Faculty of Engineering  
Summer Research Program 2019-2020

Project Title:  
Occupant-centric Assumptions amongst Building Design Stakeholders  
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Objective
Designing high-performance buildings is a complex process that involves several stakeholders at different stages of design development. The stakeholders may need to work together to achieve the complex design objectives and overcome challenges. Due to occupants’ individual circumstances and comfort levels, uncertainty for the definition of high-performance buildings can be considered as one of the major challenges during the design decision-making process. Occupant-related assumptions are made throughout the design process. The resolution of these assumptions is highly dependent on the design stakeholders’ project objectives and the time of engagement in the design process. The different resolutions of occupant-related assumptions can lead to a sizeable level of uncertainty which probably leads to suboptimal design decisions. To this end, the current practice including the challenges and the barriers need to be documented and understood in order to develop an improved occupant modelling approach during building design. Therefore, this project aims at mapping and analyzing the current practices of communicating occupant-related assumptions in building design process.

Project Details
This study has two main approaches. The project will highlight the shortcomings and proposes revised key directions for improving the current practices on how to communicate occupant-related assumptions among building design stakeholders and incorporate them into their decision-making process.

- A literature review on occupant-related assumptions for the design of high-performance buildings. The review specifically focuses on investigating how such assumptions are communicated among various design stakeholders (e.g. architects, engineers, building contractors, and interior designers).

- Semi-structured interviews with various industry stakeholders to identify the needs of occupant-related assumptions and the challenges of communications at different stages of design development.

Prerequisites
Excellent communication skills, both verbal and written

Additional Information
Applicants may be required to attend an interview.