

Reducing flood risk in construction

Solutions to drive resilience and mitigate flood risk

Challenge

As storms increase in frequency, severity and unpredictability, there is a growing need for construction companies to understand and mitigate the risk of all flood perils, including ordinary watercourses and surface water.

Flooding can affect the construction sector in several ways. Catastrophic events can disrupt national and global supply chains – potentially delaying projects and impacting materials, pricing and availability. Whilst at site level, localised flooding can overwhelm drainage systems, impact electrical systems and generate risk to assets, property, health and potentially, life. Even with insurance, contractors can still incur out-of-pocket expenses for deductibles, project creep and business interruption.

From a compliance and liability perspective, health and safety regulations state that site operatives should not be unduly exposed to flood-related hazards with the mitigation of associated risks typically the responsibility of the principal contractor. DEFRA is now recommending mandatory steps for the construction industry to mitigate flood risk and reduce storm overflow discharge on all new developments. See DEFRA's press release.



Solutions for the construction industry

Previsico provides real-time, property-level surface water flood forecasts using its proprietary live hydrodynamic modelling software and sensor technologies to help mitigate flood-related impacts and losses.

- **Flood warnings:** Automated email warnings when districts and properties are at risk of surface water and ordinary watercourse flooding, and when sensors detect flooding or threshold level exceedance.
- **Flood dashboard:** Displays predicted time and depth of flooding up to 48 hours in advance and visualises data from sensors.
- **Water depth and flow sensors:** Located on and around critical infrastructures, above ground (e.g. retention pools, discharge points, culverts) or below ground (e.g. waste and surface water drainage).
- **API feeds:** Automated real-time forecast data and warnings that integrate with existing systems.

Benefits for the construction industry

- Can mitigate flood impacts from surface water and ordinary watercourses – perils not covered by other forecasting systems.
- Risk mitigation measures support Health & Safety compliance.
- Forecasts, warnings and data enable contractors to take preventative action to minimise loss.
- On-site sensors enable monitoring of critical infrastructures, above and below ground.
- Sensor outputs can feed into critical control systems e.g. SCADA, automating otherwise manual processes.
- Improves insight into pollution pathways to mitigate contamination from discharges.
- Reduces unexpected repair costs, excess fees, replacement and ESG commitments.
- Prevents delays and demonstrates good practice.

“ Construction sites are often rapidly evolving environments and the need for risk management services will vary as project phases start and finish and the risk profiles change. This means the right technology – delivered in the right locations and at the right times – is required to help mitigate impacts and losses. ”

Dr Andrew Pledger
IoT Systems Manager, Previsico

The growing flood problem...

- Water damage is the second most frequent cause of loss during building projects.*
- Properties affected by surface water flood risk have increased to 1 in 5 in the UK.*
- Flood losses are expected to increase five-fold by 2050.*

* References



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