BIM PERFORMATIVE DESIGN

This article deals with the question: What about BIM performance analysis?

The advantage of the digital design tools is that they bring a feedback performance. This data information is useful in the early stages of design. So, we can discuss with the client in order to make some decisions. For example, a performance can report the temperature indoors on a cold winter's day.

Traditional approaches have tools that are too "simplistic" or too "complicated" to provide a good design support.

The promise of BIM in early design was the integration of many different digital design decision support tools (Doon 2009). BIM focuses on the design options but offers the promise to reduce complexity of data input due to the shared common building model.

Performative processes are used in design: BIM performative design, where the performance of the building is as much a generative design technique as more formal considerations of proportion or context. It suggest form (generates) but doesn't analyse ideas generates by other ways. For example, the designer can identify a daylighting target and the performative software then develops a window solution that is capable of providing this light.

BIM Isn't only a model of the building, as it also includes a model of the sky driving the daylighting performance (the model of the environment in which the building is placed).

The most critical element of any daylighting simulation are the reflectivities, both internal and external.

The validation dataset used in the analysis was created to extend the existing daylighting validation for 3ds MAX Design (Reinhart and Breton 2009). When the surface colours are unknown it is recommended that inside the rooms the ceiling can be modelled white with a reflectivity of 0,8, walls as mid-grey with reflectivities between 0,5 and 0,7 and floors dark grey with reflectivities of 0,2-0,3.

This reflectivity values inside the room can provide without fault how big window we need.

Moreover, the sky model used by the software has important limitations near sunrise and sunset when the sun is at a very low angle of elevation above the horizon. That shows the limitations in the applicability of the performance predictions.

So, the currently BIM restrict the ability to contribute to performance building. Thus we need a BIM that can function with incomplete information but providing support for the performance of many design scenarios.

Maybe it is interesting design tools that provide design advice rather than simulate design alternatives (Petersen and Svendsen 2010).

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Note: this article is a summary of the article "BIM and Predesign Process: Modeling the unknown". Michael Donn.