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# Information modelling for case-based construction planning of highway bridge projects

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## Abstract

In practice, construction planning and control draws on large-scale project and corporate data repositories, which are often unstructured. This article argues that the development of a large-scale data repository should be the precursor to any case-based reasoning system development. The article presents a large number of conceptual object models, which were developed to identify the attributes and relationships between product and planning information comprehensively, using bridges as a representative product. The models were used to develop a large information repository implemented in a database management system to facilitate real world project information collation, organisation, and management to reflect the large-scale nature of construction projects in practice. The database acts as a source of cases and sub-cases that are retrieved and mapped into a case-base. These cases are considered individually for indexing, matching, retrieval, and

validation purposes, facilitating the re-use of parts of multiple cases to construct new project plans. A prototype software model, CBRidge Planner, which was developed and tested with real world project cases to demonstrate the approach is presented.



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## Keywords

Construction planning and control; Bridges; Case-based reasoning; Object-orientated modeling; Project modelling; Database management

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