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ANNUAL PLAN 2019-2023: DEVELOPMENT OF HOUSING AND REAL ESTATE

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1. INTRODUCTION

1.1. General

The objective of the annual plan, entitled 'Development of housing and real estate', is to further elaborate on the programme being implemented within the framework of the long-term housing strategy (hereinafter 'LTSH'). This annual plan is related to UT's financial budget and contains an update of the financial situation, updates of the ongoing projects within the programme, and an overview of the detailed choices and prioritization for projects implemented by UT. For our projects and goals we always look five years into the future. This plan also outlines current national and regional developments affecting real estate and housing, and the campus as a whole. The status of on-campus real estate projects involving UT is also specified.

As mentioned earlier, the annual plan is updated every year and fits within a framework called LTSH 2016-2025, which was prepared in spring 2016 with the assistance of the consulting firm Brink Management & Advies B.V. and adopted in July 2016 by the Executive Board. The LTSH contains a housing strategy for which the UT strategy 'Vision 2020' has been translated into housing frameworks and principles that take national and regional developments into consideration. It is also an important part of the professionalization of the real estate management of the university. All the UT housing initiatives are listed, including future maintenance processes necessary to keep up existing housing quality levels. In 2016 we reviewed the university's financial situation as well as the investment potential for real estate in the coming years.

The LTSH identifies two major real estate initiatives that started in 2016. Firstly, the Health cluster will be housed in the Technohal, which is due for a total renovation for this purpose. Secondly, the Faculty of Geo-Information Science and Earth Observation (ITC project) – currently located at Hengelosestraat in the Enschede city centre – will be housed on campus at the O&O Square in a new building, at a location to be determined.

In terms of the major Health and ITC projects and in addition to fulfilling the primary objective (housing ITC on campus and clustering Health), facilities will be built that will benefit the development of the entire campus, such as expansion of catering facilities, classrooms, and an increased number of study and project areas.

The scope of these two major projects, however, does restrict our opportunities to make additional large investments in housing in the first five years. For this reason, subject to financial constraints, the new initiatives to be implemented which are necessary and desirable under the UT strategy have been determined on an annual basis since 2016. As agreed during the adoption of the LTSH, the real estate initiatives are compiled into a programme of projects to be updated annually in the 'Development of housing and real estate' annual plan, which has been integrated into the annual UT budget.

1.2. Review of 2018

Over the past year, UT's real estate activities were characterized mainly by the following items:

- The rebuilding/renovation of the Technohal is taking place; the building process has been slowed down because of frequent discoveries of asbestos in the Technohal. The building was planned to be ready at the end of December but will now be finished in April 2019. Not only did the asbestos finds account for unforeseen costs, there were also costs associated with the extension of the construction period.
- The design team for the new ITC building has been formed. At the moment, the project is temporarily on hold. Estimations of the costs for the new building at the planned location of the Citadel building show an overrun of the budget.
- As a consequence of the ITC project developments, the Citadel building will not be demolished; the housing and effects for the current users CES, UCT and LISA will be reassessed, and budget will remain available.
- Actualizing and prioritizing other projects/initiatives that emerged from the LTSH process.
- An investigation has been started to determine whether the hotel and conference centre Drienerburgh can offer good accommodations for University College Twente.
- The spaces now in use by ECTM in Carré must be reconstructed for other uses after the staff and laboratories of ECTM are housed in the Technohal. Different solutions are being developed.
- Behind the HogeKamp building, 240 car parking spaces for the Camelot apartments, the UParkhotel and High Tech Factory have been realized. This parking lot replaces the one formerly in front of the building.
- The underground infrastructure around the HogeKamp has been renewed.
- The new living environment in front of the HogeKamp has been designed. Construction of the terraces, gardens and square has started, as far as the renovation of the tower area allows. The tower that is part of the HogeKamp requires a construction site to be located in the middle of the square to be constructed.

A design has been made to expand the parking facilities for cars on the campus. A design for the parking facilities for bikes is under construction. This expansion is necessary if the faculty ITC is to be accommodated on the campus. Depending on the new preferred location of the ITC building during construction, a construction area is needed. It is very likely that the car parks around the O&O square will be used. There is also a need for parking spaces for construction staff. That is why it is sensible to have extra parking spaces ready before the start of construction.

An artificial turf field for different kinds of sports was realized in 2018. After the lava layer was ready the weather conditions were not suitable for the fabrication of the middle layer. In early 2018, when the weather conditions were good, it appeared that the Dutch hockey federation did not approve of the properties of the artificial grass mat. The mat was of a new type and had to be tested. The complete grass mat had already been produced. In August the manufacturer supplied a new mat that meets the requirements of the hockey federation. The existing hockey field has been replaced by a modern water-based playing surface. The existing tennis courts made of artificial clay have been replaced by clay courts.

1.3. Preview of 2019

- The number of students and staff is likely to increase in the next coming years. But on long term a decrease may also be possible. It is necessary to create an overview for the effects of several growth scenario's on housing.
- Restart the ITC project as a result of the scenario analyses.
- Because the Citadel building will be preserved, a new plan will be made for current and possible new users.
- UCT as new user at the Drienerburgh, for both education and housing.
- Creating an overview of the impact on housing resulting from the quality agreements (WSV) and sector plan budgets.
- Update of the urban plan (last update was 2013).
- Parking management for both cars and bikes needs attention as part of the urban plan. This includes creating enough parking spaces for electrical cars.
- An investigation of the renovation and use of the Paviljoen building is necessary.
- Creation of the student home bases in relation with community-building and the quality agreements.
- Because of the growing number of ET students the facilities are being used at full capacity. Especially the workshop cannot handle more students. A plan of requirements is currently being developed. An investment in new lab facilities including some over dimensioning is likely to be necessary. Also the planned cooperation with the VU in Amsterdam requires more lab facilities than are currently available in the Horst building.
- Initiation of follow-up discussions about the redevelopment of Gallery Phase II.
- A business case and a plan of requirements is being written for the housing of Navitas IFY. The IFY (International Foundation Year) is a preparatory programme for international students that can be taken before enrolling in a Bachelor's programme at the University of Twente.
- A new Visual Arts Advisory Committee has been appointed.
- Solving the growing student housing problem by creating collaborations with third parties that can exploit housing.
- Further professionalization of the LTSH and portfolio management.

1.4. Reading guide

Chapter 2 of this plan describes the internal and external developments relevant to the basic principles of the LTSH and examines whether these developments necessitate any changes to the chosen strategy for the LTSH. Chapter 3 provides an explanation of the process management regarding advice and definition of the programme of housing initiatives. Chapter 4 provides insight into the financial framework of the current programme, while Chapter 5 explains how and by which criteria, as derived from the LTSH, we determined the present priorities for the real estate programme. The identified risks for this programme are listed in Chapter 6, and all the proposed projects are briefly described in Chapter 7.

2. NATIONAL, REGIONAL AND UT DEVELOPMENTS

To further elaborate on the LTSH it is important to record any developments, whether major or minor, relating to the number of users to be housed or to their needs. National or regional developments that could affect the financial or spatial frameworks of the LTSH are also important. This chapter lists the relevant developments.

2.1. Developments within UT

Since the adoption of the LTSH (July 2016), the following developments have been significant for the further elaboration of the LTSH:

- Student enrolment for the 2017/2018 academic year has developed as expected, in line with the projections outlined in the LTSH. Over the long term, the discussion about additional funding for the 4TUs may result in a higher number of students being admitted to UT.
- In order to improve the community building at the UT, more home bases will be created. The creation of home bases are also an important part of the quality agreements. See also section 7.4
- Staff numbers may increase the next few years as a result of structural growth, sector plans and quality agreements. On long term this is uncertain.
- The space requirements of faculties were generally assessed halfway through 2018. The assessment revealed that vacancy as estimated in the LTSH will decrease in coming years. Vacancy will drop below 2% of the total usable floor area. From a financial point of view this is a positive development, yet it limits the flexibility to accommodate growth and organizational changes of groups within the university. A vacancy rate of 3% is seen as a good percentage. Further inquiry and analysis are needed to decide whether these requirements for educational/research areas and secondary areas will lead to major quantitative or qualitative changes in our real estate portfolio.
- As part of its Strategic Business Development, UT collaborated with all the relevant stakeholders on a business case for the development of Gallery II, with a preference for the gallery to retain an incubator-like function. There appears to be considerable interest from the business community in this respect. The development offers possibilities for positioning of the current DesignLab and the desire for a student workspace (Dream hall). See also sections 7.4/7.8.

These developments are in line with the basic principles of the LTSH, and there is no reason to amend the present strategy.

2.2. Important partnerships

UT has several important partnerships at both the regional and national level. In this region UT is a partner in the development of the Kennispark. The other partners are the municipality of Enschede and businesses. Together we are working on a strategic development vision of the Kennispark area. There is also an important collaboration with the High Tech Systems Park in Hengelo and the Techbase in Enschede. At the national level, UT has started a partnership with VU Amsterdam. Starting with the new curriculum for 2019-2020, VU offers Mechanical Engineering (ME); for the workshops students will visit UT. At the international level a corporation has been started with Navitas IFY. Navitas IFY provides a Pre-Bachelor's programme.

2.3. Political discussion around real estate investments

Investigation by the General Chamber of Audit

In 2016, the General Chamber of Audit (AR) began investigating the university's real estate portfolio and real estate management. This was the first phase of the investigation. In 2016-2017 the AR worked on the second part of its investigation, focusing on property management at selected universities (UT was one of the randomly selected universities). This second part addresses the following question: 'Do universities have their property management (including governance) organized in such a way that risks can be identified in a timely manner and still be adjusted?'

The AR has finished its analysis (based on numerous documents and several interviews with stakeholders involved with real estate at UT). In November 2016 the university checked the facts and figures of the report issued by the AR and provided its response. The final report was submitted at the end of September 2017 to the Executive Board of UT. The real estate management of UT is generally well organized. The report also has some recommendations:

- Create a clear real estate strategy.
- Generate proper real estate data like occupancy rates of spaces in order to optimize use.
- Strengthen the checks and balances, keep the Supervisory Board well informed as necessary.
- In case of important decisions, give an overview of the financial consequences and create a proper risk inventory, especially in case of complex collaborations with third parties.

2.4. Urban Planning

Update of the UT urban plan

The university has had an urban development plan for the campus since 2013. This is the *Beeldkwaliteitsplan* (visual quality plan), drawn up by the university's supervising architect in close cooperation with Strategy & Policy and the Facility Service Centre. The urban plan will be updated in cooperation with the supervisor. This update is necessary because many projects/developments are in progress or already finished. Remaining and new developments must be investigated to keep the plan up-to-date and the UT plan future-proof. Some important issues are parking on campus for both cars and bikes, the addition of a sustainability section, identifying the real estate locations available for expansion and development/redevelopment, and attention for the connection between the O&O square and the W&L area (Oude Drienerlolaan).

Kennispark zoning plan

All the issues to be changed have been identified. A distinction has been made between urgent and less-urgent issues for UT. These issues have been delineated because the entire zoning plan, with a focus on the business terrain opposite the campus (including the innovation path), is expected to be modified. These modifications started in 2018 and will continue in 2019. The aim is to create the right conditions to attract firms that are interested in the Kennispark. As mentioned before, UT is part of the Board of the Kennispark.

Pressing issues of the zoning plan

Several issues with the zoning plan are so urgent that they require quicker action. These concern the apartments in the HogeKamp tower. The issues relating to these buildings are currently being addressed with an environmental permit that contains a request to deviate from the zoning plan. A structural deviation from the zoning plan will also be requested for commercial events that were allowed again in 2018.

Undergraduate, graduate and doctoral student housing

Over the long term, enabling all international students to live on campus or nearby will require modifications to the zoning plan. The number of residential units must expand by 1,000 (presently 2,200). This takes into account relocation of the city centre units to the campus in due time and the housing improvement projects of housing organization 'De Veste'. Adapting the zoning plan's current locations for on-campus housing is also being considered, given that past decisions regarding locations are no longer appropriate.

Experimental zone

For the campus to be more available for education and research, the zoning plan must be amended so the campus can be used as an experimental zone. A potential aspect for this could be the deployment of drones. This development will require a broad-based collaboration between the municipality, the province and various other market partners. Possible partners are institutional investors that might be interested in parts of UT real estate that will not be used for the primary process. The Dutch Ministry of Infrastructure and the Environment will also be involved.

2.5. NOEK [access to Enschede knowledge park from motorway A1]

The previous 2018-2022 plan indicated that the objections to the NOEK knowledge park (particularly the vibrations) had been investigated and that it was the municipality's turn to make a move. The new municipal coalition resulting from the elections and the coalition agreement decided to skip the NOEK.

2.6. Housing for international students and staff

Available, adequate and affordable housing for new international students, employees and guests is becoming increasingly important. This is emphasized in UT's Vision 2020 and Vision on Internationalization. Adequate, professional and flexible assistance in finding suitable accommodation is crucial for attracting international talent. In addition, UT has been chosen as the 'Most Welcoming University' for students, employees and guests.

The policy paper 'Housing of UT students, employees and guests' was written because of a number of changes in the housing offered on and off campus, which gave rise to increasingly differentiated questions. This policy paper was approved by the Executive Board of the University Council in spring 2017.

One of UT's stated goals in this policy paper is to support all students, staff and guests in finding appropriate and affordable housing. UT:

- guarantees accommodation to all visaed students, employees and guests for the first year of housing;
- provides assistance in finding accommodation to non-visaed home and international students, employees and guests, and visaed students, staff and guests after the first year.

Since February 2018, UT offers its housing services through the online portal Roomspot. In the coming period attention will be paid to:

- further development of Roomspot;
- finding ways to lower the threshold of the co-optation system;
- based on prognoses, consulting with the Municipality of Enschede, real estate developers and corporations about a possible expansion of the housing supply.

In the coming year, because of a programme, an inventory is being made to present a better overview of supply and demand concerning student and staff housing. This is necessary to create enough supply for the future. A possible consequence is changing the zoning plan.

2.7. Sustainability

Sustainability is an integral aspect of the management of the terrain and buildings on campus. A reduction in energy consumption remains a top priority. The possibilities for on-site energy

generation will be examined, as well as the greening of the remaining energy demand. In addition, we will stimulate improving sustainability by our suppliers (in the value chain and concerning transportation activity to and from the campus) and work towards increasing the environmental awareness of all campus users.

The university's carbon dioxide footprint has been developed in accordance with the Greenhouse Gas Protocol, which considers its own CO₂ emissions and those of the suppliers. This footprint is a good tool for choosing emission-reducing policies. The savings in the chain are difficult to quantify. Although we know that many of our suppliers are already doing a great deal, it is hard to translate those actions into reduction percentages. We will investigate together with the procurement department how to better approach this and work towards improving the sustainability level of the companies UT works with.

For a quick view of the impact of energy measures, an energy monitoring system has been set up that allows *real-time* monitoring of all the energy metres in buildings. Besides the physical aspects of sustainability such as energy-reduction measures, we also want to focus on the comfort experience of the users of the building.

Specific actions:

- The heat generated by waste incineration is used for district heating, which is used by most of the university's buildings.
- The capacity of the on-site generation of power using solar panels will be increased by placing 860 solar panels on the roof of the Technohal.
- The outdoor pool is largely heated by solar panels (and the pool is covered after use to avoid heat loss), while the shower water at the sports centre is partially heated by solar water heaters.
- UT's largest facility management contracts contain a paragraph on sustainability that encourages these partners to help increase the sustainability of the university.
- An action plan on sustainability will be written by the catering company.
- Waste separation will be introduced to the student housing on campus.

2.8. Energy savings/MJA III

As a sector, universities have signed the *Multiple-year agreement energy-efficiency* (MJA), a long-term agreement on energy efficiency. This agreement stipulates that universities will strive to reduce their energy consumption and, more specifically, achieve 30% in energy savings from 2005 to 2020. The Energy Efficiency planning report 2013-2016 (EEP) discusses in detail the energy-saving measures that UT intends to implement. At least 20% of the savings are to be achieved in UT's own energy consumption and 10% in the 'chain', i.e. with the suppliers.

UT has met its commitments **with regard to reduction in energy consumption. Continued emphasis on energy measures** is in order to further reduce our energy consumption as student numbers are increasing, and with the addition of the Technohal and the ITC building the amount of floor space has increased too.

All buildings will require an energy label by 2023. Based on the results, it is expected that investments will be needed to improve the buildings, especially in terms of insulation, as this is the basis for reducing energy consumption and improving comfort and well-being for the users. District

heating with heat produced by a waste incinerator is currently considered a sustainable heat source and improves the energy label for each three- or four-storey building. Despite the energy label improvements, it is important to remain focused on the increase of comfort in the buildings through measures such as insulation.

The following items have been identified to support the MJA objectives:

- Significant energy savings are possible through use-dependent control of the installation. One such example is the control system for office lighting. The building automation systems that control the climate in classrooms and lecture halls are linked with the timetabling of these rooms. The air extraction in the laboratories using laboratory fume cupboards has been linked to the position of the windows in the cupboards.
- MJA measures (general item for measures to reduce energy consumption).
- Outdoor lighting (LED lighting of grounds), investments in lighting (LED lighting for buildings).
- Installation of solar panels on the roof of the Technohal.
- Providing lab ventilation with laboratory fume hoods, depending on the position of the windows of these cabinets.
- Determining energy labels for UT buildings.
- Assessing the load-bearing capacity of the roofs of UT buildings for sustainable solutions.

One obligation from the MJA III is that the organization must use a suitable energy management system. The current energy management system will be upgraded to the ISO 50001 standard. By the end of 2018, the organization will ensure that its energy reduction and sustainability responsibilities are in accordance with this standard.

The Energy Care System requires the establishment of a steering group, a multidisciplinary coordinating group and a working group. The steering group will consist of a member of the Board, a faculty dean and the directors of S&B, C&FM, FEZ and M&C. The coordinating group will consist of an energy coordinator, policy officer for sustainability, programme manager for innovation, subject-specific advisor and a supporting staff member. The working group will consist of a procurement manager, real estate and management manager, IT manager, operations directors of the faculties, VGM coordinator for the supporting departments, policy officer for sustainability and a supporting member.

3. PORTFOLIO MANAGEMENT FOR THE DEVELOPMENT OF HOUSING AND REAL ESTATE

To monitor and fine-tune the development of on-campus housing and real estate, a process has been devised that closely matches the existing P&C cycle. As previously indicated, the LTSH forms the wider framework. Every year it is important to consider and prioritize all the projects in relation to one other due to:

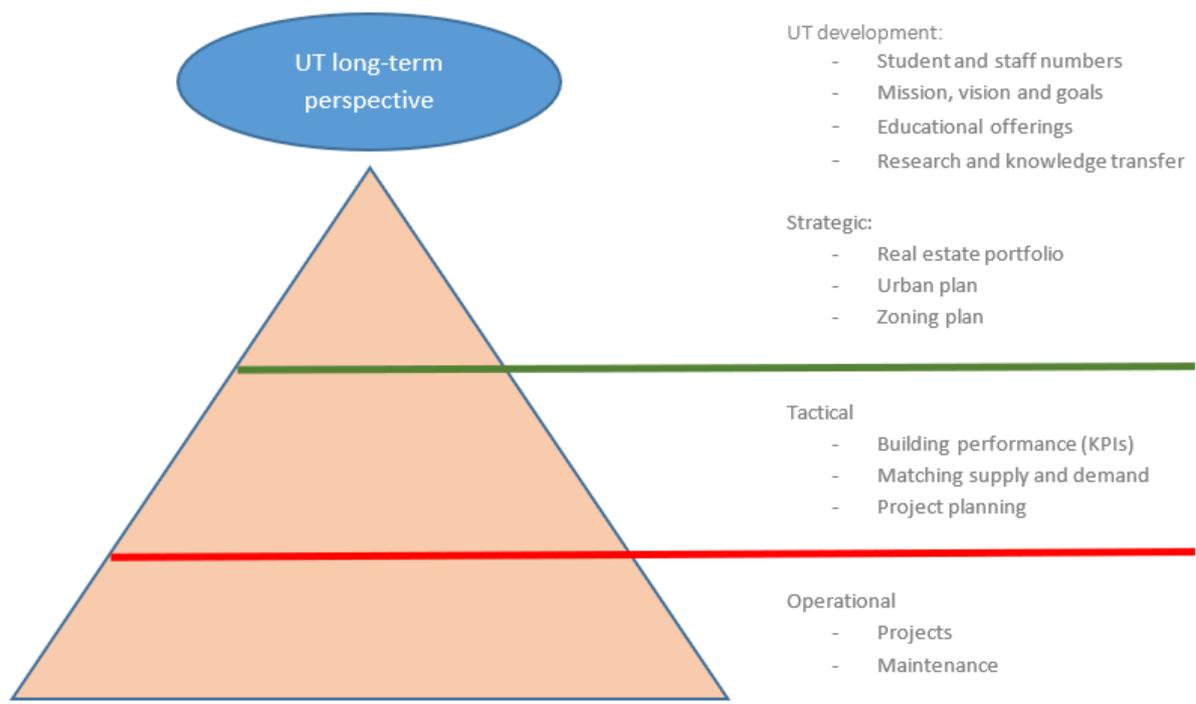
- the necessity to balance UT's strategic interests in relation to the interests of specific user groups;
- the limited scope of annual financial investments;
- finding possible solutions that relate to individual initiatives;
- reconciliation of overarching issues such as insurance, zoning, contract formation, AV specification and calls for tender;
- closely aligning new projects with maintenance and/or energy projects;
- staff scheduling (size and capacity) at strategic, tactical and operational levels;
- managing temporary, transitional situations and inconveniences.

3.1. Portfolio management

UT's real estate is supportive of the core business: research and education. One of the most important goals of the LTSH is to translate developments at UT into strategic plans for housing like:

- developments in student and staff numbers;
- strategic long-term mission, vision and goals;
- educational offerings;
- research and knowledge transfer.

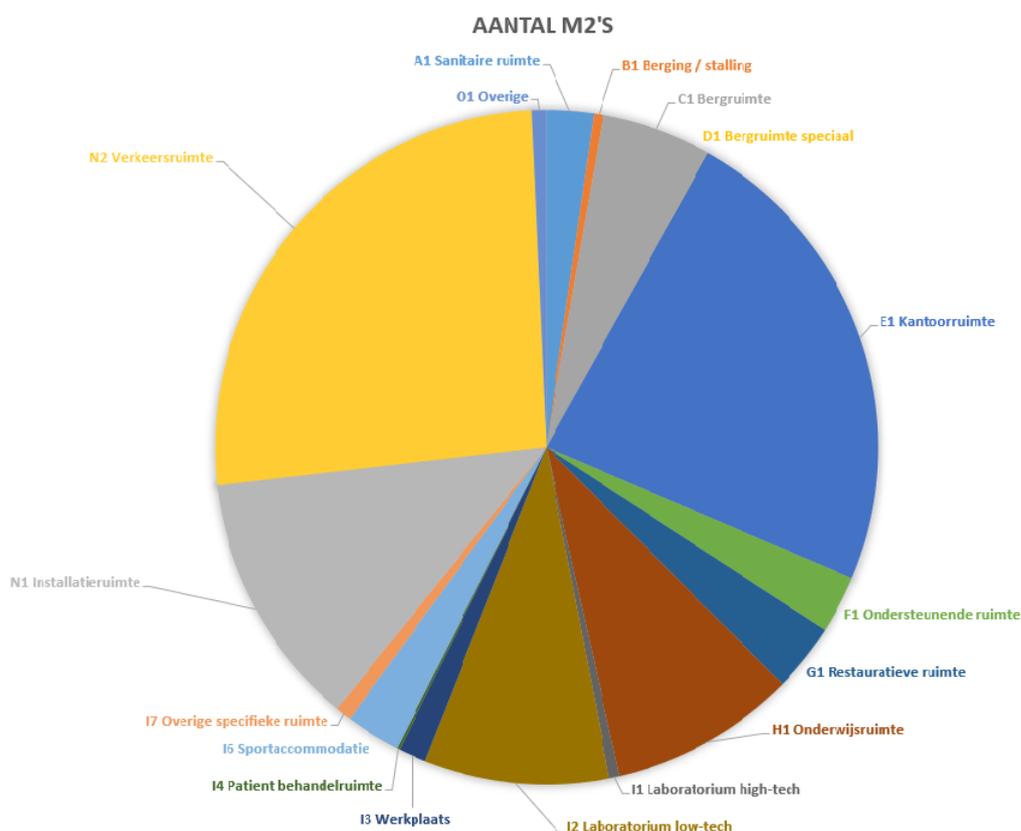
Real estate at the strategic level consists of the entire portfolio and elements like the urban plan, zoning plan, etc. On the tactical level each building will be scored for the extent to which it contributes to the strategic goals. This can result in new projects or real estate development/redevelopment. Further, setting up a good set of KPIs to evaluate the performance of the building is one of the issues for the next version of the LTSH. Projects and maintenance are on the operational level.



3.2. Overview of UT real estate

In order to create a good prognosis of the needed square metres for the long term, an overview of the current real estate situation has been published. In the next LTSH version the prognosis will be added based on UT's vision and growth forecast. The current total portfolio of net square metres for UT is 205,610 net square metres (including all circulation spaces). Direct and indirect UT property buildings are included in this overview, but non-UT property buildings are excluded. A list is given in the **Appendix**. One exception is the ITC hotel, which is UT property but is excluded because of the lack of data.

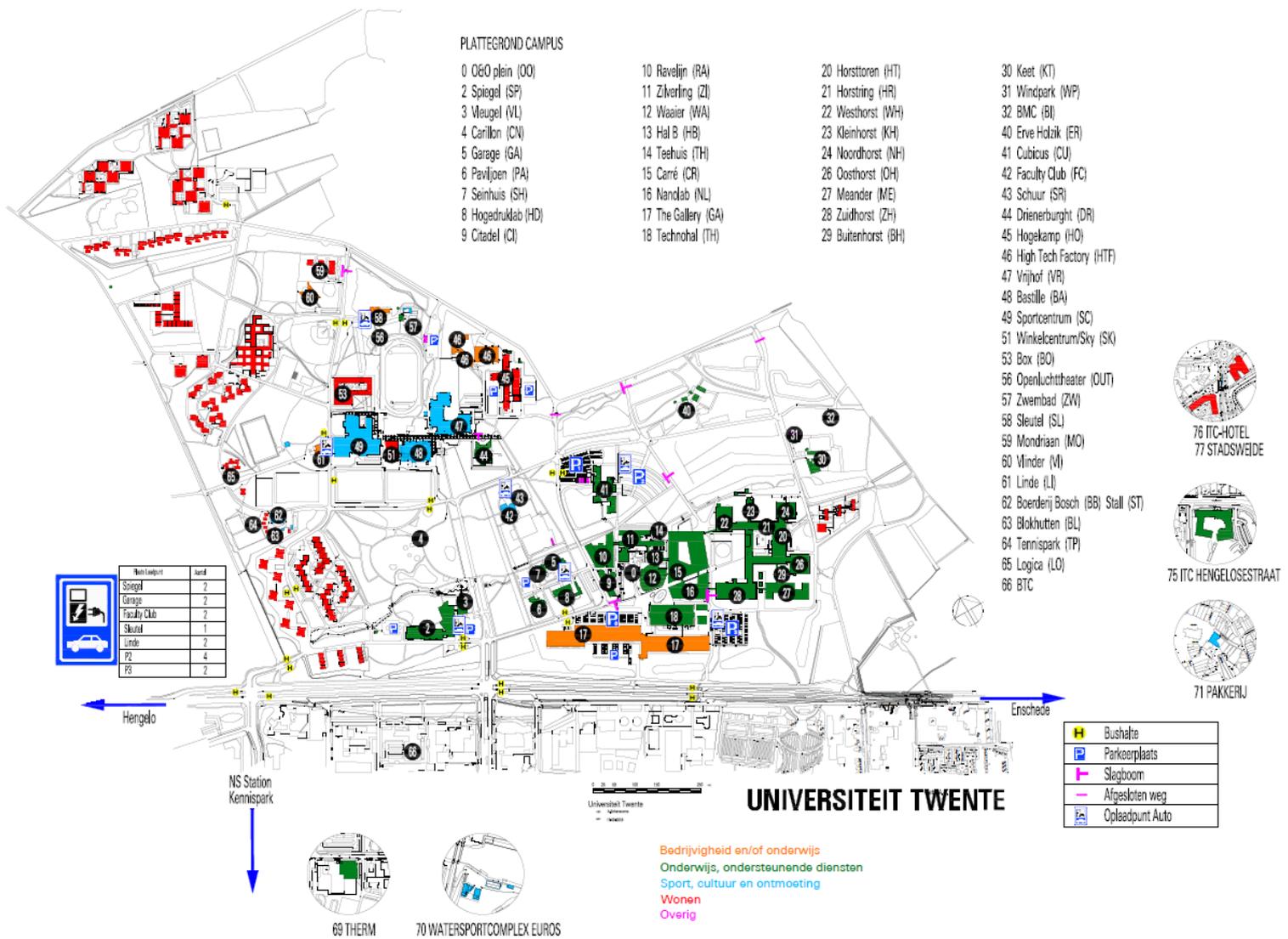
Ruimtecategorie	Subtotaal Netto oppervlak Aantal M2's
A1 Sanitaire ruimte	4.714,93
B1 Berging / stalling	920,52
C1 Bergruimte	10.997,39
D1 Bergruimte speciaal	33,51
E1 Kantoorruimte	47.789,02
F1 Ondersteunende ruimte	5.685,14
G1 Restauratieve ruimte	6.721,48
H1 Onderwijsruimte	18.649,13
I1 Laboratorium high-tech	1.029,61
I2 Laboratorium low-tech	18.529,47
I3 Werkplaats	2.767,82
I4 Patient behandelruimte	278,17
I6 Sportaccommodatie	5.478,54
I7 Overige specifieke ruimte	1.568,69
N1 Installatieruimte	25.357,81
N2 Verkeersruimte	53.642,11
O1 Overige	1.446,92
	205.610,28



3.3. The entire real estate portfolio of UT can be divided into five main categories

- Primary real estate: education, research, knowledge transfer, supporting facilities (green)
- Secondary real estate: sports, culture and meeting spaces (blue)
- Tertiary real estate: businesses and/or education owned by third parties (orange)
- Quaternary real estate: residential (red)
- Quinary real estate: remainder (purple)

The first category is the most important because it is necessary for the core business of UT, namely research and education. The second category is supportive of the core business and mostly property of UT. The remaining three categories are also supportive of the core business but mostly not owned by UT.



3.4. Organization of LTSH and Real Estate Projects

All of this results in the need for a clear organizational structure to fully implement and monitor the total scope of the projects outlined in the LTSH (programme, planning, future-proofing and financing).

An LTSH programme team has been assembled to monitor developments in UT real estate and housing and to prepare for decision-making and participation in sub-projects. The choice for

programmatic control instead of working with 'normal' hierarchical control is due to the complexity of the real estate task. This is reflected by working with participants from all the different service departments. The programme team is managed by the real estate portfolio manager and consists of representatives from the directorates of Strategy & Policy, Financial and Economic Management, and Marketing & Communications. The programme team seeks advice from an Advisory Group composed of two managing directors from two faculties, two members of the University Council, a managing director from one of the service departments and a representative from the Student Union (SU). The programme team reports to the Steering Committee.

The Steering Committee consists of the Executive Board portfolio holder, management from Strategy & Policy, Financial and Economic Management, and the Facility Service Centre. The Steering Committee prepares the decision-making of the Executive Board. For large Health and ITC projects, project managers have been appointed who are linked to the programme team. Proposals and elaborations will be introduced by the project managers within the programme team, and the programme team will place items on the agenda of the Steering Committee. The Steering Committee will then examine the relevant decisions and determine whether certain matters should be submitted to the Executive Board.

Within the programme team, the existing projects, project proposals, and new requirements and wishes are being discussed in relation to one another; they are prioritized according to the criteria and principles described in the LTSH. The proposals for prioritization shall be submitted to the advisory board group for advice. The results will be recorded each year in the annual plan 'Development of housing and real estate'. This plan will be submitted for advice to the UCB and the CvB-D before decision-making by the Executive Board. The annual plan will then be submitted to the University Council and the Supervisory Board for approval.

3.5. Involvement of General and Line Organizations

In preparation for 2019, as already indicated in the previous section, the annual plan will be submitted for advice to UCB and CvB-D before being presented to the Executive Board.

The objective in the coming years will remain to discuss every spring the various fora developments and shed light on the issues facing housing. The goal is to begin gathering input in the spring concerning amendments to the annual plan for the following year. In this way, major developments can be included in the long-term frameworks in a timely fashion ('Spring Memorandum'), which may lead to a revision of the LTSH itself.

3.6. Governance

As mentioned in the introduction, this annual plan is part of the 2019-2023 budget of UT. This financial progress is part of the P&C cycle. This means that the financial situation and a budget forecast will be included in the periodic management reports. The two major real estate projects, namely 'Health' and 'ITC', will hereby be explained separately. In the context of additional risk management, any deviations from the budget greater than 10% for each of these two projects must be approved by the Supervisory Board and the University Council at specific points in the process. The University Council has the right of assent on budget deviations from those projects that exceed 10%.

3.7. Internal and external communications on housing and real estate development

Internal and external communication on the development of real estate and housing at UT is essential and deserves attention. The basic principle for communications is the chosen strategy in the LTHS of 2016 and its elaboration in the present annual plan. The following applies to the website of Campus and Facility Management as an information platform for real estate and housing developments: <https://www.utwente.nl/en/lths/>.

The main language of communication is English, and all the information disclosed on the website will be available in English. Mailings and news items will be published in Dutch and English.

For targeted communications, the first order of business is to define who is connected to the various housing developments that will be included in the present plan and to what extent. A distinction is made here between most involved, involved, and other/generally involved stakeholders. The extent to which people are involved determines the content and format best suited to these groups. The maxim is that those who are the most involved should be approached in the most personal manner, as the impact will be greatest for them. For less involved groups it is generally sufficient to establish communication methods and messages on the employee and student portal that link to the Campus and Facility Management's real estate website mentioned above.

An important maxim in the communication about on-campus real estate and housing is that internal communication takes place before external communication, in order of priority from the most involved people first, then the involved group, and finally the generally involved group. U-Today coverage will be grouped under external communications.

Besides the intensive involvement of the general and line organizations and user groups within UT, timely inclusion of the participants and the supervisor is essential. Frequent points for testing and consulting prior to the formal decision-making (through various 'advisory' bodies) can also be important for support purposes and early identification of risks or situations that require adjustment. How this will take place is described in detail in section 3 of this plan. Finally, a basic agreement exists that communications with media about housing questions will be carried out via or in coordination with a representative of the Executive Board.

Project-oriented communication

The scope of several upcoming housing activities arising from the LTSH, and the ways in which they are interrelated requires project-oriented communication. According to the present communication plan, a secondary communication plan is to be prepared for every project. For the year 2018-2019, this will pertain to communication plans for the following projects:

- Demolition and renovation of the Technohal, preparation for relocation of the Health cluster in 2019.
- Preparing the opening ceremony of the Technohal in 2019, with Remke Bury as chairman.
- Possible relocation of current Citadel building residents (such as UCT ATLAS, ICTS Service Desk and the Educational Support Services).
- HogeKamp Square and relocation of Drienerburgh towards HogeKamp and the new name of the UPark Hotel, including the Faculty Club.
- Communication about the development of the Gallery Phase II is organized externally by BLOC. M&C (spokesperson) is involved in their communication activities.

Internal target groups

Relevant internal target groups that, depending on the current project, range from 'most involved' to 'involved' and 'generally involved':

- Health cluster staff and students;
- ITC staff, students and Faculty Council;
- UCT ATLAS staff and students;
- Other Citadel 'residents';
- Steering Committee, programme team, advisory board, project teams;
- Bodies in the decision-making process: UCB, CvB-D, CvB, University Council (FPB committee) and RvT;
- Student union;
- General community of UT (faculty, administrative and support staff and students);
- Defining specific groups related to the list of priorities for other spatial housing investments (the remaining M€xx for the next five years, in addition to the main files of Health, ITC and related projects).

External target groups

- Ministry of Education, Culture and Science: via information provided to the General Chamber of Audit that was commissioned by the Ministry of Education, Culture and Science.
- Make information on housing developments publicly available via a website, excluding business-sensitive information.
- Chamber of Audit: 'Assessment of major housing investments' report; Conclusion of the General Chamber of Audit: universities in general (October 2016) and UT specifically (spring 2017) should also make information available, excluding business-sensitive information.
- Results of the investigation conducted by the Governance and Finance Steering Committee of VSNU into the university's real estate developments: refer to the explanation of necessary investments and the maintenance tasks of universities.
- Hogekamp BV director.
- Drienerburght employees.
- Municipality of Enschede, Twente region, Overijssel Province.
- Companies in the UT area (via knowledge park).
- Residents living near the campus.
- Media (U-Today, Tubantia, RTV Oost, Enschede FM and national media).
- Consider when it may be desirable to proactively approach media about housing developments. This is risky given the current political discussion on the real estate investment activities of Dutch universities.
- Partner institutions.
- Agreements with tenants, cooperation between external parties on housing (such as Hogekamp BV), maintaining good relations with retail, hospitality and service operators. Whenever it proves interesting, making optimal use of joint PR opportunities.

Messages in communication

- The focal points set out in Vision 2020 for the campus can be summarized as follows:
 - Encounters: inspiring meeting places for students and staff.
 - Entrepreneurial: there is a lot of room for innovation, daring and creativity in and around the campus.

- International: the on-campus facilities are in line with the needs of the international community, and contribute to the international character of UT.
 - Experience and experiment: the on-campus facilities contribute to the user experience and provide space for experimentation.
 - How housing development contributes to UT's overall vision: international reputation; a modern, attractive, high-quality and future-proof education; striving for a higher academic success rate and excellence in research.
- Important basic principles have been determined for the housing developments over the coming years, based on the Vision 2020, which will be considered before making a final decision on each project:
 - A focus on quality and flexibility;
 - A focus on the efficient usage of space;
 - Non-primary facilities;
 - Real estate that is in line with strategic focal points.
 - Profiling Health and ITC, which are both in the O&O area, gives a qualitative boost to the O&O area. The associated expansions in facilities such as the restorative facilities and the central educational facilities are accessible to the entire UT and provide optimal opportunities for synergy and facility-sharing. The Technohal renovation will provide a boost to the appearance and activities of the O&O Square. This strategy is in line with the aspirations to use housing to improve coherence, cooperation and profiling around specific themes and to quantitatively and qualitatively optimize the educational facilities on offer. Creating flexible educational and office spaces for the O&O area.
 - In addition to these intensive projects, there are still very limited opportunities available for investing in other housing projects. If flexibility arises due to better-than-anticipated maintenance costs or otherwise, the defined list of priorities will be used to guide decision-making on how to provide an example for other housing needs in the coming years.

Communication moments and resources throughout the year:

Communication will take place through the usual UT channels: the real estate website at www.utwente.nl/en/ltsh, the staff and student portal, U-Today and, if relevant, news coverage on the university's homepage.

At least in the short term, from October to December 2018:

- Publish the annual plan online and email it to the bodies involved in the decision-making process, and link to the staff and student portal after approval from the University Council.
- Communicate internally the list of priorities for investing in housing projects and the process communication programme approach.

In addition to the projects indicated for 2019 that have been worked out in detail at the project level, the following topics lend themselves to incidental moments for targeted communication:

- Preparing Hoge Kamp and Square opening ceremony, in cooperation with Camelot Real Estate and UPark Hotel (Drienerburg).
- Publicize developments in sustainability and energy savings, if newsworthy: via C&FM communication consultants and Environment & Sustainability Policy Officer.

- Maintenance and renovation projects: via C&FM communication consultants.
- Interviews of home-base students and staff, and optimization of the scheduling process: outcome and follow-up.
- Team hall (student workplace): via press relations.
- Start-up hub, Bastille quality impulse: Student Union along with press relations.
- Realization of a new workshop for the ET faculty and cooperation with VU.

4. FINANCIAL FRAMEWORK FOR THE ANNUAL PLAN 2019-2023

The LTSH (July 2016) contains the financial framework within which the housing investment can be carried out. Within this framework, investments are to be carried out that are compatible with the current property rates to cover the capital burden and with the target values set by the university for liquidity and solvency.

4.1. Reassessment of the investment potential

Prior to drafting the Annual plan for Real Estate & Housing 2019-2023, an assessment was necessary for the available investment potential. In 2018 it has become clear that due to unforeseen circumstances the budget for the Technohal will be overspent, therefore the total budget has been reassessed with a significant part of the general LTSH unforeseen budget. The following premises were assumed when reassessing the investment potential:

1. Maintaining the current housing rates (RT codes) (incl. adjusting the rates for 2019) for the capital components of interest and depreciation, in accordance with the premises of the LTSH.
2. Maintaining the current key figures for solvency (xx% at a minimum) and liquidity (current ratio within the xx-xx range and a minimum liquidity limit of M€xx) within the financial framework of the LTSH.
3. Established investments from the LTSH strategy:
 - a. Technohal M€xx (based on the tender, including M€xx from the unforeseen budget; in use in 2019)
 - b. Redecoration 3rd floor Carré M€xx
 - c. New ITC building (temp. on hold) M€xx (incl. budget for restorative facilities; 2018-2021)
 - d. Optional relocation Citadel users (CES, LISA) (temp. on hold) M€xx (2018-2019)
 - e. New UCT housing in Drienerburgh M€xx (2018-2019)
 - f. Expansion of parking facilities M€xx (2018-2020)
 - g. Layout of the Technohal square M€xx (2018-2020)
 - h. Hogekamp square M€xx (2018-2019)
 - i. Nanolab – redecoration MESA+ M€xx
 - j. Realization of the Noordwest Horst M€xx (including temporary housing; 2019)
 - k. General unforeseen items M€xx (covering risk of market forces for the tenders)
4. Necessary expansion, maintenance and renovation investments:
 - a. Expansion of the Koudecirkel M€xx (2019)
 - b. Pavilion renovation M€xx (2019)
 - c. Renovation investments M€xx (2021-2022)
 - d. Regular maintenance investments M€xx (estimated yearly)

5. Prioritized projects not yet approved by the LTSH Sounding Board:
 - a. Creation of the student home base M€xx (investments in 2019-2020; after relocating to the Technohal). In combination with quality agreements (WSV) and sector plans.
 - b. Team hall for student teams p.m.
 - c. Redevelopment of “Boerderij” building p.m.
 - a. Further consequences of the quality agreements and sector plans p.m.
 - d. Renovation of water sport complex p.m.
 - e. Start-up hub & Bastille M€xx (investments in 2019)
 - f. Campus Arts M€xx (2021)

6. Other property investments to be determined in 2019 for management and campus development, based on an annual inventory for housing plan to be prepared; average of M€xx per year; in accordance with the LTSH.

As in the original LTSH, this was not included in the additional recalculation of the investment potential:

1. Potential effects (gains or losses, liquidity) from the sale of the ITC building at the Hengelosestraat.
2. Future of the Linde building. This building is the property of HTT BV and currently houses Human Capital Care (HCC). HCC currently has a lease on the building until April 2021.
3. Financial impact of transferring the Drienerburgh building from TTOG to UT. Possible future investments that must be made on a large-scale, strategic infrastructure for research and IT at UT.

4.2. Creation of investment potential

Investment potential has been generated because the coverage from leasing rooms to users at constant rates (for the capital component) will remain consistent in the coming years with lower depreciation. These diminishing depreciation charges are due to the fact that buildings or components of buildings (e.g. installations) have been fully written off and are no longer included in the annual depreciation charges. See the graph below:



(x million)

The area between the housing income (green line) and the interest and depreciation charges across from it (red line) reflects the basis for the investment potential that will be created if no further real estate investments are made in the coming years. This investment potential can be used to invest in buildings. This concerns both necessary standard replacement and/or maintenance investments, large-scale renovation investments, and possible expansion investments (new construction or redevelopment).

Developments regarding implementation of the LTSH and its effect on investment potential

The calculation of the space that can be leased by investing in a new ITC building and the Technohal generates additional coverage of M€xx as from 2019 (by occupying the Technohal) and, as from 2022, an additional M€xx for occupying the ITC building. In the previous annual plan for housing just M€xx was calculated for additional coverage due to investment in the Technohal. Because of fewer expected vacancies in the Technohal and other buildings on campus, the additional coverage will increase. The total expected extra coverage due to investments in Technohal, the new ITC building and decreasing vacancy amounts to about M€xx.

The reassessment of the available investment potential now includes an investment volume of M€xx in total over the years, until 2023. The total of the real estate investments is nearly the same as the year 2017. The non-determined investment availability has increased with M€xx.

Description	LTSH 2017	Reassessment	Change
Change total investment potential	M€xx	M€xx	M€xx
Change total of real estate investments	M€xx	M€xx	M€xx
Availability change	M€xx	M€xx	M€xx

The newly determined investment potential and the property investments planned through 2023 provide the following impression:

Description	LTSH Strategy 2017-2021	Annual plan 2018-2022	Annual plan 2019-2023
Total investment potential			
Established investments from the LTSH strategy:			
New ITC building incl. restorative facilities Technohal Redecoration 3rd floor Carré Citadel relocation New UCT housing Hogekamp square Layout of the Technohal and ITC square Expansion of campus parking facilities Nanolab - redecoration MESA+ Realization of the Noordwest Horst (ET) General unforeseen items			
subtotal			
Necessary expansion, maintenance and renovation investments:			
Regular maintenance Renovation investments Expansion of the koudecirkel for Technohal and ITC Construction of the multi-field (to be finished in 2018) Paviljoen renovation			
subtotal			
Projects not yet prioritized by the LTSH Sounding Board; not yet approved:			
Creation of the student home base Teamhall student teams Campus art project Improvements for sports facilities (finished in 2018) Start-up hub & Bastille quality impulse			
subtotal			
Unforeseen market forces			
Investments to be specified (est. M€ 2,0 yearly)			
Total real-estate investments			
Available / deficiency (-)			

General explanation of the table

Because of the current growth in students and staff, the established investments from the LTSH strategy have increased from M€xx to M€xx. This is mainly budget originating from the 'investments to be specified'. As a result, the total budget for real investments remains relatively stable at M€xx. Extra note on the Mesa+ project: this is a small project with a likely 50% coverage from the faculty not yet taken into account, the other part is covered by extra rent. On the other hand, the total investment potential has increased by M€xx to M€xx. This is because extra rent revenues have been taken into account. In the last version there was more vacancy.

Uncertainty within the budgets

Quality agreements (WSV) and sectorplans

Another important possible influence is the uncertainty of the growth of the student- and staff numbers. This concerns not only the structural growth but also the growth as a result from the quality agreements (WSV) and the sector plans. Especially the sector plans will lead to a substantial increase of research staff. This may result in an adjustment of the plans for housing.

Marketforces

The PM budget for 'unforeseen market forces' is new. In the last few years the building market has faced rising prices for wages and raw materials. On top of that, market forces are pushing prices up. The developments will have an effect on UT. We have therefore calculated a PM amount for unforeseen spending due to the circumstances as mentioned above. The PM amount has to be covered by the available investment potential. An estimation based on this calculation will lie between M€xx and M€xx.

Because the Technohal already has been tendered, this project will not be taken into account when calculating the unforeseen budget. Mainly as a result of market forces the ITC project is temporarily on hold and scenarios are being developed in order to restart the project in 2019. Also, the Citadel building will not be demolished. Moving of the current Citadel users is still budgeted because decisions for the permanent housing of these parties still have to be taken. Consequences of preserving the Citadel building have not yet been calculated and processed in the financial overviews (!). Another important possible influence is the uncertainty of the growth of student and staff numbers. This concerns not only structural growth but also the growth resulting from the quality agreements (WSV) and sector plans. This may result in an adjustment of the plans.

Amendment January/February 2019

The planning is to correct the budget with an amendment in January/February 2019 after:

- choosing what is the best ITC scenario;
- a decision for the use of the Citadel building;
- determination of a budget for the influence of market forces.

There will also be extra meetings with the advisory group and the Steering committee.

Investment Overview Annual Plan Real Estate & Housing - Updated with 2018 estimated figures

Description	LTSH June 2016	Spendings	Spendings	Spendings Annual Plan Real Estate & Housing 2018-2023 (incl. spendings as from 2017)						Investment to be covered by available potential **
		2017	2018 (est.)	2019	2020	2021	2022	2023	2017 through 2023	
Established investments form the LTSH strategy:										
New ITC building incl. restorative facilities										
Technohal (incl. M€ 1,1 unforeseen)										
Redecoration 3rd floor Carré										
Citadel relocation										
New UCT housing										
Expanding restorative facilities (now included in ITC budget)										
Expansion of campus parking facilities										
Hogekamp square										
Layout of the Technohal and ITC square										
Nanolab - aanpassing MESA+										
Realization of the Noordwest Horst (ET)										
General unforeseen items										
Total established investments LTSH										
Necessary expansion, maintenance and renovation investments:										
Regular maintenance and renovation investments										
Construction of the multi-fields										
Renovation investments										
Expansion of the koudecirkel for Technohal and ITC										
Renovation Paviljoen										
Total maintenance and renovation investments										
Projects not yet prioritized by the LTSH Sounding Board:										
Creation of the student home base										
Redevelopment of the Faculty Club										
Teamhall student teams										
Campus art project										
Start-up hub & Bastille quality impulse										
Renovation Boerderij										
Renovation Watersportcomplex										
Consequences of quality agreements and sector plans										
Improving sports facilities										
Total prioritized projects LTSH:										
Unforeseen for market forces; exl. Technohal*										
To be determined initiatives/developments (to be financed from the available investment potential; estimated M€ 2,0 per year):										
Initiatives and projects to be determined										
Total of new initiatives										
Total real estate investements up to 2023										
Cumulative investments as from 2017										
Available investment potential up to										
Available / deficiency (-)										

* The budget for Technohal includes the expected market forces

** Costs of projects finished in 2018 or before (e.g. regular maintenance) are included in the investment potential (depreciation). Depreciation of still-ongoing projects (e.g. Technohal) with expenditures in previous years will start in the year after the building is taken in use.

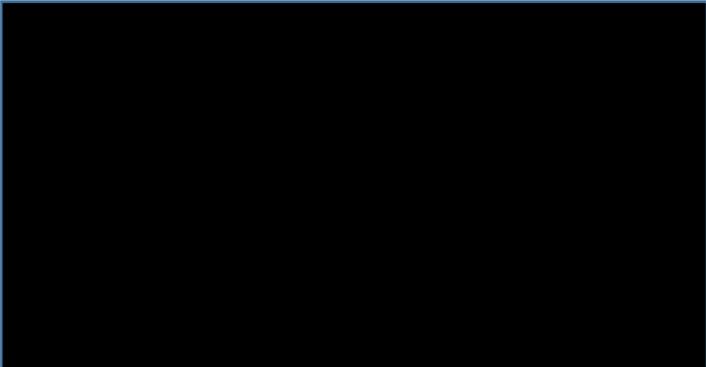
The table above shows the assessment as it was in the original LTSH, with an investment potential of M€xx for 2017-2021. The other columns show the recurring investment potential for the periods through 2021, 2022 and 2023, based on the currently available data for estimates and the project planning for the Technohal and the ITC building, as well as other projects as shown in the beginning of this memorandum.

4.3. Vacancy

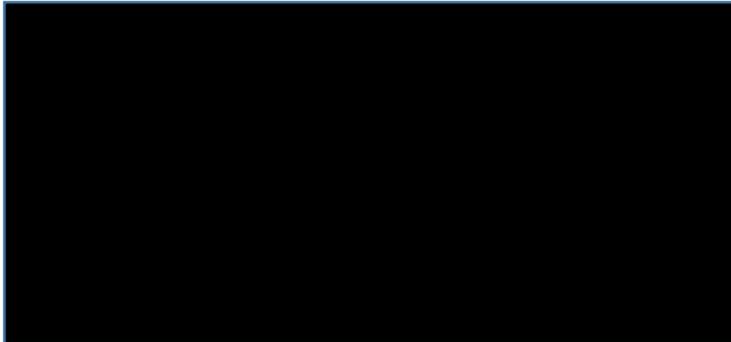
The LTSH programme assumes that the current vacant leasable floor space of 2.3% remains practically the same, but to ensure flexibility a vacant leasable floor space of 3% is necessary. In the original LTSH programme a vacant leasable floor space of 6,500 m² was calculated – an increase of approximately 3,000 m² due to realization of the Technohal and the spaces that will be left after moving to the Technohal. New insights about spaces needed by the faculties show a higher demand, which results in a decrease of vacant floor space down to 2.3%. The preservation of the Citadel building has not been processed yet in this calculation.

4.4. Key Figures (TO BE UPDATED WITH FINAL FIGURES OF TOTAL UT BUDGET 2019)

As this Annual 2019-2023 plan is an integrated part of the UT budget for 2018-2021, the ratios are calculated based on this budget. The planned investments will not affect the solvency of UT because they are financed with our own resources; it is a shift within the assets side of the balance sheet. By the end of 2022 the solvency (Solvency I) of UT is expected to be at xx%. Solvency II ((equity + provisions)/total capital) used by the Ministry of Education stands at xx% at the end of 2022. Both ratios remain above the lower bandwidth of xx%.



Due to the real estate investments and repayments of loans, liquidity will decrease in the coming years, but the current ratio will still stand above the lower bandwidth of xx and liquidity will remain above the lower limit of M€xx.



4.5. Conclusion

Based on investments from the LTSH and the necessary maintenance, renovation and other investments (M€xx through 2023, see right column layout on page 2), the planned or to-be planned investments are within the available investment potential of M€xx by the end of 2023, without having to increase the capital component of the housing rates. By the end of 2023 an investment potential of M€xx will still be available to implement the outlined programme. This may be needed for potentially higher investment amounts resulting from the completion of real estate initiatives or developments for which, as from 2019, a volume of investment of M€xx per year has been calculated. Other developments such as the possible redevelopment of the Faculty Club should be partly or fully covered by this (and the investment potential generated again in the years after 2023).

Due to the increasing depreciation charges from investments, 2019 and 2020 are expected to have a temporary shortfall in the housing operation of the capital component (interest and depreciation), which will return to a positive result in the following years (see section 6).

Based on the 2019-2023 budget, into which this Annual plan is integrated, the ratios for solvency and liquidity remain above the lower limits UT has stated in the reserve policy.

5. PROGRAMME PROPOSAL 2019-2023

As previously indicated, there is limited financial scope to fulfil the needs identified in the LTSH (2016) and subsequently inventoried. Choices will have to be made. Further choices will be made based on the following criteria.

5.1. Criteria for prioritizing initiatives

Substantive criteria to generate detailed choices for initiatives:

Vision for the Campus (source: LTSH, July 2016):

- Raising the university's profile and generating attention for its strategic themes.
- Focusing on meeting and connecting: integration and synergy between education, research, valorization and support.
- Providing both experimental space (smart living campus) and space for student entrepreneurship.
- The objective is to preserve the characteristic greenery of the campus and the facilities that appeal to students and staff, such as sports and cultural facilities.

Vision on education (source: LTSH, July 2016)

- Provide enough capacity for education and research (m²).
- Promoting community-building and small-scale education.
- Striving to create a 'home base' for all students and to promote positive encounters between students, course associations and staff.

Practical criteria to generate detailed choices for initiatives

- Necessity due to decisions made for other initiatives (Health and ITC).
- Degree of adaptive capacity, flexibility and facility-sharing.
- Degree of added value in relation to the level of the investment.
- Degree to which initiatives are linked with investments for necessary maintenance activities.
- Extent to which an initiative has been elaborated and the risks have been assessed.
- Contribution of creating enough vacancy (3%) for added flexibility.
- Contribution to a reduction in external leasing.
- Phased realization in connection with the necessary capacity for the existing organization.
- Limiting claims to resources.
- Optimal facility-sharing.

Each initiative requires further examination (additional substantive and financial exploration).

5.2. Update of the provisional prioritization of new and existing housing initiatives

In autumn 2016, the new and existing investment projects within the LTSH were prioritized according to the criteria listed in section 5.1, as stated in the previous annual plan (2017-2021). The advisory board unanimously agreed on that prioritization. In March 2017 the advisory board was asked to give a recommendation on further prioritization because of further specified budget estimates and certain developments. The UCB approved the recommendations/advice of the advisory board.

In conclusion, the LTSH steering group requested the Executive Board to invest in sports facilities in 2017. In October 2017, the advisory board confirmed the prioritization of autumn 2016.

Chapter 7 provides a description of the investment projects that remain in the planning.

<p>Necessary priority projects (in addition to Technohal and ITC building)</p>	<ul style="list-style-type: none"> • Connect the O&O Square with the Technohal, upon its redevelopment (project will start in 2018). • Relocate the examination room to the campus (decision postponed until 2019). • As a result of the Technohal renovation, space will become available in several buildings. This future available space can be used for new functions (for example Carré 3rd floor). • Expand the workshop facilities in the Horst for the faculty of ET (called Noordwest Horst in the overviews). • Prepare the consequences of the quality agreements (WSV) and sector plan funds. The availability of this budget will have consequences for housing, e.g. creating home bases and offices because of staff expansion. • Navitas FYI will come to UT. Housing issues are to be expected for educational housing and student housing on campus. <p><i>Arguments relating to the LTSH focal points:</i></p> <ul style="list-style-type: none"> • Improve services for students (to meet housing demand). • Work activities necessitated by the renovation of the Technohal.
<p>Priority one:</p>	<p>Create/optimize a home base/community for students. This can be accomplished in conjunction with creating more study locations (particularly in and around the O&O Square). Further optimization of teaching scheduling and central education facilities.</p> <p><i>Arguments relating to the LTSH focal points:</i></p> <ul style="list-style-type: none"> • Community-building and small-scale education are strategic focal points for UT's educational offerings. • In 2017-20218 a broad survey was conducted. The definitive findings and recommendations are described in section 7.4. • Also, funds from the WSV are available; this budget may contribute to the LTSH budget for home bases.
<p>Priority two:</p>	<p>Realization of a workspace facility for UT student teams (dream) Team Hall</p> <p><i>Arguments relating to the LTSH focal points:</i></p> <ul style="list-style-type: none"> • Promoting an entrepreneurial attitude and providing an experimental space for students are also strategic priorities of UT. The 'High Tech Human Touch' profile will also be visibly enhanced. • In spring 2017, the advisory board and UCB stated that, taking the limited budget for investments into consideration, the best option would be to establish a Team Hall within the business case of Gallery II.
<p>Priority three:</p>	<p>Provide a quality impulse for the Bastille to strengthen its function as a central meeting place for students in relation to the Start-up hub.</p>
<p>Followed by:</p>	<ul style="list-style-type: none"> • To be decided, see Chapter 7 for a list of initiatives.

5.3. Explanation of the investment cost overview

The investment cost overview included in the Appendix has been divided into several topics:

- The accorded projects related to the investment strategy of LTSH;
- Necessary maintenance and renovation projects;
- Prioritized investment projects;
- (Partly) new initiatives/projects (due to the emergence of progressive insights and new developments).

The first column contains the financial reservations, as indicated in the LTSH. The second column shows the prognosis for 2018. The phasing for 2018-2022 details the projects that have been proposed for further development and completion during this period. For this phasing it should be explicitly mentioned that the maintenance and renovation projects and the new and existing investment projects must be further prioritized and elaborated.

The financial resources available to realize the LTSH are not yet fully allocated. There is still some financial leeway, where necessary, for reprioritizing and/or adding important emerging initiatives in the coming years. The final line in the overview shows the relationship between investment activities in that year and the liquidity ratio. This may fluctuate slightly per year (positive and negative amounts).

The investments for 2018 pertain to the projects for Health, Hogekamp and Sports, as well as for maintenance and renovation projects.

The overview includes an annual estimated budget, as from 2019, of M€xx for completing additional initiatives or real estate developments. To this end, the Facility Service Centre has created an inventory of the wishes and initiatives of the units within the university. Based on this and possibly supplemented with new developments, priorities will be set that will ultimately result in a supplementation to the available budget.

6. RISK MANAGEMENT AND CONTROL MEASURES

Overall long-term general risks are addressed in the LTSH of June 2016, such as financial risks and risks of decreases/increases in student and staff numbers. The uncertainties and risks, listed below, are more specific.

Uncertainty / Risk	Impact	Measure
<i>UT level</i>		
Market forces in the construction industry cause price increases and time delays	Major impact on the total budget	- Review of the scope and amounts for financial investment (the investment potential) has taken place. - A budget is reserved for setbacks due to market forces and price increases at the UT and programme levels
Uncertainty about the remaining budget for other/new initiatives	This results in limited implementation of additional projects in coming years and potentially in non-allocation of resources.	- Accurate monitoring by programme LTSH, see Chapter 3 -Expectations management: do not make premature commitments and keep stakeholders informed
Delay in decision-making processes; decisions are discussed at all organizational levels.	Within this market situation, every delay costs extra and therefore affects the budget.	Tight scheduling and strict use of deadlines.
Because of the sector plans, the prognose is that for TNW, EWI and ET the research staff will increase more than average. This may put pressure on the housing capacity of the UT.	On middle term housing capacity problems.	Try to anticipate on the housing demand and take measures in time. Preferable within the current buildings or otherwise create extra flexible of permanent housing.
<i>Technohal Project</i>		
Delay in completion of the Technohal renovation due to setbacks	The building is expected to be operational for education as of 1 September 2019. According to the current planning, the new Technohal will be completed in the spring of 2019. This leaves enough regulating margin.	The rebuilding process of the Technohal is tightly managed. An external overarching project manager is appointed to supervise the building process on the building site, working in close collaboration with the UT project leader.
Changing user requirements because of certain developments	Possible delay and/or increase in costs.	Close collaboration within the project and with representative Health/TNW (bouwheer TNW)
Hindrance Nanolab (nearby Technohal) because of building work	Time delay	Live up to agreements with Nanolab made before the building work starts.
<i>ITC Project</i>		
Possible budget overrun for the estimate of the detailed design with regard to the provisional design for the ITC building. Caused by further impact of market forces on the project.	The guiding principle is to maintain the total available budget reserved for ITC (adjusted in autumn 2017).	Close collaboration between the design team, programme team and the Steering Committee will be necessary. The project is currently on hold, alternative scenarios will be developed. The Citadel will not be demolished.
Delay in decision-making processes (UC and SB need to approve required budget ITC)	Completion of ITC building is planned for the end of 2020. Relocation is planned for summer 2021. Because of the on-hold situation this may change.	Developing robust scenarios for a start through of the project. Close collaboration within programme organization and with Executive Board.
meet BENG legal requirements (almost energy neutral building)	Uncertain. New legislation, consequences are not clear. Not enough technical possibilities.	Accurate project management and hiring expertise, creative solutions.

7. DESCRIPTION OF UT PROJECTS/INITIATIVES

7.1. Inventory of general projects under the LTSH framework

The LTSH differentiates the following categories regarding buildings:

- A. on-campus, owned by UT, in use by UT.
- B. off-campus, owned by UT, in use by UT.
- C. on-campus, not owned by UT, participation of UT.
- D. off-campus, not owned by UT, in use by UT.
- E. on-campus, owned by UT, leased.
- F. on-campus, owned by UT, not in use.

7.2. Investment projects identified in the LTSH and approved by the Executive Board

The LTSH stipulates the realization of strategy 2, which is based on profiling Health and ITC at the O&O Square. The following projects have already been approved for development.

Housing of ITC on campus (A)

The Faculty of Geo-Information Science and Earth Observation – currently located at Hengelosestraat in the Enschede city centre – will be housed on campus near the O&O Square. ITC has set up a Programme of Requirements and submitted this for approval regarding the programme, budget and planning to the Executive Board. The tender for selecting a design team started after approval (in November 2017). Currently the project is on hold because of an estimated budget overrun. Scenarios are being developed with the intent of enabling ITC to move to the Campus. It is certain that the Citadel building will remain.

Renovation of the Technohal (A)

The staff of the educational programmes on Health (TG, TM, BMT, BME GZ, HS) and relevant Health research groups will be housed in the Technohal, which will be completely renovated for this purpose. The actual renovation of the Technohal for Health has already been initiated. The selected implementing agencies, after the EU Tender, are Dura Vermeer, BAM Techniek and Homij Technische Installaties. Implementation will be completed by the end of 2018 and groups can begin moving in during 2019. The next period will be used to work on the tender of the solar panels and on the established interior. The circular working out of the existing office furniture will continue.

Through close involvement with building work, direct contact with the users and building contractors, support of external advisors and internal maintenance experts, the project manager monitors the control aspects: Budget, Organization, Planning, Information and Quality.

New functions for the free coming spaces in Carré (A)

The Technohal will be delivered in 2019, so spaces in the third floor of Carré will be free for new functions. An investigation of the best completion will be conducted in 2018-2019.

Expansion of the ET engineering workshop (A)

Because of the structural growth of the education programme of ME and the cooperation with VU Amsterdam, the Horst building lacks enough workshop capacity. Structural expansion of the workshop facilities is needed.

UCT ATLAS housing (A)

We are currently working on a set of requirements for a future housing location. The Drienerburgh seems to be one of the best options.

Expansion of restaurant facilities (A)

Once the Faculty of Geo-Information Science and Earth Observation (ITC) is integrated into the O&O Centre, additional catering facilities will be required. The decision has been made to include a facility in the new building for the Faculty of Geo-Information Science and Earth Observation, whose concept is more compatible with the building's users.

Additional campus parking spaces for both cars and bikes (A)

The arrival of ITC will necessitate increased parking capacity for both cars and bikes. Further examination into the required number of parking spaces and a suitable venue has not yet been undertaken. Parking capacity for electrical cars is also one of the issues.

Layout of the O&O Square around the Technohal (A)

The O&O Square will be completed (A) after the construction activities around the Technohal are finished. The layout of the area and the paving will be adapted to the main entrances of the Gallery and the Technohal. In addition, the underground infrastructure will be partially renovated before being connected to the new infrastructure in the Technohal. Due to the large number of students that will be using the buildings around the O&O square, a bicycle parking route will be designed and installed around the buildings.

Expansion of the Koudecirkel's capacity for the ITC building and the Technohal (A)

The on-campus cold-water network for cooling buildings and processes, known as *Koudecirkel*, consists of a cooling water buffer, a piping system that connects nine buildings, and three cooling systems. The *Koudecirkel* is a very efficient system for cooling buildings. The network, however, does not have sufficient capacity to cool the new building for ITC, so both the capacity of the cooling system and of the cooling water buffer must be expanded. The buffer itself does not have to be increased but the intake and exhaust system in the buffer will need to be modified. The possibilities for expanding the capacity of the *Koudecirkel* network are currently being analysed.

MJA solar panels on the roof of the Technohal (A)

The fact that the load-bearing structure and the floors of the Technohal will be re-used is very sustainable, but in assigning energy labels a special emphasis lies on energy consumption during operation. Because this is a renovation of an existing steel building, the façade – even though it's been replaced – will have less insulation than a completely new building. Solar panels on the roof can compensate for this. More than 1,000 solar panels will be placed on the building with the help of an SDE+ grant from the Dutch government.

Hogekamp Infrastructure (A)

The renovation of the Hogekamp building is presently being carried out to provide adequate housing for local and international students and staff. The work is being done by the Van Wijnen construction firm. However, the above- and below-ground infrastructure will need to be replaced and adapted to

better facilitate the new purpose of the building. This work is also currently being performed. Special precautions are being taken to avoid most of the inconvenience for employees in nearby buildings like HTF, Vrijhof and Drienerburght.

Campus Arts

The Campus Arts Advisory Committee advises the Executive Board of the University of Twente on projects at the interface of architecture and visual art, both solicited and unsolicited, in the framework of the university's real estate plan. Management, preservation and development of the art collection of UT are also subject to advice. It has been agreed with the Executive Board to link the purchase or realization of a number of major works on campus to a lustrum year (start 2021). An appeal will be made to the housing plan for a budget in the order of €xx to xxk.

7.3. Necessary maintenance and renovation projects

Further clarification on the items from the required maintenance investments.

Maintenance investments for architectural, electrical, measurement and control technology, and mechanical engineering (A)

Condition-driven maintenance is applied in accordance with NEN 2767 for the maintenance of buildings and installations. This has resulted in a detailed Long-Term Maintenance Plan (MJOP, containing 38,000 elements). The annual work required to maintain all the elements that make up the existing buildings in the preferred condition is based on the MJOP. The costs associated with these work activities are coupled to a cost database. The annual plan therefore also contains a good estimate of the necessary resources. These are largely funded from the operating budget for maintenance. However, the costs for certain major maintenance tasks that exceed €xx will be amortized. Examples include the replacement of awnings, large carpeted floor surfaces, lighting and asbestos pipelines for natural gas and water, as well as the gradual replacement of city lighting, etc. These amounts fluctuate significantly every year. Replacement of the building automation system in the Horst will be completed this year. The ventilation system of several classrooms will be enhanced because the rooms are used by an increasing number of students. The central elements of the fire protection system in the Horst will also be replaced.

Maintenance investments in the sewerage underground infrastructure (A)

Approximately 20% of the sewerage system is inspected annually using cameras. The results are recorded in *Kikker*, a sewerage management system. Every year the damaged and poorly functioning portions of the sewerage system are replaced or relined. When replacing road surfaces, the underlying drainage is replaced where necessary. Experience has shown that it is necessary to submit an amount for this every year.

Maintenance investments in the underground infrastructure of electricity and transformers (A)

The electrical cabling (10kV and 400V) will be replaced in the event it shows strong signs of ageing. To that end, parts of the 10kV cabling will be tested annually. Also, any old lead-coated cabling installed under a road will be replaced.

Maintenance investments for the underground infrastructure of gas and water (A)

A large portion of the underground gas and water piping is made of asbestos cement. In some locations these pipes are nearing the end of their service life. This is heavily dependent on the composition of the soil and groundwater. If multiple fractures have formed in a pipe, it will be replaced. Gas and water pipes that are made of asbestos cement are always replaced when replacing a road surface.

Maintenance investments for outdoor lighting (A)

Every year, a portion of the 1,000 lampposts on campus will be replaced, for the amount indicated, by poles with dimmable LED lighting. More than 40% of the lampposts have already been replaced. This budget will also be used to gradually replace the underground cabling of this public lighting.

Investments in MJA measures (A)

Under the framework of the Long-Term Agreements (MJA) the university has committed to reduce its energy consumption by 2% every year. This will require an annual savings of 1% in the chain (suppliers, commuting traffic and the like). A persistent effort will be required to achieve this reduction. Thanks notably to intelligent control technology, more efficient installations (*Koudecirkel*), improvement of underperforming systems and sustainability efforts (solar collectors for the outdoor swimming pool), the university will be able to meet these requirements.

Paviljoen renovation (A):

The Paviljoen is in poor condition. Because the roof is collapsing and two Gerber beams have cracked, temporary columns have been installed to prevent further damage. In addition, the building is not insulated. However, the property does have architectural value. In terms of functionality, the building is very flexible. It could be used, for example, for an open office environment. Renovation is highly desirable. A renovation proposal has been submitted by the architect Andre van Stigt. The estimated costs are about M€xx.

7.4. Prioritized projects/initiatives in 2018

Dream (Team) hall/student workplace

There is a need for a common workspace (2,000 m²) where different student teams from the UT campus can collaborate on projects. The teams can then build and test their projects in their own assembly areas, consult in communal areas, potentially receive exposure and use specific techniques. The right location for this Dream hall (or Team hall) is still under review. The most realistic option is to include the student workplace in the business case for Gallery Phase II.

Create/optimize a home base for students and improve education scheduling and Central Education Facilities (COV in Dutch) (A)

In 2017-2018, an inquiry about home base was executed amongst the UT community: students, teachers, programme directors and supporting staff. The report has been completed in October 2018. The most important questions were:

1. What is a home base?
2. How can we create the home bases within the UT?

A home base is a surrounding where a combination of work and relaxation are an important element. Designing, enterprising or researching faculties have other needs. Further development of the home bases have to be a co-creation of the faculties, C&FM, student Associations, CES and M&C.

It is a key element in the aspect of binding and connecting students to give the student associations a prominent place and the vicinity of the study program . Make students take part in developing their home base and stimulating crossovers between disciplines and studies

Connection to the study program and the fellow students is an important result of a home base. This starts with the connection of freshman students to this home base. Home base is understood as a condition for community education. There is also something like a crossovers home base; cross-fertilization between disciplines and different student groups. Through inter-faculty education, different student groups meet for cooperation or general bond with the UT.

An important aspect to a home bases is a sense of recognition. A student should feel at home and part of the community. Fostering a connection, joint interest and support and working towards common goals. An environment that fits with the overall UT profile and the study or task and is facilitating. It must be a recognizable place but still be accessible for all students

The location is the fundament of the homebase, an environment in the vicinity of the study association and proximity of the study program (teachers, support staff). The vicinity of educational facilities for freshman student is an important part for connecting the students to their homebase.

Link with quality agreements (WSV)

Currently plans are being made for the quality agreements. One of the plans in these agreements is the creation of home bases at the UT. The budget from the LTSH of M€ xx will be used to enrol the real estate plans. The budget quality agreements will be used for the decoration/furnishing of the home bases.

Start-up hub – Bastille Quality Impulse (A)

A quality impulse is desired for the Bastille to strengthen its function as a central meeting place for students and to make a cautious start on the SU plan for incubators. SU wants to convert the Bastille into a business landscape; the second floor of the Bastille will need to be adapted to accommodate this. The SU has already invested in upgrading the atrium: in 2017 it became a flexible place where people can meet, study and eat lunch. The goal is to renovate the second floor for use by student spin-off companies.

Improvements to sports facilities (A/E)

In 2016 several large investment projects for the sport facilities were implemented. In 2017 the decision was made to follow up on these investments by investing in a 'multi-field' (autumn 2017). During summer 2017 the entire fitness centre was renovated, including new equipment. Further

improvement to the sports and cultural facilities remains desirable, as well as maintenance of the existing on-campus facilities, aimed in particular at increasing the offerings of individual activities for sports and culture, given that this remains a consistent request from international students. Further research into possible facilities has led to plans that could include additional tennis courts, paddle courts and a renewed hockey court.

Examination Room (A) (postponed until 2019)

The space freed up by the Noordhorst can be used for the examination room, which is currently leased off campus. Because other occupancies of the Noordhorst are also possible, a different location for the examination room may need to be found (e.g. the Spiegel). This also includes the development of digital testing.

7.5. Other investment projects/initiatives

The following is an explanation of other investment projects that have been identified in the LTSH, but which require further decision-making. Chapter 5 contains a prioritization of the actual implementation of these projects.

Before initiating implementation of the following projects, the underlying business cases will be prepared. For some projects there are opportunities to generate income by leasing to the third parties present (for example at the sports facilities) or the possibility of VAT offsetting. These opportunities to generate income should be included in the processes from decision-making to realization.

7.6. Changing requirements, new initiatives

As a result of progressive insight and changing requirements, new initiatives and housing needs have emerged. The projects will be weighted using the same criteria and, if found to be important enough, will be included in the schedule of investment costs.

The following initiatives can be mentioned:

- Expansion of POF chair (Meander) lab spaces;
- Relocation of Central Educational Facilities (COV) & study association. TNW to Carré, home base;
- Expansion of EMS chair (Carré) lab;
- Expansion of XUV chair (Carré) offices, depending on the project;
- Expansion of practical space on Carré floor 4;
- Expansion of Create in Zilverling;
- Relocation of the Zilverling practical area (necessary for Create);
- Expansion (requested option of Buitenhorst vacancy after BOZ);
- Expansion of BMS lab from Design Lab to Ravelijn;
- Culture: a new multifunctional dance hall;
- Sport: investigation of the technical condition of the water sport complex.

7.7. Future utilization of buildings on campus

How the following buildings on campus can be re-purposed in the future bears further examination:

- Drienerburgh;
- Faculty Club;
- Logica Building (momentarily mainly in use for student housing UCT);
- De Linde;
- Paviljoen.

7.8. Projects in which the university participates

Hogekamp (C)

Through Hogekamp B.V. and in cooperation with project developer Van Wijnen, we are working on redeveloping the Hogekamp building into student housing (to be used by Camelot) and a hotel with conference facilities (to be used by the UPark Hotel). Construction started in 2017; it was completed in summer/autumn 2018. The development of Hogekamp is dependent on external parties, the operational date for student housing is set for the 2018-2019 academic year. This was successful.

Gallery Phase II (C)

Redevelopment of the Gallery phase II forms part of a larger puzzle that has many external stakeholders and shareholders. All the stakeholders would prefer the Gallery II to have an incubator-like function, including a student workspace and possibly also the DesignLab. A specific department from the province has reserved an amount for investment or participation. To start the actual redevelopment, a broad-based business case should be established by the end of 2018. An association of five parties is engaged in the development; the university is involved. Further development depends on finding and binding support partners such as investors, users, innovation partners and creatives.

ITC hotel (B)

With the Faculty of Geo-Information Science and Earth Observation relocating on campus, it is also desirable to bring the housing accommodations for ITC students on campus. Further analysis is required; one possibility is the Hogekamp development.

APPENDIX I LTSH Principles (in addition to section 5.1)

➤ **Aiming for quality and flexibility**

With the development and redevelopment of real estate, besides quality considerations adaptive capacity is also a top priority. The core elements for this include:

- Facility-sharing (largely for educational and office spaces, and to a lesser extent for research labs).
- Building generality: buildings have the same provisions or 'equipment level'.
- Every type of space will be generically realized, so that its identity can be established by the different users (spatial appearance and experience).

➤ **A focus on the efficient use of space and the optimal deployment of the current real estate portfolio**

- The guideline stipulates a 3% vacancy rate for the total space that can be leased.
- The guideline for the use of office space is a bandwidth of up to 12 m² functional net area per FTE (for future housing initiatives).
- All educational areas (except for rooms with very specific facilities) are part of the Central Educational Facilities (COV).
- The guideline for educational areas is a minimum 60-70% occupancy rate.
- UT only leases space off campus if there is no appropriate space available on campus, temporarily or structurally.

➤ **Secondary facilities**

- Sports and cultural facilities are primarily aimed at students.
- Sports (especially campus-wide sports) and culture are also intended for university employees and are thus important pillars for local and international community-building at UT.
- The retail, catering and service facilities reflect UT's image and objectives, and they are sufficiently diverse, offer sufficient quality, and are managed by third parties.

➤ **The real estate appears to match UT's strategic focal points**

- The campus is an international learning and working environment. The housing is geared towards meeting and access, as well as raising the university's profile and generating attention for its strategic themes.

Appendix II Overview of buildings

Number	Name	Address	Ownership situation	Part of the overview
30	Waste deposit	Achterhorst	UT	Yes
54	Athletic storage	Campuslaan	UT	Yes
48	Bastille	De Hems	UT	Yes
63	Cabins (incl Sanitary block)	Campuslaan	UT	Yes
32	BMC	Achterhorst	UT	Yes
62	Boerderij Bosch	Campuslaan	UT	Yes
52	Boortoren	Calslaan	UT	No
04	Carillon	Drienerlolaan	UT	No, not a building
15	Carré	Hallenweg	UT	Yes
09	Citadel	Hallenweg	UT	Yes
41	Cubicus	De Zul	UT	Yes
44	Drienerburght	Boerderijweg	UT	Yes
40	Erve Holzik	Boerderijweg	UT	Yes
42	Faculty Club (incl Shed)	Boerderijweg	UT	Yes
17	Gallery	Hengelosestraat	Third parties	No
05	Garage	Dienstweg	UT	Yes
90	Gas pressure regulator station	Dienstweg	UT	Yes
13	Hall B	Hallenweg	UT	No, part of Carré
46	High-tech Factory	De Veldmaat	Third parties	No
08	High-pressure Lab	Dienstweg	UT	Yes
45	Hogekamp	De Veldmaat	Third parties	No
91	High-voltage distribution station	Dienstweg	UT	Yes
20	Horst Complex	De Horst	UT	Yes
75	ITC	Hengelosestraat	UT	Yes
76	ITC International Hotel	Boulevard 1945	UT	No, lack of data
	Koel building	De Horst	UT	No
93	Koudecirkel	De Horst	UT	No, not a building
61	Linde	Calslaan	UT	Yes
65	Logica	Campuslaan	UT	Yes
16	Nanolab	Hallenweg	UT	Yes
56	Open-air theatre	Campuslaan	UT	No, not a building
71	Pakkerij	Oude Markt	UT	Yes
06	Paviljoen	Dienstweg	UT	Yes
97	Petrol station	Campuslaan	UT	Yes
10	Ravelijn	Hallenweg	UT	Yes

96	Rainwater cellar	Campuslaan	UT	Yes
92	Sewerage pumping station	Het Ritke	UT	Yes
43	Shed	Boerderijweg	UT	No
07	Seinhuis	Dienstweg	UT	Yes
46	SePa	De Veldmaat	UT	No
58	Sleutel	Campuslaan	UT	No
02	Spiegel	Drienerlolaan	UT	Yes
49	Athletic centre	De Hems	UT	Yes
77	Stadsweide	Haaksbergerstraat	UT	No, rental situation
62	Stall	Campuslaan	UT	No
18	Technohal	Hallenweg	UT	No, building project
14	Teehuis	Hallenweg	UT	Yes
98	Tekeningenarchief	Dienstweg	UT	No
	Telefonie tussenstation		UT	Yes
64	Tennis pavilion	Campuslaan	UT	Yes
69	Therm	Capitool	UT	No, rental situation
95	Trafostation	Bosweg	UT	Yes
60	Vlinder	Calslaan	UT	No
47	Vrijhof	De Veldmaat	UT	Yes
12	Waaier	Hallenweg	UT	Yes
	Wallstreet	Walstraat	UT	No
70	Water sport complex	Auke Vleerstraat	UT	Yes
31	Windpark	Achterhorst	UT	Yes
11	Zilverling	Hallenweg	UT	Yes
57	Swimming pool	Campuslaan	UT	Yes