# Elements of a hierarchical representation for architectural design and decision support

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## Abstract

In computer-aided architectural design, one impor-
tant research objective has been the development of
rich representations for applications that would sup-
port the early phases of building design. Efforts to
address this problem have proven difficult. For one,
designers tend to frequently and at times drastically
adjust their designs, particularly at the beginning of
the design process. In this paper, we review selected
features of a representation which was developed for
the building performance domain and caters to cer-
tain requirements of early design such as rapid
manipulation of building models and automatic
maintenance of geometric integrity. We discuss in
more detail a recently added concept called proce-
dural grouping. It takes advantage of the hierarchical
structure of the original representation and enhances
the ease of manipulation of building models. Exam-
ples from a system prototype illustrate how design-
ers might benefit from such procedural grouping
mechanisms.