Application of Quick Change Over Principles

Dispersal Tunnel Move

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Where does it fit? Is It Critical?
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Where does it fit? Is It Critical?

- Demo prep works starts at 2/3rds Weather tight
- Atrium Construction
- Dispersal Tunnel move
- VA2 Escalator and Stairs Programme
- Escalator enclosure interfaces
- Upper Retail Demolition
- Concourse MRN's & Enabling works
- Lower Retail Demolition
- Atrium Finishes install begins?
Tunnel Look
Potential Options

- Build a new tunnel
  - Expensive £1.5m, Safe, Impacts other Construction activities

- Move it in sections
  - Slow, disruptive, repetitive risk, costly.

- Move swiftly
  - Cost effective, less disruptive but riskier.
  - CLIENT MOST SATISFIED
Change four wheels and fill up?

How long? How many people?

Benefits = winning

How fast
Move Scope

- 2 new tunnel sections already built in advance
- Sequence of tunnel units removal is important - fit
- 42 units to be moved
- Escalator enclosures already in place
- 3m sections
- Must be ready for station opening
Internal & External

**Internal**
Any work element that needs to be carried out whilst the process is stopped.

E.g. Move tunnel units, recommission

**External**
Any work element that can be safely carried out while the process is running, in advance or post installation.

E.g. wiring, bracketry,
Steps to identify Improvement

Step 1: Capture the current situation
Step 2: Separate External from Internal
Step 3: Convert Internal to External
Step 4: Eliminate Waste / Optimise the process (Internals 1st)

Process currently

Capture the current situation

Separate External from Internal

Convert Internal to External

Eliminate Waste / Optimise the process (Internals 1st)
Process analysis – what it include

Actual Process

Downtime time

- De-construct
- Move
- Re-construct
- Commission
Finishing Works Process Analysis

Preparation works  | Actual tunnel closed - Process of move  | Tunnel live – finishing works

Tunnel Closed to public

Mech and Electrical works breakdown

External Prep
- CIS onto columns (temp cables)
- PA test in advance
- Junction box works install and link
- Airwave moved

Internal works
- CCTV Connection
- PAVA (connect) connection
- Connect additional CCTV, PA – North and South

Commission
External - Preparatory Works

- Cabling replaced
- Plug and play connections
- Back up distribution boards installed
- Unit movement jacks & wheels
- Trial runs and tests
Modelling to Support Process Improvement

Complex processes visualisation and simulation
Supporting Critical paths

- Ensure alignment of objectives to maintain momentum.
The outcome
• Tunnel moved creating buffer period
• Tunnel commissioned and open on schedule.
• Huge team based effort and mayor win for the Project.
• Station delighted.
• Public inconvenience minimised.
Why did it work?

- Leadership.
- Process with data not opinion.
- Time to develop solutions.
- Critical path and benefits so great.
- Visualisation, trials, tests.