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Abstract: This PhD project sets out to gain a better understanding of environmentally sustainable architecture and the methodical approaches applied in the development of this type of architecture.

The research methodology applied in the project combines a literature study of descriptions of methodical approaches and built examples with a sensitivity analysis and a qualitative interview with two designers from a best practice example of a practice that has achieved environmentally sustainable architecture through an integrated design approach. The findings of the literature study and the qualitative interview have directed the PhD project towards the importance of project specific design strategies and an integrated and multiprofessional approach to environmentally sustainable building design. The project therefore focuses on the issue of design strategy development in an experimental application of sensitivity analysis as a methodical approach to the development of a design strategy for a new energy-efficient residential building in Denmark. The outset of the analysis is a single family reference building through which the sensitivity of parameters relating to energy and residential building design are analysed.

In conclusion the PhD project discusses the strengths and weaknesses of sensitivity analysis as a methodical approach to design strategy development, and makes a suggestion for the development of a tool that supports project specific design strategy development.

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