

**2020 NEI Report of Project Management Lessons Learned and Best Practices
Construction of New Nuclear Power (NNP) Plants
32 Public Domain Reference Documents**

2013

Industry Reference Document (20) of (32)

London 2012 Olympics - Project Controls Lessons

27 pages

Olympic Delivery Authority, CLM,
Nuclear Decommissioning Authority and Association for Project Management

Olympics Lessons Learned Event Presentation slides

21st February 2013, Energus,
Lillyhall, Cumbria.

Section 2: Project Controls

The following presentation material was delivered on 21st February 2013 at the Olympics Lessons Learned event held at the Energus facility, Lillyhall, Cumbria.

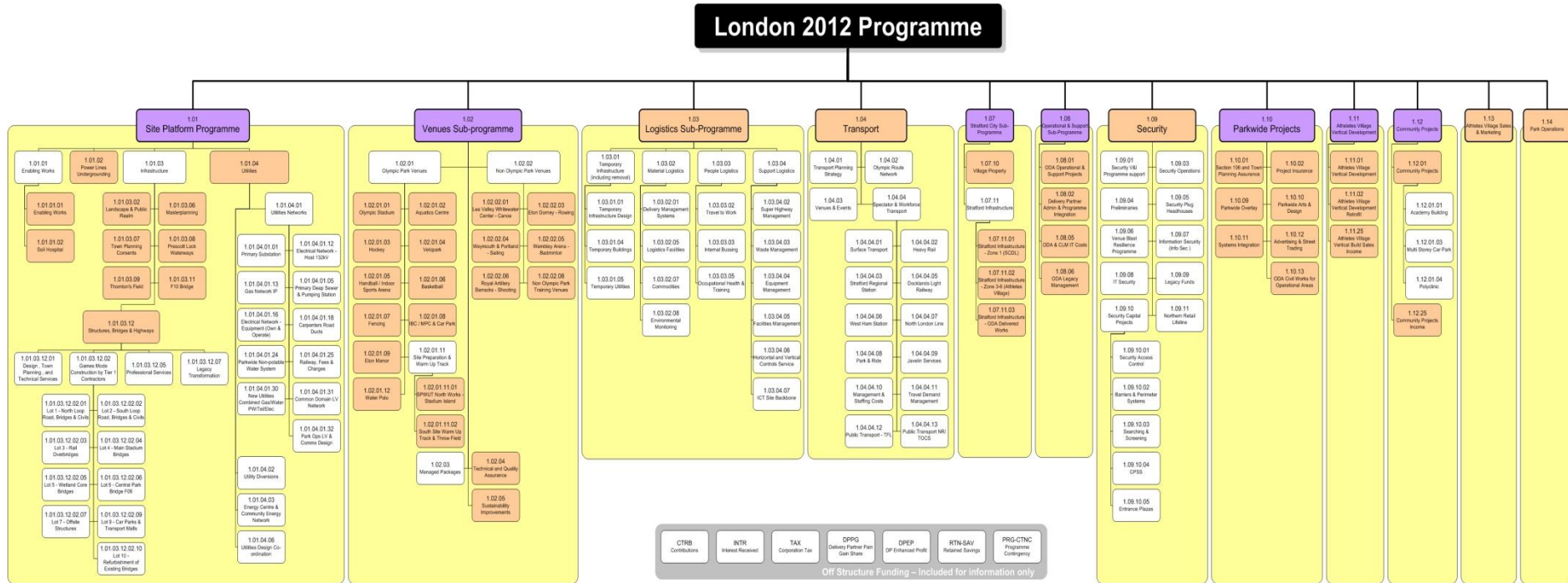
The event was organised by the Nuclear Decommissioning Authority and jointly sponsored by the Association for Project Management and the Centre for Leadership performance. The material was produced and presented by representatives from the Olympic Delivery Authority and CLM and delivered to an audience of around 200 delegates primarily from the Sellafield Site and Supply Chain organisations as part of the Learning Legacy activities following on from the London 2012 Olympics.

London 2012 Learning Legacy Delivering the London 2012 Olympic Park – Planning and Project Controls

Zoe Madams, Planning Manager
CLM



Work Breakdown Structure



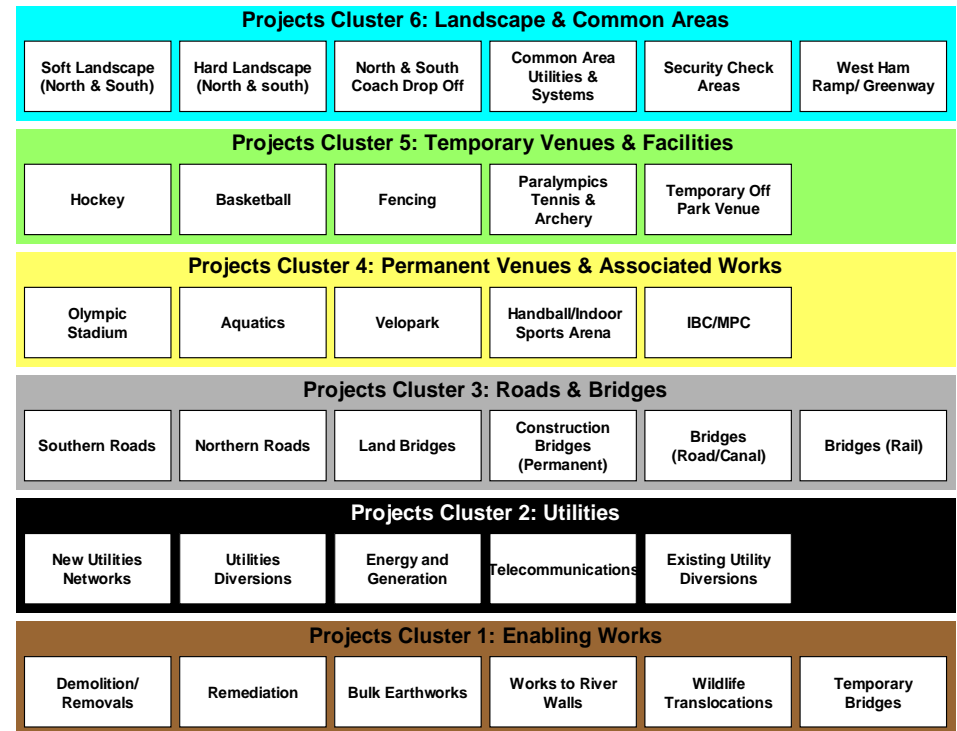
WBS Version 15

London 2012 Work Breakdown Structure

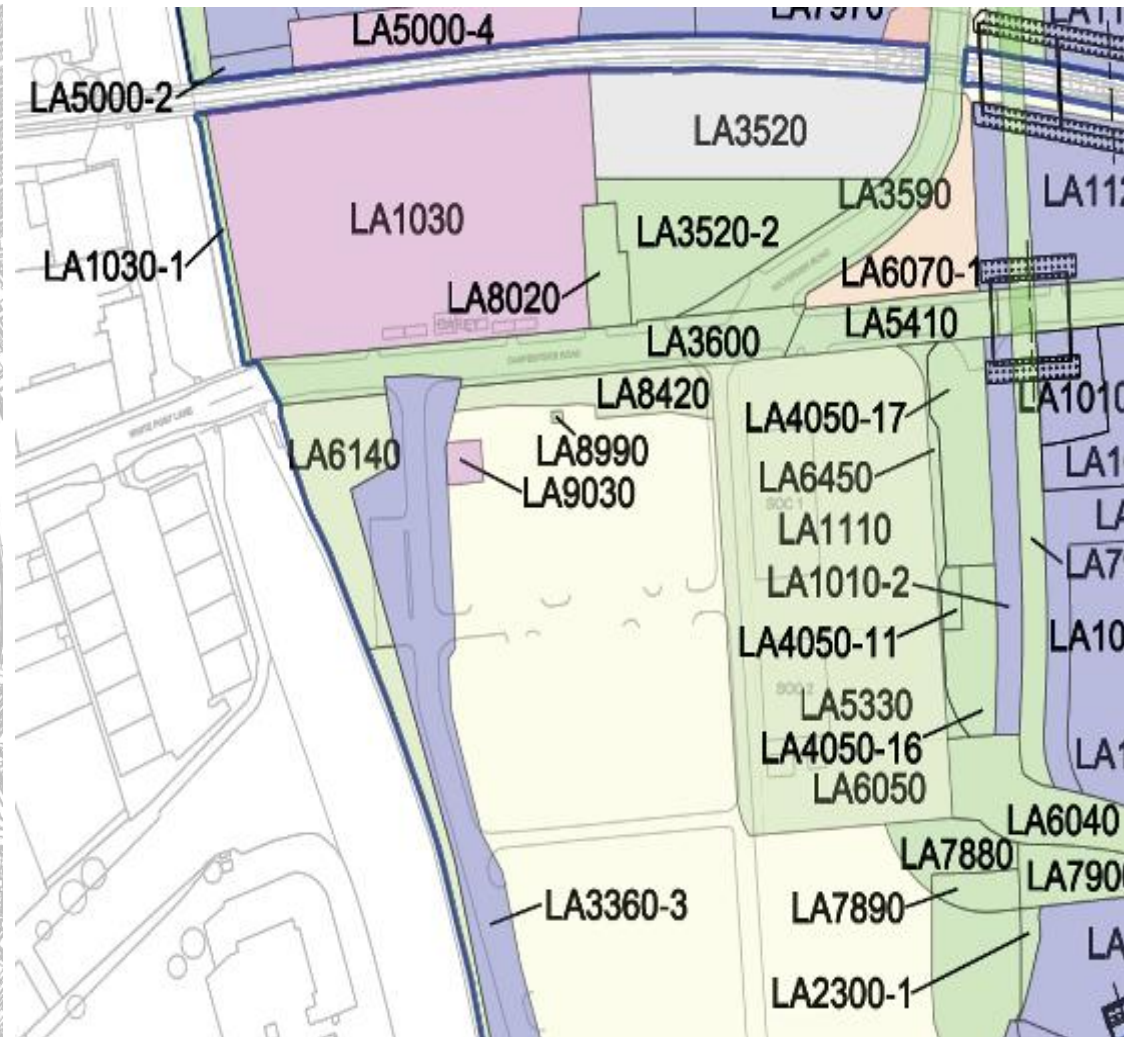
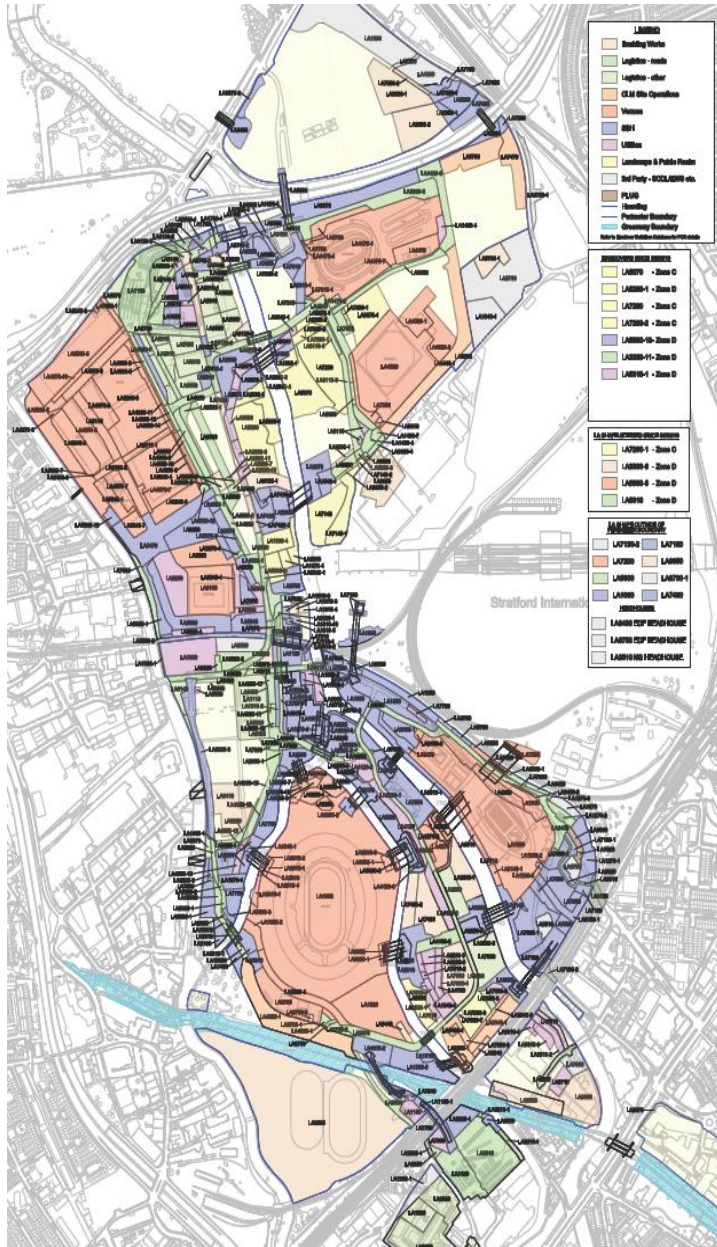
- 70 Reporting Projects
- 1,000+ WBS Elements
- Common language across Programme

Understanding the Phasing

- Mobilisation
- Design & Procure
(Design, Dig, Demolish)
- Construction – phase 1
Construction – phase 2
(The Big Build)
- Commission, Close Out
& Handover



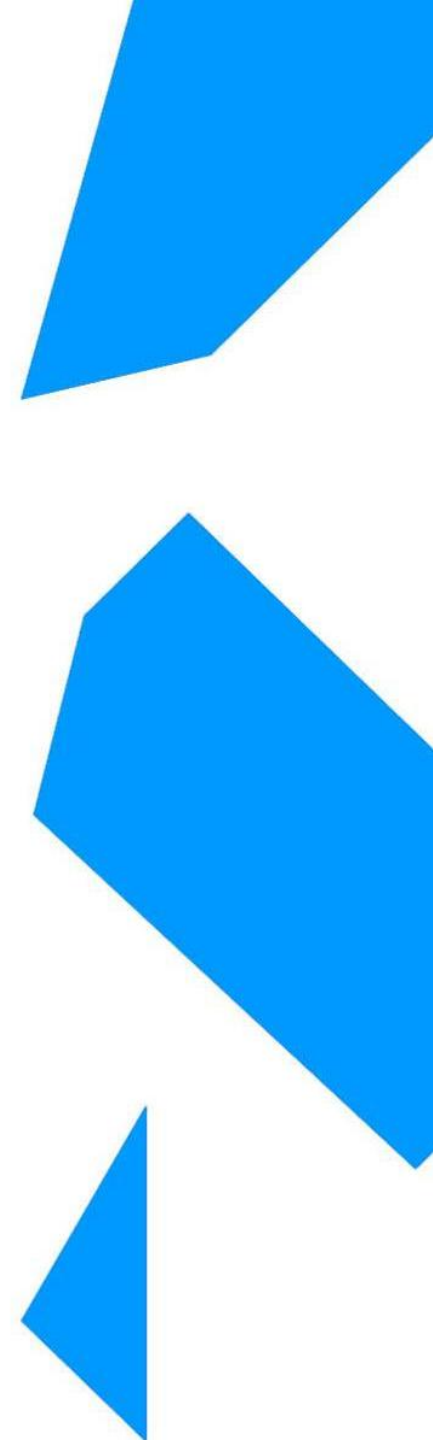
Co-ordination of Land Areas



Management of 600+ LA areas

Integrated Planning - The Need

- The scale and complexity of delivering the London 2012 Programme drove a structure of around 50 major projects
- Learning from previous Olympic programmes required an early need to address integration issues:
 - ✓ Infrastructure and Venues works in parallel in a small area of land
 - ✓ Key milestones for Infrastructure and Venues are driven from various project interfaces
 - ✓ Design interfaces could lead to a project interface on site
 - ✓ Principal Contractor methodology (site boundaries) and handovers of areas of land is a key interface factor
 - ✓ Works by others in Principal Contractor areas could create disruption or re-sequence of works



Integrated Planning

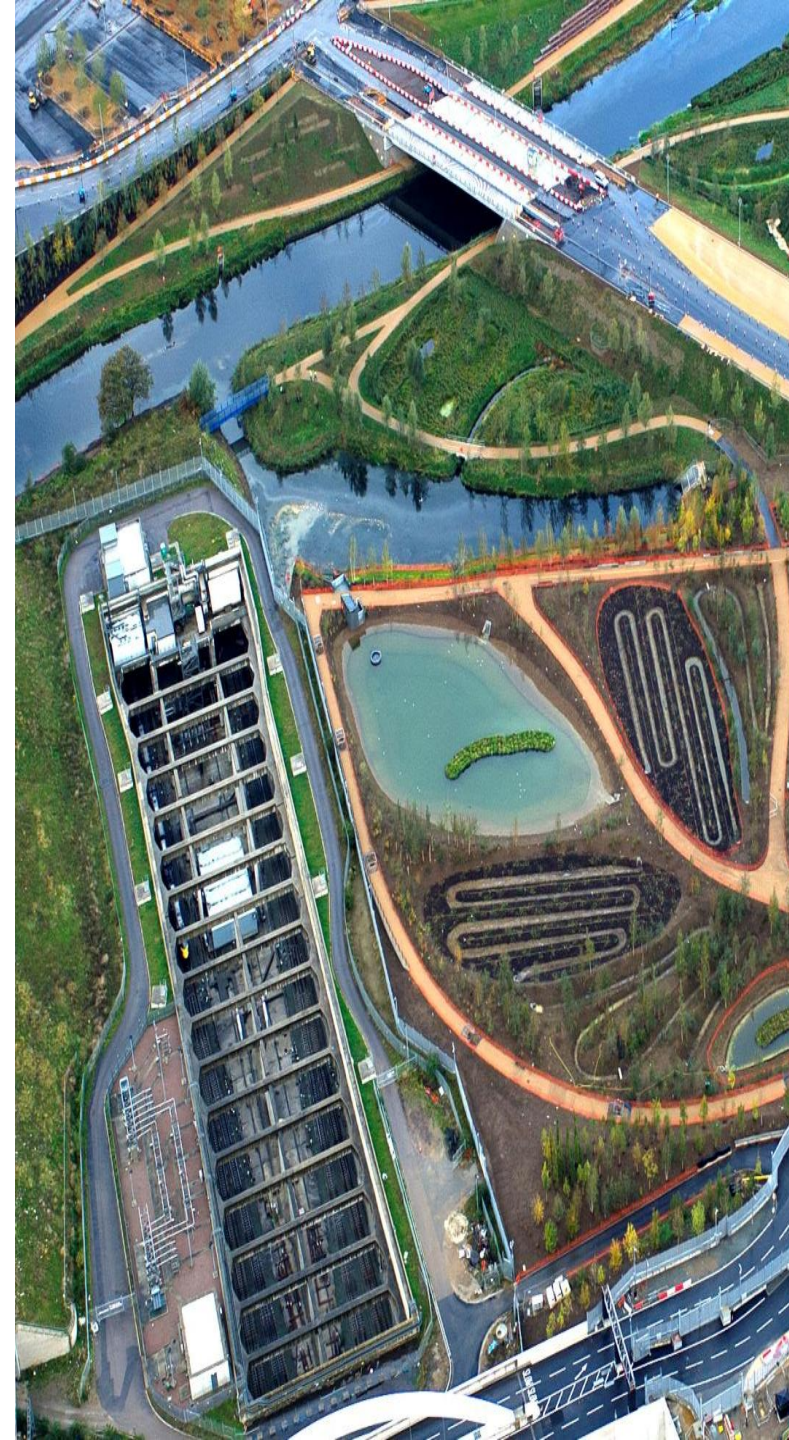
CLM fully accountable for managing the interfaces

- Planning
- Process / governance
- Scope / budget implications
- Assurance

One Programme

- Managing complexity
- Bringing clarity to areas of ambiguity

Changing emphasis through lifecycle



The Method

- Establish a suite of processes, meeting structure, reports and assurance framework
- Understand the interfaces using drawings, scope documents and the drivers for key deliverables
- Using weekly strategic and monthly detail integration meetings to review interfaces or understand and capture new ones
- Capture the timing of the interface, the type, and the cost and schedule impact to successor activities or projects (*trend and raise changes*)
- Implement in P6 using specific processes / procedures/Coding structures
- Intensive tracking and monitoring

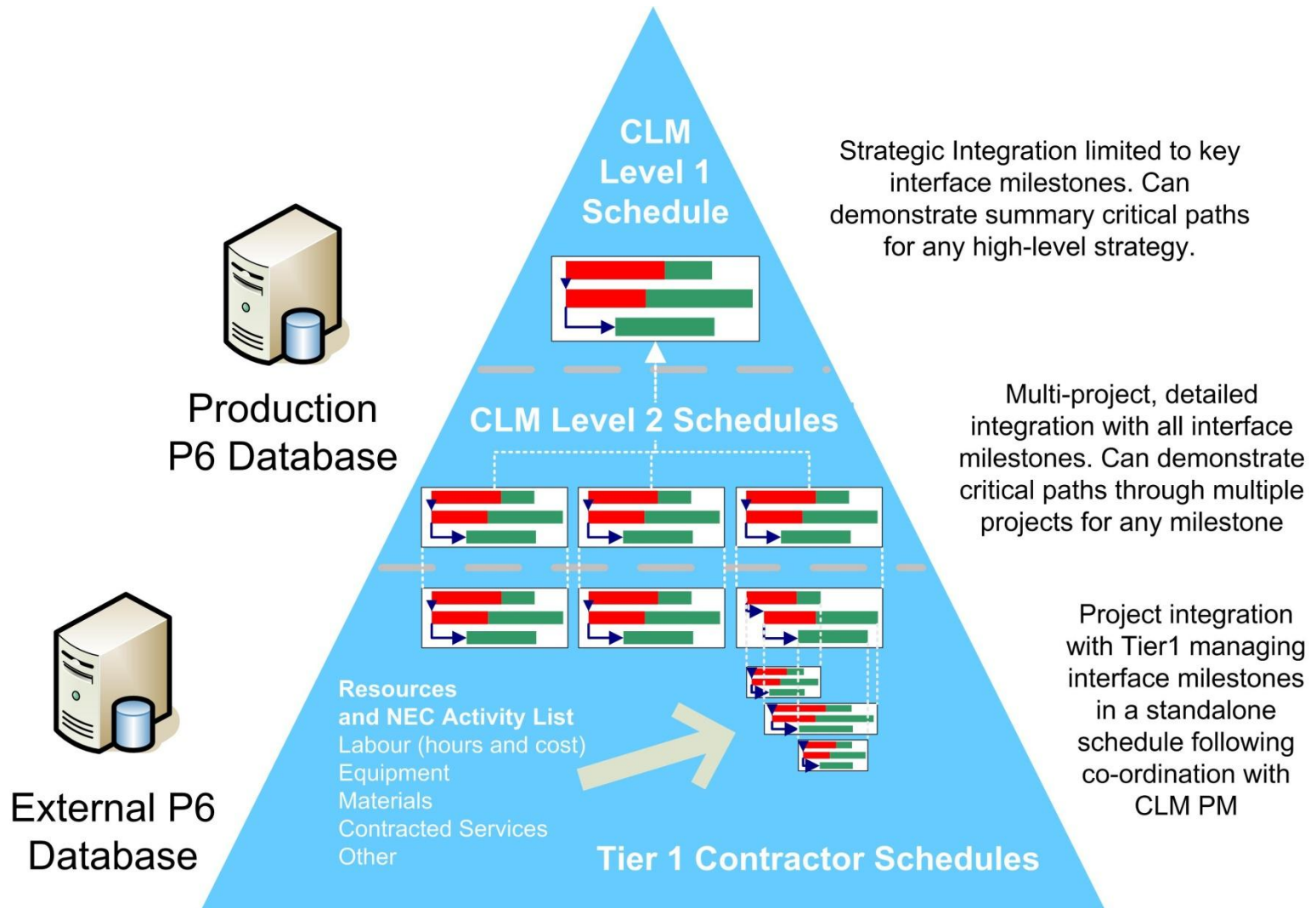


The People

- Construction Integration Teams to understand and capture the interface
- Integration Planners to implement the interface in P6
- Both teams to monitor the interface through meetings and regular reporting
- Regular weekly/bi-weekly co-ordination meetings with project teams
- Identification of 3rd Party representatives and regular meetings
- Infrastructure/Venue directorates responsible for park integration
- Monthly Executive level meetings to discuss Amber/Red integration issues



Delivery Platform - Schedule Milestone Integration



Programme Tools

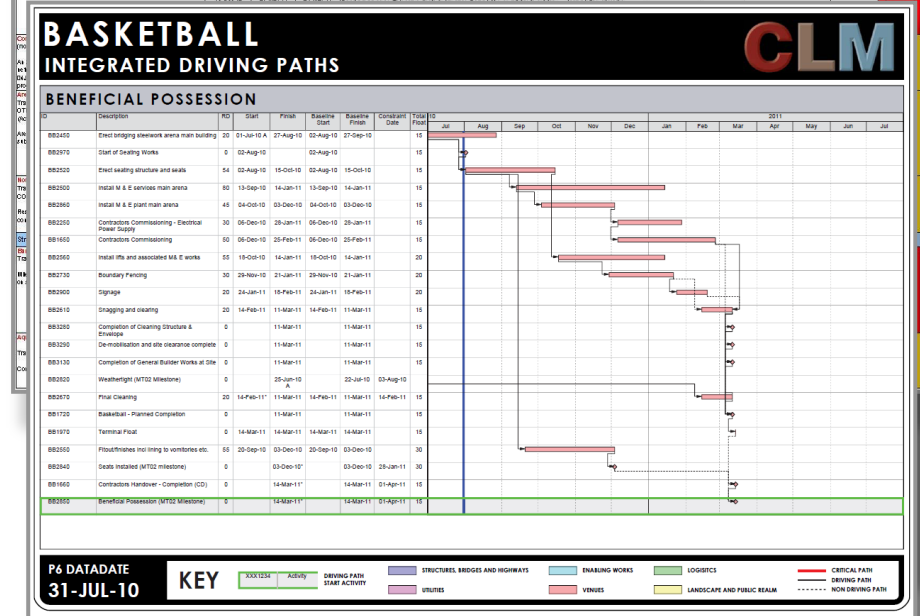
- Integration registers based on milestones and coded areas in the park
- Handover Database
- Critical paths & driving paths showing the involvement from many projects to achieve a key deliverable
- Integrated logic drives Key Milestones
- Programme Dashboards capture key completion Milestones

The image displays a collection of project management tools used in a park development project. At the top left, there are two site maps: one showing 'Security Classification Phases' and another showing 'Security Classification Phases' with a legend for 'UNDER CONSTRUCTION (FILL WALLS)', 'PERMANENT FINISHES', 'TEMPORARY ROADS', etc. Below the maps is a table with columns for 'Description & Issue', 'Resolves Date', 'Forecast Start', 'Forecast End', 'Impact & Mitigation', and 'Actions'. The table lists various issues such as 'Heating/Cooling in Venues and other Venues' and 'Occupation of Site Main'. To the right of the table is a vertical bar chart showing 'Action' and 'Progress Impact' for different team members like Jackie Rice and Frank Parsons. Below the table is a 'CLM PROGRAMME / LEVEL2' section with a 'REPORT INTEGRATED CRITICAL PATH' and a Gantt chart showing project milestones from Jan to Nov 2010. At the bottom, there are several dashboards: 'Venues and Infrastructure Projects Dashboard (CPR Codes 1 & 2)', 'Health and Safety', 'Milestone April 22 Through Page 11', 'Programme Status - VENUES', and 'Programme Status - INFRASTRUCTURE'. A date stamp 'Jan-10' is visible on the right side of the dashboards.

Time Performance

- All Milestone Report
 ≈700 key milestones in change-controlled Baseline, AMR includes commentary and RAG status
- Critical Paths
 The path or paths that drive project / programme completion
- Strategic Plan
 High-level view of key interfaces and handovers for LOCOG Test Events and security lockdown of Olympic Park

Description & Issue	Baseline Date	Forecast Date Oct-10 Period End	Forecast Date Jan-11 Period End	Impact/Integration Strategy / Current Status	Actions	Owner	Programme Impact
Main U05A to U05B Training Main Show: MT02 - MAIN UTILITIES AVAILABLE TO U05B - CONTRACT DATE 05 OCT 10 (UT0525)	25-Jun-10	25-Feb-11	25-Feb-11	Not in programme & January; Good progress on take-over once a January. Complete in advance and early March and before the start of the show.	Review performance of the U05B to ensure complete. Red reported to be in full compliance of order.	John Rie Devy Ferris	➔
Main U05A to U05C Training Main Show: MT02 - MAIN UTILITIES AVAILABLE TO U05C - CONTRACT DATE 05 OCT 10 (UT0543)	15-Jun-10	04-Apr-11	04-Apr-11	Not in programme & January; Good progress on take-over once a January. Complete in advance and early March and before the start of the show.	Review performance of the U05C to ensure complete. Red reported to be in full compliance of order.	John Rie Devy Ferris	➔
Main U05A to Aquatics Training Main Show: MT02 - MAIN UTILITIES AVAILABLE TO AQUATICS - CONTRACT DATE 05 OCT 10 (UT0525)	17-Oct-10	04-Apr-11	04-Apr-11	Not in programme & January;	Review performance of the U05A to ensure complete. Red reported to be in full compliance of order.	John Rie	➔



P6 DATADATE	KEY	XXX1254	Activity	DRIVING PATH	START ACTIVITY	STRUCTURES, BRIDGES AND HIGHWAYS	ENABLING WORKS	LOGISTICS	VEHICLES	LANDSCAPE AND PUBLIC BEAM	CRITICAL PATH	DRIVING PATH	NON-DRIVING PATH
River Walkway U07 Complete													
SBH implementing contingency plan for d&b elements of U07. Crossrail extension into early September for rail possession works being resisted as it would jeopardise overall completion.													
SBH T12 Stratford High Street Crossing Legacy Removal Planned Completion													
1.01.03.12.07.01.02.02-Legacy Construction South Park - BAM Nuttall													
Bridge E30 Strengthening Works Planned Completion													
Resubmission of Planning Application required to address LBTH safety concerns. S61 compliance and retention of pedestrian route extends construction period but revised baseline following Jun PCB.													
Transport Malls and Operational Areas													
1.01.03.12.02.09.01-SBH Lot 9 - Transport Malls - John Sisk & Son													
OVTM Olympic Village Transport Mall Access Date (04 Jul 11)													
SSCP Sponsor Coach Park Access Date (31 Oct 11)													
Early access date of 31 Oct 11 included within TM contract													
Southern Spectator Transport Mall Complete													
Supply problems with Westfield fill eroding float. Pressure on completion date due to extended T12 construction works may delay final site area handover.													
OVTM Olympic Village Transport Mall Planned Completion													
Subject to release of site areas from EW, Village Health and Logistics in July 11. Site may need to be sub-divided into phases if handovers do not support single stage access.													
Transport Malls Completion & Handover													
Completion date driven by retention of PML & OPEPO offices beyond 31 Oct 11.													
Southern Sponsor Coach Parking Complete													
Contract completion date based on access by 31 Oct 11. Impact from retention of PML offices to Dec 11 and OPEPO to Jun 12 (subject of outstanding Logistics CRF)													
1.01.03.12.02.13-SBH Lot 11 - Transport Mall NSTM - CWOA Contractor													
NSTM Test Event Evacuation Route (RVP) Temp Handover from SBH to Park ops													
Northern Spectator Transport Mall Complete													

Lessons Learned

- Effective integration requires a culture with excellent communication and co-operation

All teams were involved in monitoring and managing interfaces through regular co-ordination meetings and reporting.

- Initially the integration team was centrally-based

Recognised that individuals had to be embedded in project delivery teams to effectively identify the required interfaces and subsequently implement the required programme changes this enabled more focused, interactive dialogue, resulting in earlier and better definition of interfaces which, in turn, drove more effective and efficient delivery.

- Level 2 schedule logic initially maintained in both baseline and forecast schedules

Simplified the baseline to key milestones and any changes subject to change control. Forecast schedule then kept current on a day-to-day basis with logic, activities and milestones being updated whenever detail became available. Progress was updated on a monthly basis.

End of Planning and Project Controls



London 2012 Learning Legacy Delivering the London 2012 Olympic Park – Programme Controls and Assurance

Gordon Alexander
ODA, Programme Assurance





The Objective

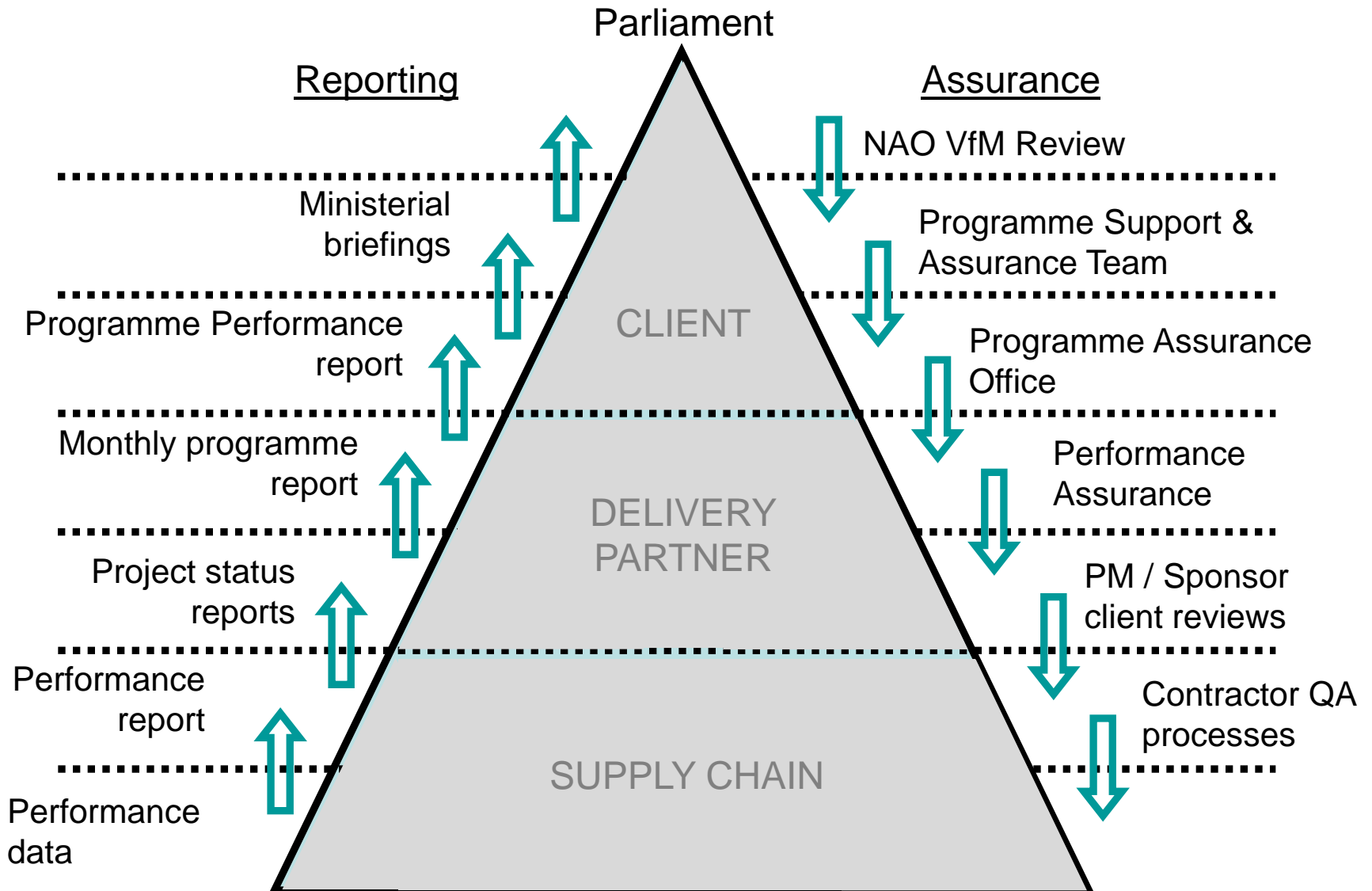
- Present trusted information to the right people, at the right time to facilitate effective decision making
- Challenge is to navigate a mass of data and convert it into transparent and actionable management information

Key Processes

- Decision “Rules”
 - Latest responsible date for action
 - 80/20
 - Protect the float
- Be flexible - adjust controls systems to suit the phase and nature of construction
- Keep it Simple – No jargon, clear, concise and graphic reporting – use data analytics but discuss the issue not the metric
- Everyone must work to the same calendar



The Reporting Structure



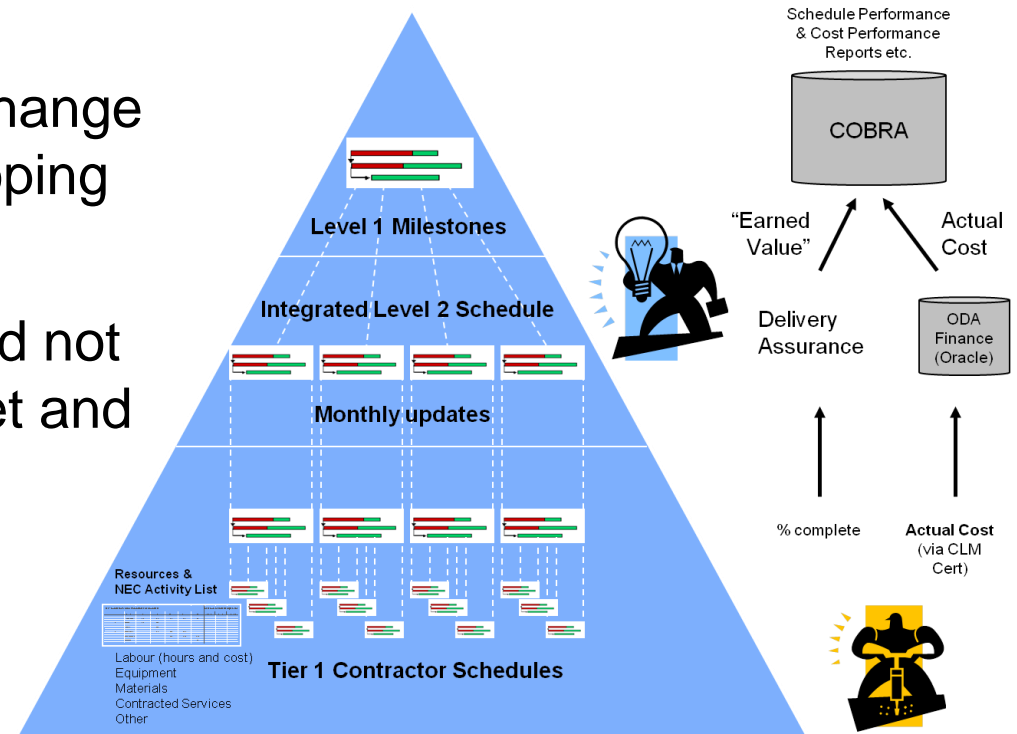


Connecting with the Supply Chain

- Reach out to involve people in Tier 1 and beyond – management to workforce
- Rigid control and assure outputs for objectives, standards and reporting toolset but not prescriptive about *how* they are delivered
- Benefits of collaborative framework
- Help and support to embed programme-wide practices for consistency

Earned Value to monitor progress

- All 32 criteria specified in ANSI / EIA 748 and APM were applied – but emphasised some more than others
 - Single data collection structure implemented through project teams and into Tier 1 contractors
 - Fully integrated budget-loaded programme
 - Earned Value (£) as the common means of reporting progress across diverse projects
- Baseline kept current (via change control) to reflect the developing delivery strategies
- Strict financial control but did not differentiate between Budget and Funding



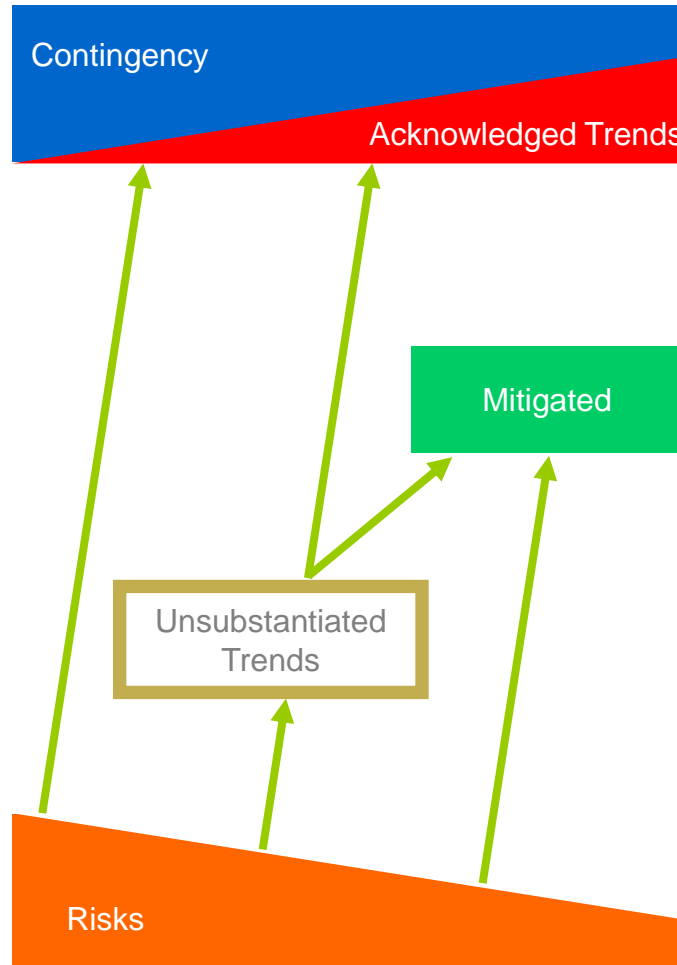
Budget Forecasting and Management of Risk

Cost Planning Phase



QRA (P80) informs level of contingency allowance

Delivery Phase (erosion of contingency)



Potential AFC



Control of Change and Contingency

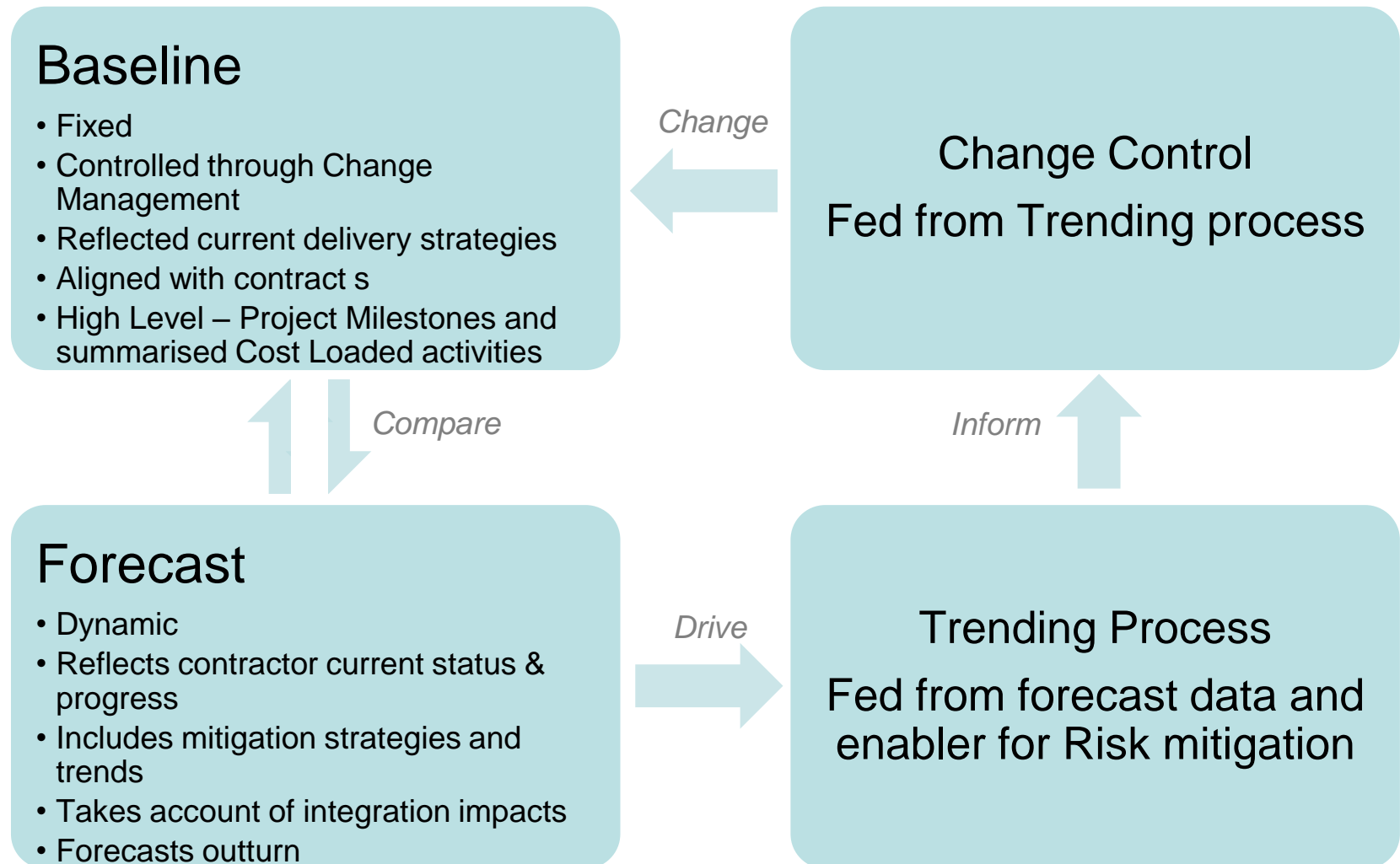
- Programme Change Board - Monthly
- Good governance structure that required authorisation for changes
- “Trends” process to show potential changes, which created opportunities to manage them out

Three contingency pots:

- Project – held within project budgets *available with Change Board approval*
- Programme – held by the ODA *accessible with approval to Funders*
- Funders – Held by the Funding bodies *only available by application to Funders*



Dynamic of Cost and Schedule Data



Lessons Learned

<http://learninglegacy.independent.gov.uk/index.php>

- No single magic bullet
- Agree on a 'single source of the truth' to fuel the Governance process
- Align the reporting / governance calendar across the Programme team
- Agree the detailed content of reports early and evolve to suit phase
- Keep it short and simple – avoid jargon, concise and graphic exception reporting, invest time in analysis
- Use data analytics but discuss only the issues and what to do about them
- Keep Baseline high-level and ensure Forecast is dynamic and integrated

End of Programme Controls and Assurance

