COLLABORATION AND CONTROL
- THE KEYS TO SUCCESSFUL DELIVERY

ADEPT MANAGEMENT
A RIDGE COMPANY

RIDGE

SKANSKA

COLLABORATION AND CONTROL
- THE KEYS TO SUCCESSFUL DELIVERY

DAVE PRANGLEY

Adept Management / Ridge

David Prangley is an industry leader in the management of the design process with over 20 years experience in the construction sector. He's a regular contributor at industry events and a lecturer at a number of UK Universities.

ADEPT MANAGEMENT
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IAIN BUSHELL

Skanska, UK

Iain Bushell is a Project Director with more than 25 years' experience in the construction industry, specialising in construction management and steering projects from design through procurement to delivery. Recently, he has led the rollout of project controls across Skanska UK, emphasising clear KPIs and performance monitoring at all organisational levels.

SKANSKA

ADEPT MANAGEMENT

ADEPT MANAGEMENT
A RIDGE COMPANY

RIDGE

- Consultancy & Technology Organisation
- Client Outcome Focussed
- Core Business Stream;
  - *Design/Project Management*
  - *Project Controls*
  - *Workflow Delivery (Flow®)*
- Industry / Academic Research Roots (1990 / early 2000's)
- Recently joined Ridge & Partners LLP

OUR COLLABORATIONS OVER THE LAST 20 YEARS

OUR COLLABORATIONS OVER THE LAST 20 YEARS

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OUR COLLABORATIONS OVER THE LAST 20 YEARS

Skanska UK overview
2024 figures

Established

2000

Employees

3,239

(monthly average)

Cash

£472.3m

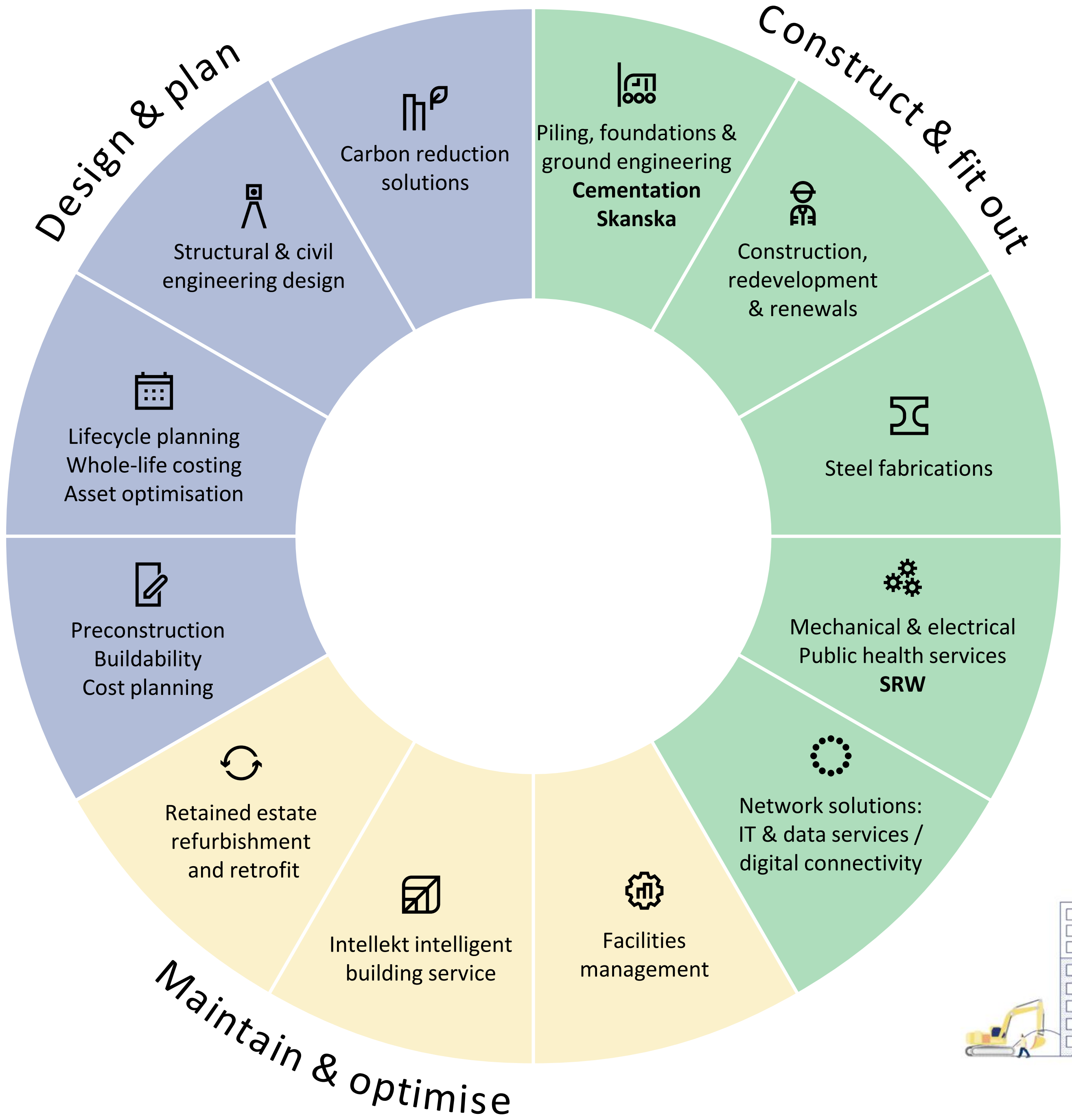
Revenue

£1.27bn

Operating Margin

4.3%

Our services



SKANSKA

What is production control?

Two simple questions

Have I had a good day?

How do I know I’ve had a good day?

What we require from our partners

Mindset
that planning &
production control
are essential

Willingness to
engage & upskill
with new
data platforms

Be honest &
transparent

What our partners can expect from us

Consistency in our approach

Provision of training & support

Honesty & transparency

CONSTRUCTION PRODUCTIVITY TASKFORCE

What is the Construction Productivity Taskforce?

With average productivity levels in the construction industry remaining consistently below the UK average, leaders from the construction industry came together in February 2020 to identify and trial new ways of making the sector more productive. The group brings together leading figures in the construction industry – clients, contractors, supply chain and consultants – to undertake practical interventions designed to make the sector more productive.

Members of the taskforce include: British Land, Landsec, GPE, Bovis, Mace, Skanska UK, Sir Robert McAlpine, Morrisroe Group, SOM, Derwent London. Meet the individual members of the Construction Productivity Taskforce.

12%
In real terms, the gross value added to the construction industry in the 22 years to 2019.

53%
How this contribution compares to the performance of the entire economy.

£5,000
How much each worker would be better off if pre-2008 productivity growth rate had continued.

CONSTRUCTION PRODUCTIVITY TASKFORCE

Construction Productivity Taskforce – VSSP – Pilot Case Study

The Vehicle Storage Support Programme (VSSP) project at Ashchurch, Tewkesbury, represents a major public-sector development to deliver modern, sustainable, and effective storage and maintenance solutions for the British Army's land equipment fleet.

Disrupter	Occurrence (%)
Design issues (errors/missing details)	14-20%
Material deliveries/ logistics	8-16%
Activity scheduling clashes	6-12%
Weather conditions	5-10%

Table 1 Key disrupters impacting on productivity.

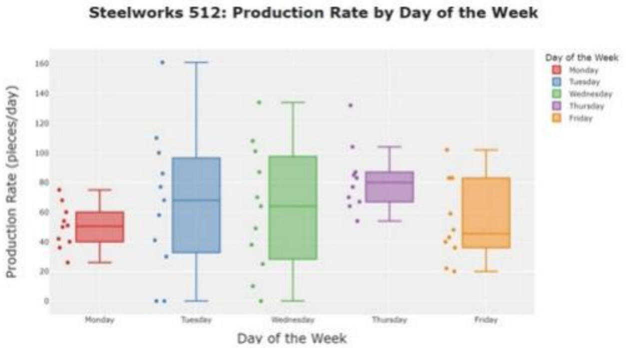


Figure 4 Production variability experienced across a typical working week (University of Cambridge)

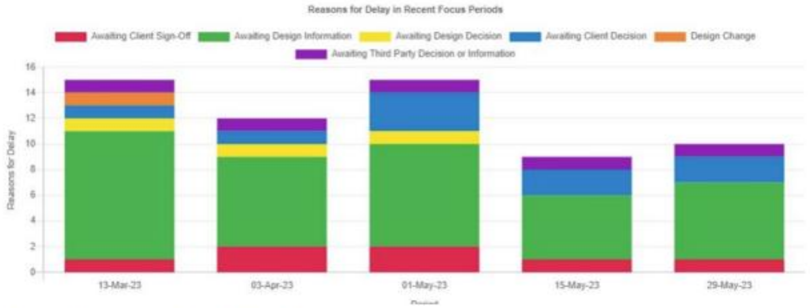


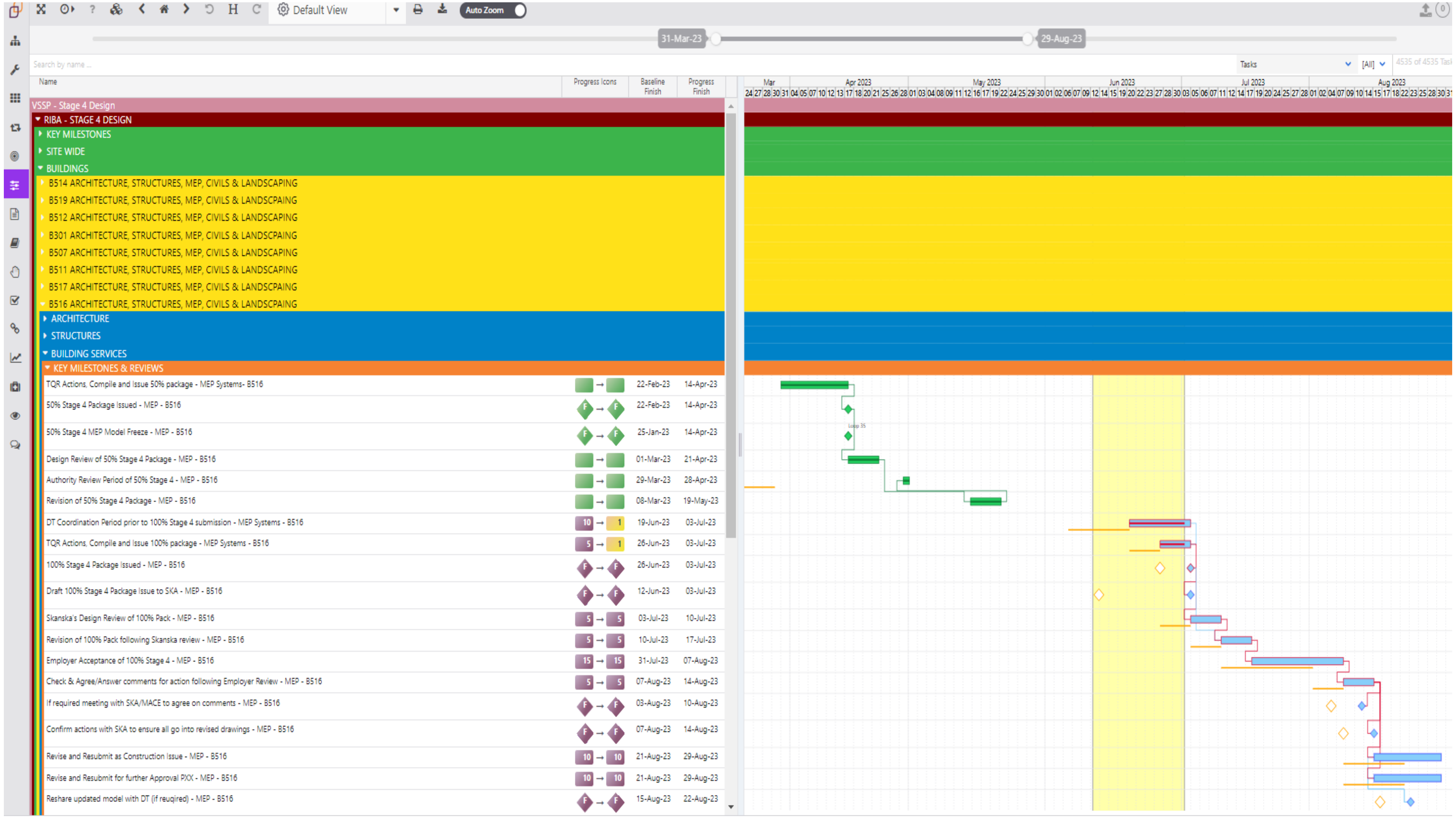
Figure 6 A typical output from Flow summarising key issues impacting design delivery

STAGE 3 – STANDARDISED DESIGN PROCESS DEVELOPED COLLABORATIVELY

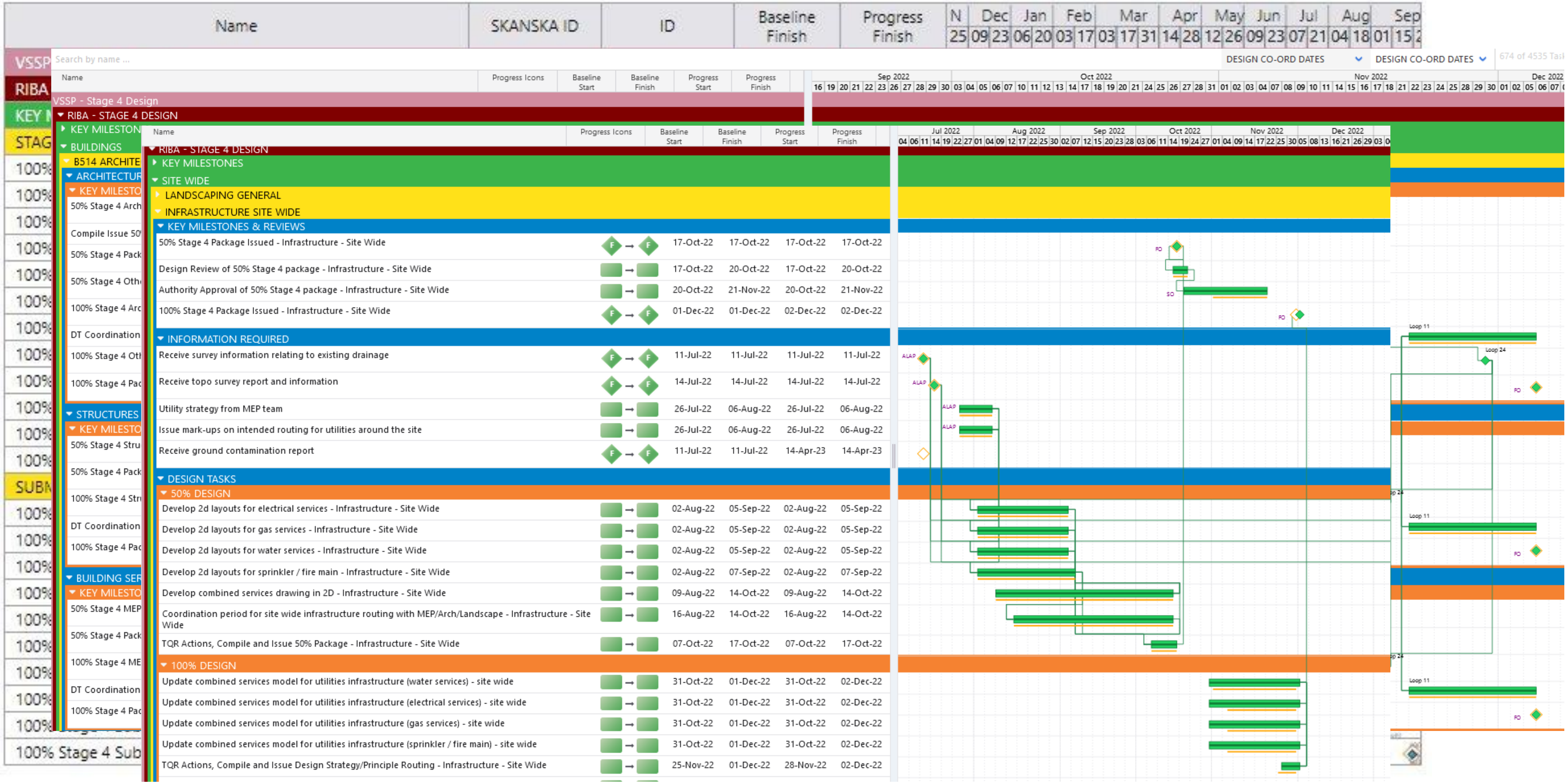
Name	External ID	Baseline Start	Baseline Finish	Baseli Remai Durati
BUILDING SERVICES		01-Aug-22	09-Jan-23	580
KEY MILESTONES & REVIEWS		03-Oct-22	09-Jan-23	25
50% Stage 4 Package Issued - MEP - B514		03-Oct-22	03-Oct-22	0
Design Review of 50% Stage 4 - MEP - B514		18-Oct-22	31-Oct-22	10
Employer Approval of 50% Stage 4 - MEP - B514		01-Nov-22	21-Nov-22	15
100% Stage 4 Package Issued - MEP - B514		09-Jan-23	09-Jan-23	0
STAGE 3 CATCH-UP		02-Aug-22	15-Aug-22	20
Completion of Stage 3 Validation - B514		02-Aug-22	08-Aug-22	5
Validation of plant room sizing - B514		09-Aug-22	15-Aug-22	5
Development of service distribution strategy - B514		09-Aug-22	15-Aug-22	5
Preliminary Mech/Elec Loading Assessment - B514		09-Aug-22	15-Aug-22	5
INFORMATION REQUIRED		01-Aug-22	31-Oct-22	0
Confirmation required on proposed supplier for CHE		01-Aug-22	01-Aug-22	0
Confirmation required on proposed supplier for lighting		01-Aug-22	01-Aug-22	0
Confirmation required on proposed supplier for LV Switchgear		01-Aug-22	01-Aug-22	0
Confirmation required on proposed supplier for sprinkler		01-Aug-22	01-Aug-22	0
Confirmation required on proposed supplier for Fire Alarm incl. PA/VA		01-Aug-22	01-Aug-22	0
Confirmation of U values to be worked to (based on Stage 3 validation)		08-Aug-22	08-Aug-22	0
Receive updated architectural model as basis of design for modelling		05-Sep-22	05-Sep-22	0
Appoint CDP for detailed design - Sprinkler		31-Oct-22	31-Oct-22	0
MECHANICAL		02-Aug-22	19-Dec-22	190
SPRINKLERS		02-Aug-22	19-Dec-22	80
50% DESIGN		02-Aug-22	19-Sep-22	40
Engage with Skanska supply chain and CDP specialist - Sprinklers - B514		02-Aug-22	15-Aug-22	10
Development of schematic design (based on stage 3 concept) - Sprinklers - B514		16-Aug-22	29-Aug-22	10
Develop principle routing for pipework to confirm location/sizing of rising main - Sprinklers - B514		30-Aug-22	12-Sep-22	10
Coordination of principle routing - Sprinklers - B514		06-Sep-22	12-Sep-22	5
TQR Actions, Compile and Issue 50% package - Sprinklers - B514		13-Sep-22	19-Sep-22	5
100% DESIGN		01-Nov-22	19-Dec-22	40
Development of detailed sprinkler design by CDP - Sprinklers - B514		01-Nov-22	05-Dec-22	25
Review and incorporate the CDP sprinkler routing/sizing design - Sprinklers - B514		06-Dec-22	19-Dec-22	10
TQR Actions, Compile and Issue 100% package - Sprinklers - B514		13-Dec-22	19-Dec-22	5
CHE SYSTEM (HUMIDITY CONTROL)		02-Aug-22	19-Dec-22	110
50% DESIGN		02-Aug-22	26-Sep-22	75
Engage with Skanska supply chain and CDP specialist - CHE - B514		02-Aug-22	15-Aug-22	10
Heat loss / ventilation calculations - CHE - B514		09-Aug-22	22-Aug-22	10
Humidity calculations & control - CHE - B514		23-Aug-22	05-Sep-22	10
Selection of CHE units - CHE - B514		30-Aug-22	05-Sep-22	5
Develop CHE locations, modelling ductwork routing - CHE - B514		30-Aug-22	19-Sep-22	15
Develop and size external penetrations / louvres - CHE - B514		30-Aug-22	12-Sep-22	10
Coordination of louvres with arch/structures - CHE - B514		13-Sep-22	19-Sep-22	5
Coordination of plant spaces and ductwork routing with structures/arch - CHE - B514		13-Sep-22	19-Sep-22	5
TQR Actions, Compile and Issue 50% package - CHE - B514		20-Sep-22	26-Sep-22	5
100% DESIGN		01-Nov-22	19-Dec-22	35
Final sizing of ductwork/equipment and updates to incorporate comments - CHE - B514		01-Nov-22	28-Nov-22	20
Final equipment selection for ancilliaries - CHE - B514		29-Nov-22	12-Dec-22	10
TQR Actions, Compile and Issue 100% package - CHE - B514		13-Dec-22	19-Dec-22	5

Name	External ID	Baseline Start	Baseline Finish	Baseli Remai Durati
ELECTRICAL		02-Aug-22	09-Jan-23	315
POWER SYSTEMS (INCL. LV, CONTAINMENT, DISTRIBUTION, EARTHING)		02-Aug-22	09-Jan-23	120
50% DESIGN		02-Aug-22	03-Oct-22	65
Engage with Skanska supply chain and CDP specialist - LV Switchgear - B514		02-Aug-22	15-Aug-22	10
Electrical Load analysis - Power Systems - B514		30-Aug-22	05-Sep-22	5
Electrical power calculations for cable and switchgear sizing - Power Systems - B514		30-Aug-22	12-Sep-22	10
Develop sizing/routing of electrical distribution/containment in model - Power Systems - B514		06-Sep-22	26-Sep-22	15
Develop electrical plant spaces in model - Power Systems - B514		06-Sep-22	26-Sep-22	15
SSG review of containment drawings to ensure appropriate routes to security equipment - B514		16-Sep-22	22-Sep-22	5
TQR Actions, Compile and Issue 50% package - Power Systems - B514		27-Sep-22	03-Oct-22	5
100% DESIGN		01-Nov-22	09-Jan-23	55
Update routing/plant/model and incorporate comments - Power Systems - B514		01-Nov-22	28-Nov-22	20
Develop final schedules incl. DBs - Power Systems - B514		29-Nov-22	19-Dec-22	15
Final cable sizing/scheduling - Power Systems - B514		29-Nov-22	19-Dec-22	15
TQR Actions, Compile and Issue 100% package - Power Systems - B514		20-Dec-22	09-Jan-23	5
LIGHTING (INTERNAL, EXTERNAL AND EMERGENCY)		02-Aug-22	09-Jan-23	115
50% DESIGN		02-Aug-22	26-Sep-22	60
Engage with Skanska supply chain and CDP specialist - Lighting - B514		02-Aug-22	15-Aug-22	10
Agree luminaires with project team - Lighting - B514		02-Aug-22	08-Aug-22	5
Undertake lighting calculations - Lighting - B514		09-Aug-22	29-Aug-22	15
Develop design of luminaires and cable sizing/routing - Lighting - B514		30-Aug-22	19-Sep-22	15
Coordination of high level services - Lighting - B514		13-Sep-22	19-Sep-22	5
Coordination of wall mounted lighting - Lighting - B514		13-Sep-22	19-Sep-22	5
TQR Actions, Compile and Issue 50% package - Lighting - B514		20-Sep-22	26-Sep-22	5
100% DESIGN		01-Nov-22	09-Jan-23	55
Update layout/model and incorporate comments - Lighting - B514		01-Nov-22	28-Nov-22	20
Finalise schedule and references - Lighting - B514		29-Nov-22	19-Dec-22	15
Final circuitry design - Lighting - B514		29-Nov-22	19-Dec-22	15
TQR Actions, Compile and Issue 100% package - Lighting - B514		20-Dec-22	09-Jan-23	5
FIRE ALARMS incl. VA/PA		02-Aug-22	12-Dec-22	80
50% DESIGN		02-Aug-22	05-Sep-22	35
Engage with Skanska supply chain and CDP specialist - Fire Alarm - B514		02-Aug-22	15-Aug-22	10
Develop fire alarm requirements and performance specification - Fire Alarm - B514		02-Aug-22	22-Aug-22	15
Input from Fire alarm CDP to capture requirements and coordinate with high level services for 50% package - Fire Alarm - B514		23-Aug-22	29-Aug-22	5
TQR Actions, Compile and Issue 50% package - Fire Alarm - B514		30-Aug-22	05-Sep-22	5
100% DESIGN		01-Nov-22	12-Dec-22	45
Finalise fire alarm layouts, schedule and references and incorporate comments - Fire Alarm - B514		01-Nov-22	28-Nov-22	20
Final circuitry and routing design - Fire Alarm - B514		15-Nov-22	28-Nov-22	10
Review CDP design and incorporate into models for final coordination - Fire Alarm - B514		29-Nov-22	12-Dec-22	10
TQR Actions, Compile and Issue 100% package - Fire Alarm - B514		06-Dec-22	12-Dec-22	5
SPECIFICATIONS		20-Sep-22	09-Jan-23	30
Development building services report/outline specification - 50% - MEP - B514		20-Sep-22	03-Oct-22	10
Development full specification incl. workmanship clauses - 100% - MEP - Site wide		22-Nov-22	05-Dec-22	10
Develop equipment schedule and scope of work - B514 - 100% - MEP - B514		13-Dec-22	09-Jan-23	10

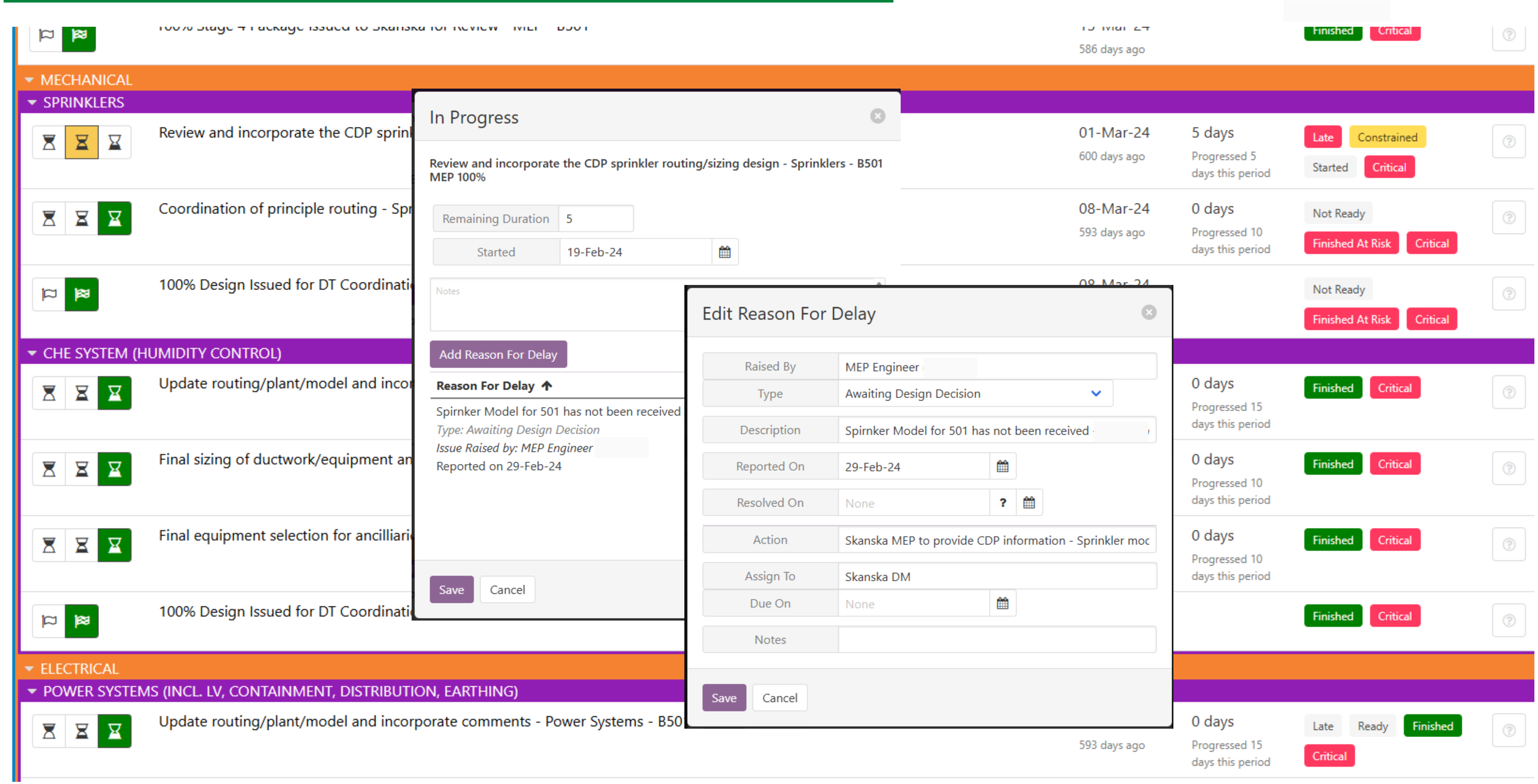
STAGE 3 – UTILISING STANDARDISED PROCESS TO DRIVE CONSISTENCY



STAGE 3 – INTERACTIVE LIVE VIEWS AVAILABLE TO ALL



SAFE SPACE FOR REPORTING



COLLABORATION TO RESOLVE ISSUES

Filter by name ... [Any Type] [Any Severity] [Any Actionable] [Any Criticality] Unresolved [Any Raised By Resource] [Any Owned By Resource] 12 of 84 Issue

	Issue	Details	Related To	Date	Issue Raised By	Action Owned By
Close	69	No Oil Systems CDP information provided - Areas to be shown in abeyance for 100% Reason For Delay · Reported · Awaiting Design Information Action Skanska to coordinate with CDP	Review and incorporate the CDP oil & fuel delivery routing/sizing design - Oil & Fuel Delivery - B519 ¬RIBA - STAGE 4 DESIGN¬BUILDINGS¬B519 ARCHITECTURE, STRUCTURES, MEP, CIVILS & LANDSCPAING¬BUILDING SERVICES¬MECHANICAL¬OIL AND FLUID DELIVERY SYSTEM¬100% DESIGN	09-Feb-23	IP MEP Engineer	DB Skanska Procurement
Close	86	Structures awaiting desing information from supply chain for section and personell doors on B511 Reason For Delay · Critical · Reported · Awaiting Design Information Action Skanska to feed info from rom supply chain for section and personell doors on B511	Design/sizing of principle secondary steelwork and typical details - (cold rolled) plus hot rolled steelwork around sectional doors - B511 ¬RIBA - STAGE 4 DESIGN¬BUILDINGS¬B511 ARCHITECTURE, STRUCTURES, MEP, CIVILS & LANDSCAPING¬STRUCTURES¬SUPERSTRUCTURE¬50% DESIGN	19-May-23	AW Structural Engineer	DB Skanska DM
Close	57	Accessible parking spaces - sign off by authorities required following PMI 46 change Reason For Delay · Critical · Reported · Awaiting Client Sign-Off Action Skanska to confrim accessible parking spaces with the client	100% Design Issued for DT Coordination/TQR - Hard & Soft Landscaping - B301 ¬RIBA - STAGE 4 DESIGN¬BUILDINGS¬B301 ARCHITECTURE, STRUCTURES, MEP, CIVILS & LANDSCPAING¬LANDSCAPING & CIVILS¬HARD & SOFT LANDSCAPING¬100% DESIGN	23-Jan-23	RP Landscape	DB Skanska DM
Close	87	Structures awaiting desing information from supply chain for section doors on B516 Reason For Delay · Critical · Reported · Awaiting Design Information Action Skanska to feed info from supply chain for section doors on B516	Finalise secondary steelwork - B516 ¬RIBA - STAGE 4 DESIGN¬BUILDINGS¬B516 ARCHITECTURE, STRUCTURES, MEP, CIVILS & LANDSCPAING¬STRUCTURES¬SUPERSTRUCTURE¬100% DESIGN	19-May-23	AW Structural Engineer	DB Skanska DM
Close	90	are expecting comments for the Testing area Reason For Delay · Critical · Due · Awaiting Client Decision Action SKANSKA to confirm with MACE when comments to be provided	Develop sections / surface water drainage / pavement design - Testing Area - Site Wide ¬RIBA - STAGE 4 DESIGN¬SITE WIDE¬TESTING AREA¬DESIGN TASKS¬100% DESIGN	07-Jul-23	AW Structural Engineer	DB Skanska DM
Close	58	Awaiting CDP information - PV areas (site wide) Reason For Delay · Critical · Reported · Awaiting Design Information Action Skanska to provide/assign CDP information	100% Design Issued for DT Coordination/TQR - Hard & Soft Landscaping - B519 ¬RIBA - STAGE 4 DESIGN¬BUILDINGS¬B519 ARCHITECTURE, STRUCTURES, MEP, CIVILS & LANDSCPAING¬LANDSCAPING & CIVILS¬HARD & SOFT LANDSCAPING¬100% DESIGN	23-Jan-23	RP Landscape	DB Skanska DM
Close	13	LEV Technical note 001 issued, response required to close-out Reason For Delay · Critical · Reported · Awaiting Design Information Action Technical note 001 issued, response required to close-out	LEV calculations - Welding LEV - B519 ¬RIBA - STAGE 4 DESIGN¬BUILDINGS¬B519 ARCHITECTURE, STRUCTURES, MEP, CIVILS & LANDSCPAING¬BUILDING SERVICES¬MECHANICAL¬WELDING LOCAL EXHAUST VENT SYSTEM (LEV)¬50% DESIGN	31-Aug-22	IP MEP Engineer	DB Client Team
Close	71	Site plate load bearing test results required - for all of Stores & Workshops Reason For Delay · Critical · Due · Awaiting Third Party Decision or Information Action Skanska to undertake plate load bearing test to confirm the slab thickness	Finalise ground slab details, rebar weights and building services ground slab penetrations - B507 ¬RIBA - STAGE 4 DESIGN¬BUILDINGS¬B507 ARCHITECTURE, STRUCTURES, MEP, CIVILS & LANDSCAPING¬STRUCTURES¬SUBSTRUCTURE¬GROUND SLAB¬100% DESIGN	23-Feb-23	AW Structural Engineer	DB Skanska DM

CONSISTENT REPORTING TO INFORM RISKS

Achieved Key Milestones

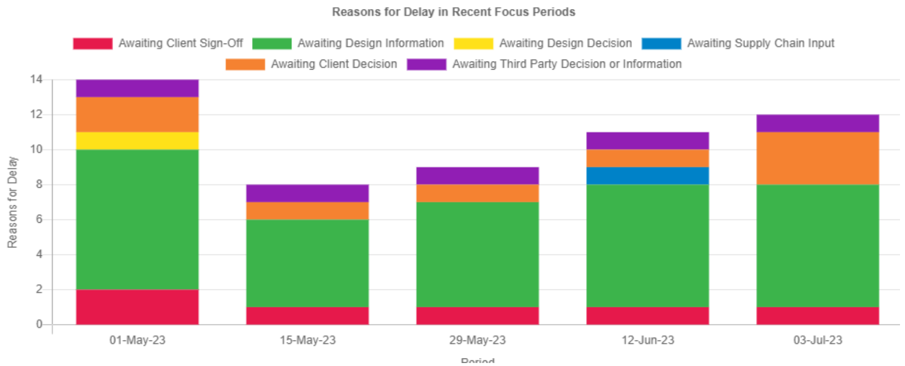
View all 65

Name	Status	Target	Achieved	Resource	
100% Stage 4 Package Issued to Skanska for Review - Civil & Lanscaping - B501	Hit (by 0 days)	15-Mar-24	15-Mar-24	Civils (Aecom)	Critical
100% Stage 4 Package Issued to Skanska for Review - MEP - B501	Hit (by 0 days)	15-Mar-24	15-Mar-24	MEP Engineer (Aecom)	Critical
100% Stage 4 Package Issued to Skanska for Review - Structures - B501	Hit (by 0 days)	15-Mar-24	15-Mar-24	Structural Engineer (Aecom)	Critical
100% Stage 4 Package Issued to Skanska for Review - Architecture - B501	Hit (by 0 days)	15-Mar-24	15-Mar-24	Architect (SBR)	Critical
DT Issue Stage 4 Design Review Reviewable Data Package	Missed (by 4 days)	16-Feb-24	20-Feb-24	Skanska DM	Critical

Outstanding Key Milestones

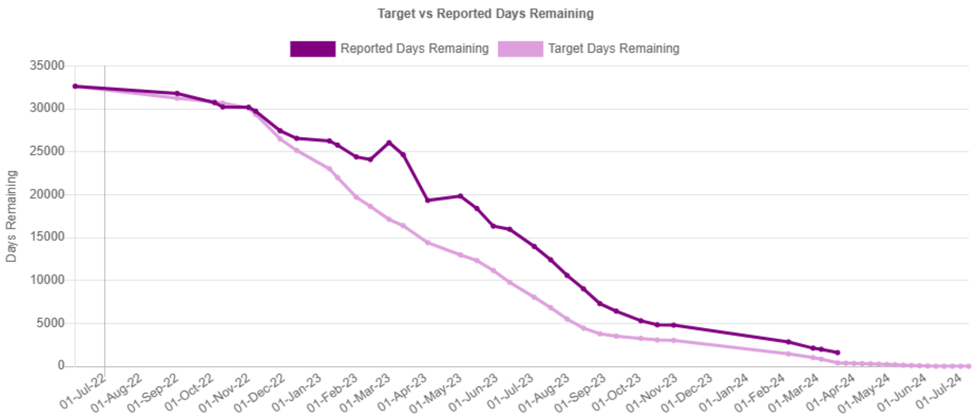
Name	Status	Target	Reported	Resource
100% Stage 4 Package Issued to Client - Architecture - B501	Hitting (by 0 days)	02-Apr-24	02-Apr-24	Skanska DM
100% Stage 4 Package Issued to Client - Structures - B501	Hitting (by 0 days)	02-Apr-24	02-Apr-24	Skanska DM
100% Stage 4 Package Issued to Client - Civil & Lanscaping - B501	Hitting (by 0 days)	02-Apr-24	02-Apr-24	Skanska DM
100% Stage 4 Package Issued to Client - MEP - B501	Hitting (by 0 days)	02-Apr-24	02-Apr-24	Skanska DM

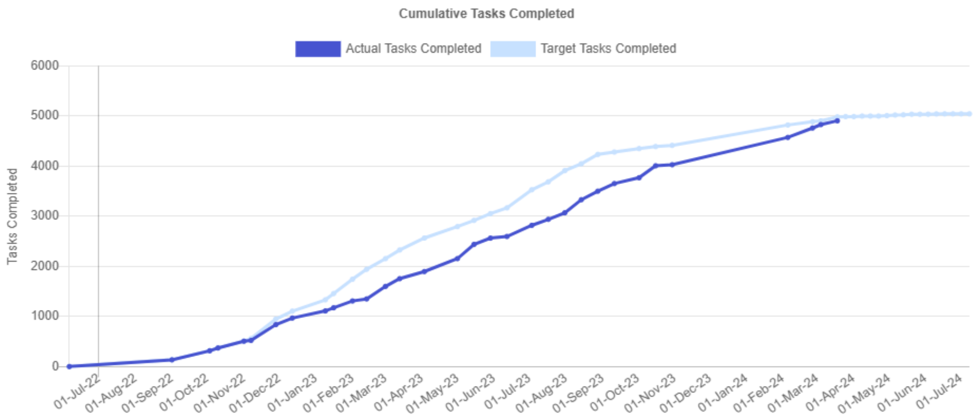
Reasons for Delay and Look-Ahead Constraints Reported



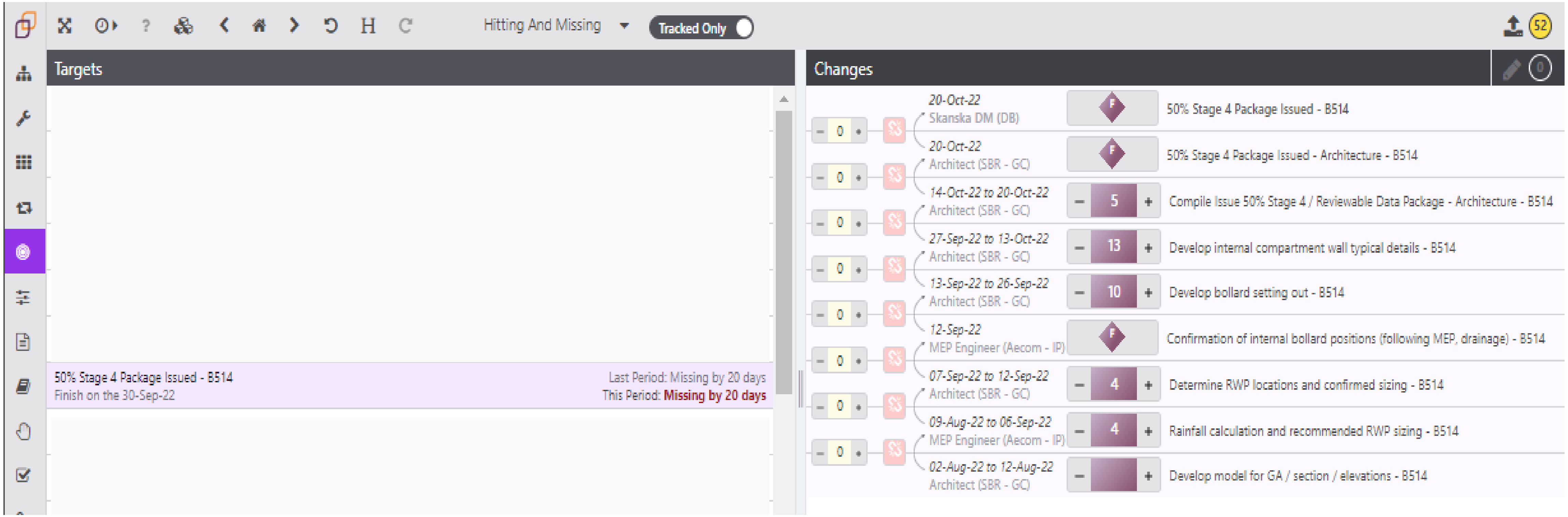
Project Performance Overview

Reported Performance Only





COLLABORATIVE RESOLUTION OF DELIVERY PINCH-POINTS



SUCCESSFUL DELIVERY

Belinda Lunn, Senior Responsible Owner of VSSP, said:

"The handover of this new CHE storage building is a fantastic milestone in our programme to deliver this exceptional facility for the Field Army. This is the fifth building to be completed under VSSP in the past year and represents a step change in the capability of the site. We look forward to further progress over coming months as we continue our collaboration with DIO and industry partners, to improve working infrastructure for personnel at MOD Ashchurch."

Warren Webster, DIO MPP Programme Director – Army, said:

"It is always gratifying to celebrate a significant milestone for a complex construction project. The excellent progress we've made at VSSP has been achieved thanks to the collaborative effort of DIO, Army, Skanska and Mace project teams, and their supply chain. We are proud to be delivering modern, sustainable infrastructure that will meet the enduring requirements of the Army's fleet and benefit military personnel."

Thank You for joining us….

Any Questions?