Elstree to St John’s Wood
400 kV Cable Tunnel

Professor Steve Swingler
System Overlay Philosophy

- 275 kV system is over 40 years old
- New build to be at 400 kV
- Minimise public impact
- Minimise disruption to existing system during construction
St John’s Wood: Aerial Shot
Construction Issues: Substations

- Space
- Site access
- Traffic management
- Site clearance
- Construction works
- Impact on local community
- Architecture
Why Dig a Tunnel?

- Reduced public disruption during construction
- Reduced programme risk
- Secure environment for cable
- Future provision for second circuit
The Tunnel Route
Technical Details

- 400kV XLPE cable circuit
- 2500 mm$^2$ Copper conductor
- Forced air cooling
- DTS monitoring and control
- PD Couplers installed in accessories
- Single circuit
The Tunnel
Construction Issues: Tunnel Shaft Sites

- Site availability
- Site access
- Traffic management
- Spoil removal
- Impact on local community
- Headworks
Kilburn Grange Park: Aerial Shot
Kilburn Grange Park: Headhouse and New Entrance
Tunnel Layout
Consultations and Communications Strategy

- Introductory open meetings
- Ongoing discussion forums
- Freephone service
- Programme updates
- Adverts
- Local community support
Project Identity

The London Connection
London Infrastructure Project: Summary

- System installed and operating
- Commissioning test from Elstree
- PD measurements during test
- Major consultation exercise