

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	My-le Tsan
Student number	4468406

Studio		
Name / Theme	Housing associations: repair maintenance & tenant satisfaction	
Main mentor	Joris Hoekstra	Urban Development Management
Second mentor	Gerard van Bortel	Real Estate Management
Argumentation of choice of the studio	Repair maintenance is carried out in response to complaints from tenants. Although housing associations often score satisfactory in the Aedes Benchmark for tenant satisfaction in the field of repair maintenance, in practice situations occur where housing associations struggle with carrying out and/ or managing repair maintenance, which leads to dissatisfied tenants. So, there are opportunities to maximize tenant satisfaction and investigate repair maintenance.	

Graduation project	
Title of the graduation project	Ways to improve tenant satisfaction with repair maintenance
Goal	
Location:	Housing associations
The posed problem,	<p>Motivation 1: Poor maintenance</p> <p>According to the office of the United Nations high commissioner for human rights (n.d.), everyone is entitled to adequate and healthy housing. Unfortunately, this is not always the case. At some housing associations, tenants often have to contend with overdue maintenance of their homes (SP, n.d.). Some examples are poor insulation, mold problems, poorly maintained central heating boilers, rotten rear doors, and damp spots on the wall (Toetenel, 2020). At housing associations, the demand for a home is often greater than the supply. There is a shortage of rental</p>

	<p>properties and affordable rental properties. This may be one of the reasons why some housing associations pay less attention to repair maintenance, leading to dissatisfied tenants. Repair requests are often delayed or not answered by some housing associations, resulting in poor technical conditions, such as sound insulation. Some residents, therefore, carry out the maintenance themselves and hire recognized companies to repair it (Toetenel, 2020).</p> <p>Motivation 2: Tenant satisfaction</p> <p>An important point of these services is tenant satisfaction. The Aedes Benchmark data (2020) shows differences between tenants' assessment of repair requests. In this research, housing associations in the Netherlands are benchmarked, resulting in a table with the individual benchmark position of housing associations in 2020. It is interesting to see that the results differ, and the question arises where these differences come from. For example, is this due to how housing associations organize their repair maintenance, or do other factors (homeownership, size of housing association, urban/rural area) play a role?</p> <p>Motivation 3: Human health</p> <p>On average, people spend 90 percent of their time in their homes (Kort, Kok & Aydin, 2020). Health problems arise when a house is poorly maintained (Kok, 2020). As the need for maintenance increases, problems such as mold, moisture, drafts, and poor insulation become more common, which has direct consequences for the indoor climate in a home. A sample of 300,000 respondents shows that as the condition of their home deteriorates, visits to the doctor increase (Kort, 2020). This especially applies to the elderly. Respondents with good housing quality go to the doctor less often than people with a house that needs drastic renovation. In the elderly, there is a strong correlation between a moderately and poorly maintained home and a visit to a doctor. Elderly living in moderately maintained homes visit the doctor 24 percent more often, but elderly in poorly maintained homes visit the doctor about 77 percent more often than the average of their age group. People in a good home also suffer less from mental health problems. It is therefore important that homes are well maintained for human health.</p>
research questions and	<p>Main research question:</p> <p>What contributes to tenant satisfaction at housing associations in the field of repair maintenance and how can this be improved?</p>

	<p>Sub questions:</p> <ol style="list-style-type: none"> 1. How is the repair maintenance organized and what are the recent developments? 2. Which factors contribute to tenant satisfaction regarding repair maintenance? 3. Which factors can be influenced by the policy of housing associations and in what respect? 4. Which solutions can be given based on the analysis and what are the limitations of these solutions? 5. Which recommendations can be given to maximize tenant satisfaction and improve repair maintenance?
design assignment in which these result.	Advice/recommendations that social housing associations can take into account in their repair maintenance. These advice/recommendations can help housing associations make choices to maximize tenant satisfaction.
Process	
Method description	
<p>First of all, a literature review is conducted to find out what knowledge already exists on the subject. After that, case studies are carried out, consisting of both literature research and interviews with professionals from the field.</p>	

Literature and general practical preference

Preference is given to literature on factors that are important in maximizing tenant satisfaction with regard to repair maintenance in housing associations. The aim of the case studies is to gain a deeper understanding of the opinions and views of experts in the field.

Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

The graduation topic (repair maintenance and tenant satisfaction) is one of the management processes at housing associations. Tenant satisfaction can serve as a metric for housing associations to measure the efficiency of their own maintenance service or of the hired maintenance service(s). A high tenant satisfaction can therefore indicate that a housing association manages repair maintenance efficiently and that tenants are satisfied. The master track MBE is about managing the process (in this case tenant satisfaction) and the real estate (in this case with repair maintenance) to achieve a high-quality and financially rewarding development. The relationship with the master's program MSc AUBS is that an attempt is made to create solutions for managing and/or optimizing the processes and real estate portfolios in the built environment.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

Social relevance

In practice as well as in theory, a lot of attention is paid to new construction. This is because the Netherlands is faced with a significant housing shortage. In the coming decades, many new homes will therefore have to be built (ABF Research, 2018). The shortage is mainly caused by an increasing number of households (Capital Value, 2018). Nevertheless, the quality of the housing stock is largely influenced by the maintenance service (Van Mossel, 2008). Homes that are well maintained improve the quality of life (Oladapo, 2006) and contribute to tenant satisfaction. Providing maintenance services is an opportunity for housing associations to get in contact with their tenants and show their commitment. Previously, maintenance was often seen as a technical and financial problem (Van Mossel, 2008). Although housing associations want to increase tenant satisfaction by improving their maintenance services, many seem to have difficulty with this. Therefore, this research focuses on investigation how maintenance and repair services can contribute to more tenant satisfaction.

Scientific relevance

This research is part of housing sciences and building sciences. Recent research often focuses on new construction (e.g. Shearer & Burton, 2021; Shearer & Burton, 2019; Lukkarinen, 2019; Kilman, 2016; Mutter, 2013). In existing buildings, research focuses more on making stocks more sustainable (e.g. Ruparathna, Hewage & Sadiq, 2016; Pallis, Gkonis, Varvagiannis, Braimakis, Karellas, Katsaros & Vourliotis, 2019;

Gangolells, Casals, Forcada, Macarulla & Cuerva, 2016), while maintenance and repair are an important task of housing associations, the studies often concern maintenance costs (e.g. Tucker, Turley & Holgate, 2014; Ali, Kamaruzzaman, Sulaiman & Peng, 2010; El-Haram & Horner, 2002). Such research often does not focus on the preferences of end users concerning the maintenance and repair service. The purpose of this study is therefore to develop knowledge regarding the preferences of end users for maintenance to maximize tenant satisfaction.