

Specialist in Engineering Assurance Delivery

Rail Division - Introduction

09-February-2023 | Version 01



Agenda

Sections

1. DSE Projects Overview
2. Assurance Flow
3. Assurance Process for Hand Back
4. Progress Report, Visualization and BIM
5. Contact Details

DSE Projects

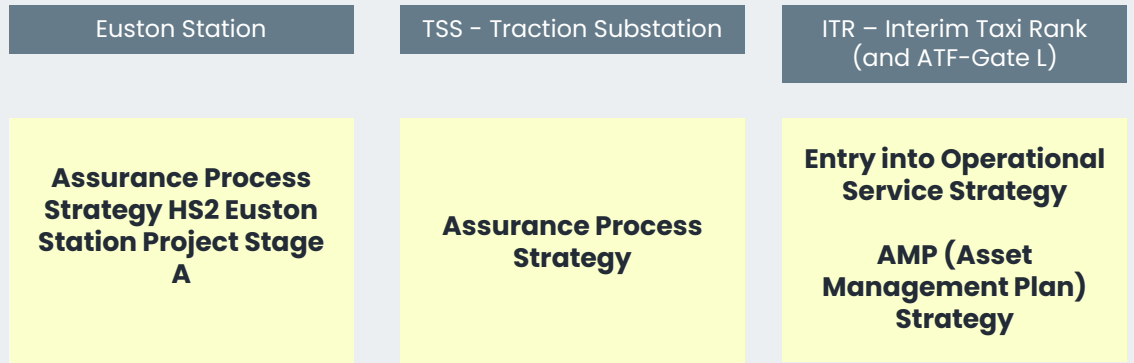
Gatwick Station Project and Euston Station

EUSTON

We have provided continuous support since 2020, firstly as delivery provider of the Stage A End to End Assurance Strategy for key Rail stakeholders HS2/LUL/TFL & NR.

This included assurance team organisation with R&R structure, deliverables, assurance mapping against disciplines as well as assurance spatial breakdown following UNICLASS classification for asset assurance identification.

For the Traction Substation we are providing strategic support with the provision of the Assurance Process Strategy, and for the Taxi Rank we have embedded a team within the project to manage the implementation of the assurance process.



DSE Projects

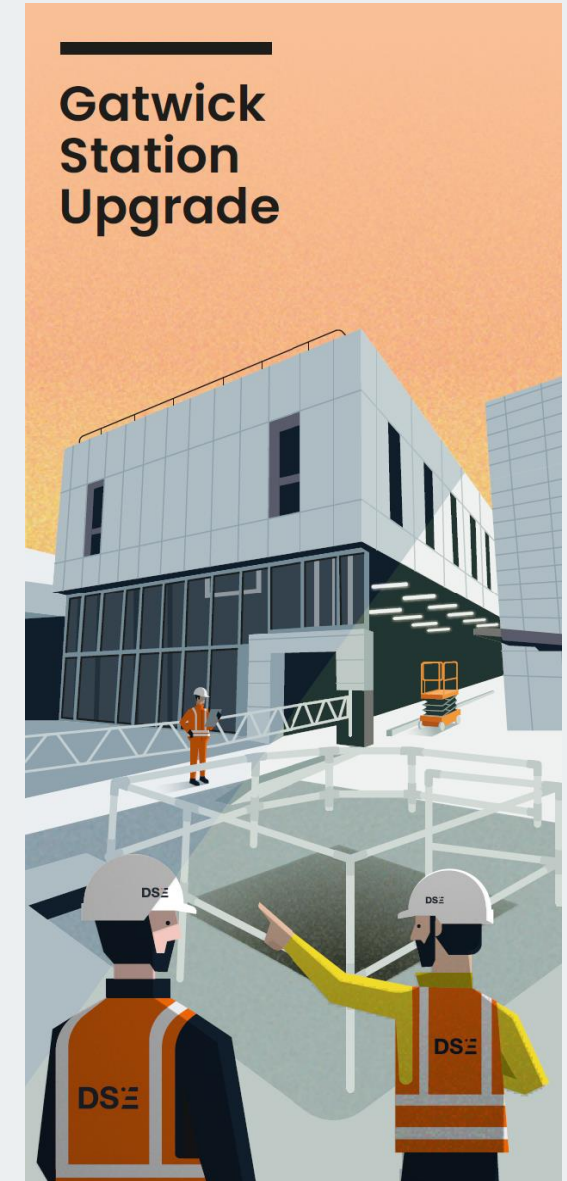
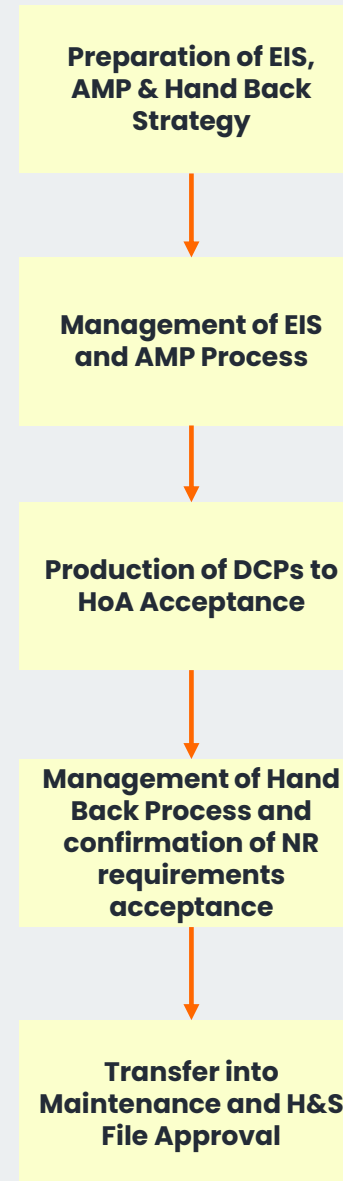
Gatwick Station Project and HS2 Station

GATWICK

We delivered an Entry into Service Strategy, AMP Asset Management Plan and Hand Back Strategy reviewed and accepted by Stakeholders.

We then assigned a management and assurance team on site to deliver and support the implementation of assurance requirements and measure readiness for EIS and Hand Back. This progressively populate Discipline Completion Packs for AMP certification evidence.

Currently we are supporting the project through the final stage with the preparation of the H&S File to achieve AMP017 signed off.





Section 2

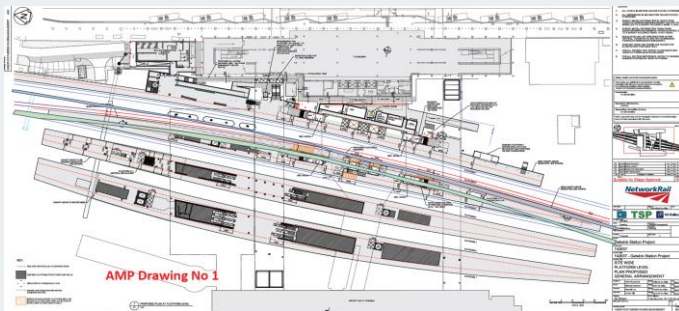
Assurance Flow

Spatial Breakdown for Assurance

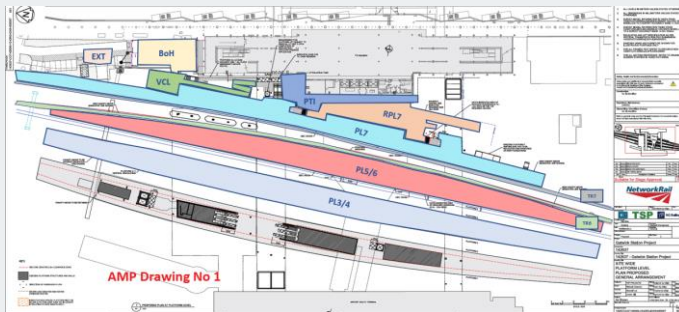
Geographical spatial breakdown for non-system assets to generate manageable packs of assurance information, based on construction profile. System installations will follow the system schematics.

1 Spatial Breakdown

Approved For Construction



AFC with Spatial Breakdown



2 Assurance Disciplines

Discipline	Sub-discipline	Product
Civils	CV01	Pile and Pile caps
	CV02	Drainage
	CV03	Retaining Walls
	CV04	Infill - Pre-Cast
	CV05	RC Slabs
	CV06	Underground Drainage
	CV07	Others
Structural	ST01	Infill - Pre-Cast
	ST02	Primary Steels
	ST03	Secondary Steels
	ST04	Structural Steel Spans
	ST05	RC wall
	ST06	Pre-cast Platform sections
	ST07	Others
Architectural	AR01	Waterproofing, copers, line marking, tactile & substrate, paving and manholes, Aco drainage
	AR02	Architectural metalwork, balustrades, flashings, bump rail, handrail, posts, brackets, gates, lift surrounds
	AR03	External Cladding, first fixings and wall build ups, Glazed curtain walls, Roofing and Drainage outlets, External doors, gates, fence, bollards, cycle racks
	AR04	Glazing, mastic, signage, wayfinding & pigeon protection
	AR05	Internal Wall Structure - Fire Compound, Internal wall finishes, Floor (includes access covers), Ceiling (including access hatches), Internal Doors and door's ironmongery, Internal steel work - Handrail / treads /stair stringer/ Ladders/ Key Clamp, Sanatory ware, Signage Way Finding & Statutory, Kitchen Fit Out, Glazing internal stairs/lifts/staircase
	AR06	Substrate and floor finishes, man hole service trench covers, Skirting, luggage rail, luggage barriers
	AR07	Glazing to escalator interface, Glazing to lifts, Glazing to stair interface
	AR08	Power assisted doors, steel doors, glazed doors
	AR09	Other

3 Assurance Packages

Assurance Files

AF-NR-PL-PL7-CV01-01
 AF-NR-PL-PL7-CV01-02
 AF-NR-PL-PL7-CV01-03
 AF-NR-PL-PL7-CV01-04



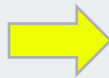
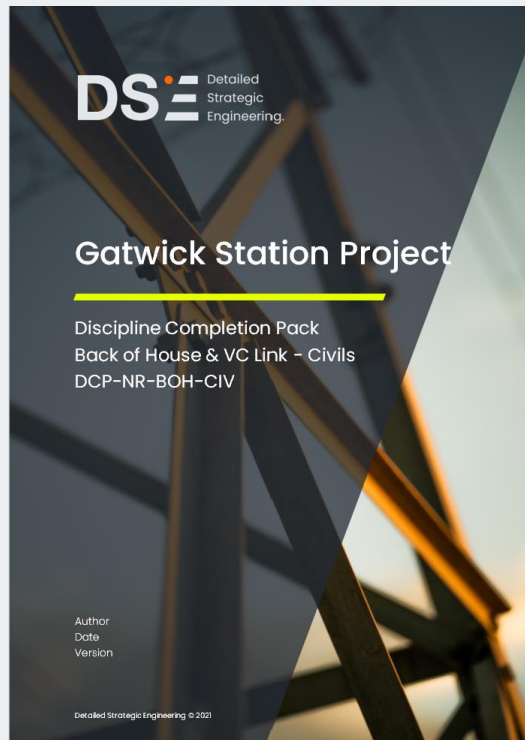
DCP Packs

DCP-NR-PL-PL7-CV PL7 Civils
 DCP-NR-PL-PL5/6-CV PL5.6 Civils
 DCP-NR-CL-BoH-CV BoH Civils
 DCP-NR-CL-AE-CV AE Civils

Discipline Completion Packs

Discipline Completion Pack (DCP) structure

For each given zone according to the spatial breakdown and discipline, the DCP compiles all assurance certification from design to completion.



DCP Section	Deliverable/Product
Residual Risk	Residual Risk Register
Red Lines / As Builts	As Builts
T&F	Training & Familiarisation
Operational Assets	System O&M
Construction Validation	Form 005
Reports	i.e. Inspection Reports
Location of Works	Location Sketch / Photographic report
Completion of Works	Assurance Files
Accepted Design	Form 003 & AFC

DCP and AMP015/016 Matrix

DCP Breakdown per Project Location

DISCIPLINE	LOCATION	SAB	PL5/6	Airport Entrance & PTI Link	Service Core	PL7	PL1/2	PL3/4	Station Entrance & NR Overbridges	BOH Urban Realm	Railway Systems	Lifts PL3/4 PL5/6 PL7	Escalators 11&12	Escalators PL7 (4Es) PL5/6 (2Es) AE (1Es)		
	DCP	Civil	DCP-NR-BOH-CIV	DCP-NR-PL5/6-CIV	DCP-NR-AEC-PTI-CIV	DCP-NR-SC-CIV	DCP-NR-PL-CIV									DCP-NR-PL-LIFT-CIV&STR
Structures		DCP-NR-BOH-ST	DCP-NR-PL5/6-STR	DCP-NR-AEC-PTI-STR	DCP-NR-SC-STR	DCP-NR-PL-STR			DCP-NR-SE-STR							
Architectural int		DCP-NR-BOH-AR	DCP-NR-PL5/6-AR-INT	DCP-NR-AEC-PTI-AR-INT	DCP-NR-SC-AR-INT	DCP-NR-PL-AR			DCP-NR-SE-AR							
Architectural ext		DCP-NR-BOH-AR-EXT		DCP-NR-AEC-PTI-AR-EXT												
Electrical		DCP-NR-PL1/2-ELE-01	DCP-NR-SC-ELE				DCP-NR-PL1/2-ELE-02	DCP-NR-SC-ELE								
Telecoms		DCP-NR-SC-ETL-01	DCP-NR-SC-ETL													
Mechanical		DCP-NR-BOH-EME	DCP-NR-PL5/6-EME	DCP-NR-AE-EME	DCP-NR-SC-EME	DCP-NR-PL7-EME		DCP-NR-PL3/4-EME	DCP-NR-SE-EME							
Fire		DCP-NR-BOH-FR-01	DCP-NR-SW-FR													
Public Health		DCP-NR-BOH-EPH	DCP-NR-PL5/6-EPH	DCP-NR-AE-EPH	DCP-NR-SC-EPH	DCP-NR-PL7-EPH		DCP-NR-PL3/4-EPH	DCP-NR-SE-EPH							
Lift		DCP-NR-BOH-LIFT										DCP-NR-PL-LIFT				
Escalators													DCP-NR-II-ESC	DCP-NR-SW-ESC		
Signalling												DCP-NR-RWS-SI				
Track												DCP-NR-RWS-TR				
Energisation												DCP-NR-RWS-P&E				
Plant												DCP-NR-RWS-HV				
HV																
Urban Realm										DCP-NR-BOH-AR-URB						
AMP 015/16	Buildings	1	1	1												
	Telecoms	1	1													
	Lift & Escalators	1										1		1		
	STEP										4			1		

51

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Section 3

Assurance Process for Hand Back

Network Rail Deliverables Identification

Pre-Construction

- NR/L2/CIV/003/F003 – Certificate of Design and Check
- NR/L2/CIV/003/F004 – Architectural and layout acceptance
- NR/L2/CIV/003/F006 – Roads/Highways Authority Agreement to Bridgeworks
- Inspection and Test Plan
- Issued for Construction drawings
- AMP003 – Asset Management Plan Agreement (Including all mandatory and project required AMP certs)
- QF703 – Memorandum of Agreement and DDM
- AMP010 – Delap Survey
- AMP004 – Staged Construction Report (if complete in stages)

Construction & Manufacture, Testing & Commissioning

- Inspection and Test records/construction records
- Nonconformance Reports
- Concessions, Departures
- Survey records
- EIS (Entry into Service) Inspections
- BIM – 3D Model
- DOWL List
- Operations and Maintenance manuals
- Calibration registers & certificates
- Assurance Files, including any related NCRs/RFIs/TQs
- NR/L2/CIV/003/F005 – Certificate of fitness to be taken into use
- Discipline Completion Pack (DCP) Inspection
- DCP – Capturing all Design & Construction Assurance
- Training and Familiarisation Records
- Spares list

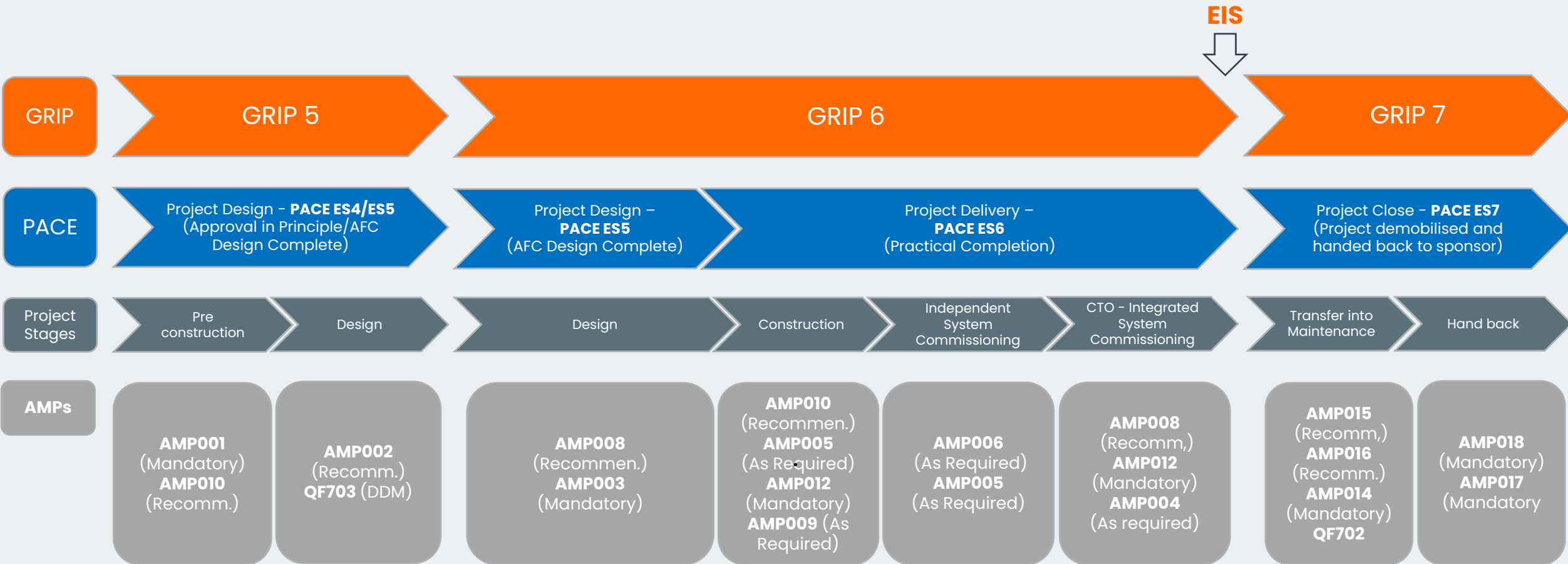
Handover

- Red line drawings/As-built drawings
- NR Asset Registers (CARRS, Ellipse, OPAS, etc.)
- ACM (Project Delivery – PACE ES6 Practical Completions Stage/GRIP 6
- AMP015 – Taking Over Certificate
- AMP016 – Defect and Snag Identification and Completion
- AMP012 – Notification of Asset Change
- AMP013 – Stage Completion Report
- AMP014 – Substantial Completion
- QF915 – H&S File Return
- QF702 – Acceptance of H&S File
- AMP017 – Final Certificate
- AMP018 – Defects Arising during Defect Liability Period

Based on F0032 EIS Checklist a Readiness for EIS and Hand back Tracker is generated to capture and progressively manage the above processes

High Level Assurance Deliverables Workflow

Summary - High Level Progressive Assurance Flow Chart for EIS, Asset Management Plan and Hand back





Section 4

Progress Report, Visualization & BIM

Network Rail Deliverables Identification

Discipline Boards

Consents

Network Rail

- Concessions/Departures
- Other land agreements/licences
- All 3rd Party consents (GAL, GTR, NR)

Project Delivery

Principal Contractor

- ITPs
- ITRs
- Issued for Construction drawings
- Redline/As-Built Drawings
- NCRs
- DOWs
- Assurance Files
- O&Ms
- Training & Familiarisation

Station Operations

Network Rail

- Station Change Process (GS23)
- Trades Union consultation
- Sectional Appendices
- Staff Consultation
- ConOps

System Safety

Network Rail

- Hazard Directory/Hazard Log
- System Safety Cases
- Common Safety Method Approval
- TNC & Derogations

NR Engineering Deliverables

DSE/CEM/DPE

- All AMP Certification (AMP001-018)
- NR/L2/CIV/003/F003 - Certificate of Design and Check
- NR/L2/CIV/003/F004 - Architectural and layout acceptance
- NR/L2/CIV/003/F005 - Certificate of fitness to be taken into use
- DCPs
- EIS Inspections
- H&S File Process
- Consent to Operate
- Form X

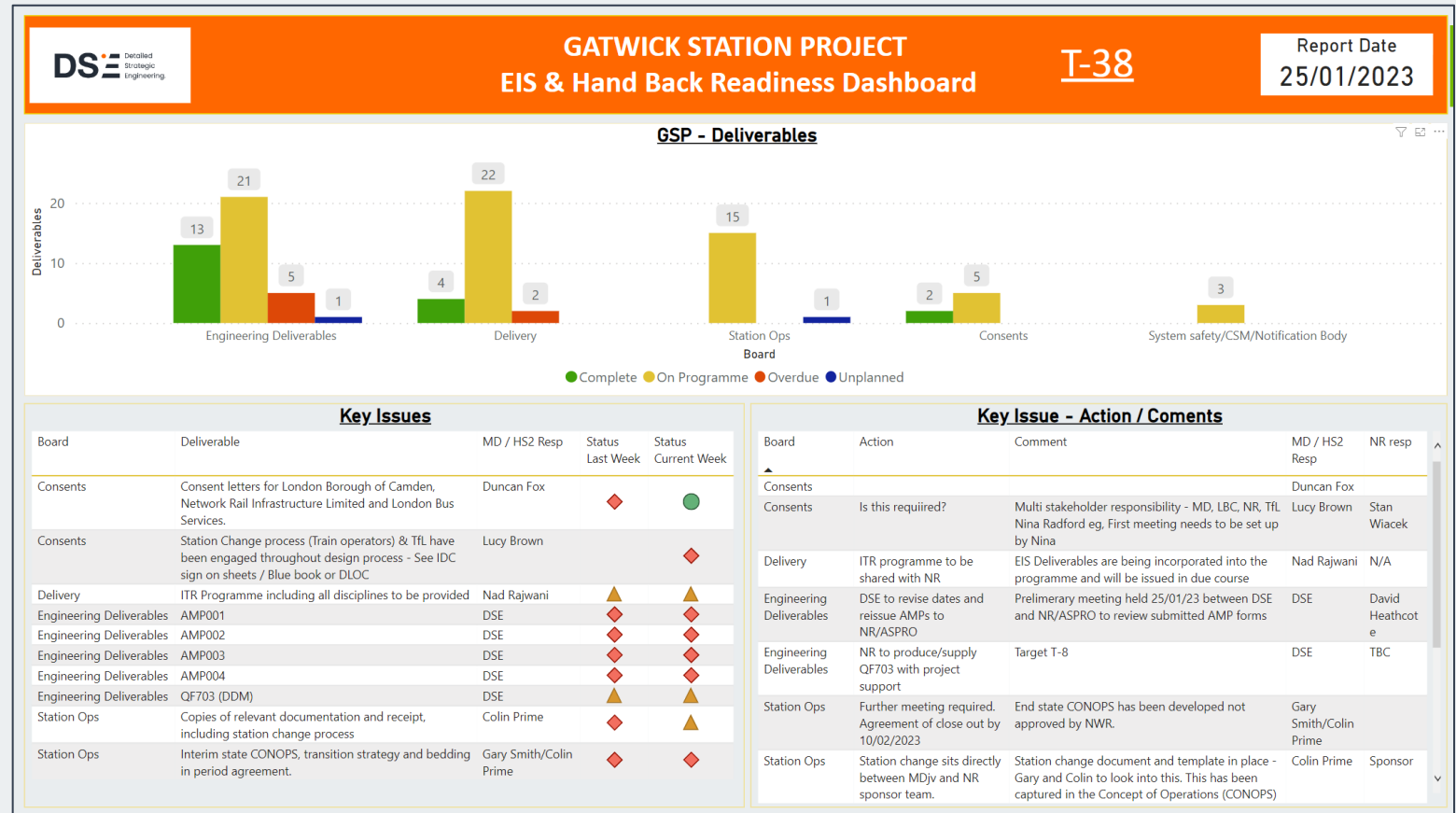
EIS & Hand Back Readiness Tracker / Dashboard

Weekly Report to Network Rail Team

The EIS deliverables for the Project required to satisfy the technical, operational and maintenance requirements have been listed in the EIS & Hand Back Assurance Readiness Tracker, following the NR/L2/INI/CP0075/F0032, the Network Rail EIS Checklist template.

The EIS checklist has also been disseminated into a control room environment, which has categorised the checklist requirements into 5 boards, which are:

- Project Delivery
- NR Engineering Deliverables
- System Safety
- Station Operations
- Consents



Assurance Readiness for Hand Back

Project Specific Dashboards Trackers

At DSE we implement targeted dashboards against key assurance stages, such as design approval, ITP production and assurance file completions.

Here we work with the delivery teams to plan for the production of assurance prior to works package commencement. This is set out in quality readiness review process starting T-10 weeks from start onsite date.

Works are then tracked and forecast through to assurance file acceptance as well as room by room completion readiness status

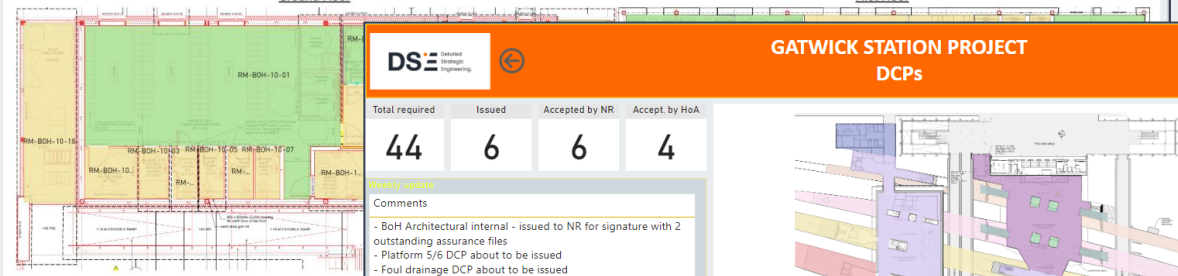
DSE

Room by Room - Station Accommodation Block

GSP
GATWICK STATION PROJECT

Number of Rooms	Supplier Rooms Snagged	CRE Inspected rooms	EIS Inspection snags raised	EIS Inspection snags closed	EIS Inspection snags open	AMP015/16 snags raised	AMP015/16 snags closed
38	38	38	248	192	56	0	0

Ground Floor First Floor



DSE

GATWICK STATION PROJECT
DCPs

Report Date
05/09/2023

Total required	Issued	Accepted by NR	Accept. by HoA
44	6	6	4

Comments

- BoH Architectural internal - issued to NR for signature with 2 outstanding assurance files
- Platform 5/6 DCP about to be issued
- Foul drainage DCP about to be issued
- BoH Telecoms DCP - verbal acceptance, awaiting signature from Dave Lodge
- BoH Electrical DCP - awaiting CRE approval on Small Power and lighting recline drawings and check errors on lux levels results
- BoH Lift DCP - awaiting assurance file and O&M

Discipline

Architectural

Civils & Structural

MEPT

RWS

Location

(Blank) PL

AE RW


BOH SE

L&E

DCP ID	Location	Discipline	Complete on site	Works complete	Percentage Complete	F003s required	F003s submitted	F003s accepted	F005s required	F005s submitted	Assurance files required	Assurance files submitted	Assurance files accepted	Redlines required	Redlines submitted	Redlines accepted
DCP-NR-PL5/6-AR	Platform 5/6	Architectural	No	30/10/2023	5%	2	2	2	1	0	6	1	2	5	1	2
DCP-NR-PL-AR	Platforms excluding 5/6 & 7	Architectural	No	30/09/2023	5%	6	6	0	1	0	18	0	4	18	0	4
DCP-NR-AEC-PTI-AR-EXT	Airport Entrance & PTI	Architectural external	No	31/08/2023	5%	9	9	5	1	0	8	0	0	0	0	0
DCP-NR-BOH-AR-EXT	Back Of House	Architectural external	Yes	31/07/2023	75%	3	3	3	1	1	6	1	0	6	1	0
DCP-NR-AEC-PTI-AR-INT	Airport Entrance & PTI	Architectural internal	No	29/09/2023	5%	7	7	4	1	0	16	2	1	17	2	1
DCP-NR-BOH-AR-INT	Back Of House	Architectural internal	Yes	30/04/2023	35%	1	1	1	1	1	8	8	5	34	34	21
DCP-NR-OB-AR	Station Entrance & NR Overbridges	Architectural internal	No	31/08/2023	5%	14	14	8	1	0	24	0	6	27	0	7
DCP-NR-SC-AR-INT	Service core	Architectural internal	No	31/08/2023	5%	3	3	1	1	0	3	0	1	4	0	1
DCP-NR-BOH-AR-URB	Back Of House - urban	Architectural urban	No	30/11/2023	35%	3	3	3	1	0	3	1	2	3	1	2

EIS & Hand Back Readiness Tracker / Dashboard

Weekly Report to Network Rail Team

 GATWICK STATION PROJECT Hand Back Key Issues Board T-38 Report Date 25/01/2023							
Key Issues							
Board	Deliverable	Action	Comment	MD / HS2 Resp	Planned Completion Date	Status Last Week	Status Current Week
Consents	Consent letters for London Borough of Camden, Network Rail Infrastructure Limited and London Bus Services.			Duncan Fox	28/02/2023	🔴	🟢
Consents	Station Change process (Train operators) & TfL have been engaged throughout design process - See IDC sign on sheets / Blue book or DLOC	Is this required?	Multi stakeholder responsibility - MD, LBC, NR, TfL Nina Radford eg. First meeting needs to be set up by Nina	Lucy Brown	31/01/2023		🔴
Delivery	ITR Programme including all disciplines to be provided	ITR programme to be shared with NR	EIS Deliverables are being incorporated into the programme and will be issued in due course	Nad Rajwani	21/11/2022	🟡	🟡
Engineering Deliverables	AMP001	DSE to revise dates and reissue AMPs to NR/ASPRO	Preliminary meeting held 25/01/23 between DSE and NR/ASPRO to review submitted AMP forms	DSE	27/08/2022	🔴	🔴
Engineering Deliverables	AMP002	DSE to revise dates and reissue AMPs to NR/ASPRO	Preliminary meeting held 25/01/23 between DSE and NR/ASPRO to review submitted AMP forms	DSE	27/08/2022	🔴	🔴
Engineering Deliverables	AMP003	DSE to revise dates and reissue AMPs to NR/ASPRO	Preliminary meeting held 25/01/23 between DSE and NR/ASPRO to review submitted AMP forms	DSE	27/08/2022	🔴	🔴
Engineering Deliverables	AMP004	DSE to revise dates and reissue AMPs to NR/ASPRO	Preliminary meeting held 25/01/23 between DSE and NR/ASPRO to review submitted AMP forms	DSE	27/08/2022	🔴	🔴
Engineering Deliverables	QF703 (DDM)	NR to produce/supply QF703 with project support	Target T-8	DSE		🟡	🟡
Station Ops	Copies of relevant documentation and receipt, including station change process	Station change sits directly between MDjv and NR sponsor team. G Smith to arrange TOCs face to face meeting.	Station change document and template in place - Gary and Colin to look into this. This has been captured in the Concept of Operations (CONOPS) Report issued to NR CP 16.12.2022 Station Change Notice (SCN) will be submitted as 1 notice encompassing all phases. We need to confirm internally the approach we are taking as this will need to form part of the SCN. The SCN will be submitted on the basis that NR lead consultation in relation to other works happening in the area, and demonstrate to TOCs that integration is occurring.	Colin Prime	10/02/2023		🟡
Station Ops	Interim state CONOPS, transition strategy and bedding in period agreement.	Further meeting required. Agreement of close out by 10/02/2023	End state CONOPS has been developed not approved by NWR.	Gary Smith/Colin Prime	10/02/2023	🔴	🔴

Key issues dashboard generated to track progress of items that could impact EIS or Hand Back and that require to be escalated.

This board identifies:

- 2 weeks RAG status
- Issue Owner
- Action Required
- Progress Comments
- Plan completion Date

Note: Boards can be bespoke to client requirements and level of information needed.

EIS & Hand Back Readiness Tracker / Dashboard

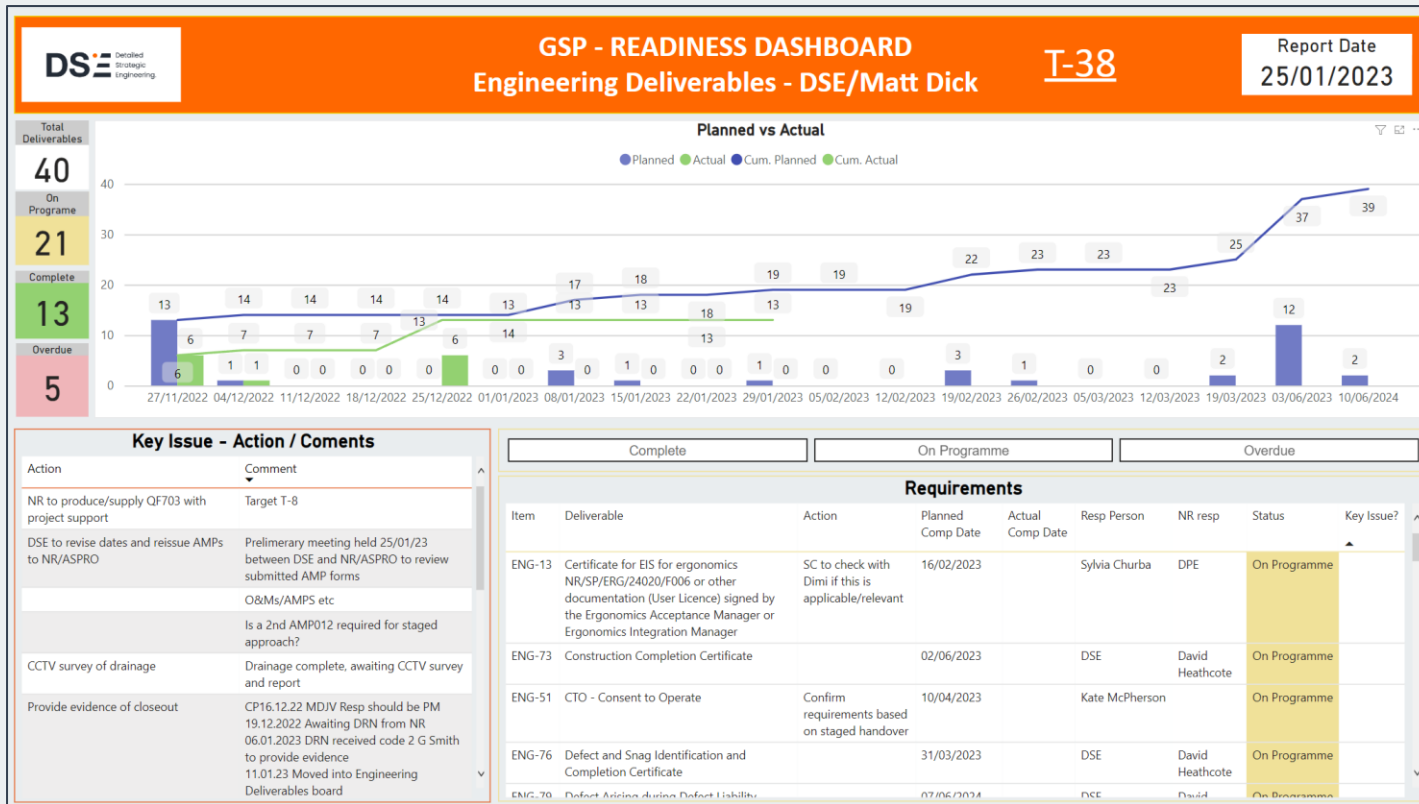
Weekly Report to Network Rail Team

Upon completion of works, bespoke room by room dashboards are generated to monitor specific requirements i.e. CRE inspections, DCP signed off and closure of defects and outstanding works (DOWL).



EIS & Hand Back Readiness Tracker / Dashboard

Weekly Report to Network Rail Team



Weekly Readiness Review meeting set up with all stakeholders to review progress. Readiness shall be reported through a PBI dashboard which is based on the Network Rail F0032 EIS Checklist, and including any additional deliverables relevant to EIS or Hand Back.

The dashboards will be reviewed and updated individually with the board owners (PC, NR and Stakeholder representatives where applicable).

The chart included shows a snapshot of the Engineering Deliverables Board report.

Contact us:

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