11: Visitability and Universal Design

The Universal Design to follow Life Time Homes and UK building Regulations.

NPD Credit 12: Community Outreach and Involvement

A Statement of Community Involvement is a requirement of UK planning applications of this type.

NPD Credit 14: Tree-Lined and Shaded Streets

Invasive species as designated in UK law will be applied.

Table from LEED-ND document

Rental dwelling units				For-sale dwelling units			
Percent up to 80% AMI		Percent up to 100% AMI		Percent up to 120% AMI		Percent up to 120% AMI	
Percentage of total rental units	Points	Percentage of total rental units	Points	Percentage of total for-sale units	Points	Percentage of total for-sale units	Points
0	1	20	1	0	3	0	1
20	2	25	2	10	2	25	2
25	3	25	3	15	3	25	3

Converted table

% of rental units	points	% of for-sale units	points
10	1	5	1
15	2	10	2
25	3	15	3

GREEN INFRASTRUCTURE AND BUILDINGS

GIB Credit 1: Certified Green Buildings

Follow CSH, Level 4/ BREEAM very Good

GIB Credit 2: Building Energy Efficiency

Follow CSH-Energy Issue, the following conversions were made:

-Achieve at least 25% (instead of 18% of US LEED-ND) improvement over AD L1A 2006 (equivalent to level 3) = 1 credit.

-Achieve at least 44% (instead of 26% of US LEED-ND) improvement over AD L1A 2006 (equivalent to level 4) = 2 credits.

The percentages are higher than LEED, but are more comparable in relative achievement in the UK.

GIB Credit 3: Building Water Efficiency

Follow CSH-Water Issue

GIB Credit 4: Water-Efficient Landscaping

Requirement on rainwater harvesting (not greywater)

GIB Credit 6: Historic Resource Preservation and Adaptive Use

Look for listed buildings (English Heritage) and conservation areas.

GIB Credit 8: Stormwater Management

Following the CSH-Surface Issue, the above table was converted as follows:

Table from LEED-ND document

Percentile rainfall event (total volume to be retained)	Points
80%	1
85%	2
90%	3
95%	4

Converted table

Criteria	Points
A. Ensure that the peak rate of runoff into watercourses is no greater for the developed site than it was for the pre-development site. This should comply with the Interim Code of Practice for Sustainable Drainage Systems (SUDS) (CIRIA, 2004) or for at least the 1 year and 100 year return period events	1
the above A plus: B. Ensure that the additional predicted volume of rainwater discharge caused by the new development, for a 1 in 100 year event of 6 hour duration including an allowance for climate change (PPS25, 2006), is entirely reduced using infiltration and/or is made available for use in the dwelling as a replacement for potable water use in non-potable applications such as WC flushing or washing machine operation.	2
A+B + use of SUDS	4

GIB Credit 9: Heat Island Reduction

Comply with SRI's from CIBSE and CIBSE SLL Lighting Guide for the Outer Environment

GIB Credit 11: On-Site Renewable Energy Sources

Follow CSH-Energy Issue

-Achieve 10% (instead of 5%) improvement: 1 point

-Achieve 15% (instead of 12.5%) improvement: 2 points

-Achieve 20% improvement: 3 points

The percentages are higher than LEED, but are more comparable in relative achievement in the UK and are in line with planning requirements.

GIB Credit 14: Wastewater Management

Follow CSH-Water Issue (Water Calculator from CSH was not used as we need the percentage of the wastewater that was reused and not the water consumption efficiency).

GIB Credit 16: Solid Waste Management Infrastructure

According to the CSH, the provision of storage of household waste is mandatory for all levels but not of the recycling waste. In this case, LEED-ND is more demanding and should be followed with no conversion.

GIB Credit 17: Light Pollution Reduction

Comply with CIBSE SLL Lighting Guide and/ or CSH-Energy + CIBSE specifications of luminaires for outer spaces.



PLACE



RESEARCH



LAB

www.placeresearchlab.org.uk