

Zurich Escape of Water Seminar

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



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ZURICH

Wasted spend on error

Direct costs of error (5%) resources used in correcting an error

Indirect costs of error (7%)

Resources used in follow on work and costs to other parties

Unrecorded process waste (6%)

Errors occur, are identified and corrected without being recorded

Latent defects (3%)

remain in place after client acceptance and any 'defects liability period' has passed



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 strategic aim

To improve construction productivity and quality by eliminating error.



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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.



Current GIRI membership

53 members including:

- Government advisory bodies
- Clients
- Architects
- Structural and M&E engineers
- Tier one and tier two contractors
- Lawyers
- Insurers and insurance brokers



Get It Right Initiative members – April 2020



Why today's webinar?

Reducing error reduces insurance claims, which reduces premiums and hence costs



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We need to help insurers to help us

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



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Escape of water – how can we get it right?

Zurich Insurance Plc

IIII

IIII

Robert Innes Senior Construction Risk Engineer Matthew Porter Executive Adjuster – Construction Claims

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Housekeeping

- This is our first knowledge sharing event so please bear with us and thank you for your patience
- Please keep your microphones on mute and turn your webcam off
- Use the "chat" function for any questions during the presentation we can either address them during or at the end of the presentation
- If your name is not correctly listed on the participants, please select "Rename" and amend. This helps us identify who has attended the webinar.

'This session is for information and shared experience only. Zurich Insurance PLC will not provide advice as part of this session and any references to losses will be to provide information by way of hypothetical examples only rather than any comment on existing cases.'











GIRI goal:

• "To improve the knowledge across the sector so that all involved properly understand the ways that design and construction processes can be disrupted and how this can and often does lead to error and waste."

Webinar objectives:

- Bring cross industry organisations together
- Help share knowledge and improve best practice
- Reduce mistakes and errors to benefit all parties

Future knowledge sharing:

• This is hopefully the first in a number of these events where we can discuss a variety of topics to improve overall industry standards



Introduction



- Understanding the scale of the problem
- Examples of large losses
- The impact on insurance
- Root causes
- How can we 'Get It Right'?
- Questions and discussion for everyone
- Next steps



Understanding the scale of the problem



- In 2018 the value of water damage claims paid by the insurance industry was approx. £930M.
- The average cost of a claim has increased from £2119 per claim in 2014 to £3242 per claim in 2018.

Most common construction claims

- 31% Escape of Water
- 19% Accidental Damage / Loss
- 13% Theft
- 12% Storm
- 6% Malicious Damage
- 6% Fire and Explosion
- 11% Other including impact, flood etc.





Mixed Used Tower - UK: Construction Value - £100M+

Claims info:

- Project has had 8 escape of water (EoW) claims totalling £8.5M
- One claim resulted in a £5M loss.

Details:

£5M loss, it occurred in an en-suite bathroom on the 8th floor causing damage down to the 2nd floor.

Root causes:

- Primary cause of 7 EoW events: Poorly crimped water pipes for the permanent supply which burst under pressure.
- Cause for other EoW event: Leaking shower units in over 40 apartments

Impact on the contractor:

- £200K for the 8 claims in deductibles
- £445k for idle time and liquidated damages not covered by insurance.



Residential Development – UK : Construction Value - £500M+



Claims info:

- Project had multiple EoW events up to a value of £3.5M.
- One escape of water claim with a value of £545K.

Details:

- Project was undergoing snagging prior to PC
- Leak occurred at 11.00 in one flat where a sprinkler pipe leaked during testing.
- Damage occurred to said flat and flats beneath and damage occurred to fixtures and fittings.

Root cause:

• A result of faulty welded plastic joint.

Impact on the contractor:

- £585K for the claims including deductibles and works not covered by insurance.
- Deductible / excess consequently increased from £5K to £50K and then to £500K



Mixed Use Development – UK

Claims info:

• Value of loss: £900K

Details

- Construction of 200+ flats across multiple buildings
- Value of subcontractor works £5.2M
- 50% of apartments suffered leaking slot drains in bathrooms

Root cause

- Incorrect adhesive used between drains and waterproofing membrane
- Lack of / inadequate training of installer or incorrect specification of materials used.

Impact on the contractor

• £170K in costs (deductible and works not covered under insurance) plus idle time (unquantified).





Non-residential – UK: Construction Value - £100M+

Claims info:

• Project has had a large claim in the region of £3M.

Details:

- Project also suffered a previous EoW event with a crimped joint. All large pipe dia. were tested but smaller dia. were not.
- Failure of a crimped joint in a 42mm dia. hot water pipe on 1st floor. It occurred in the evening and identified after midnight through CCTV.
- Lower floors flooded as a result and subsequent damage to fixtures and fittings etc. Rooms were being prepared for handover
- •Root cause(s)
- Cause was considered that the pipe was not inserted to the correct depth prior to crimping (13mm as opposed to 31.5mm). Crimping equipment may also have been defective.

Impact on the contractor

• Cost to the contractor: £410K (including deductibles, snagging works, idle time)







Residential – UK : Construction Value - £8BN

Claims info:

• Project has had a large claim that settled for £14M.

Details:

• The project suffered water leaks due to corrosion of radiators and heating pipework at multiple locations.

Root cause(s):

- · Failure of the rust inhibitor
- Use of polypropylene pipe which allowed too much oxygen to circulate in the heating system leading to corrosion
- Wet tested radiators were stored with water within them allowing the corrosion process to start.

Impact on the contractor:

• Total cost to the contractor: £32M.



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The impact on insurance

Every insurance quotation is evaluated on an individual basis with many factors determining coverage, premium etc. The following is an indication of how the issue of escape of water is impacting the insurance market

Coverage / Terms:

 More prescriptive coverage in relation to water damage by linking indemnification to implementation and observance of water management plans, introduction of automatic shut off valves etc.

Premiums

- Increase in premiums across the board for CAR business.
- Delays to projects potentially resulting in policy extensions and paying more premium payments

Deductibles / Excess

- Deductibles are increasing; £10K to £50K and £75K
- Previous example showed where it has increased from £5K to £500K







Root causes

Joints not installed correctly (most common cause)

- Pipes are not inserted to the correct depth or not crimped correctly
- It can be difficult to verify the quality of the joints once installed.
- Lack of supervision mistakes are being missed
- · Deficiencies in work competencies and lack of training
- Inadequate testing and commissioning regimes

Significant extent of damage

- Water leaks often spread easily down to lower floors through openings such as risers.
- Water leaks are being discovered many hours after they start and often out-of-hours.
- Lack of emergency action plans outlining what to do and who to contact in the event of a water leak

Incorrect/inadequate materials being used

- Often inadequate materials are being used which either are not approved and / or deviate from the specification
- Potential value engineering
- Cost / programme pressures





How can we 'Get It Right'?



Treat this in the same way that you would treat the risk of fire.

Best practice guidance for managing this risk

- CIREG Managing Escape of Water Risk on Construction Sites: Nov 2019 (Free to download)
- Zurich Fluid Book Insight document for Construction / Property
 - Google: Zurich Fluid Book

Water management plan

- Details of an appointed person specifically to manage this risk
 - Ideally this would be from the managing contractor
- Contain details of the emergency action plan
- Outline quality control standards and procedures
- Identify competency requirements
- Outline mitigation measures in place for the temporary and permanent water supplies



How can we 'Get It Right'?

Emergency action plan

- · Outline what are the procedures in an EoW event
- Cascade these procedures to ALL personnel through inductions and specific toolbox talks
- Procedures should be placed on appropriate signs around the Construction Site.
- Isolation valves should be clearly labelled and plan drawings provided on noticeboards to show their location.

Water work permit

- Control the water work by the requirement to issue and approve a permit (paper or electronic)
 - · Consider the use of a "Water Watch"
 - No testing / commissioning in the last hour and a final site check at the end of each working day

Improve quality control

- Test joints are installed and visually inspected / tested.
- Joints are labelled / marked and these are recorded in QA records / systems (such as Field View).
- Full pressure testing to manufacturer's specifications



Escape of Water Permit		Permit No.:	
Company Name:		Project Name:	
Instructions Subcontractor:		Prior to the start of work	YN
 Complete permit information, subcontractor approvals and precaution and safe guard checklist. Submit the form to the PM for approval. After approval, display Permit at location of work being performed. When work is complete, verify Final Inspections and other DM final approximation. 		Management Plan detailing what to do in the event of a leak or water damage?	
		and are they accessible?	
		Are valves labelled for easy identification?	
Permit Information		Are there pipe diagrams available at the location of work being performed?	
Location/Building/Floor		Has the piping been drained prior to the start of these works?	
Description of work to be done:		Is a lockout/tagout procedure required for the work being performed under this permit? Please attach a copy to this permit if required.	
		Is there a spill kit available at the work area?	
Description of monitoring practices:		If no spill kit is available, is one required for the work being performed under this permit?	
		Have floor openings or cracks through which a leaking fluid may pass and damage areas below been protected?	
Approvals		Is electrical and other sensitive equipment protected from potential water damage?	
Subcontractor Approvals Worker name (print): Date:		Confirm all drains in the area of the work being performed under this permit are functional and clean.	
Worker signature: Worker and water watch has on precautions and emerge	s been briefed	If work being performed on the roof, are the roof drains connected, free of debris and functioning properly?	
PM Approvals PM signature:		Workday End or Completion of Work	VP.
I have verified that the above location has been inspected and the required precautions and safeguards have been		Confirm all plumbing, taps and drains are free of all debris, materials and tools.	
laken. Permission is authori Date permit expires	sed only for the above work. Time	Have relevant taps been shut off and all hoses drained at the end of each work day?	
Date work started	Time	Check that nothing is leaking before leaving area at any time during the work day and at the end of each day.	
Date work completed	Time	Will the system be drained after testing?	



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How can we 'Get It Right'?

Competency

- Checking of competency should be undertaken at inductions and periodically reviewed during the works.
- NVQ Level 3 / affliation to CIPHE / Advanced Craft CSCS

Temporary water supplies

- Often neglected
- Install leak detection on any temporary supply or manually isolate the supply on a daily basis.
- These leak detection devices should be tested/checked frequently
- Route the supply externally where practical and install isolation valves where it enters at every floor
- Undertake regular checks of joints

Minimise the risk of spread / extent of damage

- Eliminate (where practical) any openings in floor structure above electrical rooms
- Install upstands around all floor to floor openings and any smaller openings are adequately sealed at the earliest opportunity.
- Ideally locate any water tanks on the lowest floor
- Install any permanent plant and equipment on raised concrete plinths







Escape of water – the legal perspective

Weightmans LLP

Paul Lowe: Partner DDI 020 7822 7134 paul.lowe@weightmans.com Simon Durkin: Partner DDI 020 7822 1946 simon.durkin@weightmans.com

- Legal disputes arising from escapes of water remain commonplace.
- Claims often involve:
 - Review of the policy
 - Allocation of responsibility between project parties
 - Subrogated claims against guilty parties.
 - Lengthy disputes/litigation
- Contractors/Professionals/Supply chain involvement, specifically fitout contractors, M&E contractors and M&E Engineers.



- Why does the claims trend continue to increase?
- Research by loss adjusters, Crawfords, suggests:
 - Increased use of plastic push-fit components.
 - Tendency to conceal pipework.
 - Thermal efficiency requirements in building regs. creating cavity spaces.
 - Use of building materials that do not withstand or prevent escape of water.
- Dynamics in the housing market: multiple occupancy buildings.
- Increasing costs of repair and components.



- Causation recap of common issues resulting in EOW:
 - Poor workmanship/installation
 - Manufacturing defects
 - Component design
 - Mechanical damage
 - Deliberate damage
 - Impact of weather
 - Gradual deterioration
 - Pressure fluctuations
- Where does liability lie?
- Ultimately, regardless of who is "responsible" for the loss, it is in everyone's interests to avert or minimise risk/loss.



- Current case example: instructed by office fit-out contractor.
- Sub-contracted design and installation of sprinkler system.
- 3 years after Practical Completion, sprinkler spontaneously discharged, causing considerable damage and BI.
- Cause: regular impact of lobby door on sprinkler head. Primarily design issue?
- Catalogue of missed opportunities/practical tips:
 - Design stage adoption of best practice in design (and installation).
 - Inspection at PC site walk-around/visual inspection of works.
 - Maintenance building/sprinklers opportunity to proactively remedy.
 - Emergency response plan in place.
 - Preservation of evidence to identify cause, draw lessons and maximise prospects of recovery.
 - Liaise with insurers before the event.



Questions and discussion



Format to try and keep it orderly

- Type your question/comment in the "chat" function
- We will call your name out to speak
- You can unmute as necessary and then re-mute once done
- 20 mins for questions and discussions

Questions?

Discussion

- What are your positive or negative experiences of Escape of Water events?
- Do you think this is an issue for you?
- What can you share (positive or negative experiences) such that we can all improve the way we work?
- What best practice guidance do you follow? Is there anything you think we can produce to improve things?





Next steps

Did you find this webinar useful and would you like to see more?

Please suggest any topics you would like to discuss!

Future topics may include:

- Other areas of concern for insurers such as Hot Work Fires
- Cladding Remediation and Regulatory / Legislative Changes
- Re-starting construction projects after Covid-19





For more information about GIRI contact: Tom Barton, Executive Director

tom.barton@getitright.uk.com

Thank you for joining us

Please **give us your feedback** via our online survey which will be sent to you by email or use the QR code shown.



OUR NEXT MEMBERS' EVENT

GIRI forum; managing and motivating staff during Covid-19. Thursday 7 May, 16.00

https://getitright.uk.com/events/giri-forum-managing-motivating-staff-undercovid-19



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