Design of a 'fit for person' comfort assessment tool within a BIM environment

**Background**

WoonConnect is an online tool developed by De Twee Snoeken. This tool is based on the principles of building information modelling, on site collected data and a material database (BouwConnect). The aim of this tool is to provide buildings performances calculations, personal advice and best cost effective solutions to different parties, including real estate, municipalities, occupants and technical specialists. At first WoonConnect was developed to assist within the energy transition of the current housing market towards the goals set for 2023 and 2050. This by acting as a communication, calculation, and management tool. However, most occupants require some push factors to invest and agree to these sustainable renovations. Therefore WoonConnect aims to provide 'fit for person' comfort calculations to motivate the people into sustainable renovation and investments for their dwellings.

**Project aim and design requirements**

The main objective is to develop a piece of software that can assess comfort criteria within the current WoonConnect environment. With regards to this development there are several system requirements set:

- WoonConnect should be able to consider the preferences and complaints of the occupants and take these into account within the calculations. This to provide 'fit for person' solutions.
- WoonConnect should be able to display the output of the comfort module in different scenarios created by the users themselves. These scenarios should display the trade-off between comfort, costs and energy in one overview.
- WoonConnect should consider the (maximum) potential of the buildings. Moreover, the tool will only consider practical solutions and renovation options.

**Design Approach**

The design approach is displayed in the figure 3.

**Design Solution**

WoonConnect aims to provide calculations to assess lighting, thermal comfort, acoustics, moisture and ventilation within the building. The model will consider the preferred input of the occupants through information such as family composition, hobbies and complaints. Based on these input WoonConnect provides advice on the energy consumption, comfort and costs to the different users within the integral environment.