# Appendix: Decomposition of the Maximal Fit

Definitions HPmax= Maximal House Performance

HP1  = House Performance at moment 1

Imax= Maximal Importance

I1 = Maximal Importance at moment 1

Maximal Fit = HPmax\* Imax

= HPmax\* Imax - HPmax\* I1 + HPmax\* I1

= HPmax\*(Imax - I1) + HPmax\* I1

= HPmax\*(Imax - I1) + HPmax\* I1 - HP1\* I1 + HP1 \* I1

= HPmax\*(Imax - I1) + (HPmax - HP1)\* I1 + HP1 \* I1

= HP1 \* I1 + (HPmax - HP1)\* I1 + HPmax\*(Imax - I1) (5)

HP1 \* I1 is the Comfort Fit

(HPmax - HP1)\* I1 is the Improvement Potential by changing the house, assuming that the importance of the indicator remains the same for the person.

HPmax\*(Imax - I1) can be interpreted as an Improvement Potential due to increasing Importance, after/during the architectural improvement of the dwelling.

Simply written it would look as follows:

Maximal Fit = Comfort Fit1 + IPhouse + IPperson (6)

 From equations (1) and (6) we can say that:

Comfort Fit1 = HP1 \* I1

Comfort Fit1 + IPperson = Maximal Fit - IPhouse

Therefore:

(HP1 \* I1 + HPmax\*(Imax - I1)) = Maximal Fit – (HPmax - HP1)\* I1

This change of importance of an indicator (people’s values) during the renovation process, if it occurs, is psychological than architectural in nature. Therefore, it is not visualized in the Comfort Tool, and the Importance per indicator is considered to remain constant for the user before and after improvement. Since the improvement potential of the house is in fact a key element in the Comfort Profile and the Importance is considered to remain constant, the calculation implemented for the online tool can be simplified as follows:

Comfort Fitext = Maximal Fit – IP (7)

When using a Likert scale of 1-5 (as we do in the Comfort Tool) then HPmax is set to 5 and equation (2) shows the Maximal Fit value is set to 25. Therefore:

 Comfort Fitext = 25 - (5 - HP1) \* I1

# Appendix 2: Comfort Tool Questionnaires

Comfort preferences (Importance) question:



Home performance question:

