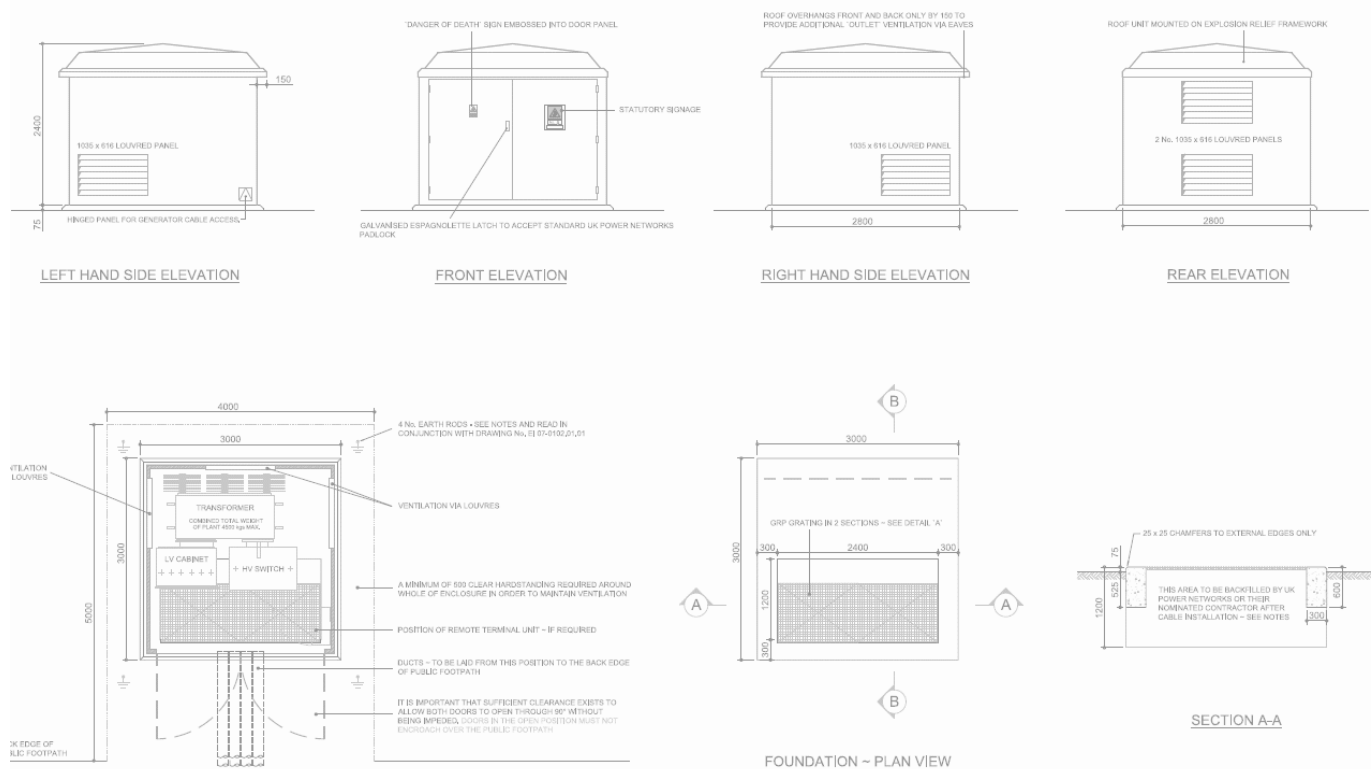
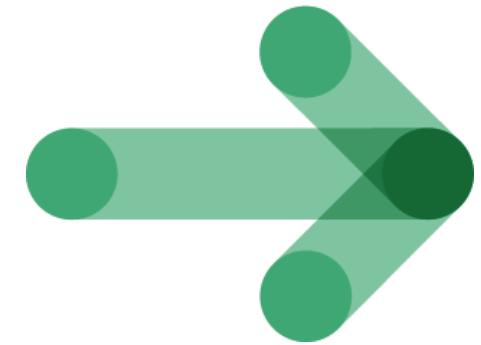


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infrastructure cōrdination



Re-imagining electricity
substations



Phil Smith,
Senior Infrastructure Planning & Policy Officer, GLA

What are electricity substations?

- Substations reduce network electricity voltages for safe distribution for use in homes and businesses.
- Prevalent across all London and the UK, they service nearby development.
- New substations are required to support development and growth.



Electricity substation, standard UKPN brick enclosure



Electricity substation, Shepards Bush Green, London



Electricity substation, Woodpecker Road, Lewisham, London



Electricity substation, Harrow on The Hill, Harrow, London

Substation types

	Free-standing	Integral
Primary		
Secondary	 	

Substations are everywhere!

Sometimes you wouldn't even know they're there...



Public artwork on an integral substation
at Railton Road Market, Herne Hill,
London



Residents have taken things into their own
hands in south London

What are the problems?

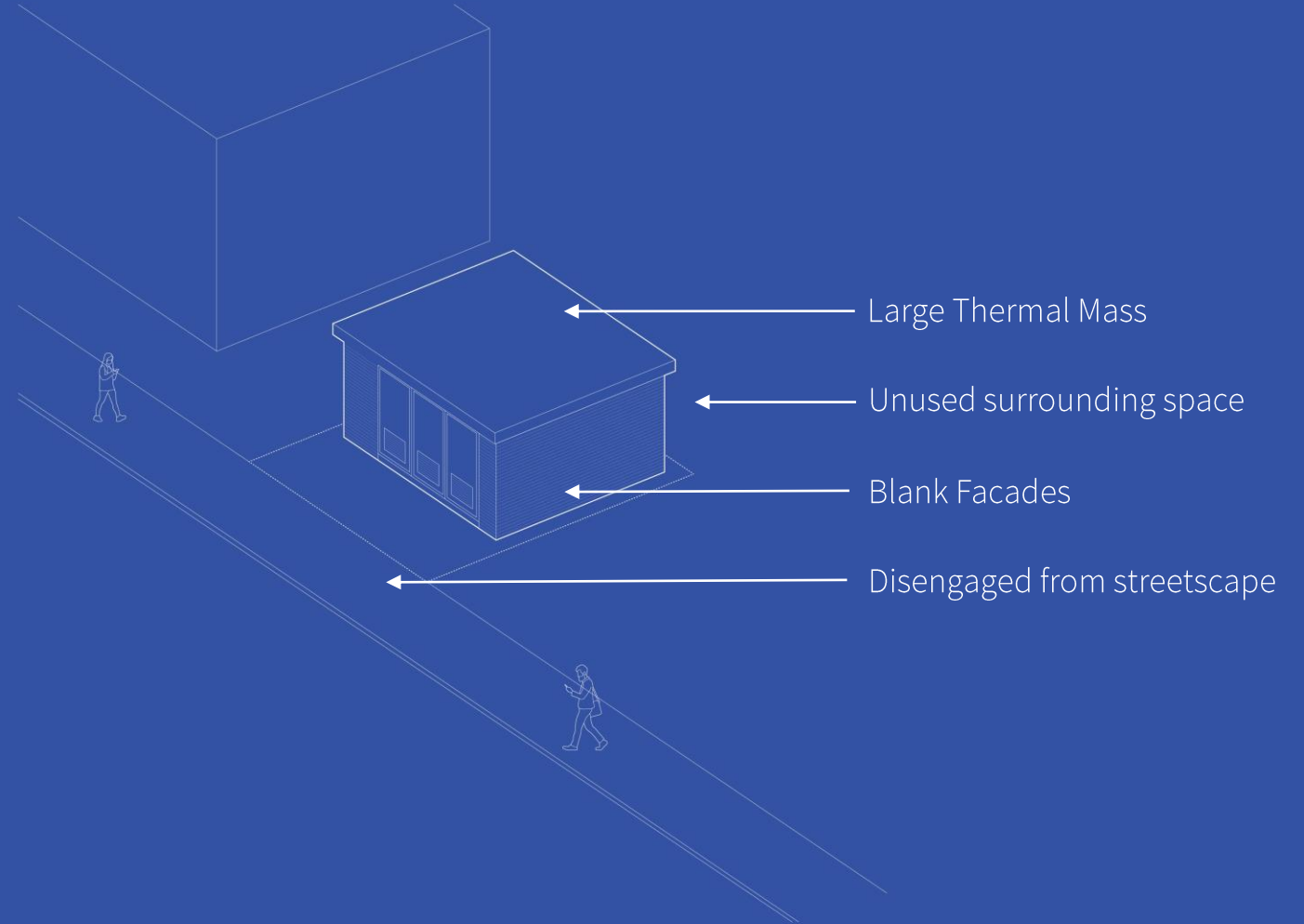
- Built to specification, often resulting in a similar in appearance and layout, with typical building materials and designs replicated (utilitarian, brick enclosures, concrete features).
- Largely uninhabited buildings, with safety warnings and security features, sometimes enclosed by fencing.
- Design is driven by compliance, and rarely anything else!



Two key documents set out UKPNs requirements for secondary substation design

What are the problems? (2)

- Blank facades - which can lead to vandalism.
- The space around them is often underutilised land
- Disengaged streetscape may lead to crime or fear of crime
- Overheating of assets, especially with a changing climate.



What are the problems? (3)

- Monofunctional land use
- Often poorly integrated with the public realm
- Little engagement occurs with community on purpose, form and function.



Electricity substation, Greenbank, London



Electricity substation behind Riefeld Road, Eltham in Greenwich, London



Narrow Street Substation, Tower Hamlets, London



Substation near Poplar DLR, LB Tower Hamlets, London

What are the policy drivers for change?

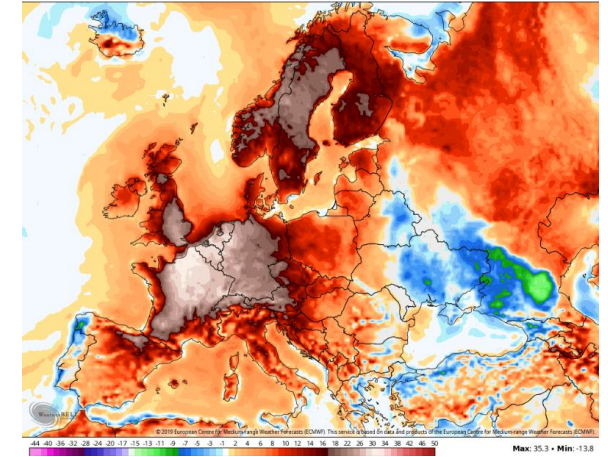
- Good Growth by Design - Mayoral Programme
- Net zero 2030
- Ambitious national infrastructure – Transforming infrastructure performance



Severe Weather changes



Local energy production



Increased hotter temperatures



Increased electricity loading

What are the project goals?

Challenge and
influence existing
practice

by identifying design opportunities
for Substation retrofit and for new
development.

Better leverage
infrastructure
assets

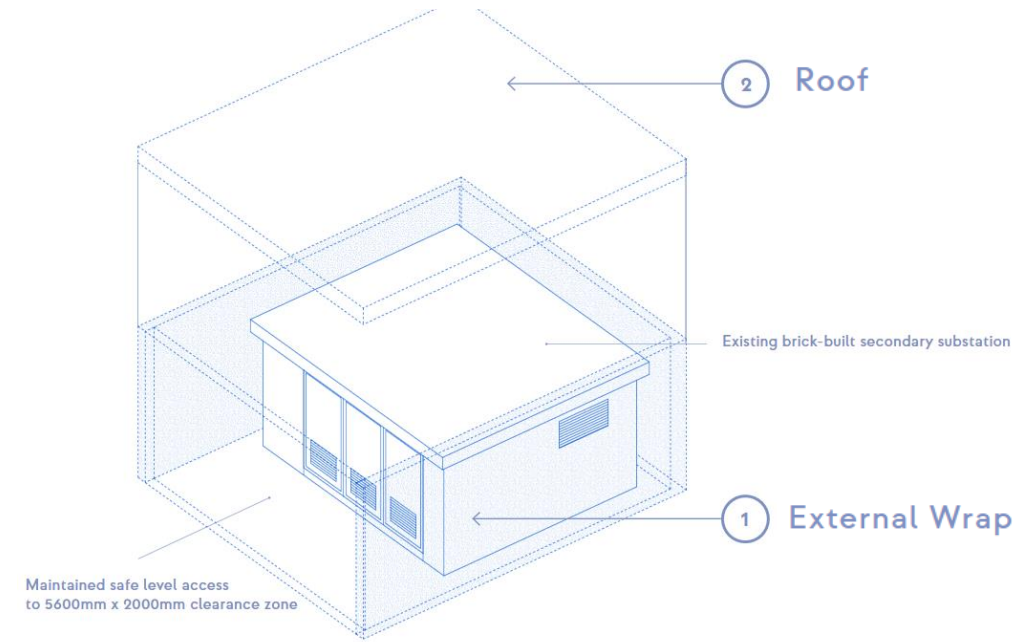
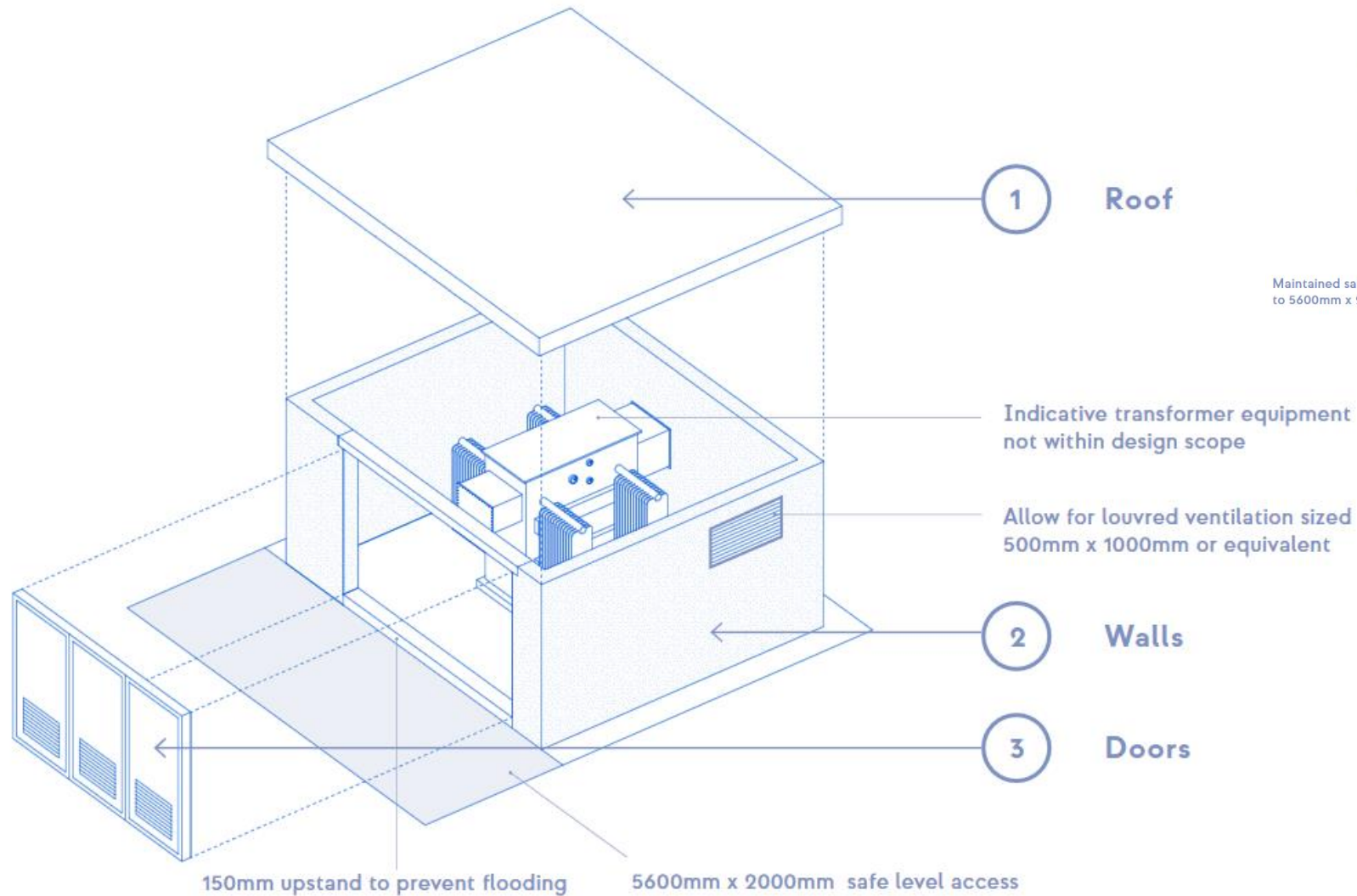
by identifying compatible uses and delivery of
multiple functions; including opportunities to think
about contribution to climate change mitigation &
adaptation and disruption resilience, as well as social
/ community value and Healthy Streets.

Encourage better
integration of
substations into
the public realm

by exploring ways they can more positively
contribute to the urban environment.



What are the possibilities? (1)



Opportunities

- Placemaking
- Diversification of use - into multifunctional civic infrastructure assets
- Play and active landscapes
- Enhance healthy streets: creating visual interest for walkers and cyclists, places to stop and rest, weather shelters
- Economic uses: Kiosks, Cafes, Stalls



City Camouflage, Rotterdam, Netherlands



Larkin Street Substation Expansion, TEF Design, San Francisco



City Camouflage, Roeland Otten, Netherlands



Clay Station, Assemble Studio and Matthew Raw, London

Opportunities

- Climate change mitigation / adaptation
- Planting and biodiversity; urban greening, landscape integration, community gardens
- Social value: art, installations, community engagement spaces
- Education: e.g. informing on the areas power use / needs
- 'Energy hubs' with EV charging points



Community Garden



Park n Play, JAJA Architects, Copenhagen



EV charging points



City Camouflage, Roeland Otten, Netherlands

Core ambitions

- Place making
- Resilience
- Replicability

Placemaking is:

- Context-specific
- Connected
- Community driven
- Inclusive
- Welcoming
- Focused on creating destinations
- Transformative
- Collaborative
- Sociable

Core ambitions

- Place making
- Resilience
- Replicability

Environmental resilience



Changing Weather
Patterns



Biodiversity Loss



Embodied carbon
considerations

Social and economic resilience



Urban Loneliness
& Isolation



Employment
& Inequality



Diversity &
Inclusion



Health &
Wellbeing

Core ambitions

- Place making
- Resilience
- Replicability

Replicability could include:

- Approach
- Materiality
- Flexible / modular system

What are the potential benefits?

Improved public realm	Art
Feels safer	Fun and visual interest
Educational	Cleaner
Place identity, pride and neighborliness	Shelter / places to rest
	Better places!

Substation
Transformation
Project, Bermondsey,
London



... and who will benefit?

Residents and local communities	Infrastructure asset owners
Those visiting and walking/cycling through	Public realm maintenance
Local businesses	Developers
London Boroughs	

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What is the future London substation ?

- The GLA wishes to influence the design quality of new and existing substations.
- We want to run a design competition as a first step, generating ideas for London on the future for electrical substations.



Substation Transformation Project, Bermondsey, London



Integral Substation, Herne Hill, London

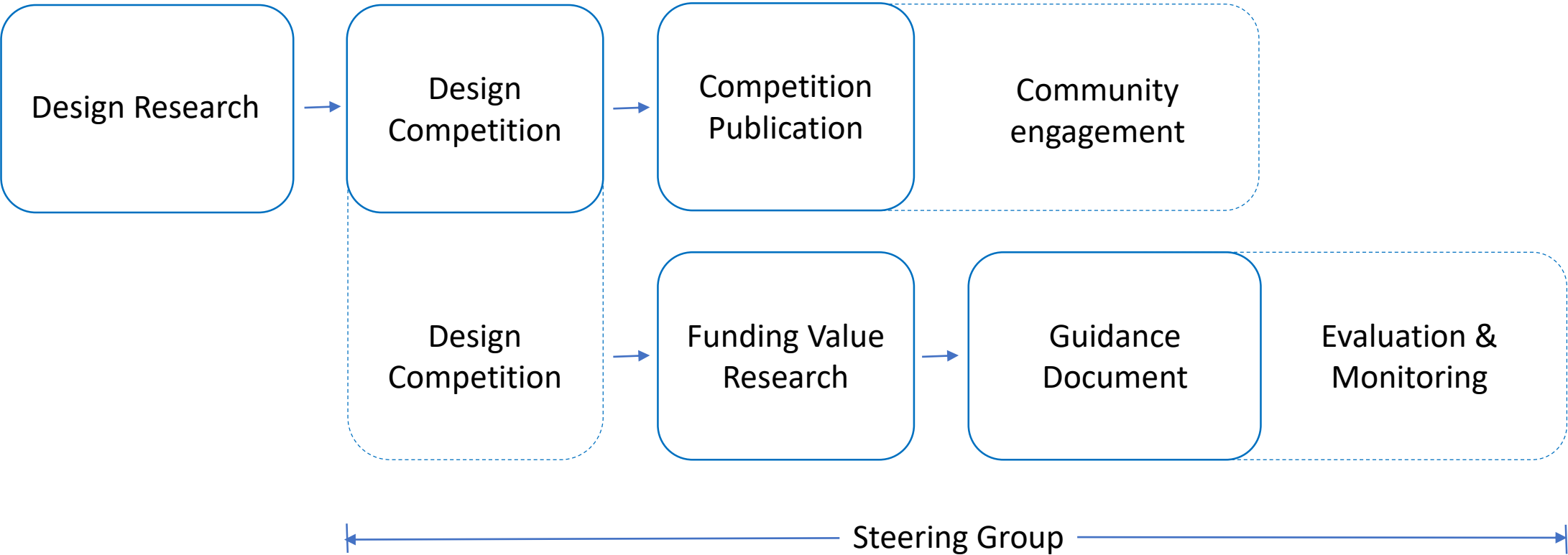


Substation on East Lane, Bermondsey, London



Living Forest, Aif Khan and Mini, London

What's the plan?



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