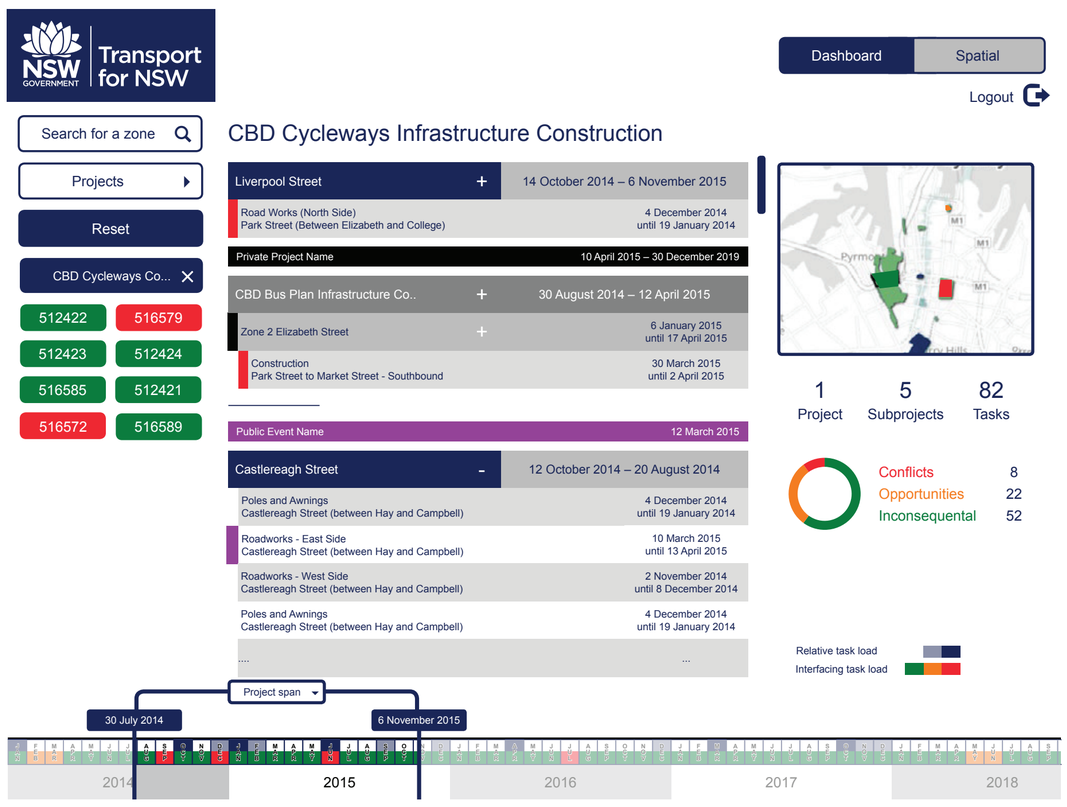
Creating Tools for Capturing Value from Data

As a group of multi-disciplined students from engineering, data analysis, digital development and visual design backgrounds, our aim was to show Arup, a consulting engineering firm, the sort of skills and resources required to turn their data into a resource for useful information tools. Over the 12 week Monash University Industry Team Initiative (MITI) programme we created and conceptualised various data visualisation tools, and helped Arup understand where it needs to invest its resources to make this exciting work continue.

TfNSW Spatial Coordination Tool

Our conceptual layout for the *Transport for NSW Spatial Coordination Tool* seeks to give an overview of transport works happening in the Sydney CBD and give an overview of the amount of activity happening.

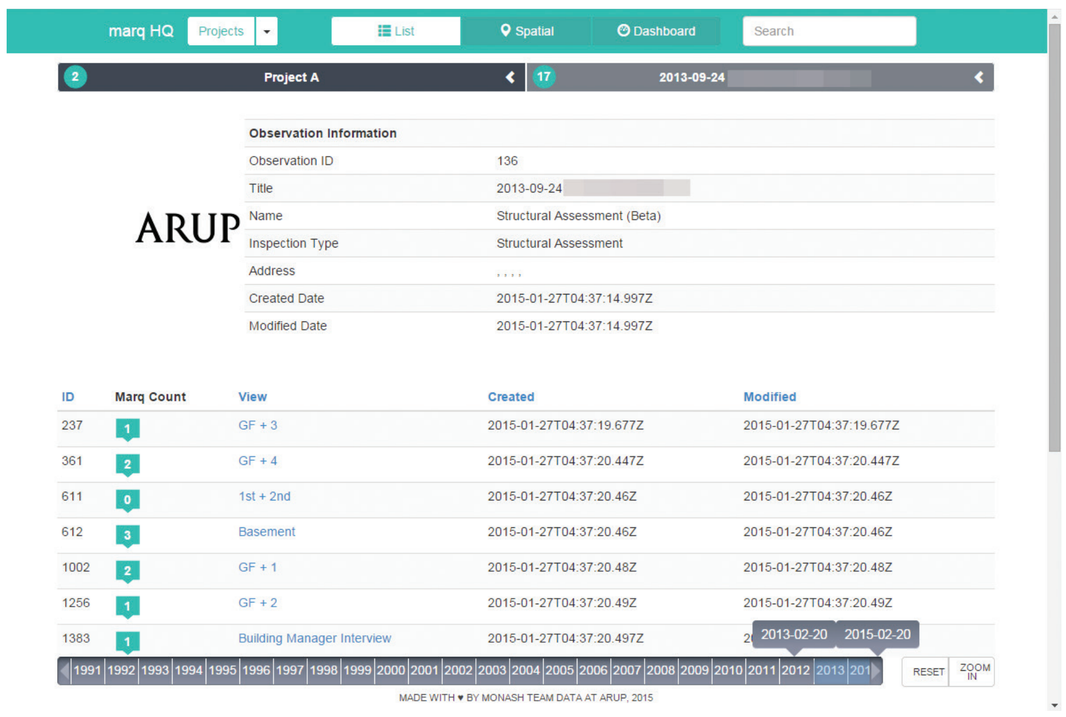
Our solution provided a distinct dashboard and spatial view for users to get a graphic overview as well as an up-front list with conflicting and interfacing projects and public events clustered together.



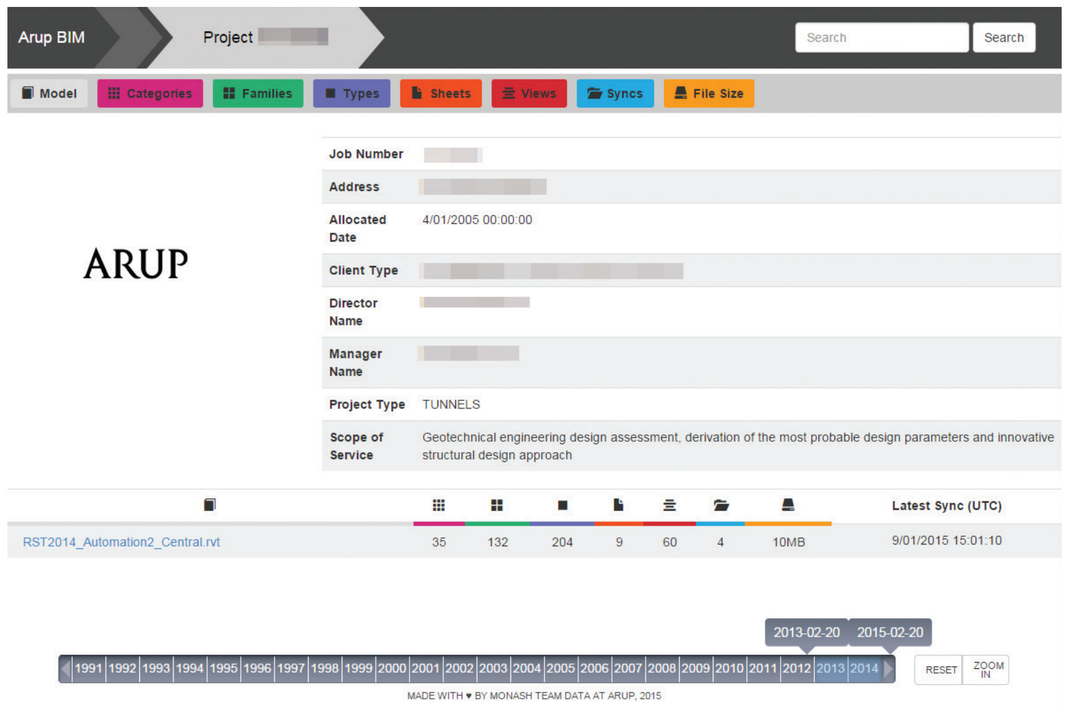
Marq HQ

Currently, many engineers make observations on worksites with pen, paper, a camera and a hand full of plans. This slow process has many shortcomings, and Arup has invested in using compact tablet devices to capture images and notes on spatial plans.

For Arup's newest version of the application, we worked on displaying the data engineers collect individually, on an online portal. The new *Marq HQ* system allows managers to make custom templates for engineers across disciplines to fill out on site, and much of our effort went into considering the best way to deal with such a broad system of data sources, technically and visually.



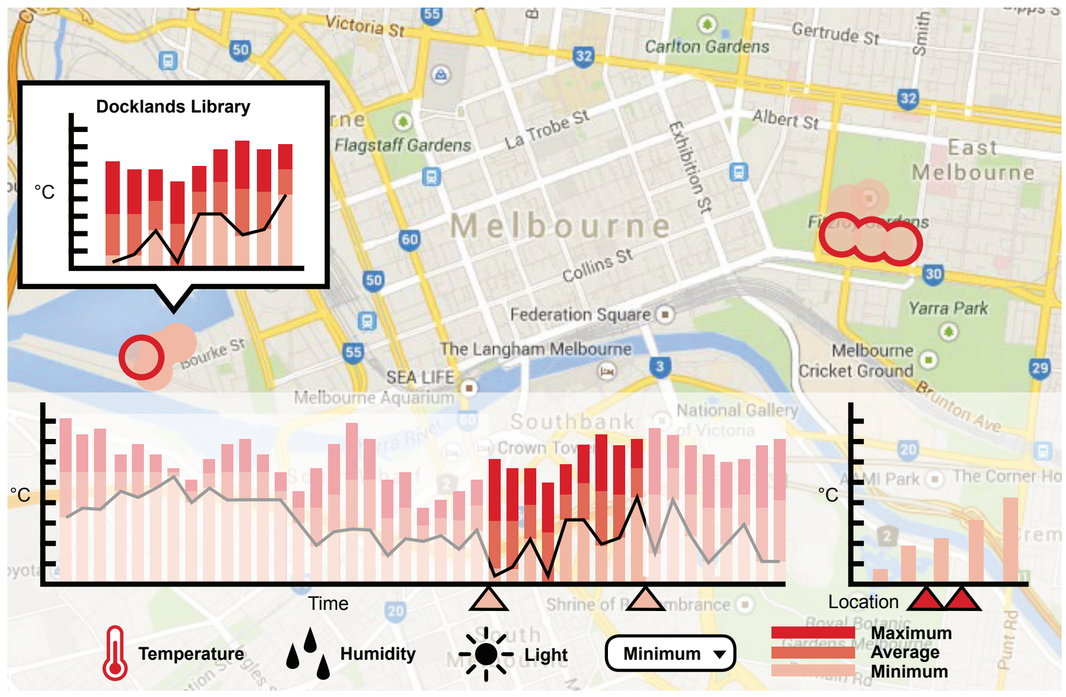
BIM Dashboard



We put together an application to integrate and display BIM (Building Information Modeling) data, beginning with engineering model data, to help Arup create more efficient models by finding, reusing and learning about their technical data.

We looked at existing databases, cleansed the data, found and resolved access issues and designed a flexible visual interface to handle future sources of data, to help engineers gain even more, and more accurate, insights into their work.

Creating a Smart City through Internet of Things



The City of Melbourne, University of Melbourne and Arup have been working together to collect simple data on temperature, humidity and light levels at two different sites across the day with the aim of helping researchers understand the effects of canopy cover on cooling.

We conceptualised how to best show this data, by focusing on making data selections in time, allowing comparisons between sites and allowing the ability to find patterns across sites if they exist to help researchers gain definitive answers to their questions. Interestingly, our experiments revealed critical flaws in the current data collection method.

By: ARUP

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