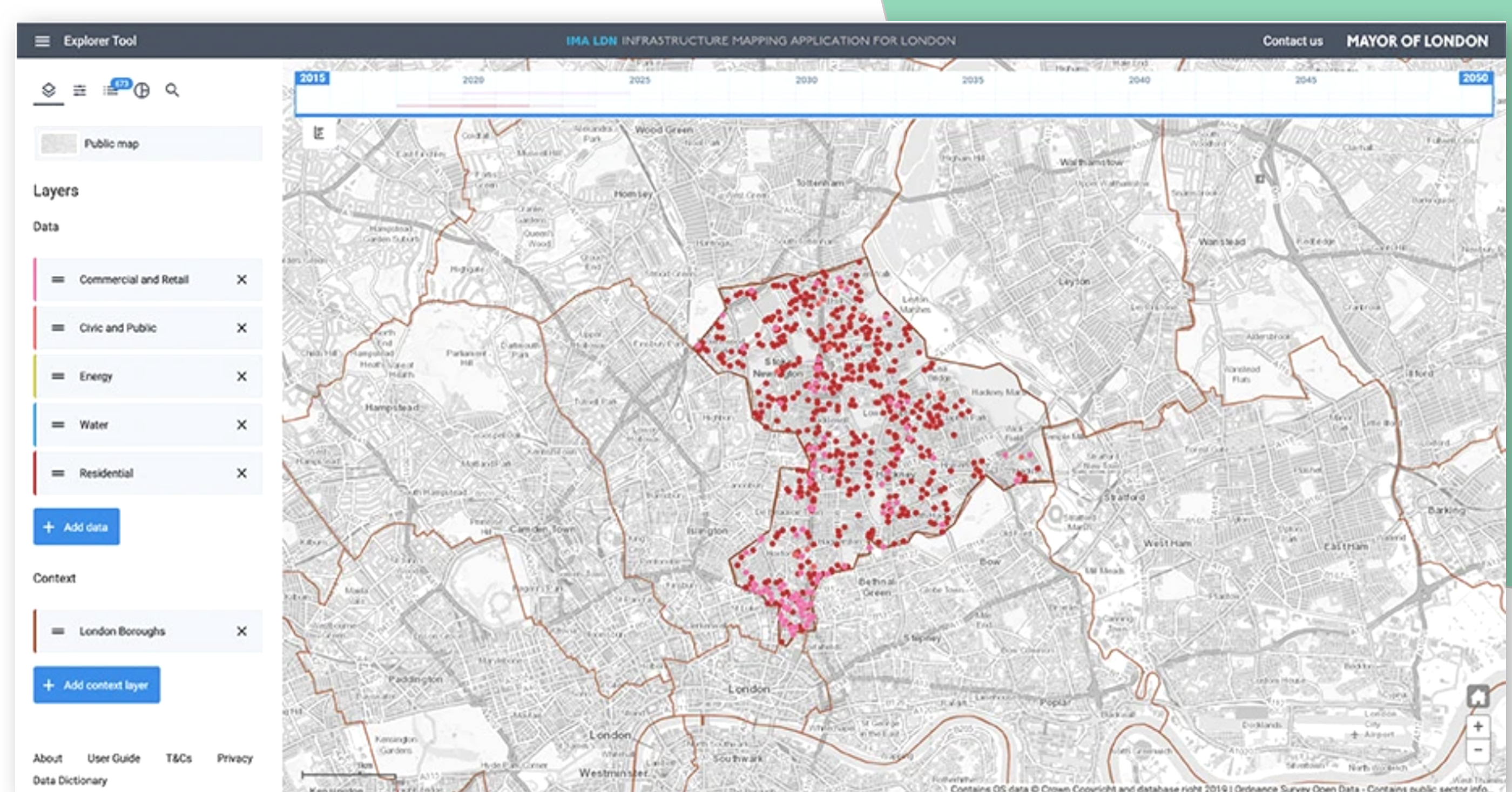# Infrastructure Mapping Application

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Transforming infrastructure delivery by uniting data & enabling collaboration.

In 2014, the Greater London Authority (GLA) enlisted Arup to produce the London Infrastructure Plan 2050. Showcasing the estimated £1.3 trillion new and renewed infrastructure needed to support London's future growth, it highlighted the strategic requirement for a step-change in the planning and delivery of infrastructure in London.

With the need for increased efficiency in mind, the GLA created the Infrastructure Mapping Application (IMA) - a web-based desktop application that maps current and future development and infrastructure investment plans by integrating data from a wide range of sources.

Equipped with a strong existing relationship with the GLA and close grasp of the challenges following the delivery of the London Infrastructure Plan 2050, Arup was brought in to develop their tool further.

Greater visibility for future developments

Providing foresight to utilities, contractors, transport providers and boroughs, IMA aims to encourage collaboration between them, thereby reducing costs and disruption.

The Arup team consisted of web developers, UX designers and geospatial experts, who worked in collaboration with the GLA to identify how best to deliver the objectives for the next iteration of the tool, including improving functionality and data integration and optimising performance using updated technologies.

Integrating data to foster collaboration

The application includes a 'Collaboration Tool', which allows infrastructure providers to easily search the IMA database for collaboration opportunities, by specifying locations, timeframes and preferred partners, with the results displayed on an interactive map of the capital, as well as build and save their own custom maps. Armed with information about possible opportunities, users can then initiate conversations with potential partners.

Other key features include:

- The ability to predict the likelihood that a particular development will come forward over time.

- Identifying developments that are not currently progressing.

- Understanding the development and infrastructure planned for a certain area of interest.

Optimising the application

Arup's developers focused on improving the application codebase and transforming its core workings.

Working alongside the GLA as it enriched the application with the latest available data from a wide range of sources - including utilities, the London Development database, infrastructure and construction intelligence providers, government bodies, Transport for London (TfL) and London Boroughs - Arup ensured this new data could be analysed to maximises users' ability to collaborate.

Only reliable data, with a reasonable degree of certainty about a project's date and location, was deemed useful to potential collaborators.

Shaping a new visual future for infrastructure delivery

The tool has been demonstrated at significant events - such as at London City Hall by the Mayor of London, Sadiq Khan, and the Mayor's Infrastructure Advisory Panel. The application enables infrastructure providers, developers, utilities, local authorities, contractors and others to see a quick and convenient visual of future infrastructure projects and opportunities to collaborate across the capital, years in advance.

Within the first three years of the launch of version 2.0, more than 15,000 private and public users have accessed and used the tool. It is transforming infrastructure delivery in London by:

- Providing a single source of truth for public and private users, making available information from 30,000 infrastructure and development data points across 50 layers, in a single place.

- Layering and visualising data from across sectors, encouraging the exploration of future projects.

- Making visible in advance potential obstacles to building works and highlighting to local authorities and regulators where extra investment may be needed.

- Providing a useful source of infrastructure planning information to the public, through its general-level access.

> *Our aim is to minimise disruption and maximise efficiency in the London infrastructure sector. We are doing this through coordinating activities in the sector to make collaborative working business as usual.*
>
> *The IMA is essential to our work as it allows sharing of valuable data and provides the basis for scoping out opportunities for collaboration. Through the use of the IMA, we have identified over 26 multi utility collaborative opportunities London wide – five are currently progressing, with one already completed.*

- Infrastructure Coordination Team, GLA

> *We are pleased to work in collaboration with the GLA and partners using the Infrastructure Mapping Application. It has enabled us to have productive conversations with partners to establish whether there is scope for us to collaborate on our projects to help protect Londoners from increased flood risk.*
>
> *The GLA and findings from the IMA have facilitated several good conversations with partners so far and we look forward to continuing our work using the tool and to continued collaborative working in London.*

- Environment Agency (User)