

Visual Management Missions Rooms for major Projects

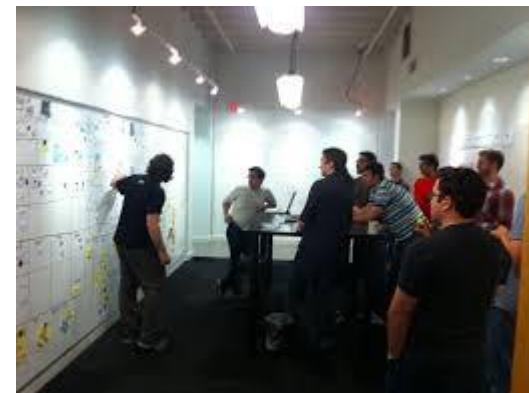
Richard O'Connor
Transform Business Improvement

Overview of the session

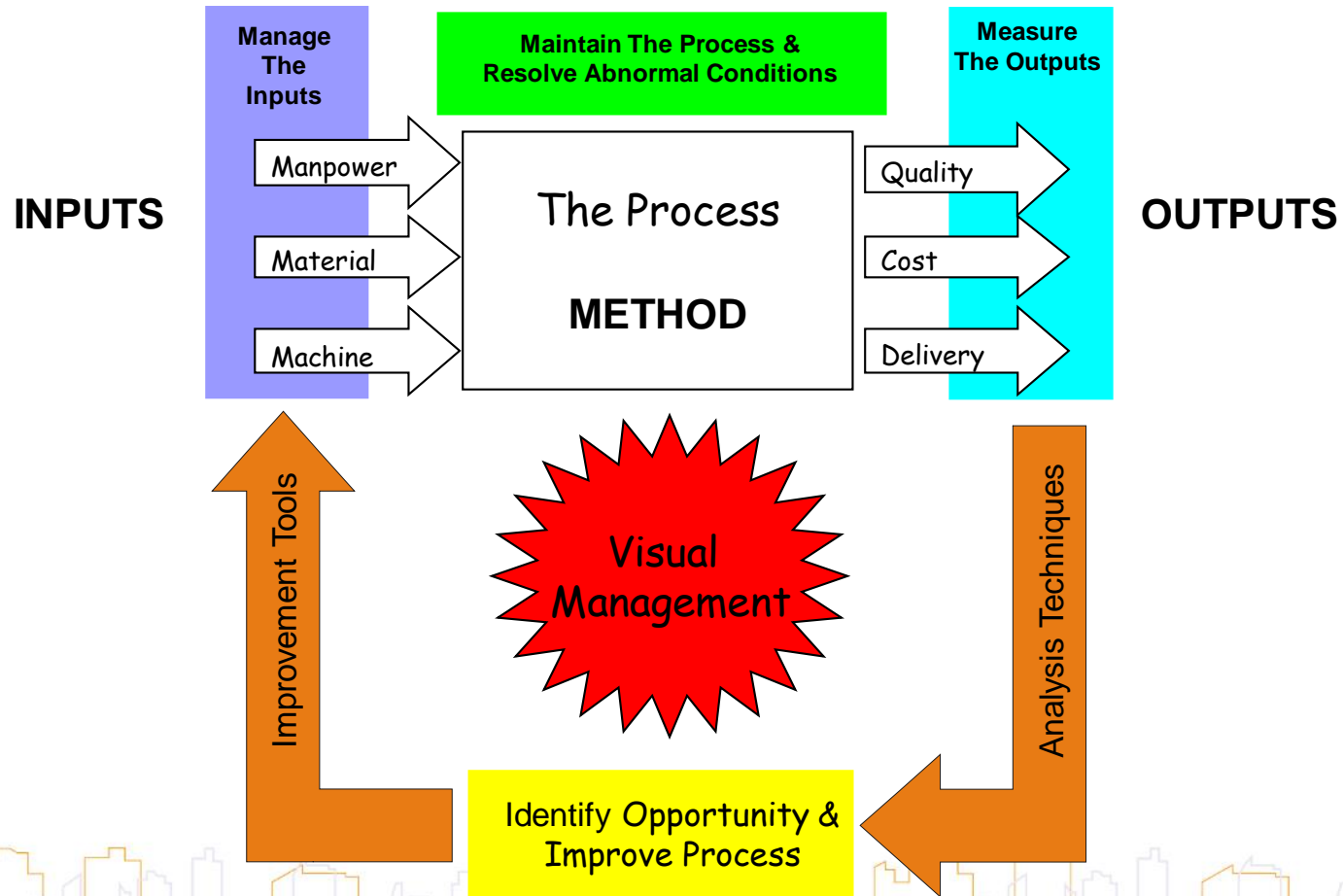
- Visual management principles
- Examples from other sectors
- Application to major construction projects
- Discussion

Principles

- Visual management
- A picture paints a 1000 words
- Clear, simple, concise
- Communication and alignment
- Stand-up
- Show achievement and issues
- Provoke the right reaction
- Rapid response



The Process View



Visual Factory

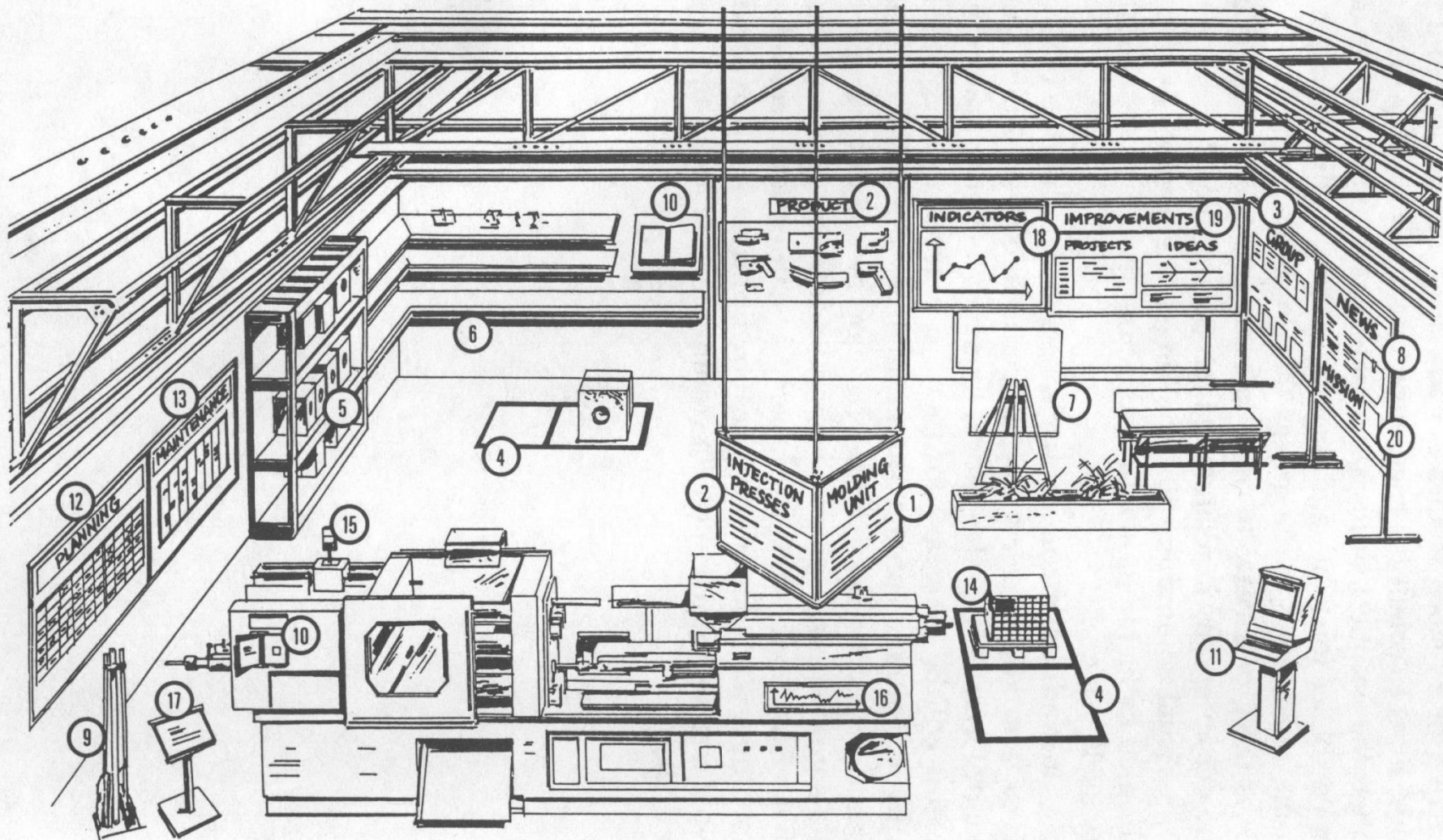


Illustration from "The Visual Factory" - Grief

Examples from other sectors

- Automotive
- Aerospace
- Chemical / Processing
- Manufacturing
- Health



Characteristics

- Aligned to defined goals
- Common format
- Stand-up
- Efficient and to-the-point
- Attended by all relevant persons



Examples from other sectors

1

Facility/business unit board

CAT Production System An Admired Global Leader Making Progress Possible				
	PLAN	DO		
PEOPLE	Key Objectives Plan	Stop-works Lost Time	RIF & LTOR	Missed Person or Implementation Rate
QUALITY	Key Objectives Plan	External Quality CHIRCE: VCR, DFI or PPM	Internal Quality CHIRCE: 1st Pass Yield, Scrap & Rework or DPM	MSI/TOR and Conformance
VELOCITY	Key Objectives Plan	Customer Delivery Performance	Inventory Turns (Days)	% S in Pull Inventory and Shipping
COST	Key Objectives Plan	CPV Value Prop on Target	Production CHIRCE: MS/Machine, S/MS Worked or S/Machine MS	Facility/Business Unit Choice

Facility / Business Unit Level				
	CHECK	ACT		
VST Investment - Self-Start PPM/MS, Certified PDSB	Facility/Business Unit Choice	Facility/Business Unit Choice	Root Cause Corrective Actions (RCCA)	15 GUIDING PRINCIPLES ASSESSMENT
Record Accuracy Inventory, Reading, SCW & Standard Work	Facility/Business Unit Choice	Facility/Business Unit Choice	Root Cause Corrective Actions (RCCA)	OPERATING
Prior of Use: Material Availability	Facility/Business Unit Choice	Facility/Business Unit Choice	Root Cause Corrective Actions (RCCA)	CULTURAL
Facility/Business Unit Choice	Facility/Business Unit Choice	Facility/Business Unit Choice	Root Cause Corrective Actions (RCCA)	MANAGEMENT

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Area/section level board*

CAT Production System Area / Section Level				
	PLAN	DO	CHECK	ACT
PEOPLE	Key Objectives Plan			Root Cause Corrective Actions (RCCA)
QUALITY	Key Objectives Plan			Root Cause Corrective Actions (RCCA)
VELOCITY	Key Objectives Plan			Root Cause Corrective Actions (RCCA)
COST	Key Objectives Plan			Root Cause Corrective Actions (RCCA)

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Value stream and area level board and communication tower

CAT Production System An Admired Global Leader Making Progress Possible				
	PLAN	DO		
PEOPLE	Key Objectives Plan	Stop-works Lost Time	Missed Person or Implementation Rate	Training Hours - Skills & Capability
QUALITY	Key Objectives Plan	CHIRCE: PPM or MSB/MSI	CHIRCE: % S in Pull or 1st Pass Yield	Scrap & Rework
VELOCITY	Key Objectives Plan	CHIRCE: Shipping Performance or Water Product Schedule Performance	Total Cycle Time - MS/MS	% S in Pull Inventory and Shipping
COST	Key Objectives Plan	MSI or Conformance	CHIRCE: MS/MS or MS/MS Machine	Value Stream Choice

Value Stream Level				
	CHECK	ACT		
Value Stream Choice	Value Stream Choice	Value Stream Choice	Root Cause Corrective Actions (RCCA)	15 GUIDING PRINCIPLES ASSESSMENT
Value Stream Choice	Value Stream Choice	Value Stream Choice	Root Cause Corrective Actions (RCCA)	OPERATING
Value Stream Choice	Value Stream Choice	Value Stream Choice	Root Cause Corrective Actions (RCCA)	CULTURAL
Value Stream Choice	Value Stream Choice	Value Stream Choice	Root Cause Corrective Actions (RCCA)	MANAGEMENT



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Cell level board*

CAT Production System DAILY PRODUCTION EFFICIENCY				
	PLAN	DO	CHECK	ACT
PEOPLE				
QUALITY				
VELOCITY				
COST				

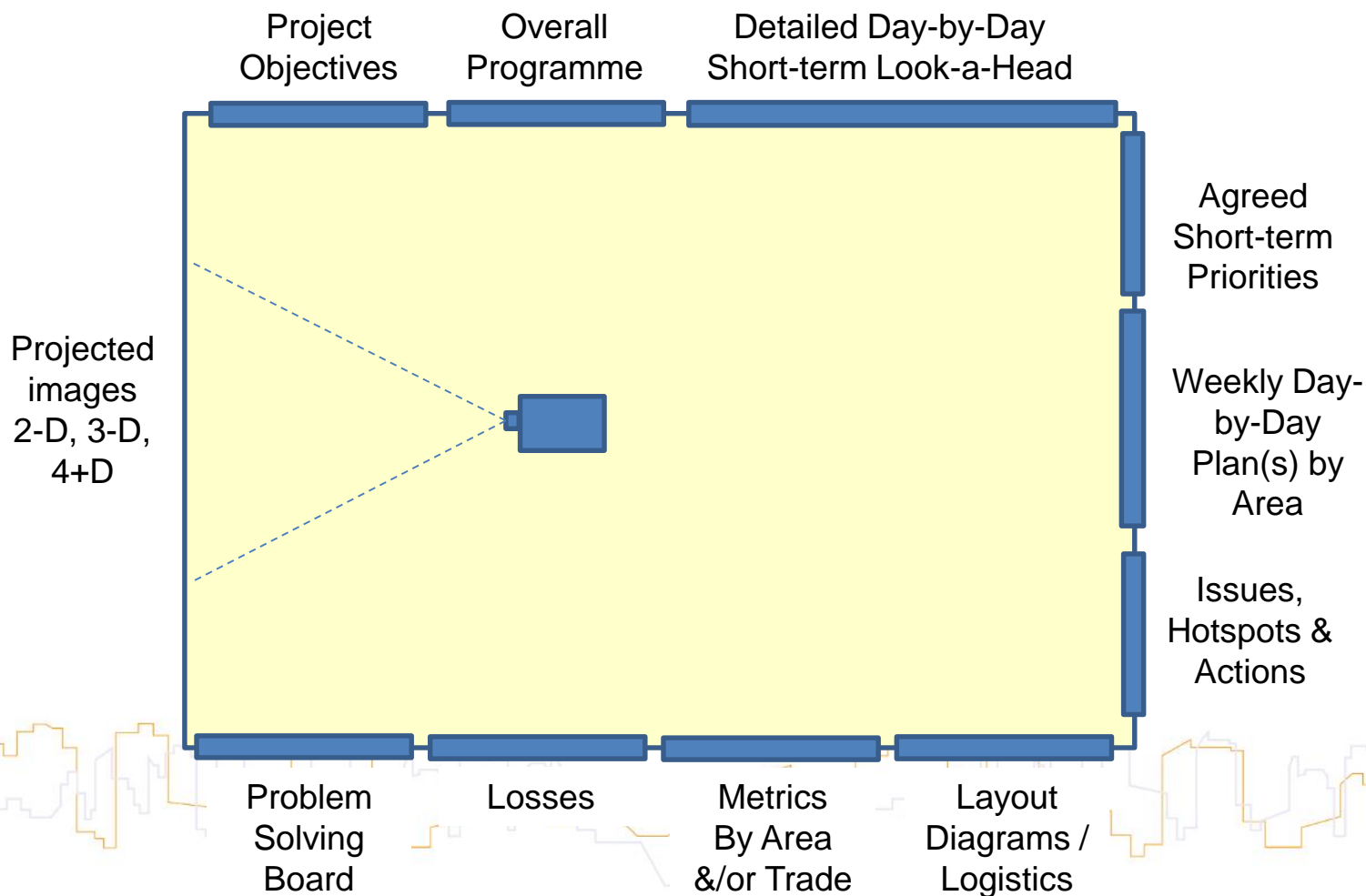
Application to major projects

Project / Mission Control Room

- Project / Mission Control Room
 - Typical set-up
- Example Projects
 - Birmingham Gateway
 - Power station, South Africa

Application to major projects

Project Control Room – Typical Elements



Project Control Room Examples

Birmingham Gateway

- Complex project
- £600m
- Live public environment
- Number of challenges (e.g. mixture of old & new)
- Coordination of all areas of work and interfaces vital to success
- Dynamic / changing project situation
- Central planning & control is critical
- Hub & spoke

mace

working in partnership with

NetworkRail



Birmingham Gateway Central Goal Command Room

- Now focused on countdown to handover
- Daily review of project execution versus the plan
- The central hub for ensuring:
 - Confirmation of the plan
 - Monitoring achievement
 - Identifying issues and agreeing how to resolve
 - Agreeing changing priorities for the Project not just individual areas
 - RAG status
 - Communication



Birmingham Gateway Central Goal Command Room

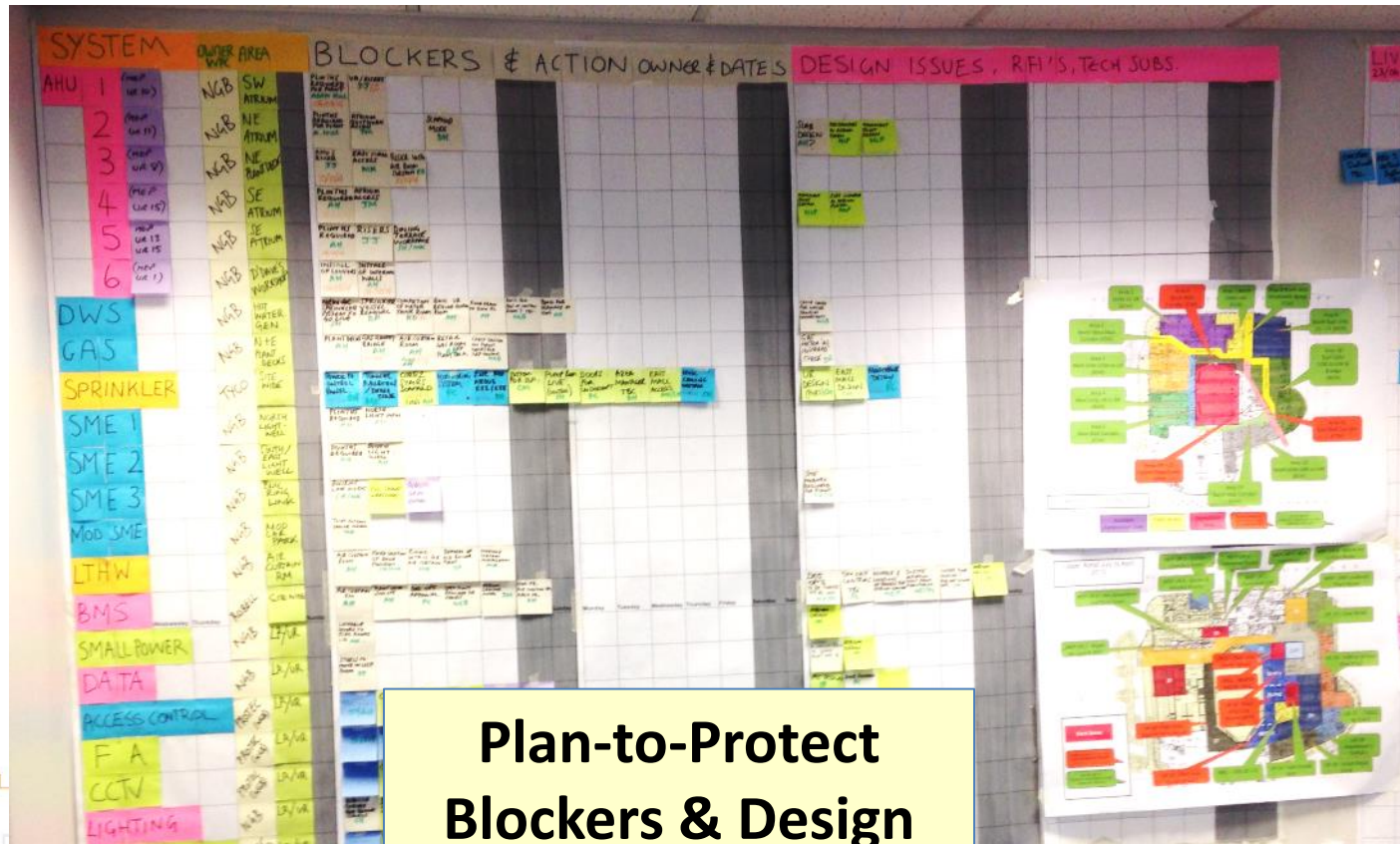
Critical Path + Escalation Monitor



AREA	Base Component	Color	Assign Sally (-LIFE)	KEY ACTIONS
ROBBER HOUSE	KNOW RUE 2	Red		COLEMAN OUT OF HOUSE - PLAN ROBBER - MILES MANAGE TO BE ALLOCATED - PD
LONGER REVENUE	DAVE P PUL	Green		LONGER REVENUE STOCKHOLDER - SELLING ALIGNMENT LONGER REVENUE - HARD ACCESS DATE
212 COMPANY	BLAKE JOHN	Green		
212 MILES	MILES G DORNE	Red	X MILE 7H	CLEAR RPT
212 MILES 212 MILES 212 MILES	77 PUL 3	Orange		WEEKLY HANDOVER W PACE - BULKHEAD - NG BAILEY !!!! <i>emulate 212!!!!</i>
212 MILES 212 MILES	AUCE JOHN	Green		ACCESS ASSIGNMENTS TO BE CONFIRMED
212 MILES 212 MILES	DAVE H MURPHY	Orange		6 th OCT HANDOVER TO COLEMAN - COLLABORATIVE PROGRAMME TO COMPLETION - A ROLL
212 MILES 212 MILES		Red		
212 MILES 212 MILES	WV	Red		INITIAL PROGRAMME - MILES STEEL - NIGRAVAL - FIT-OUT RE-DESIGN
212 MILES 212 MILES	A 212 MILES	Orange		
212 MILES 212 MILES	PA	Red		
212 MILES 212 MILES	212 PUL	Red		
212 MILES 212 MILES	212 PD in 212	Red		

Hotspots + Actions

Birmingham Gateway Central Goal Command Room



Central Goal Command Room Area - Standard Visual Management

High level key
phase
programme

Programme
progress
report

Issue & action
board

Visual phase
layouts

Visual progress
monitor

Short-term
visual work
planner



Birmingham Gateway Central Goal Command Room

- Weekly review and planning meeting = 1 hour
 - Progress, planning, design, logistics
 - Performance on PPC and 6 week look-a-heads
 - Driven by Deputy Project Director
- Daily reviews = 20 minutes
- Planners meetings – driven by senior planner
- Stand-up, no tables or chairs
- Attended by 'all' relevant parties
- Area manager to up-date of info before the meeting
- Senior team use room for regular meetings

Visual Management Area Planning & Control Spokes

Visual phasing layouts to show areas of working and plant & material logistics in support of weekly production plan

RAG (Red, Amber, Green) visual system used to show status of work activities and actions

Detailed day-by-day collaborative master target programme



Glass overlaid on construction layout drawings, enables the project team to draw-on the location and movement of resources and helps:

- Planning and communication
- The identification of any potential areas of interface clashes, etc.

Overall programme(s) for individual areas of work

Visual Management To Plan & Control Design Delivery



Central Design Planning & Control Hub



Visual T Card process for planning & progressing Design tasks

Visual Management Standard for the Workplace




Example Visual Comms Board

Clearly defined milestones for the overall work area

PROGRAMME MONITOR		OUR PLAN		
	STATUS	KEY MILESTONES		COUNTDOWN
Overall 'Work Area'		<div><div>What</div><div>When</div><div>Status</div><div><div></div><div></div><div></div><div></div></div></div>		<div>4</div> <div>WEEKS TO GO</div>
Atkins				
Birse				
NG Baileys				
Etc				
Etc				

Countdown displaying number of weeks to programmed works completion

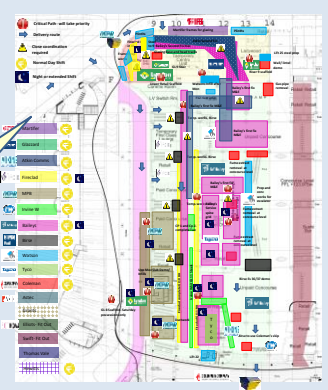
What is the status of the works and associated subbies

THE TEAM		DELIVERABLES THIS WEEK	H&S ISSUES / LOOK-OUTS
 Package Mgr.		<ul style="list-style-type: none"> - Paving GL10-17 - Switch room panels - Demo on Ilughdiugfe 	
 Sub-con 1 Sup.			
 Sub-con 2 Sup.			

Agreed and quantified deliverables this week by trade

Top 5 H&S issues &/or H&S 'look-outs' for this week

Photos + company, role & responsibilities

AREAS OF WORK AND MATERIAL LOGISTICS		
	Issue	Agreed Action
		Communicated?
<p>MATERIAL DELIVERIES PLAN</p> <ul style="list-style-type: none"> - DSONDFSONFDSO - JDSBDSFBDSEIU - DKJFDGDFDSNKJFD 		

Agreed actions re any methods of work &/or to resolve interface clashes, identified from PCS, etc.

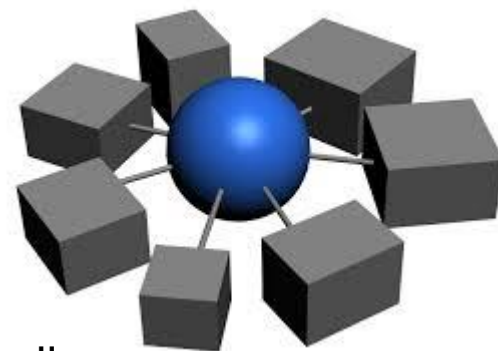
Agreed materials delivery plan – probably colour coded by subbie by day & time

Planned work & logistics visual resulting from weekly PCS

Project Control Rooms

Application to major projects

- Who should drive?
- Who should attend
 - A 'Lean' view – 'all' focused on supporting VALUE creation
 - Contractor manager(s)
 - Production Supervision
 - Planning
 - Design
 - Stores / Logistics
 - Procurement
 - Location
 - Central 'hub'
 - + Area plan & control 'spokes' + Coal face comms cells



Project Control Rooms

Application to major projects

Benefits:

- Awareness – Common view and understanding
- Agreement – Overall programme and critical path
- Alignment – Focus on the 'project' not own areas
- Achievement – Easy to see progress & blockers
- Issues – Agreed priorities and actions
- Programme predictability (PPC) increases

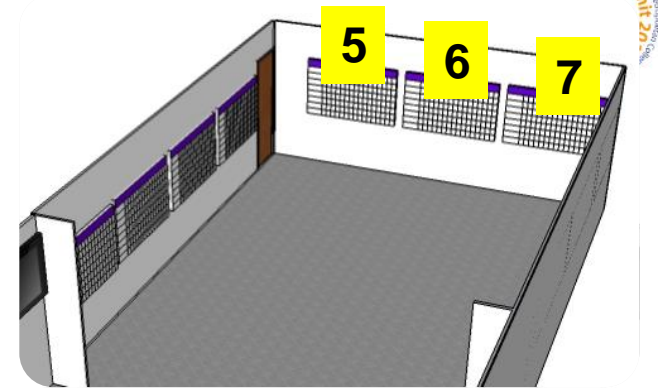
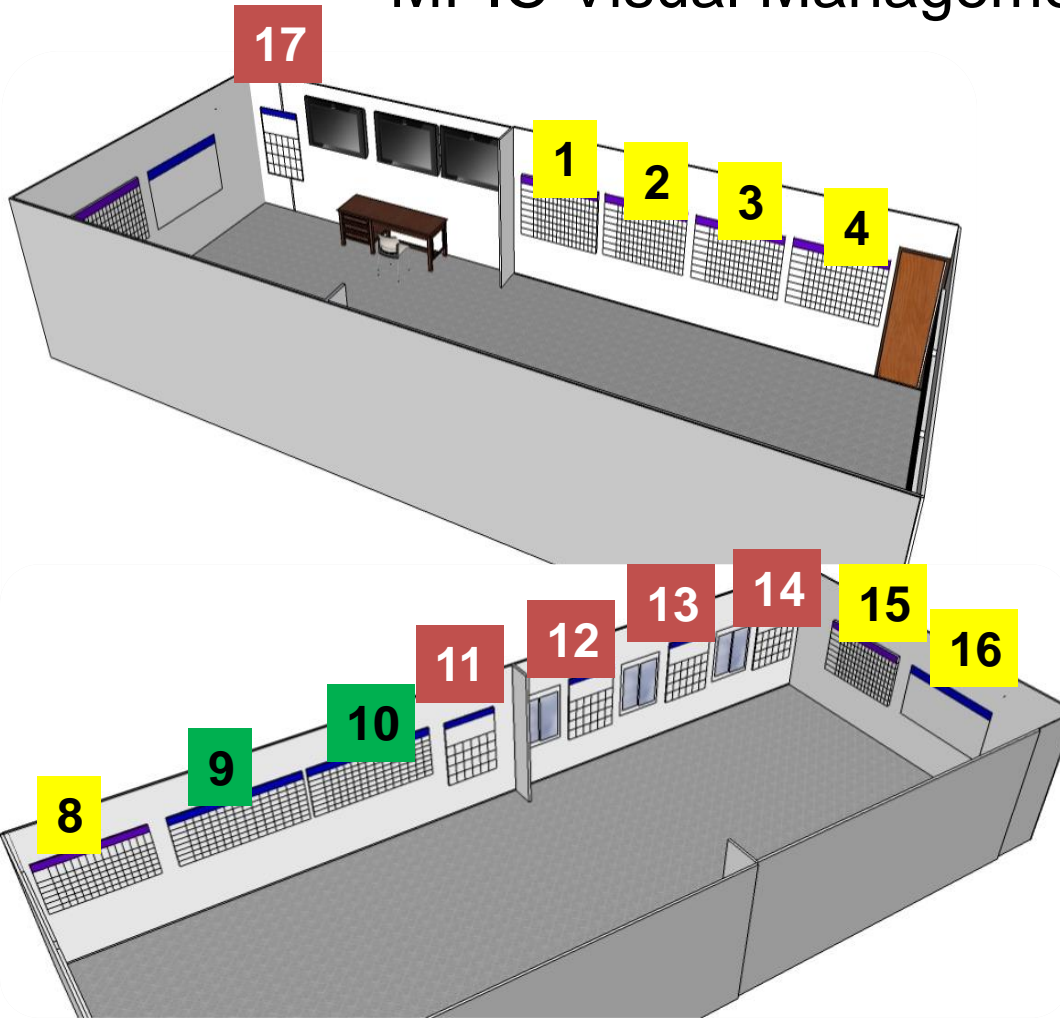
Project Control Room Examples

Construction of a Coal Fired Power Station

- South Africa
- £100 million
- 5 year programme
- 10+ trades
- As many nationalities
- 22,340 meals prepared daily
- Concrete – in excess of 600, 000 cubic metres
- Steelwork – 120000 tonnes (more than the worlds tallest building)
- Coal conveyor 6km long
- Will consume 14 million tonnes of coal per annum



MPIC Visual Management Room Layout



1. BP Construction Status
2. BP Construction 2 Week Look Ahead
3. Turbine Construction Status
4. Turbine Construction 2 Week Look Ahead
5. Milestone Status Board
6. Boiler Construction Status
7. Boiler Construction 2 Week Look Ahead
8. Boiler Status Board
9. Labour Board 1
10. Labour Board 2
11. Safety Board
12. Boiler Welds Board
13. C&I Board
14. Electrical Cable Board
15. Commissioning Board
16. Unit 6 Construction Plan
17. Improvement / Suggestion Board

1500mm x 1200mm (

1500mm x 1200mm (Portrait)

**1800mm x 1200mm
(Landscape)**

Project Control Room Examples

Construction of a Coal Fired Power Station

- Stand-up meetings, daily 20-30 minutes
- Structured feedback, 2-5 mins per area
- The plan, achievements, issues & actions recorded on boards
- RAG status
- Focus on ambers and reds
- Resolutions sought prior to meetings
- Adjustments & priorities agreed



Project Control Rooms

Application to major projects

Some challenges:

- Transient nature of construction / projects
- Each project - different parties, with different drivers, motives, perspectives
- Project delivery success – largely influenced by the project management style, processes and ability to create 'one-team' approach
- Visual project control rooms can quickly help establish culture, behaviours and collaborative approach

Project Control Rooms

Application to major projects

Some thoughts for success:

- Invest vs ROI
- Establish central project planning & control hub + spokes right from the outset
- Common approach breeds familiarity and ease & consistency of use
- Transparency is key – if problems arise, let's see them, we'll resolve them together
- Disciplined usage
- Requires proper buy-in and support by all relevant parties