Making the Right Choices: Behavioural Safety for Designers on a Construction Project

Shelley Stiles[1]

[1]Gateway Consultants (HSW) Ltd

SUMMARY

Behavioural safety programmes are widely used across the Construction Industry, largely targeted at influencing behaviours of frontline workers and/or leadership behaviours. However, there is limited application of behavioural safety at the pre-construction (design) phase of a construction project, given the importance of the design community in eliminating and mitigating health and safety risks. This paper details a case study for the application of behavioural safety intervention targeted at the design community for a large infrastructure project.

KEYWORDS

Behavioural Safety, Construction, Design Community

Introduction

In the UK, construction is worth over £100bn and employs over 2.4 million people (Rhodes, 2019). Several studies have identified the cause of accidents to be due to decision made during the planning or design stage of construction projects, with one study in the United States (Behm 2005) identified that 42% of construction site fatalities were linked to design. Designers (both individuals and organisations) are appointed by construction clients to undertake design work which involves preparing or modifying designs for construction projects which may include architects, as well as discipline specialists e.g. structural engineers. Designs include drawings, design details, specifications, bills of quantity and design calculations (CDM 2015). The decisions made by designers fundamentally affect the health and safety of construction work, as well as those operating or maintaining the final asset.

Over the last 15 years construction contractors have been implementing behavioural safety programmes (referred to as BSPs for the remainder of this paper), following on from their reported success in other industries; oil and gas etc. A BSP is a wide term for any activity focused on changing workplace behaviours that cause (or are believed to cause) accidents. Despite considerable research on the contents of BSP's, research to date does not consider the contribution of the design community, and their behaviours, as part of the overall project safety culture. The study objectives are to explore the effectiveness of a behavioural safety training programme specifically for the design community, within a case study.

Case Study: Applying Behavioural Safety within the Design Community

A "Health and Safety Design Risk Management: Making the Right Choices" training programme has been delivered for one large infrastructure construction project valued at £470 million. The total project lasted 9.5 years and at the peak there were 100 designers working on the project. The content of the training programme was developed by Gateway Consultants (HSW) Ltd in line with

the project BSP, previously targeted at frontline construction workers. Each training session was delivered by a member of the Gateway Team to members of the design community working on this project from across a number of different design disciplines, and organisations. A blended learning approach was undertaken with a combination of classroom tutorials, e-learning modules and project task activities. The aim of the programme was to focus on good designer behaviours that support the elimination or mitigation of health and safety risks in accordance with the General Principles of Prevention. There were four key behaviours:

- Be alert - lookahead, anticipate and prevent hazard/risk to the health and safety of everyone
- Value user input – involve operators, construction and maintenance teams
- Share information – right information to the right people at the right time
- Keep it real – understand real world application/challenges

A total of 51 individuals from within the design community attended the training sessions scheduled over a 4-month period, spread across 8 cohorts. Feedback was taken from attendees at the end of the training by completing a digital anonymous survey. The feedback showed attendees rated the course as excellent (60%), very good (20%) and good (20%). 97% of attendees stated that the training would be beneficial back at work. With regard the question 'Which part of the course will be most useful back at work?' the most common responses include predictive behaviours, human factors, culture of teams, refresh of CDM and managing risks through design. Therefore, it can be concluded that the initial reaction of individuals attending the training session was positive and considered to be of benefit.

Further feedback from the Project Senior Leadership Team have identified improvements following the training interventions with more challenging conversations about health and safety risk management amongst the design community working on the project. Reported examples were built upon the outputs from one of the training activities; where real project design tasks were evaluated against the four key behaviours, and individuals tasked with identifying areas for improvement. This was reported as a particular positive outcome from the training sessions helping to bridge the gap between learning and improving behaviours in the workplace. For example, identifying that meetings were not always an open forum for all attendees to speak up, thus valuable input was missed for a brickwork design scenario. Following the training activity, the individuals established behavioural ground rules for these forums enabling better engagement and greater input from users.

Another tangible improvement from the programme was reported by the Project Director and Engineering Director. Regular designer visits are now being undertaken to the construction site to bridge the gap between design and operational teams which focus on problem solving, shared learning and continue to build on the content provided in the training sessions.

Recommendations

It is concluded that behavioural safety may have a role to play for the design community working on UK construction projects. Further data collection is needed to evaluate whether a BSP intervention can have a significant impact improving safety culture by improving behaviour of designers during the pre-construction stage of a project.

References

Behm, M. (2005) 'Linking construction fatalities to the design for construction'. Safety Concept

CDM 2015 Available from https://www.legislation.gov.uk/uksi/2015/51/contents/made. Last accessed 23/11/22.

Rhodes, C. (2019) Construction industry: statistics and policy. House of Commons Briefing Paper Number 01432. Available from https://researchbriefings.files.parliament.uk/documents/SN01432/SN01432.pdf Last accessed 23/11/22