



practical business improvements
delivering business agility

CASE STUDY:

Project Approach / North Sea Asset 2019 Campaign

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Introduction to Client & Scope of Work

This case study demonstrates the impact of lean & agile ways of working when applied to a specific project.

The asset in question was the client's £5 billion flagship asset, located in the North Sea.

The 2019 Campaign followed previous campaigns 2016-2018 from which good performances across a range of well defined metrics had been delivered. The objective of the 2019 campaign was to lift performance to another level using lean and agile working methods.

The scope of activity from a coaching perspective was initially undefined and the project team very open minded, allowing the coach to take a holistic approach; targeting project management, interfaces and communications at all levels, as well as identifying the most significant installation scopes for focused improvement.

The campaign had 3 key contractors in addition to the client's personnel, each with their own operating structures and management systems. As with all projects in this industry, safety was always the most critical consideration.

The Coach deployed to the project in February 2019 which enabled activity to focus on the readiness phase 14 weeks before transitioning to the execution phase.

The Campaign moved offshore in June 2019 with 78,826 hours of activity scheduled within the 5 month campaign window.

6 min read

North Sea Asset 2019 Campaign

Project Based Deployment



Key Project Summary “At a glance”

Project Scope

Project Approach take for readiness phase and full Campaign duration:

- Scope: All areas
- Deployment 8 Months
- Scheduled Hours 78,826
- Client + 3 key Contractors
 - Construction
 - Commissioning
 - Fabric Maintenance
- Phases
 - Readiness
 - Execution

Improvement Strategy

- Lean & Agile tools
- Campaign Room: all areas & contractors represented
- Huddle Boards: deployed for key areas and scopes
- Kaizen events:
 - Sea Water Lift Pump (SWLP)
 - Gas Turbine (GT)
- Fabric Maintenance:
 - Value Stream Map
 - Kanban board

Benefits Delivered

All Campaign Goals Exceeded:

- HSE Zero Reportable Injuries
- Additional +19k hrs achieved, a 24% increase on plan
- Cumulative Productivity highest on record at 1.04
- Kaizen SWLP: 20% Reduction on sched time. Installed additional pump
- Kaizen Gas Turbine: 6 weeks, 3 days removed from plan
- Finished 10 days early



Asset 2019 Campaign Scheduled Scope

Scope Breakdown (Hours)

Description	Scheduled Hrs
Construction	22014
Commissioning	20141
Fabric Maintenance	36670
F1 Work	28133
F2 Work	34981
F3 Work	15711
F4 Work	
Overall	78826

Scope Activity (what & where)

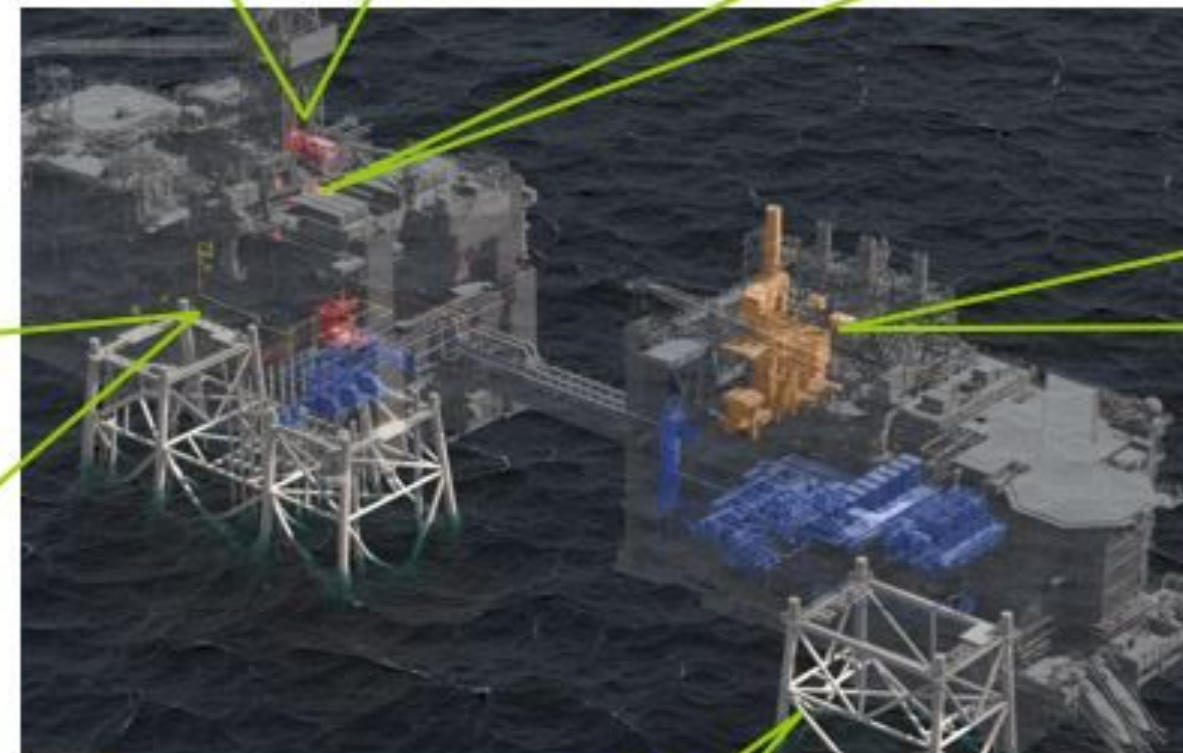
Fabrication Maint
F1 Hot Carbon Steel remedial F2 FMO's and Cooling Medium remedials
F3 PP caging, 2018 carry over, punch, Observations + F4 Lower priority

Drilling
GPO and Enhancement
Scope F2 / F3

Punch List 400 B PL's F3

Gas Turbine
F1 Installation to MC
F2 Commissioning and Testing to SH

Sea Water Lift Pump
F1 1st Framo SWLP F2 2nd Framo SWLP + F3 3rd Framo SWLP





Improvement Strategy Deployed



The PBI Approach

As always the approach was to undertake a strategic and tactical review and then to coach hands-on, leading and facilitating activities and delivering real-time tangible improvements.

The openness of the Leadership Team and the latitude given to the coach in this project enabled a full and holistic approach to be taken. Coaching at all levels regarding meeting cadence and general behaviour was delivered on an on-going basis.

Interface and functional management was optimised by the deployment of a Campaign Room with Huddles installed for functional areas, providing effective communications whilst ensuring full participation at all levels, delivering end to end participation and communication.

Leadership & Interface Management Coaching

The PBI Coach acted as Leadership Coach, improvement facilitator and provided general coaching at all levels.

The requirement for a Campaign Room was identified early in the project. This function was the vehicle for much of the on-going management and interface coaching. The management team consisted of Client Leadership, Engineering and off-shore operational interfaces with the project team involving: Leadership, Client Engineering, Engineering Contractors, Construction, Fabrication Maintenance.

Effective Multi-Level Communications & Escalation

Method: Campaign Room. This project management framework contributed significantly to the results achieved by the project, providing the focus and rigor for action planning, identification and closure. The room consisted of the following functions:

- Engineering
- Construction
- Fabrication Maintenance
- Procurement & Supply Chain Management
- Commissioning On & Off Shore Ops

The room conveyed on a daily basis both in the readiness and execution phases. A charter, operating guidelines and general behavioural standards were agreed and complied with. Visual management data was utilised to enable “at a glance views” of status in key areas which developed and evolved with the project.

Method: Daily Huddles. These were used to optimise team involvement and to optimise communication across the team network. The process was adopted by critical scope teams as well as functional departments.

Focused Lean & Agile Improvement Events

Key areas of focus were selected based on project impact and risk with improvement interventions planned and executed.

- Kaizen Seawater Lift Pump
- Kaizen Gas Turbine
- VSM: Fabric Maintenance Activity
- Workshop: Perfect Day & Week



Kaizen Focus Area: Gas Turbine Installation



Opportunity

The installation of the Gas Turbine included non-standard activity due to parts had been used for spares on other turbines resulting in non-standard items requiring replacement e.g. Drive-shaft.

Stored materials both on and off shore required checking and in some instances re-working and replacing.

The plan for the Installation spanned the full length of the offshore platform campaign with no growth or slippage allowance. It was scheduled for over 21 weeks (149 days in total). This was considered very high risk for the campaign.

Improvement Methodology Applied: Kaizen Event

This focus area was identified for a full Kaizen which required 5 days to execute (1 day Value Stream Map & 4 days for Kaizen). The team included 9 participants ranging from Functional Leads and Supervisors to Procurement, Commissioning and Vendor Project Managers.

Value Stream Mapping session, identified 150 process issues

During the 4 day Kaizen event:

- The team identified the requirement to accelerate actions associated with vendors, suppliers and the various functions to ensure predictable and reliable execution
- Set-up reduction methodology used to refine plan with a focus on optimisation of parallel working. Complete process / all trades mapped-out and worked to detail of Work-pack
- Mapped Process: 10 Trades with over 450 Job cards by day and shift
- Checked and streamlined materials and logistics arrangements for all stages of installation process including arrangements for equipment including vendor supplied parts and equipment

Performance Data / Delivered



6 Week
reduction to
schedule



30%
Reduction in
original schedule
time



2,610
Offshore hours
saved

Additionally:

- Improved readiness for execution ensured a robust and reliable plan with potential issues minimised and mitigated
- Installation plan reduced Block of time across multiple trades freed up for other campaign activity.



Kaizen Focus Area: Sea Water Lift Pump



Opportunity

The SWLP replacement scope for destruct had been developed based on past activities, the construct scope had been developed specifically for the project with lessons learnt from the previous SWLPs.

This resulted in the original plan showing 15 weeks and 5 days (110 days in total / 10,245 hours) Doing nothing put at risk the projects ability to replace 2 SWLPs within the 2019 Campaign window.

Improvement Methodology Applied: Kaizen Event

This focus area was identified for a full Kaizen which required 5 days to execute (1 day Value Stream Map & 4 days for Kaizen) The team included 7 participants ranging from Functional Leads and Supervisors to Procurement, Commissioning and Vendor Project Managers.

A Value Stream Mapping session, identified 85 process issues.

During the 4 day Kaizen event:

- Full assessment of material positioning at point of use to maximise productivity during installation
- Improved process for managing Vendor interface, material testing and positioning
- The team then reviewed the existing installation process to maximise concurrent working opportunities to establish the safest and most efficient execution possible

(continued):

- Set-up reduction methodology used to refine plan with a focus on optimisation of parallel working. Complete process / all trades mapped-out and worked to detail of Work-pack

Performance Data / Delivered Benefits



18 day

**Reduction to
installation plan**



20%

**Reduction in
original schedule
time**



1

**Additional SWLP
commissioned
within time**

Additionally:

- Improved readiness for execution ensures a more robust and reliable plan with potential issues minimised and mitigated
- As a direct consequence of the accelerated delivery a 3rd Sea Water lift Pump was scheduled, material positioned, fully installed and commissioned. The pump was taken to full system Handover within the Campaign which still finished 10 days early. This was considered a significant achievement within the Clients Global Projects Organisation

Benefits Summary: Overall Productivity



Campaign Productivity Summary

- Exceeded all Milestones in baseline Plan
- Additional +19k Hours achieved Plan Vs Actual / 24% increase
- Installed additional Seawater Lift Pump completed to SH
- Cumulative Campaign productivity was highest on record at 1.04
- Higher Utilisation on planned scope
- Zero Recordable injuries / Supervisor led HSE Performance: Deployed a “find unique ways to engage the Supervisors” approach, leading to improved trends as campaign progressed. Started strong, finished stronger!
- Finished Campaign 10 days earlier than baseline plan

Plan Vs Actual Breakdown (Hours)

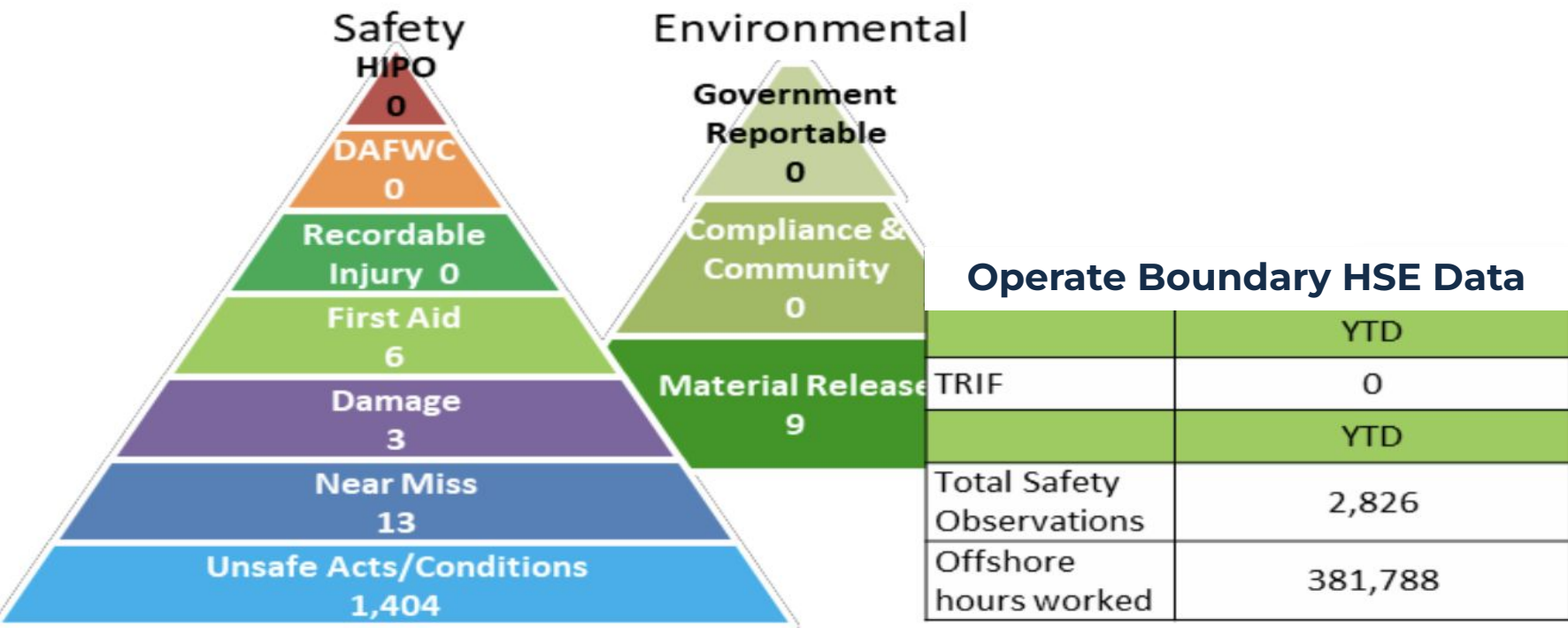
Description	Original Budget	Growth	Final Achieved
Construction	22014	1823	23837
Commissioning	20141	648	20789
Fabric Maintenance	36670	2205	38875
F1 Work	28133		27865
F2 Work	34981		38858
F3 Work	15711		16780
F4 Work			14100
Overall	78826		97604

Contractor Productivity Breakdown

	Productive Time		Labour Utilisation	
	Planned	Actual	Planned	Actual
Fabric Maintenance	7 Hours	8 + Hours	80%	90% +
Construction	7 Hours	8 + Hours	80%	90% +
Commissioning	6 Hours	7+ Hours	70%	80% +

Benefits Summary: HSE

GPO Incident Triangles Operate Boundary - End of Project Figures



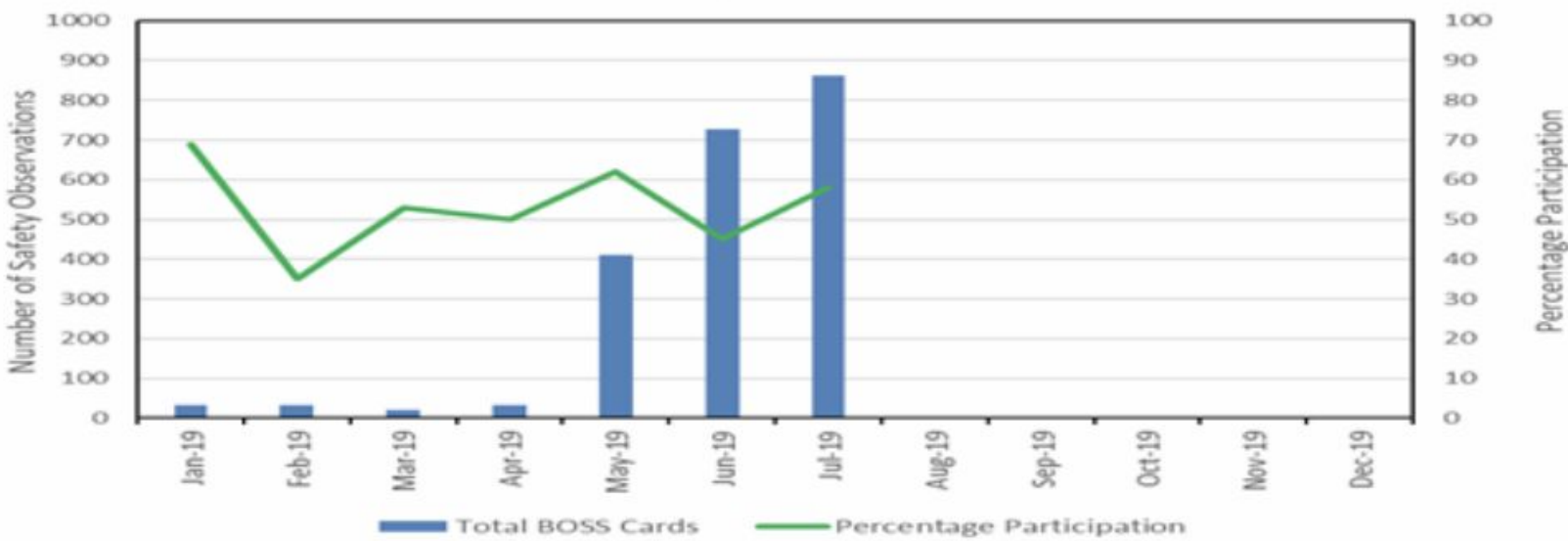
Delivered Benefits

- Zero Reportable Injuries from 381,788 hours worked
- Over 500 People inducted by Onshore HSE Team over 5 month period
- Maintained focus around Operating Discipline and basic rules throughout campaign
- Site based coaching and encouragement resulted in improved IRIS participation

Lean & Agile Performance Drivers

- HSE Daily Huddle:
- Process used daily for internal HSE Communication and action management
- HSE full participation in Campaign Room
- Readiness Phase
 - Tracking / data and detailed status on readiness
 - Deep-dives on a regular basis
 - Offshore Execution Phase
 - Onshore Huddle Focus
 - Continuous monitoring & tracking
 - Effective escalation
 - Review, adapt, improve

Safety Observations with Participation % (2019)



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