
SSE Enterprise Telecoms
Introduction and Overview to Fibre in Sewers (FiS)
Connecting London
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Agenda

- Introduction
- SSE Group and SSE Enterprise Telecoms Overview
- Fibre in Sewers (FiS)- What does it look like?
  Why we do it?
  Innovation!
- SSE London Network Expansion projects
- Working Collaboratively, Driving Improvements

‘Enabling City Councils, Enterprise Clients & MNO’s to future proof for the digital challenges of tomorrow’

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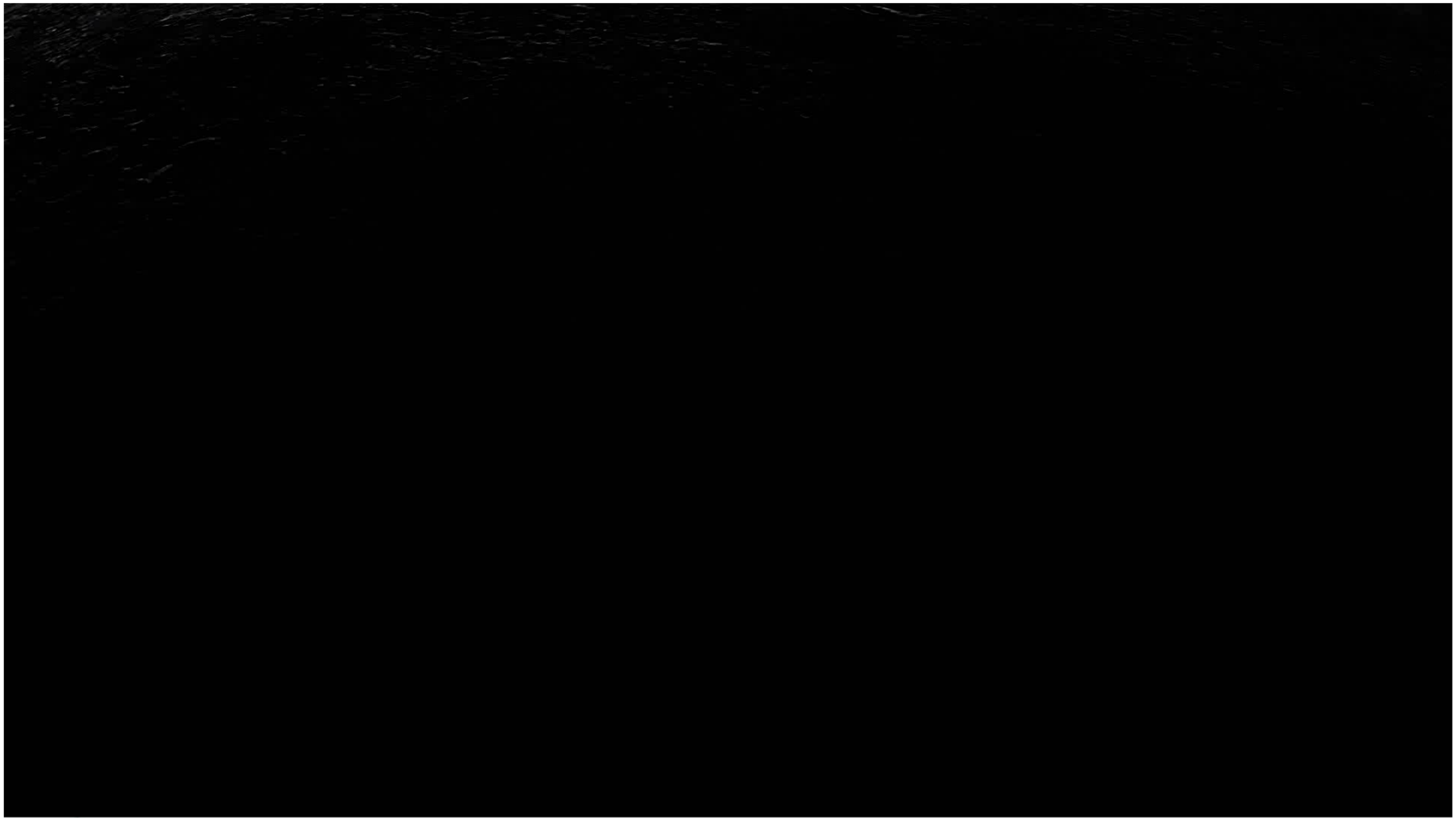

About SSE Group

- £15.2bn market capitalisation
- FTSE top 40
- Employing over 20,000 people
- A+ credit rating
- Largest UK generator of renewable energy
- Second largest generator of electricity
- Over 10 million customers

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What SSE Enterprise Telecoms means to SSE Group






- Manage 2m calls a month
- Protect and control 30% of GB grid
- Control storage of 2 days gas for UK
- Control water levels in our 91 dams
- Manage communications for the UK's largest renewables fleet
- Connect our 22,000 employees across GB
- Part of the team that "keeps the lights on"

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Telecoms have developed a significant network asset

2014

2019

- 13,700km of fibre
- 80 Commercial Datacentres
- 165 conventional Points of Presence
- 15 regional co-location facilities
- 3 Network Operation Centres (24/7)
- A further 177 BT Exchanges being rolled-out over the next 2 years
- Co-location in 300 exchanges
- Customer Satisfaction, NPS avg. +60
- Supporting 5G trials with Three and O2

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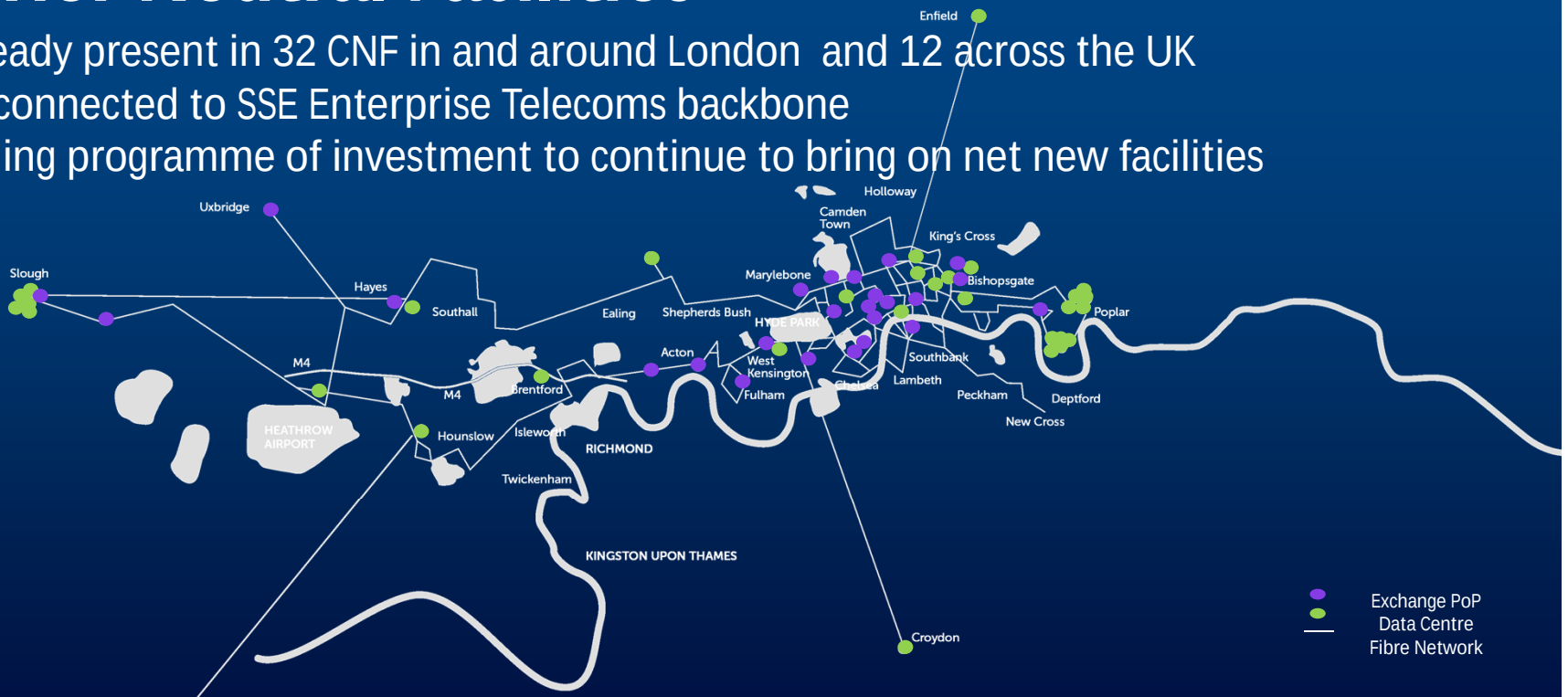
Carrier Neutral Facilities

- Already present in 32 CNF in and around London and 12 across the UK
- All connected to SSE Enterprise Telecoms backbone
- Rolling programme of investment to continue to bring on net new facilities



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Our accreditations

CAS(T)

The UK government standard for telecommunication businesses that have an exemplary level of security.

Cyber Essentials Plus

Issued by the UK government as a rubber stamp for our investment in cyber security.

RoSPA Gold Medal Award

Our 11th Gold Medal demonstrating we take a firm view on ensuring safety in the workplace.

London Stock Exchange ACP

Offering unprecedented connectivity services to LSE and its stakeholders – from banks to traders.

ISO9001

Quality management systems award ensuring that our products & services consistently meet customer requirements.

ISO27001

Offering reassurance of a demanding, externally validated information security management standard.

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Unique & Innovative

Demand Commercialisation

SSE Telecoms optimise designs based on Livequote & sectors:

-MNO
-Enterprise
-Smart City
-FTTP / FTTC

Deployment & Technology

7 way subduct

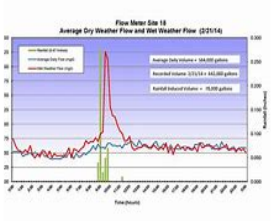
Small Bore

Branching

Minimal disruption

Abandoned assets

WASC FiS Propositions



Smart monitoring

Rental

Fibre allocation

Managed service (cost reduction)

Profit Share (Partnership model)

Capital Investment

Top 40 FTSE

Invests £1.5bn in capital projects p.a.

Infracapital 50% acquisition @ £380m

Liability Cover & Insurance

WASC property liability requires £10m plus cover

Group Property insurance covers risk

Safety Culture

11 consecutive Gold awards

Inherent safety culture

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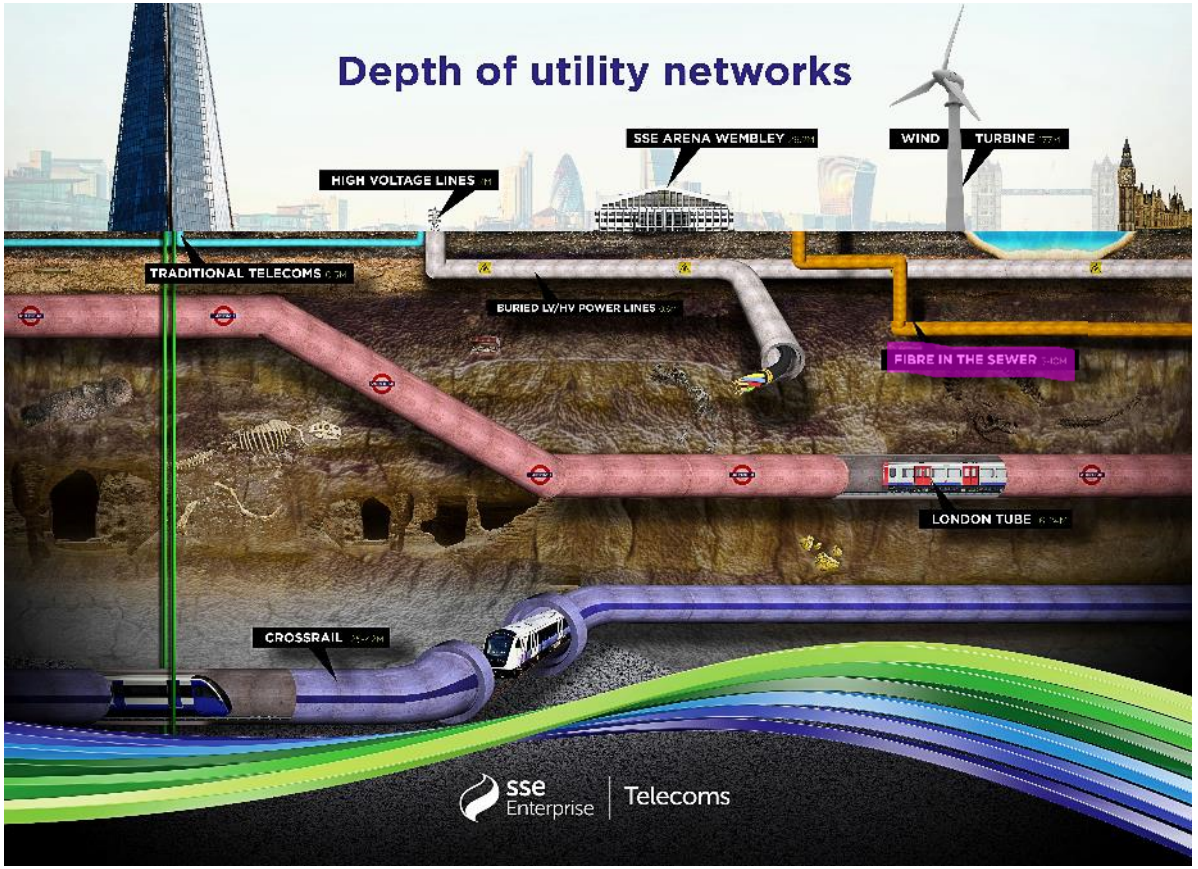
FiS - What does that look like?

The waste water depths start at 2 metre below the surface, in some cases not much less than the tube lines.



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Traditional network build has many known constraints & difficulties

£ High civils/construction costs

Environmental impact

Long time to dig and build

Alternative - leasing from existing networks

Traffic management issues

How SSE are getting around this?

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Fibre-in-Sewers (FiS)

- Water and Sewerage Companies (WASCs) have an extensive metro sewer networks meaning telecoms can take advantage to:
  - Reduce capital costs
  - Increase speed of deployment
- SSE Telecoms has a unique accredited partner agreement with Thames Water and is in discussion with a number of other UK WASCs
- Developing Multi-duct Access product to more cost effectively utilise small diameter sewer lines, side-stepping expensive traditional dig options
- SSEET is the only organisation in the FiS field that actively works in partnership with UK WASCs and has pioneered the necessary technical, commercial and governance framework

Realising the total benefit

Unique routing

Using the waste water systems means creating more direct and diverse routes, not usually available for telecoms, which means more choice and lower latency services.

Greener

Not only will disruption to your street be minimal, using the waste water systems is more environmentally friendly.

Safe as houses

Because it's far deeper underground than other telecoms networks, we can offer a more secure and reliable network.

Quick and easy

The tunnels already exist, so installing our fibre optic cables is simple and fast. We won't be constrained by Section 58 and Traffic Management restrictions, so we can get you connected much faster.

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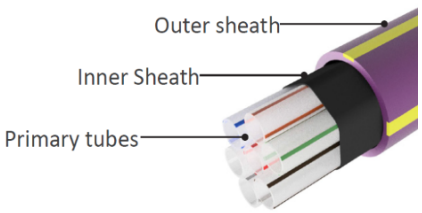
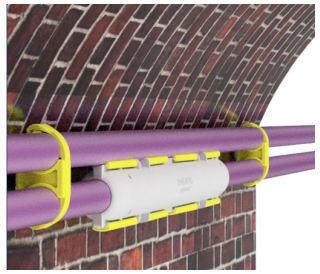
What does an FiS installation look like?

Man-Entry Deployment- diameter- typically more than 1.2metres





Current Small Diameter Deployment

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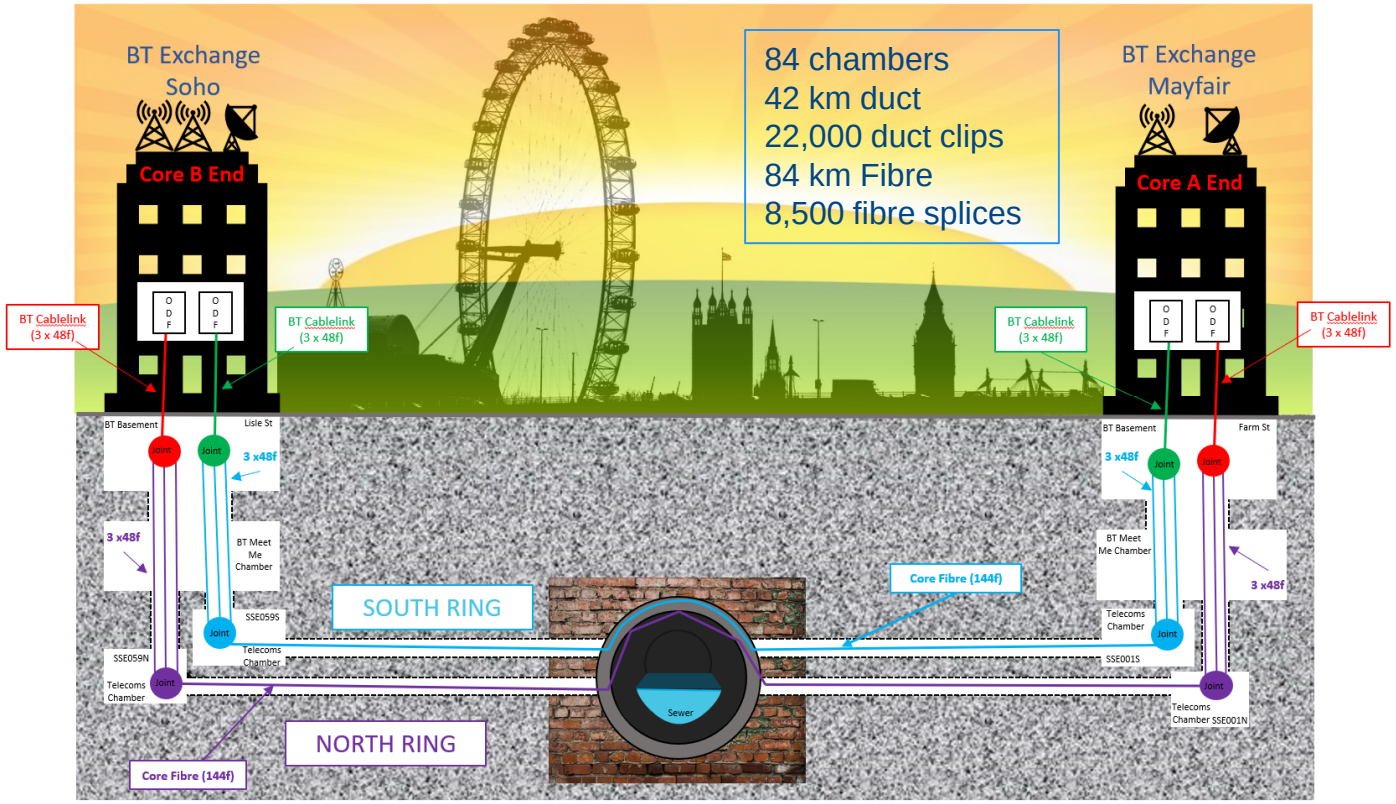
Mayfair – Core Network Build



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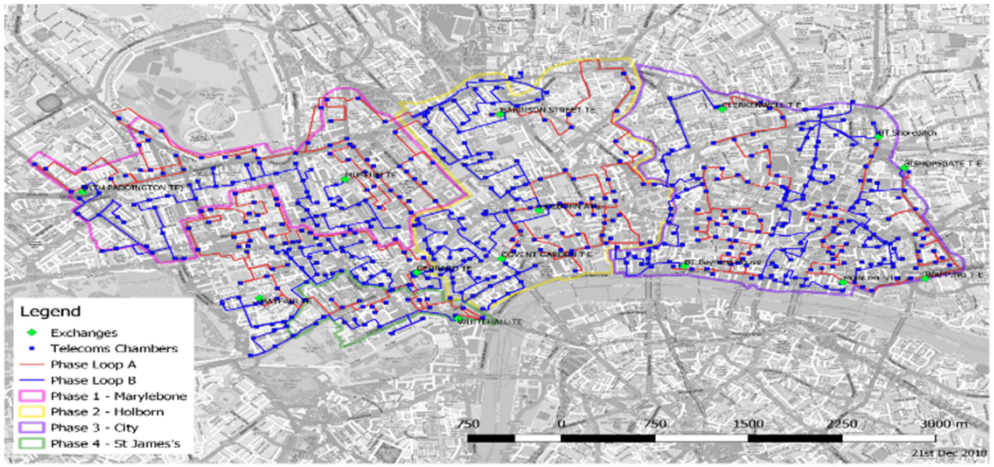
Mayfair-Working Collaboratively, Driving Improvements

- 18km fibre network expansion, where less than 1km is traditional dig, Consolidated build disruption for multiple network operators in a single build
- Reduced disruption to the public
- Supports the increase demand for fixed and transient population for current 3G/4G coverage and capacity with access to SSE's new 100Gb national network
- Prepares Westminster with backhaul capacity for 5G deployment and early adoption
- Enabling Westminster to future proof for the digital challenges of tomorrow'

What's next?



-Currently rolling out designs and first phase build for a further 130km New Core within London.

-Development of a small pipe multi-tube duct installation product and installation methodology.

-Extend to Metropolitan areas outside of London – Core ring networks in Manchester, Liverpool, Coventry, Scotland ….

-Finalise our asset monitoring products

-Consider the use of abandoned assets when designing core network and point to point new builds.

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FiS WASC engagement strategy

	Cities	Status
Thames Water	London, Oxford, Swindon, Reading	FiS Partner – Licence agreement
Scottish Water	Glasgow, Edinburgh, Aberdeen, Perth	FiS Partner – New Licence format to be finalised
United Utilities	Liverpool, Manchester, Warrington, Blackburn, Preston	Commenced Contract Negotiations
Severn Trent Water	Birmingham, Telford, Stoke , Derby, Nottingham, Leicester, Coventry	Commenced Contract Negotiations

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WASC engagement

	Cities	Status
YorkshireWater	Leeds Bradford, Sheffield, York	Early Engagement
Dŵr Cymru Welsh Water	Swansea, Cardiff Newport, Wrexham, Chester	Early Engagement
Southern Water	Southampton, Brighton Dover, Chattam	Early Engagement
Wessex Water a YTL company	Bristol, Bath, Bournemouth	Early Engagement
NORTHUMBRIAN WATER	Newcastle, Middlesbrough, Sunderland,	Early Engagement
love every drop anglianwater	Northampton, Peterborough, Cambridge,	Early Engagement
SOUTH WEST WATER	Exeter, Plymouth	Early Engagement

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Thank you
& Questions

Richard Robson

Fibre Solutions Team
M: +44(0)7810 858013
E: richard.p.robson@sse.com
1 Forbury Place, 43 Forbury Road, Reading, Berkshire RG1 3JH
ssetelecoms.co.uk

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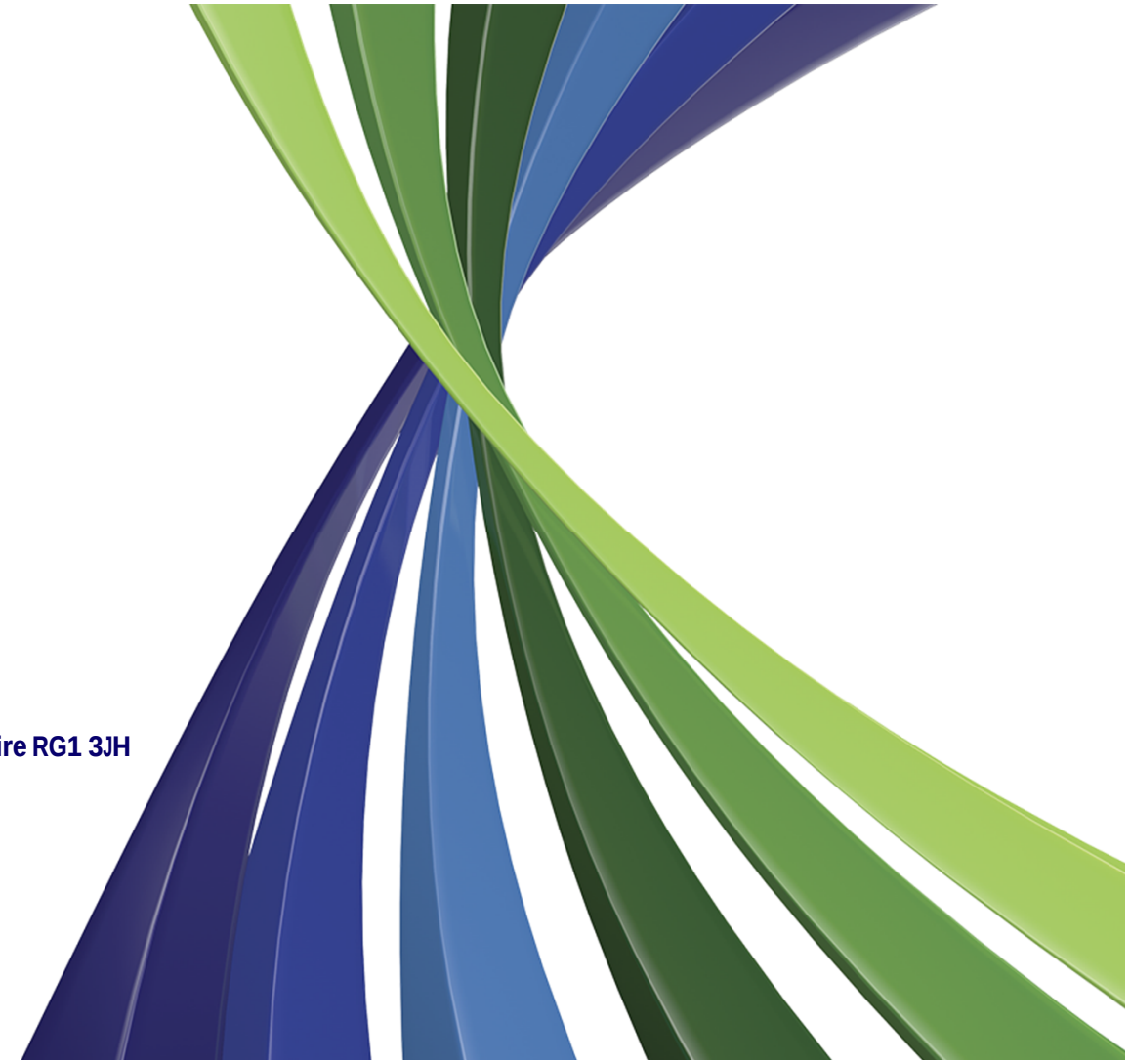


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A RELIANCE COMPANY
NEXTCONNEX
Wholesale Data Centre & Internet Infrastructure
surftelecoms
MASERGY
Virtual1
YOUR CLOUD YOUR WAY
HighNet
M247
CORETX
MANAGE • CONNECT • PROTECT
CableCom
Networking
entanet
CONNECTING CONFIDENCE
vaioni
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