

# Data exchange model and software interoperability to improve the energy efficient building design process

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## EXECUTIVE SUMMARY

This research project has been primarily focused on the data model and exchange information system based on my Virtual Data Modeling Language (VDML) that I have created, which provided a model framework that linked between the ongoing design stages of a 111 stories, 275,000 square meters, 583 meters high, mixed-use tower high-rise project that I am working on in my consulting practice, with linking with energy performance simulation. The data exchange model provided bidirectional information sharing, data reuse capabilities, and software interoperability. The goal is to create energy efficient design building information system and framework to support the sustainable design of tall building. On this software information exchange model that has database system and interoperable capabilities for the compliant applications, the smart models/contents/objects have been created to identify and validate their important elements and relationship, and rules for design guidelines to improve the design process, and scenarios to inform the creative process.