

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	Tim Fierens
Student number	5768446

Studio		
Name / Theme	Circular-adaptable real estate reuse to react to societal changes	
Main mentor	Hilde Remøy	Real Estate Management
Second mentor	Vitalija Danivska	Real Estate Economics
Argumentation of choice of the studio	My graduation theme focuses on circular and adaptable real estate reuse is in line with my belief that circularity is the future. Embracing circularity in real estate not only aligns with sustainability goals but also addresses the evolving nature of our society. This theme covers my interest to explore approaches that are future proof, both in relation to the environment and to society.	

Graduation project	
Title of the graduation project	Bridging the fit-out gap: Exploring the relationship between tenants and landlords to enable circular practices in office buildings
Goal	
Location:	The Netherlands
The posed problem,	The built environment industry poses a significant challenge to sustainable development due to its high resource demands. The linear model of extraction, production, consumption, and disposal prevails. This is particularly evident in the environmental impact of office retrofitting. Retrofits are typically performed every 5 years, resulting in substantial waste generation. Circular office fit-outs, designed based on circular economy principles, present a promising solution to optimize processes and mitigate resource waste. Recognizing the corporate real estate (CRE) industry's impact on resource use necessitates a holistic approach to Corporate Real Estate Management (CREM) for sustainability. The transition to circular fit-outs depends on understanding the dynamics of the tenant-landlord relationship, involving formal and

	informal arrangements, and addressing these complexities is crucial for a successful shift to circular fit-outs.
research questions and	<p>Main research question:</p> <p>How can the tenant – landlord relationship facilitate the process from a traditional to a circular fit-out in office buildings?</p> <p>SQ1: How does a circular fit-out differ from a traditional fit-out?</p> <p>SQ2: What defines the tenant-landlord relationship in corporate real estate?</p> <p>SQ3: What challenges and opportunities are linked to the adoption of circular fit-outs?</p> <p>SQ4: What are the determinants between tenant and landlord that facilitate this process?</p> <p>SQ5: What formal and informal arrangements between tenants and landlord can promote circular fit-outs?</p>
design assignment in which these result.	The research aims to deepen the understanding of circular office fit-outs, emphasizing the tenant-landlord relationship's role in facilitating adaptation and circular fit-out implementation. Using an exploratory approach, it investigates the challenges and opportunities associated with implementing circularity in office fit-outs. The study delves into the determinants shaping the tenant-landlord relationship. The ultimate goal is to provide recommendations, covering both formal and informal arrangements, that can promote the adoption of circular office fit-outs. The deliverables include a list of tenant-landlord arrangements related to circular fit-outs, recommendations addressing relationship determinants, and supporting evidence from literature reviews and interviews.
Process	
Method description	
This research will be exploratory research. The research will consist of a theoretical and empirical part. Qualitative research methodologies will be used. The qualitative research methods in chronological order in this research are a literature review, cross-case analysis, semi-structured interviews and an expert meeting.	

Literature and general practical references

The literature study will cover three topics: a circular office fit-out, the tenant-owner relationship (in corporate real estate), and the arrangements between the tenant and owner in the context of (circular) office fit-outs. The results of the literature review will be used as input for the subsequent phases of the research.

Scopus by Elsevier will be mostly used to extract useful information from. Keywords were chosen, and numerous search results were obtained. Articles are judged relevant based on their title, study area, and abstracts. The TU Delft education repository will also be used. However, while the concept of circularity and circular economy is extensively developed in academia, the connection with an office fit-out is mostly absent. As a result, reports from firms in the field are a helpful complement in bridging these two concepts. Additionally, snowball searches will also be executed to find additional relevant publications which are in the reference list of the start-article (snowball) (Radboud University Library, n.d.).

The first concept, a circular office fit-out, will be investigated by researching and defining the characteristics of a traditional office fit-outs and the principles of the circular economy, with the goal of connecting the two and defining the new concept. Second, the tenant-owner relationship is studied to gain insight into the dimensions that define the quality and the power dynamics in the relationship. Furthermore, stakeholder management theory and facility management theory will be briefly explored to aid in understanding the external stakeholders to the relationship. Third, a preliminary search of connectors (arrangement) will be executed, but literature will be further consulted on this topic while the research progresses. It is likely the empirical research will reveal arrangements that have not been included yet, and need a more theoretical background.

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 project topic is a specialized exploration within the broader context of the Master Programme in Architecture, Urbanism, and the Building Sciences. This master programme covers all topics related to the built environment, including interiors of buildings and stakeholders related to buildings.

Furthermore, the studio topic on circular-adaptable real estate reuse aligns with the sustainability aspects of the circular office fit-out concept.

The Master Track in Management in the Built Environment contributes with management and operational perspectives to the understanding of the built environment. The track especially proves to be valuable when researching the tenant-landlord relationship.

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

Societal relevance

This research looks at the importance of sustainable development in the built environment, for which there is a great need as set out in several of the 17 Sustainable Development Goals (SDGs), such as SDG 12 Responsible Consumption and Production and SDG 11 Sustainable Cities and Communities (United Nations, n.d.). The focus is on material consumption during the use phase of corporate real estate. Given the frequency with which office fit-outs are changed, this leads to huge material consumption and waste that needs to be reduced. Circular office fit-outs are a promising alternative.

The transition to circular fit-out brings challenges, but can bring long-term economic benefits, such as cost savings and waste reduction. In essence, the research highlights the interplay of sustainability, responsible consumption, economic benefits and understanding stakeholder relationships in building a more sustainable society.

Scientific relevance

The research focuses on circularity in the built environment during the use phase to develop recommendations that promote sustainability and increase scientific understanding of resource consumption. While there is a reasonable amount of scientific literature on energy consumption during the use phase of buildings, there is only limited literature on material consumption. To the best of this author's knowledge, there is no scientific literature at all on the specific concept of a circular fit-out.

Hence, this exploratory research is relevant to discover the specifics of commercial office fit-outs and their much needed transition to a circular economy. The research aims to do so by deepening the understanding of the tenant-landlord relationship in commercial real estate, adding depth to the understanding of the economic and stakeholder aspects of circularity.