

Behavioural Management of Safety

BMOS Case Study BG Group Headquarters Refurbishment



BMOS

BEHAVIOURAL MANAGEMENT OF SAFETY
Case Study of a BMOS implementation
BG Group Headquarters Refurbishment



Introduction

Mace was awarded the commission to deliver the refurbishment of the headquarters complex for BG Group in Reading, United Kingdom. This commission was to use a Construction Management methodology, to deliver a multi million pound refurbishment of four separate buildings over 24 months. The initial part of the project commenced on the Drake building, over a period of ten months.

Recognising the BG Group wish to promote excellence in Health and Safety standards, Mace proposed their own Behavioural Management Of Safety (BMOS) programme as part of the refurbishment. BG Group were pleased to see this included as part of the Mace offer, and awarded the commission to Mace.

The overall BG Group requirement is for no Lost Time Incidents (LTIs) on the project and to dovetail the behavioural approach with their own behavioural '6 pillar model' approach.

The following observations have been made about the BMOS rollout on the project on the Drake building :

- The BMOS principles were well received by the team and the Trade Contractors, particularly the idea of positively reinforcing correct behaviour
- **BMOS was led with an enthusiasm to safety**
- The safety record on the project met the client requirements of zero LTIs

Rollout of the process

Mace embarked on a programme of rolling out BMOS on the site using a defined implementation methodology, broken down as follows:

- Assessment of project environment
- Planning of the engagement to suit the project environment
- Delivery of management and supervisory training
- Establishment of Behavioural Improvement Plans (BIPs) targeting safe behaviours identified through existing data on performance at the site
- Ongoing implementation of improvement using behavioural principles

Comment on individual stages is shown below:

Assessment of the project environment

Initial meetings were held with the Mace Project Manager (to understand the nature of leadership on the project), the Project Planner (to understand the nature of work taking place and the risk issues around this) and the client (who wished to verify that BMOS was consistent with the principles of his own behavioural safety model, which subsequently proved to be the case).

BG Group had stressed their need for zero Lost Time Injuries (LTIs) on this project. This was an extremely challenging target to meet in UK construction terms, where performance is normally expressed in terms of Accident Incident Rate (AIR) based on reportable injuries.

This BG Group expectation highlighted an issue which is commonplace in dealing with construction projects for Oil /Gas/Petrochemical (OGP) clients. The OGP industry operate at a high level of safety culture maturity, management of risk is more carefully defined, and the environment is one where safety is more of a value than a priority.

Mace have faced up to this challenge through targeting of immediate improvement solutions, long term improvement plans addressing root causes and recognition of safe behaviour to promote continuous improvement towards a improved safety culture.

Planning of the engagement to suit the project

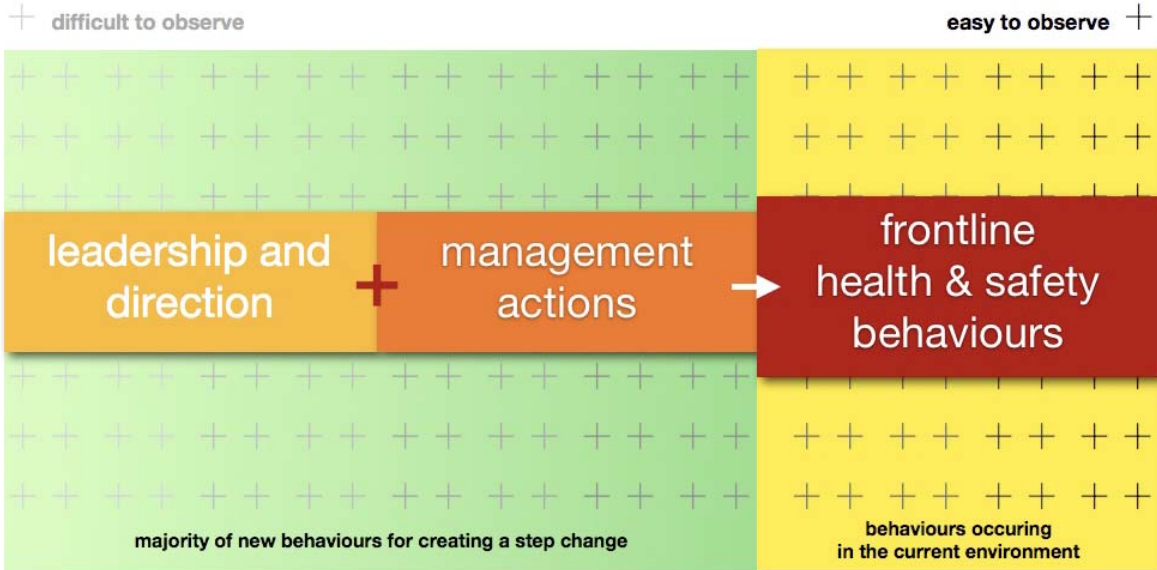
The nature of the project meant that the major risks of injury were in line with those normally highlighted by UK based construction work, namely:

- Slips / trips and falls
- Working at height
- Vehicle movements

Rollout of the process

As a result, it was intended that the initial BIPs were focussed on these areas. Because the management of the project was new to BMOS, BIPs were also focussed on management behaviours. A crucial part of BMOS is development and sustaining of behaviours at management level as a precursor to the necessary change at workforce level:

Critical behaviours for creating a step change



Training

Two rounds of training were given to managerial staff, as well as workforce briefings to alert the workforce to the introduction of BMOS.

BIP implementation

The team decided on a range of BIPs on selected improvement issues as shown below. In each case, the methodology of pinpointing a safe behaviour, then measuring, feeding back and reinforcing it was adopted.

Issue	Pinpoint
Improving PPE compliance	Hard hats to be worn at all times
Improve visibility of senior managers on site	Management safety tours to be carried out as planned
Safe behaviours on podium steps	No steps to be moved whilst operatives were on them
Safe behaviours around excavations	Excavator driver at work with banksman at all times
Safe use of mobile towers	No steps to be moved whilst operatives were on them
Improvement in safety leadership behaviours	Four specified leadership behaviours to be carried out daily / weekly as appropriate

Rollout of the process

Ongoing improvement

The groups who had been trained in BMOS principles took ongoing responsibility under the leadership of the Project Manager, to measure, feed back and reinforce the changes. Initially there was some resistance in making time to do this amongst what was viewed as 'normal' work. Many of those involved in the training had not been exposed to adopting such an approach previously and it became apparent that some of the team were using behavioural principles, but lacking diligence in recording the improvement for the purpose of measurement and feedback.

However, with the leadership of the PM having greater impact as time progressed, improvement in safe behaviour took place, with notable successes including the ones shown below:

Area	Improvement
Number of safety tours	86% over base
Safe excavations	200% over base
Leadership behaviours	13% over base

As a result, overall safe behaviour scores improved by an average of 79% over base.

The Drake project was delivered without any LTIs as per the client requirement. In addition, the client feedback on Mace management of the site was exemplary, with a 'cold eyes' inspection of the site including the following comments:

'On speaking to the Contractor's representative and some of your team, it is clear that they are very committed to providing a safe work place and furthermore they have demonstrated that they can provide the right environment for people to work. I can understand why Mace would consider it to be a model site.'

In summary the general level of housekeeping was so good, in comparison to other building sites and fabrication sites, we perhaps should consider using it to show some of our other oil and gas contractors what can be achieved if the correct environment is provided and reinforced.

Good luck and keep up the excellent work.'

The project was nominated 'safest project of the year' at a recent internal Mace award ceremony.

Lessons Learned

There were several valuable lessons learned from Drake, which are being incorporated in further phases at BG Group headquarters. These are listed below:

'Quick Hit' approaches can work at a localised level

By applying effective consequence management, it was possible to shape the behaviour of the workforce for the duration of their time on the project (typically 6 to 8 weeks). There was some reservation expressed by site managers that 'we don't have time to change the culture here'. This was addressed by focussing the attention on localised issues for the duration of the relevant work phase, using data obtained from Mace's online safety measurement system to initiate the improvement.

Safety leadership is key

It is often the case that project leaders or client representatives will indicate 'safety is paramount' then fail to reflect that in their own behaviour. This is made more difficult by the fact that management behaviour can be more difficult to measure and reinforce. It is no coincidence that this project with the best safety performance in the business unit for 2007, was also the one with the most engaged client, and a project manager who was prepared to have his own behaviour subject to measurement / reinforcement.

Simple workforce engagement works

As part of the initial rollout, Mace's Trade Contractors were included in BMOS training, and improvement targets established with them. The environment is such that a Trade Contract supply chain will never truly 'own' improvement – this has to rest with the Mace site management teams. However, Mace recognised that there was room for improvement around greater levels of workforce engagement. The 'Mark 1' version focused largely on the necessary task of educating management and encouraging them to implement engagement practice on their sites. The 'Mark 2' version now has a greater element of activity associated around workforce engagement, continuous observations of key safe behaviours and tracking for the purposes of measurement and continuous improvement.



**Mace Star Awards 2007 Winner:
BG Reading project**

This team had a client with very high health and safety performance. The team implemented a very successful behavioural safety programme and achieved a zero accident incidence rate (AIR)."

BMOS Team

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John Hanley
 Managing Director

With over twenty years in the construction industry, John has built and leads a very strong and talented ESH team which provides a wide array of specialist skills including the BMOS - Behavioural Management of Safety service to support our clients, project teams, suppliers and workforce in meeting our very demanding ESH expectations.



David Rowbotham
 Director

David is currently a Director of Mace Sustain, responsible for directing the operational activities of the Safety, Health & environment consultancy, CDM coordination service, our corporate responsibility offer and BMOS. His role makes him fully responsible for the successful delivery and implantation of our commissions to meet the expectations and service requirements of our clients.



Andy Furber
 Senior SHE Manager

Andy is a specialist in behavioural safety and emergency planning. He has implemented behavioural safety programmes, competency based management training and safety leadership training for industries including: (offshore) oil and gas, (onshore) petrochemical, atomic weapons / nuclear fuels, utilities companies, construction industry, manufacturing and many others industries.



Robin Phillips
 Senior SHE Manager

Robin specialises in behavioural risk management, measurement of organisational safety climate, evaluation of computer based training and OHS training. He has over 18 years experience in this area based on academic research and implementation. He has published over 50 academic papers, presented at international conferences and provides workshops for IOSH having been their behavioural safety CPD course provider for the last 9 years.



Douglas Hamilton
 Behavioural Management Consultant

Douglas Hamilton trained as a Chartered Mechanical Engineer before specialising in Behavioural Management. He has carried out consulting work with a variety of clients including Bechtel, BG Group, Carillion, Galliford Try, Mace, Network Rail, Scottish Water Solutions and United Utilities.