

Reducing Errors and Improving Quality
Presentation to CE SW & Midlands

17th November 2020

getitright.uk.com @GIRI_UK



Initial research report: Strategy for Change



The Research Project

- To identify the costs of error, the parts of the process where they happened and the root causes.
- Grounded Theory analysis and strict confidentiality rules
- Literature reviews and desk research to find out what has already been done in the area
- Review of data provided by companies
- Interviews with senior construction professionals
- Online questionnaire (143 responses)
- Delphi style workshops with industry experts to rank the results of the and to assess the relative financial impact



https://www.youtube.com/watch?v=QreDy-TAuFg&t=2s



 Which areas of construction have the costliest mistakes?

Please use the Q&A function



Areas in which cost of error is greatest

- Concrete Works
- Mechanical Systems
- Facades / Cladding
- **Electrical Systems**
- **Finishes**
- Roofing
- **Basement Waterproofing**

- Setting Out
- Drainage
- **Drainage to Completed Works**
- Steelwork Coatings
- Piling
- Roads & Pavements



Root causes of error

What do you think are the most likely root causes of error?

Please use the Q&A function



Root causes of error

- Inadequate planning (from task through to project level)
- Late design changes
- Poorly communicated design information
- Poor culture in relation to quality
- Poorly coordinated and incorrect design information
- Inadequate attention paid in the design to construction
- Excessive commercial (financial and time) pressures
- Poor interface management and design
- Ineffective communication between team members
- Inadequate supervisory skills





GIRI Aims and Objectives

- Create a culture and working environment to get it right from the start.
- Change attitudes and harness leadership responsibility to reduce error and improve quality and productivity.
- Engage all stakeholders in eliminating error from inception, through operation, to completion.
- Share knowledge about error reduction processes and systems.
- Improve skills across the sector creating a positive approach to pre-empting error.

Strategic Aim of GIRI

To improve construction productivity and quality by eliminating error.



GIRI Strategic Priority Themes

- Deliver a strategic awareness campaign to improve sector attitudes to error
- Develop and implement an error reduction skills programme across the sector
- Develop improvements to processes, systems and technology to remove error
- Provide opportunities for members to share experience and network



Current GIRI membership

56 members including:







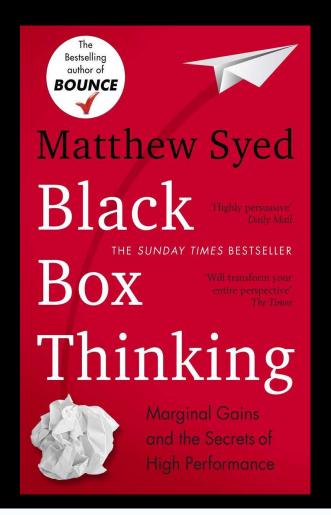


Get it Right or Is it Right?



Culture







Virginia Mason Hospital Seattle

•2002-2013

•74% Reduction in Liability Insurance **Premiums**



Persimmon Findings of Independent Review Led by Stephanie Barwise QC

The problem Persimmon has encountered with missing/improperly fitted cavity barriers is a systemic nationwide problem, which is a manifestation of poor culture coupled with the lack of a Group build process (a rigorous regime of Group controlled build, based on clear drawings and specifications supported by an appropriate supervision and inspection regime).



Campaign

- On line Webinars in the UK and Ireland with audiences in USA and Australia
- International conferences across 5 continents
- Seminars and Workshops
- Website and Social Media
- ICE Learning Hub
- Supply Chain School –Getting It Right First Time



What some of our recent delegates have said

- Quality at the very least to be given a place at the table in project inductions.
- Slow down and plan how we will record and prove we have done it right.
- Ownership and responsibilities
- You go to jail for not complying with ISO 45001 or 14001 but not ISO 9001



Supply Chain School E-Learning Module





Skills Development



GIRI Training Video

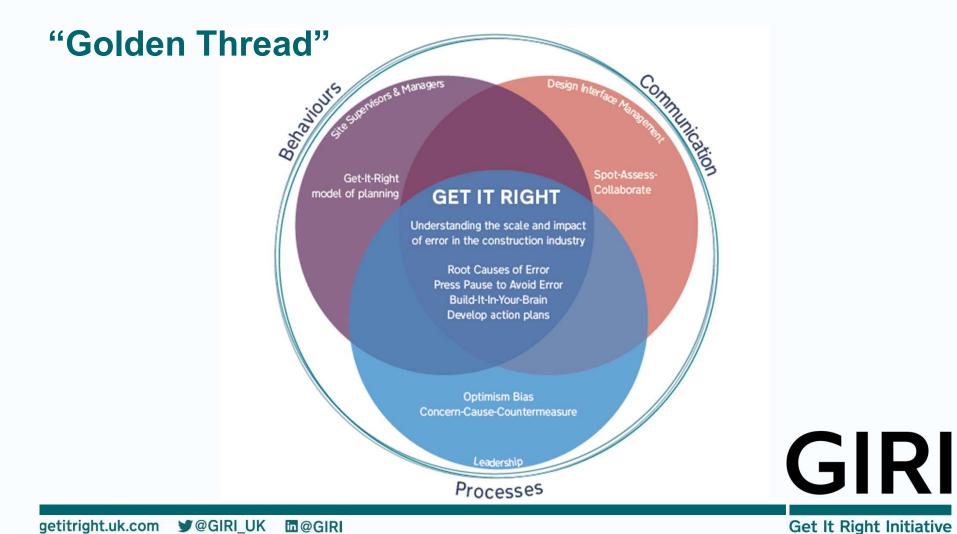


Background



- GIRI Research: identified root causes of error in construction
- 2017: CITB Launch £500K Productivity Commission
- £315K secured by GIRI members for 3 skills projects:
 - Leadership skills (Led by Kier)
 - Supervisor and Manager Skills (Led by VINCI)
 - Interfaces (Led by Berkeley
- Projects completed end of 2019





Press pause – to avoid error



• "The drawings have only just been issued and have a lot of detail, we're likely to make errors if we start constructing this part before I've been able to build it in my brain... I think we need to press pause to avoid error"

• "The subcontractor seems to be working in a sequence I wouldn't have expected, I don't think he's had a chance to build it in his brain. I just want to check... let's press pause to avoid error."

Outcomes

- 7 GIRI training courses developed
- Associated Train the Trainer modules
- Piloted over 18 months
- Delivery of 128 courses to 918 attendees
- **60** + organisations
- Evaluation showing consistently high levels of satisfaction
- All courses are approved for CITB Grants





Training to Get It Right

CITB Approved Courses

- Supervisor and Manager Training
- Interface and Design Management Training
- Leadership Training



Feedback

- "This course was the best I have been on in my entire career at XXX..."
- "...It is relevant not just to construction but to pretty much all other businesses and business processes..."
- "...the way the course was structured and presented brought the key messages across in the most effective way. Practical exercises were relevant and appropriate and were designed so that all participated and no one individual was allowed to dominate."
- "I can only imagine the impact on [Multi £Bn mega-project] if we had implemented some or all of the concepts in the way the course proposed."
- "The exercises identified real world roots of errors and brought interesting discussion to the table"

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Get It Right Initiative

Next Steps

GIRI accredited training available to the industry



Now

Delivered by GIRI Training and Consultancy

Soon

- Via third-party GIRI Approved Training Providers
- Trained trainer schemes for in-house delivery by GIRI **Approved Trainers**

Maximise impact on productivity and profitability



Get It Right Initiative



A Guide to Improving Value by Reducing Design Error



A Guide to Improving Value by Reducing Design Error

Collaboration Plan Brief Culture Robust Approach Increased Investment Every project needs a clearly Increased investment in defined intent, a consistent focus design reduces project error. successful projects with fewer on outcomes and the project team to work seamlessly together and across all disciplines to act to enable collaboration to take place. The adopt the process of back-briefing. adoption of a Partnering Charter 8 10 11 Opening Up & **Guiding the** Information Contractor Input Handover Stakeholder Closing Down **Design Team** If a comprehensive set of information is produced at the handover stage and communicated Management Introduction of an Independent benefit from Contractor advice at a project allows for all creative thinking and key decision making Principal Consultant as the the design stage. This should be 'controlling mind' for design encouraged and would lead to a development is critical to ensure good time prior to preparation of subsequent production information. reduction in design errors. misinterpreted, resulting in fewer errors. that design-related communications are robust, co-ordinated, and well managed. change and hence the opportunity for errors.



Information

design information is integral to and Contractors.



Harnessing Technology to Eliminate Error



GIRI Technology Report 2018

Recommendations:-

- 1. Offsite Manufacture;
- 2. Standardisation;
- 3. Improved Construction Processes;
- 4. Error-minimising Components.
- 5. Automation.



Error-minimising components Poka-Yoke



- Factory checked, pre-assembled reinforcement cages
- Plug-and-play wiring looms
- Proprietary fixing systems for cladding panels and brackets
- Pipe-jointing systems-Maybe!



Harnessing Technology to Eliminate Error

- Greater collaboration between design consultants, contractors and specialist contractors to incorporate ALL construction details throughout the BIM models
- Provision of practical, easy-to-understand information about construction details for site workers, accessible on mobile devices
- Visual aids for site workers derived from BIM models and other software applications
- Software applications to record inspections of work
- Real-time, as-built survey information



Harnessing Technology to Eliminate Error

GIRI Technology Working Group - Case Study Research Proposal

GIRI's initial Research Report identified the root causes of error in projects. The root cause ranked third out of the top ten causes was 'Poorly communicated design information'.

Research Proposal: Carry out case studies into the current use of technology to communicate design information at construction stage to personnel on site.

The purpose of the research is to find out what technologies are being used on projects to ensure that clear, concise and correct information is easily accessible to people carrying out construction work on site, and this information contains everything that is needed to complete the work correctly.



UNIVERSAL METRIC FOR **ERROR Error Frequency Ratio** (EFR)



Error Frequency Ratio

- •SIMPLE
- TRANSPARENT
- CONSISTENT
- UNIVERSAL



Statutory Obligations

The Building Safety Bill





How will we behave tomorrow?

We cannot afford not to change the way we do things

Working together to eliminate error, by industry, for industry.