

3DIR: Three-Dimensional Information Retrieval

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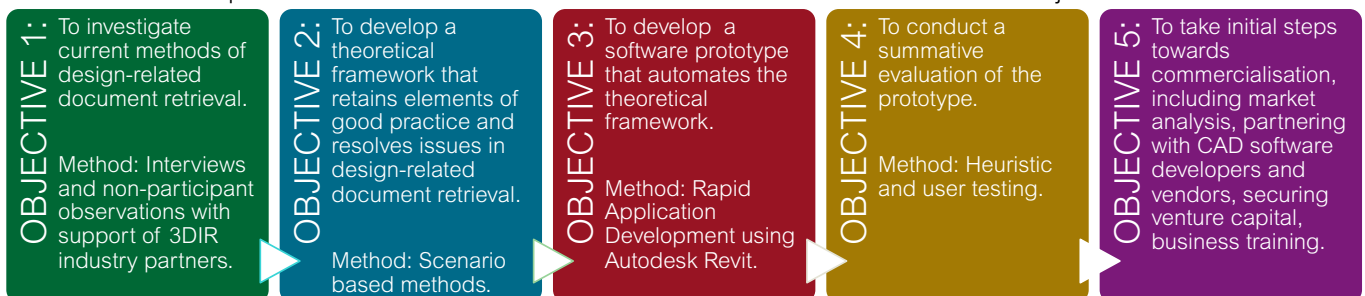
Introduction

- The way we model things (buildings, products, cities) in 2D and 3D is changing. More non-geometric information is being included in our models. Building Information Modelling (BIM) and Product Lifecycle Management (PLM) systems are examples of this.
- Beyond modelling and design, the average human needs to manage unprecedented amounts of information. Modern technologies allow access to vast amounts of information, and the increasing problem of "information overload" is well documented. Much of this information is linked to 2D/3D space.
- Research has identified human strengths in vision, spatial cognition and visual memory. These strengths can be exploited when managing information linked to 2D/3D space.



Aim and Objectives

The aim is to develop a tool for information retrieval of documents for 3D artefacts. The objectives are:



3DIR Principle: Exploit 2D/3D Visualisation for Information Retrieval

3DIR explores how 2D/3D visualisations can be used when managing information. The three classic IR steps are: (1) A user has an information need which he/she translates into a query; (2) The system identifies information items relevant to this query; and (3) The system displays these search results to the user. Using the construction and building design industries as application domains, a 3D visualisation prototype will be created. This will be used to formulate queries, and identify relevant items using classic information retrieval computations supplemented with 3D calculations. It will also display the search results, which would have the option for superimposing them in the 3D visualisation of the building. These fundamental principles are applicable beyond construction.

Developing a Prototype

The 3DIR team will target intended end-users from construction. User requirements will be articulated and a tool designed to meet those needs. The team will work with leading CAD/BIM developers to create the software.

Brian Mercer Award

The Royal Society's Brian Mercer Feasibility Award has enabled the 3DIR team from the School of Civil and Building Engineering and the Department of Information Science to apply their research to the creation of new software tools, working with professional CAD/BIM developers.