

Design rationale documentation and exchange in the Danish AEC industry

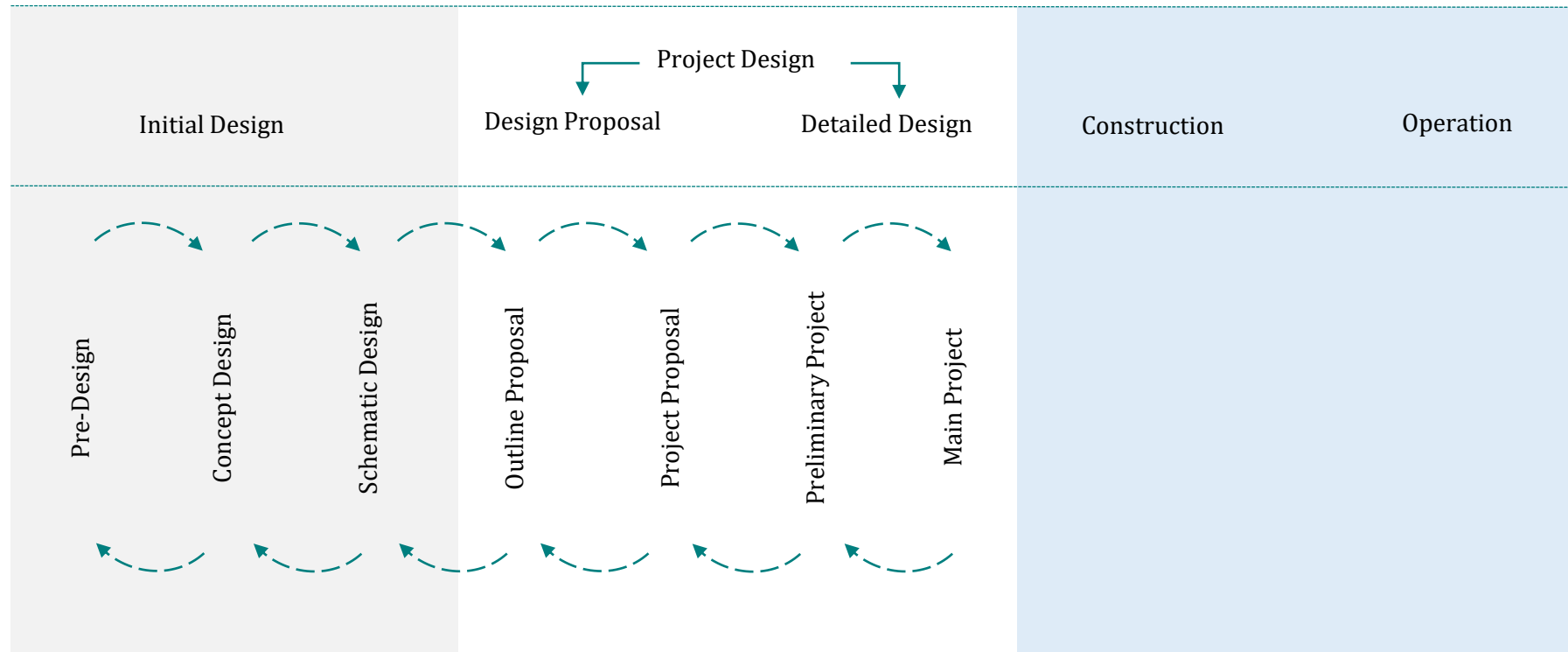
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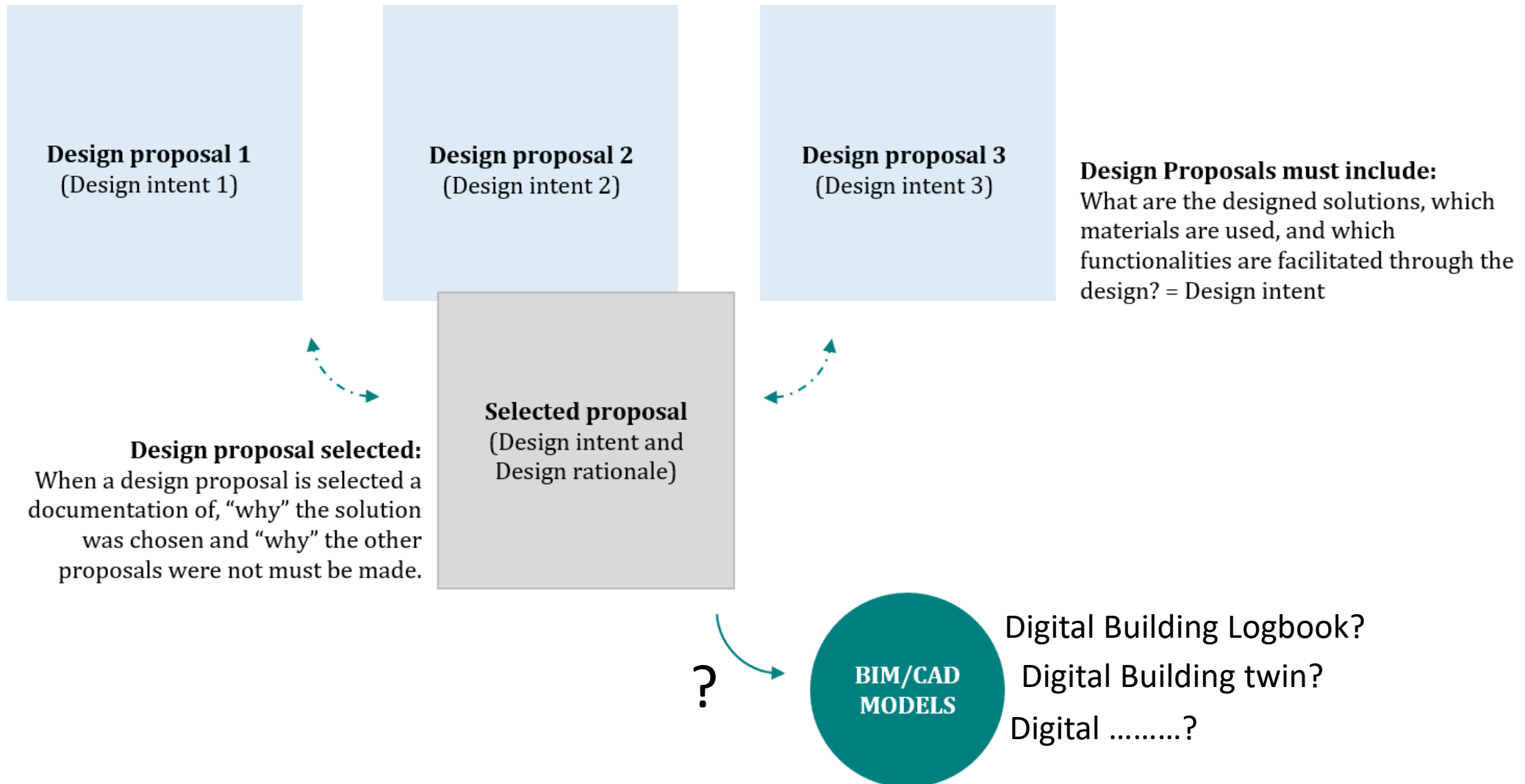
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Part of a PhD project

- This work is part of a PhD project on “Interdisciplinary information exchange between actants in design and renovation projects”
- This paper examines how ***design intent*** and ***design rationale*** are handled in the Danish AEC industry (**what and why**)



Design intent and design rationale



Interviews

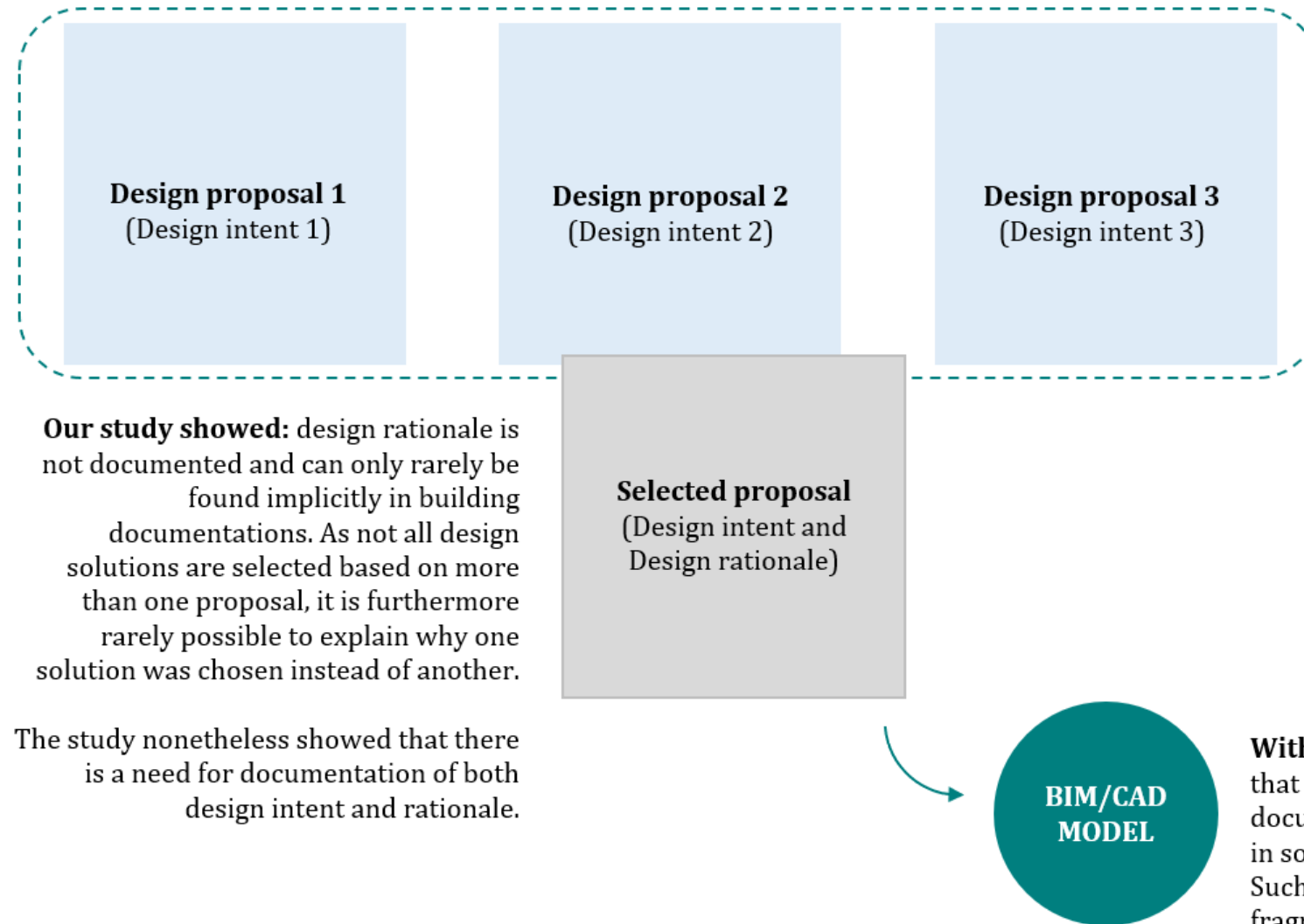
5 persons with different background from different companies of different size were interviewed

No.	Gender	Profession	Company employees	Interview-platform
1	Female	Architect	1-10	Telephone
2	Male	Construction Architect	1-5	Telephone
3	Male	Engineer	100-150	Microsoft Teams
4	Male	Construction Architect	25-30	Physical meeting
5	Male	Construction Architect	25-30	Physical meeting

Selected statements from interviews

- Respondent 2 explained that design decisions made in the early design phases, are often altered in later design phases, only to be changed back to the original design.
- Respondent 3 explained that sometimes a design is changed, only to be changed back again by another person because the latter did not understand the reason for the first change.
- Respondents explain that issues related to details, e.g. specific components may be communicated via notes in BIM models or just email messages.
- Regular meetings, with oral discussion of design solutions between project participants were described as essential by respondents 3 and 4
- Respondent 1 revealed that design intent and change-requests are normally based on hand written post-it notes, or notes in separate documents
- Current processes of exchanging information rely heavily on oral communication and email correspondence stored separately from BIM models

Results



Our study showed: design intent can be found implicitly in design model, drawings and other documentations, as well as in 3D modelling tool addons. However, often this is only the case for a selected design and not discarded proposals.

Proposals of more than one design solution is additionally not common practice in all AEC companies.

Our study showed: design rationale is not documented and can only rarely be found implicitly in building documentations. As not all design solutions are selected based on more than one proposal, it is furthermore rarely possible to explain why one solution was chosen instead of another.

The study nonetheless showed that there is a need for documentation of both design intent and rationale.

With respect to ICT: The study showed that some tools are already utilised for documentation of some design intent, and in some cases even some design rationale. Such documentation is however often fragmented and un-structured.

Thank you 😊