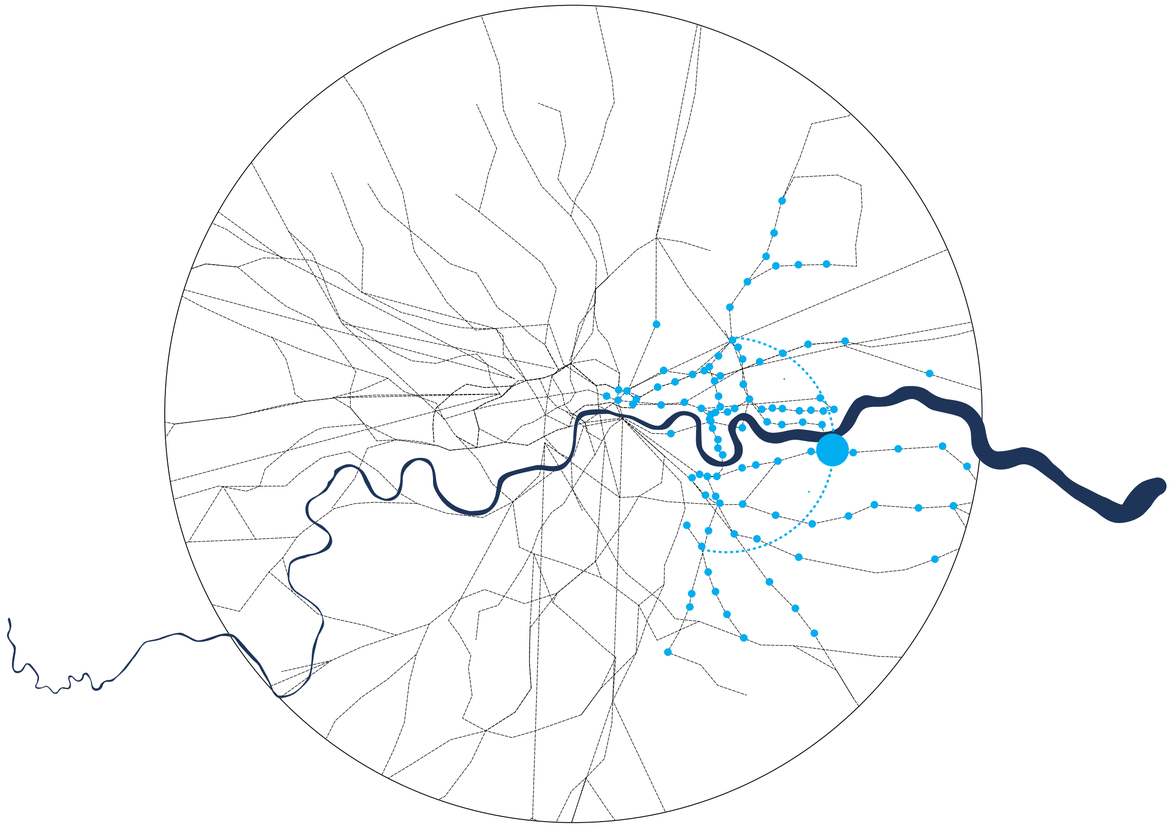
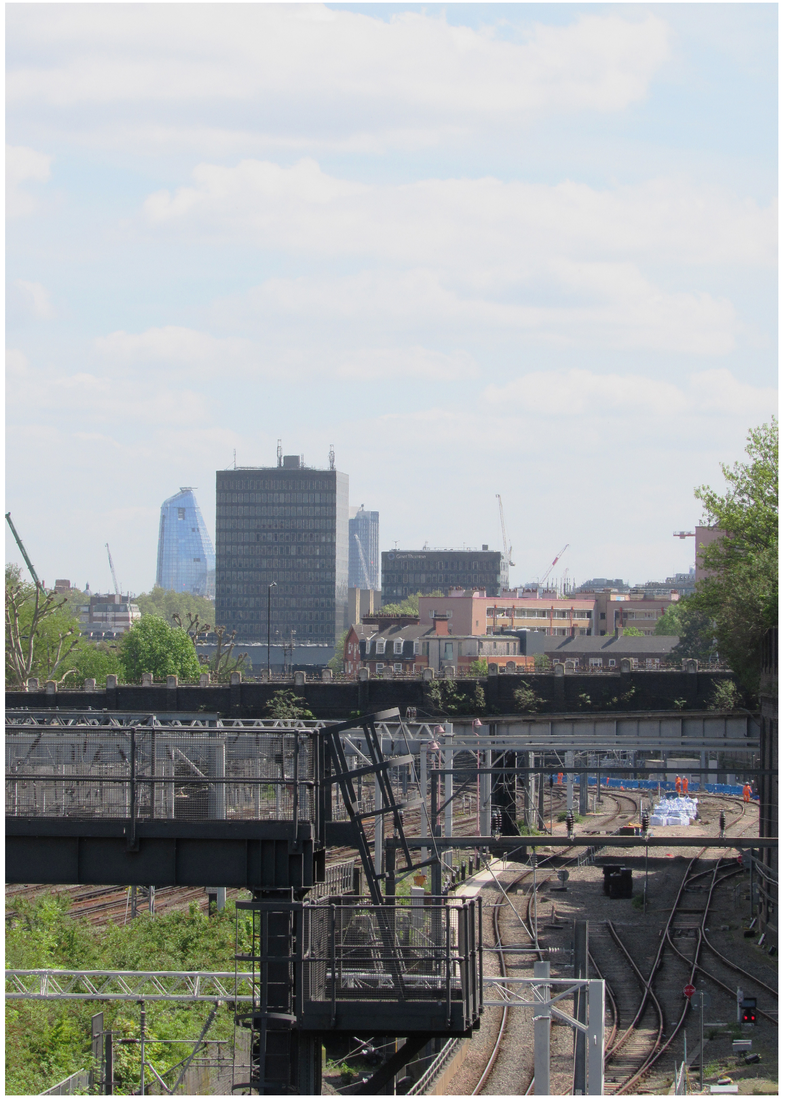


London 2041

challenging a region's mono-centric development paradigm

Daan Leenders | P5 Presentation







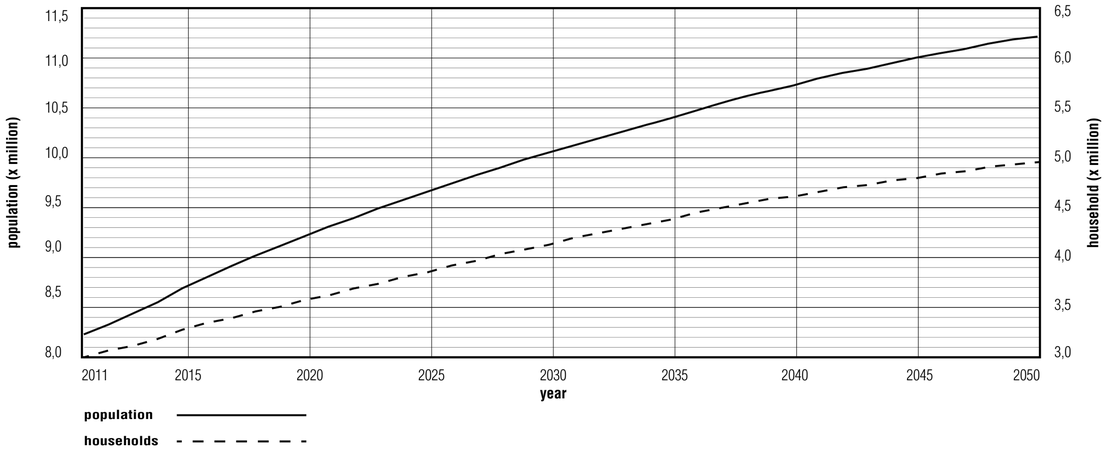
source: Images by author



source: Image by author

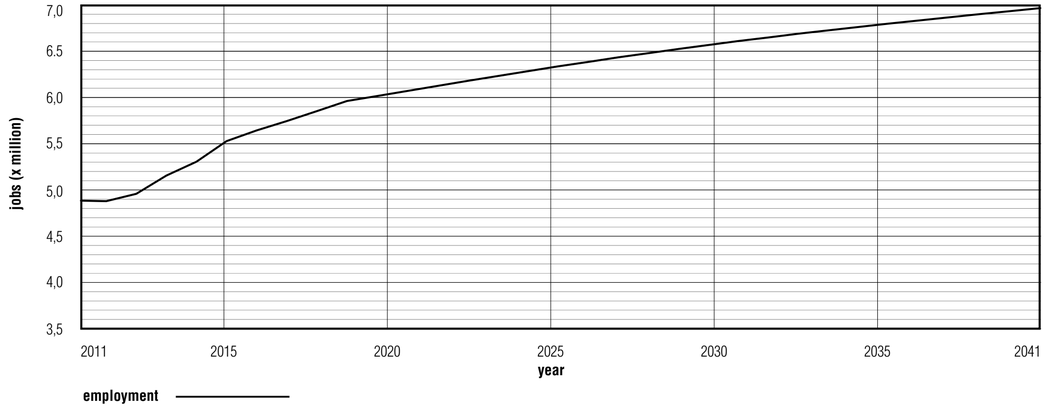
Introduction

Population growth

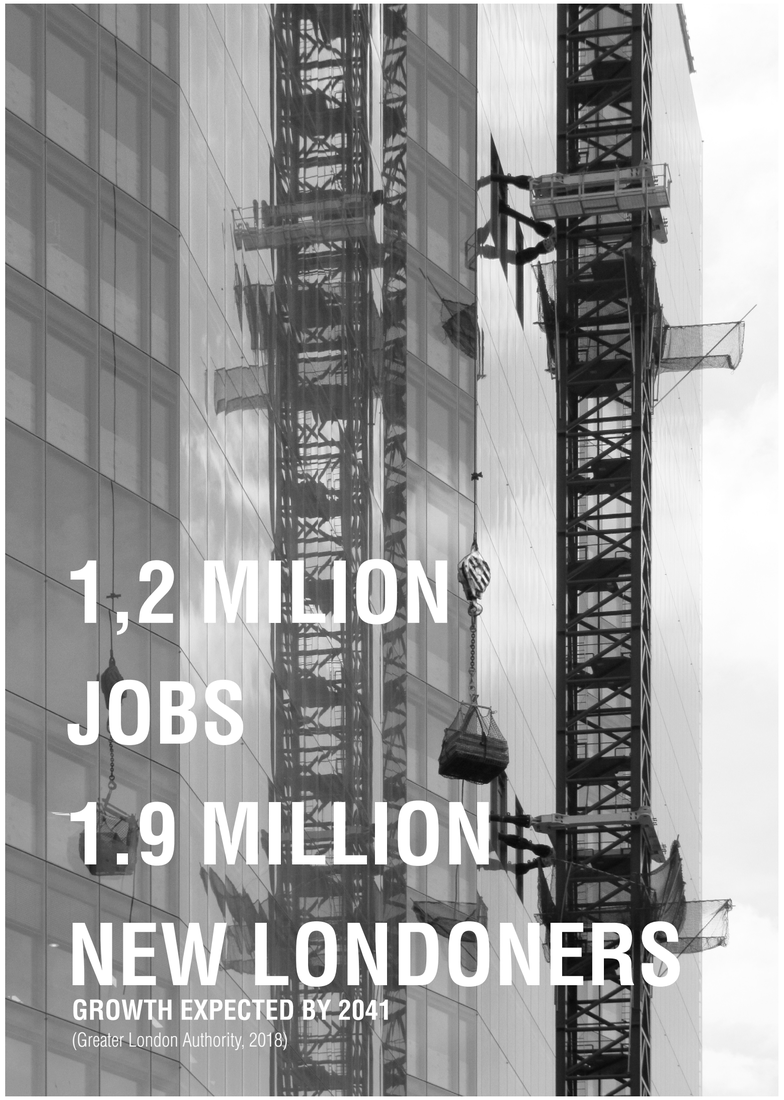


source: based on GLA Economics (2017)

Employment growth



source: based on GLA Economics (2017)



source: Image by author

Residential density

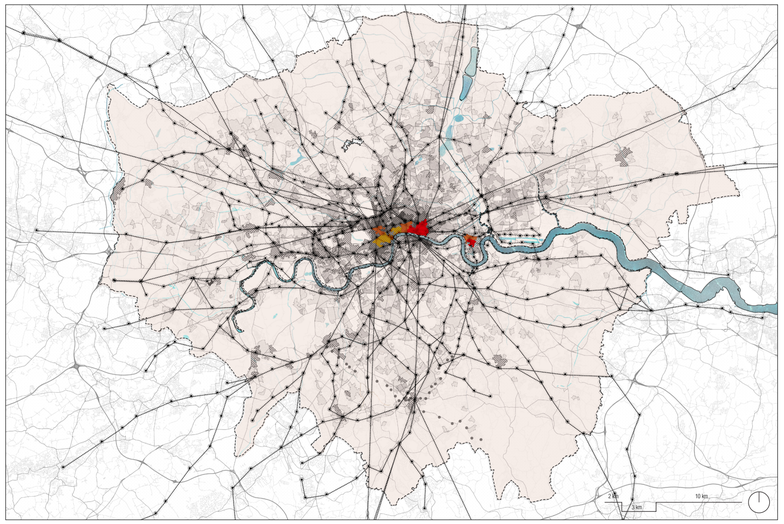
- 275 - 685 people / ha
- 70 - 275 people / ha
- 1 - 70 people / ha



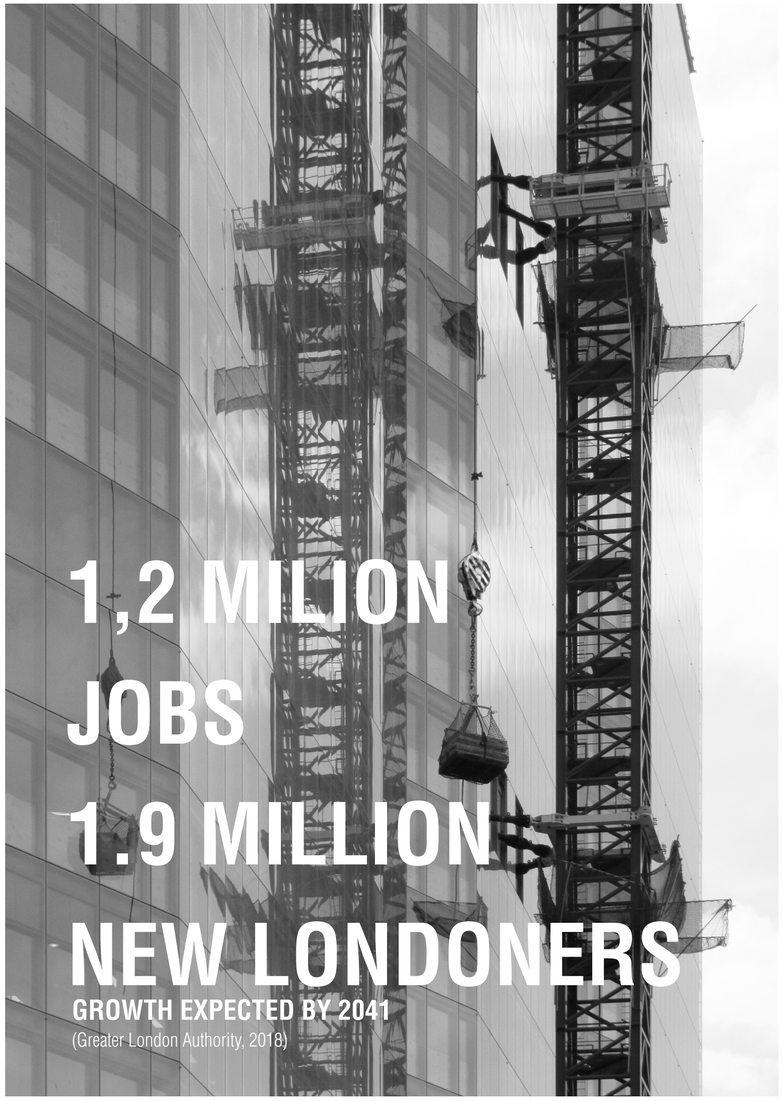
source: based on Greater London Authority (2018)

Employment density

- 200.000 - 230.000 jobs / km^2
- 90.000 - 150.000 jobs / km^2
- 22.000 - 90.000 jobs / km^2
- < 22.000 jobs / km^2



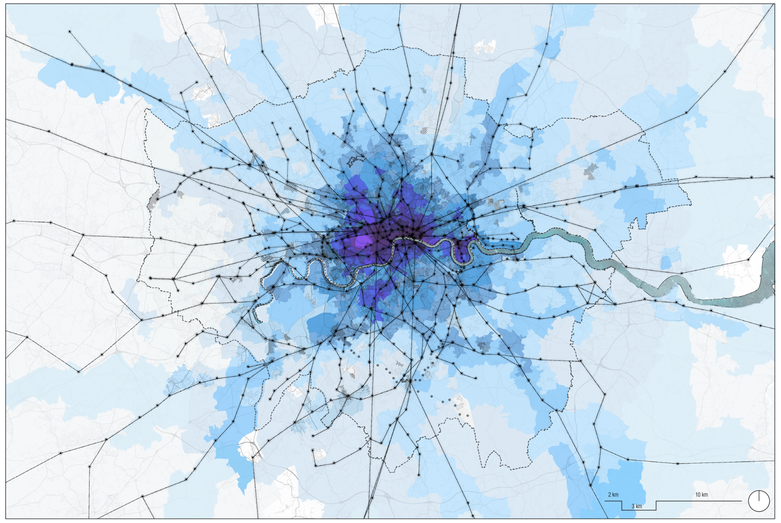
source: based on Greater London Authority (2018)



source: Image by author

% of people working in the CAZ

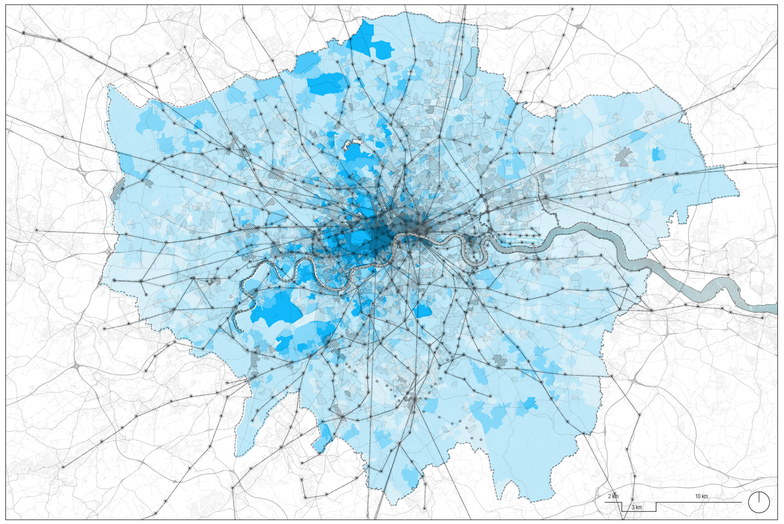
0% % employed in the CAZ 90%



source: based on Office of National Statistics. Census Division et al. (2015)

Housing affordability

< 5 houseprice / median household income > 29

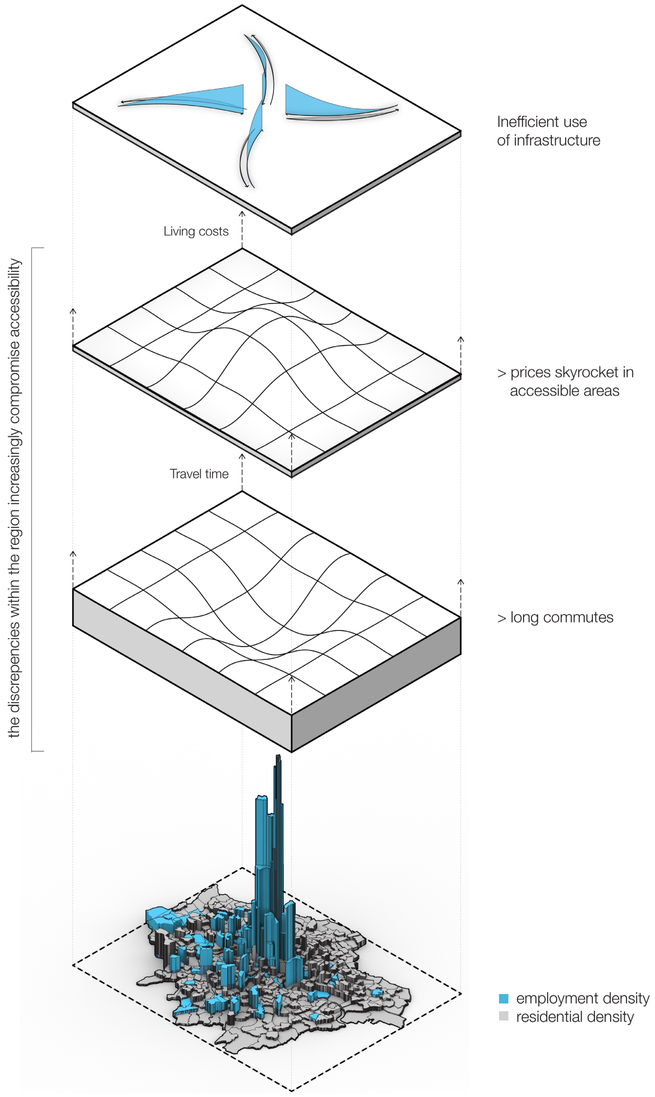


source: based on Greater London Authority (2018)

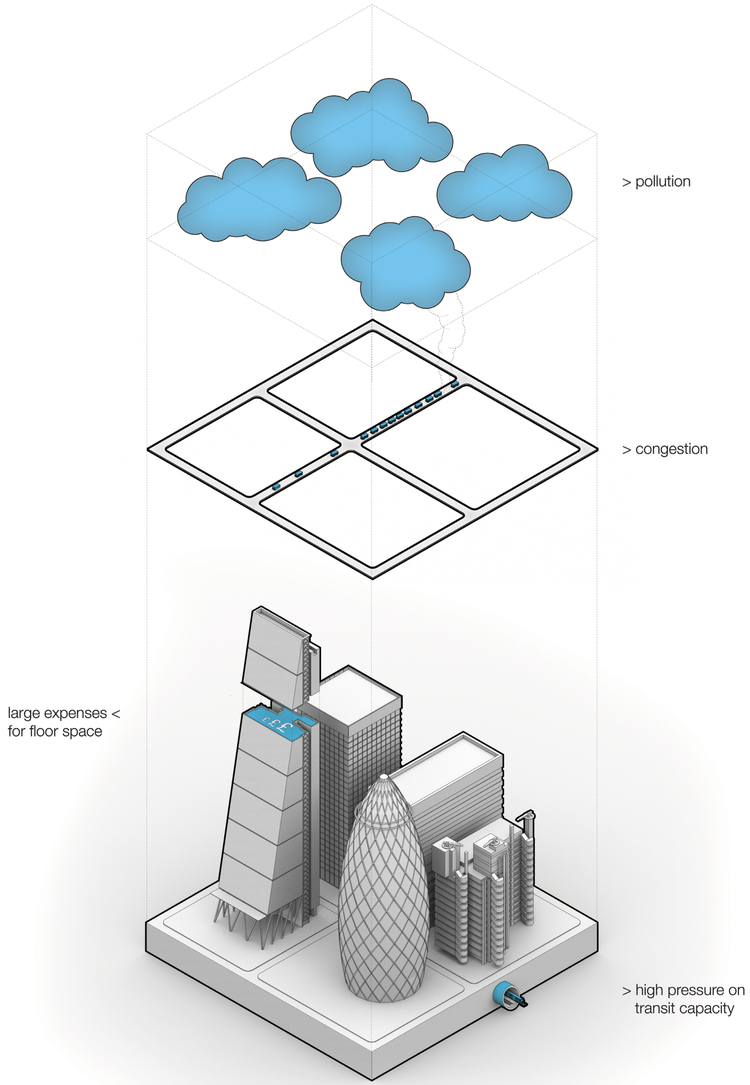


source: Business insider (2014)

Regional costs of monocentricity



Local costs of monocentriicty



source: Image by author

problem analysis [growth, accessibility, **costs of monocentricity,** problem statement]

Problem Statement

The costs of Greater London's **increasingly mono-centric** metropolitan functionality are rising quickly. The large disparity between the region's productive core and surrounding residential areas are causing **accessibility** to employment, services, and amenities to become increasingly compromised. In light of projected growth, the time is now to critically consider **an alternative to this model of development**. While nurturing the competitive qualities that have made Greater London flourish as a region, a new balance must be struck that ensures better accessibility throughout the region, improving the daily lives of its inhabitants.

research question

How can a better integration of land-use and mobility policy offer an **alternative model of regional development** for Greater London that **improves territorial cohesion** through the development of **a new centrality outside the central area?**

goals

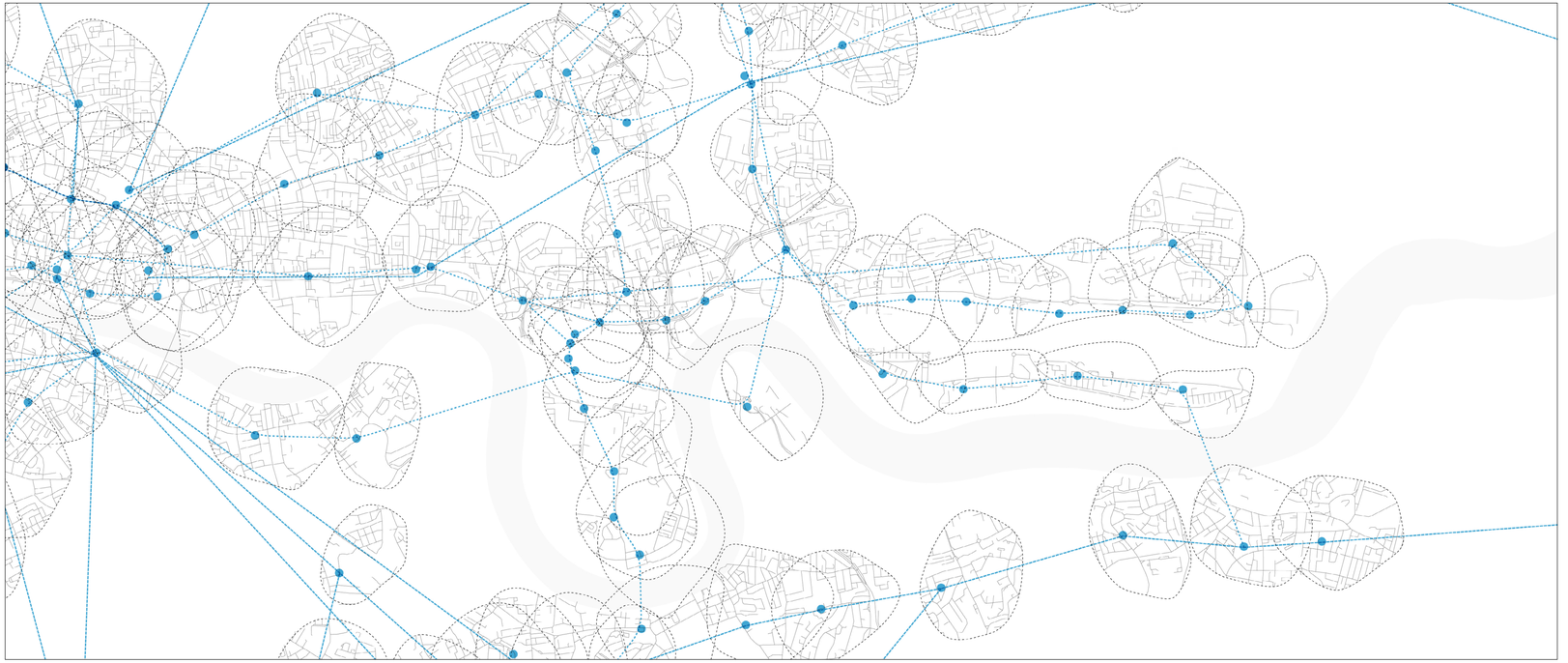
Create a region in which **access** to services, amenities and jobs is a more **common good** and **extreme commuting times** are reduced.

Foster more **sustainable** and **efficient travel patterns.**

Accommodate London's **growth** in a more **balanced** manner **throughout the region.**

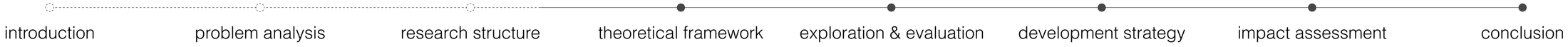
Research structure [**research question & goals,** scope]

Focus: London’s station areas and the network connecting them



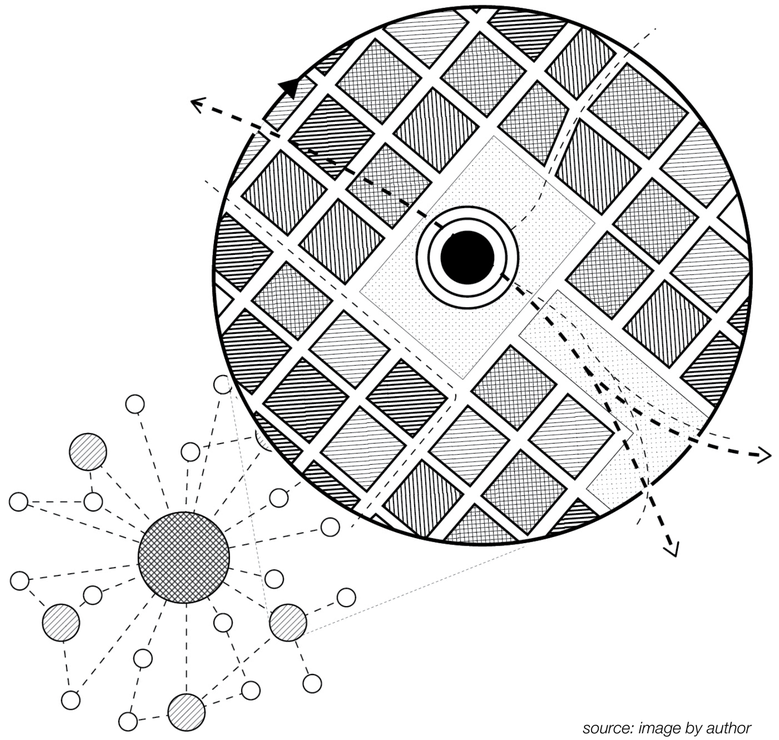
source: image by author

towards a development strategy



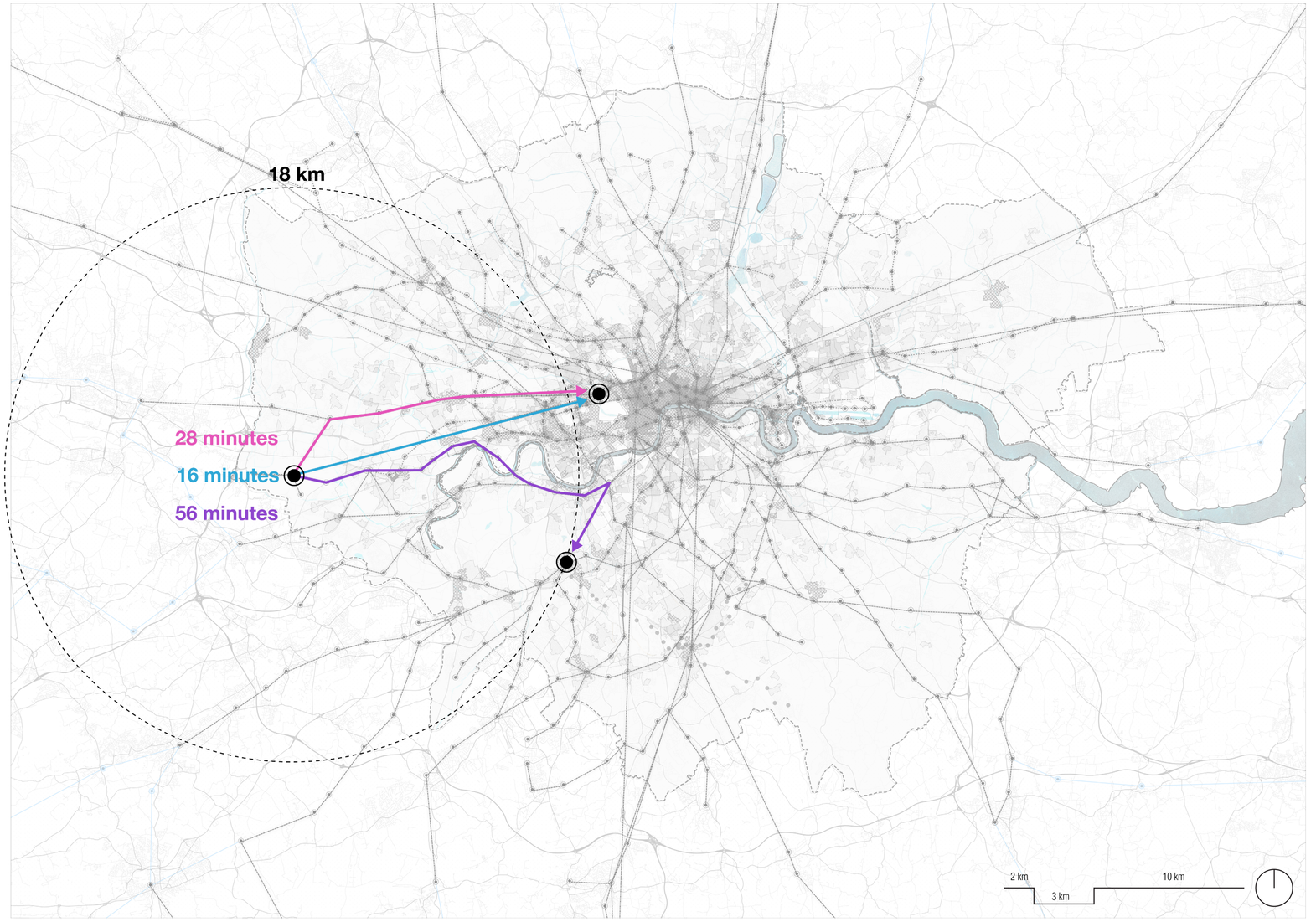
Research structure [research question & goals, **scope**]

The region as a networked urban system



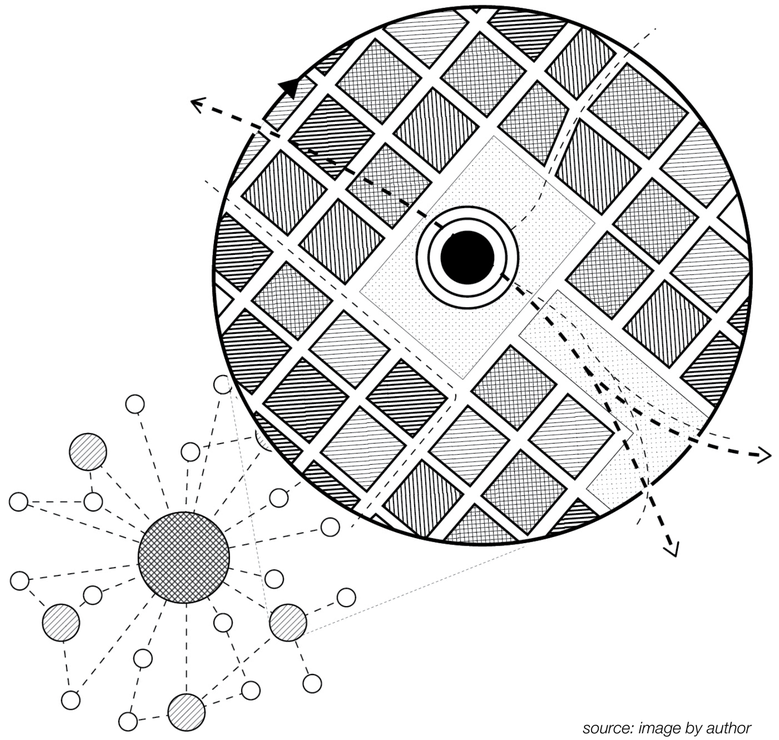
source: image by author

The region as a networked urban system



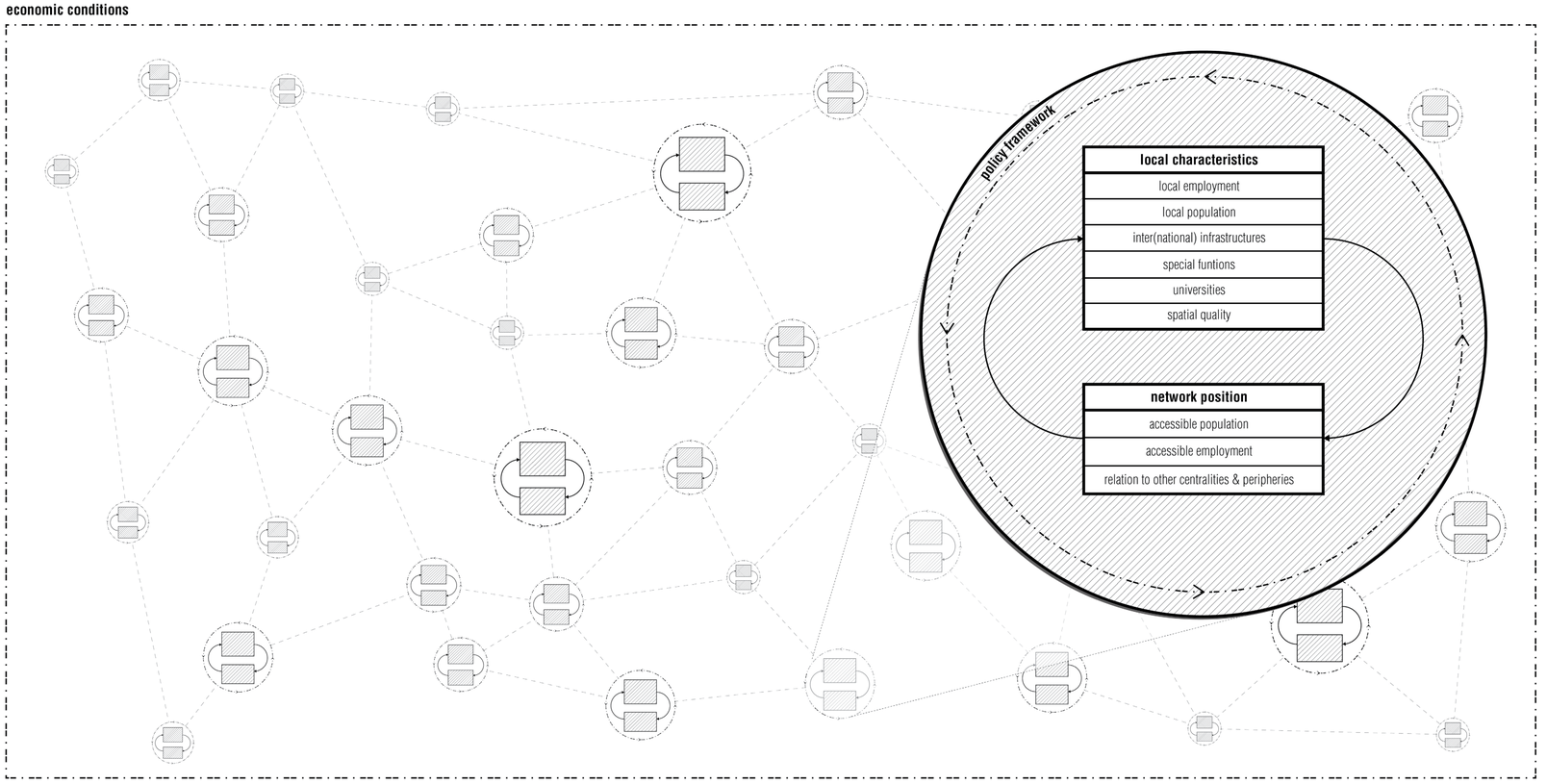
source: based on Transport for London (2019)

The region as a networked urban system



source: image by author

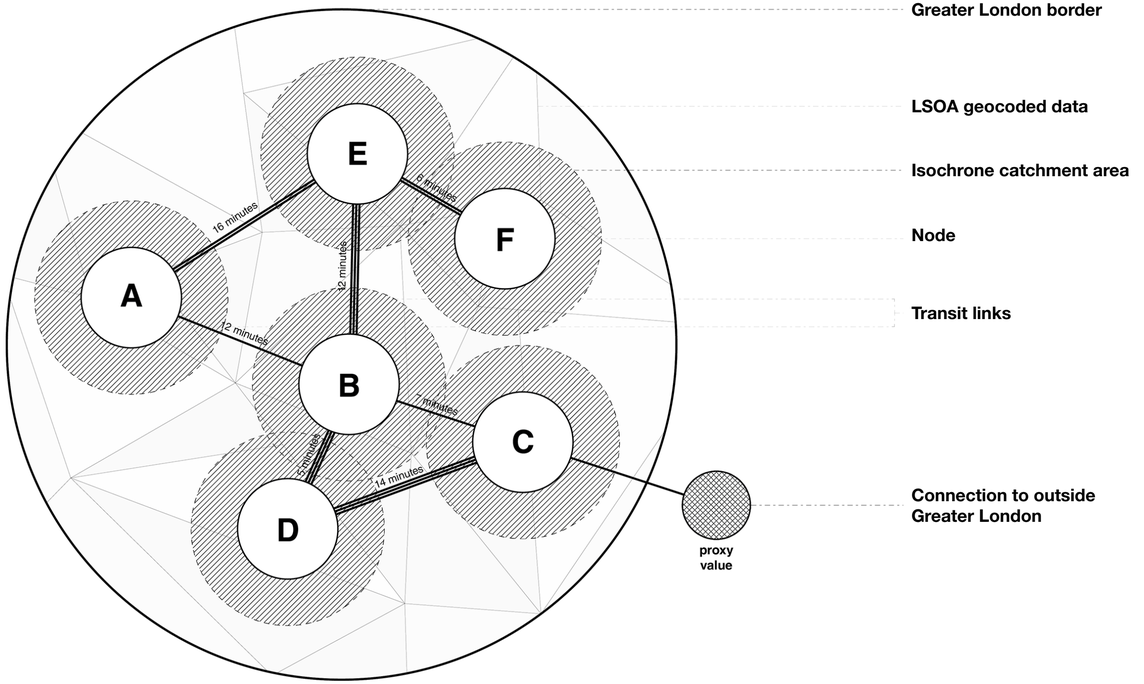
Centrality Development Framework



source: image by author

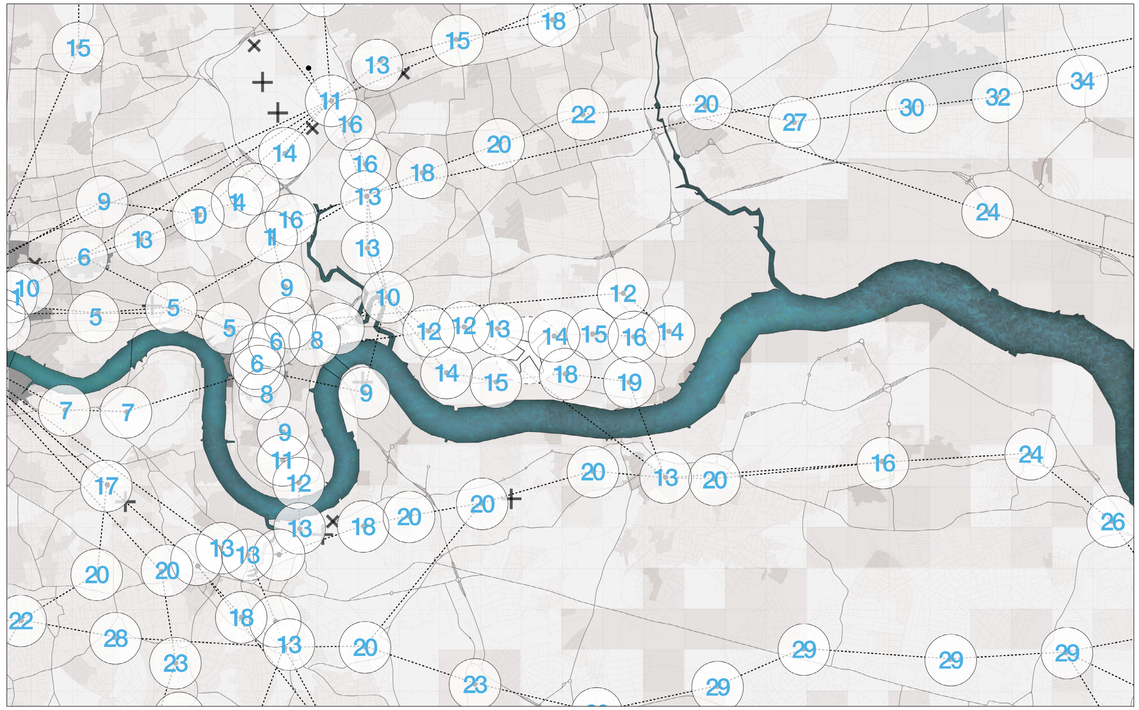
Theoretical framework [urban systems, **centrality development framework**]

Network Analysis



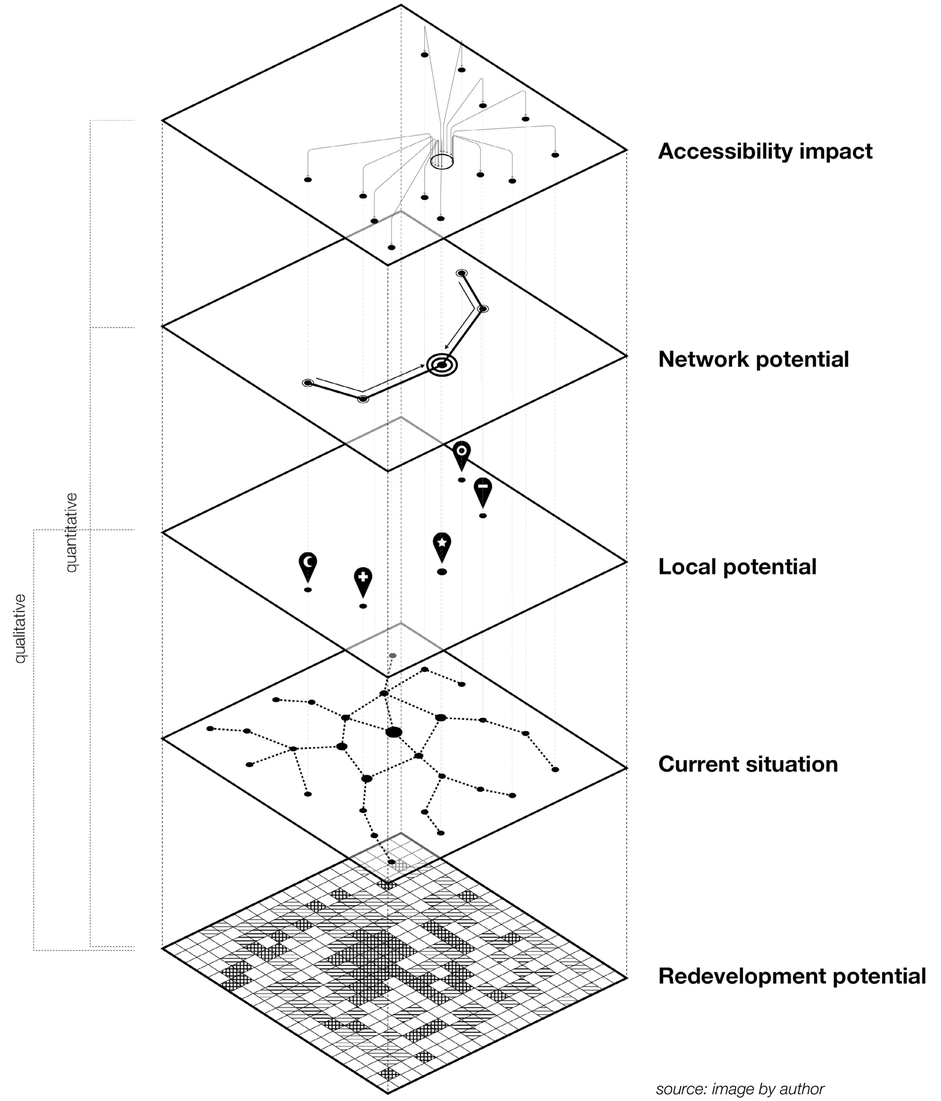
source: image by author

Network Analysis



source: image by author

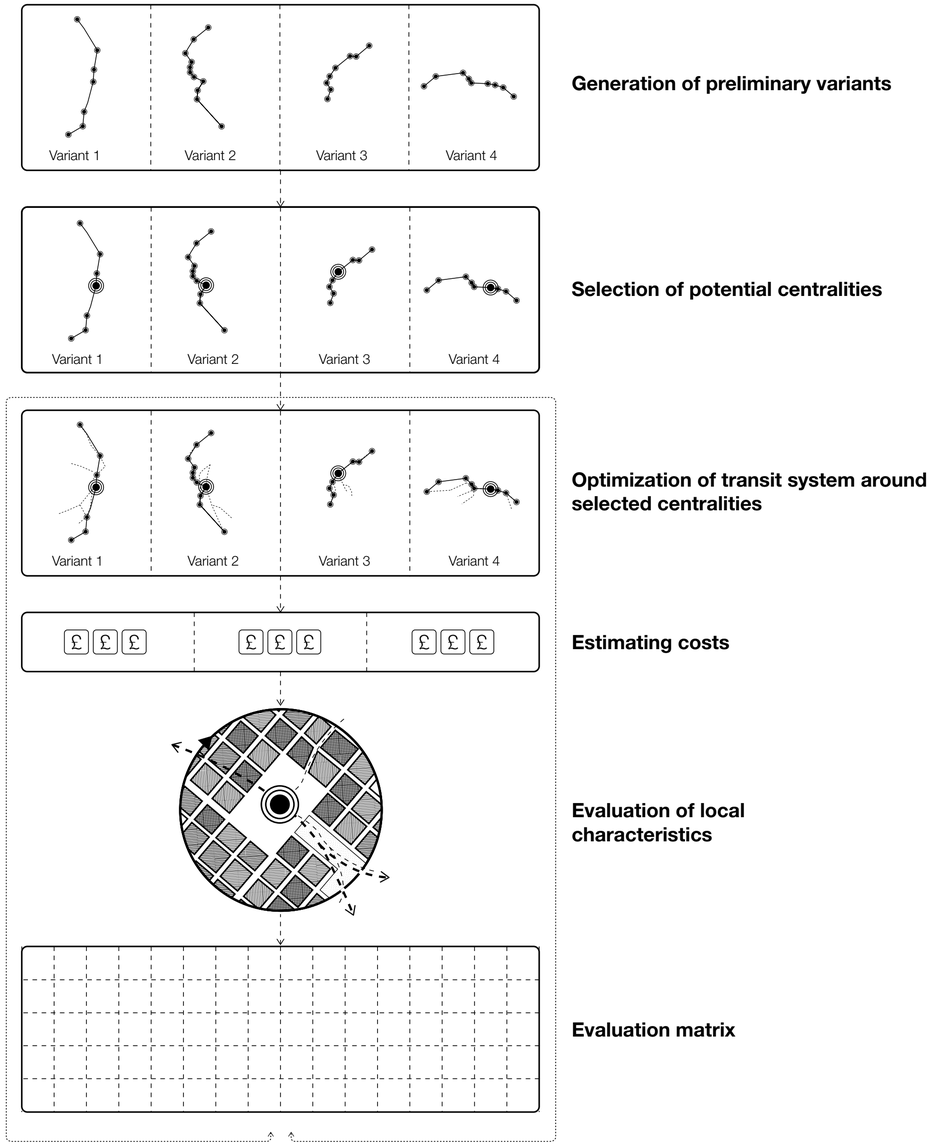
Evaluation criteria



source: image by author

Exploration & evaluation [network analysis, **criteria,** assessment structure, options, evaluation matrix, current policy]

Assessment structure



Generation of preliminary variants

Selection of potential centralities

Optimization of transit system around selected centralities

Estimating costs

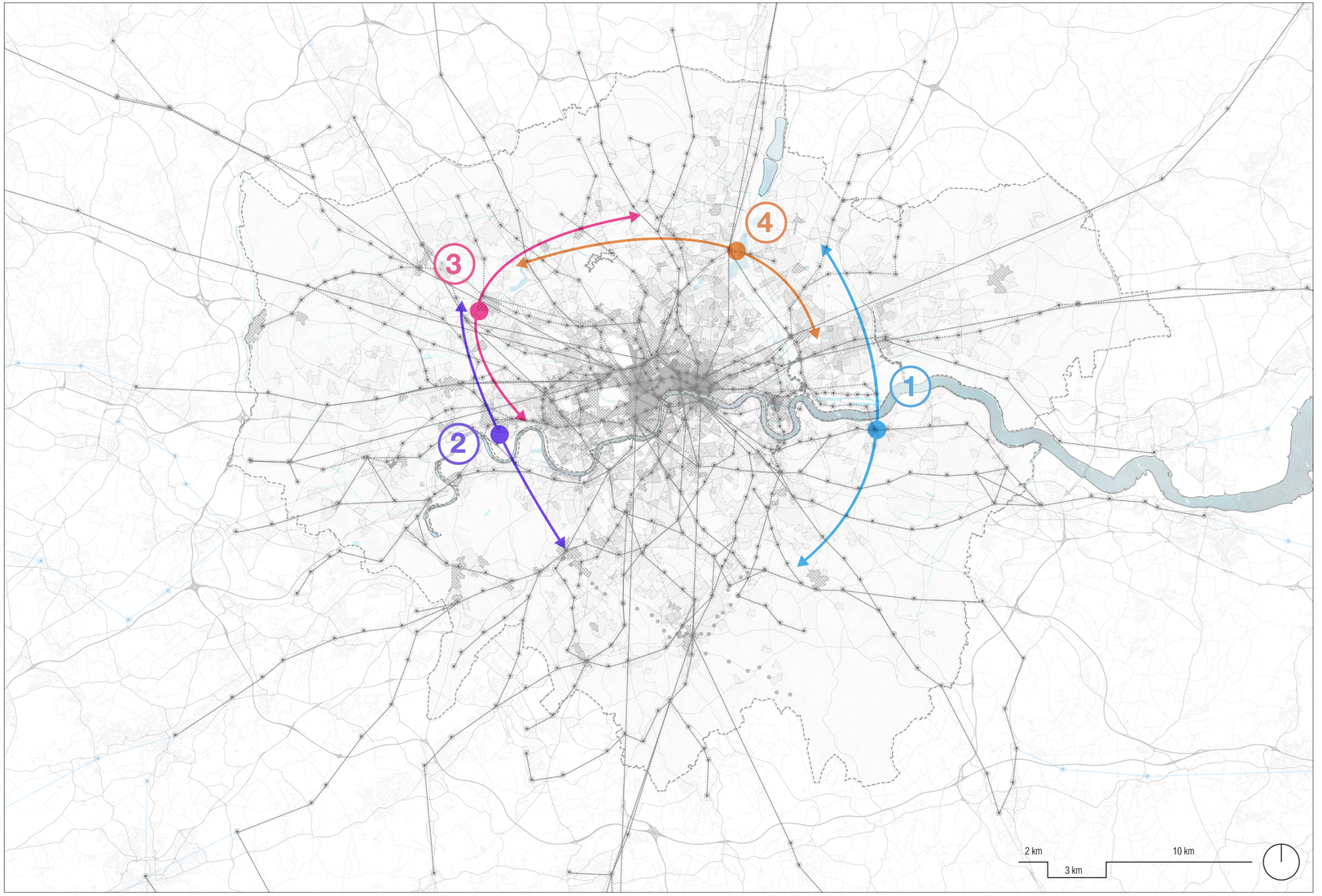
Evaluation of local characteristics

Evaluation matrix

source: image by author

Exploration & evaluation [network analysis, criteria, **assessment structure,** options, evaluation matrix, current policy]

Preliminary variants



source: image by author

Exploration & evaluation [network analysis, criteria, assessment structure, **options,** evaluation matrix, current policy]

Woolwich Arsenal | Variants evaluated



source: image by author

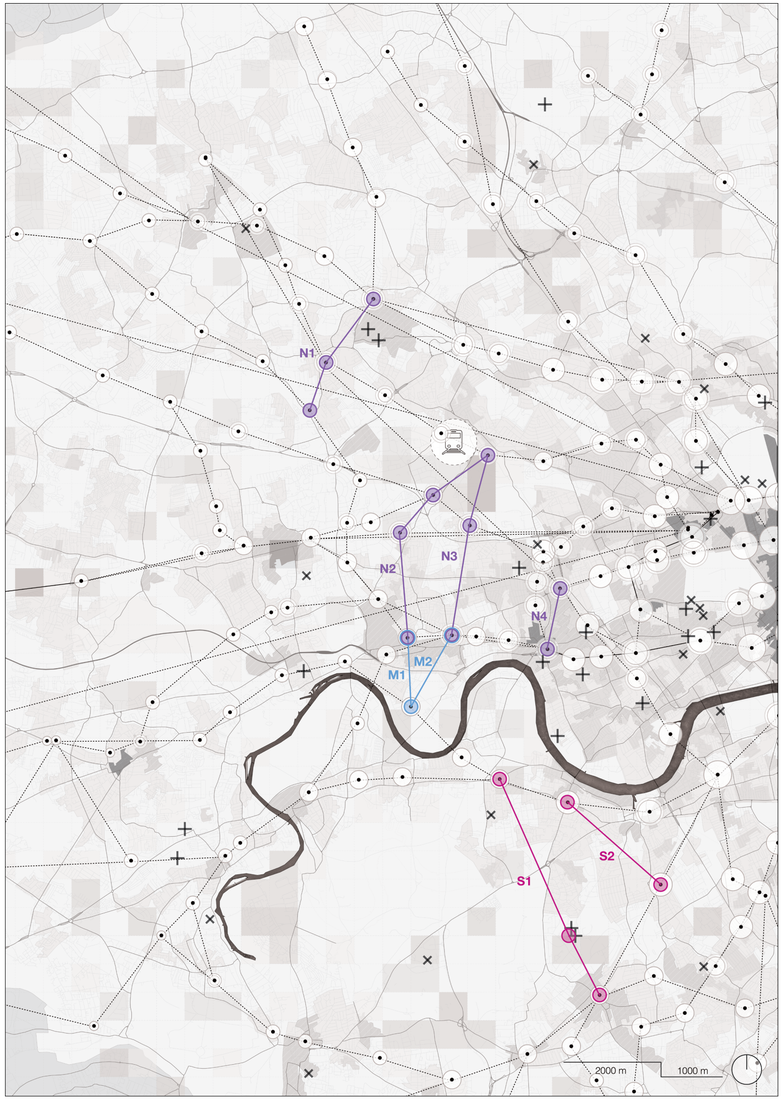
Woolwich Arsenal | Variant selected



source: image by author

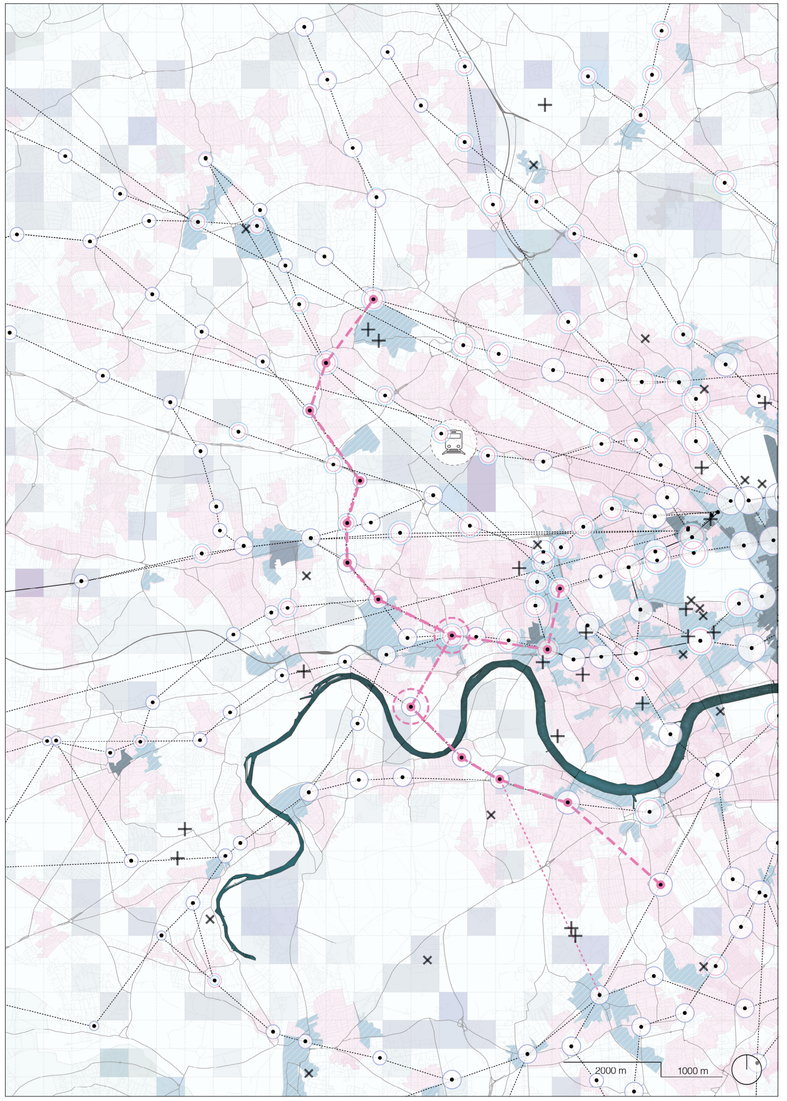
Exploration & evaluation [network analysis, criteria, assessment structure, **options,** evaluation matrix, current policy]

Chiswick / Turnham Green | Variants evaluated



source: image by author

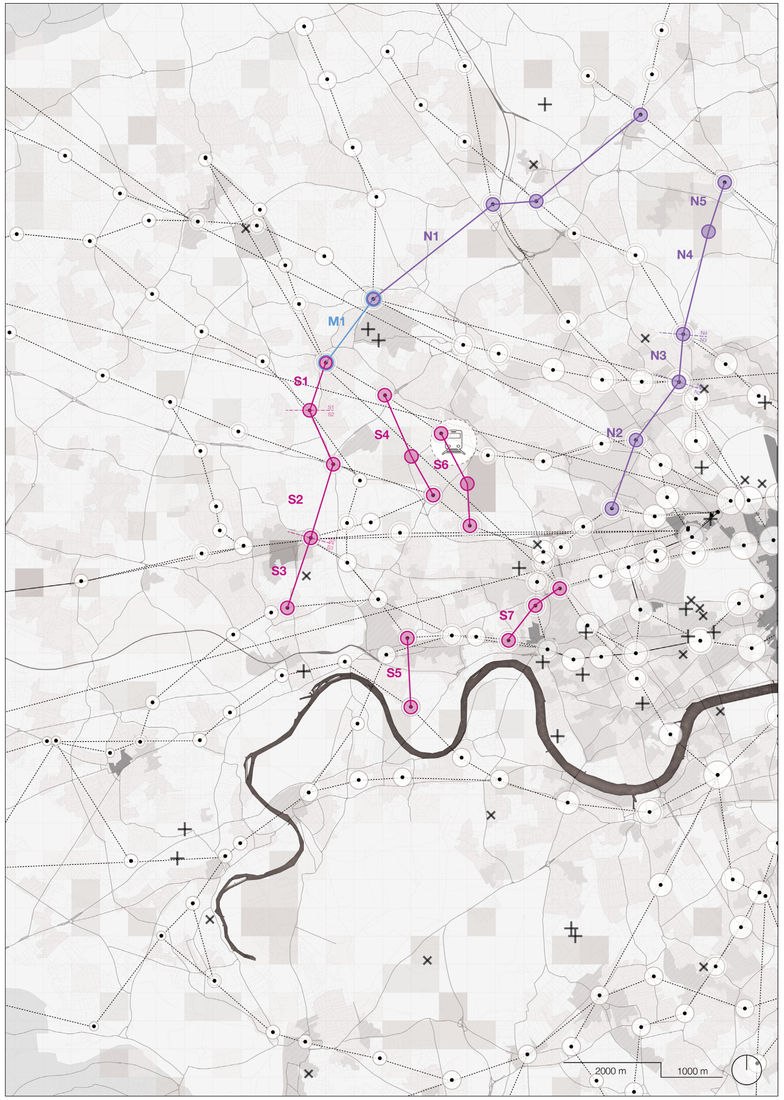
Chiswick / Turnham Green | Variant selected



source: image by author

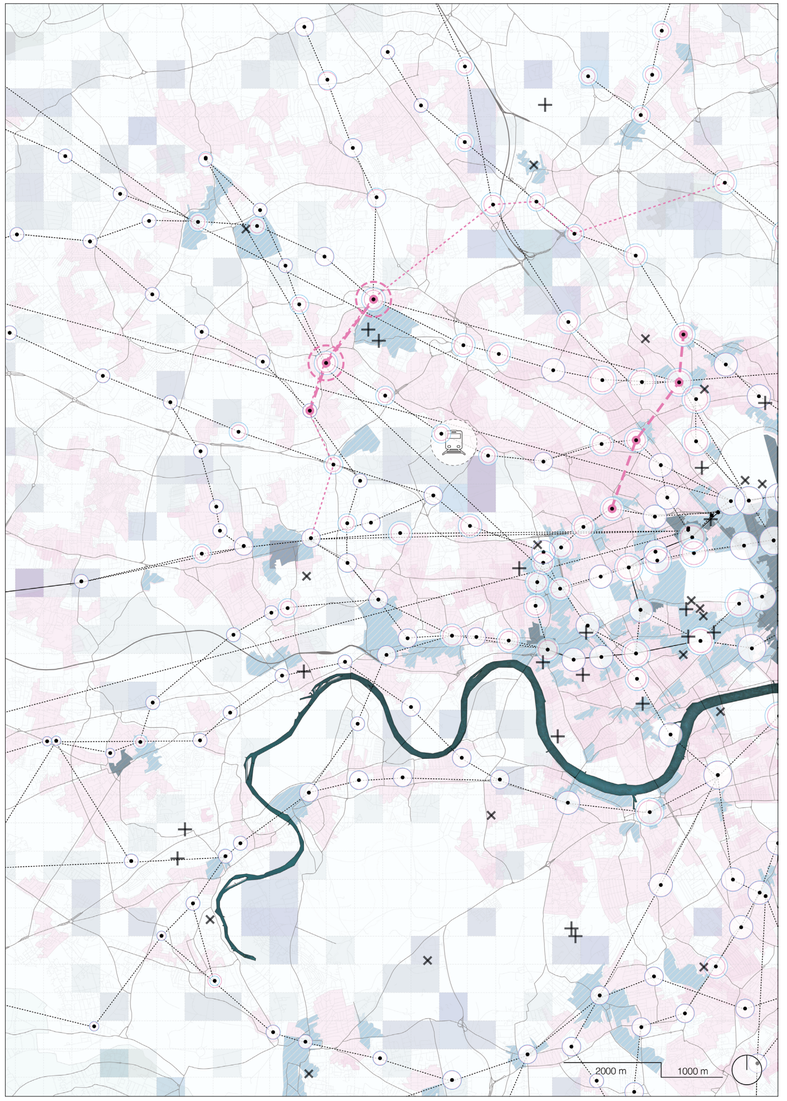
Exploration & evaluation [network analysis, criteria, assessment structure, **options,** evaluation matrix, current policy]

Wembley | Variants evaluated



source: image by author

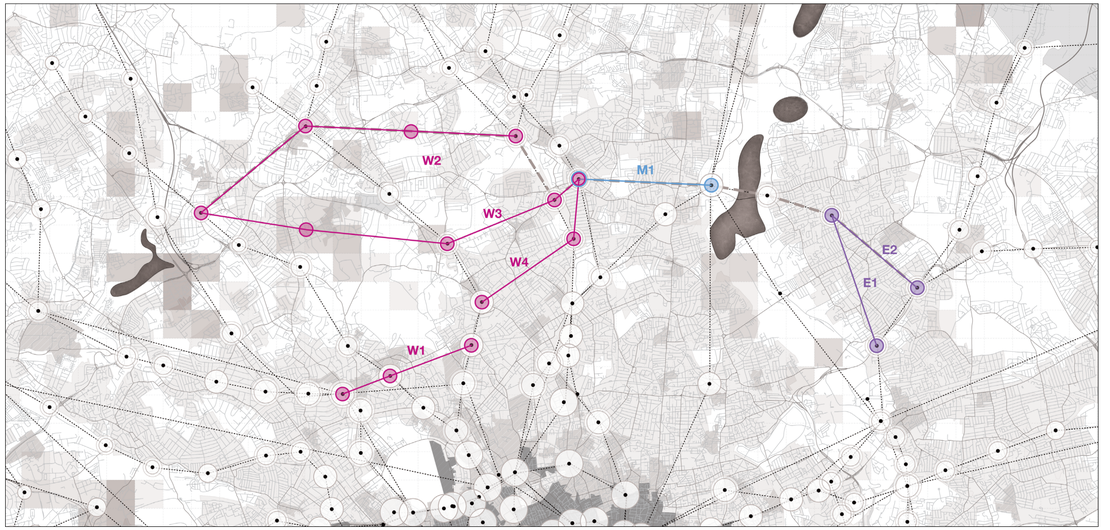
Wembley | Variant selected



source: image by author

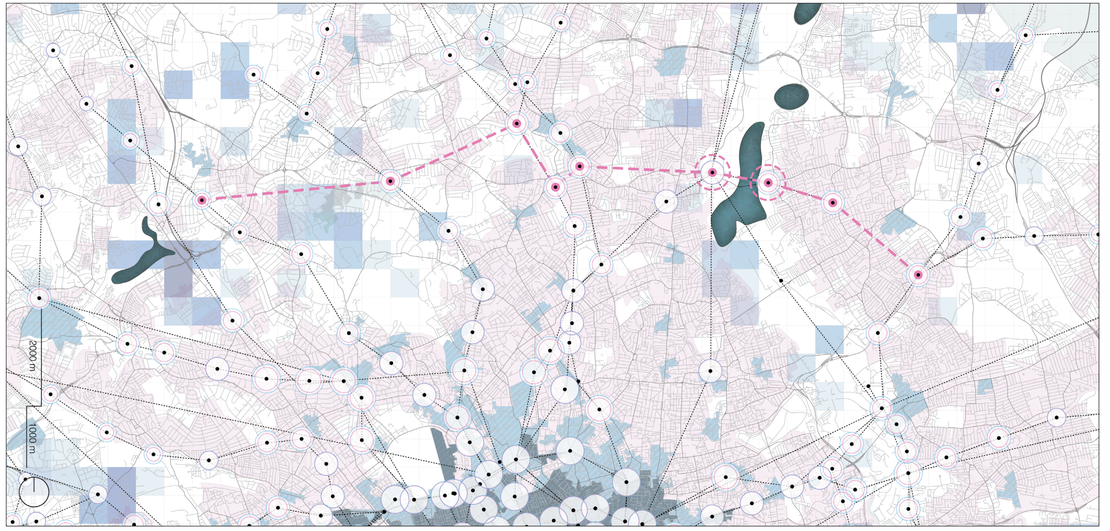
Exploration & evaluation [network analysis, criteria, assessment structure, **options,** evaluation matrix, current policy]

Tottenham Hale | Variants evaluated



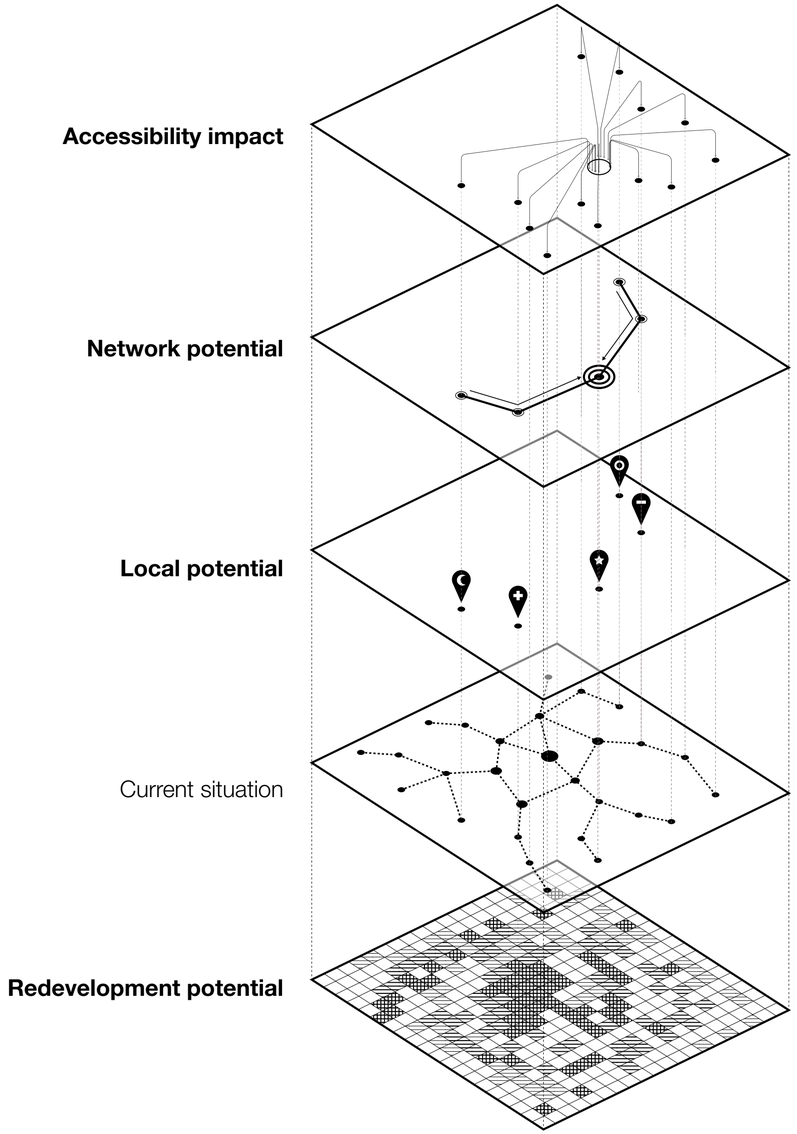
source: image by author

Tottenham Hale | Variant selected



source: image by author

Exploration & evaluation [network analysis, criteria, assessment structure, **options,** evaluation matrix, current policy]



access to target areas

access to population

access to employment

risk of competition

unique characteristics

spatial quality

local integration

cost estimate

local redevelopment potential

redevelopment potential in surroundings

source: image by author

Exploration & evaluation [network analysis, criteria, assessment structure, options, **evaluation matrix,** current policy]

Evaluation matrix

Variant	Woolwich Arsenal				Turnham Green				Wembley			
access to target areas		A	B	C		A	B	C		A	B	C
	15 minutes	1	14	17	15 minutes	4	15	18	15 minutes	8	13	7
	35 minutes	9	44	51	35 minutes	18	69	24	35 minutes	15	59	23
access to population	overall	1,735,133			overall	1,695,844			overall	1,862,932		
	15 minutes	625,000			15 minutes	260,000			15 minutes	260,000		
access to employment	Overall	2,554,590			Overall	2,450,490			Overall	2,628,827		
	15 minutes	110,000			15 minutes	180,000			15 minutes	80,000		
risk of competition		Tier-1 Centrality	Tier-2 Centrality	Periphery		Tier-1 Centrality	Tier-2 Centrality	Periphery		Tier-1 Centrality	Tier-2 Centrality	Periphery
	15 minutes	4	3	60	15 minutes	0	1	34	15 minutes	0	1	32
	35 minutes	25	28	171	35 minutes	15	26	160	35 minutes	18	30	165
unique characteristics	- In close proximity to London City Airport - Historical home of the British Military armaments - Waterfront location				- Waterfront location				- Wembley Entertainment Cluster			
spatial quality	- Diverse area - Unique historical character - Well defined block structures				- Well articulated high street near Turnham Green Station - Otherwise the area is of mostly suburban structure - Thames waterfront is far away from Turnham Green Station				- Care has been taken in the urban design of Wembley Park, however the large introverted buildings and heavy car infrastructure might not make for a succesful environment for other uses - Lively high-street is surrounded by vast sub-urban neighbourhoods			
local integration	- Little fragmentation due to heavy infrastructure, part of a major rail artery already underground				- The area is heavily fragmented by both heavy rail and road infrastructure - Both Turnham Green and Chiswick station are relatively far removed from one another (1,8 km)				- A vast array of railway and road arteries largely cross through the area, creating an isolated patch around Wembley Stadium			
local redevelopment potential	- Many brownfield and industrial locations, however they are relatively scattered - The Royal Artillery Barracks stands to be sold by the MOD - Closed block typologies are relatively suitable for infill development				- Limited availability of brownfield land and other redevelop-ment opportunities				- Many opportunities to redevelop brownfields and industrial locations on the patch surrounding Wembley Stadium - The freestanding housing outside of this patch might be relatively difficult to redevelop.			
surrounding redevelopment potential	- Many opportuntiies for future redevelopment in nearby areas and locations along closely connected transit lines				- Limited opportuntiies for future redevelopment in nearby areas and locations along closely connected transit lines				- Limited opportuntiies for future redevelopment in nearby areas and locations along closely connected transit lines			
cost estimate	£ 11649 million £				£ 8893 million £				£ 7905 million £			

source: image by author

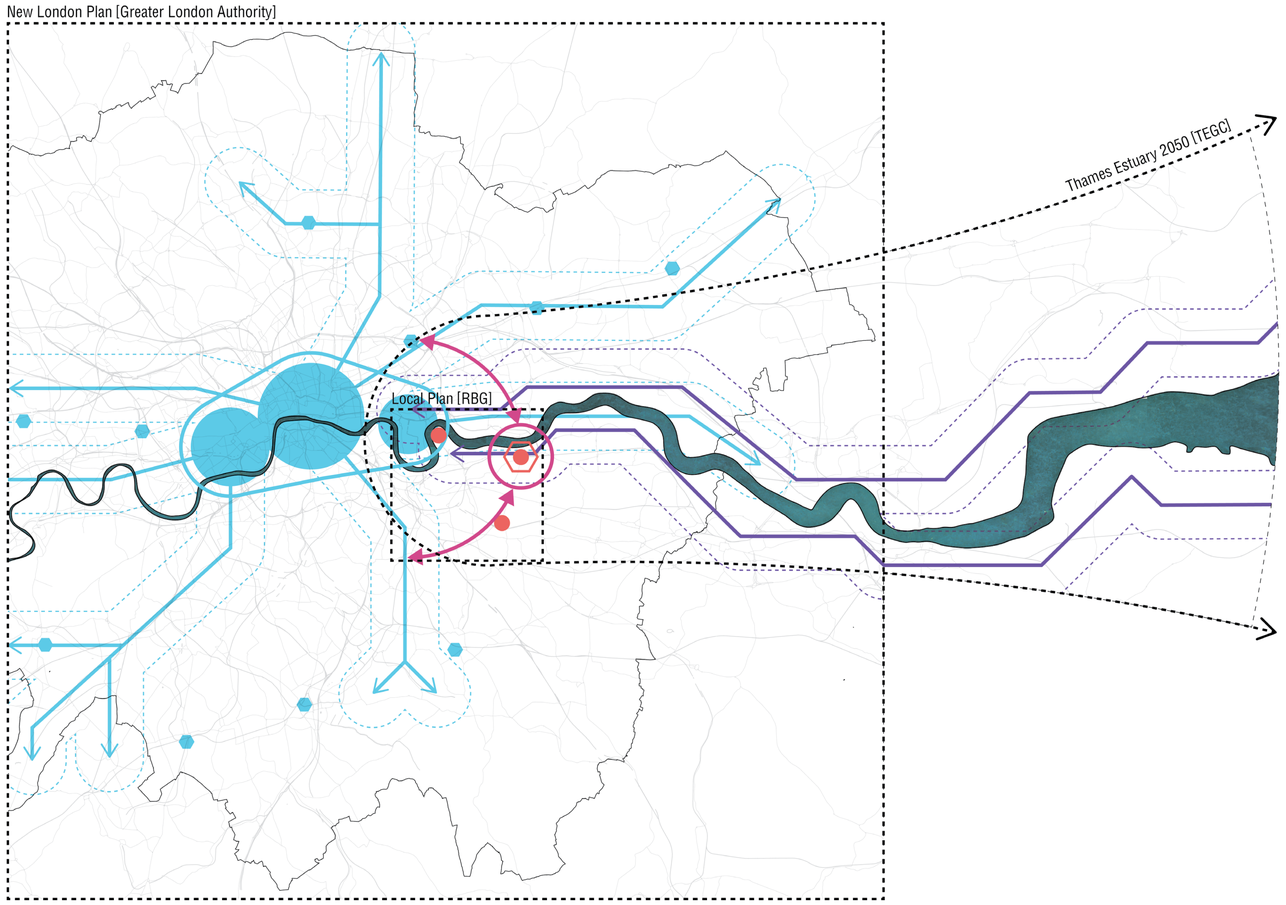
A new centrality for London: Woolwich



source: image by author

Exploration & evaluation [network analysis, criteria, assessment structure, options, **evaluation matrix,** current policy]

Relation to planning policy



source: image by author

Proposed transit links

Woolwich

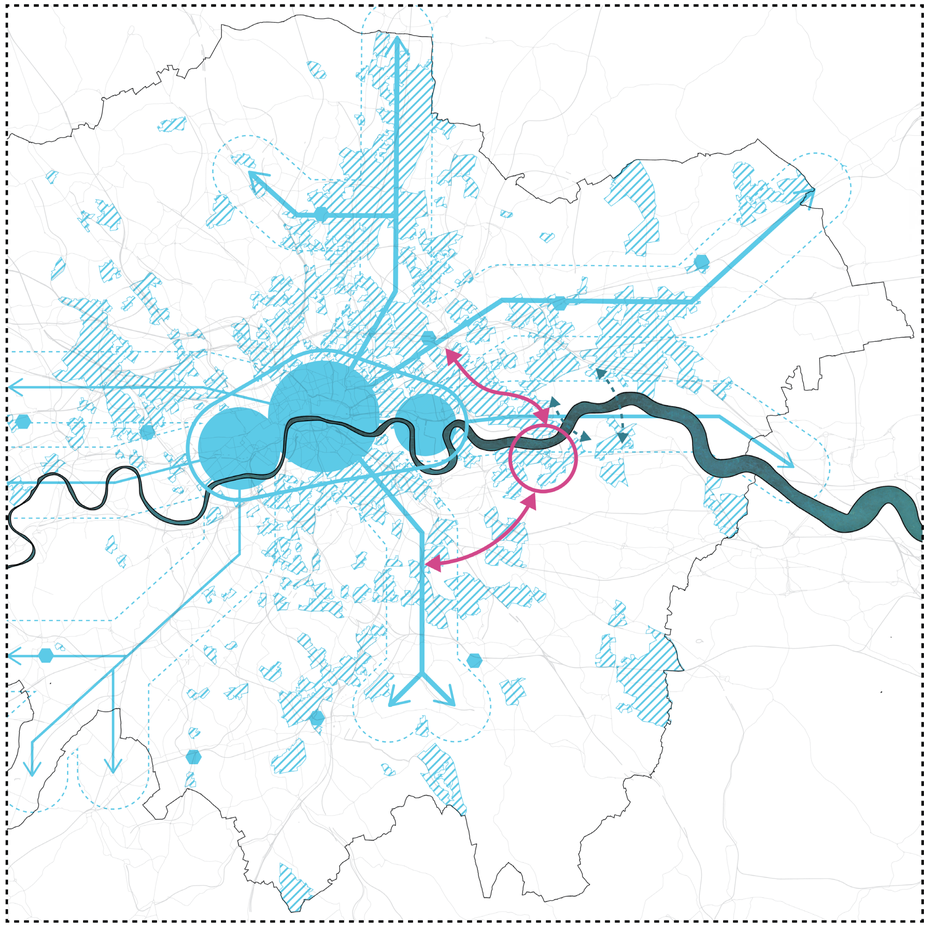
Central London

New London Plan corridors

TE2050 development corridor

Exploration & evaluation [network analysis, criteria, assessment structure, options, evaluation matrix, **current policy**]

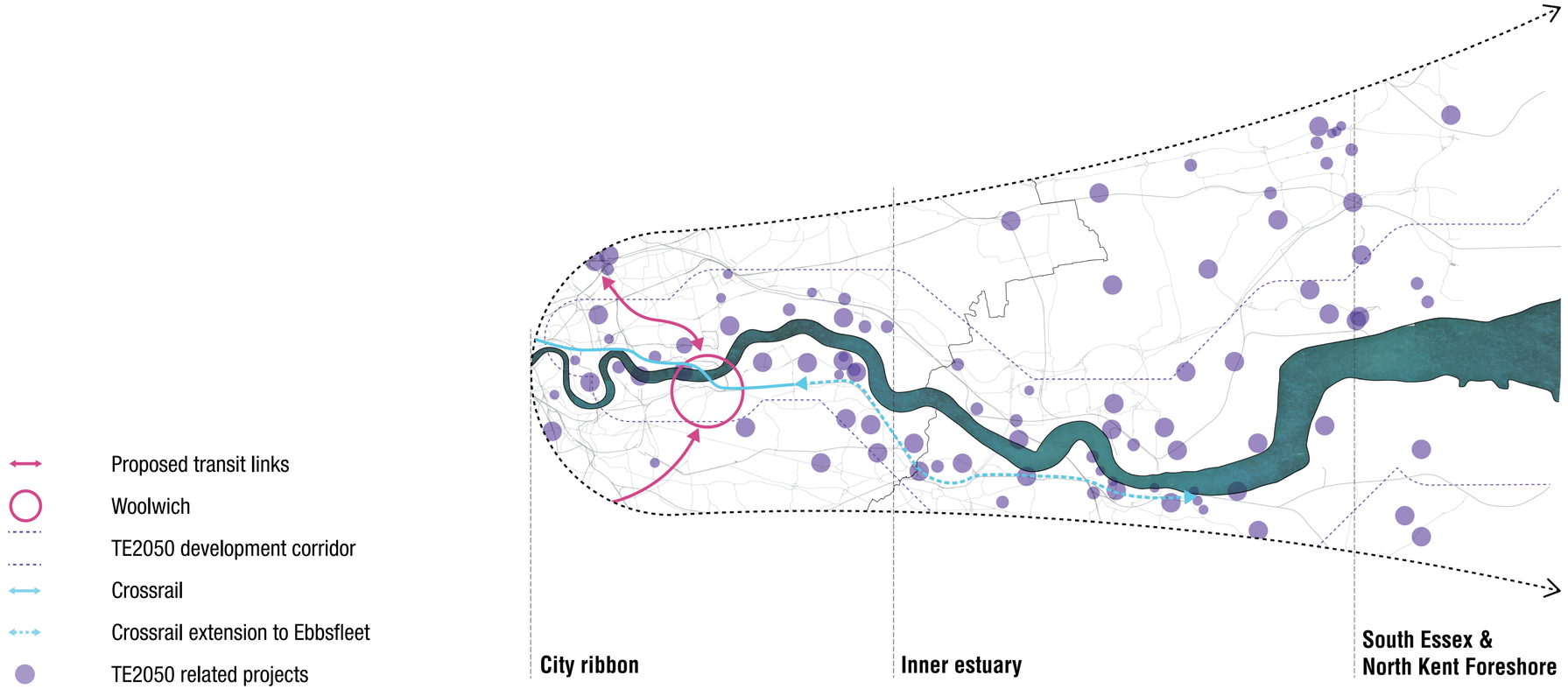
Relation to planning policy | New London Plan



source: image by author

- Proposed transit links
- Woolwich
- Central London
- New London Plan corridors
- Strategic regeneration areas
- Investigated new Thames crossings

Relation to planning policy | Thames Estuary 2050



source: image by author

Exploration & evaluation [network analysis, criteria, assessment structure, options, evaluation matrix, **current policy**]



source: Old UK Photos (2019)



source: BBC (2014)



source: Google Maps (2018)



source: Wikimedia Commons (2018)



source: Flickr (2018)



source: Berkeley Group (2018)



source: Berkeley Group (2018)

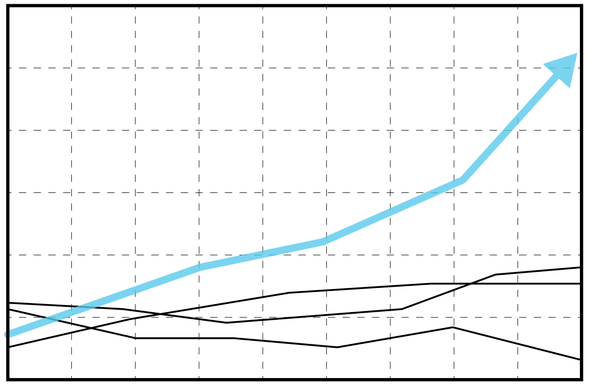


source: Google Maps (2018)

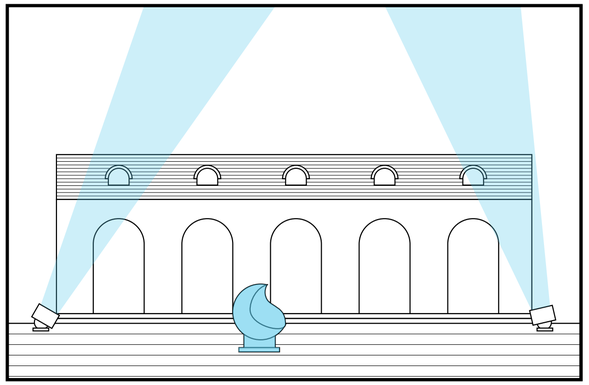


source: Google Maps (2018)

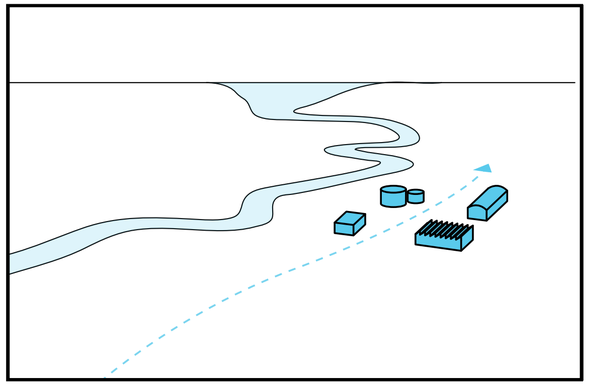
Target creative & knowledge services



Sectors projected for signficant growth (GLA Economics, 2016)

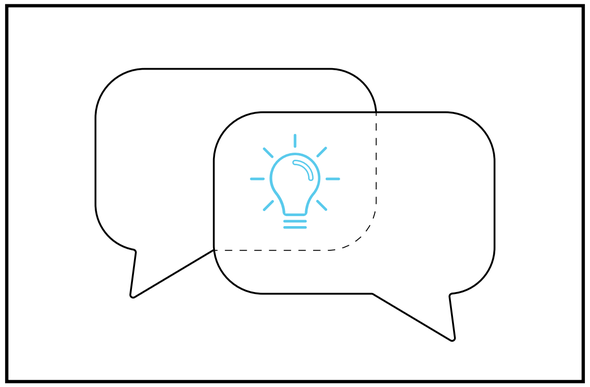


Build on existing and planned cultural amenities



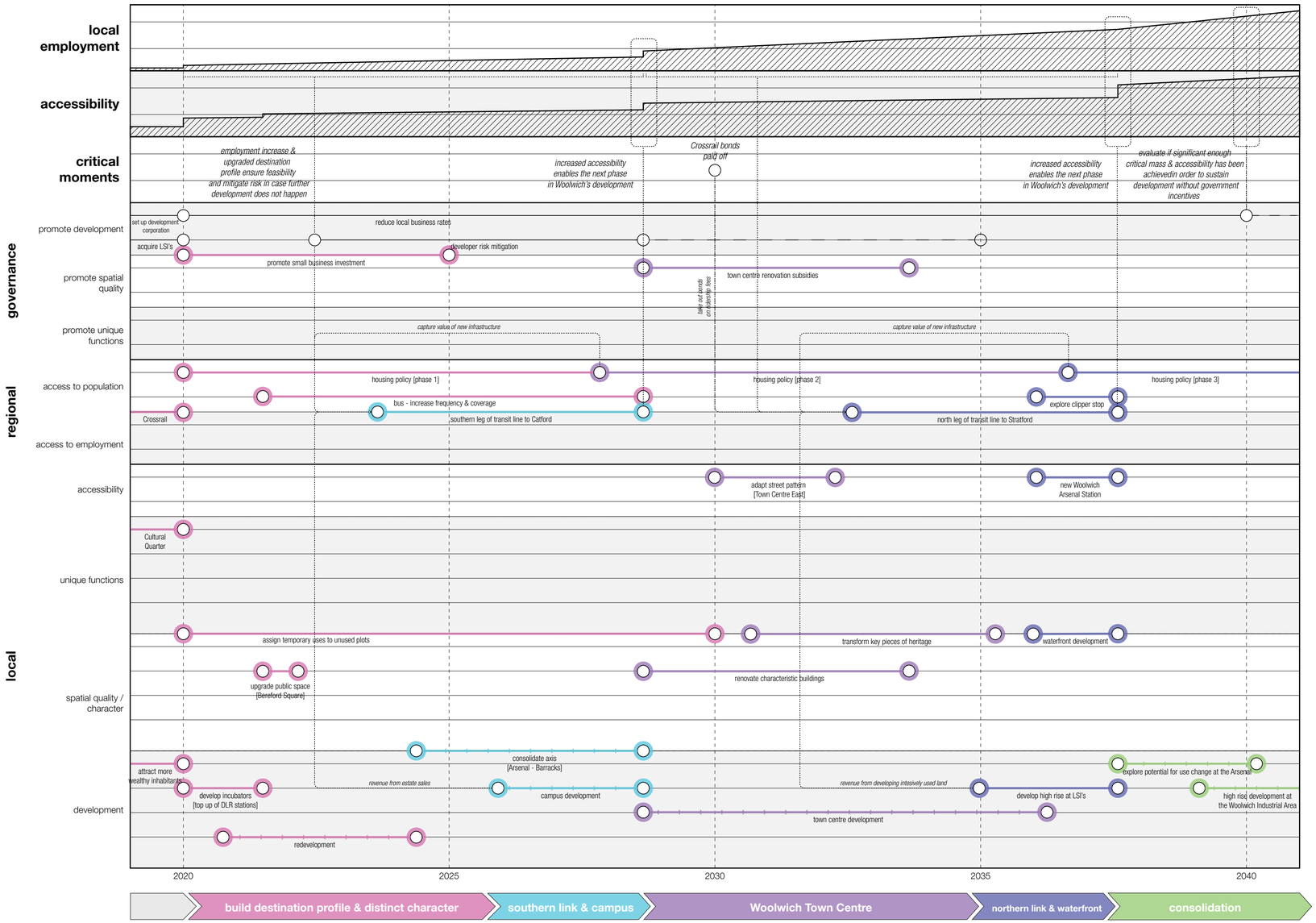
Complementary relationship with high-tech in the Thames Estuary

Target creative & knowledge services



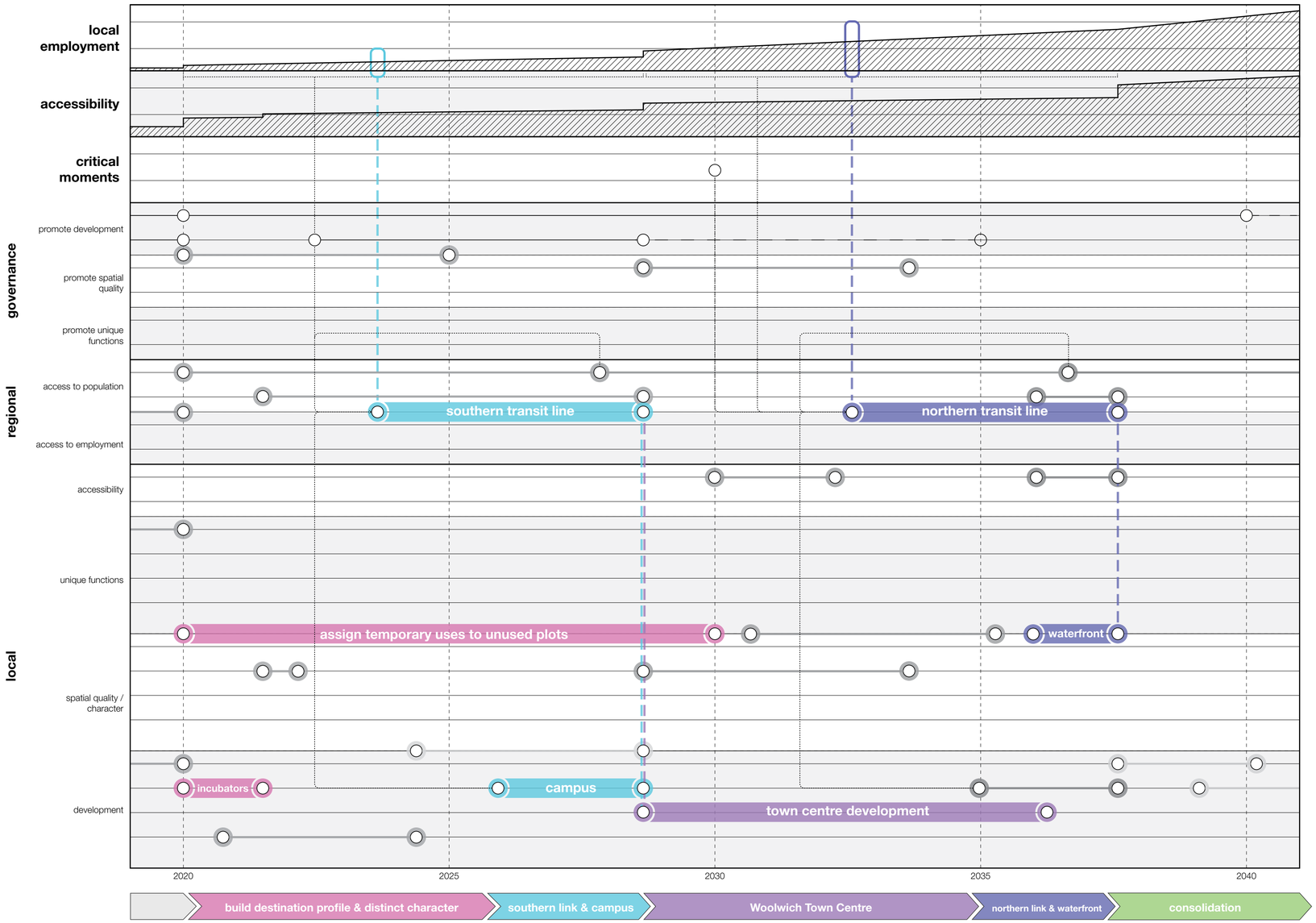
promote interaction environments
facilitating knowledge exchange

Development strategy [introduction, **issues & opportunities,** timeline, phasing, organizational model]



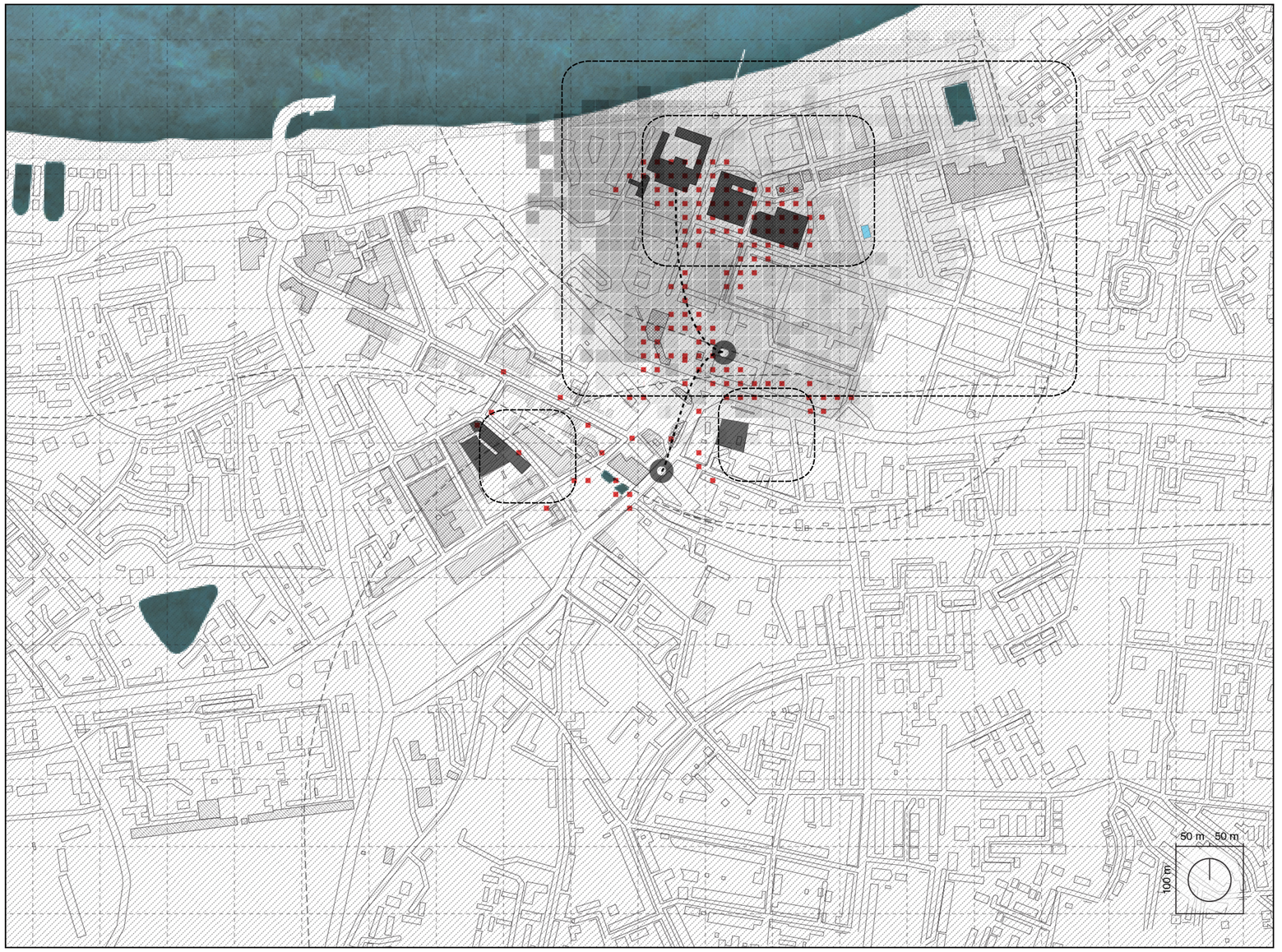
source: image by author

Development strategy [introduction, issues & opportunities, **timeline,** phasing, organizational model]



source: image by author

Development strategy [introduction, issues & opportunities, **timeline,** phasing, organizational model]



starting situation

new development [mix-use]

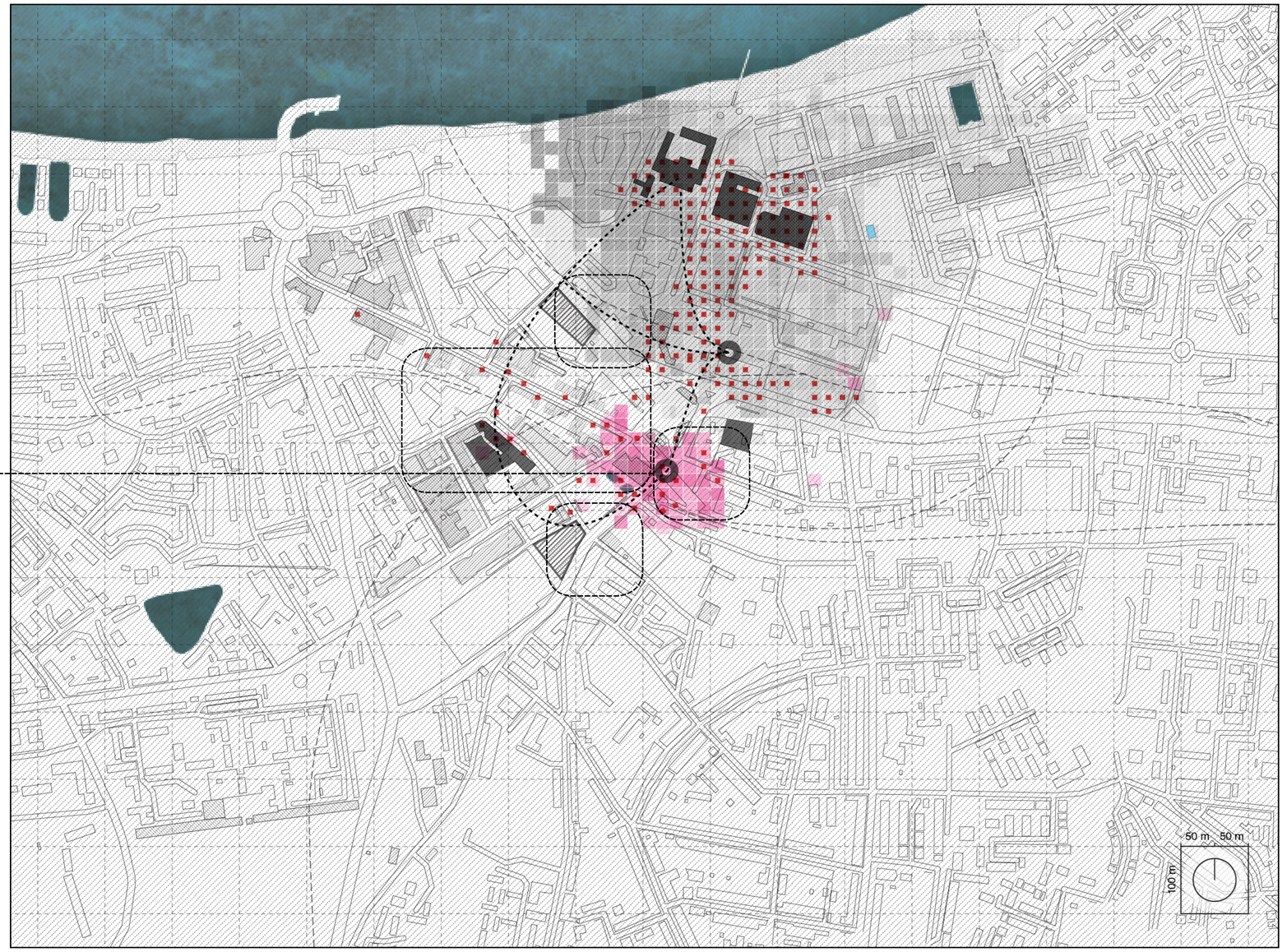
Royal Arsenal

enhanced retail & hospitality

source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

Develop business incubators



new development [mix-use]

Royal Arsenal

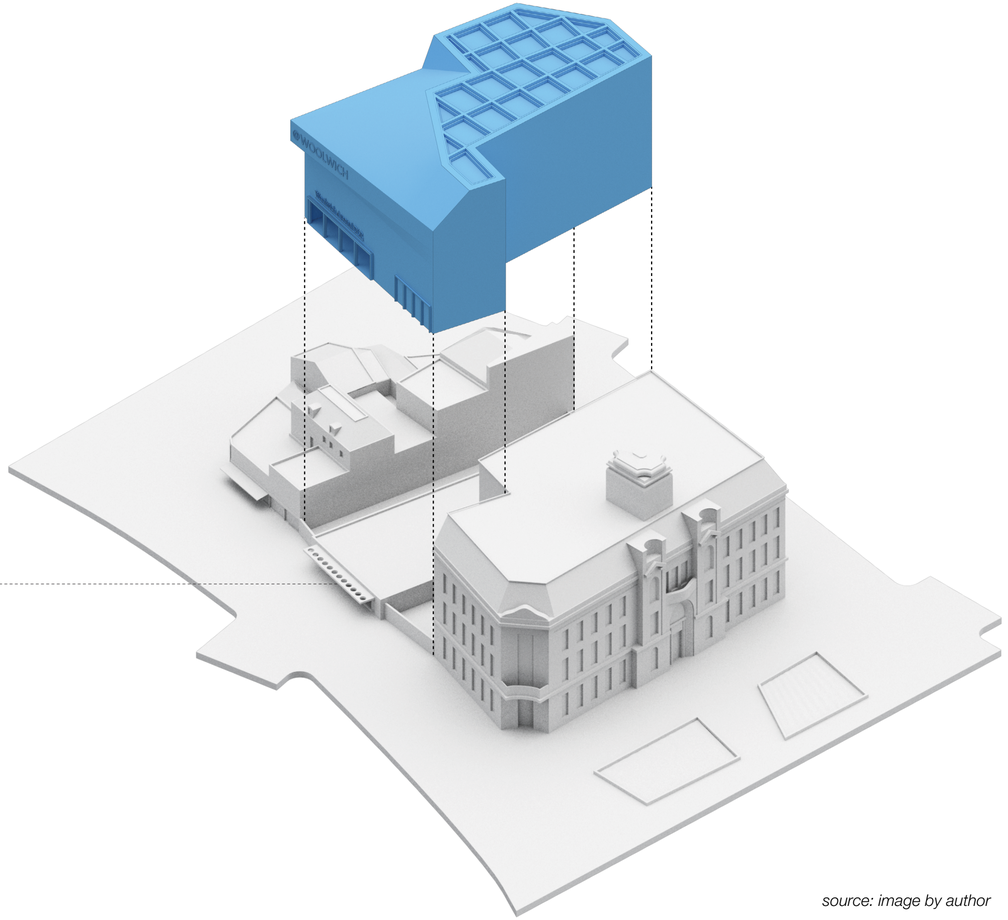
enhanced retail & hospitality

source: image by author

build destination profile & distinct character

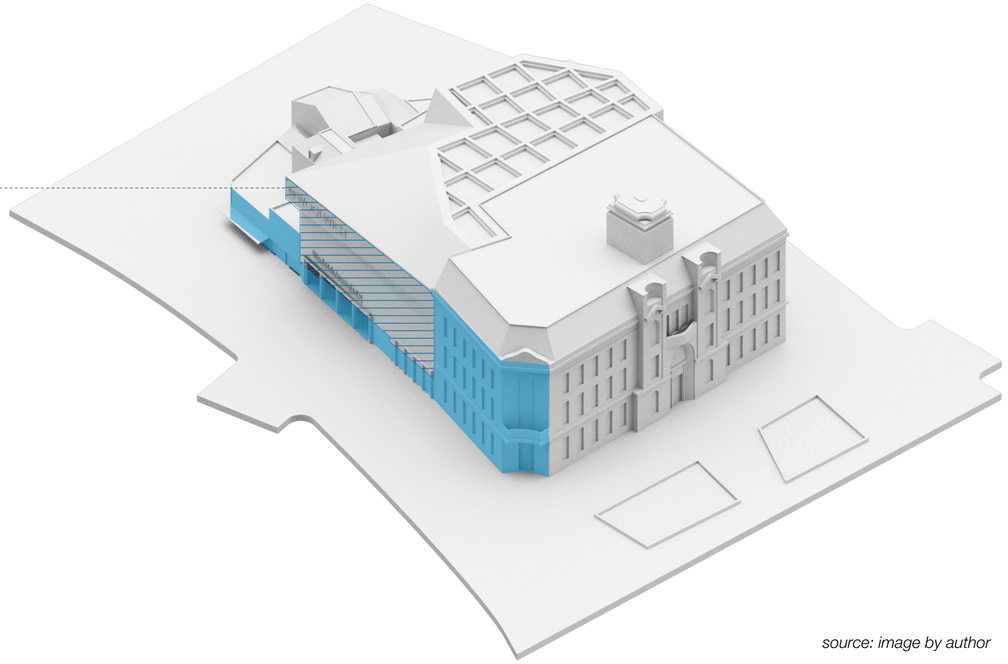
Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

>> incentive
> cheap transfer of government owned land to developers can reduces the investment necessary, lowering the threshold for the first developing the first significant commercial spaces at Woolwich
tool: land-right transfer / lease
actor: Royal Borough of Greenwich / Transport for London



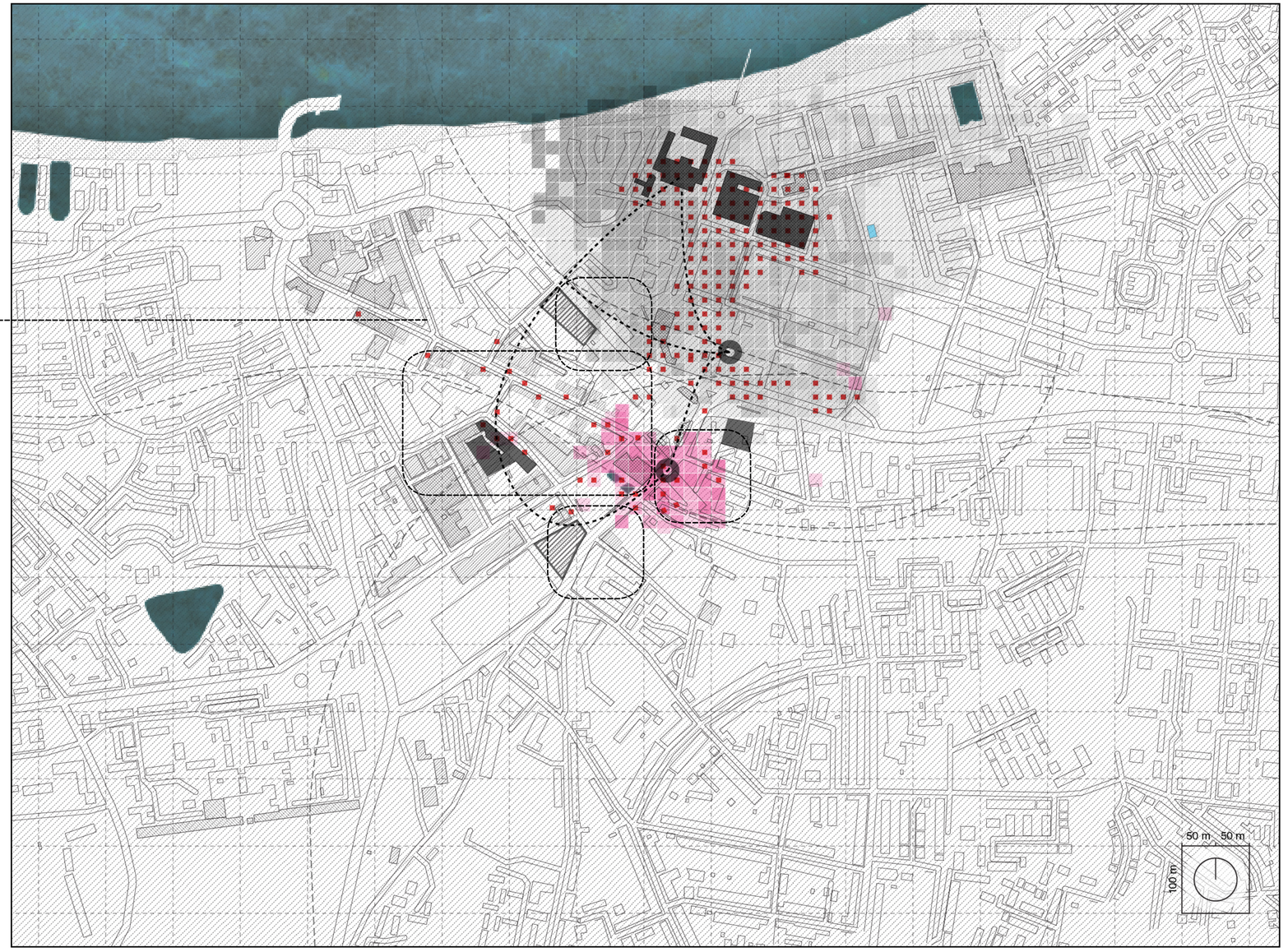
source: image by author

>> guidance
> clearly define urban space by filling in gaps in the built fabric
tool: development strategy
actor: Woolwich Development Corporation



source: image by author

Repurpose derelict sites



new development [mix-use]

Royal Arsenal

enhanced retail & hospitality

source: image by author

build destination profile & distinct character

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



source: Google Maps (2018)

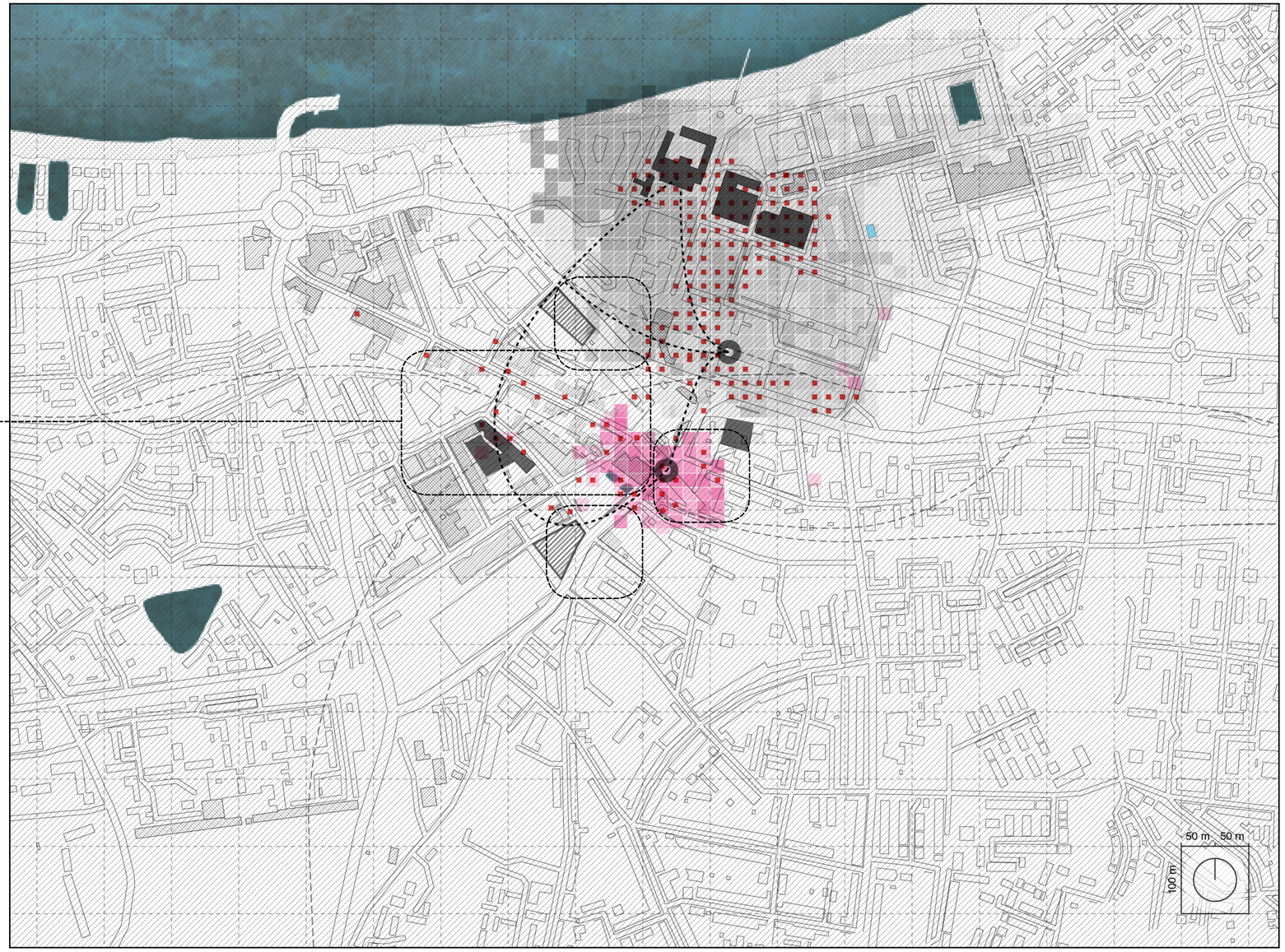
Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

Promote small business investment



build destination profile & distinct character

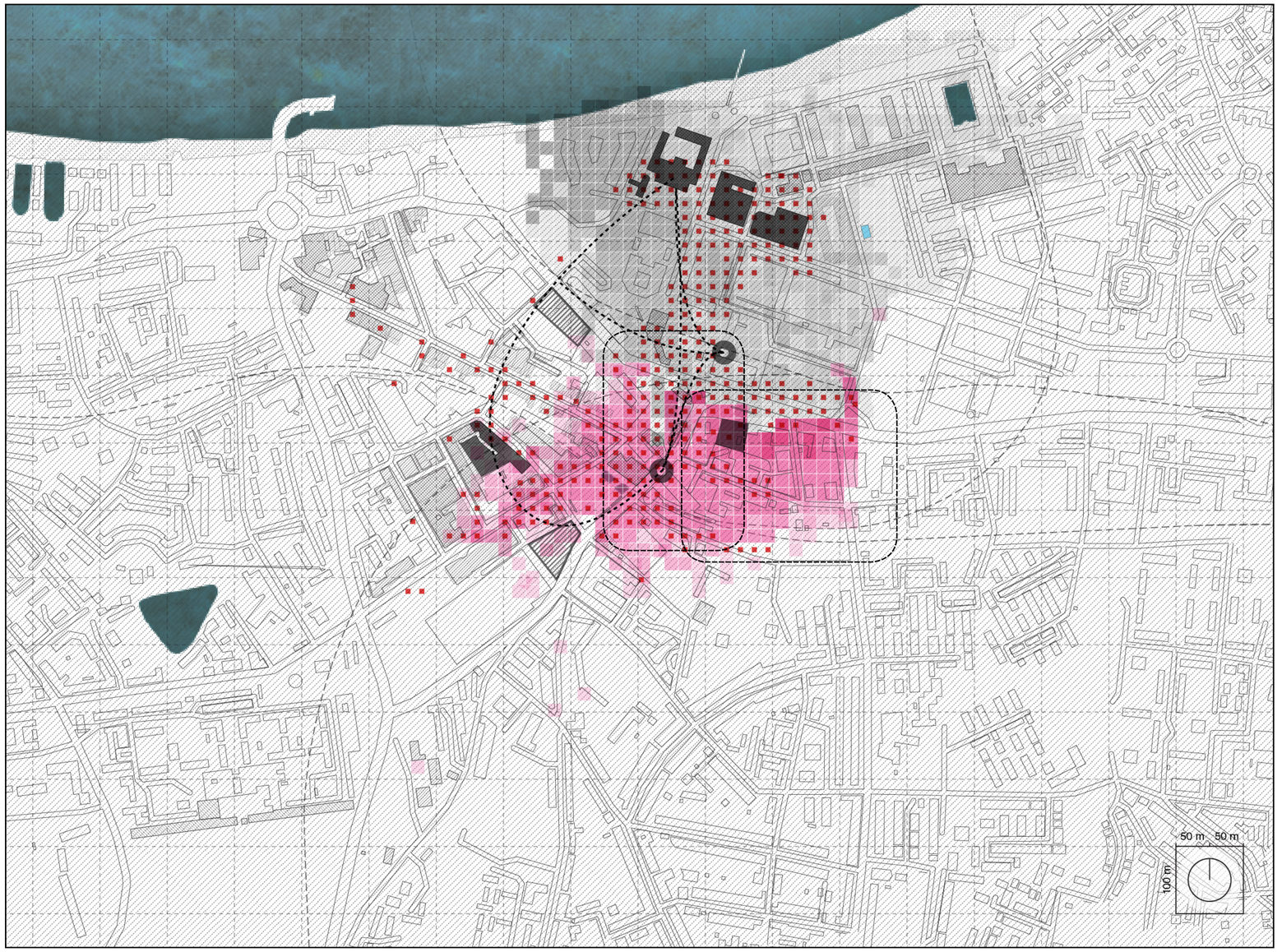
new development [mix-use]

Royal Arsenal

enhanced retail & hospitality

source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



new development [mix-use]

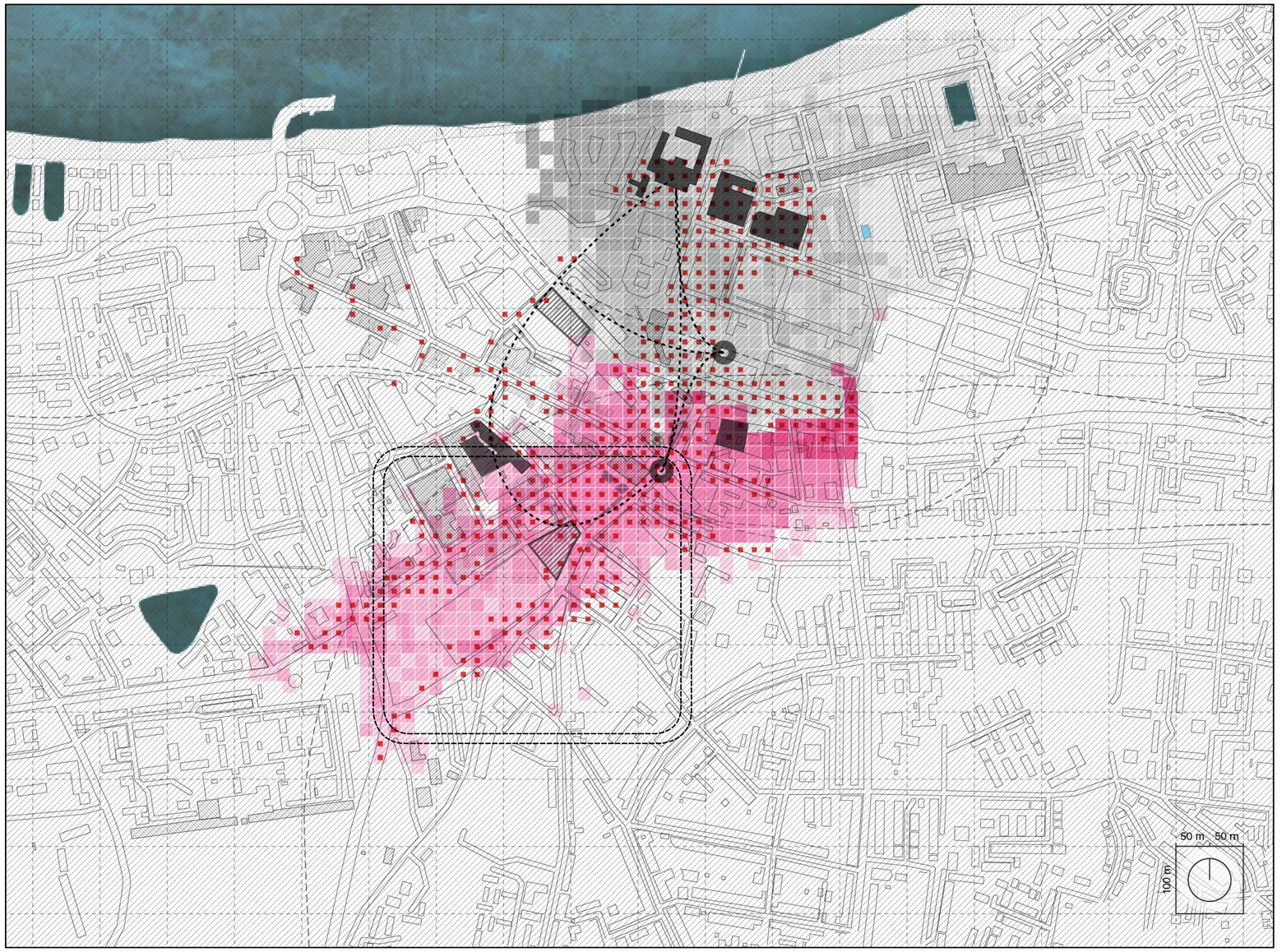
Royal Arsenal

enhanced retail & hospitality

source: image by author

build destination profile & distinct character

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



southern link& campus

new development [mix-use]

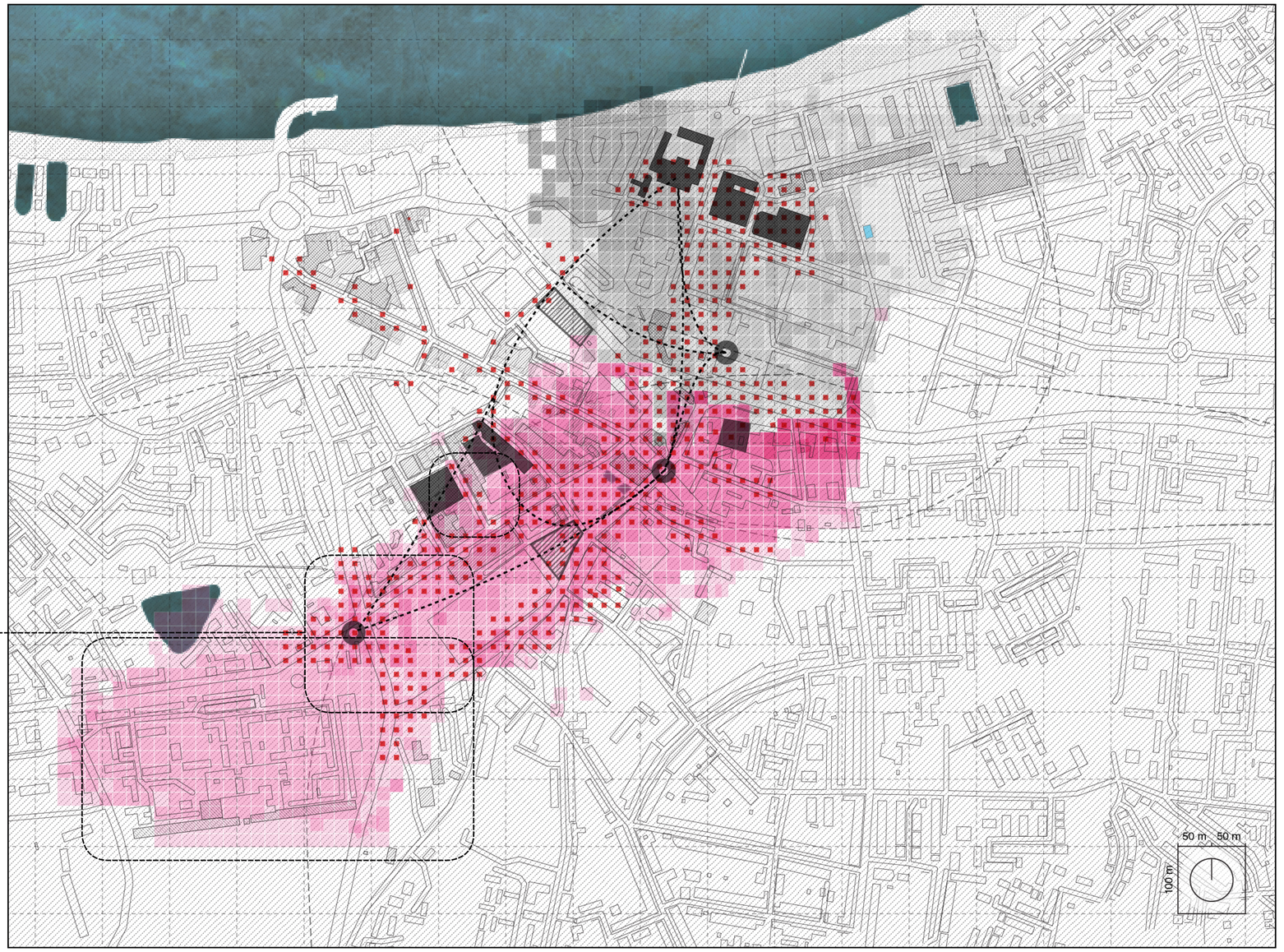
Royal Arsenal

enhanced retail & hospitality

source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

Southern transit line &
Royal Barracks Station



new development [mix-use]

Royal Arsenal

enhanced retail & hospitality

source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

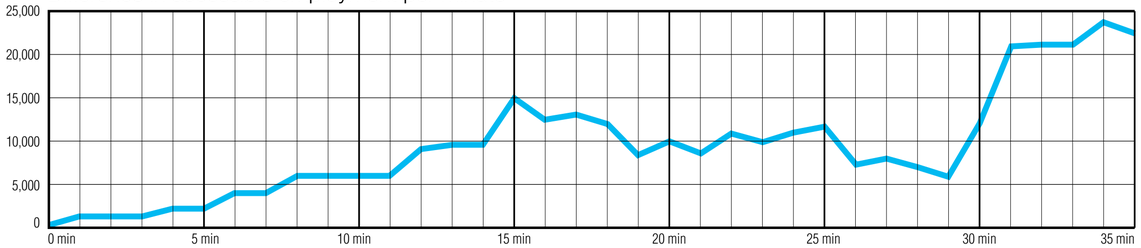


source: image by author

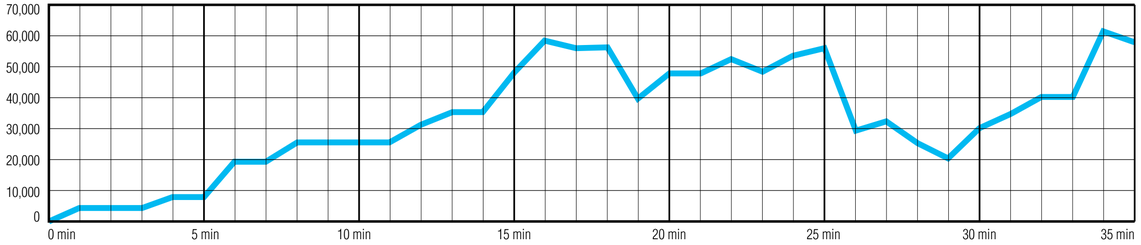
Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

Impact of new line [= situation with southern line - base situation]

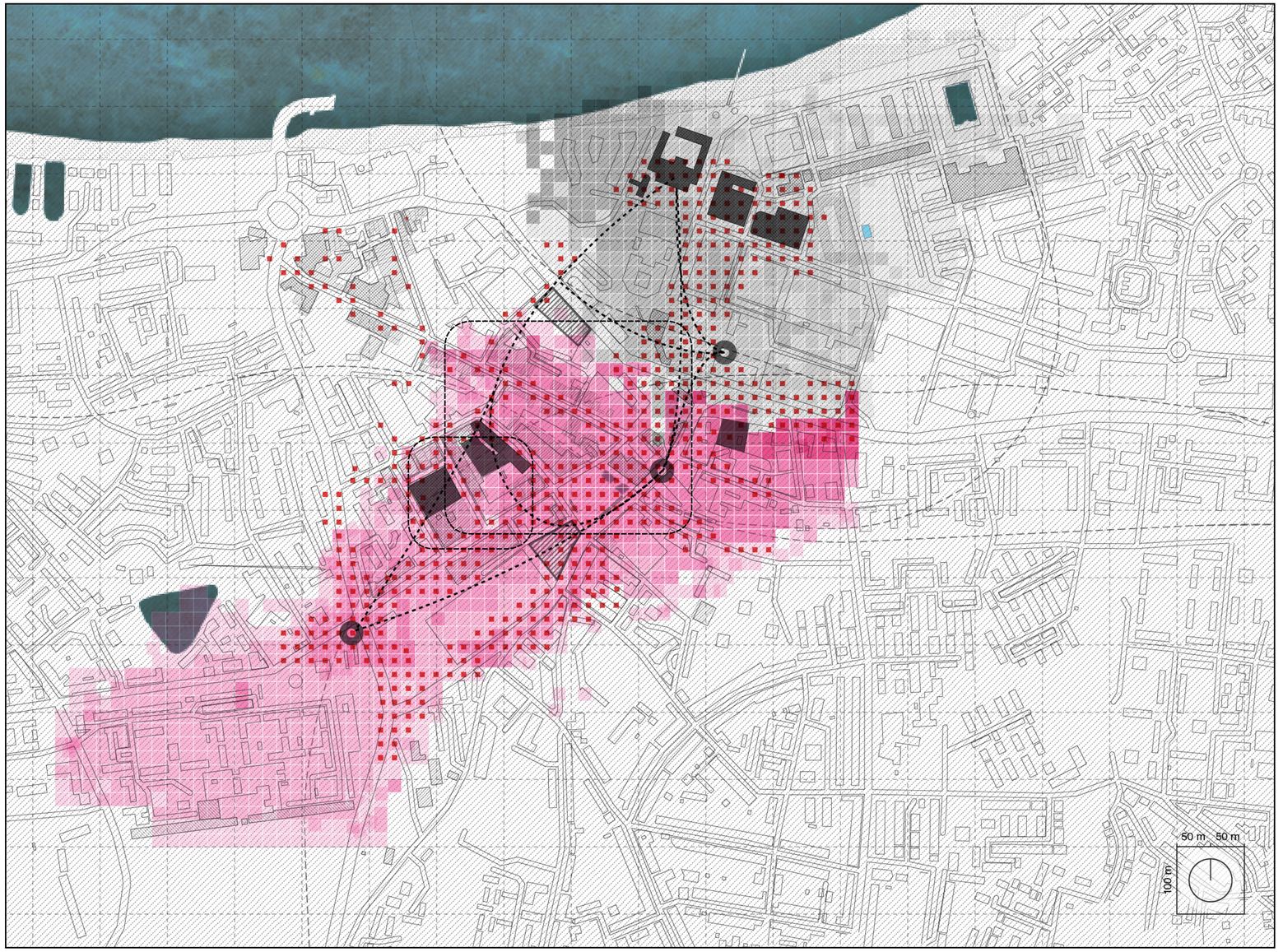
Difference in accessible employment per minute



Difference in accessible people per minute



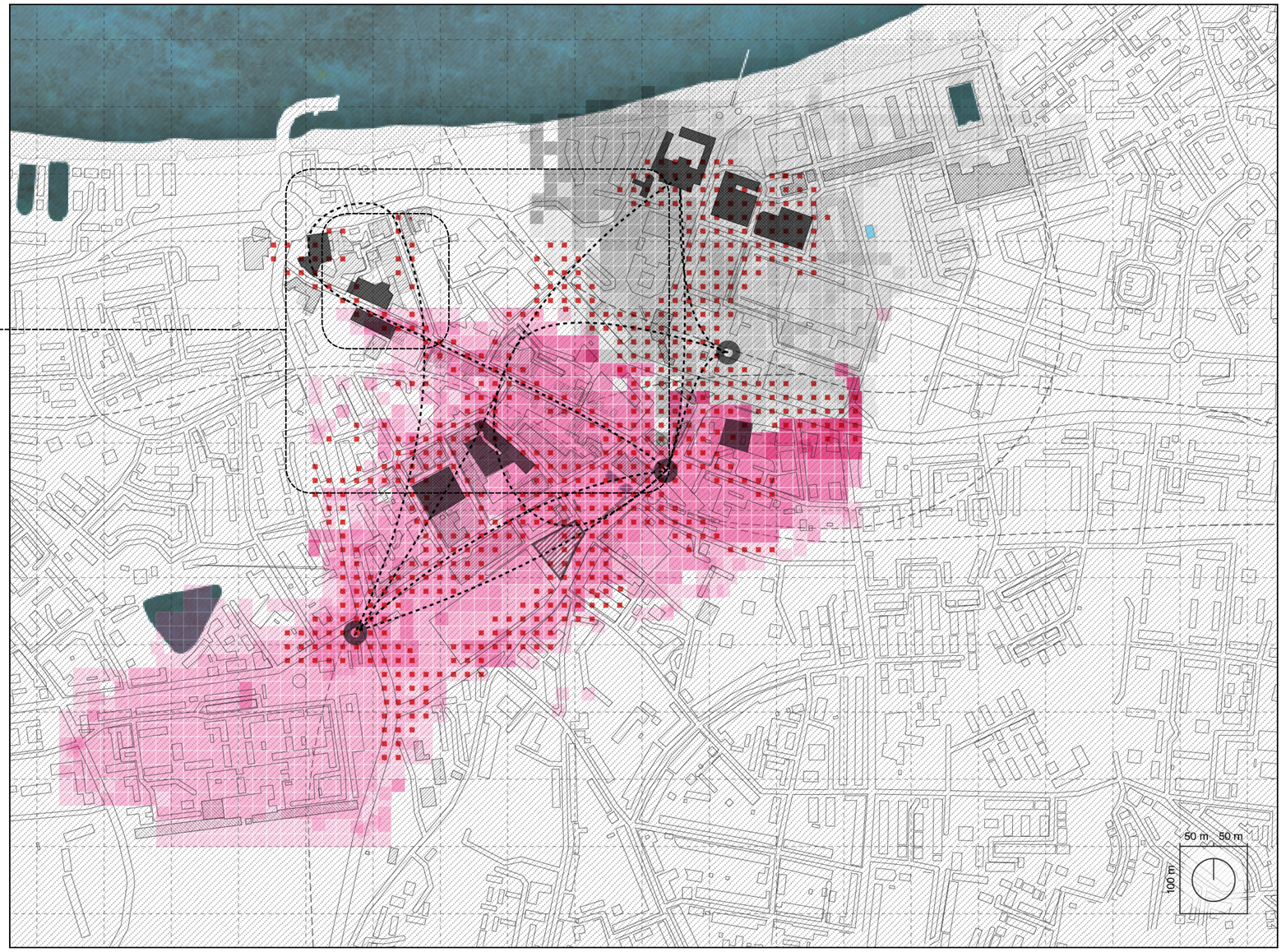
source: image by author



source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

Transform key heritage



Woolwich Town Centre

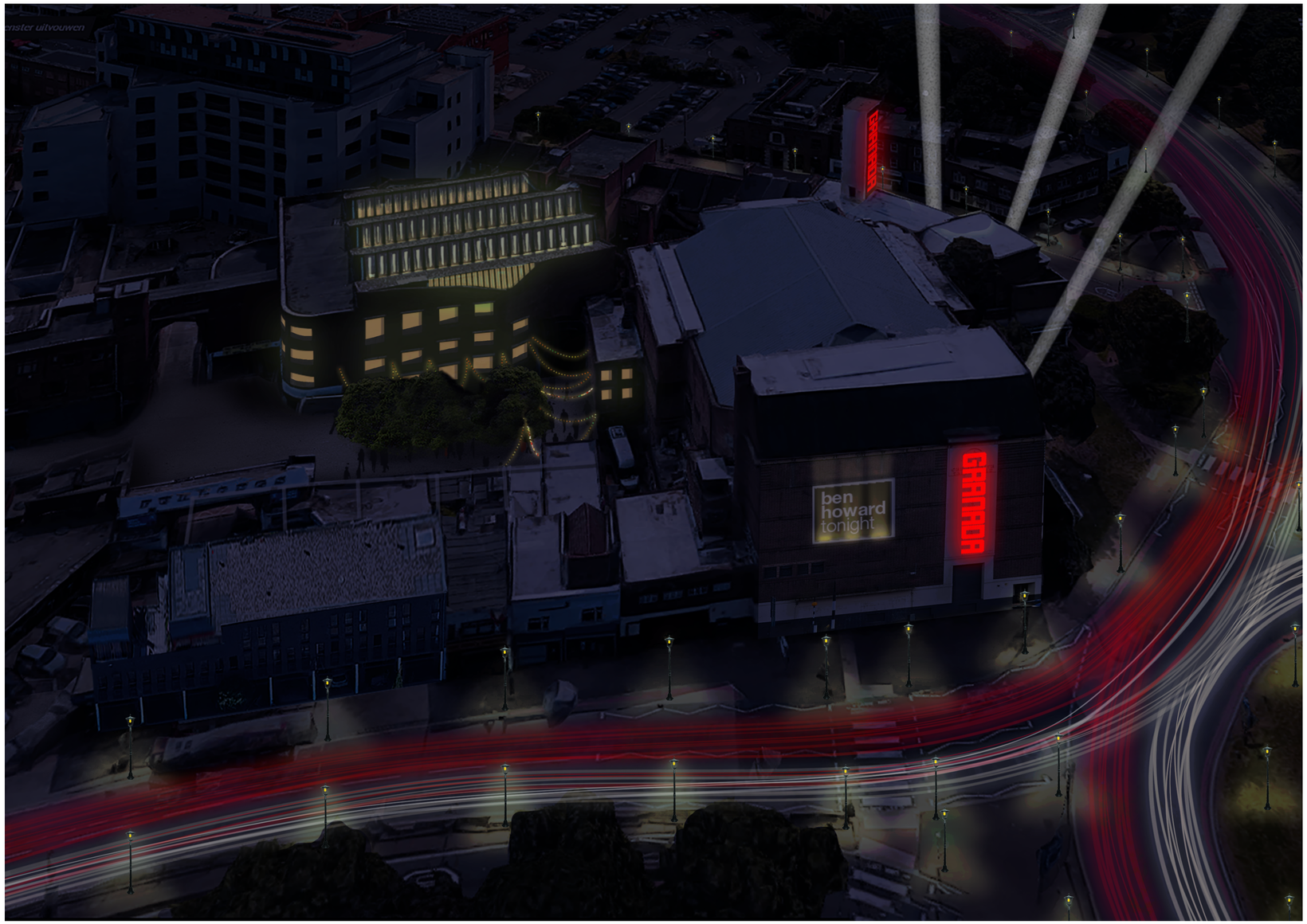
new development [mix-use]

Royal Arsenal

enhanced retail & hospitality

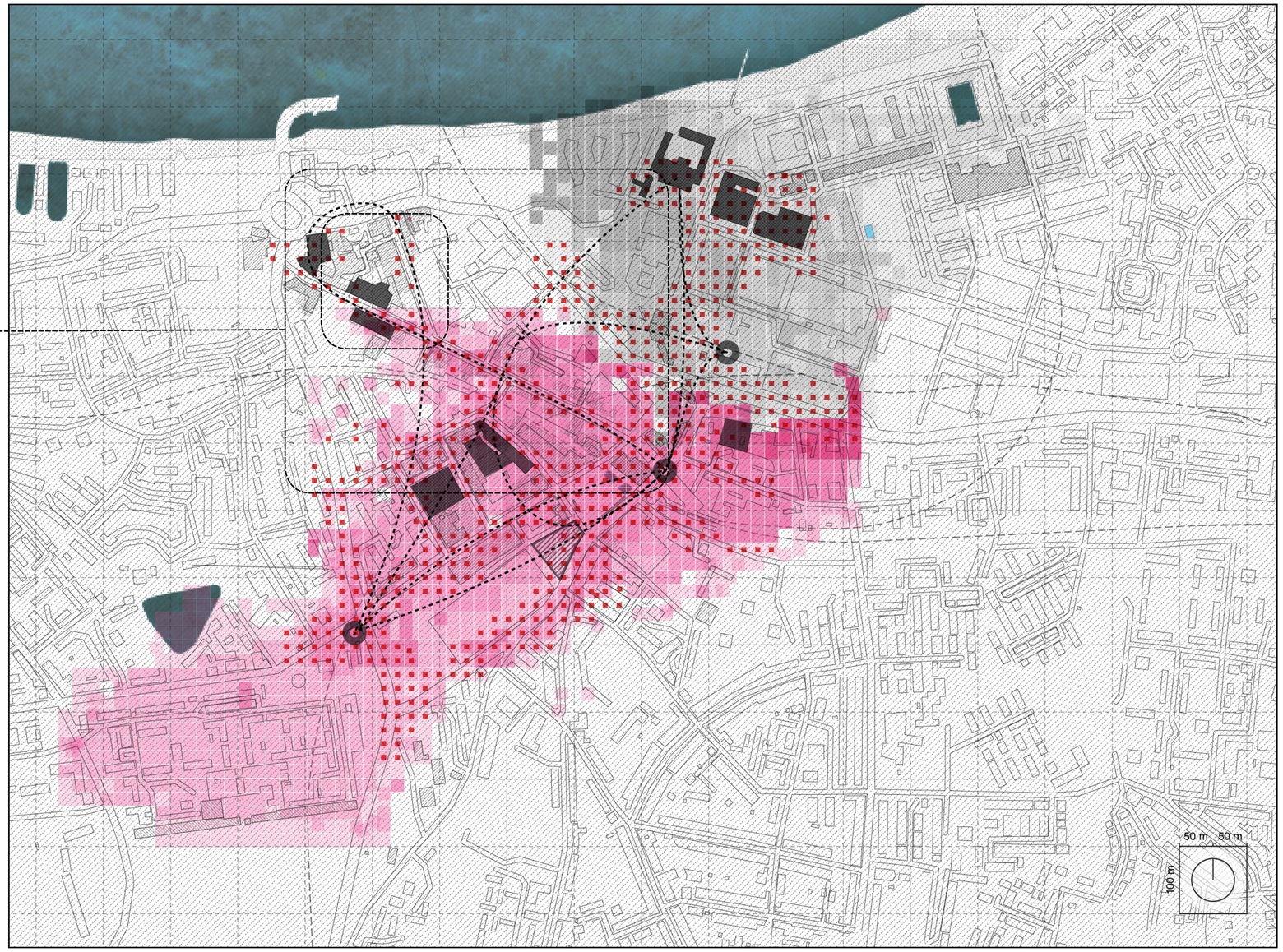
source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



source: image by author

Town centre development



new development [mix-use]

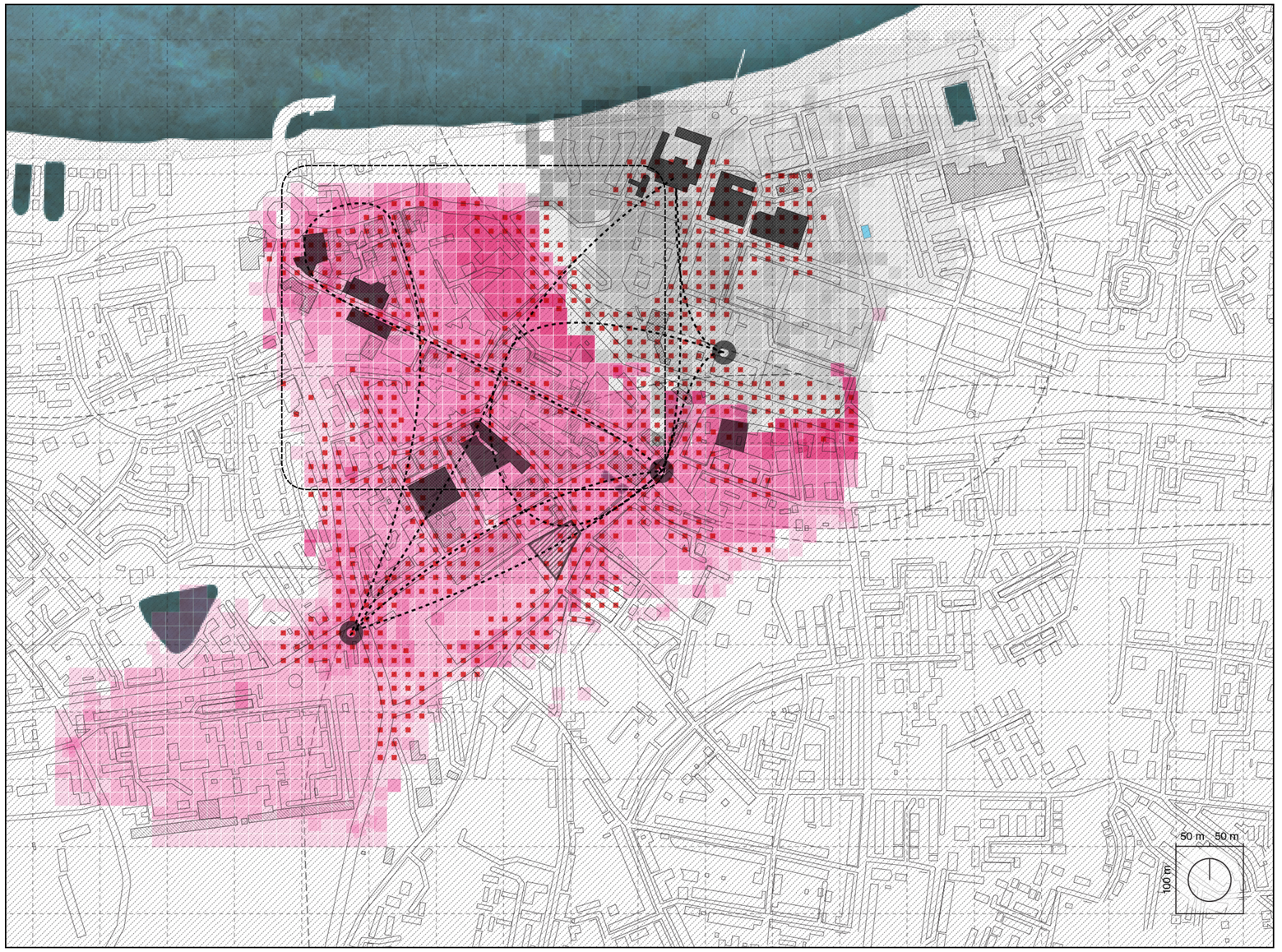
Royal Arsenal

enhanced retail & hospitality

source: image by author

Woolwich Town Centre

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



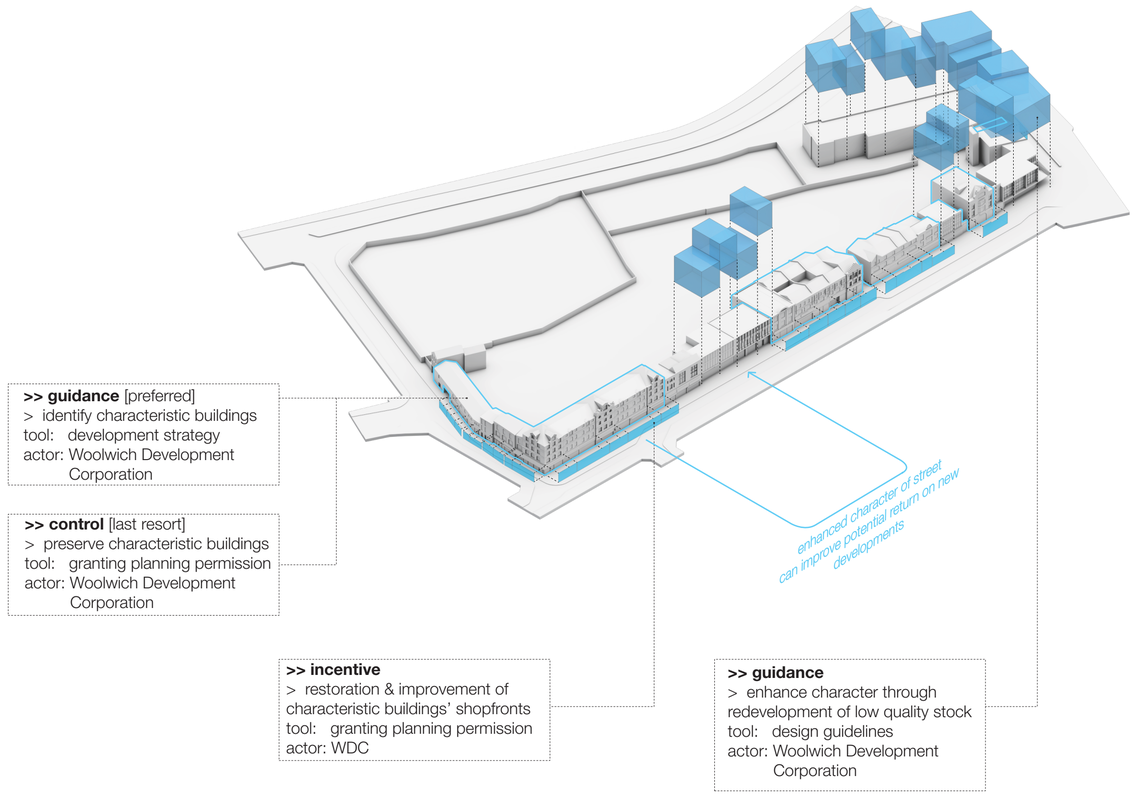
new development [mix-use]

Royal Arsenal

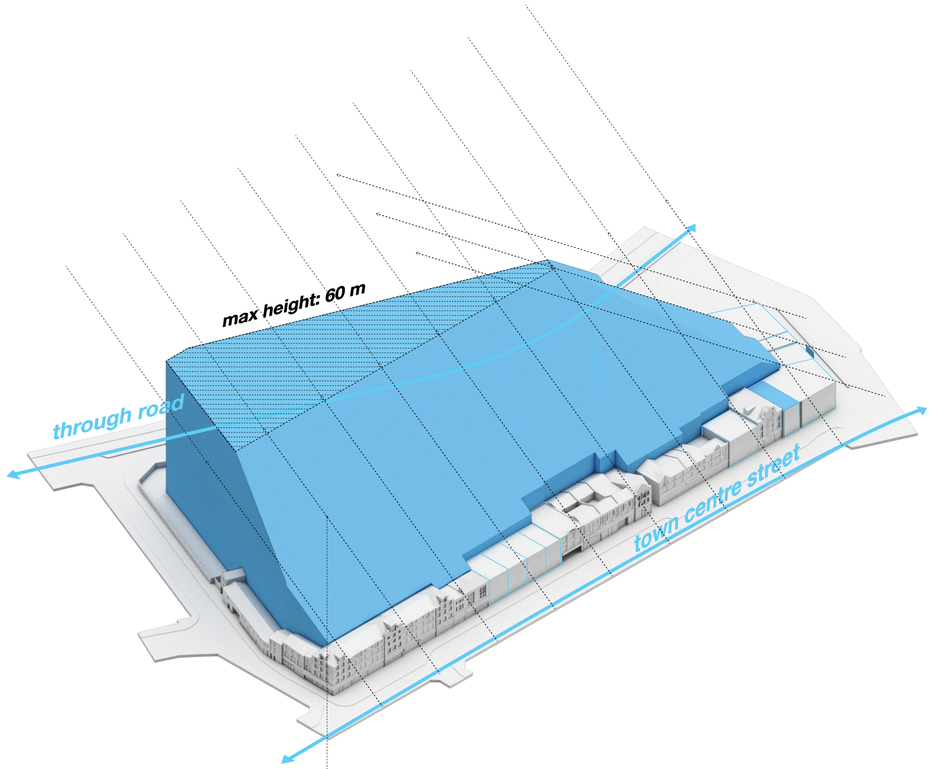
enhanced retail & hospitality

source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

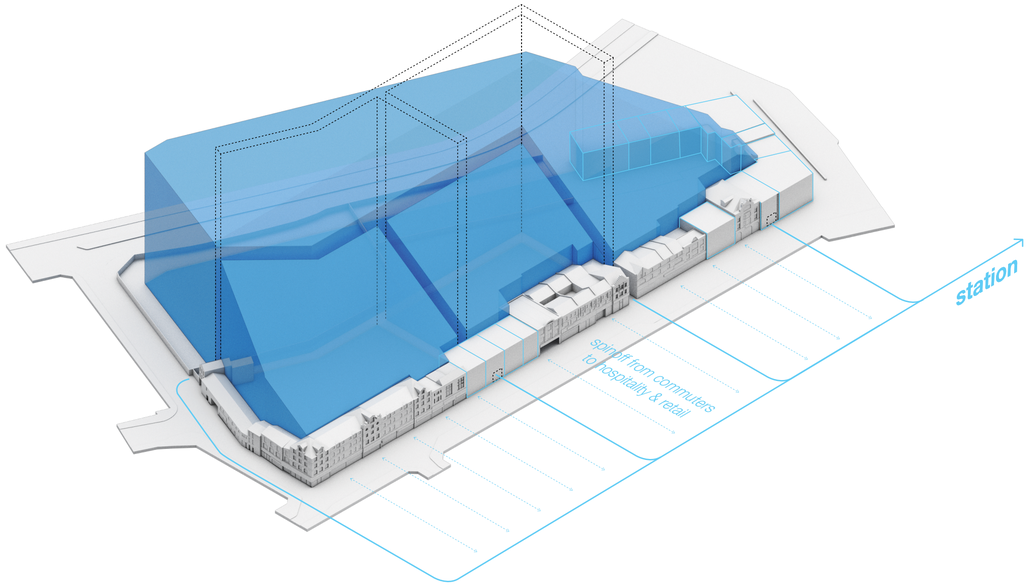


source: image by author



>> control
> maximum building height dependent on sightlines from town centre streets
tool: granting planning permission
actor: Woolwich Development Corporation

source: image by author



source: image by author

indirect incentive

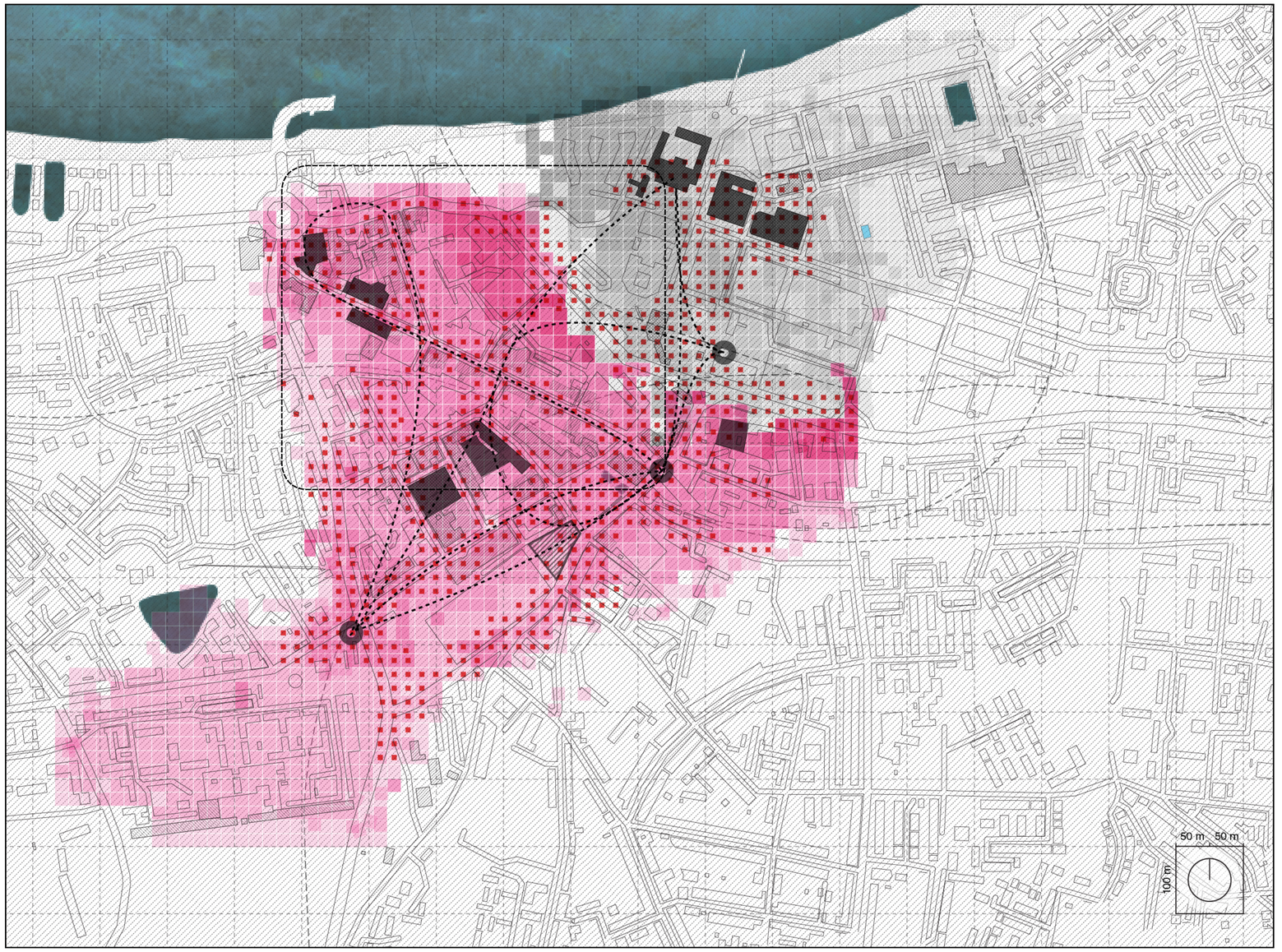
Due to height restrictions potential Gross Floor Area is lower towards the town centre streets. This area is thus less costly to give up for ciculation

>> guidance
> orienting internal circulation towards highly integrated* town centre streets (if dimensions require)
tool: development strategy
actor: Woolwich Development Corporation



source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



new development [mix-use]

Royal Arsenal

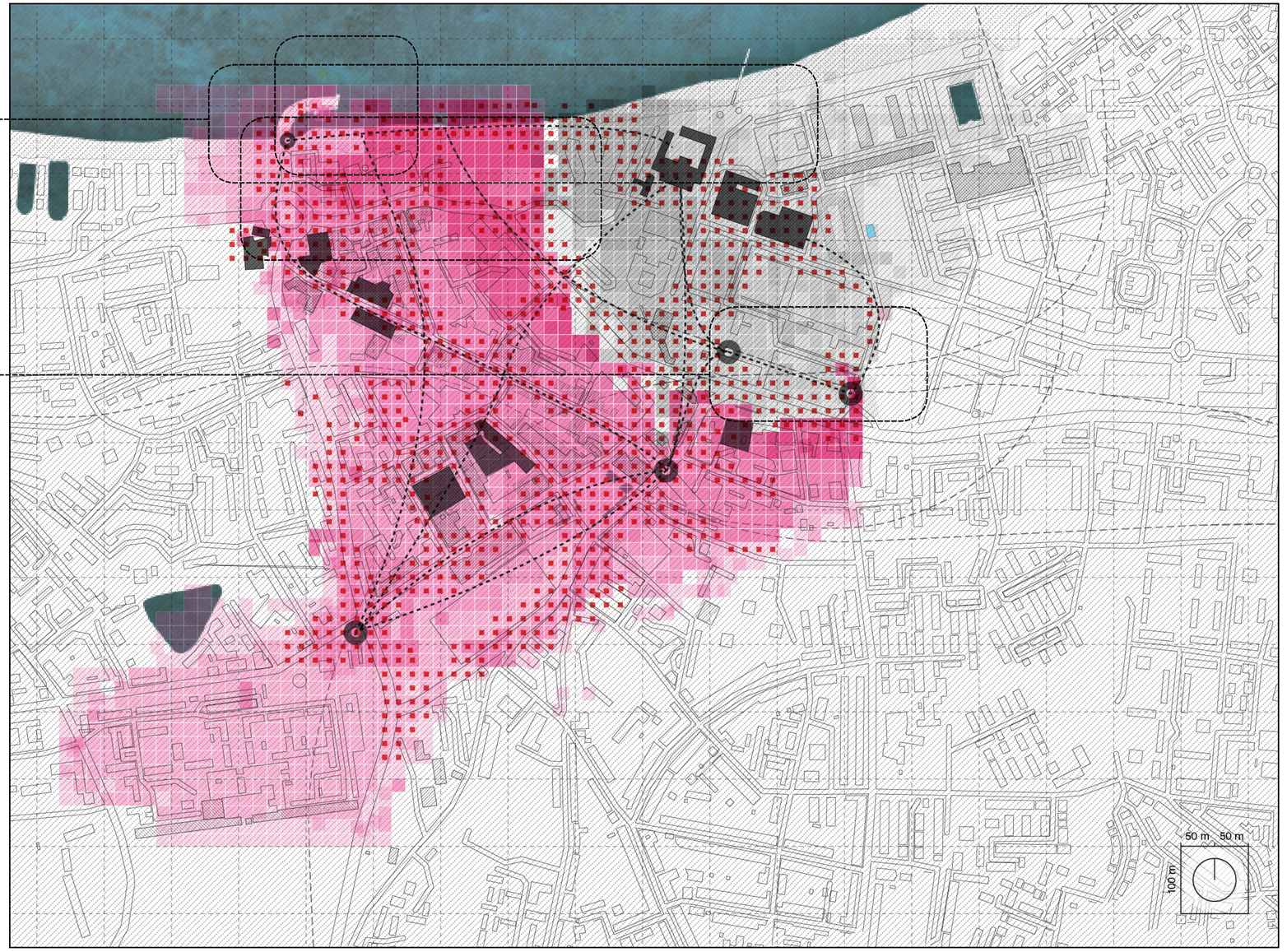
enhanced retail & hospitality

source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

Waterfront development

Northern transit line &
Existing station upgrade



new development [mix-use]

Royal Arsenal

enhanced retail & hospitality

northern link & waterfront

source: image by author

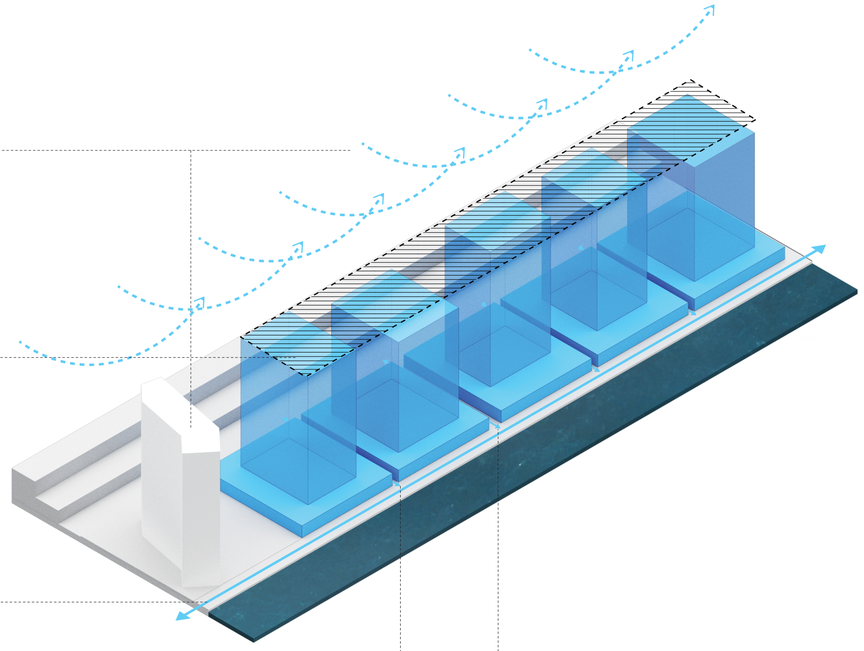
Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

>> guidance
> increase in scale towards water-front [continuation of Royal Riverside precedent]
tool: design guidelines
actor: Woolwich Development Corporation

>> control
> Inquiry with city airport on maximum building heights
tool: Safeguarded and Obstacle Limitation Surfaces
actor: London City Airport

>> guidance
> Riverside prominade links back to the Arsenal
tool: development strategy
actor: Woolwich Development Corporation

>> guidance
> variation between small alleyways walking streets with active facades creates a pluriform environment oriented towards the river
tool: development strategy
actor: Woolwich Development Corporation



source: image by author



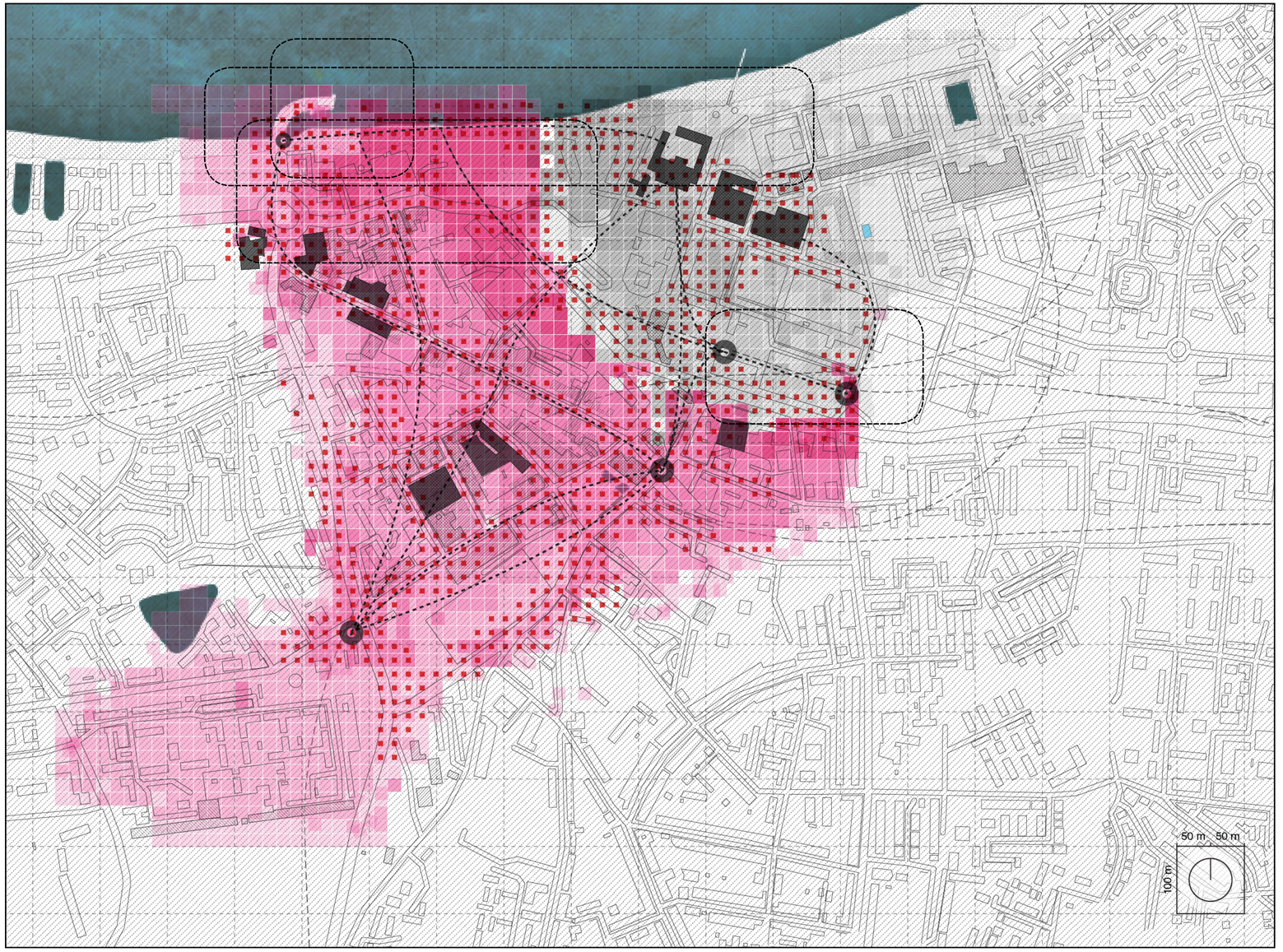
source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



northern link & waterfront

new development [mix-use]

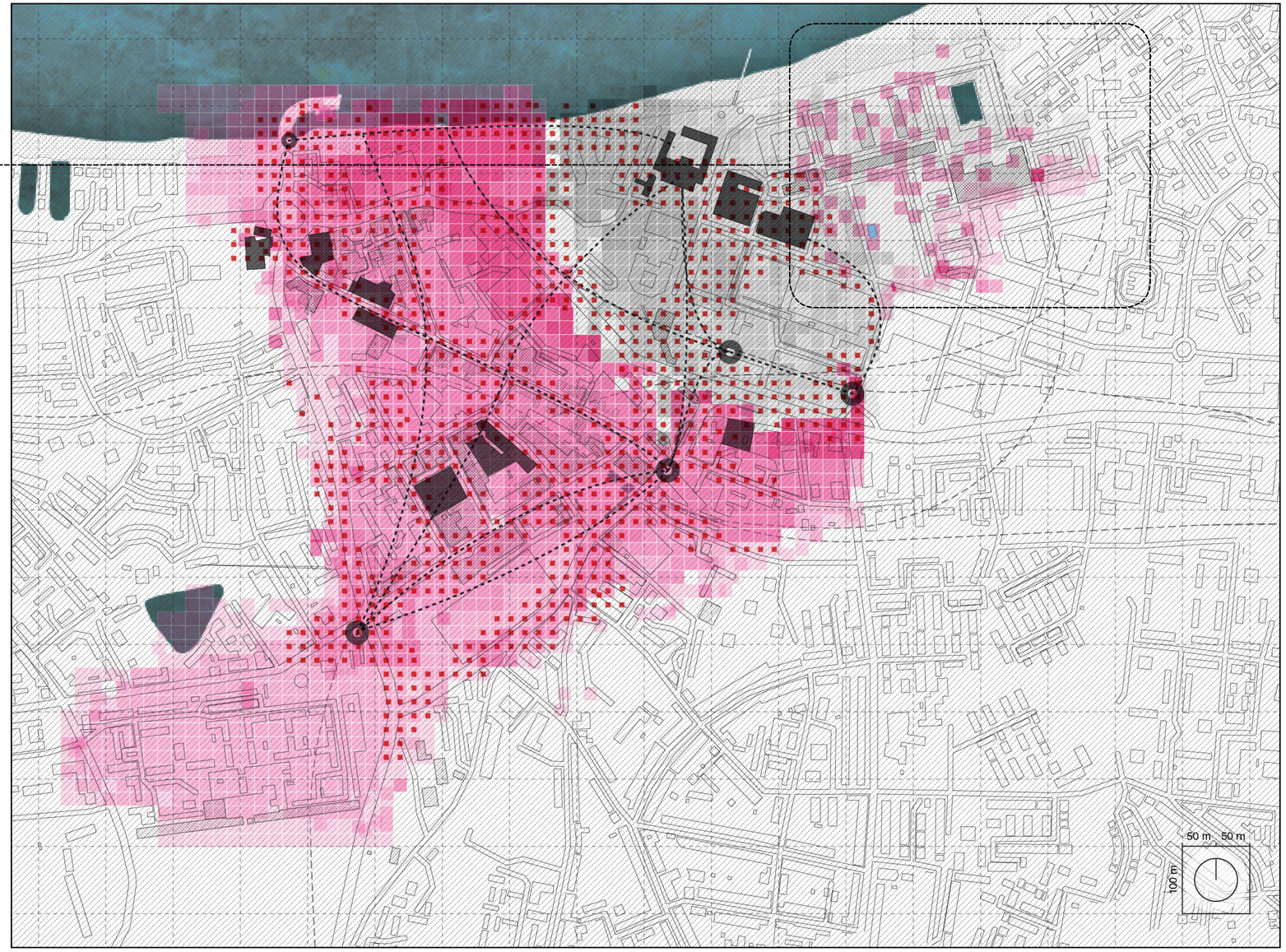
Royal Arsenal

enhanced retail & hospitality

source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

Arsenal use changes



consolidation

new development [mix-use]

Royal Arsenal

enhanced retail & hospitality

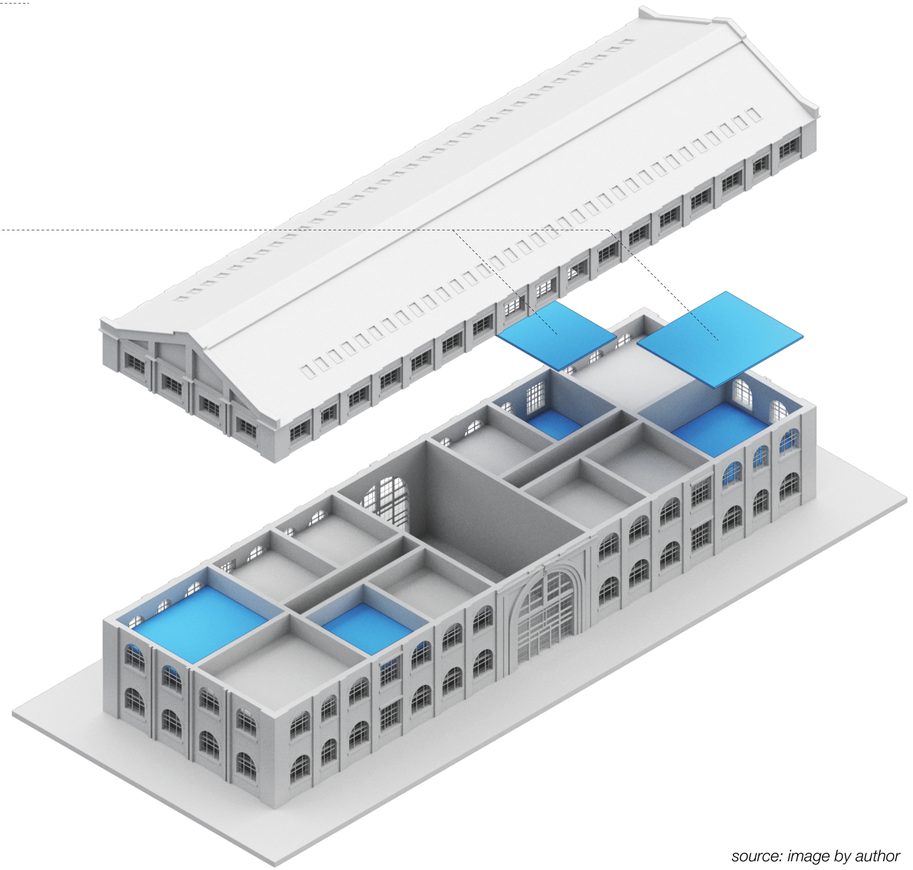
source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

>> guidance
> remove partition floors to improve quality
tool: occupier demand study
actor: developer

>> incentive
> simplify application process for residential - commercial conversion
tool: development strategy
actor: Woolwich Development Corporation

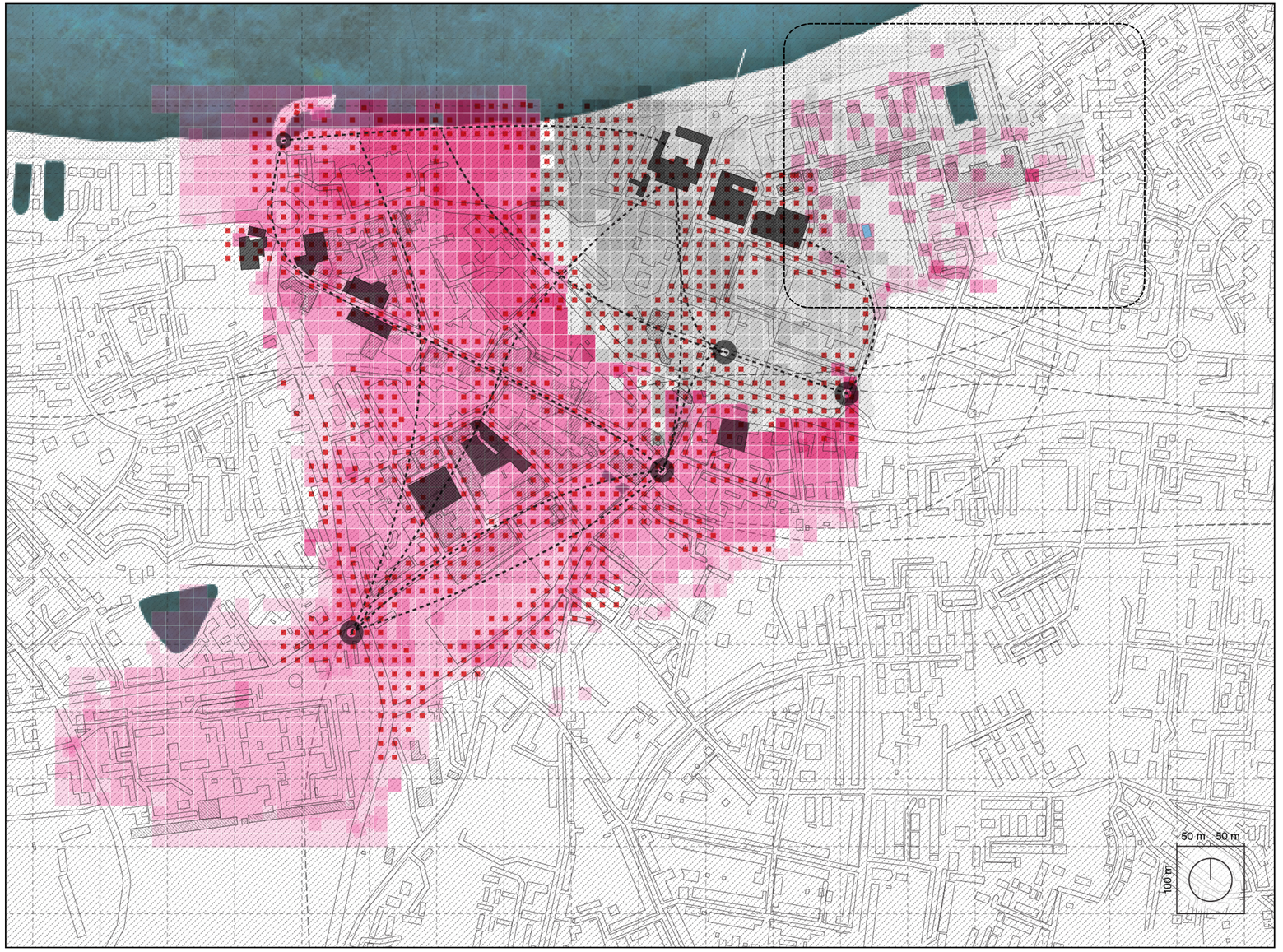
>> guidance
> the smaller subdivided spaces in the Arsenal's transformed buildings is better suited for smaller (often creative) businesses
tool: development strategy
actor: Woolwich Development Corporation



source: image by author

consolidation

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



consolidation

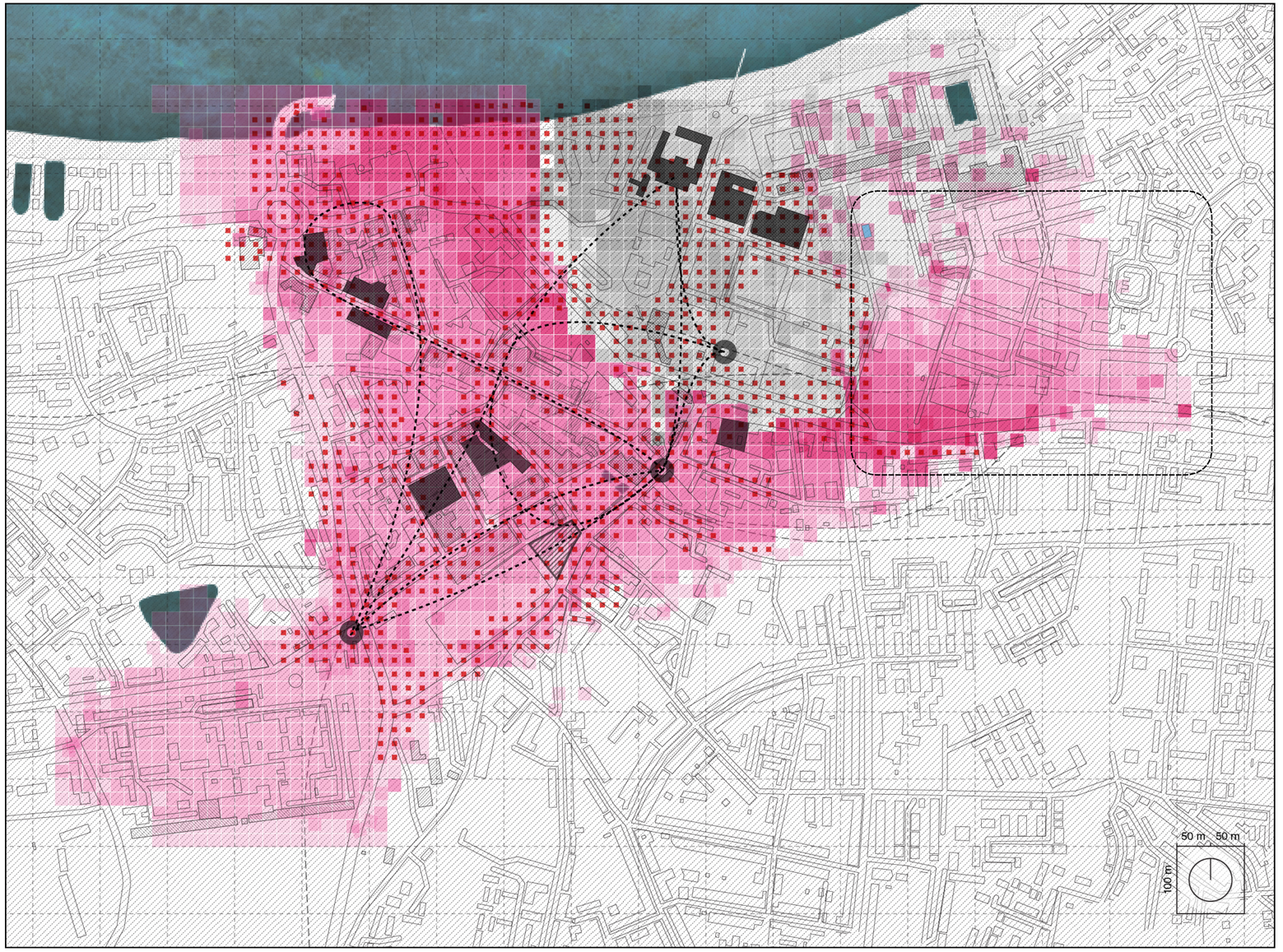
new development [mix-use]

Royal Arsenal

enhanced retail & hospitality

source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



consolidation

new development [mix-use]

Royal Arsenal

enhanced retail & hospitality

source: image by author

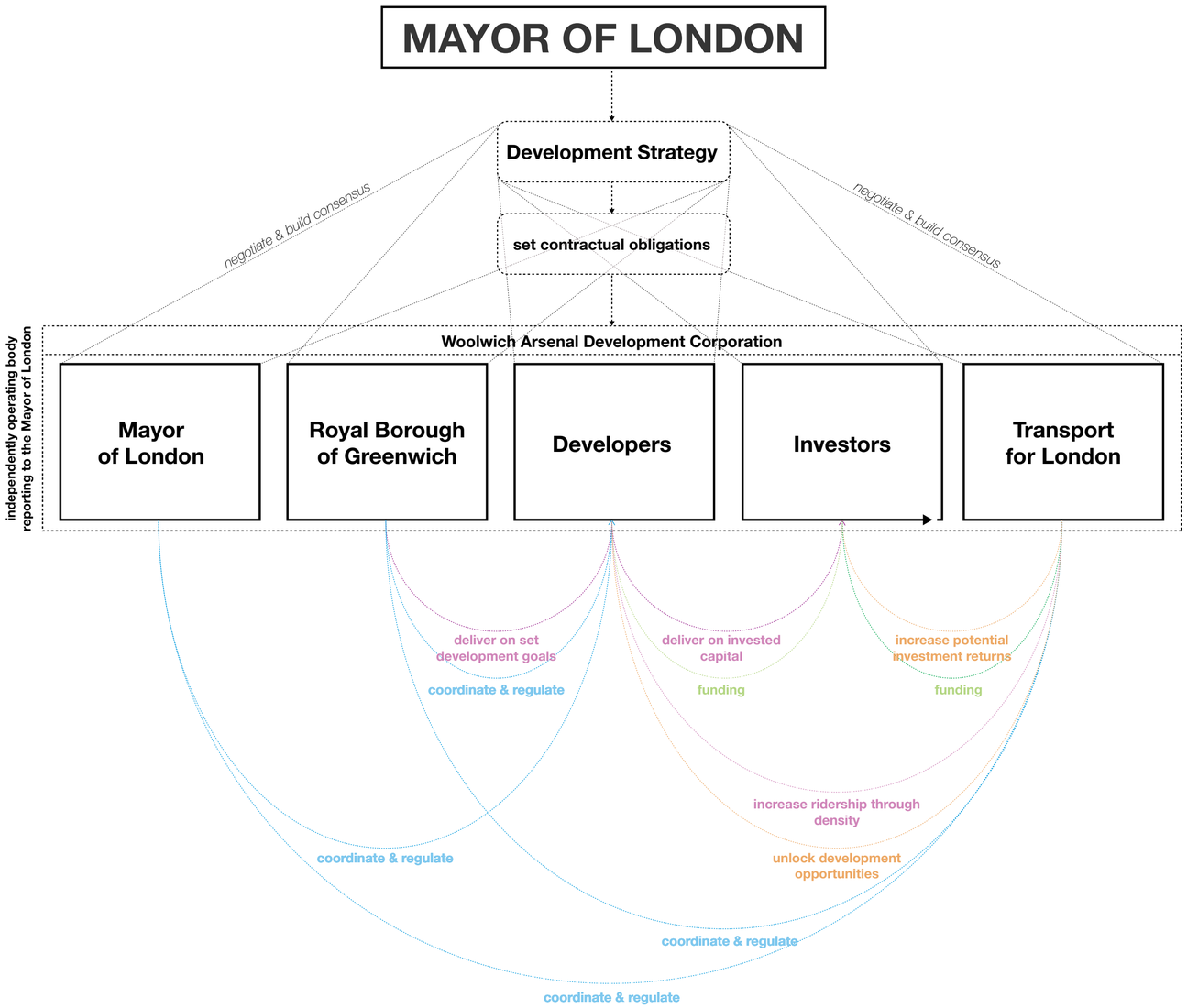
Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]



source: image by author

Development strategy [introduction, issues & opportunities, timeline, **phasing**, organizational model]

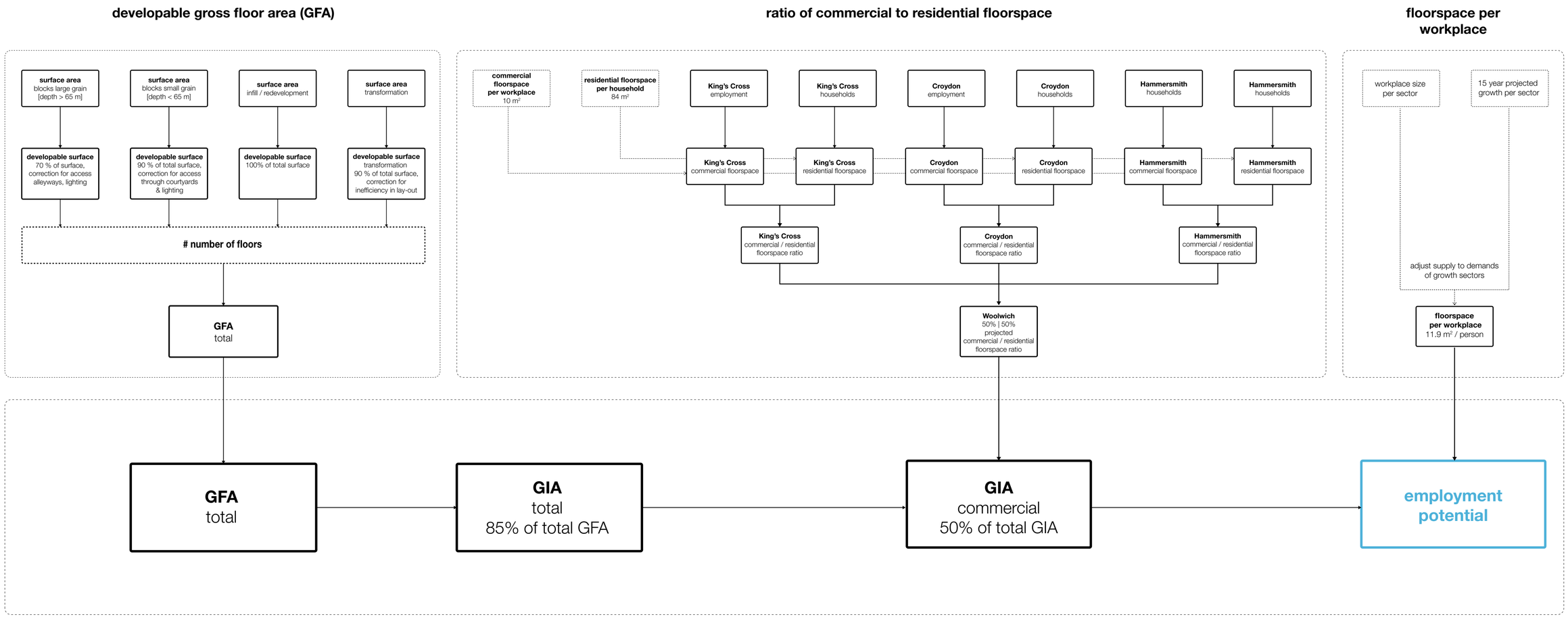
Mayoral development corporation



source: image by author

Development strategy [introduction, issues & opportunities, timeline, phasing, **organizational model**]

Employment potential



Impact assessment [**employment potential,** accessibility, travel patterns]

> Woolwich employment | 149,000



> Northern Isle of Dogs employment | 151,000 jobs

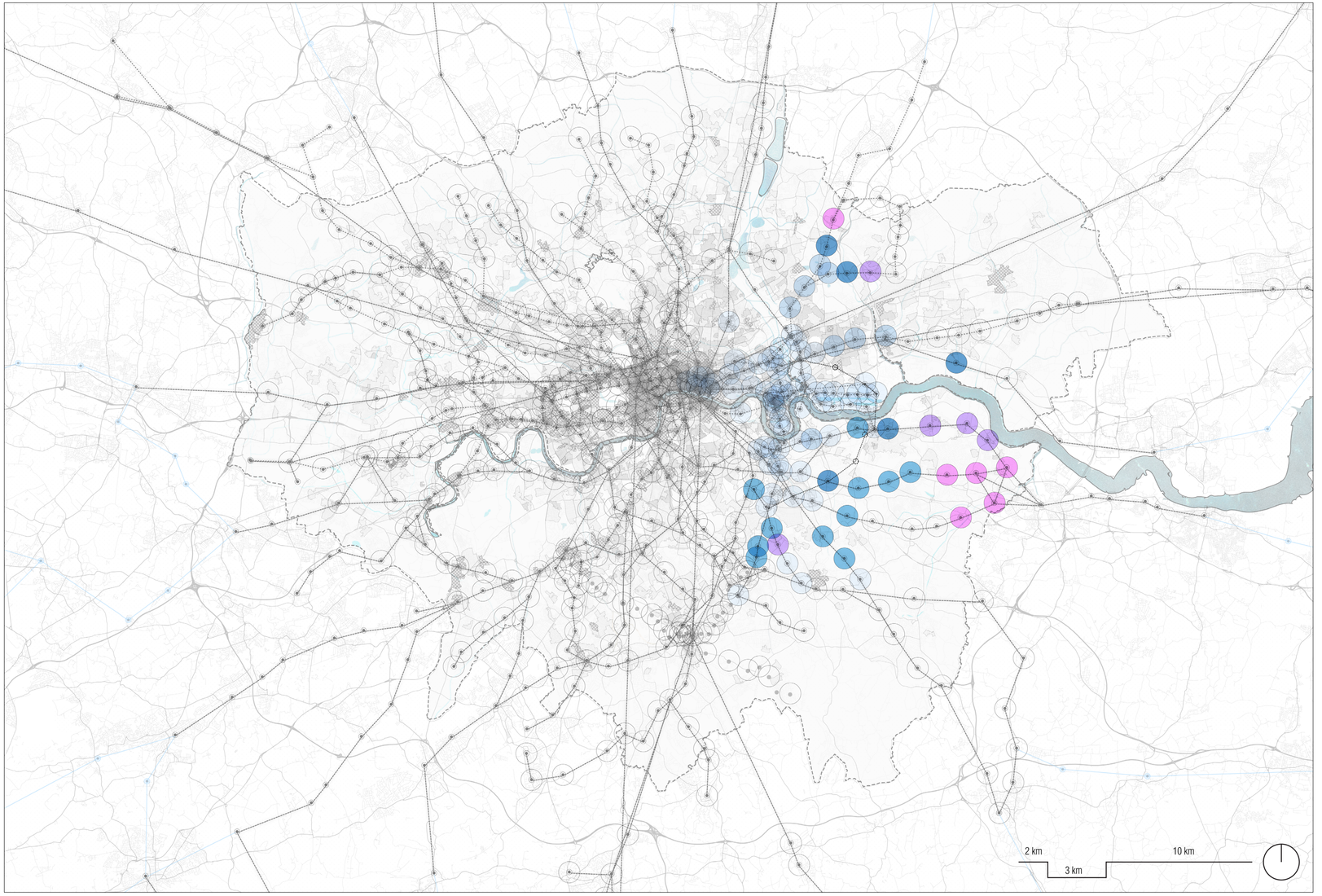


> City of London employment | 463,000 jobs



Impact assessment [**employment potential,** accessibility, travel patterns]

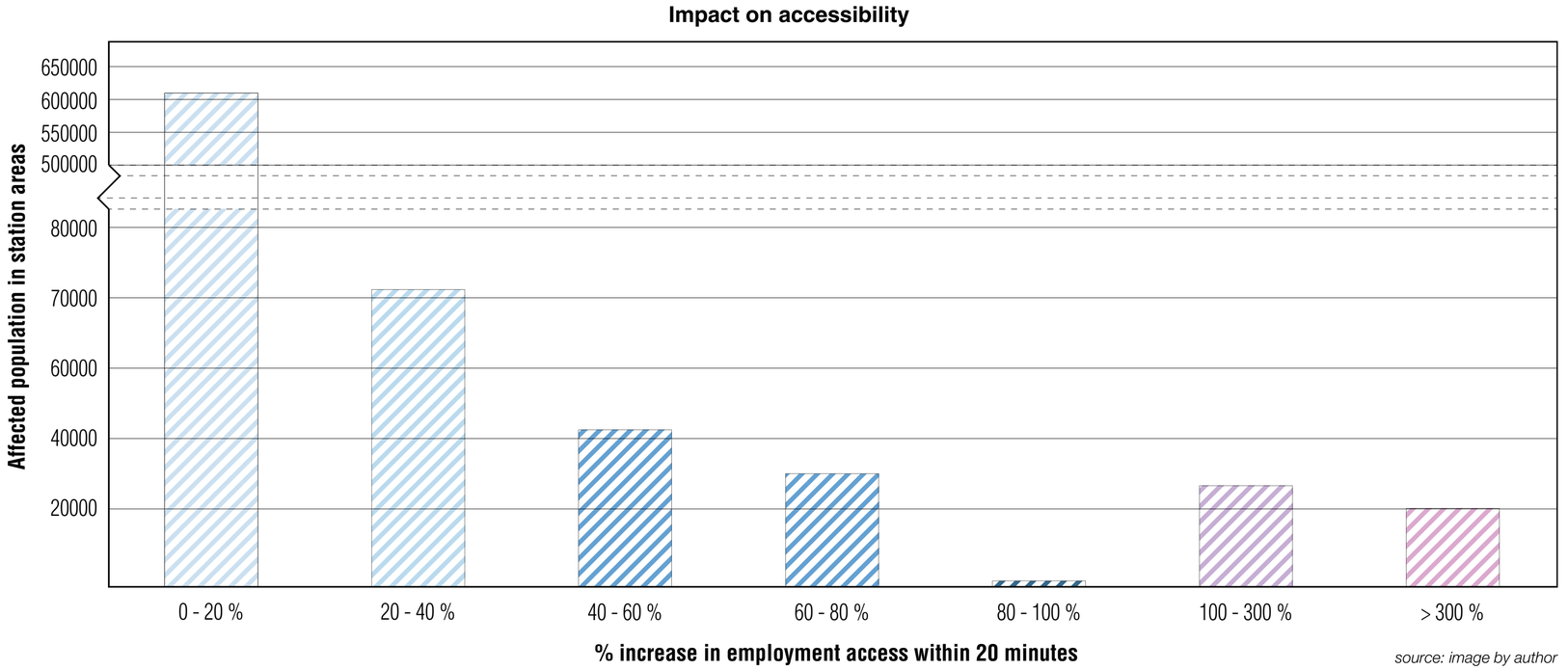
Impact on accessibility



- 0 - 20 %
- 20 - 40 %
- 40 - 60 %
- 60 - 80 %
- 80 - 100 %
- 100 - 300 %
- > 300 %

source: image by author

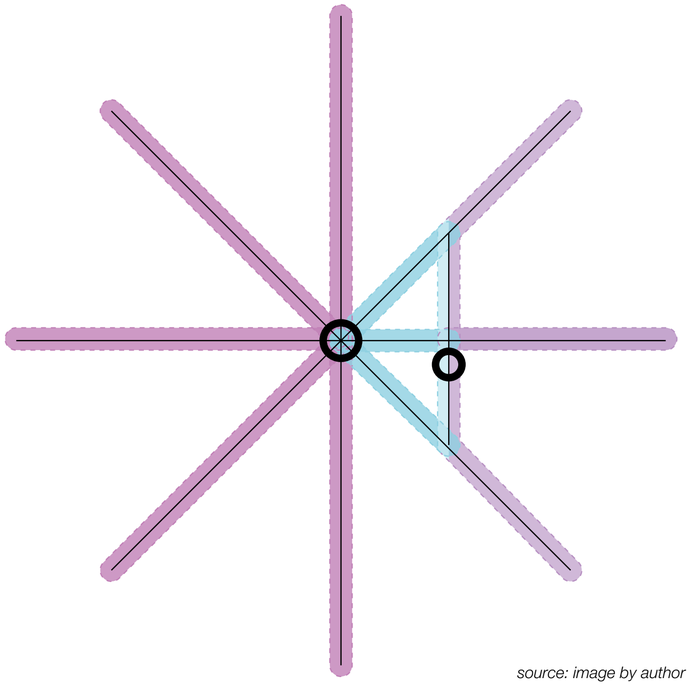
Impact assessment [employment potential, **accessibility,** travel patterns]



source: image by author

Impact assessment [employment potential, **accessibility,** travel patterns]

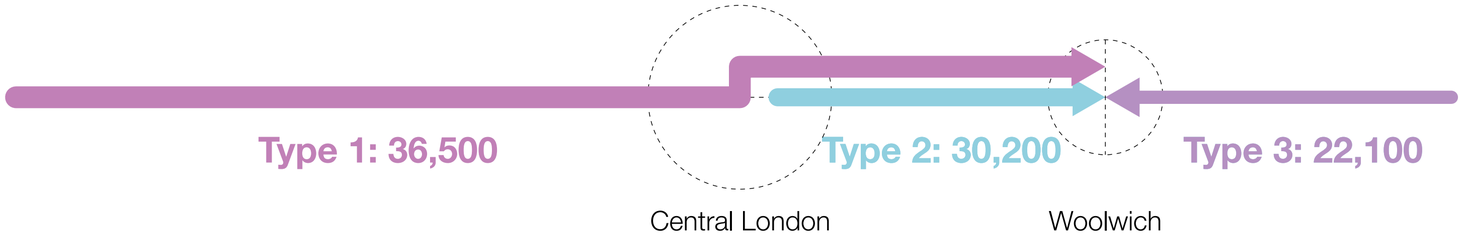
Impact on travel patterns



source: image by author

Impact assessment [employment potential, accessibility, **travel patterns**]

Impact on travel patterns



source: image by author

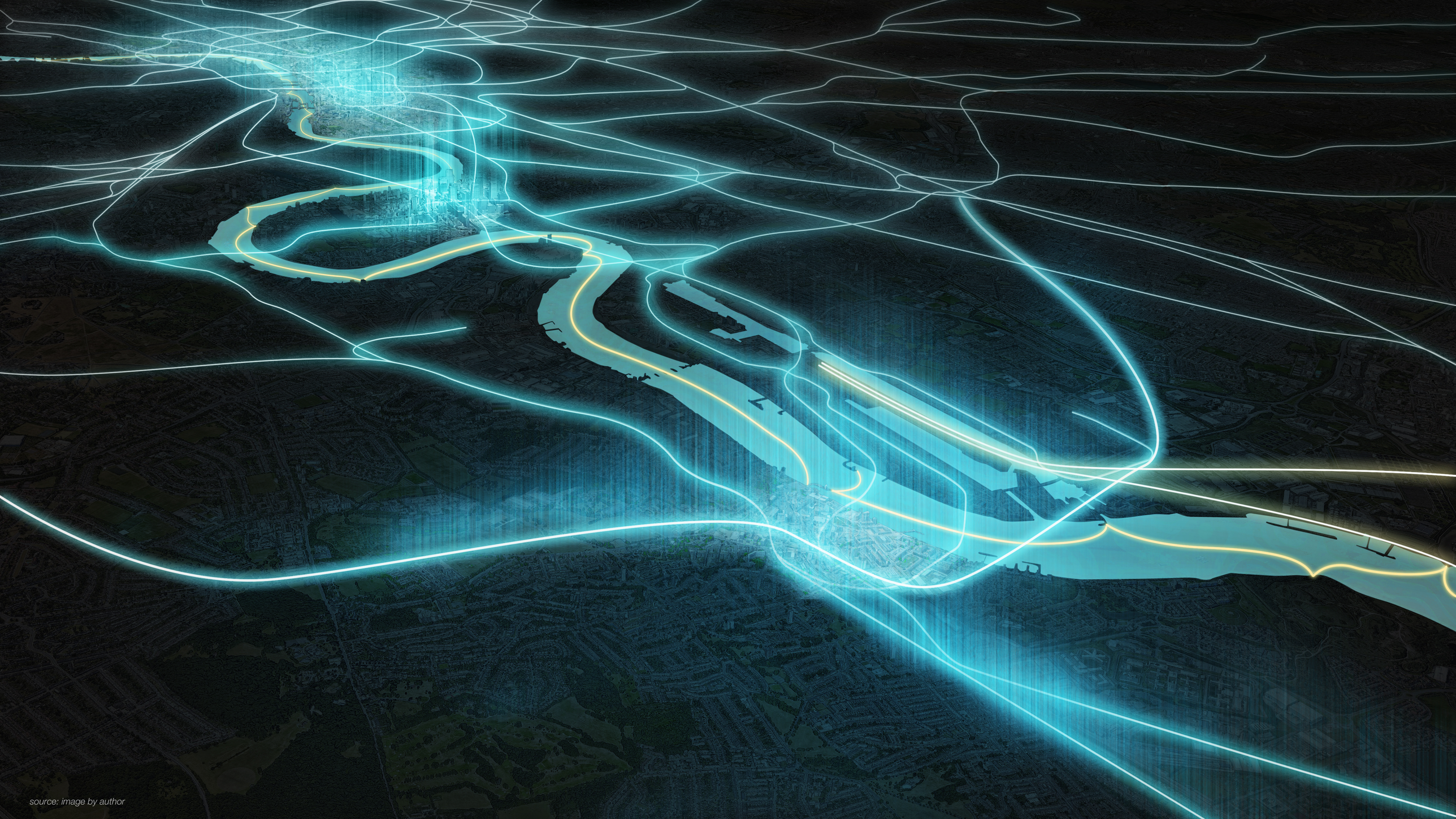
Impact assessment [employment potential, accessibility, **travel patterns**]



source: image by author



source: image by author



source: image by author