Collaboration in an Emergency; applying the learning to design

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Highways England

Introduction – Chris Wearne

33 years experience
Project manager: construction, design, client
Trained to Lean Sigma Green Belt
Trained as ‘Facilitator’, Foundation level, APMG

Lead facilitator, Boston Manor Viaduct repair
Lead Author, ‘Collaboration in an Emergency…’, ICE Proceedings, Feb 2014

Collaborative Planning experience

Construction	Design	Design/Const
Boston Manor Viaduct	M25 Bearing Schemes	M1 J39-42 M'g'd M'way
Dartford Tunnel Safety	M4 Managed Motorway DCO	Doha Expressways, P15
M62 J30-2 Pinchpoint	M4 Smart Motorway	
M18 J1-3 Pinchpoint	A14 Cambridge – Huntingdon	
	M6 J2-4 Smart Motorway	
	L Thames Crossing, options	

And advice to many others working in Local Authorities, Rail, in UK and abroad

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Boston Manor Viaduct

The background

Floods…. and water shortages

Border Agency difficulties at airports

G4 unable to recruit 10,000 security guards

M4 links Heathrow airport to Olympic Park



Repairs included 30 splice plate repairs to 2.5m deep plate girder

Massive public and media interest and government pressure

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Boston Manor - emergency works

What we did

1. Planned as an Integrated Team - to create a Master Plan
2. Short Interval Reviews – daily meetings, 7 days a week
3. Analysed, Learned and Improved – learned from ‘non-delivery’,
4. People, Information and Engagement - created a live visual display

Repair completed on Friday 13 2012, start of arrival of Olympics traffic

Graham Dalton noted in blog ‘Lean Techniques really work’

Stage 1. Plan as an Integrated Team

Collaborative Mapping



Map interdependencies



A first Programme

Stage 2. Short Interval Reviews

Daily meetings, 7 days a week

Boston Manor M4 Bridge Repairs (Design and Construction Production Plan)								
Date	Task ID	Location	Task Details	Owner	Organisation	Complete Y/N	Root cause	Reason - Category
07/06/2012	1	(7) W8 N ES3 Bottom Outer	Deliver plates to site	Roger Slade	BS Steels	Y		
07/06/2012	2	(7) W8 N ES3 Bottom Outer	Lift plates into location ready for installation	Dave Dibson	Osborne	Y		
07/06/2012	3	General	Create drg register + upload into BIW	Ian Davis	Arup	Y		
07/06/2012	4	Type A	Issue schedule for samples + edge grinding for Type A to Osborne	Chris Handy	Atkins	N	Awaiting review from TWI	Pre-requisite (Internal)
07/06/2012	5	(8) E5 S ES3 Bottom Outer	Complete 3D Survey + upload	James Earl	OR 3D	Y		
07/06/2012	6	(15) E3 S ES5 Top Inner	Complete 3D Survey + upload	James Earl	OR 3D	N	Description of location was noted incorrect on a schedule which resulted in the wrong location being surveyed	Other
07/06/2012	7	(1) W5 N ES3 Top Inner	Complete 3D CAD by midday and issue for plates to be milled	James Earl	OR 3D	Y		
07/06/2012	8	(2) W5 S ES3 Top Outer	Complete 3D CAD by midday and issue for plates to be milled	James Earl	OR 3D	Y		

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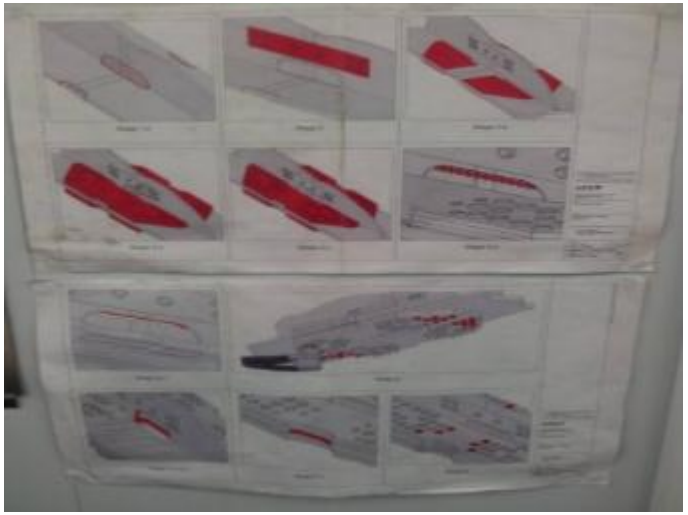
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driving forward

Stage 4. People, Information, Engagement

What we did – created a visual display





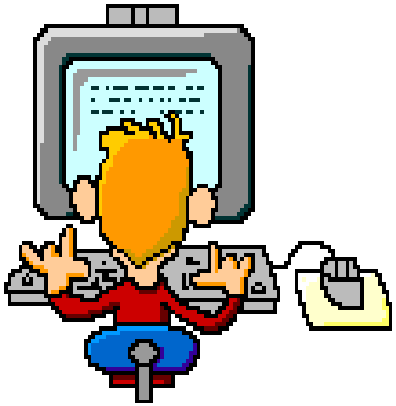
Collaborative Planning in Design

Before you start
- senior support essential
- court the ‘opinion formers’
- understand the client, the project

And then
- Plan as an Integrated Team
- Short Interval Review
- Analyse, Learn and Improve
- People – Information, Engagement

1. Planning as an Integrated Team

30 years experience?



614 years!

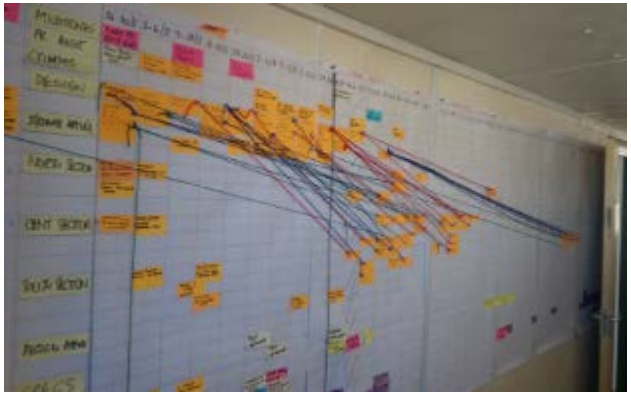


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1. Planning as an Integrated Team









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1. Planning as an Integrated Team

What has worked for me:

Get a group on their feet inside an hour or two

Think ‘clusters’ and groups

Big picture, medium term, then immediate

Concentrate on handovers, dependencies

Give the group a display that helps them build their ‘mind map’

2. Short Interval Review

A distant target ?

One stage at a time





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2. Short Interval Review

What has worked for me:

In design, we have generally met weekly, via dial in, face to face monthly

Cover actions in 1-2 minutes; if they need longer, take offline

Ask the group to look forward to upcoming handovers, dependencies

Ensure actions on the master plan are listed on the Short Interview list

Issue the record on the day

2. Short Interval Review

Look forward record

Unique reference number

Single Action owner

S M A R T action, agree wording

Delivery target date

Notes on follow on action?

Look back record

Delivered Yes (100%) or No

If No, reasons for non delivery, set list

Notes on non delivery

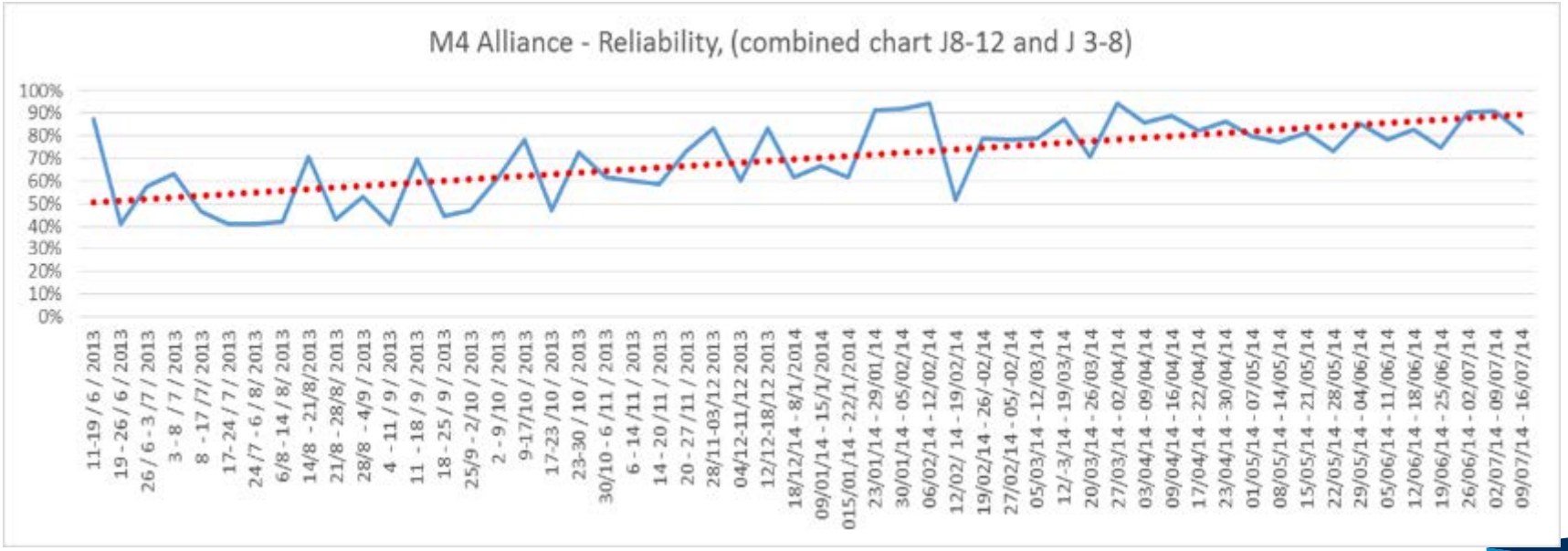
3. Analyse, Learn and Improve

What can the analysis tell us? Examples

Lack of Labour, Plant or Materials	it may be in our hands?
Insufficient Time Planned	it is in our hands
Internal Pre-requisites	it is in our hands
Conflicting activities	it is usually in our hands
3rd Party Pre-requisites	do they need to be in the tent?
Client change	do they realise impact?
Unforseen, unforseeable	does client realise impact?
Weather	in design? Really?

3. Analyse, Learn and Improve

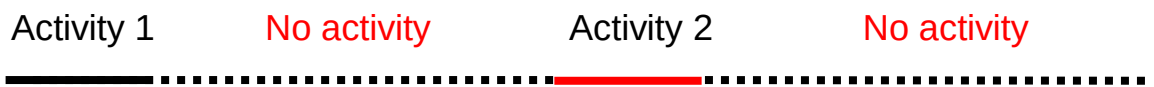
Showing improvement – ‘leading indicator’



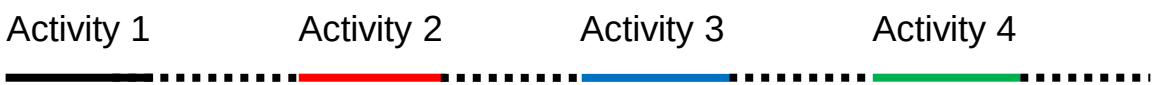
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3. Analyse, Learn and Improve – a model

We start with this



We reduce gaps



We reduce durations



We interact better

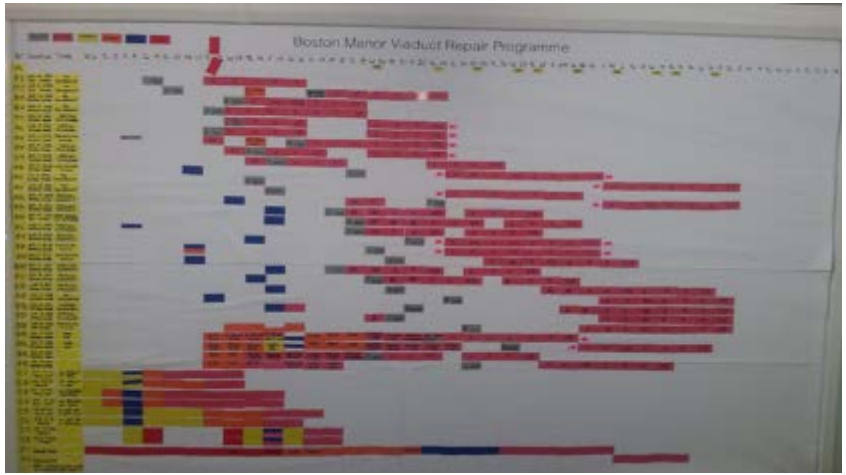


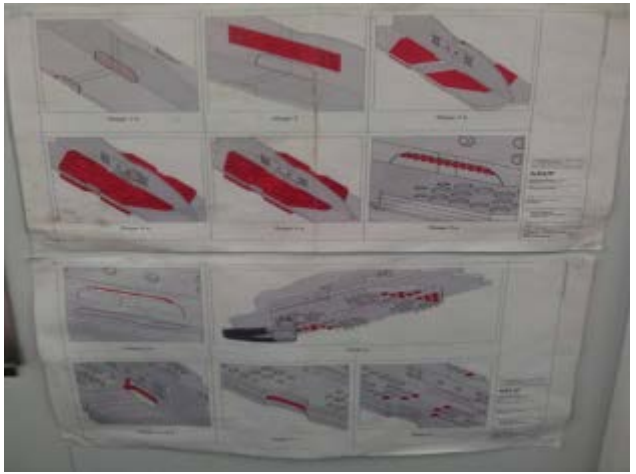
A Collaborative Planning Improvement Model, ©

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4. People, Information & Engagement

The value of displayed information





This display was used for Inductions for incoming staff at Boston Manor

4. People, Information & Engagement

More than just ‘better projects’ – culture

The disciplines assist Project Managers to do their job

The disciplines assist others to perform better

Teamwork happens faster

Usually less stressful; fewer nasty surprises, better relationships

Adds a new skill set that can be used by the group

Questions and Discussion

Why not? Why do it? Costs? Savings?

Thank you

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