

Case Study Title: Data Led Approach to Developing Lean Behaviours on Complex Projects

Company Overview | ARDMAC | ardmac.com

Ardmac is an international construction company delivering complex high value workspaces and technical environments. We have been providing high quality spaces to fast moving and evolving markets for over 40 years. We are a leading global provider of cleanrooms, data centres, electric vehicle battery facilities, fit out and modular solutions. At Ardmac, we believe in setting new standards for the industry and driving innovation. We believe in tailoring solutions to our clients' evolving needs, and in working hard to harness our unrivalled knowledge to deliver safety first and excellence as standard across award winning projects.

Ardmac work "smart," meaning we deploy innovative technology

throughout the business to empower our people, drive performance and delight our customers. We place the customer at the centre and apply lean construction principles and technology to everything we do. Our ultimate goal is to maximise value for our customers. We believe that technology and innovation have the power to drastically change the face of the construction sector and we are committed to staying ahead of the curve.

In the delivery of this high performance team case study, we partnered with Breakthrough Change. Founded in 1998 Breakthrough Change creates lean performance-driven teams for complex construction projects.

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Overview & Background to the Lean Initiative

Successful Implementation of this program on a first of a kind hyperscale data centre in which Ardmac where an Integrated Delivery partner initiated the thought that it would be of benefit to the organisation if rolled out across all business units as opposed to just project based.

Starting with one Business Unit and then widening the scope to include remaining business units Ardmac needed to ensure that all Business Units each with their own objectives and drivers align with the Ardmac group objectives and that the teams are maximising their

potential in achieving agreed strategic and operational performance. Ardmac have focused on creating a sustainable open communication with all teams and a monthly communication forum was deemed the appropriate avenue to deliver the rollout of the High Performance Team initiative.

Against this backdrop, a lean approach was needed that would ensure all projects within the business units worked together if focus groups, avoiding duplication, and increasing collaboration across the team, resulting in increased productivity.

Lean Initiative Undertaken – Lean Thinking, Tools, Techniques

Having identified the challenges facing the project, including the scale and the objective of integrating all project teams and business units, the need for a lean approach was recognised. The High-Performance Team model was selected. The High-Performance Team model is built upon the research by Harvard University, McKinsey, Independent Project Analysis, University of Michigan, and Deloitte and identifies the enablers for high performance on complex projects. Using the data from over 600 studies on high performance teams, Breakthrough Change identified



Figure 1: The six foundations and steps

the six foundations of high performance and the language people used when successful. From this, they created a way to measure and manage both the foundations and the language, thus leading teams on complex projects to high performance. The process used is simple, yet highly effective, with the full support from a committed senior leadership team.

Process Steps:

1. Baseline:

To establish the baseline, the Higher Performance Team Questionnaire (HPTQ™) was used. This is a questionnaire that captures the team perception of where they are against the six foundations of high performance, also capturing how the team describes current performance, what the team does well and what needs to improve. Based on this data, we had a solid baseline against the six foundations. Through practical application of the model, it has been found on more than 40 complex projects between 2005 and 2021, that high performance occurs above 80% where the language ratio is above 4:1 positive to negative.

2. Analyse:

HPT Foundation	Ardmac
Behavioural Skills	67%
Technical Skills	75%
Accountability	68%
Process Procedures	68%
Goals, Role & Responsibilities	70%
Vision & Purpose	70%

Figure 2: Improvement Areas identified

The priority areas identified in the initial analysis (baseline) stage involved improving the 'behavioural skills, accountability and working approach.' This involves the systems being used, and the shared platforms that would accurately manage the project metrics as well as encourage the behaviours that enable collaborative, delivery focused, trust-based relationships that are the hallmarks of a high-performance team.

3. Review:

The third step involved reviewing the data with the team and involving them in describing exactly what is needed to improve the performance in the lower scoring areas.

4. Plan:

An action plan was then developed with the team. This ensured maximum buy-in by the team as it was 'their plan.'

5. Implement:

For the implementation step, focus groups were established to focus on the areas requiring attention and these were socialised and shared throughout the business unit. Improvement measures were created and delivered at team meetings, integrated as part of the Ardmac IMS and were soon adopted as the key ways of improving performance of where the team were heading as well as providing a sense of purpose.

An updated and improved live RACI (Responsible, Accountable, Consulted, Informed) to clearly identify roles and responsibilities on projects from Pre-tender through Pre-construction, Construction phase and Project close out as well as training plans for skills gaps and new topics for discussion at communications meetings were all created to enable improvement on performance.

6. Track:

The team performance was then reassessed/ baselined using the HPTQ™. By focusing on the three areas, then building a suitable action plan and implementing it, we improved performance. As a result, the 'behavioural skills' and 'accountability' were positively impacted. The overall result was an improvement in the six foundations.

HPT Foundation	Sep 22	Feb 22
Behavioural Skills	75%	67%
Technical Skills	76%	75%
Accountability	75%	68%
Working Approach	76%	68%
Goals, Role & Responsibilities	83%	70%
Vision & Purpose	78%	70%

Figure 3: Improvement in foundation scores.

As a result of the improvements, the individual and team confidence and belief increased, enabling the team members to concentrate on further improvements and project delivery. The Ardmac teams have moved from a siloed working approach to a collaborative integrated team approach. This resulted in an acceleration of performance, progress, and delivery. The other benefits included a more creative, solution-focused team which continues on the its high performance team journey.

Lean Initiative Improvements & Impact

The Project Team baseline against the High Performance Team Foundations was an HPTQ™ score of 69% overall indicating the team was at the Potential Team performance level with an accompanying Language Ratio of Positive 2.9: Negative 1. From this data, we developed an action plan for each multi discipline team across the business unit, which was led by an embedded Team Connector. The action plan focused on improving the areas the survey identified as needing to be improved. The action plan was

agreed with the team and implemented in stages over the next six months. We conducted a re-baseline, again using the HPTQ™, that showed an improvement in the HPTQ™ score to 75% indicating the team had moved into the Real Team performance level and a Language Ratio of Positive 3.5: Negative 1. This represents an HPTQ™ improvement of 6 points or a 9.2% improvement and an increase in the Language Ratio of 21%.



Figure 4: Overall Higher Performance Team Questionnaire Score

The following is a summary of the overall impact from this initiative:

1. A more collaborative team: cross discipline and cross organisational collaboration resulting in less duplication of work, identifying the best athlete for the task, which increased productivity.
2. Improved measurement of performance data, enabling more focused and precise management of the project. This was achieved by creating the collaborative teams that were able to put project first ahead of their own organisation and share a common agreed set of project data on the same platform that enabled precise shared measurement on progress using

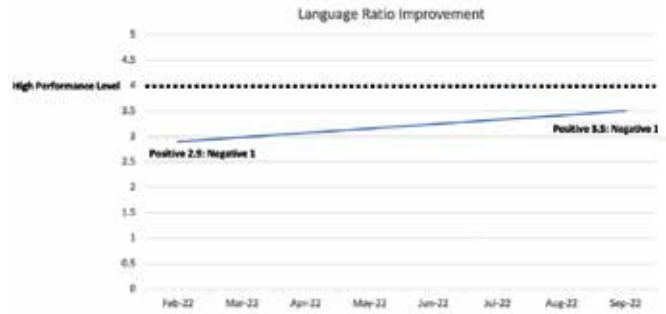


Figure 5: Language Ration Improvement (Positive: Negative)

Schedule Performance Index (SPI), Cost Performance Index (CPI) and Earned Value Management (EVM).

3. A shared vision on what the team was aiming for, in terms of final delivery and the stages to get there, the quality standard required and the shared schedule and budgets.
4. Team accountability for the results through full understanding and knowledge of the project metrics produced on a daily basis.
5. Achievement of business unit key milestones.
6. Improvement in relation to cost and budget
7. Increased productivity.

Summary and Lessons Learned

Behaviours by their very nature are hard to measure and monitor; without expending a vast amount of money, yet it is ultimately behaviours that drive performance. The High-Performance Team Model offers a cost-effective way to translate behaviours into data by gathering the teams perception on the team's performance against a tried and tested set of foundations, which identifies areas that need to be improved.

The following are some of the key lessons learned from this initiative:

Lesson 1: Have a solid set of data (baseline) on the current team performance/behaviours upon which to build your improvement plan. As the team is involved in creating that baseline, it becomes a true change programme, where they are fully involved in creating their own destiny.

Lesson 2: Genuinely involve the team. The HPT programme needs the full support of the senior leadership team, from survey completion to implementing the action plans. Without

this committed, engaged and patient leadership support, the programme falters as behavioural improvements take time, unlike task improvements that seem instant.

Lesson 3: Include the behavioural measurement in your project metrics and align them to enable you to track and monitor how changing behaviours affect the other metrics of SPI, CPI & EVM.

Lesson 4: Link the behavioural performance to the task performance and manage both actively. By objectively and accurately measuring the team's perception, we are able to address their specific concerns against the High-Performance Team model. This enables us to develop the areas of underperformance quickly and effectively, which builds the team confidence, belief and ultimately performance.

Successful implementation of this model has enabled the value to be seen in other parts of our organisation. Since the implementation of the case identified above, the model has been used in 5 business units within Ardmac, moving all units to a level of higher performance.