Promoting sustainable design

Nick Giesler: Head of Environment, Crossrail 2



MAYOR OF LONDON

NetworkRai

Crossrail 2 – new transport solution



A new railway to serve London and the wider Southeast

- 100km route, with twin tunnels over 35km
- 51 stations
- 30 trains per hour
- Carrying up to 270,000 people in peak
- Open in the early 2030s
- Joint TfL/Network Rail project

Crossrail 2 – an economic imperative

- Enables the development of up to 200,000 new homes
- Supports up to 200,000 new jobs in London and the wider South East
- Supports 60,000+ construction sector and supply chain jobs across the UK
- Adds up to £150bn to UK economy
- Transforms travel across the Southeast: faster, accessible and direct journeys across the region







Crossrail 2 – a sustainable railway

TfL and Network Rail are committed to developing Crossrail 2 as a **sustainable railway** that puts the needs of **customers at the heart** of our decisions, maintains or **improves the quality of life and the environment** in London and the South East, and supports the UK's **climate change** objectives

- More than a railway
- Big investment, big impacts, long life span, wide ownership
- What else can we fix?
- How else can we help?
- It's all in the policy

.... avoiding, limiting and mitigating negative impacts on and realising enhancements for local communities and the natural and built environment where possible Cossal 2 is a proposed new raikey that would provide end-de-and journeys connecting existing rail tendorks in Surger and Hetrotophink via a tunnel serving we stations in centul London. It would provide essential new transport capacity within the South East, both directly and by relieving the increasing pressures on existing mainline and underground railways, putting a new and improved rail service in reach of more people.

These transport improvements would enable and accelerate the development of new homes across the region, and support the jobs and businesses that are fundamental to London's competitiveness as a global oity.

Our vision Tit, and Network Rail are committed to developing Crossnal 2 as a sustainable railway that puts the needs of customers at the heart of our decisions, maintains or improves the quality of life and the environment in London and the South East, and supports the UrS climate change objectives.

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By by improving

This policy sets out what we will do be embed our organisation's youtainability priorities, and hose of the industry as a whole (set out in the <u>Rest Sustanable betweenner Principals</u>) in the design procurement and construction of the scheme, both directly and through our influence on the development that Crossral 2 will enable.

What we will do: our seven priorities

Support prowth, skills and employment: We Put customers at the heart of our railway: We will I isten and respond to the needs of our passengers. I construction sectors to introduce We will ensure Crossrail 2 is accessible for all, and construction sectors to introduce ible, for our sever sustainable technology and innovation. We will delivers reliable journeys with good information and hese will be ed publicly. We become an employer of choice committed to provides good connectivity and integration with other pporting the health and wellbeing of our orkforce and investing in their development. modes of the project Enhance the natural and built envi We will promote careers in transport and We will promote careers in transport and Enhance the natural and outil environment. We angineering, create apprenticeships and empty will design stations and infrastructure that preserve a diverse workforce. and complement local heritage and, where possible, susteinehilit a diverse workforce. re projects and of ugh our continued d construction, we rail 2 to leave a legacy, as well as learning and and the industry as as others affected by our infrastructure. We will Provide a carbon smart and climate resilient as others antecked by our inflassingularie. We will relate a standon anisat and utilization for more the quality of lefs for our regibbours and customers through cleaner are, to and from our tastom by supporting purposes. We provide a standon pumpy, reducing ambodied callon and by controlling noise and by supporting pump cleaners and the provide a standon pumpy, reducing ambodied callon and to and from our tastom by foot and bike. ent and the



Sustainable design and environmental mitigation

Two sides of the same coin

Sustainable design

Delivering the good stuff



Environmental design

Preventing the bad stuff

Establishing what's important

- Political, industry, corporate and project drivers
- What costs and benefits?
- What risks and opportunities?



• 19 sustainability themes, wrapped within the policy

Sustainable design! We like it: what is it?



Sustainable design! We like it: what is it?



Promoting the sustainability agenda

- Embed sustainability within the project brief
- Carpe diem: get moving early, lock into design, when decisions are made
- Make it relevant to the project
- Get high level endorsement (statement from the boss)
- Delegate, delegate it's everyone's job
- Integrate within project requirements
- Third party endorsement, good but handle with care

Case study 1: enhanced natural environment net gain in biodiversity

- Supports UK, London and corporate vision
- Core principles reflect what it means for us
- Engaging with multiple stakeholders
- Six step process
 - Define scope & objectives
 - Calculate baseline
 - Inform mitigation
 - Identify offsets
 - Calculate units
 - Set up projects
- Uses the Defra metric
- Need to secure land and/or ongoing management



Case study 2: no such thing as waste material re-use





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Case study 2: no such thing as waste material re-use



Case study 2: no such thing as waste material re-use

- Alternative to transport out by barge
- Reduces lorries in London
- Barge to railhead, then onward by rail or road
- Ideal to find coastal sites for biodiversity or coastal protection



Case study 3: carbon smart scheme Carbon and value engineering



- Running Tunnels
- Tooting Broadway Station
- Euston St Pancras Station
- Wood Green Station
- Oakleigh Road Depot
- Waterside Way, T1 Shaft
- Victoria Coach Station, 10 Shaft
- Stamford Hill 23b Junction
- Stamford Hill, 23b Crossover

- Above ground Track
- Clapham Junction Station
- Angel Station
- New Southgate Station
- New Southgate portal
- Springfield Hospital, T4a Shaft
- Shoreditch Park, 20 Shaft
- Wimbledon Crossover
- Network level

- Tunnel Infastructure
- Victoria Station
- Dalston Station
- Wimbledon Station
- Tottenham Hale portal
- Heathfield Road, T4b Shaft
- Stamford Hill, 23b Shaft
 - Battersea Park Crossover

- Cross-passages
- Tottenham Court Road Station
- Seven Sisters Station
- Weir Road Depot
- Gap Road portal
- Battersea Park, 7 Shaft
- Shoreditch Park, 20 Junction
- Angel Crossover

Case study 4: rewarding urban realm urban integration

- Outline local masterplanning potential
- Integrating with the wider urban realm





Case study 4: rewarding urban realm urban integration

Urban realm integration studies explore stations in relation to urban context, and how to integrate with surroundings:

- understand sensitivities
- examine movement and interchange.
- accommodate council aspirations and vision

Confirm constraints/ opportunities; develop vision:

- entrances, interchanges, routes, public realm and OSD
- inform designs and assumptions; optimise urban integration
- define essential public realm works



Thank you Nick Giesler: Head of Environment, Crossrail 2



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