

Zuyd University of Applied Sciences

Master Facility and Real Estate Management

Limited study programme assessment

002A2022.06

Summary

In November 2022 the Master programme Facility and Real Estate Management (FREM) of Zuyd University of Applied Sciences (Zuyd) was assessed by an audit panel from NQA. The fulltime and part-time 60 EC programme is taught in English at the location of Zuyd in Maastricht. The audit panel assesses the quality of the study programme as **positive**.

The master FREM integrates the two worlds of facility and real estate management and wants to show the dynamics between hospitality, services, management and buildings in a different perspective. After graduating, students acquire a double degree with an integrated Facility and Real Estate Management degree in the Netherlands and a MSc degree at the University of Greenwich (UK). The panel is enthusiastic about the master's programme. It sees an active programme that takes recommendations seriously and acts upon them. The advisory board also feels that they are being listened to. Alumni and students are enthusiastic about the teaching team and how education is provided. The panel sees that relevant topics are being addressed by students in their final project. Students are guided to their theses directly from the start of the programme with sound guidance through lectures and thesis group sessions. The curriculum offers a good balance between professional and academic skills. Strong features of the master are the close connection to the Research Centre Facility Management (Lectoraat) and the personalized approach. The panel is positive about the planned curriculum renewal, which provides opportunities for a further integrated programme and more explicit inclusion of important current social issues such as smart buildings, energy transition and healthy work places. Other opportunities for the master are a stronger substantive cooperation with Greenwich University and Saxion UAS and strengthening the collaboration with alumni and advisory board members.

Standard 1: Intended Learning Outcomes

The study programme **meets** the generic quality requirements for standard 1.

The FREM programme is built around four professional competences and one master's competence. This set of five competences is formulated in a generic way and operationalised in learning outcomes per competence and module. The competences are connected to the Dublin descriptors and elaborate on the Dutch Bachelor standards for Facility Management.

The panel acknowledges the added value of a programme that combines the domains facility management, real estate management and also asset management. The panel encourages the master to further integrate the three domains facility, real estate and asset management within the new curriculum. According to the advisory board, FREM students are better prepared for developments in the field and able to find answers to difficult issues.

Standard 2: Teaching-Learning Environment

The study programme **meets** the generic quality requirements for standard 2.

Students and alumni the panel spoke with, are positive about the structure and content of the programme. The didactic concept of the programme is based on practice-oriented learning by means of authentic assignments from the work field. The programme demands a high level of the student's own responsibility, initiative and motivation. The panel considers the didactic concept apt for a master programme. The panel considers the programme to be coherent, suitable for a master programme and offering students the tools they need to master the final competences. Student mentoring is good with short lines and a personal approach. Students are positive about the accessibility, engagement and expertise of their lecturers. A strong point is the relation of the staff with the professional field through participation in the research group Facility Management,

with their professor also being course director of the master. To make the team benefit even more from each other's expertise, the panel encourages the programme to actively involve all staff members in the future curriculum innovation.

Standard 3: Student Assessment

The study programme **meets** the generic quality requirements for standard 3.

The master's assessments reflect the symbiosis between practice and theory and are connected to and focusing on the module's learning outcomes. The study programme uses an adequate mix of exams and assessments. All tests are individual, which the panel finds suitable for a master's programme. Students judge the assessment system and the various assessments as satisfactory. The panel, however, does note that the master programme makes relatively little use of formative tests and encourages the master to make formative testing a more formal part of the assessment policy, as well as considering a more holistic approach to testing. The panel is of the opinion that the graduation phase is well designed with a proper assessment system. The panel has established that the examination board works in line with the law and regulations.

Standard 4: Achieved Learning Outcomes

The study programme **meets** the generic quality requirements for standard 4.

Students demonstrate they master the competences at the final level with a thesis in which students show that they are able to handle a complex practice-oriented research question. The panel is very positive about the wide range and relevance of topics students work on. The early start of developing academic skills and topic selection benefits the quality of the products. Students are challenged to continually sharpen and adjust their ideas to relevant issues. The recently installed thesis group sessions stimulate this as well as the actively shared research agenda of the Research Centre Facility Management.

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Introduction

This is the assessment report of the Master Facility and Real Estate Management offered by Zuyd University of Applied Sciences (Zuyd). The assessment was conducted by an audit panel compiled by Netherlands Quality Agency (NQA) commissioned by Zuyd. Prior to the assessment process, the audit panel had been approved by NVAO.

In this report NQA gives account of its findings, considerations and conclusions. The assessment was undertaken according to the *Assessment Framework for the Higher Education Accreditation System of the Netherlands* of NVAO (September 2018) and the *NQA Guideline 2019 for Limited Programme Assessment*.

The assessment took place on the 30th of November 2022.

The audit panel consisted of:

P.C. (Pieter) le Roux PDEng (chair/domain expert);
G.L. (Geoff) de Booij MSc (domain expert);
R. (Ronald) Beckers dr.ir. (domain expert workfield);
Q.D. (Quintus) Bol (student member).

P.R. (Patricia) Molegraaf MSc, NQA auditor, acted as secretary of the panel.

The master programme Facility and Real Estate Management is part of the audit cluster HBO Facility and Real Estate.

Method of working of the panel and process

For the assessment, the study programme offered a critical reflection with appendices. For the assessment of the achieved learning outcomes, the panel has studied fifteen graduate products of graduates who recently finished their studies. These fifteen graduate products have been selected from the list of alumni of the last two academic years. In this selection, the variety in grading and variants have been taken into account.

To prepare the visit the panel held a preliminary meeting. In the preliminary meeting the panel members have been instructed about NQA's method of working and about the *NVAO-Assessment Framework*. In this meeting the panel members also discussed their tentative findings. During both the preliminary meeting and during the audit, the panel members shared their findings with each other continuously. During the audit the panel spoke with various stakeholders of the study programme, such as students, lecturers (assessors) and representatives of the work field and it studied several documents, see appendix 1 and 2. At the end of the assessment day the panel incorporated all the information it had obtained in an overall picture and in a tentative substantiated assessment. In the final oral feedback session the panel chairperson communicated the conclusive assessment and the major findings of the panel. Staff members and students of the study programme have had the opportunity to approach the panel in confidence to bring to the attention of the panel those matters they deem of importance for the assessment. No use was made of this possibility.

After the assessment day a draft report was formulated, which was presented to the panel. On the basis of the panel's input a second draft was made, which was presented to the study

programme for a check on factual inaccuracies. The panel members have taken note of the reaction of the study programme and if necessary, adapted the report. Subsequently, the report was established as definitive. With all information provided (orally and in writing) the panel has been able to make a deliberate judgement.

The audit panel declares that the assessment of the study programme has been carried out independently.

Utrecht, January, 2023

Panel chairman



P.C. (Pieter) le Roux PDEng

Panel secretary



P.R. (Patricia) Molegraaf MSc

Characteristic Features of the Study Programme

The master Facility and Real Estate Management (FREM) is offered by Zuyd University of Applied Sciences in Maastricht. After successfully completing the programme, students receive two Master of Science diplomas, one from Zuyd UAS and one from The University of Greenwich¹. The Zuyd FREM master offers a programme of 60 ECs with a duration of 12 months. Since September 2021 the programme offers a part-time modus of 24 months as well. Over the past years the number of students attending the programme has increased from 7 to 10 in the first years to 25 students per year since 2020. In 2021-2022 the master had an intake of 21 full-time and 4 part-time students, of which 11 were foreign and 14 Dutch. The non-governmental funded programme is offered in English because of the international context in which FREM organizations operate. In addition to this, the collaboration with the University of Greenwich requires an English taught curriculum.

Within Zuyd, the master FREM resides under the Academy Facility Management and is hosted by Zuyd's Hotel Management School Maastricht (HMSM). The master FREM was developed by a consortium of four Dutch Universities of Applied Sciences in the 1990s. In an association with the University of Greenwich in London (UK) the consortium offered two MSc programmes: a Msc Facility Management (since 1995) and a Msc Real Estate Management (1999). After the programme had obtained an accreditation from NVAO in 2010, it changed into a double degree with an integrated Facility and Real Estate Management degree in the Netherlands and the existing MSc degree in the UK. Since 2012 the five universities are no longer joined in a consortium. Two universities continued their FREM programme; Zuyd UAS and Saxion UAS now offer the programme independently, both as a double degree programme with the University of Greenwich. In 2014 Zuyd, Saxion and the University of Greenwich decided to redevelop the programme entirely. As part of this redevelopment, all students are now awarded an integrated MSc Facility and Real Estate Management at the University of Greenwich, similar to the already awarded Dutch MSc degree at Zuyd and Saxion.

The curriculum

The curriculum consists of five modules of 8 ECs each and finishes with a thesis of 20 ECs (see figure 1). Part-time students follow Strategic Facility Management, Strategic Building Management and Asset Management in their first year. In year two they follow Strategic Business Management, Academic Skills and the Thesis.

Academic Skills (8 EC)			Thesis (20 EC)
Strategic Facility Management (8 EC)	Strategic Building Management (8 EC)	Strategic Asset Management (8 EC)	
Strategic Business Management (8 EC)			

Figure 1: Programme structure Master FREM

¹ The degree offered by the University of Greenwich is not assessed here because it is not a joint degree, Zuyd students only follow courses of the Zuyd programme itself.

Corona

During the Corona pandemic the study programme demonstrated flexibility in the transition from physical to fully online education in 2020-2021 but also in 2021-2022. The programme felt it not safe enough to invite foreign students to travel to Maastricht. Proper attention was paid to the wellbeing of students and they were offered intensified coaching. The Corona pandemic has brought along new experiences with online education and the drive to explore new forms of blended learning. The programme received positive feedback from students with no significant lower valuations of the modules. But students did miss the social interaction. In September 2022 the programme started off line again in Maastricht.

Basic Data of the Study Programme

Name study programme as in CROHO	Master Facility and Real Estate Management
Orientation and level study programme	Hbo (professional orientation); master
Grade	Master of Science
Number of study credits	60 ECs
Location	Maastricht
Varieties	Full-time and part-time
Language used	English
Registration number in CROHO	70144

Retrospective of the Previous Accreditation

After the last audit in 2017, the programme received a number of recommendations. These recommendations concerned realising a tighter connection with the advisory board, a further integration of the FREM domains in the curriculum and the intertwinement of Academic Skills in the other modules. Other recommendations concerned the strengthening of blended learning and of the qualifications of lecturers/assessors regarding assessments.

These recommendations have led to the following actions:

- After a slight decrease in contacts during the Corona pandemic, the participation of the advisory board has been intensified with two meetings in May and October of 2022 and the involvement of three members of the advisory board in the preparation of the present audit.
- The programme plans a redesign of the curriculum starting early 2023 in which the synthesis of facility management and real estate management will be intensified and the Academic Skills module divided in two specified parts and made available to full-time as well as part-time students in year 1.
- The majority of teaching staff and thesis supervisors are BQE-certified (Basic Qualification Examination), the programme director SQE-certified (Senior Qualification Examination) and all assignments assessment forms are based upon rubrics in the current curriculum.

According to the panel, the above actions show the programme has actively followed up the main suggestions of the previous accreditation panel. Additionally, the panel also sees an active follow-up of the recommendations from the internal audit of 2019. For further elaboration on implemented improvements, see the chapters on the four standards of the NVAO-assessment framework.

Standard 1 Intended Learning Outcomes

The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline and international requirements.

Conclusion

Based on the considerations mentioned below, the audit panel assesses that the master Facility and Real Estate Management study programme **meets** the generic quality requirements for Standard 1.

The master FREM wants to deliver FREM professionals who are capable of creating smart, sustainable fit-for-use environments and supporting services. Students learn to take 'hard' and 'soft' services into account in an integrated manner in a client-oriented way. The FREM programme is built around four professional competences and one master's competence. This set of five competences is formulated in a generic way and operationalised in learning outcomes per competence and module. The competences are connected to the Dublin descriptors and elaborate on the Dutch Bachelor standards for Facility Management.

The panel recognizes the added value of the integrated programme and encourages the master to further integrate the three domains facility, real estate and asset management within the new curriculum. It also advises the programme to stronger incorporate major current social issues in this curriculum such as smart buildings, the energy transition and healthy work places. Other opportunities for the master are a stronger substantive cooperation with Greenwich University and strengthening the collaboration with alumni and advisory board members.

Substantiation

Professional orientation and distinctive features

The programme considers as its unique selling point the integration of facility management (FM) and corporate real estate management (CREM). With this intertwinement between FM and CREM, the programme wants to deliver FREM professionals who are well equipped to create, maintain and operate a fit for use environment and additional services that contribute to organizational goals, by integrating people, space, processes and technology. The masters FREM of Zuyd and Saxion are the only integrated masters in the facility and real estate domains in the Netherlands. Affiliated master programmes abroad neither have this close integration of the hard, project based, services and the soft services for fit for use environments.

The panel acknowledges the added value of a programme that combines the domains of facility management, real estate management and also asset management. The members of the advisory board the panel spoke with are very positive about this combination within one programme. According to them, FREM students are better prepared for developments in the field and able to find answers to difficult issues. Having said this, the panel encourages the study programme to further strengthen the professional profile by giving more focus to a greater integration of these three domains. The current curriculum rather explicitly delineates between subdomains (see Standard 2). The panel is pleased to hear that this is envisaged in the new curriculum that will be developed coming year in cooperation with the study programme of Saxion UAS. The panel is positive about the benefits of this collaboration with Saxion and advises the

panel to deepen this with more activities and exchanges, for example by mutual Thesis poster presentations.

The study programme is linked to Zuyd's research agenda via its close connection with the Research Centre for Facility Management. This research programme focusses on three topics: supporting and reinforcement of communities, value driven procurement and sustainable conversion of real estate. All members of the research group are active as thesis supervisors and as a result, relevant research topics are introduced within the master. The panel sees collaboration with the research centre as an added USP of the programme. It offers a good connection to relevant and current issues within society and the work field. The panel encourages the programme to explore the opportunities of this collaboration even further.

Another strong asset is the masters strategic position at the borders of Belgium and Germany. The panel sees an international context in the curriculum with international cases and literature. Students the panel spoke with, are positive about this. According to the panel, the double degree with Greenwich University offers more possibilities in the international field than have been exploited so far. A closer collaboration provides an opportunity to further strengthen the relationship with more exchange of knowledge and guest lecturers. The panel recommends the master to elaborate on this when designing the new curriculum.

Current set of learning outcomes

The master programme is built around four professional competences and one master's competence. The competence profile is the same for the full-time as well as the part-time programme. The competences are connected to the Dublin descriptors and elaborate on the Dutch Bachelor standards for Facility Management and EURO FM (European Facility Management organisation). According to the panel, the competences fit the professional orientation of the programme. The level of professional performance is reflected in the complexity of the assignments or questions students are able to handle and their ability to innovate.

The five Zuyd Master FREM competences are:

1. Proactively developing and/or improving FREM strategic alignment based upon methodical analyses of trends and developments in society, industry and FREM domain.
2. Systematically reviewing complex issues to optimise FREM processes and organisations, using (technological) innovations that add value in matching demand and supply, demonstrating entrepreneurial leadership and critical awareness of current problems and/or new insights.
3. Familiarising with power and interests of relevant internal and external stakeholders to initiate, manage and implement change.
4. Analysing the FREM portfolio to create, maintain and operate hard (space and infrastructure) and soft services (organisation and people) in an integrative way to deliver best value for money.
5. Collecting and analysing primary and secondary data in a critical way and communicating research results to specialist and non-specialist audiences

The programme consulted professionals of the Advisory Boards of both Saxion and Zuyd to align the five competences and to approve them by the professional field. The competences are formulated in a generic way and have been operationalised in learning outcomes per competence and module. See Appendix 3 for learning outcomes per competence.

The panel concludes that the intended learning outcomes as formulated by the study programme are in line with what may be expected from a professional master level. However, the panel agrees with the intention of the programme to check the five competences, in cooperation with Saxion, to see if they are in line with the current developments in the work field. In doing so, the panel advises the study programme to make even stronger connections with the professional field and incorporate major current social issues in an ever and fast changing environment such as smart buildings, the energy transition, healthy work places and the vacancy and transformation of the office real estate market. To translate these into what you can do with buildings and users: how to view the profession, the building and the use of the building from a strategic point of view.

Tuning with the work field

The programme was co-created together with Saxion UAS and Greenwich University. Calibration and consultation with them also helps to keep the programme up-to-date. The contact with other stakeholders is structurally embedded through the advisory board which consists of 12 members. and meets twice a year to discuss current trends and developments and their possible impact on the FREM programme. Companies and organisations offer authentic assignments that are translated into cases, providing real-life professional situations for students to work on. Another route through which the relation with the work field is established, is the network of the research group. Further connections with the work field are maintained through guest lecturers and staff members who are partly professionally active. The members of the advisory board and alumni the panel spoke with see the relevance in the multi-disciplinary programme and connection with Greenwich, which can both be exploited even stronger according to them. The panel is positive about the involvement of stakeholders and encourages the programme to intensify this, with a stronger connection of the advisory board members and alumni to the programme with guest lectureships, workshops or as a client to perform for in a module.

Standard 2 Teaching-Learning Environment

The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.

Conclusion

Based on the considerations mentioned below, the audit panel assesses that the master Facility and Real Estate Management study programme **meets** the generic quality requirements for Standard 2.

The programme's educational vision and didactical approach fit in well with its intended learning outcomes. The didactic concept of the programme is based on practice-oriented learning by means of authentic assignments from the work field. The panel considers the didactic concept apt for a master programme. Students and alumni the panel spoke with, are positive about the structure and content of the programme. They appreciate the many guest lectures and the didactic design of the programme. The panel considers the programme to be coherent, suitable for a master programme and offering students the tools they need to master the final competences. The panel is particularly positive about the way feedback of stakeholders on the programme is taken seriously.

Student mentoring is good; students are very pleased with the short lines and the personal approach. Students are positive about the accessibility, engagement and expertise of their lecturers. A strong point is the relation of the staff with the professional field through participation in the research group Facility Management, with the professor also being course director of the master. The panel is convinced that the staff is dedicated to the programme and able to offer coaching and teaching as and when needed. To make the team benefit even more from each other's expertise, the panel encourages the programme to actively involve all staff members in the future curriculum innovation, for instance via a curriculum commission. This will also help smooth the transition to a new course director when the present director will retire in 2025.

Substantiation

Educational vision and didactical approach

The didactic concept of the programme is based upon active participation, learning new theories and immediately process them towards applicability. This practice-oriented learning is given shape by means of authentic assignments from the work field. There is no distinction in didactical approach between the full-time and part-time programme. Professional collaboration and taking responsibility and initiative are stimulated through the modules and assignments. These encourage students to deepen their knowledge by searching for information and investigating and (re)formulating the questions or problems regarding the topic of the assignment. The learning context of the study programme includes the idea of 'flipping the classroom', which means that information transfer takes place at home. Students receive guidance in the form of web lectures, reading material and exercises. At school insights are enriched and deepened by discussions within communities of inquiry consisting of peers and lecturers. This requires students to come to class fully prepared and gives them ownership of their learning process. The programme demands a high level of the student's own responsibility, initiative and motivation. The panel considers the didactic concept apt for a master programme.

Content and structure of the curriculum

The curriculum consists of five modules of 8 ECs each and finishes with a thesis of 20 ECs (see also figure 1). These modules are:

- Strategic Business Management;
- Strategic Building Management;
- Strategic Asset Management;
- Strategic Facility Management; and
- Academic skills.

Three of the four strategic management modules focus on the three domains relevant for the FREM field. The fourth strategic management module, Strategic Business Management, adds a more general business administration perspective. The modules Academic Skills and Thesis make up a substantial part of the programme with a total of 28 ECs. As students have to acquire master level in a relatively short programme, much attention is paid to their academic skills, and more specifically to their research skills. In all other modules attention is paid to research methods and critical thinking as well, because the master finds academic skills core to senior professionals in the FREM field.

The programme also contains a two-day introduction module and an optional study trip to London with a visit to Greenwich University. The 'kick start' module starts every new Academic Year bringing different students together to create a cooperative and supportive climate. Four topics are addressed in this programme: intercultural awareness, study skills, programme organisation (module overview and assignments included) & staff and group dynamics.

All terms consist of 11 lecture weeks followed by three weeks used for examination. Full-time students have classes on Thursday and Friday. Part-time students follow classes on Thursdays in their first year and on Fridays in their second year. Academic skills and Strategic Business Management are taught on Friday, the other modules sequentially on Thursday. With the increase in part-time students, the need grew to offer them the module Academic Skills in their first year as well. In the renewed curriculum this will be addressed by separating the critical thinking part from the methodology part, which focuses more on the development of the research proposal. The critical thinking part will be scheduled early in the year and will be available for both part-time and full-time students. As a consequence, students can benefit from critical thinking skills throughout all assignments.

Subsequently to the lessons, approximately 24 (full-time programme) and 12 (part-time) hours are used for studying at home. During these hours students read course materials and work on assignments. During classes different ways of working are applied, such as lectures, workshops/seminars and in-class exercises. Most modules have three to four guest lectures. During lecture days students follow classes from 9AM to 3PM. They start with pitches students prepare, followed by discussions and interactive (guest) lectures.

Students and alumni the panel spoke with, are positive about the structure and content of the programme. They appreciate the guest lectures and the didactic design of the programme and find the study load appropriate. The panel considers the programme to be coherent, suitable for a master programme and offering students the tools they need to master the final competences. The panel is particularly positive about the way students' feedback and also audit recommendations are taken seriously with concrete actions such as the adjustment of the Academic Skills module or adjusting exam deadlines.

Research skills

The vision on research of the study programme gives insight in the way the study programme translates professional master level to research and analysis. The study programme emphasizes that students are taught research skills from the perspective of addressing practice-oriented problems. They learn to apply a systematic and methodological approach, in line with academic standards.

From the theses the panel studied, it sees that relevant and current topics are being researched. The close connection with the research group Facility Management, already mentioned in Standard 1, does certainly contribute to this.

Internationalisation

The full-time programme attracts about 40% non-Dutch students yearly, which stimulates the international character of the programme. Internationalisation is an integrated aspect in the curriculum with internationally oriented topics and cases. Intercultural communication is part of the kick-start module, Academic Skills and Strategic Business Management module. In the coaching of students the study programme also pays attention to cultural aspects, such as communicative and intercultural (communication) skills. The attention of the study programme for cultural differences has increased over the years, as it turned out to be an important factor in the way students perceive education, their academic attitude and what they expect from the study programme. As for international visibility and recognizability, the panel sees the master FREM has a lot to offer and learn from and it encourages the master to capitalize this even more by being more present at international conferences and symposia or in relevant journals.

Mentoring and Career Development

Students receive coaching and tutoring in different ways, depending on the module or phase in the programme. The courses are given by lecturers who guide students content wise. In addition, there is a certified study coach available from the beginning to the end of the programme. Since 2019 this is adjusted with a course coordinator who is the first point of contact for problems, (organisational) questions et cetera. Both students and staff indicate there are possibilities for students to ask for extra coaching. International students can turn to the course coordinator for practical guidance on living and studying in the Netherlands. Students indicate that the contact with lecturers is personal and informal. The small size of the study programme lowers the threshold for approaching lecturers or coaches. The panel is positive about the way different forms of coaching and guidance are organized. Responsibility and initiative for asking and receiving coaching lies with the students. The panel is of the opinion that this is in line with what may be expected from a master student and it is convinced there is sufficient attention for the individual student.

As for career development, the panel suggests the programme to think about possibilities for a closer connection of students to alumni, the advisory board and work field partners. This can help them orientate on and find their way in the professional field.

Staff

The panel spoke with a professional and experienced team. The fact that the study programme is small, makes it possible to create an informal and sympathetic atmosphere. Students the panel spoke with state that the threshold is low for approaching staff with questions or specific guidance or coaching issues. They are also positive about the competences, expertise and level of English

of the staff. The teaching staff consists of the five module lecturers and about seven thesis supervisors, with a total of 1.65 fte. Once every month the module lecturers, course coordinator and study coach have a meeting to discuss modules and students' progress and wellbeing. Three staff members have a PhD, one is a PhD candidate. The course director is also the Professor of Facility Management within the research group. Four staff members are active participants in this research group. Part of the staff is involved in both the bachelor and the master programme. The course director got his SQE (Senior Qualification Examination) certificate, the lecturer Academic Skills got his BQE (Basic Qualification Examination) certificate and all thesis supervisors also are BQE-certified. Lecturers with a small appointment (only for a module at the Master FREM) do not have a BQE, but if there is a change in assessing, it is always done under supervision of the course director. The panel establishes that the team and supporting staff are capable, qualitatively and in number, to execute the master programme.

The panel sees a dedicated teaching staff, all striving to optimize their module each year, with a programme director as the beating heart of the master programme. To make the team benefit more from each other's expertise, across the boundaries of the modules, the panel encourages the programme to actively involve all staff members in the future curriculum innovation. This can be done by establishing a small but agile curriculum commission. This will also help smooth the transition to a new programme director when the present director will retire in 2025.

Standard 3 Student Assessment

The programme has an adequate system of student assessment in place.

Conclusion

Based on the considerations mentioned below, the audit panel assesses that the master Facility and Real Estate Management study programme **meets** the generic quality requirements for Standard 3.

The study programme uses an adequate mix of exams and assessments. The assessments reflect the symbiosis between practice and theory and are connected to and focus on the module's learning outcomes. Students judge the assessment system and the various assessments as satisfactory. They are positive about the feedback they get. The panel, however, does note that the master programme makes relatively little use of formative tests and encourages the master to make formative testing a more formal part of the assessment policy, as well as considering a more holistic approach to testing.

Students show they master the competences at final level in the master thesis. This thesis is assessed with a coursework assignment and a presentation/defence. The panel finds the renewed thesis assessment form very adequate and insightful, containing meaningful feedback for the student. The panel is of the opinion that the graduation phase is well designed with a proper assessment system.

The panel establishes the examination board works in line with the law and regulations. The Academy Facility Management has a combined exam board for the Associate degree Facility Management, the bachelor Facility Management and the Master FREM. From the annual report, the conversations with representatives of the examination board and examiners, the panel sees the examination board uses sufficient instruments to guarantee the quality of assessment and the level of the study programme. As the exam board is somewhat at a distance, the master being a very small part of the Academy, the panel encourages the exam board to elaborate on an even more proactive role to really act as a critical friend.

Substantiation

Assessment policy and its execution

The leading principles of the assessment policy are documented in the Study Guide and Education- and Examination Regulations (EER). The assessment policy is in line with Zuyd's policy (Test Compass). One of the core principles of the exam policy is that the assignments reflect the symbiosis between practice and theory since it is about cases and developing student's grounded and motivated personal solutions for given situations. All assignments are connected to and focus on the module's learning outcomes. The programme want students to show knowledge of how to apply theories, models and concepts and to make conscious and well-motivated decisions about 'how to approach' a given situation. All five regular modules consist of two assessments (see table 1).

	ASkills	SBussM	SfacM	SBuilM	SAssM	Thesis
Assignment 1	Write a critical review on an Academic paper. 4.000 words. 40%	Write an essay about a management case. 2.500 words 50%	Write a paper about increasing added value 7.500 words 75%	Present a critical review about a SAMP 6 minutes presentation 30%	Deliver calculations and reasoning as part of investment proposal. 3.000 words 30%	Deliver thesis based upon execution of own research 20.000 words 80%
Assignment 2	Research Proposal 6.000 words 60%	Oral exam about a given case. 45 min. ex. 50%	Develop and present a case solution 6 min. pres. 25%	Write a paper how to decrease mismatch building – occupants. 7.000 words 70%	Develop an investment proposal with sound advice. 7.000 words 70%	Presentation and defense 45 min. 20%
Compensate y/n	Both assignments at least 5,5	Weighted average must be 5,5 or more	Weighted average must be 5,5 or more	Weighted average must be 5,5 or more	Weighted average must be 5,5 or more	Both assignments at least 5,5
Assessed by	Module lecturer	Oral Exam: Module lecturer together with 2nd examiner	Module lecturer	Module lecturer	Module lecturer	Supervisor and 2nd reader

Table 1. Assessment plan Master FREM.

The programme consists of two types of tests: presentations and coursework assignments, which take different forms (see table 1). Competences and learning outcomes are explicitly linked to each test. The four-eyes principle is applied to the oral exam and the thesis. All assignments have rubric based assessment forms which are distributed via Moodle, the electronic learning environment. The Education and Examination Regulations (EER) document is accessible for students on Moodle and the assessment structure is presented and discussed during the kick-start days. For each assessment the study programme has a so called digital 'exam file' in which the complete documentation concerning an assessment is filed. Assessment construction is always done on the basis of the four-eyes principle with at least one BQE or SQE qualified staff member. New or adapted assignments are always submitted to the test committee.

According to the panel, the programme's assessment structure is clear and insightful for students. All tests are individual tests, which the panel finds suitable for a master's programme. The panel notes that compensation is possible within the management modules, since the weighted average of the two tests must be 5.5 or higher. It advises the programme to investigate if this actually happens and if so, to reconsider the possibility of compensation. Alumni, students and lecturers the panel spoke with are satisfied with the assessment programme and its workload. The panel does however note that the master programme makes relatively little use of formative tests. This takes place within classes through feedback from students and lecturers. The panel recommends to make formative testing a more formal part of the assessment policy, as well a more holistic approach to testing. The panel sees possibilities for a more holistic approach with integrated assessments that combine different modules, such as a business case with a building and asset management component. This would fit in well with a more integrative new curriculum.

Graduation phase

Students show they master the competences at final level in the master thesis. Assessment consists of a written research report and a presentation and defence. The weight of the separate components in the final grade for this work is as follows: 80% for the report, 20% for the presentation and defence. The grading involves different examiners: the thesis supervisor as first examiner and a second examiner. Students need to pass the research proposal (part of Academic Skills) to start the thesis. The assessment form for the thesis has been object of study in SQE and been renewed. The new form is based upon the six intended learning outcomes. The panel finds this assessment form very adequate and insightful, offering meaningful feedback for the student. A good addition would be to make the criterium relevance to the FREM domain conditional and which cannot be compensated. The panel is of the opinion that the graduation phase is well designed with a proper assessment system. From the conversations with the assessors and alumni it became clear to the panel that the way of testing the final phase is to their satisfaction.

Quality assurance

The Academy Facility Management has a combined exam board for the Associate degree Facility Management, the bachelor Facility Management and the Master FREM. The exam board consists of three members one of whom is an external member. One member of the exam board is responsible for the test assurance of the master programme. The examination board monitors if quality requirements to act as an examiner in the master programme are followed. The exam board assesses a sample of module assignments and their criteria each year. It also studies a limited number of theses each year to assure the level of the final works of graduates. Since 2021-2022 the exam board has attended three thesis presentations each year. Since 2019 - 2020 there are cross university meetings between the exam boards of the masters FREM of Saxion and Zuyd. They interchange theses and assess each other's students' works. This helps the exam board to reinforce their references and ability to guarantee the MSc level of the programme. As the FREM programme is a double degree programme, its programme is also scrutinised according to the external examining system the University of Greenwich uses to verify the academic standards of the programme and its courses.

From the annual report, the conversations with representatives of the examination board and examiners, the panel sees the examination board uses sufficient instruments to guarantee the quality of assessment and the level of the study programme. Since the master is very small compared to the Associate Degree and bachelor programmes, the panel sees the exam board is somewhat more at distance, reacting on request when questions arise. The panel sees the exam board is growing to a more proactive role with the current attendance of thesis presentations and the panel wants to encourage the exam board to increase this more proactive role as a critical friend.

Standard 4 Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Conclusion

Based on the considerations mentioned below, the audit panel assesses that the master Facility and Real Estate Management study programme **meets** the generic quality requirements for Standard 4.

Students demonstrate they master the competences at the final level with a thesis in which students show that they are able to handle a complex practice-oriented research question. The panel is very positive about the wide range and relevance of topics students work on. The theses studied by the panel reflect how students carry out research and how they report on this process. In the eyes of the panel the theses show a good balance between academic and professional skills. The early start of developing academic skills and topic selection benefits the quality of the products. Students are challenged to continually sharpen and adjust their ideas to relevant issues. The recently installed thesis group sessions stimulate this. The master actively shares the lectorate's research agenda with students. All lectorate members are also thesis supervisors. The panel acknowledges the added value of the involvement of the research group and sees this as a strong asset of the programme. Alumni as well as the advisory board are positive about the value of the master FREM, for the working field and for the professionals themselves. The panel encourages the programme to involve alumni as much as possible within the programme, as guest lecturers, business coaches or in the work field committee.

Substantiation

Graduation products and level of intended learning outcomes

All five competences are assessed in the master thesis, which is carried out on an individual basis. Students perform research into an aspect of the FREM working field. They are free to choose their own topic. The focus of the thesis must be relevant to the FREM field, but students are not obliged to select a topic that covers all three domains of the FREM field. Directly at the start of the programme, students are actively guided in choosing a topic. Students and alumni the panel spoke with recognised this and confirmed all classes start with thinking about the proposal and theses topics. As they have to choose and elaborate on a topic early in the programme, when not all modules have already started, the panel supports the students' suggestion to start the academic year with an thorough introduction lecture of each module so they get familiar with all three disciplines.

The Academic Skills module provides students with skills and tools to write the research proposal. Parallel to these lectures, thesis group sessions are organised. In small groups, guided by a thesis group leader, students discuss the topics, the research questions, the research goal and the methodology. With these thesis groups, students with related/familiar topics receive extra guidance in applying what is taught in Academic Skills. According to the feedback from the educational committee the panel spoke with students value this way of working as very positive.

The panel concludes that students master the competences at the intended level in the graduation phase of the study programme. The research topics of the theses the panel read originated from both the work field and the research group. The master actively shares the lectorate's research agenda with students. This partly consists of themes that have a longer term and partly also respond to very current themes, arising from current needs in the field. All knowledge group members also act as thesis supervisors. The panel has studied a number of documents that illustrate the final level of Master FREM students at graduation. These documents consisted of fifteen final projects of students who graduated in the last two academic years. The panel is very positive about the wide range and relevance of topics it came across. Examples of research themes were: in-door environmental conditions in buildings, activity based working concepts in several contexts, the need for change in the valuation of flexible office space and new ways of working and structural office vacancy after the pandemic. Reading the theses, the panel found they maintained a good balance between academic and professional skills. The combination of the Academic Skills module and thesis group sessions help students deliver research products at master level. The panel is satisfied with the research level and sees this reflected in the fact that out of the nine graduates in September 2022, six graduated with distinction.

Functioning of alumni in the work field

The representatives of the work field the panel spoke with are enthusiastic about the study programme and the graduates. The work field also indicated their interest in employing graduates. The demand in the labour market is not easily characterized, as graduates fulfil a wide range of roles and positions in a multifaceted industry. Examples of positions alumni acquire are: sustainability adviser, consultant, portfolio manager, realtor, asset manager, procurement specialist, developer, project manager and investment manager. The companies graduates work for vary in size. Some international students return to their home countries, some graduates work for multinationals or Dutch companies. Considering the above mentioned, the panel is of the opinion that the master programme demonstrates it meets the demand in the labour market of the FREM field. As already mentioned in Standard 1, the panel thinks the programme can benefit more from alumni and the advisory board. It encourages the programme to involve alumni as much as possible within the programme, as guest lecturers, business coaches or in the advisory board.

Final Conclusion

Assessments of the Standards

The audit team comes to the following judgements with regard to the standards:

	Master Facility and Real Estate Management
<i>Standaard 1 Intended Learning Outcomes</i>	Meets the generic quality requirements
<i>Standaard 2 Teaching-Learning Environment</i>	Meets the generic quality requirements
<i>Standaard 3 Student Assessment</i>	Meets the generic quality requirements
<i>Standaard 4 Achieved Learning Outcomes</i>	Meets the generic quality requirements

The judgements have been weighed in accordance with the NVAO assessment rules. On the basis of this, the audit panel assesses the quality of the existing master study programme Facility and Real Estate Management of Zuyd University of Applied Sciences as **positive**.

Recommendations

The audit panel has the following recommendations for the study programme:

Standard 1

- Realise a stronger substantive cooperation with Greenwich University and Saxion University of Applied Sciences, to improve internationalisation and collaboratively strengthen the position of the master programme in the Netherlands.

Standard 3

- Make formative testing a more formal part of the assessment policy, as well as a more holistic approach to testing. This fits in well with the envisaged more integrative curriculum.

Appendices

Appendix 1: Programme of the Site Visit

09.00 – 09.30 uur	Consultation panel
09.30 – 10.30 uur	Conversation with students
10.45 – 11.45 uur	Conversation with teaching staff (among others member test committee, thesis supervisors)
11.45 – 12.15 uur	Consultation panel
12.15 – 13.15 uur	Lunch
13.15 – 13.45 uur	Conversation with the Examination Board
13.45 – 14.30 uur	Conversation with advisory board and alumni 2020 – 2021
14.30 – 15.30 uur	Conversation with management
15.30 – 16.15 uur	Consultation panel
16.15 – 17.15 uur	Feedback

Appendix 2: Documents Examined

- Self-evaluation Master FREM Zuyd UAS November 2022
- Education and Examination Regulations 2022-2023
- Study Guide 2021-2022
- Student chapter video
- Student chapter feedback & improvement suggestions FREM 2021-2022
- Research programs involved within the program 2021-2022
- Annual report Examination Board 2020-2021
- Marking from research proposals
- Assessment form master FREM: thesis and presentation
- Waarom we MSc facilitators hard nodig hebben
- Format ppt presentation 1rd-5th thesis group sessions
- Aanbevelingen visitatie 2017 (Recommendations audit 2017)
- Competences FREM elaborated version 2014
- Lecturers Master FREM
- Selection of 15 Theses from 2021-2022 and 2021-2020 (all full-time because first part-time students will graduate August 2023).
- Insight in Moodle during the site visit