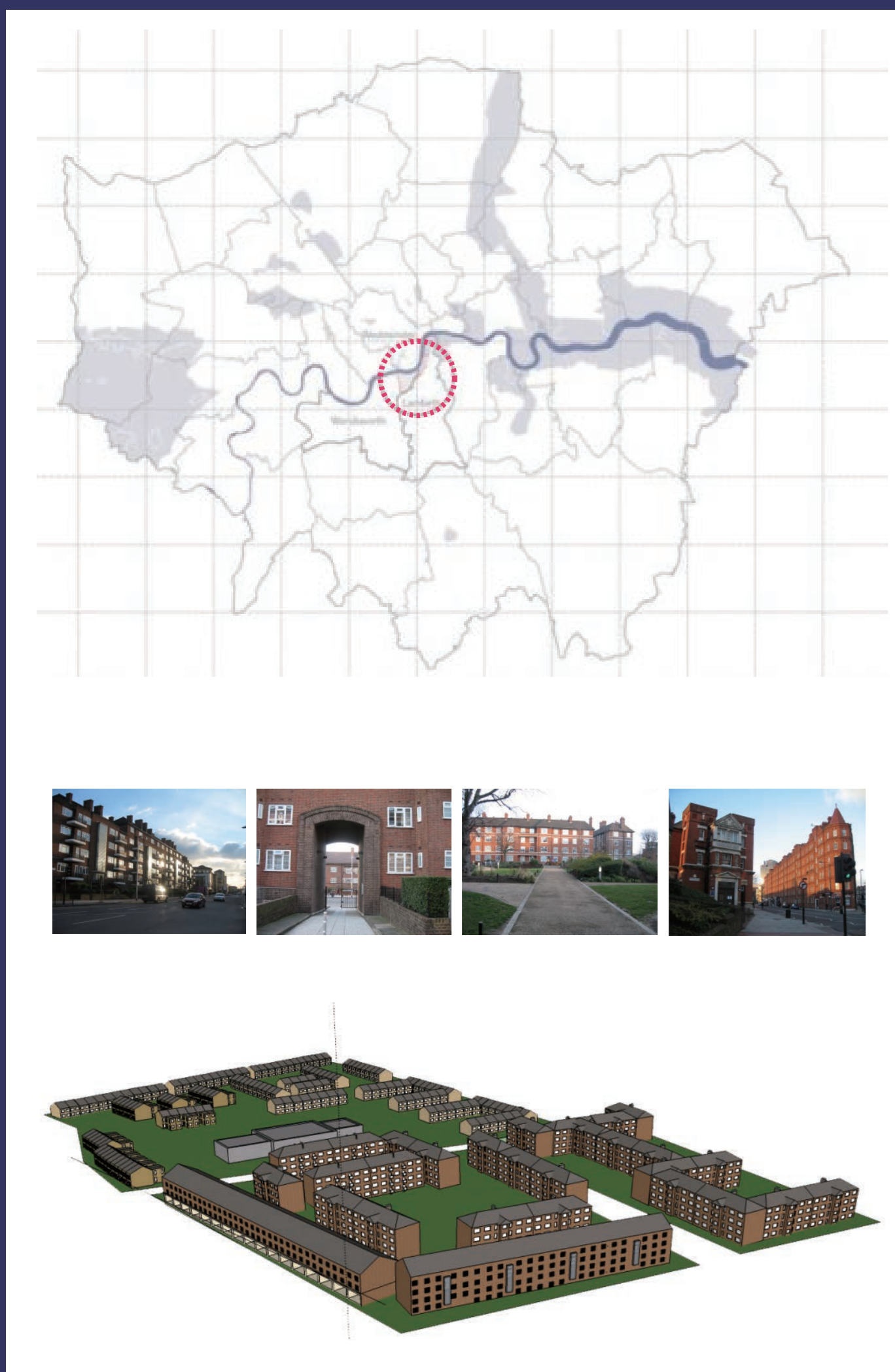
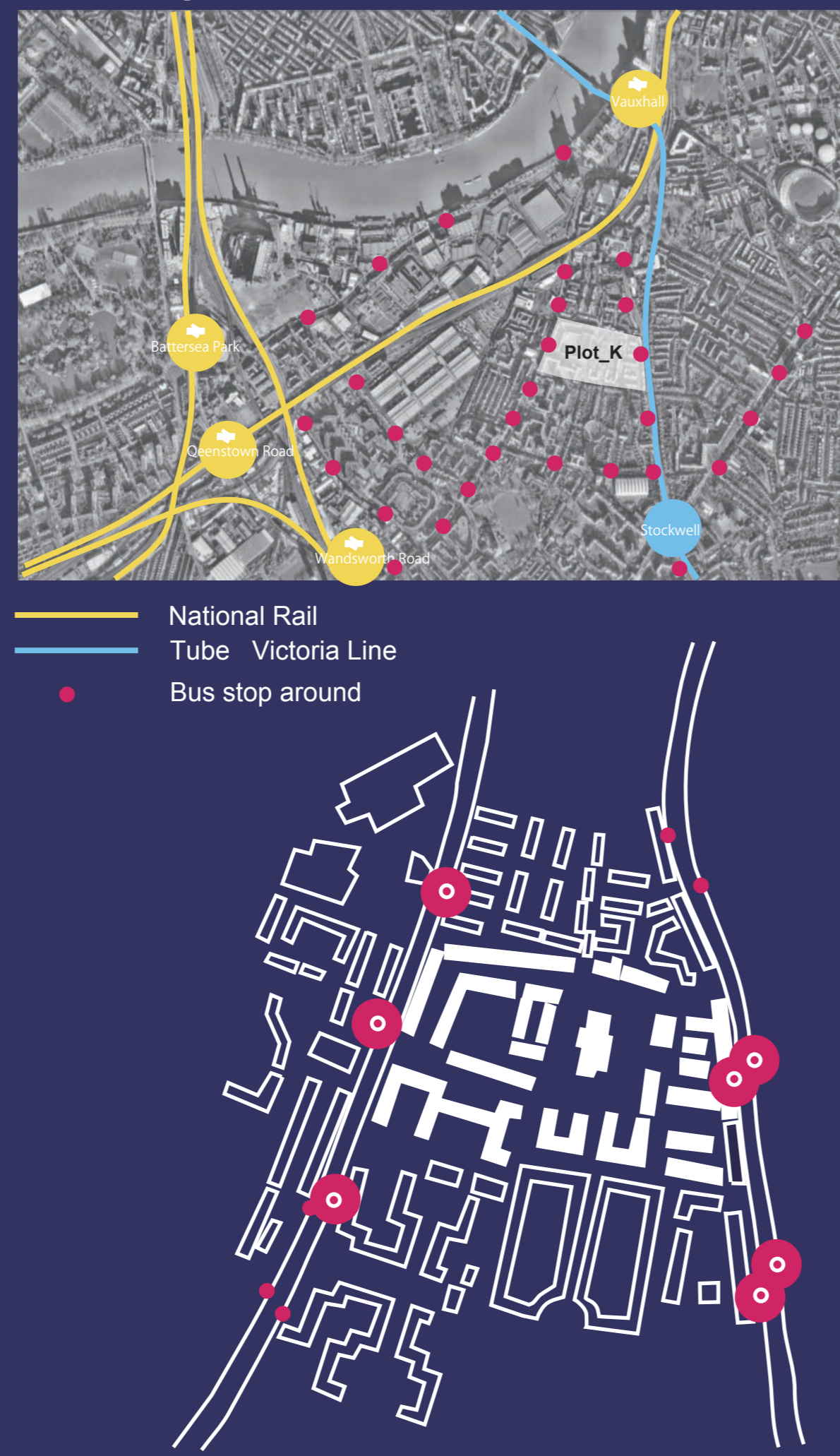


Scenario for over 70% reduction of community-scale CO2 emissions through 100 years

Site



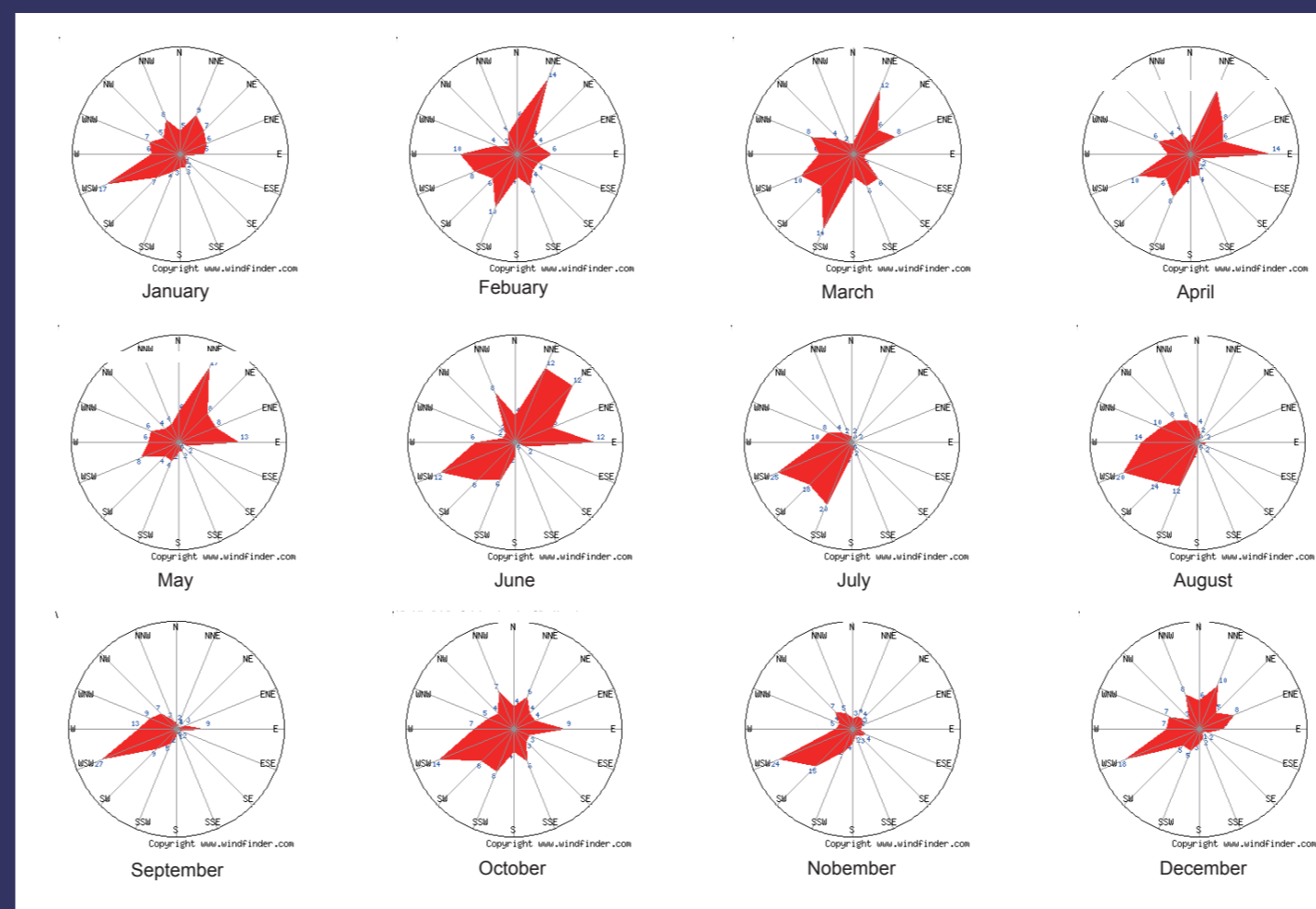
Transport Link



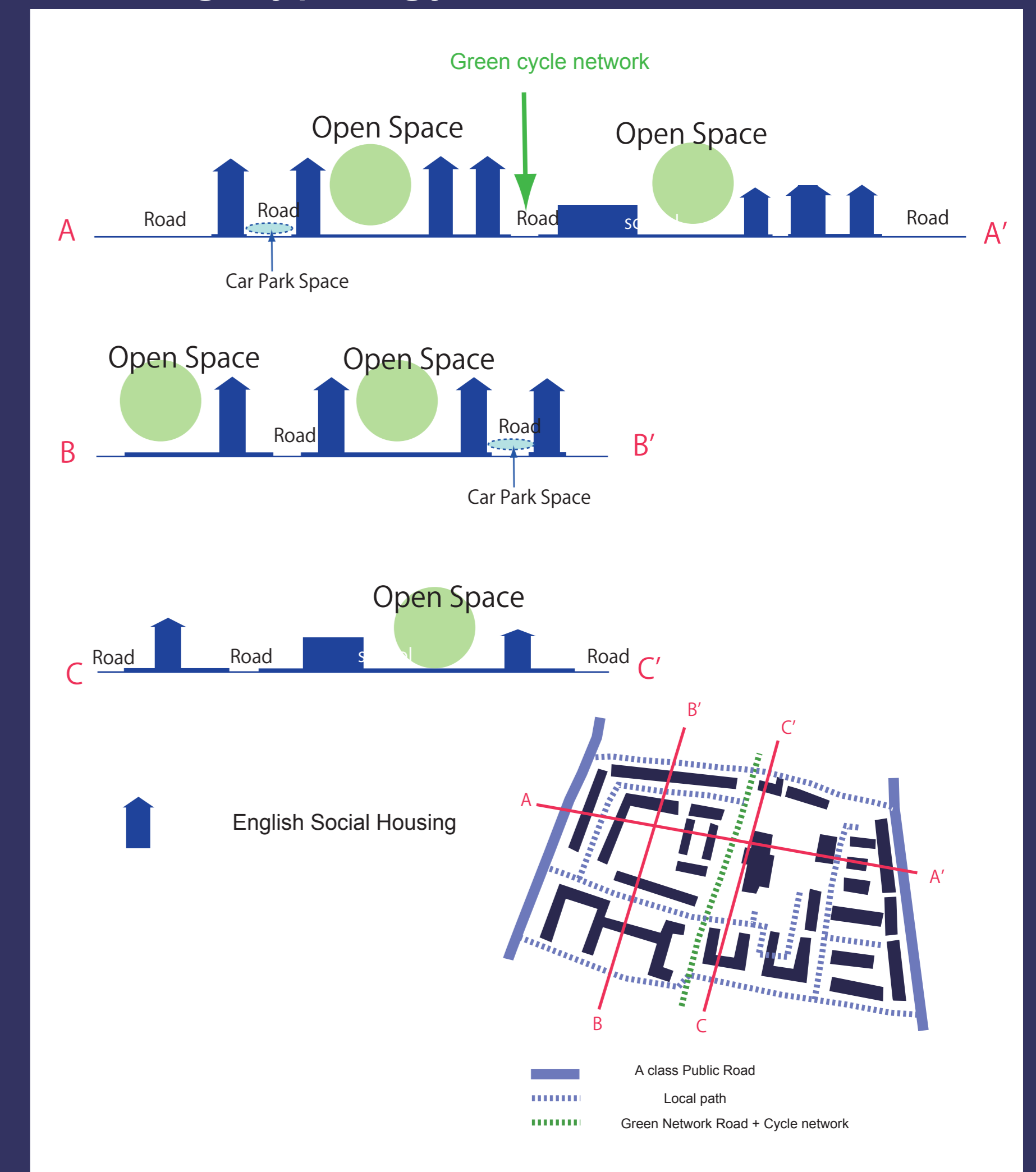
Shade Analysis



Wind Analysis

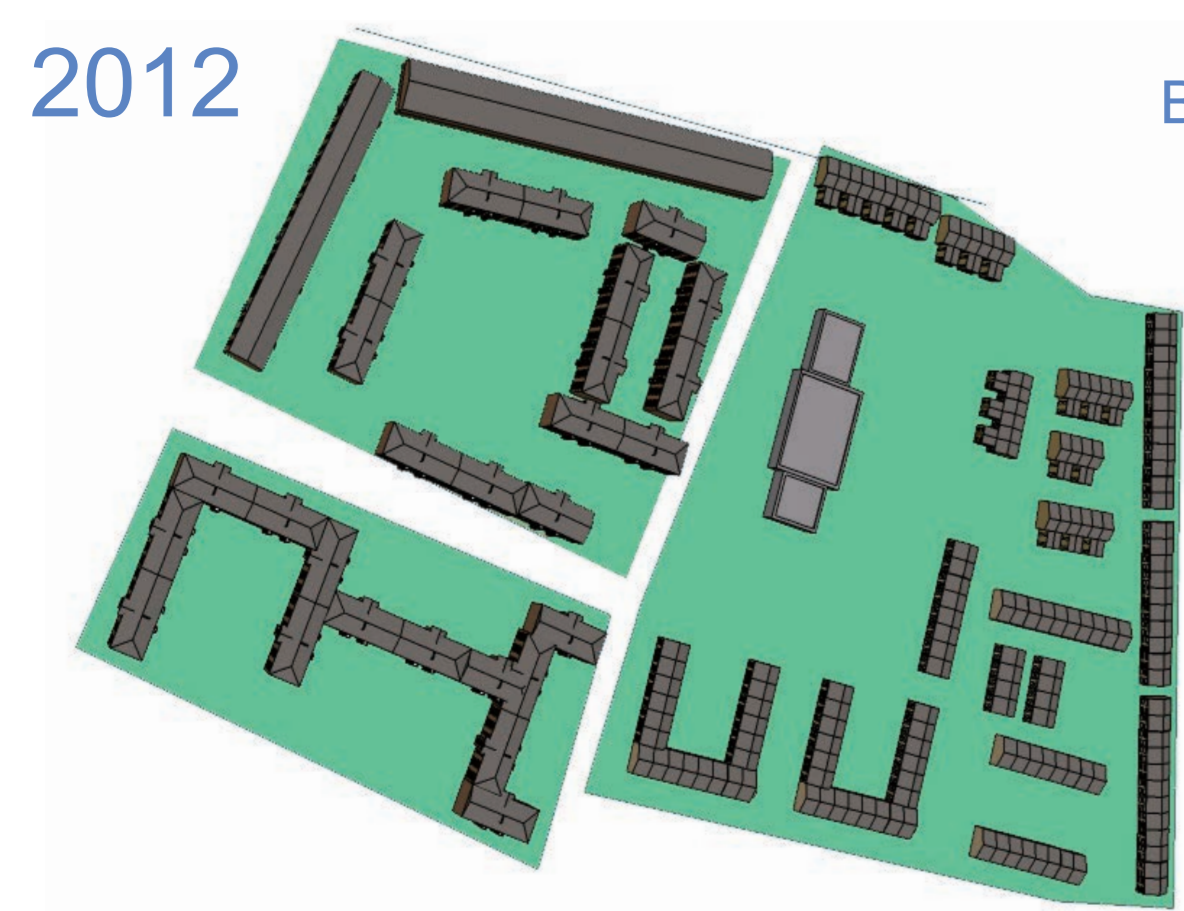


Building Typology

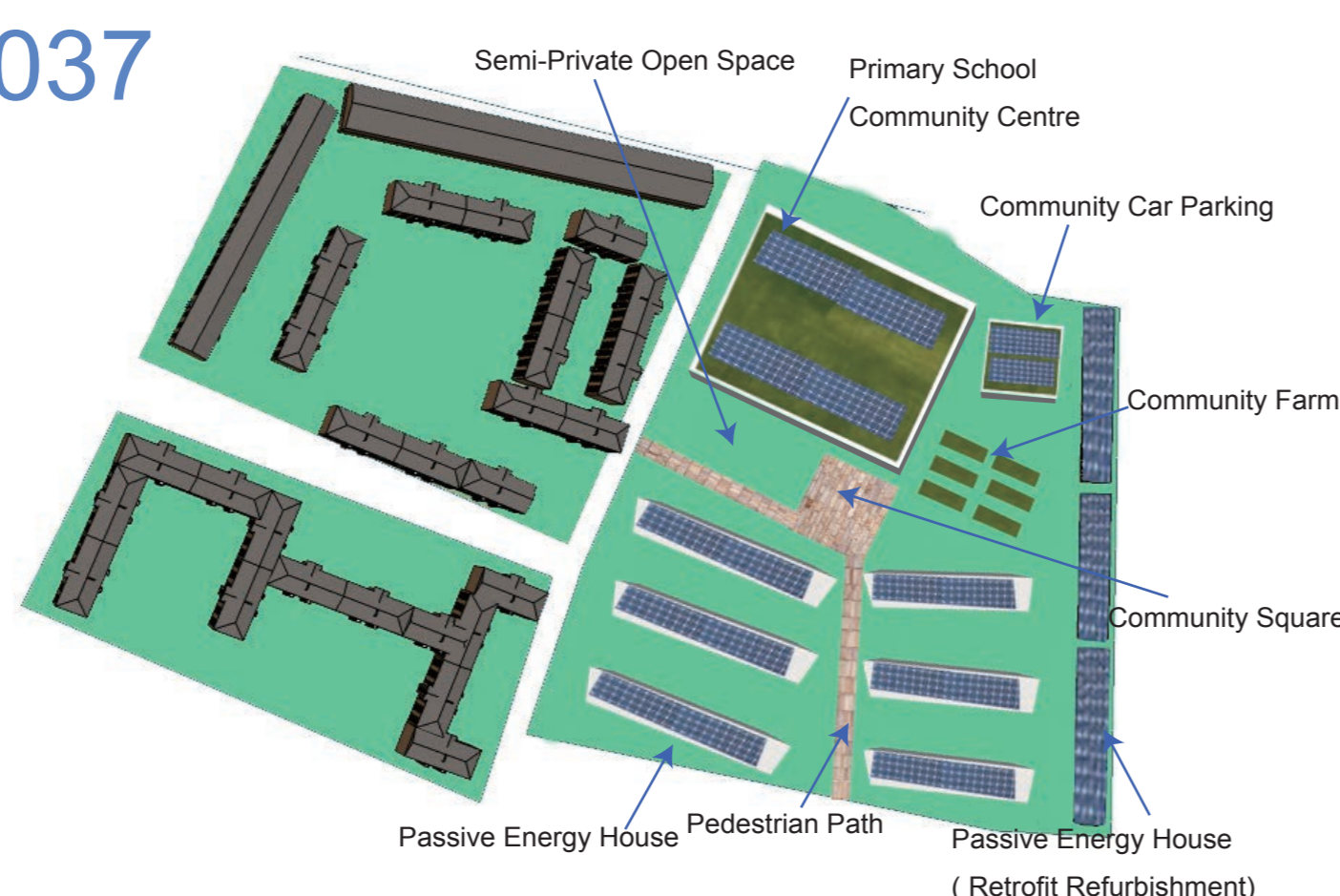


Transition Pathways

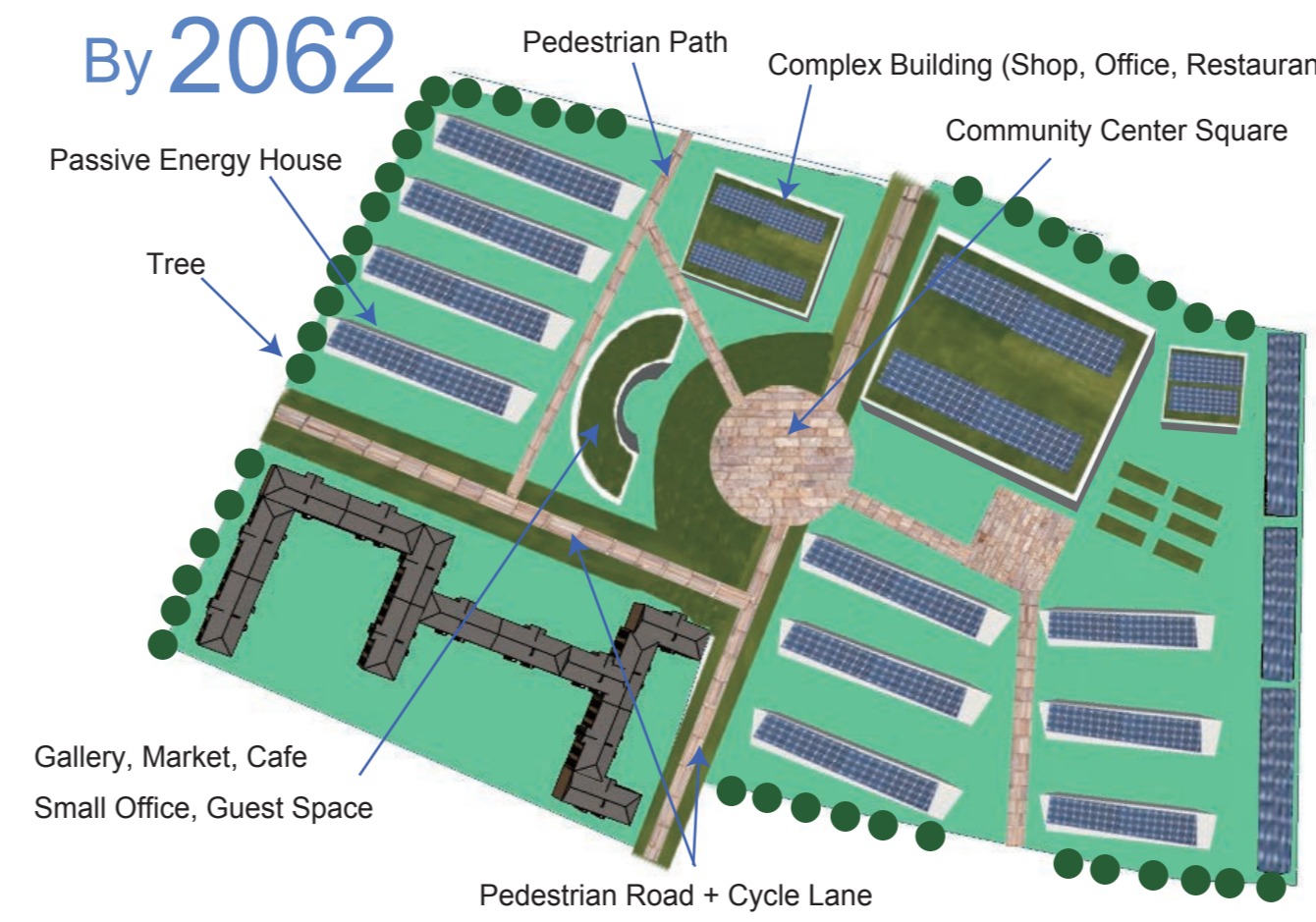
Target 70% reduction of CO2 emissions



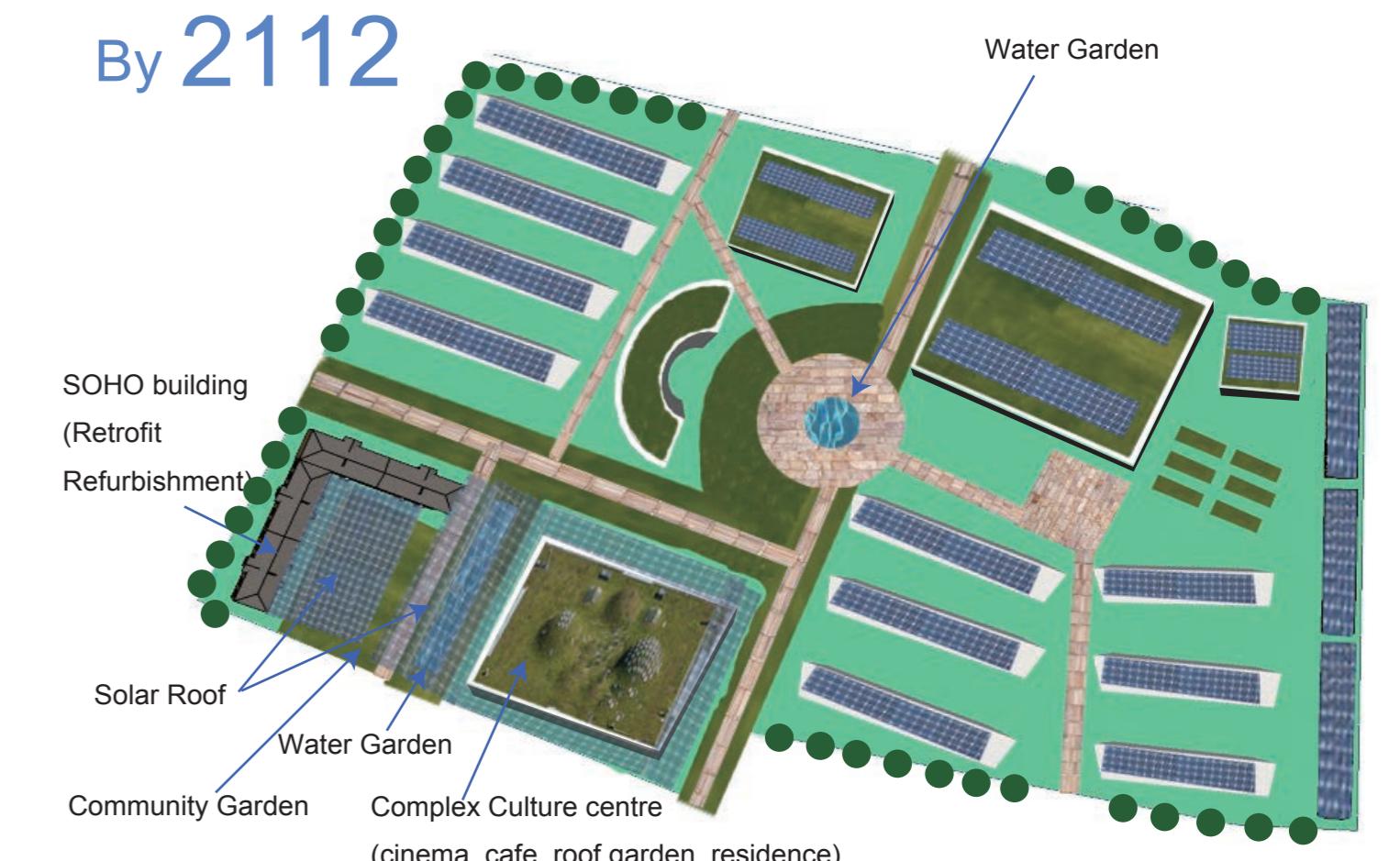
By 2037



By 2062



By 2112

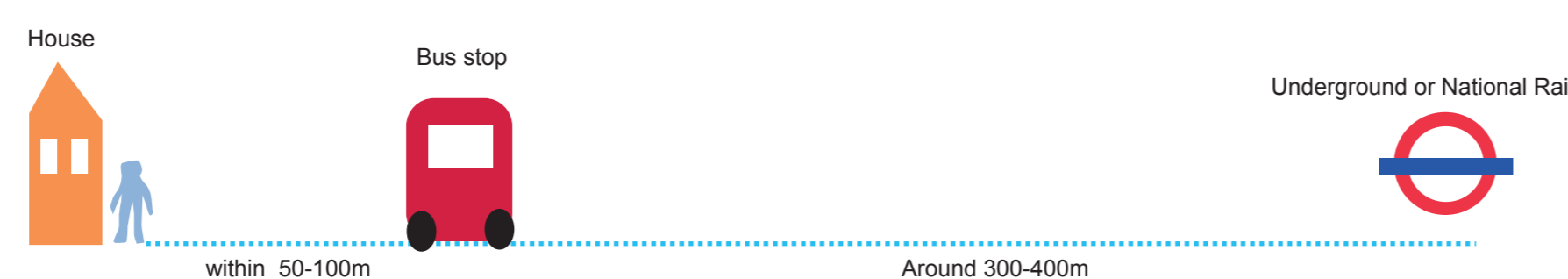


Strategies

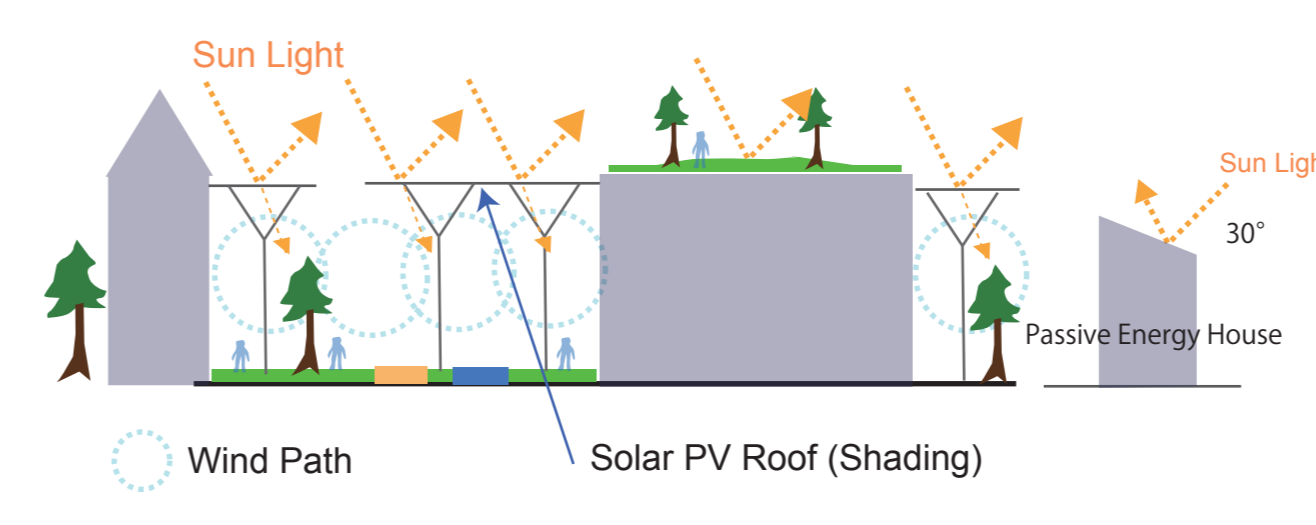
Transit Oriented Development



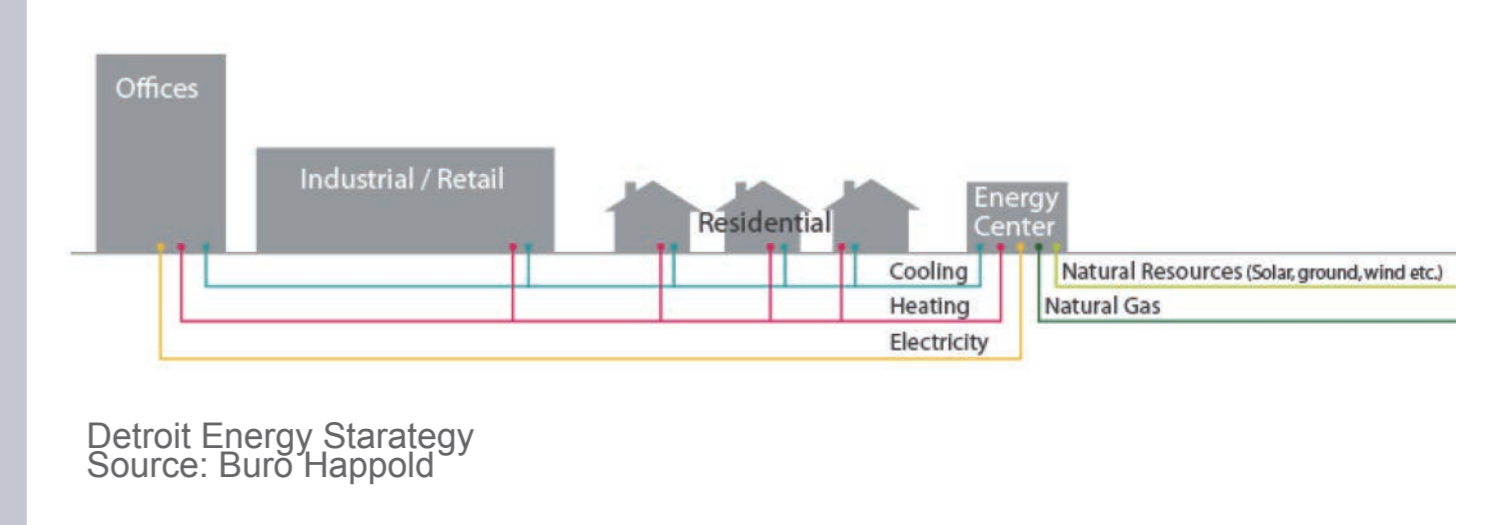
This location is linked to each public transport within possible access distance. Promote ordinary use of Public Transport. Enhance safe pedestrian/cycle link to the public transport.



Wind and Ventilation and Sun Light



CHP (Combined Heating Plant)

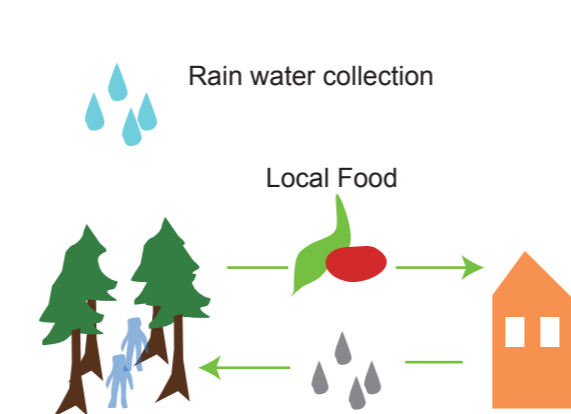


Mixed Use



Activate urban area as more flexible use. Increase housing options for different house holds. Create local sense of place. Decrease travel frequency.

Planting Strategy



Green can create natural circulate system. Create proper shade for pedestrians and houses. Mitigate noise and protect privacy. Recycle grey water for cultivating trees. Provide local foods from local gardens.

Water Management



Waste Water Treatment
There is a new technology system dealing with waste water. Hammarby Sjostad has four separate treatment lines for greywater. This grey water can be extracted bio-natural resources such as bio gas fuel.

Open Space



Enhance environmental bio-diversity. Create effective wind pass. Create comfortable community spaces. Enhance open space network for pedestrians and children.

Waste Management and Recycling



Nowadays waste is no longer just waste. It can be a resource that is being utilised effectively. This way is more economical and environmental friendly. Separating waste can also promote reducing the overall amount of waste. Then waste can be used as new materials and energy resources.

Flooding Risk Management

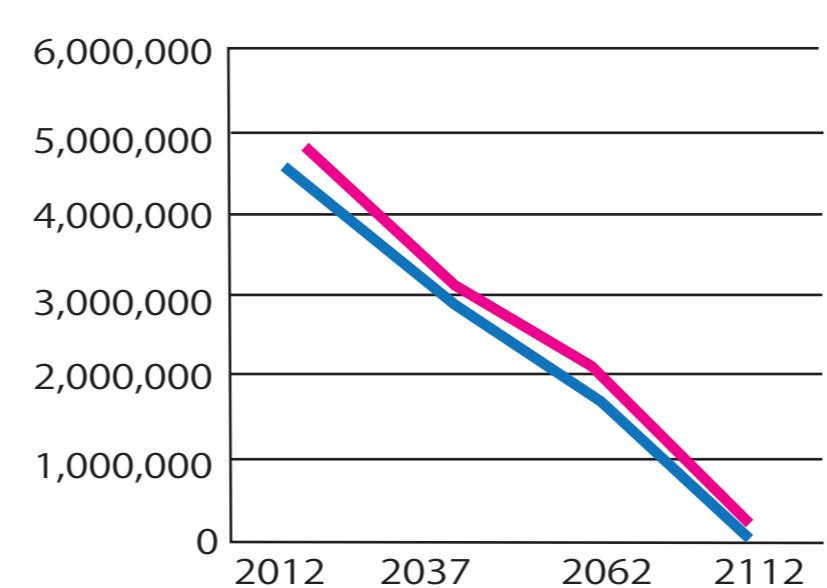


This area has much potential of flood risk (Environmental Agency, 2012). There are several way to mitigate this risk. Firstly Planting might be helpful for mitigating this situation. Secondly, the building design should apply for the rooftop evacuation space such as roof garden. Roof network around neighbourhood is also effective.

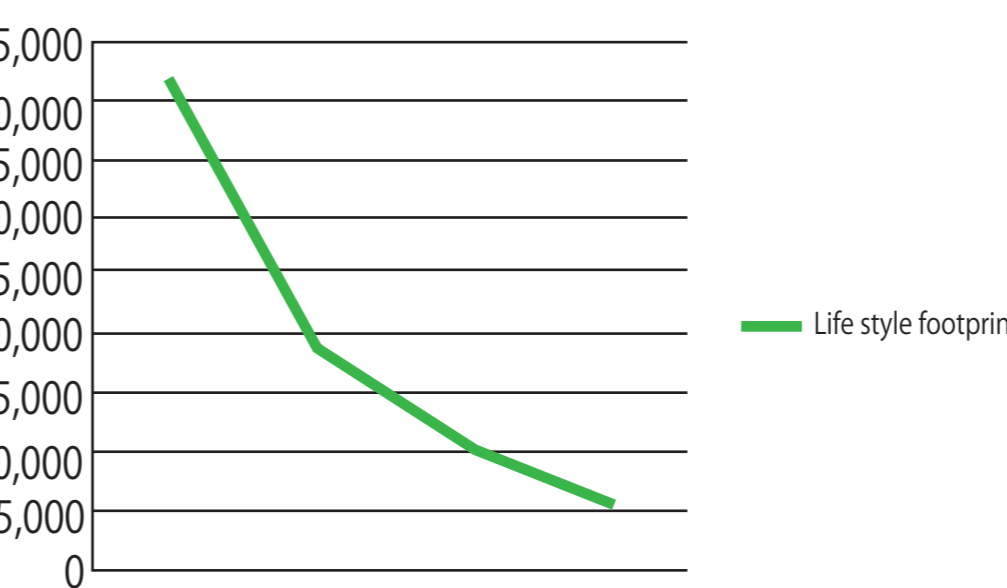
Conclusions (Summary)

SUMMARY		2012	2037	2062	2112	Increase(%)
site area	square metres	76587	76587	76587	76587	0.00%
gross internal area	square metres	81410	83140	80510	70460	-13.45%
plot ratio		1.06	1.09	1.05	0.92	-13.45%
person/ha		354.11	352.80	365.60	328.43	-7.82%
roof area green	square metres	1	5577	10705	16237	1,623,600.00%
public open space	square metres	130	6548	12253	9,325.38	-54.33%
private open space	square metres	9000	6000	4000	2500	-72.22%
south +/- 20 deg roof/facade area unobstructed	square metres	8376	10124	11628	15154	80.92%
renewable panel area total	square metres	1	3000	3700	6250	624,900.00%
total people living/working on site	people	2712	2702	2800	2500	-7.82%
total electrical	kwh/year	3615450	3239500	2581720	1651320	-54.33%
total thermal	kwh/year	14118210	11518660	7840058	3264270	-76.88%
electrical renewable	kwh/year	1	1,326,700.00	1,462,000.00	2,292,792.00	229,276,100.00%
thermal renewable	kwh/year	1	1,500,000.00	1,787,500.00	3,287,500.00	328,749,900.00%
biowaste export	kwh/year	279336	278306	288,400.00	257,500.00	-7.82%
fuel import	tonnes/year	0	0	0	0	0.00%
biomass per person	kg/person/year	0.00	0.00	0.00	0.00	0.00%
total sales value	£	£305,792,100.00	£331,049,500.00	£329,930,000.00	£309,045,750.00	1.06%
total construction value	£	£1.00	£20,100,000.00	£44,917,000.00	£63,242,000.00	6,324,199,900.00%
profit/balance	£	£305,792,099.00	£310,949,500.00	£285,013,000.00	£245,803,750.00	-19.62%
energy footprint	kg/CO2/year	4,564,555.44	2,883,996.64	1,722,798.35	-	-100.00%
lifestyle footprint	kg/CO2/year	41,700.00	18,760.00	10,420.00	5,480.00	-86.86%
embodied footprint	kg/CO2/year	244,230.00	249,420.00	241,530.00	211,380.00	-13.45%
TOTAL FOOTPRINT	kg/CO2/year	4,850,485.44	3,152,176.64	1,974,748.35	216,860.00	-95.53%
footprint/person	kg/CO2/year	1,788.53	1,166.61	705.27	86.74	-95.15%

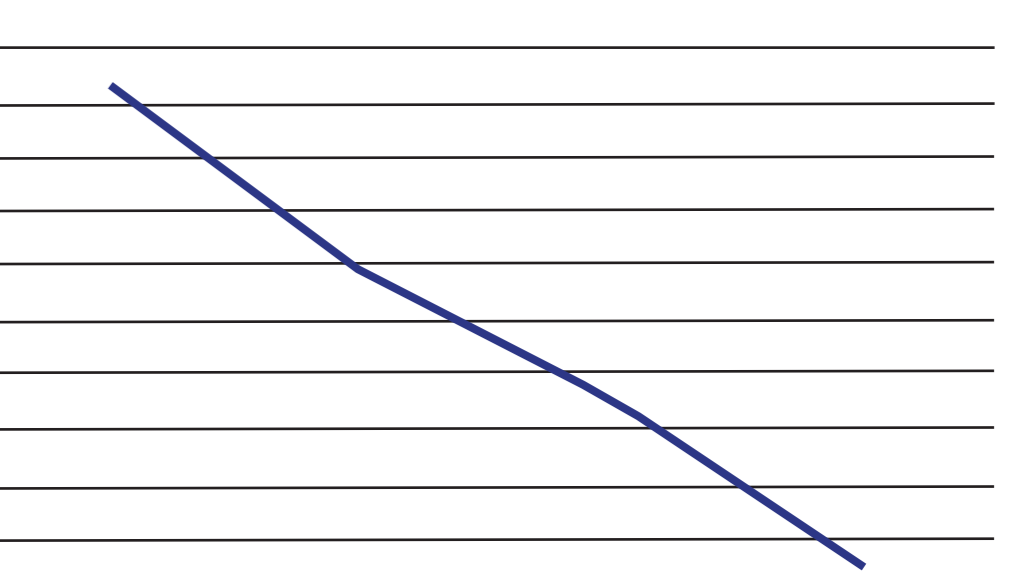
Embodied footprint/Energy footprint (kg/co2/year)



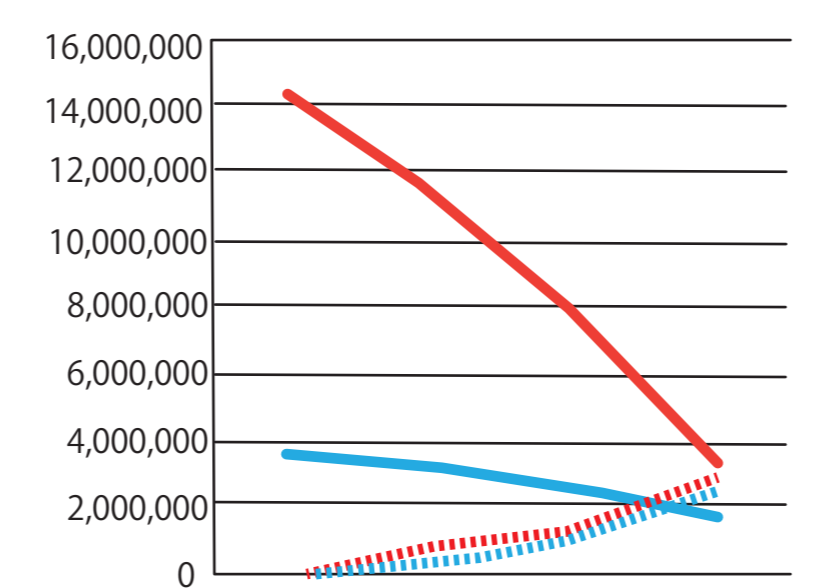
Lifestyle footprint (kg/co2/year)



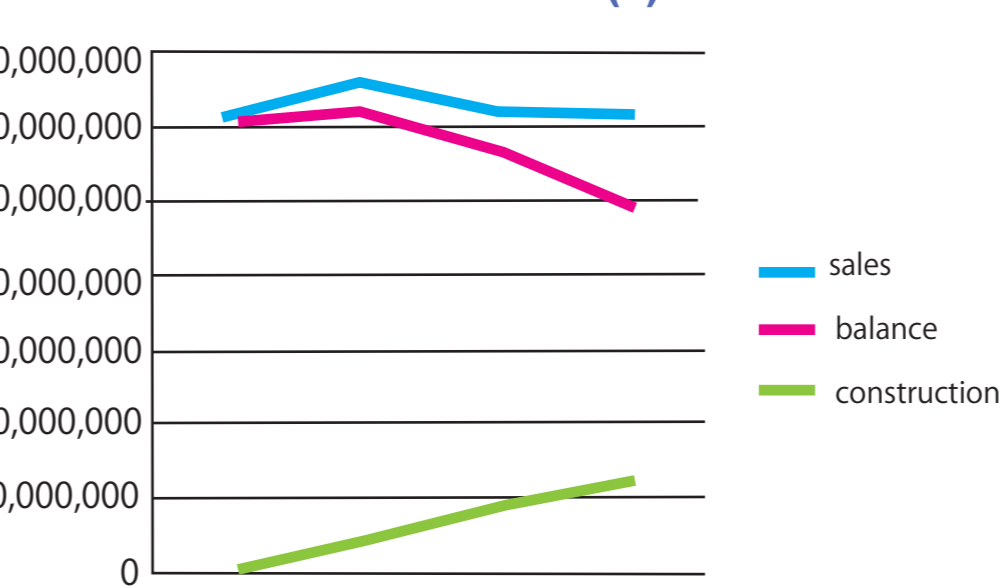
Total footprint per Person (kg/co2/year)



Electrical & Thermal reduction



Cost Benefit Balance (£)



Final Image CG



Acknowledgement: This work is partly supported by S-6 and SATREPS projects. Miho Kemei, Sustainable Social System Section, National Institute for Environmental Studies