

Process Improvement Examples

Mr. Mark Worrall & Brian Swain



Objective – illustrate 2 Process Improvement examples





New Street: New Start
 The Birmingham Gateway Project
newstreetnewstart.co.uk

Application of Quick Change Over Principles

Mace

Dispersal Tunnel Move

Brian Swain & Mark Worrall

Where does it fit? Is It Critical?



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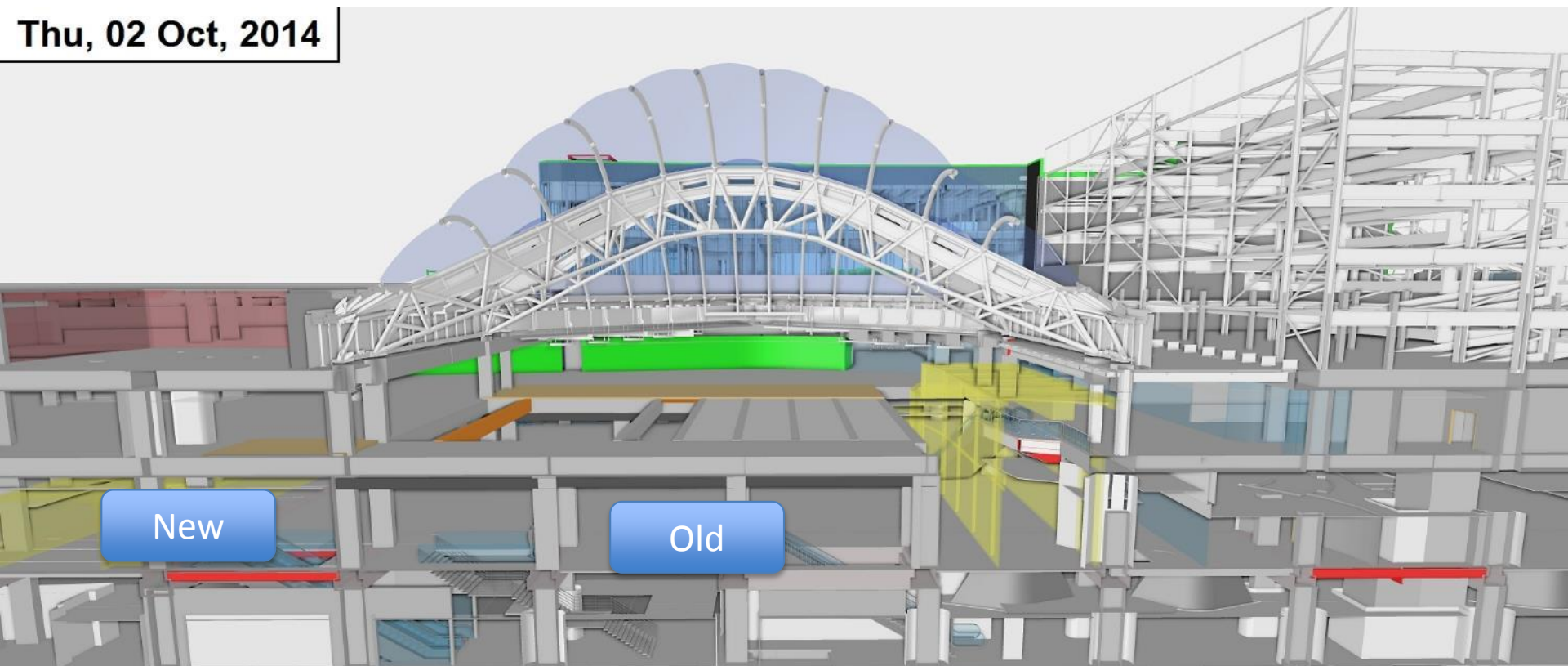


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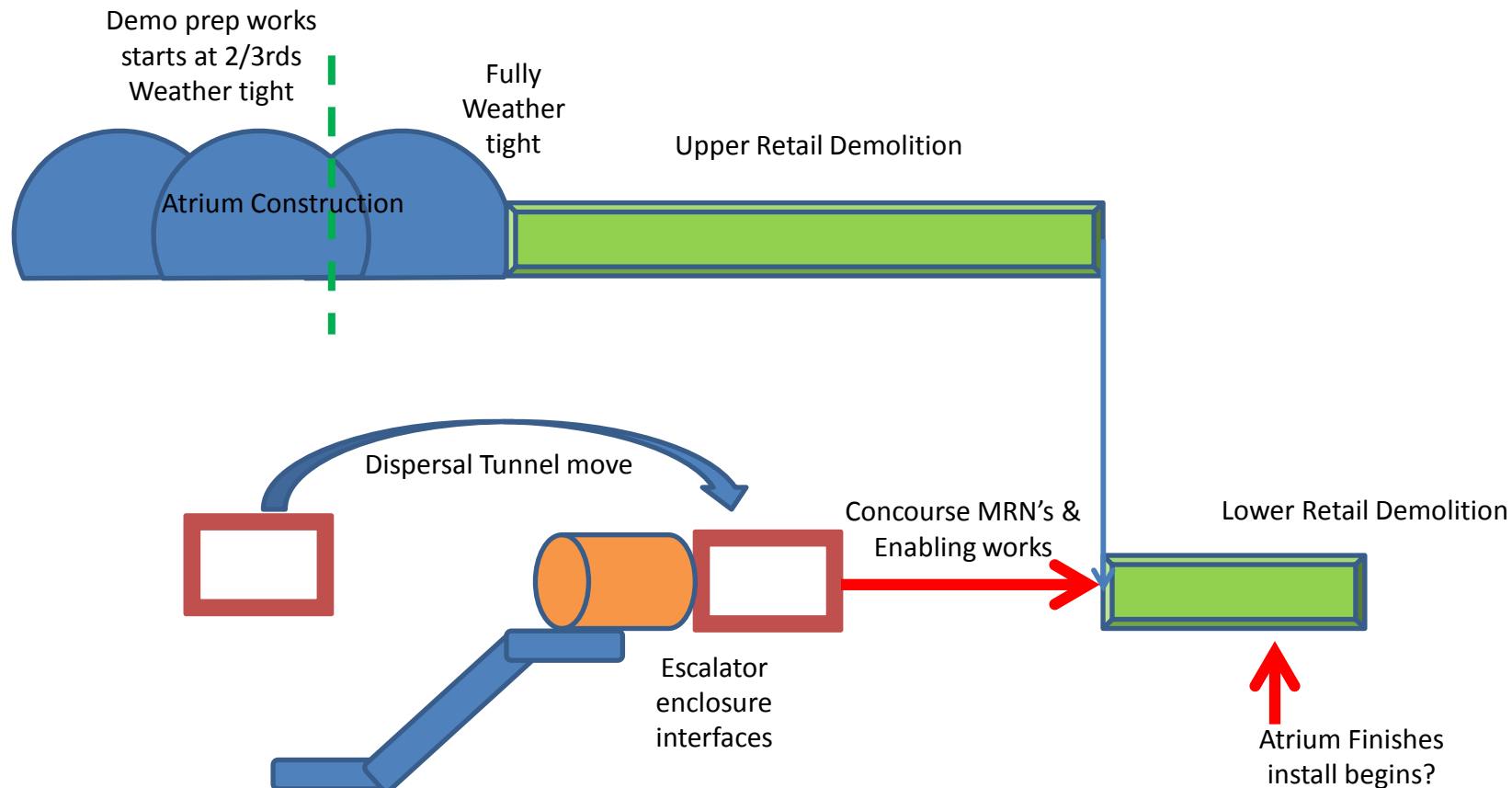


Where does it fit? Is It Critical?

Thu, 02 Oct, 2014

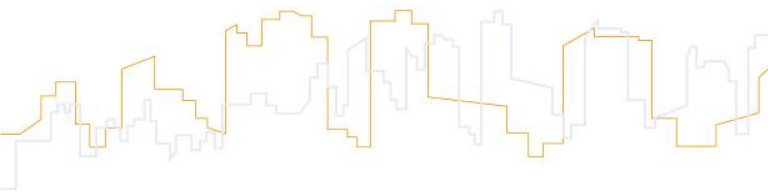


Where does it fit? Is It Critical?



VA2 Escalator and Stairs Programme

Tunnel Look



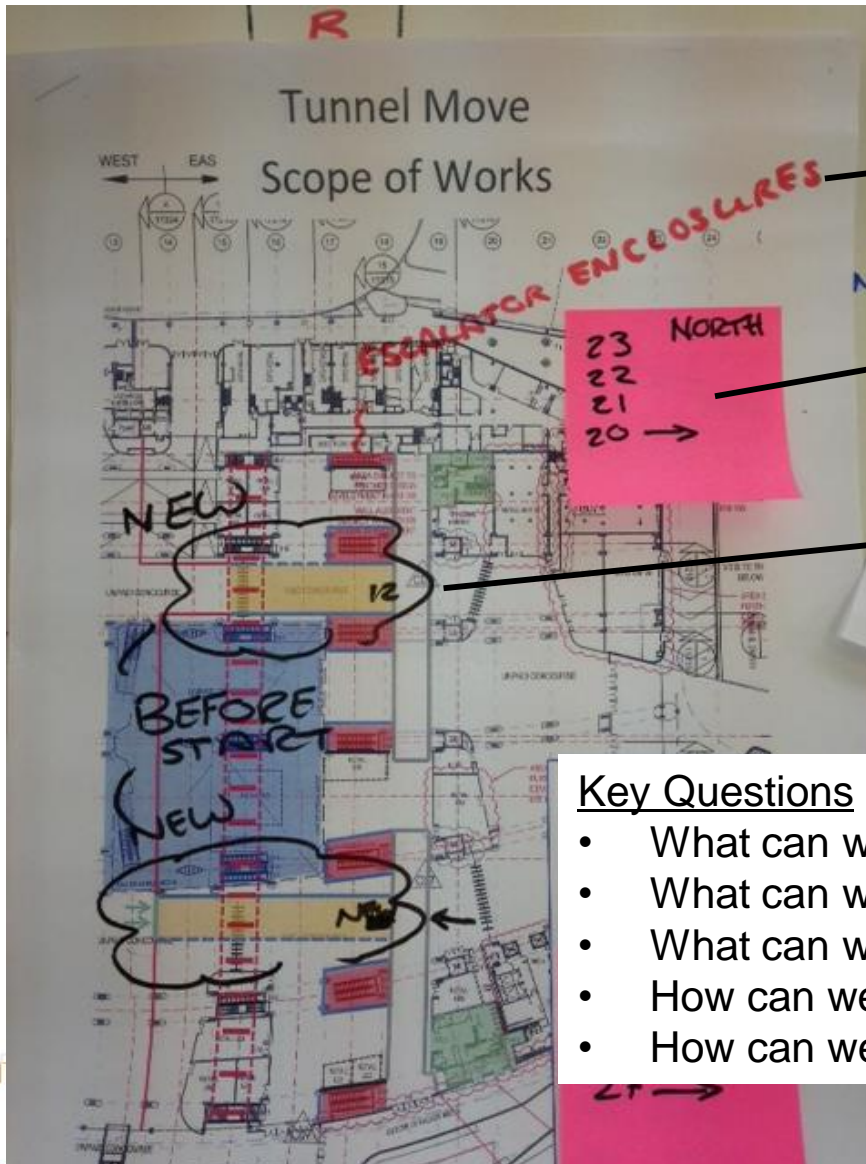
Potential Options

- 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, riskier, less disruptive
 - CLIENT MOST SATISFIED



Tunnel Scope

42 units to be moved, 6 less if
break in tunnel = 36 units



Escalator enclosures
already in place

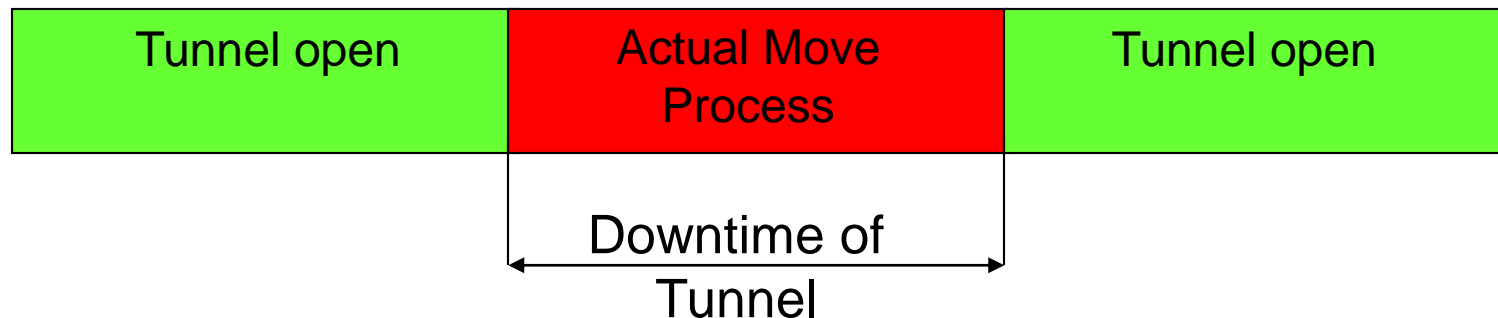
Sequence of tunnel units
removal

2 new tunnel sections
already built in advance

Key Questions

- What can we do in advance
- What can we simplify
- What can we optimise
- How can we de-risk the process
- How can we streamline the re-commissioning process

Internal & External



Internal

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

E.g. Move tunnel units, re-commission

External

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

E.g. wiring, bracketry,

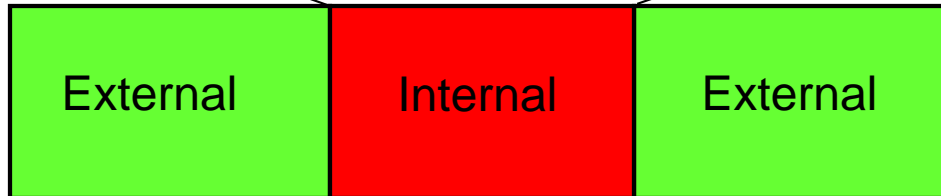
Steps to identify Improvement

Step 1



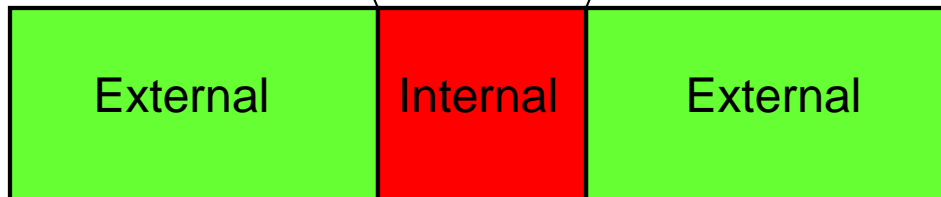
Capture the current situation

Step 2



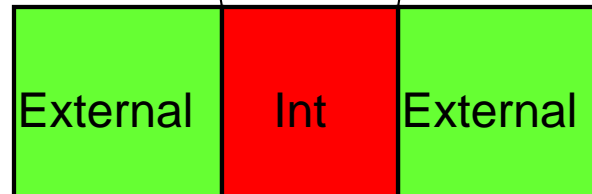
Separate External from Internal

Step 3



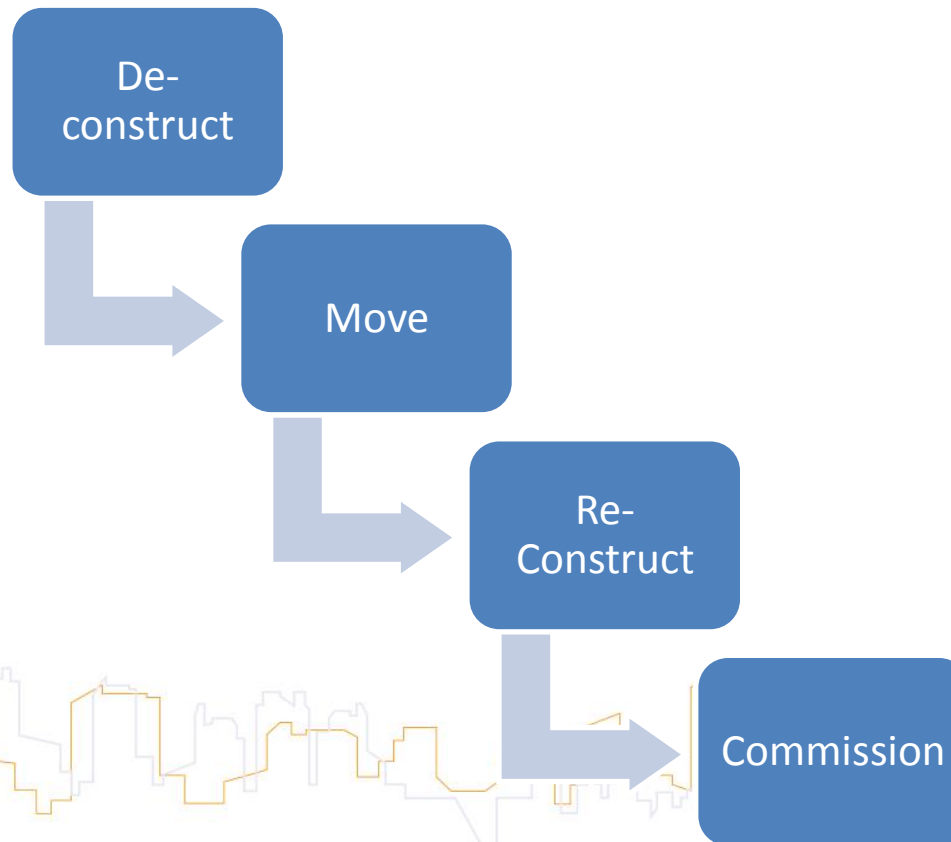
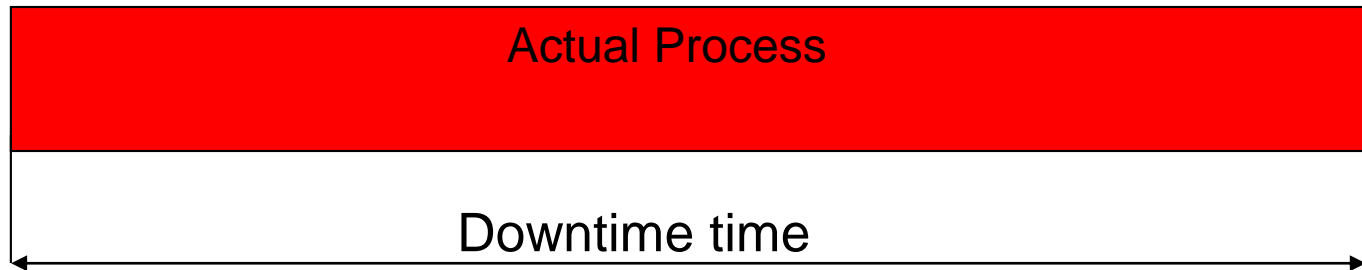
Convert Internal to External

Step 4



Eliminate Waste /
Optimise the process
(Internals 1st)

Process analysis – whats it include



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

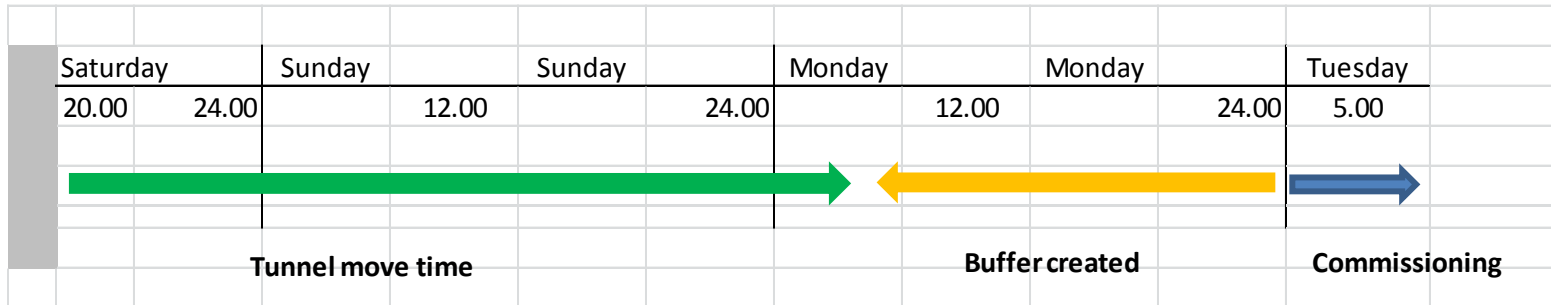


Supporting Critical paths



- Note enclosures and Vertical Access required

Summary



- 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.

Rapid Improvement of Repetitive Process

Mace

Asbestos Analysis Process

Brian Swain & Mark Worrall

Asbestos Survey Process - Rapid Improvement Event

1. Objectives

- Improvement activity to increase productivity, current programme 4 weeks late.
- Illustrate the detail of process analysis to identify the optimum process, establish real targets and improve productivity.

2. Background

- Asbestos surveying is a critical activity required when an area is identified as having asbestos or suspicious of its content.

Therefore the process

- Slows construction down**
- Adds delays into planning**

Key issues

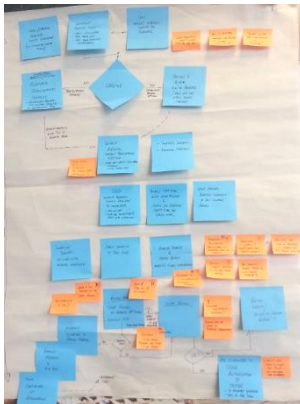
- Lack of visibility of the process**
- Process duration too long and needed improving, approx 12 days**
- Backlog of surveys.**

Data used - Asbestos surveys conducted within critical path areas (as directed by Tom Brookes on 23rd Jan '13) - Platforms 6/7 and 8/9, Concourse - areas over spine GLs 18/19, Upper Retail - Grand central management suite, North West Corner - Lower retail

Identified surveys requested and conducted during period 1/11/13 to 24/11/13

3. Current State Process Mapping

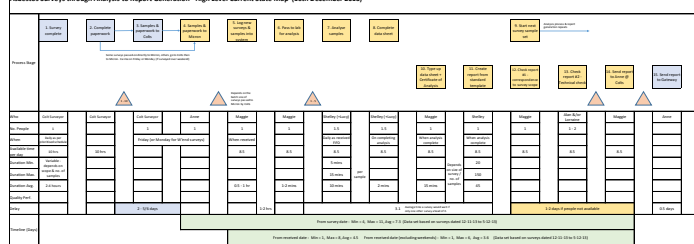
Process mapped at Gateway and at Supplier in Scunthorpe. Essential to "see" the actual process used and walk it through with the users to identify opportunities.



Actions -

- Asbestos survey schedule prioritised to the criticality needs.
- Establishing a weekly day-by-day 'last plan' of planned surveys.
- A daily review of progress against the 'last plan'
- Reviewing and challenging long duration activities (e.g. turnaround time for scope and technical sign-off of Reports)
- Mapping the current process for survey sample analysis and report generation

Asbestos Surveys through Analysis to Report Generation - High Level Current State Map (16th December 2013)



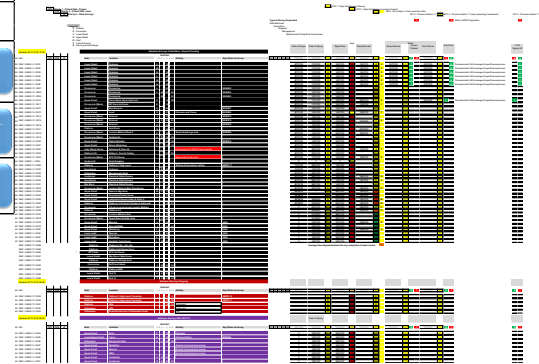
4. Process Management

Weekly activity schedule defined to improve asbestos management

Asbestos Management Process (Draft 22nd Oct '13)

| DAY | WHAT | WHO | WHEN | INPUTS | OUTPUTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|--------------------------|---|---|---------|-------|------|--------|-------|---|-------|----------------------------|---|----------------------|---|-------|----------------------------|---|--|--------------|----------------------------|---|--|--|------------|-----------------------------|---|--|--|--------------|-----------------------------|---|--|--|-------|----------------------------|---|--|--|--------------|-----------------------------|----------|--|--|-------|----------------------------|----------|--|
| MONDAY | Review of previous week's asbestos management plan and survey & asbestos works | Glenn Buckle Rep. from 12/12/13 Rep. from 12/12/13 | Monday (am) | Asbestos Log Plan for previous week and any progress for planned work | Up dated asbestos register dashboard | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Review of 5 week look ahead against programme of work & emerging areas of priority | Glenn Buckle Tom Brookes Rep. from 12/12/13 Rep. from 12/12/13 | Monday (pm) | | Updated new plan project critical path, highlighted and added priority of asbestos work for project | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TUESDAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WEDNESDAY | Asbestos Schedule Coordination meeting | Glenn Buckle David Smith Rep. from 12/12/13 Rep. from 12/12/13 | Wednesday 11.00 to 12.00 | Asbestos Schedule Coordination meeting | Agreed priorities for asbestos management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| THURSDAY | Asbestos Schedule Weekly Review | Glenn Buckle David Smith Rep. from 12/12/13 Rep. from 12/12/13 | Thursday (am) | Asbestos Schedule Weekly Review | Agreed priorities for asbestos management | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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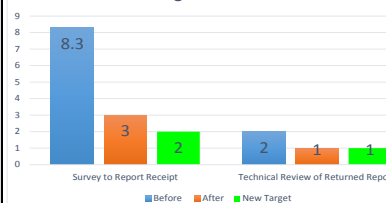
Visual of the asbestos planner & tracker spreadsheet



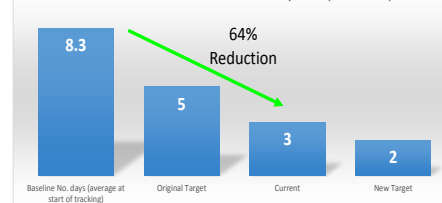
5. Benefits

| Activities completed | Benefits |
|---|--|
| Improved process for planning, organisation & control | Improved traceability, status visibility & prioritisation of survey activity in-line with project criticality. |
| Created asbestos survey tracker process | Sound data providing solid basis for planning, tracking & reporting. |
| Established weekly 'last plan' + daily review & control | Day-to-day planning & control of asbestos survey. |
| Visual management process | Improved visibility plus collective planning & control. |

Reducing Turnaround Time



Turn-around Time for Asbestos Survey to Report Receipt



6. Summary

Number of days saved in relation to previous average duration for Survey to Report Receipt = 18.2 days

Total number of project programme critical path days saved = 22 days (considering 4 critical path areas)

Additional benefits of reducing the time through the Survey process

Probable cost reduction as possible 'acceleration' costs negated

Non-critical activities can also be progressed

Benefits

- £800,00 on Critical activities
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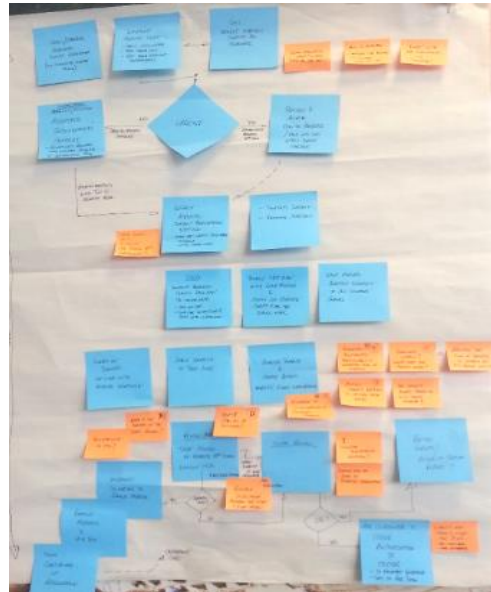
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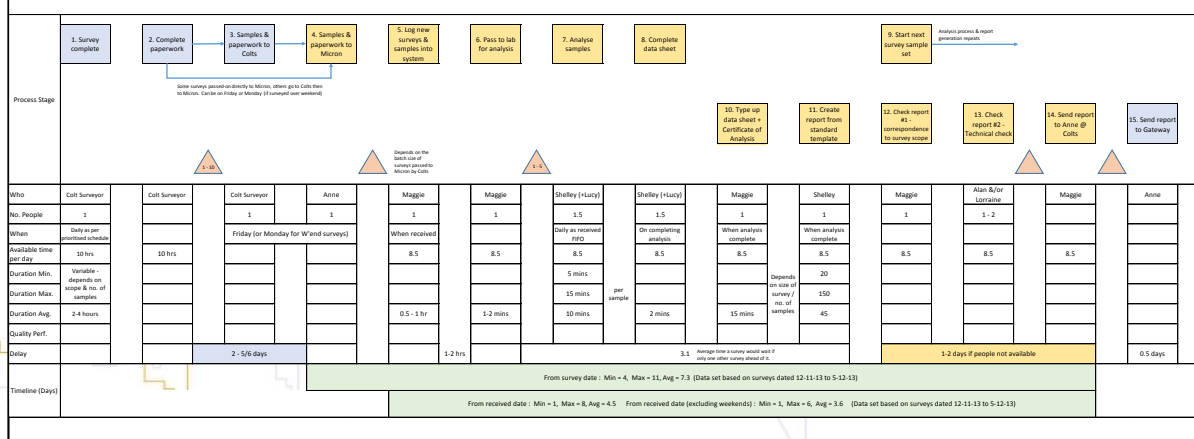
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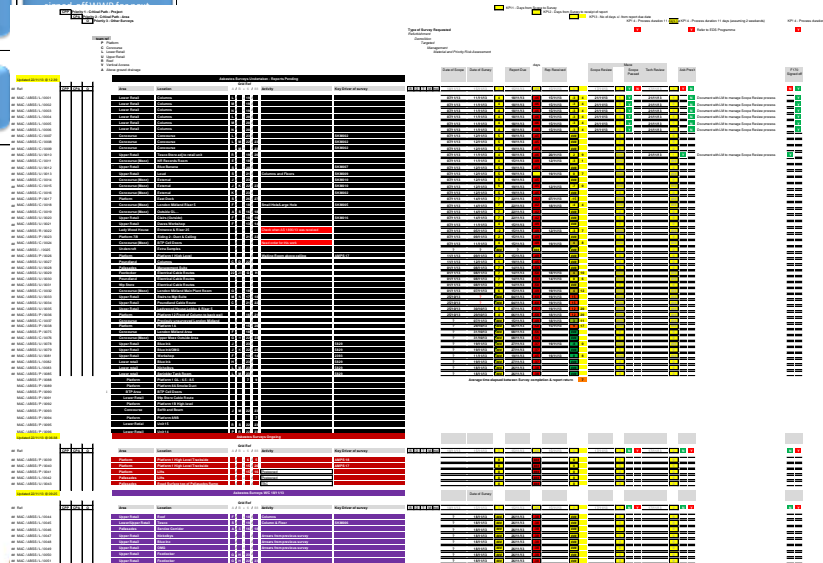
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| | Review of 6 week look-a-head against programme critical path & emerging areas of priority | Glenn Buckle Tom Brookes Richard O'Connor (short-term support) | Monday (pm) | | Verified view on project critical paths Horizontal and vertical 'picture' of asbestos across the project |
| TUESDAY | | | | | |
| WEDNESDAY | Asbestos Schedule Coordination meeting | Glenn Buckle Dave Perry (short-term) Area Managers Rep. from EDS Rep. from Colt P. Barrett | Wednesday 11:00-12:00 | Area Managers: - Up-dated 6 week look-a-head view on progress re planned works - Emerging issues & needs Asbestos Team: - Progress (app) - Site conditions - Resource constraints | Agreed prioritised plan covering: - Next 2, 14 & 28 days - 6 week look-a-head - Resource deployment |
| THURSDAY | Asbestos Weekly Work Package Review | Glenn Buckle Dave Perry (short-term) Rep. from EDS Rep. from Colt | Thursday am (tbc) | Asbestos Weekly Work Plan (Last Plan) | Agreed forward programme - |
| FRIDAY | Asbestos Weekly Communications Pack | Glenn Buckle Luke Morton Richard O'Connor (short-term support) | Friday am (tbc) | Outputs from the week's asbestos reviews / meetings | |

Visual of the asbestos planner & tracker spreadsheet

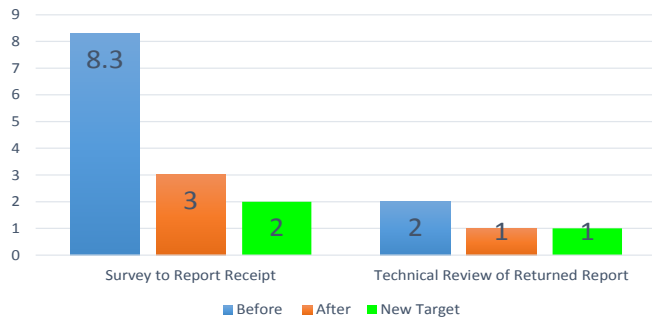
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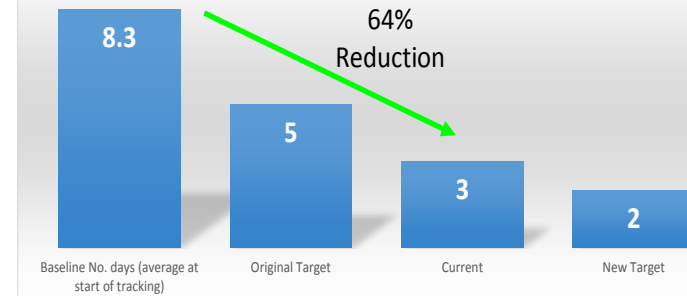
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Summary

- Lean applied to large and small processes
- Small repetitive processes can have cumulative effect
- Detail the actual process and breakdown
- Important to clarify why its important – Value
- Team based problem solving
- Discussion