ABSTRACT

ENGLISH

This Industrial PhD project, "*Behaviour Driven Practice: Analysing the Role of Interdisciplinary Knowledge Integration and DesignThinking in Architectural Processes*" is carried out in collaboration with the Danish practise 3XN Architects and GXN Innovation, and Centre of Industrialised Architecture (CINARK) at The Royal Danish Academy, School of Architecture, Design and Conservation.

A growing body of research highlights the human, economic, and environmental gains to be made by embedding knowledge on the cross-field of architecture and behaviour into architectural design practice. While a wide array of practitioners focus on qualifying their design by adopting varying methods from the social sciences, it is curiously lacking how this knowledge, once generated, or found, is actually translated into design solutions.

This Industrial PhD project investigates how to critically integrate knowledge in architectural design practise, through a case-based action research approach, by investigating the practice and epistemology of 3XN architects and GXN innovation, in light of current research within the wider framework of design thinking, specifically the notion of framing, is used as a means to search for central themes and paradoxes within projects, and use these as starting points for selecting and implementing behavioural knowledge when working towards solutions. The thesis employs a qualitative, empirically grounded approach rooted in pragmatism. Drawing from design thinking, which again builds on Pierce's abduction theory and Dewey's situational approach, it explores how new knowledge can affect relational dynamics in architectural design practice. Dewey's perspective underscores the interdependence of individual designers and their environments, providing a framework for context-driven interactive and first-hand interventions within the day-to-day design process. In essence, this research employs creative production as its core method, with practice serving as both subject and means of investigation. It also involves reflection on practice experiences, creating a dynamic interplay between these complementary research methods. This *designerly* approach regards dynamic forces shaping daily design processes, and the case-based iterative inquiry involves in total 5 design and competition workflows of the practice of 3XN/GXN. The research is carried out as Action Research, as an approach that allow for experimentation, and evaluating key approaches between projects, while aiming to change and improve the behavioural design competence of the organisation The case studies are examined through three interrelated perspectives, addressed in three empirical chapters forming the core of the thesis.

Critical Examination of the Architectural Design Process: This study investigates the architectural design process, focusing on testing methods for knowledge transfer, enhancing focus, relevance, and defining value. By applying the framework of design thinking, particularly framing, the objective is to establish intent as a foundational step in utilising behavioural science knowledge in design. Secondly, the study proposes creating a *Second Brief* as a tangible outcome to enhance the design process, especially in professional services contexts. This work presents a method for deliberate and intentional use of behavioural knowledge and may be considered a contribution to the field in its own right.

Exploring Knowledge Types and Formats: This study addresses the challenge of applying knowledge from social and behavioural research, which often yields abstract results not directly compatible with complex design processes, relying on visual, intermediate, and heuristic knowledge. Through the development of design tools, this study examines how knowledge formats can be transferred and transformed, focusing on the usability in the design process. The findings suggest that successful knowledge tools risk becoming superficial when reduced to purely visual formats, while intermediate-level tools prove valuable for connecting and utilising diverse forms of knowledge.

Investigating the Role of Interdisciplinary Knowledge in Architectural Practice: This study explores the organisational context of knowledge within architectural design practices at GXN and 3XN, aiming for a comprehensive understanding of knowledge dynamics. It centres on the concept of building a repertoire, examining knowledge acquisition, maintenance, and sharing within the organisation while considering disciplinary competence and collaboration. Acknowledging that designers make use and reuse of episodic knowledge, this inquiry views knowledge from different angles: as an object, as embedded in individuals, or as shared and created within a community. The findings emphasise the multifaceted and context-dependent nature of knowledge in architectural practice.