

Safe by Design: Briefing Note No.02

Purpose: This briefing note provides an update on the steps being taken as part of the Safe by Design (SbD) initiative to embed safety into construction and infrastructure operation through improvements at the design stage.

What is Safe by Design? Irrespective of where and what we design, Safety is an integral part of the design process. We need to understand what influences safe design and then adapt our processes – and more importantly our behaviours – to make it instinctive. Design must consider safety over the whole project lifecycle, from inception, to development, implementation, commissioning, operation and maintenance, and eventual decommissioning and disposal. The SbD initiative is a rail projects led response to these challenges.

What has been put in place to promote SbD? The SbD initiative is primarily driven by engineering discipline Working Groups comprising Electrification and Plant, Building and Civils, Signalling and Track. These are supported by a Steering Group which reports to the Project Safety Leadership Group who sponsors this initiative (see **Figure 1**).

Key Message

Safe by Design principles actively eliminate or reduce risk during design development for construction and maintenance activities and ensures that remaining risks are effectively communicated

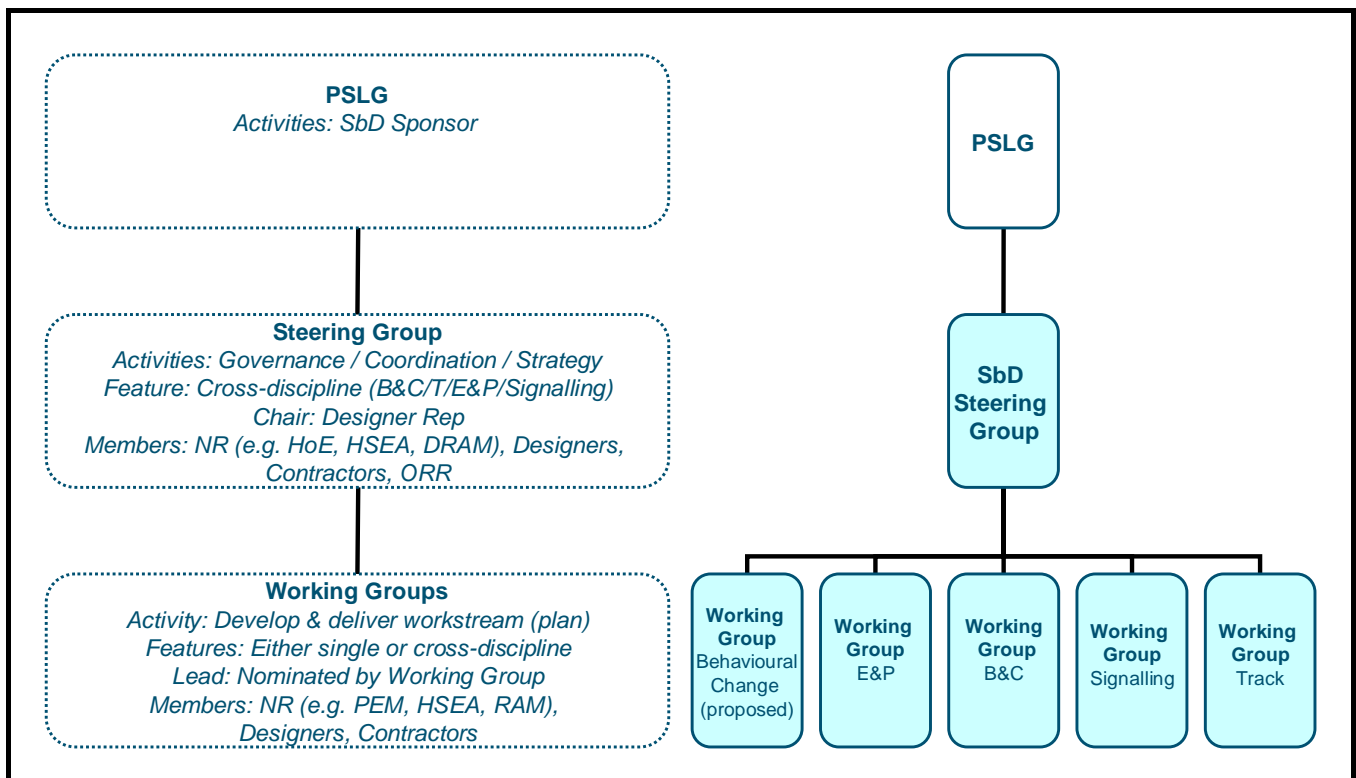


Figure 1: Structure of Safe by Design Initiative

The engineering disciplines Working Groups are the main engines that drive SbD. They lead the implementation of collaborative efforts between the supply chain and Network Rail to make a step change in the way occupational and system safety is considered in a discipline and embedded in early stages of projects. One common theme arising from the discipline working groups relates to behavioural aspects that impact SbD. Our plan is to establish 'SbD Behavioural Change' as a "supporting" working group with a specialist in that field leading and input provided by the disciplines.

The Steering Group sets strategic direction and coordinates the collaborative efforts of the Working Groups. It is made up of supplier and Network Rail representatives from each engineering discipline working groups, the Office of Rail Regulation (ORR), and Network Rail's Safety & Sustainable Development team and also major programmes such as Thameslink. We are in the process of identifying a DRAM representative to help guide and support our efforts to implement SbD in the early GRIP stages.

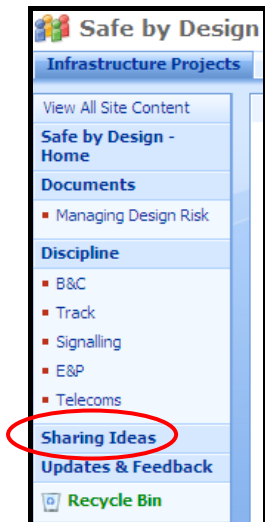
The ORR has shared, directly with the Steering Group, findings from their 2012/13 review into Safe by Design which focussed on: (1) looking at processes and industry collaboration initiatives, and (2) application of SbD principles on projects (particularly in the early GRIP stages). Some of their key findings included that there were examples of missed opportunities to integrate SbD earlier in project lifecycle and that risk assessment tools [e.g. those prescribed by the Common Safety Method (CSM)] could be better used to support SbD principles and option selection. It was also found

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that there was generally a lack of engagement with the maintainer / end user (e.g. during requirements capture in early GRIP stages). The sections below describe what progress has been made in addressing these issues.

How is SbD information shared? The two main ways for storing and sharing information about SbD is through **Safety Central** and also the web-based **Collaboration Site**.

Safety Central has dedicated pages for SbD (see **Figure 2**). The Steering Group page contains links to the engineering discipline Working Group information. When fully populated, these will provide details of: the particular group's plan, outputs, who the members are and also how to get in touch.



A Collaboration Site has been established (alongside the Network Rail Standard Design Catalogue) for sharing ideas and best practice examples in support of SbD (see **Figure 3**). It can be accessed from Safety Central and it includes a 'Sharing Ideas' function which enables new ideas or comments on existing Collaboration Site content to be uploaded.



Figure 2 (R): Image showing Safe by Design page on Safety Central

Figure 3 (L): Image of SbD Collaboration Site Structure (including the Sharing Ideas function)

The Collaboration Site is freely accessible to Network Rail employees (via IT Helpdesk on Connect) and our supply chain. Our suppliers can request access by sending an email to: safebydesign@networkrail.co.uk.

What recent progress has been made? Our recent progress against the three key themes that have emerged from the discipline working groups are summarised below.

(1) Managing risk: The E&P and Signalling Working Groups are building on earlier work by B&C and are developing guidance and common rules for the use of warning signs on drawings and also how CSM and CDM risk assessment requirements can be aligned. We have considered how risks could be better documented and transferred during the project lifecycle and identified Walsall to Rugeley Electrification Project as a best practice example (see copy of their Hazard Identification and Management flow chart on the Collaboration Site). Further work is planned to embed these principles into the GRIP process.

(2) Communications and Assessing the Impact of SbD: Steps have been taken to build on previous work by the B&C Working Group to make **Safety Central** and the web-based **Collaboration Site** as the main means of storing and sharing SbD information. We are utilising PSLG and their contacts with the wider industry to help communicate SbD initiative activities. Work is underway to establish a mix of leading and lagging measures to help assess the impact of SbD.

(3) Procurement: Network Rail's performance assessment tool (PRISM) now includes SbD evaluation criteria and is completed by Network Rail and suppliers every 2 periods for contracts valued at greater than £50k and with more than three month duration. The Pre-Qualification Questionnaire and Invitation to Tender templates now include questions about SbD and these are being adopted in the procurement of CP5 framework contracts. Tender Evaluation templates request specific consideration is given to how successfully the supplier has demonstrated application of SbD principles on previous projects. These changes have been in place for about 6 months and so user feedback will soon be requested to identify if further improvements need to be made.

Further briefing notes will be issued as we progressively work through these key themes. In the meantime you are encouraged to visit and contribute to the SbD Collaboration Site and pages on Safety Central and be part of an industry conversation aimed at collectively improving safety by design.

