

IMPORTANCE OF COMFORT FACTORS IN HOME RENOVATION

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► RESEARCH INFORMATION

KEYWORDS

Comfort, home renovation, energy efficiency, universal design, indicators

INTRODUCTION / CONTEXT

Literature, governmental and policy goals reveal a need to merge the, until now separately considered, concepts of Universal Design (UD) and Energy Efficiency (EE) in home renovations. Using the concept of Comfort as a framework that unifies UD and EE a list of 21 comfort indicators was developed based on literature research and a set of 3 qualitative studies (Fig. 1). The indicators were developed to describe comfort at home from the perspective of residents so that they may be used by the residents to better understand their renovation needs, to communicate those needs with professionals, and so that policy can be better targeted accordingly. The indicators were then used as the basis for a survey of homeowners described below. The underlying hypothesis is that these indicators indeed represent comfort at home.

QUESTION / GOAL

The main goal of the survey was to check whether the developed comfort indicators are indeed important to homeowners. Of particular interest was how important the indicators are relative to each other; and if there are any inter-relations between them.

The investigation included the important triggers and goals of renovation, their relations, the characteristics of the respondents, and the characteristics of their building plans.

METHODOLOGY

We used an in-person survey of 145 attendees at the Batibouw construction exhibition in 2016. Respondents could select multiple choices in each question on renovation triggers, renovation goals, and importance of comfort indicators. Descriptive statistics were used for ranking of indicators, triggers and goals; Spearman rank correlation was used to compare ranking order differences between respondent groups; and crosstabs were used to understand correlations between indicators.

RESULTS & DISCUSSION

The main results of the statistical analysis show that:

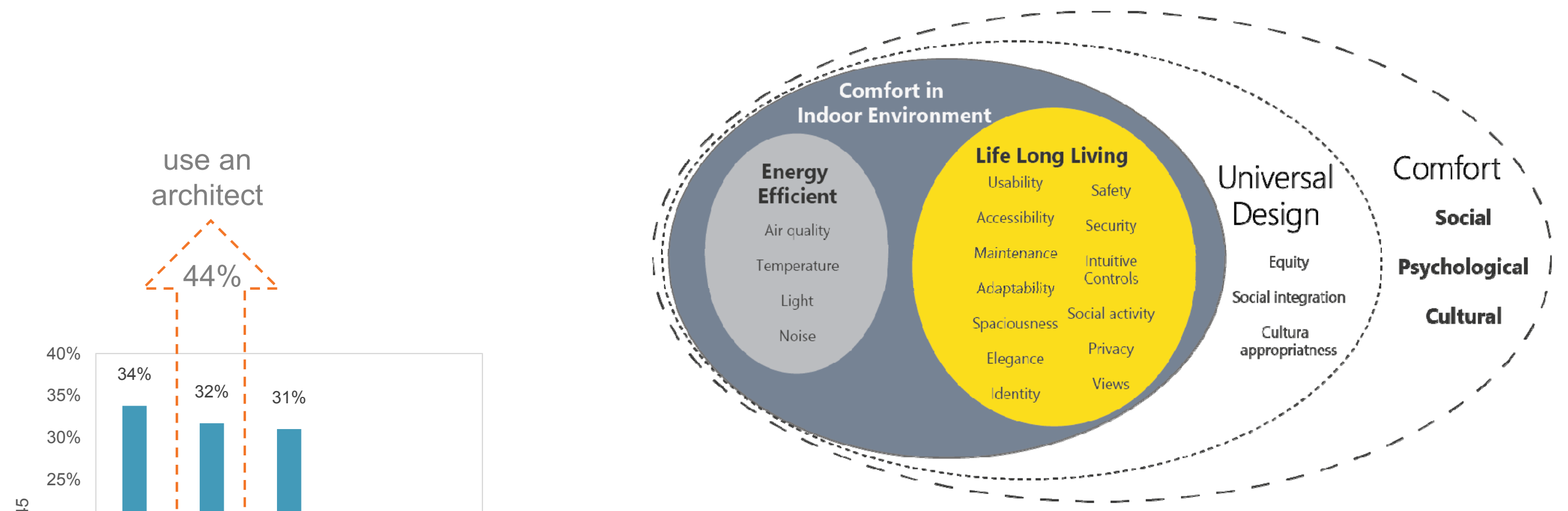
- Comfort indicators fall into **3 groups** in order of importance with EE associated indicators located somewhere in the middle pack (Fig 5).
- This **order does not significantly change** between people who plan to build a new home, those who plan to renovate, and those who do not have concrete plans yet.
- The list of comfort indicators used is reasonably **concise and complete**. About half of 145 respondents selected between 7 and 12 comfort indicators as important to them. All factors were selected by at least 30% of respondents (except for Artificial light 12%) and only 2.7% selected "Other" (Fig 4).
- An increase in comfort and an increase of the energy efficiency of the home are the most common triggers and goals for renovations (Fig 6).
- There is little change between the reasons why people started to think of a renovation (triggers) and the final goals of the renovations (Fig 7).
- Less than half of the renovators use an architect and their involvement seems to have no effect on client renovation goals or the importance of comfort indicators.

► CONTACT

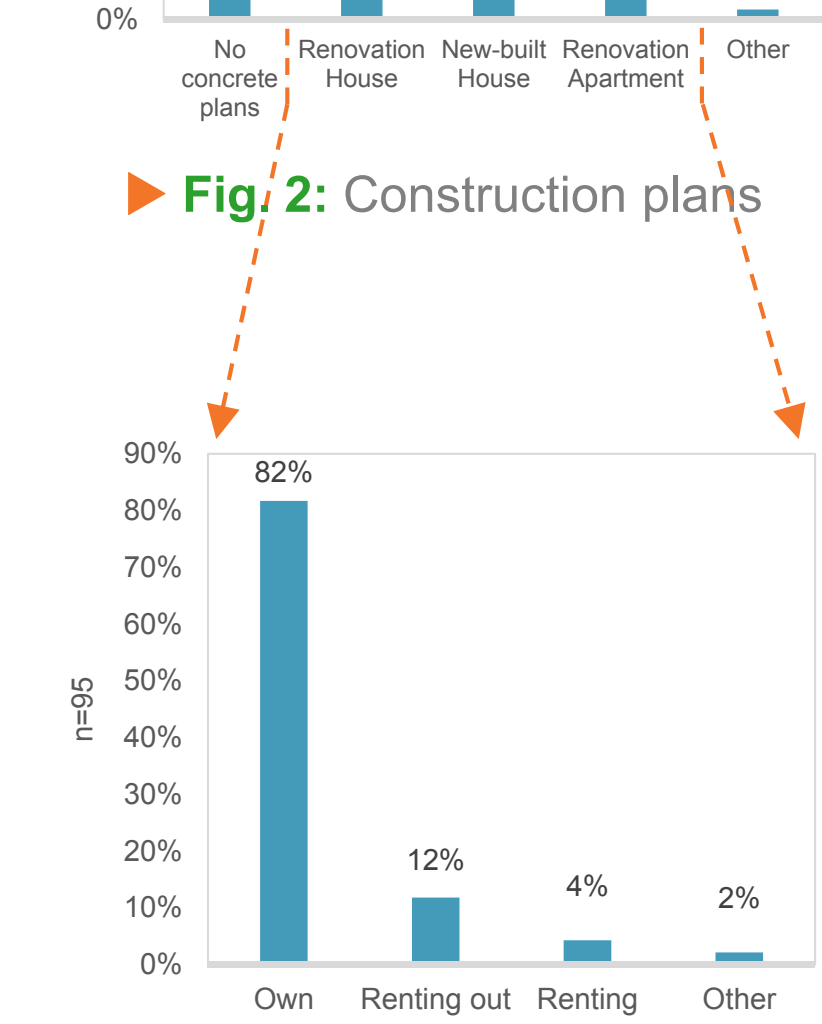
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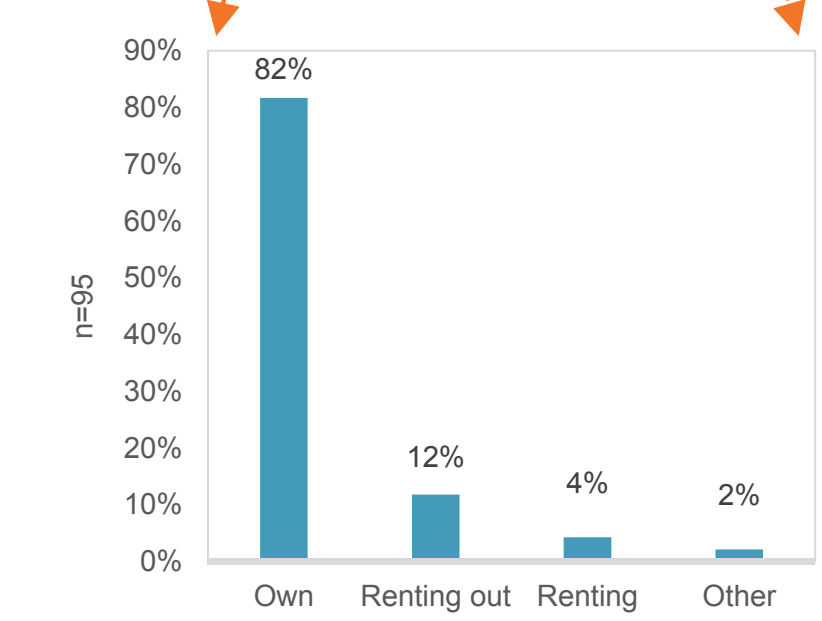
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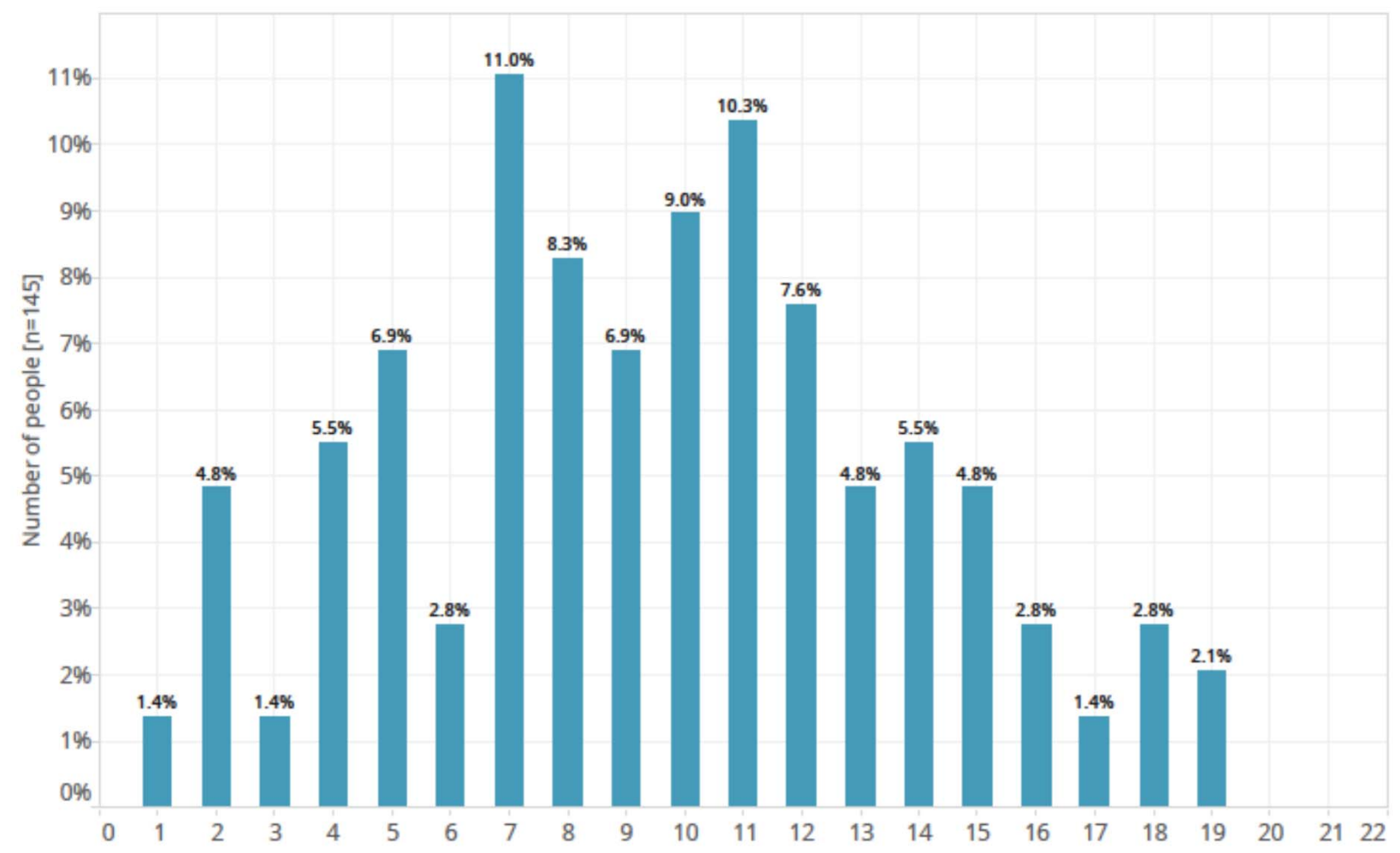
► Fig. 1: Comfort indicators according to homeowners and comfort framework including UD and EE aspects



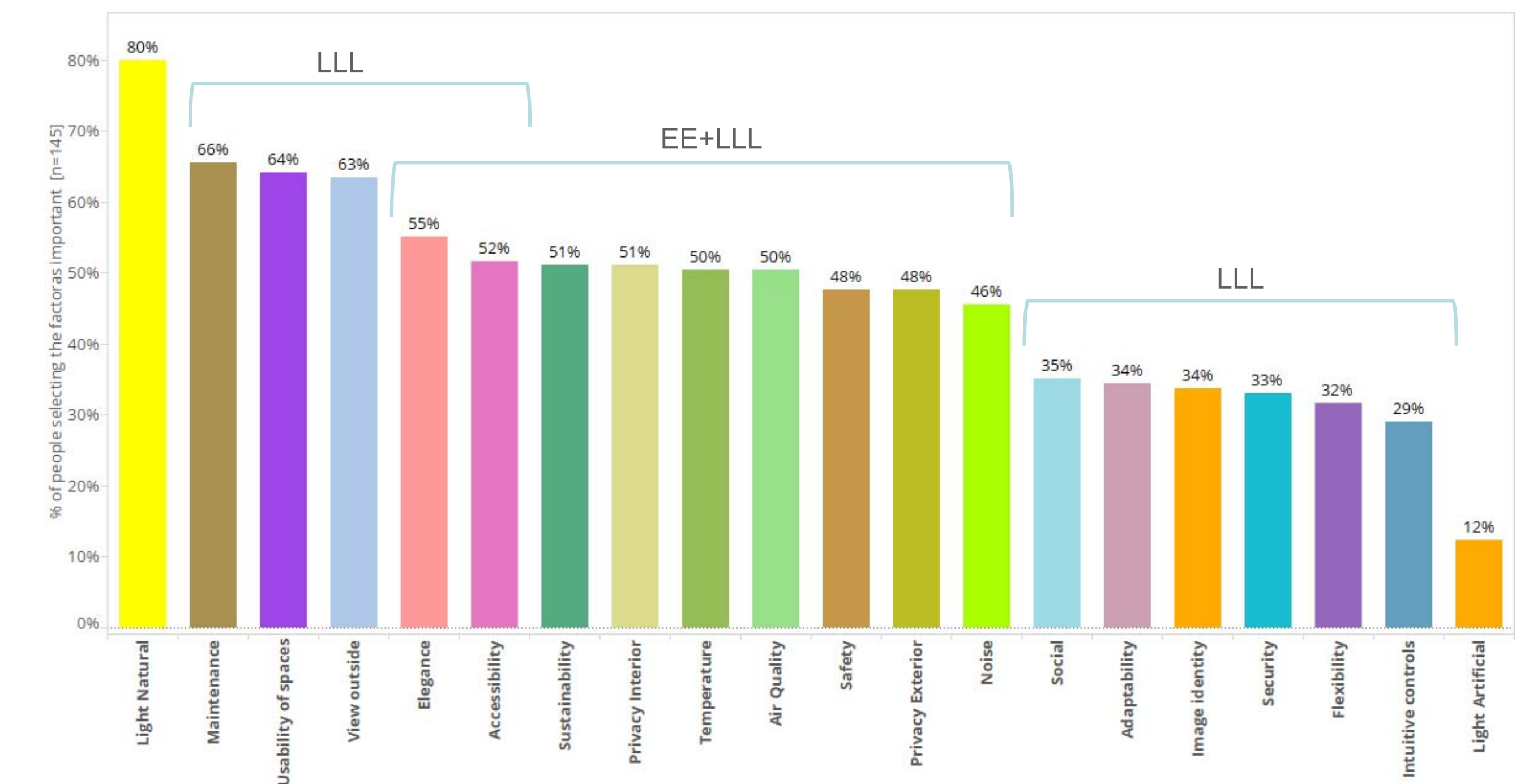
► Fig. 2: Construction plans



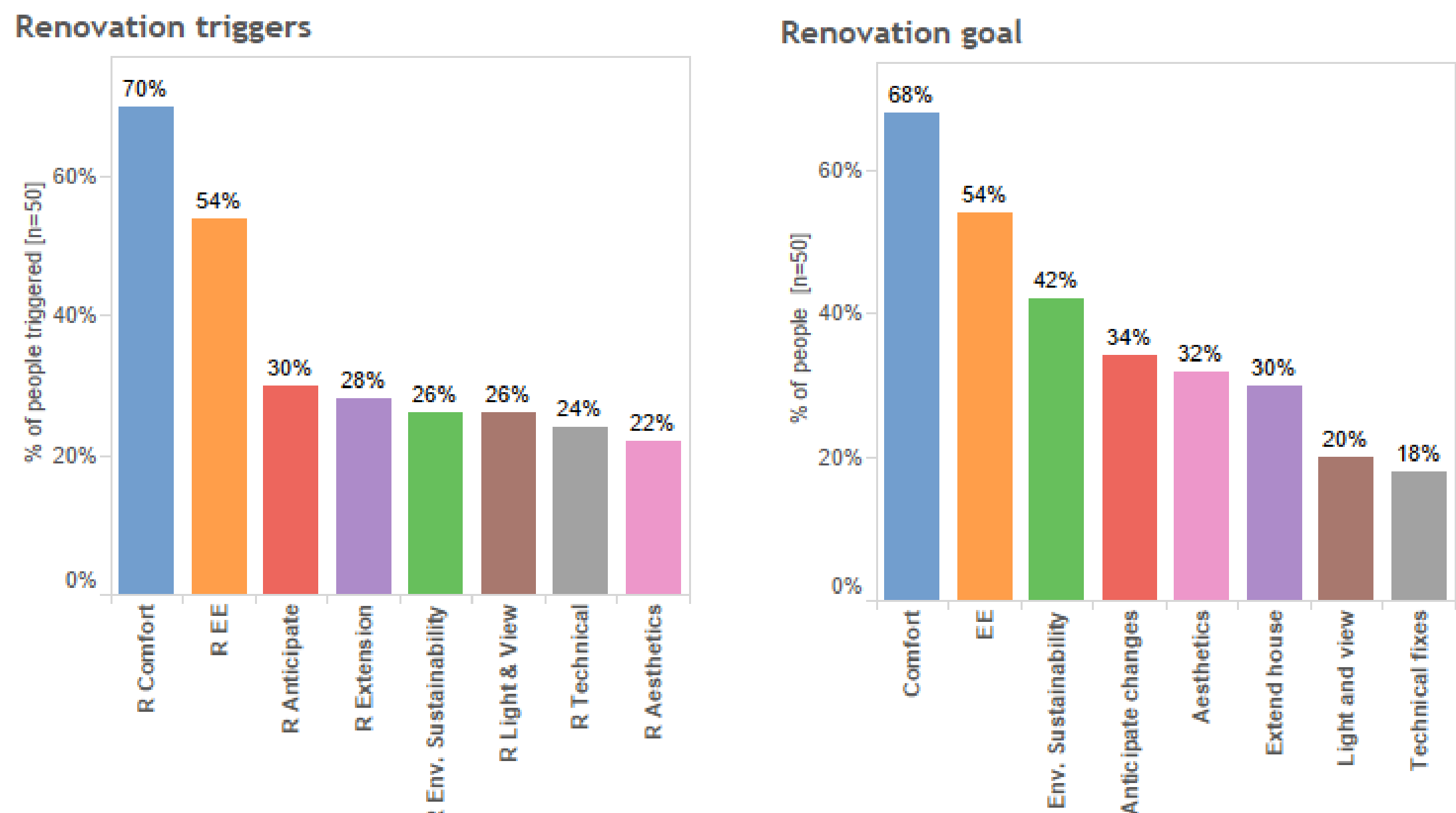
► Fig. 3: Tenure of dwelling to be renovated or built



► Fig. 4: Number of comfort indicators selected (max. 22)



► Fig. 5: Importance of comfort indicators



► Fig. 6: Importance of triggers and goals for home renovations

Triggers	Goals								
	Anticipate	Aesthetics	Comfort	EE	Extend	Other	Light & View	Technical	Sustainability
Anticipate changes	93.33	40.00	80.00	73.33	40.00	0.00	26.67	13.33	46.67
Aesthetics	27.27	81.82	72.73	54.55	27.27	0.00	9.09	27.27	72.73
Increase Comfort	37.14	34.29	88.57	60.00	28.57	0.00	25.71	20.00	42.86
Increase EE	37.04	37.04	77.78	85.19	18.52	0.00	18.52	25.93	62.96
Extend the Home	35.71	35.71	71.43	42.86	78.57	0.00	28.57	14.29	35.71
Other	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Light & View	30.77	46.15	84.62	46.15	53.85	0.00	61.54	7.69	38.46
Technical issues	33.33	33.33	83.33	58.33	25.00	0.00	16.67	58.33	41.67
Sustainability	38.46	46.15	76.92	100.00	30.77	0.00	23.08	30.77	100.00

► Fig. 7: Relationships between triggers and goals – percent of people who selected a trigger and then a goal.