

ADEPT President's Awards 2025

Entry form

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Award category Innovation in Place-shaping

Project Title Groundwater Flood Warning Service

Local authority entrant Buckinghamshire Council

Partner/s if applicable British Geological Survey, Jacobs, 3 Sided Cube

Headline summary (150 characters max.)

Project Groundwater's new real-time automated groundwater flood warning service.

Please note we need at least one supporting image per award submission. Upload your image/s below.



Video - please paste links to any video evidence here. (Leave blank if not relevant.)

<https://youtu.be/OLLaDazZa4g>

Innovation in place-shaping: How has this project used digital innovation and/or the imaginative use of new or existing technology? (150 words max.)

Our Groundwater Flood Warning Service combines the best emerging technologies to provide real time and actionable information to communities at risk of long duration groundwater flooding. For the first time, our intuitive user interface brings together the following fundamental information and presents it in a simplified way for people's local area:

- Translation of groundwater levels into flood alert and warning status considering impacts to people's lives as well as properties
- Groundwater flood hazard mapping that dynamically updates to reflect the current and forecast groundwater levels
- Daily forecasts of groundwater levels how these levels could change over the next month
- Prompts for community actions that are linked to the current and forecast groundwater levels

Innovation in place-shaping: How has this project shown evidence of improved outcomes for users? (150 words max.)

Rooted in Project Groundwater's aim for community collaboration, the system was built with in partnership with local communities. We held trials, focus groups and surveys to understand what community members and organisations would like to see and built the service accordingly. Now, the service is live, the feedback from the ongoing user trials will be used to refine the service. The system went fully live in 7 communities in December and had over 500 users sign in the first two weeks. The second phase of improvements are underway, with plans already taking shape to:

- Combine more groundwater levels in each local area to drive improved spatial definition of the service
- Refine the triggers for issue of groundwater alerts and warnings based on observations and feedback provided through the web app
- Use more locally-relevant community actions from the evolving Flood Plans for each community

Innovation in place-shaping: How has this project shown evidence of the transformation of a service/department/organisation by changing behaviours, delivering savings or improving ways of working? (150 words max.)

The system is fully automated and updated daily, keeping the information current and making the service readily scalable to more communities without significant additional resources.

This service is a massive step forward and has been built with with all users, including residents, businesses and professionals in mind. It brings a new level of usability and provision of information that will allow communities and organisations to be fully prepared for groundwater flooding.

Innovation in place-shaping: How can the innovation/technology in this project be applied in multiple sectors/areas? (150 words max.)

The service is being trialled across six counties initially and aimed primarily at communities affected by flooding.

Professional partners are also making use of the service - for example Highways, the Environment Agency and other local authorities.

The aim is to demonstrate the service has value and is financially sustainable before then rolling out to other areas of the country at risk of groundwater flooding. Current estimates are that up to 1.3 millions homes and businesses are at risk of flooding where groundwater is a factor.

Innovation in place-shaping: How does this project demonstrate scalability and resilience - the ability to use technology in a wider scope and in a way that encourages longevity of use? (150 words max.)

Although currently focussed on groundwater flooding in communities underlain by Chalk, the service framework could be equally useful to communities overlying gravels that experience groundwater flooding driven by nearby major rivers. Breaking down the barriers between groundwater and river flooding is just one example of how Project Groundwater is forever transforming how communities prepare and respond to groundwater flooding and how the new warning service could drive innovation across flood risk management industry more broadly.

All categories: please add anything else that supports your award entry

Project Groundwater is an innovation project that aims to forever change how communities prepare and respond to groundwater flooding. Of all the sources of flooding, groundwater is the least well understood, least invested in and often poorly dealt with, and yet due to its long duration groundwater flooding can be one of the most devastating. To address this gap, Project Groundwater has developed a new groundwater flood warning service and portal.

This is a significant step in increasing resilience to flooding as information and warning is the key element to allow communities and organisations to be better prepared and take action to reduce the impacts of flooding.

The system can be viewed live online at:

<https://app.projectgroundwater.co.uk/communities>