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DESK RESEARCH

FACILITY MANAGEMENT EDUCATION ACROSS THE ATLANTIC
EXPLORING EXCHANGE OPPORTUNITIES BETWEEN CANADA AND THE NETHERLANDS

NSCC | Magreet Kooij

Facility Management Education across the Atlantic

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Chapter 1 - Introduction

This report discusses information in regard to the project 'implementing an additional year for NSCC's students with a focus on Facility Management' that has been derived through **desk research:** literature, internet, articles and journals. The goal of this report is to understand the field of Facility Management (from now on to be referred to as FM, to know the position of Facility Management in the market, understand the Dutch education system as well as the International Facility Management program of the Hanze University of Applied Sciences, Groningen.

The objectives of this report are to provide a:
1. **General understanding of Facility Management**: what is the history of FM, how has the field developed over the last years, what is its definition and its scope and what are the responsibilities/skills of a Facility Manager?
2. **Picture of FM in the Netherlands and Europe**: what is its market size, what are the associations related to FM, what trends can be seen currently, and what is its future prospect? Standards that are considered to be important will be discussed as well.
3. **Understanding of Higher Education in the Netherlands**: what different levels exist in higher education and how is this organized? What are considered to be the main aspects of FM study programs, how are these programs organized, and what does the IFM program of the Hanze University look like?

The structure of this report is based on the abovementioned objectives.

The author of this report would like to give thanks to Ms. Dore Steenhuizen, whose project about implementing a Facility Management study program in Portugal were very helpful in setting up this research.

Chapter 2 The Field of Facility Management

This chapter describes the field of Facility Management (FM). The broad scope, with its several definitions, will have effect on the recommendations for NSCC, and therefore it is important to describe the field. The history and developments over the past years will be discussed, as well as the different definitions, the several roles of the Facility manager and the scope of FM. The information will be derived from books, websites, articles and other resources.

2.1 History of Facility Management

Facility Management began in the **1970's** in the United States, because of the use of computer terminals into the workstation, as well as dividing screens in the office environment. Facility managers were members of other associations at that time. In December **1978**, Herman Miller Research Corporation hosted a conference on facility influences in Michigan, USA. At this conference, the three founders of the National Facility Management Association (NFMA), George Graves, Charles Hitch and David Armstrong, voiced a need for an organization comprised of facility professionals. In May **1980** the NFMA was born. In 1981, the name was changed into the International Facility Management Association (IFMA).

In 1982, David Armstrong described the core values of FM, to be seen in the image below:
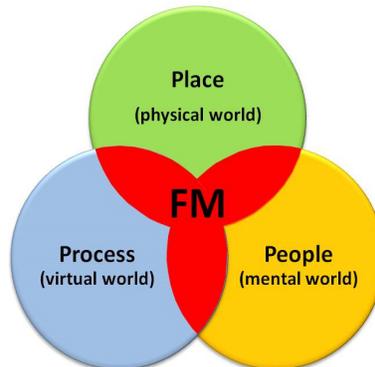
Figure 2.1 Three basic aspects of FM (EuroFM, 2011)

In **1983**, Professor Franklin Backer introduced the first Bachelor's and Master's degree programs in Facility Management in New York.
In **1984**, the British architect Frank Duffy introduced FM in Europe when designing offices. The development of FM in Europe has been very diverse; national culture, language, law and market structure have influenced the direction and form of FM.
In **1993**, The European Facility Management Network was officially registered, as well as the Dutch FM association, now known as FMM. (EuroFM, 2011)

FM was mainly concerned with building maintenance in its early years, but acceptance of FM's large impact on costs, savings and benefits has created more awareness of the FM field in organizations as well as on the market.

2.2 Definitions of FM

Facility Management is a very broad field, as mentioned before. There is not merely one final definition of Facility Management. Therefore, the following list shows several different definitions of Facility Management, according to different FM associations and authors.

- o *"Facility Management is a profession that encompasses multiple disciplines to ensure functionality of the built environment by **integrating** people, place, process and technology."* (IFMA, 2011)

- o *"Facility Management is an integrated approach to operating, maintaining, improving and adapting the buildings and infrastructure of an organization in order to create an environment that strongly **supports** the primary objectives of that organization."* (Atkin & Brooks, 2009)

- o *"Integration of processes within an organization to maintain and develop the agreed services which support and improve the **effectiveness** of its primary activities."* (EuroFM, 2011)
  This definition is agreed upon in the EN 15221-1: 2006 Facility Management – Part 1: Terms and definitions. The EN 15221 will be further explained in chapter 3.3.

- o *"Facility Management is the management activity which **supports** businesses, many other types of organizations and particularly the users of the built environment, through the provision of facilities and associated support services."* (GlobalFM, 2009)

Another great and clear description of Facility Management was derived from Facilities Centre, a consultancy service organization:

- o *"Facilities Management is **fundamental** to all organizations. Without the buildings, the equipment, the services and the environment being delivered to best practice standards, the organization itself could not produce the core product as it would like. The end results of an organization largely depend on its buildings, the environment where people work in and the equipment they use. So, services provided to staff are highly important.*
  The Facility Manager is responsible for this, and has a crucial role to play within both the ***strategic long term planning and the day to day operation*** *of the establishment. So, the Facility Manager should be responsible for delivering a variety of support services to the staff of the organization in a way that enables them to maximize their effectiveness. Structured, planned, organized and managed well, Facility Management **adds value** to all goods and services supplied by maximizing resource utilization, controlling costs and providing services to standards required by its customers."* (FacilitiesCentre, 2006)

These different definitions of Facility Management have the following in common:

➢ Multiple **disciplines** in the FM field
➢ Integration of processes – **supporting** to the organization
➢ A main focus on **People, Place and Process**, the three areas of FM

There are some differences between the definitions, too. For example, some definitions state the importance of 'technology', while others do not. Another example that might indicate a different focus of FM is the use of 'built environment', whereas other definitions mention the infrastructure or processes of an organization. However, all the definitions represent the importance of Facility Management, and that it is involved in every aspect of the organization.

In regard to the project, the first definition of FM, according to IFMA, can be used best. This definition integrates people, processes and technology, to ensure the functionality of the built environment – the focus on the hard- and soft sides of Facility Management is aligned and therefore important for NSCC, with its technological focus, as well as the Hanze University, with its more human and management focus. These hard- and soft sides can be explained as:

-   **Hard Services**; mainly technical, physical and functional aspects such as space allocation, software, and air quality.
-   **Soft Services**; service oriented, sensory, behavioural and ergonomic aspects such as the design of furniture, human resource management, and management in general (EuroFM, 2009).

To put these definitions into perspective for the project of NSCC, it is clear that a main focus on **people, place and process** should be given during the courses students will follow in the Netherlands. The School of Trades & Technology of NSCC has a strong focus on the buildings, maintenance and technology, whereas the goal of this project is to offer students the opportunity to gain more skills about **people** and management.

2.3 Scope of Facility Management

What are the activities related to the field of FM? According to the Global Facility Management Association (Global FM), Facility Management is different in every organization. As can be found in section 2.2, the definition Global FM set up for facility management is:
"Facility Management is the management activity which supports businesses, many other types of organizations and particularly the users of the built environment, through the provision of facilities and associated support services." (GlobalFM, 2009)

The Facilities Management Association (FMA) mentions the following on Facility Management:
'Every organization relies on a mix of functions and services to provide the support essential to its core business operations. Ensuring that this support is available in the right form, at the right quality and for the right cost is the task of the facilities management industry. FM is a vital function in offices, retail centers, industrial buildings, schools and hospitals. In practice, FM can be difficult

to define. But in essence, it is about taking control of non-core services, freeing organizations to do what they do best while the facilities managers take care of the rest.' (FMA, 2012)

Cotts wrote the following in his book:
'Facility management, commonly abbreviated as FM, is a fairly new business and management discipline to the private sector. In the public sector, however, it has been practices as post engineering, public works, or plant administration for many years. In leased property, the profession is titles property management or building operating management through most of the required skills are the same as those need in owned property. Outside of North America, until recently, facility management functions were often subsumed deep in the administrative structure of both private and public sector organizations.' (Cotts, 2010, p. 4)

It can be concluded from these definitions, that FM is responsible for the proper organization and execution of the secondary activities in order for the organization's primary activities to be of the best quality. Cotts makes a difference between the performance of FM in the private and public sector. He gives a more technical understanding of FM and the managerial aspects are fairly new in North America, according to Cotts.
FM is present in both sectors, the public and the private sector, and is indeed concerned with secondary processes of an organization. FM seems to have a strong relation to building maintenance.

However, these definitions of the scope of FM are not complete yet. EuroFM defined FM (see section 2.2) based on the three core values of FM, developed by Armstrong: **people, process and place.** (EuroFM, 2011) This definition of FM is part of the EN15221-1:2006 Facility Management – Part 1: Terms and definitions. This is a European Standard agreed upon in 2006. It states that the scope of FM is broad when it comes to its activities, and therefore two main groups within the field of FM have been formed, which represents people, process and place:

o **Space and infrastructure**
   Work-space related aspects: space planning, workplace, design, construction, and lease, occupancy management building operations, maintenance, furniture, equipment, technical infrastructure and cleaning.

o **People and organization**
   Health services, catering, event management, ICT, hospitality, security, safety, human resource management, logistics, office supplies, document management, accounting and marketing.

Building maintenance (place & process) is a large part of FM, but people and organization aspects have not been mentioned before (people and process). Building maintenance has a direct influence on the people that work in the building and also has an influence on processes that take place in that same building.

As with all management functions, FM is also a field that can be divided into three levels:
- Operational: execution of services such as cleaning, security, catering, maintenance
- Tactical: managerial activities such as managing the operational activities
- Strategic: managing on the long-term rather than a few years as on the tactical level
The main difference between these three levels that one will come across in organizations is the level of responsibility, complexity, influence, authority, knowledge and skills.

2.4 Development of Facility Management

The European Union and the Lisbon Agenda set a strategy and an agenda for European Facility Management, called *'Europe 2020, a European strategy for smart, sustainable and inclusive growth.'* Based on this report, the European market will continue to develop, and therefore the FM market as well. The global market is becoming more international, which creates new opportunities but also threats at the same time. More players enter the market which increases the competition. The larger offer of products and services offer more choices for consumers who are becoming more demanding over time. This will lead to higher competition again, as well as higher standards and higher expectations of the market and its future development. (European Union, 2010)

Facility Management has been on the market for several years, and is still 'under construction', which it will probably stay. FM has a strong relation to the constant and rapid changing market and other external factors such as the global economic welfare and globalization.

2.5 The Facility Manager

The facility manager is the person being held responsible for the FM department and related activities within an organization. He is mostly *invisible*, because the facility seems to run itself from an occupants' point of view. However, a facility manager is still a manager and he/she needs to be managing a department and with that he/she must be able to play many different roles: Human Resource Management, coach and leader.

According to IFMA, Facility Management professionals are a diverse group of leaders concerned with the form and function of the organization and its environment. They include:
- o Facility Managers
- o Architects
- o Engineers
- o Designers
- o Real Estate professionals

Facility managers are decision makers, consulted by Executive Management, for strategies, answers, advice and other things that affect people, place and process. They also need to be prepared to meet the challenges and trends in the field, because new possibilities need to be explored and plans for growth need to be in line with the ever-changing work environment. (IFMA, 2011)

In 2009, a new global job task analysis (GJTA) defined 11 core competencies for Facility Managers. The GJTA includes responses from Facility Managers from 62 countries.

1. *Communication:* communication plans and processes for both internal and external stakeholders
2. *Emergency Preparedness and Business Continuity:* emergency and risk management plans and procedures
3. *Environmental Stewardship and Sustainability:* sustainable management of built and natural environments

4. *Finance and Business:* strategic plans, budgets, financial analyses, procurement
5. *Human Factors:* healthful and save environment, security, employee development
6. *Leadership and Strategy:* strategic planning, organize, staff and lead organization
7. *Operations and Maintenance:* building operations and maintenance, occupant services
8. *Project Management:* oversight and management of all projects and related contracts
9. *Quality:* best practices, process improvements, audits and measurements
10. *Real Estate and Property Management:* real estate planning, acquisition and disposition
11. *Technology:* FM technology and workplace management systems

(IFMA, 2011)

Cotts et al. state in the Facility Management Handbook that every facility manager will be involved in at least these functions:
- Management of the Organization (planning, organizing, staffing, directing, controlling and evaluating)
- Facility planning and forecasting
- Lease Administration
- Space planning
- Architecture/Engineering planning and design
- Workplace planning
- Budgeting and accounting
- Technology Management
- Emergency Management
- General administrative services, like food services and moving services (Cotts, 2010)

These profiles are rather new in the FM industry, because of the fact that FM in constantly changing and is a so-called *new* field. The second reason is that the focus of a facility manager has changed, as a result of the developments in the market. For example, the facility manager not focuses merely on the technical aspects anymore, but human resources, purchasing and finance have become major concerns of him/her as well.

A facility manager can also be operating as an individual, instead of working in an organization in which he/she is responsible for the secondary processes. Working individually means offering facility services to other organizations. In this way, FM becomes a primary process/activity for the specific organization. Examples: supplier of Facility Management Information Systems (FMIS), security services and catering services.

2.7 Conclusion

This chapter described the *field of Facility Management.* FM is a new field in today's business World and it has developed considerably fast since the 1970's. This development is noticeable today and will probably continue to develop over the coming years, because FM depends on the (international) market which is also developing fast.

The three words; **people, place and process** are still considered to be the core of FM. The definition agreed upon in the Standard EN 15221 (2006): *Integration of processes within an organization to maintain and develop the agreed services which support and improve the effectiveness of its primary activities.* (EuroFM - IT2, 2011)

Many other definitions have been given to FM. They all have a different perspective, are true and have some aspects in common: FM is of a supportive nature, FM consists of multiple disciplines and FM deals with people, place and processes. There is no 'right' definition for FM; this strongly depends on the organization and the facility manager. This means that FM should be defined per organization. The *field of Facility Management* is constantly changing which makes it necessary to constantly analyze the environment of FM.

At the start of Facility Management, it had a strong focus on the technological aspects of it, and organizations and individuals still tend to think this way, instead of taking the other disciplines into consideration, such as Human Resource Management (HRM) and catering. The facility manager is the person who is responsible for the proper execution of these activities and is defined as not to be any different than other managers, and is for that reason also responsible for aspects such as HRM.

Putting the abovementioned into perspective of the project, it is crucial for NSCC and the students to know and understand the FM field, its related skills and activities. This makes it easier for students to decide if they would like to go to the Netherlands and if FM will add value to their professional and personal life.

Knowing that not all people share the same vision of FM is helpful and needed because a facility manager is expected to deal with many different situations and people.

Chapter 3 Facility Management in the Netherlands & Europe

The EuroFM Market Data is a project of EuroFM that focuses on the main objectives of EuroFM, which is becoming the central source of FM related information. This chapter will discuss issues that are related to the EuroFM project and which are important for the project of NSCC. First, the market size of FM in Europe will be discussed, FM associations will be outlined and the Standard EN 15221 will be explained.

3.1 Facility Management market size

In the European Insight FM Issue 11 – September 2009, Mr. Sven A. Teichmann presented his study on the FM market size in Europe. The aim of his study was to 'obtain data on the total expenditure on FM services as well as the ratio between internal and external services', in relation to the Gross Domestic Product (GDP) (Teichmann, 2009).
According to his research, today's FM market is estimated to be €640 billion in Europe. To clearly understand his research, Teichmann provided the reader with a table in which all European countries are listed demonstrating their share in the €640 billion.

In regard to the project of NSCC not all European countries are interesting. Table 3.1 provides an overview of the most influential countries with the strongest economies and important countries in the development of FM. The Netherlands is placed in this table as well, because it is a crucial player in regard to the project. Also, Austria and Ireland are placed in the table, since they are partner schools of NSCC.

Table 3.1 FM Market Size in Europe (Teichmann, 2009)

Ranking	Country	Market size FM in 2008 (billions)	Percentage
1	United Kingdom	€ 204,39	31,20%
2	Germany	€ 73,38	11,20%
3	France	€ 58,89	8,99%
4	Italy	€ 48,78	7,45%
5	Spain	€ 37,31	5,70%
7	Netherlands	€ 25,93	3,96%
12	Austria	€ 12,72	1,94%
17	Ireland	€ 8,38	1,28%
Total top 5		€ 422,75	64,53%
Total selected countries		€ 469,78	71,70%
Total Europe (41)		€ 655,13	100,00%

More information on the Canadian market in relation to Facility Management will be discussed in the second report of this project: *Field Research.*

3.2 Facility Management associations

The development of FM in Europe has developed uniquely in each country over the period of 1993 – 2002. This means that every country has a different view on FM. In some countries the main focus of FM was on real estate, on services or on maintenance. (EuroFM, 2011)

Obviously, the largest FM associations are IFMA and EuroFM, but there are a few FM associations in the Netherlands as well. However, the FM associations that will be discussed here include:
  - IFMA
  - Global FM
  - EuroFM
  - FMN
  - IFMA Holland

The **International Facility Management Association** (IFMA) was formed in 1980 and is the largest international association for professional facility managers. IFMA supports more than 19,000 members in 78 countries. The association assists facility managers on three main topics:
  - Managing humans
  - Managing facilities
  - Managing real estate (IFMA, 2011)

IFMA's vision is to *'serve as the resource and representative for facility management'* and its mission is to *'advance the facility management profession'.* (IFMA, 2011)
IFMA provides not only support in form of a network; it also provides two certifications and one credential, which are meant to helping professionals to improve their workplace skills.

  - **FMP: Facility Management Professional (credential)**
      - Knowledge based credential; enhance knowledge, creditability and skills
      - Basic knowledge of FM in general
      - Target group: everyone who is interested in FM and works (or will work) in the FM field
  - **CFM: Certified Facility Management (certificate)**
      - Competency-based certificate; assurance of professional excellence
      - Target group: FM practitioners and FM related fields
  - **SFP: Sustainable Facility Professional (certificate)**
      - Assessment-based certificate; expertise in the area of sustainability
      - Target group: FM practitioners and FM related fields with interest/experience in sustainability, CFM's and FMP's

The **Global Facility Management Association** (Global FM) is a '*worldwide federation of member-centered organizations committed to providing leadership in the facility management profession'* (GlobalFM, 2009). Global FM mentions on its website that they are a channel for furthering the knowledge and understanding of FM by sharing the knowledge and practices of

their members which will eventually lead to an added value to those members.
Members of Global FM:
- o *IFMA* – United States (global)
- o *EuroFM* - Europe
    - . *ARSEG* – France
    - . *HFMS* – Hungary
    - . *BIFM* – United Kingdom
- o *FMA* – Australia
- o *ABRAFAC* – South America (located in Brazil)
- o *SAFMA* – South Africa
- o *MEFMA* – Middle East (located in Dubai)
- o *International Facility Management Institute* – Asia (located in India)

The **European Facility Management Network** (EuroFM) was officially registered in 1993.
EuroFM has developed fast and expended. In its first 25 years of existence, the organization
grew from a small network to a broad one that nowadays represents the European Facilities
Management field. Over the past years, the focus points of EuroFM has changed from setting up a
network and promoting the network as well as encouraging activities and individuals/corporate
bodies on FM, to dissemination of knowledge/information and support its members.

The strategy of EuroFM, as mentioned on their website, states important goals for the long-term:
*'Providing a set of agreed European competences in facility management, promoting and
implementing the EN15221 standards and connecting the association to European Union
(research) programs.'*
The mission of EuroFM is: *'the advancement of knowledge in Facility Management in Europe and
its application in Practice, Education and Research.'* (EuroFM, 2011)

The activities of EuroFM are initiated and performed by four groups:
- ❖ The Practice Network Group (PNG)
- ❖ The Education Network Group (ENG)
- ❖ The Research Network Group (RNG)
- ❖ The Corporate Associates Group (CAG)

The Education Network Group has a special position because the group has developed strong
curricula over the past few years, together with FM educationists. Nowadays, this group is
focused on becoming the leading European network of academic and professional educators by:
- ➢ Orientation to the needs of the FM industry
- ➢ Having providers of FM programs become actively involved in the ENG
- ➢ Investing in cross-border collaboration between educational and training institutions
- ➢ Developing common standards regarding professional qualification (EuroFM, 2011)

Facility Management Netherlands (FMN) is a professional association in the field of FM. The
association contributes to the development and promotion of the branch, brings members
together and keeps them informed. FMN realizes its objectives by organizing meetings and
conferences on a national and regional level, where speakers address professional subjects and

where members can network. Besides that, FMN initiates, promotes and supports scientific research in the field of FM. FMN also strives to link education with facility practitioners. Eleven times a year, FMN publishes its association journal "Facility Management Information" (FMI), which provides information about FMN, its members and the branch. (FMN, 2011)

IFMA Holland is another large association in the Netherlands. It is part of the IFMA and has the same objectives and goals, but with a focus on the Netherlands. FMN and IFMA Holland work together regularly. (IFMA, 2011)

There are many more European associations that are seen as important. Almost every European country has a FM association. These associations have a direct influence on the development of Facility Management in countries because they are seen as large FM networks; they connect people in the FM business.

3.3 EN 15221

On October 24th, 2011, the EN 15221-3, 4, 5 and 6 have been officially published by the European Committee for Standardization (CEN). Before that, only Part 1 and Part two, published in 2006, have been used. The content of EN 15221 and what aspects are considered to be of importance in regard to the project will be discussed here.

The EN 15221 consists of different parts, which will be explained briefly:

EN 15221 – 1, Part 1:   Terms and definitions
EN 15221 – 2, Part 2:   FM Agreements
EN 15221 – 3, Part 3:   Guidance how to achieve/ensure quality in Facility Management
EN 15221 – 4, Part 4:   Classification and structures
EN 15221 – 5, Part 5:   Guidance on the development and improvement of processes
EN 15221 – 6, Part 6:   Area and space measurement

EN 15221 – 1, Terms and definitions
The first part of the norm describes the term and definition of Facility Management. In addition, the scope of FM is described in regard to terms regularly used in the area of FM. For example, Key Performance Indicators (KPI's), Service Level Agreements (SLA's), contracts and primary & secondary activities.

Figure 3.1 is mentioned in Part 1 of the EN 15221 of 2006, and is neither the latest version nor a copy of the official original model.
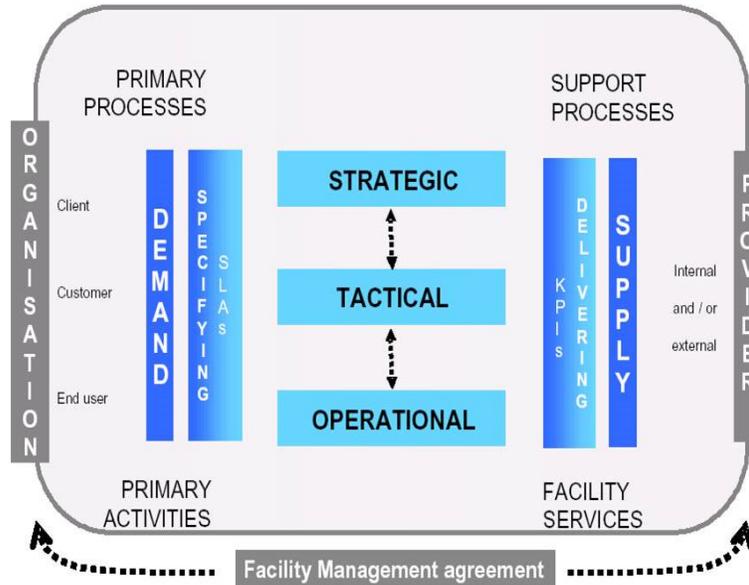
Figure 3.1 The European FM Model (EuroFM - IT2, 2011)

The model is in line with the previous mentioned definitions of FM. It also provides an overview of the scope of FM. In general, the secondary processes in an organization are all the activities that do not deal with the primary processes of the organization. For example, a primary activity of a University is to educate. Providing teachers and students with clean bathroom, parking possibilities, computers and catering **support** the primary activity, but do not belong to it. The scope of FM is grouped under two categories, which are defined as *'client demands'*:

- Space and infrastructure
- People and organization

EN 15221 – 2, FM Agreements
Part 2 of the EN 15221 discusses the different agreements that one can come across in the field of FM. According to this norm, agreements define the relations between an organization offering facility services and an organization that provides those services. Examples are: catering services, cleaning services, security services, construction services and maintenance services. The aspects that should be discussed are, among others, prices, outsourcing, services level agreement, contract, hours and tenders.

EN 15221 – 3, Guidance how to achieve/ensure quality in Facility Management
The third part of the EN 15221 defines what is meant by quality, what are the quality criteria, how quality is measured, the performance of FM, how to improve aspects such as communication, and internal processes as well as external processes (suppliers).

This norm is complementary to the EN 15221 – 1, EN 15221 – 2, ISO 9000 and ISO 9001. ISO stands for *International Organization for Standardization* and it describes the ISO 9000 as: '*The ISO 9000 family of standards represent an international consensus on good quality management practices. It consists of standards and guidelines relating to quality management systems and related supporting standards.'* (ISO, 2011)

EN 15221 – 4, Classification and structures
This norm defines the added value of FM to the primary activities. A framework focusing on European FM activities is provided, which discusses often used terms, benchmarking, costs and hierarchical structures. With that information, the main purpose of the EN 15221 – 4 is to link costs to FM, identify the added value of FM, the level son which FM is executed (operational, tactical or strategic) in regard to the primary activities of an organization. It can be concluded that the organization of FM is the main topic of the EN 15221 – 4.

EN 15221 – 5, Guidance on the development and improvement of processes
This is another norm that provides information on how to improve the FM services/products in an organization. However, the main focus here lies on the constant development which is needed in FM and therefore improvement of FM processes in order to be of better support to the primary activities of the organization. Issues that are discussed in this norm are based on ISO 9000 as this sets a certain minimum of quality. Besides that, this norm should help defining a stable and process-centered approach of FM on managerial level.

EN 15221 – 6, Area and space Management
The last part of the EN 15221 is to support FM with a framework of defined terms, definitions and values in regard to Area and Space Management. Certain formulas that should help increase the added value of FM are defined and explained. Examples are: how to measure space, the order of space (hierarchy) and how space could be defined.

Facility managers have to deal with these norms, now and in the future. The ISO 9000 is also a Standard of which (future) facility managers should be aware. The EN 15221 should be practiced with to completely understand its added value to (future) professions and employers of (future) facility managers. For example, the subject Space Management should be taught in line with the EN 15221. Projects executed by facility managers should be based on this standard for it to make the project feasible, understandable, applicable and up-to-date.

3.4 FM Accreditation

Accreditation is a way on how study programs can assure the quality. There are multiple accreditations based on the study direction, level and country. The IFMA Foundation has developed standards to recognize quality Facility Management first-professional degree programs at colleges and universities. The *'accreditation program'* initiative was designed to recognize and encourage the strengthening of current, valid FM education degrees and to assist in the development of new FM degree programs. Institutions qualified for accreditation by submitting a detailed self-study application to the IFMA Foundation, which was approved by a committee. These institutions reapply for accreditation every six years to ensure that the programs they offer continue to meet the standards set by IFMA for quality FM education.

The IFMA states the following on the IFMA Foundation Accredited Degree Program:
'A graduate of an IFM Foundation Accredited Associate Degree Program will have knowledge of at least five of the nine competencies and be able to join the FM workforce at the entry level or transfer to a FM baccalaureate degree program. Additional for-credit higher education and/or FM continuing education, in addition to professional experience, would be necessary for an individual to be rewarded the FMP designation or pass the CFM certification exam. (IFMA Foundation, 2011, p. 7)

The following ten objectives must be met in the FM study program, if it wishes to be approved by the IFMA Foundation:
- Leadership and Management
- Operations and Maintenance
- Planning and Project Management
- Communication
- Finance
- Human and Environmental Factors
- Quality Assessment and Innovation
- Real Estate
- Technology
- Integrative and Problem Solving Skills (IFMA Foundation, 2011, pp. 25-36)

For the full program as provided by IFMA, refer to Appendix 1 It is chosen not to outline more of the IFMA Foundation Accredited Degree Program here, because this project is not about setting up a Facility Management program, as the FM program of the Hanze University is already approved by IFMA. It is important to mention the Accredited Degree Program in this report, but not crucial to explain it in detail for this project.

3.5 Facility Management Trends

Trends are movements, fashions, developments or styles that are popular in a specific period of time. Trends in the FM market should be looked into because they can indicate to what direction Facility Management is leading to. It is difficult to define trends because they are temporary, sensitive and unexpected. However, they can still be identified to some extent.

According to Cotts, several business and cultural trends have radically changed the private and public sector. The following table shows the most important ones.

Table 3.2 Trends in FM (Cotts, 2010)

Business Trends	Cultural Trends
. Focus on cost reduction and shareholder value	. Aging of the population
. Internationalization	. Lack of skilled tradesmen
. Outsourcing	. Increasingly diverse workforce
. Risking costs	. Environmental concerns
. Growth of E-Commerce	. Lack of loyalty and trust in institutions
. Improved information technology, particularly in the areas of architectural/engineering planning	. Concern for better ethics and stewardship
. Increased use of public/private partnerships	. Individualization of societies
. New sustainability initiatives and targets	. Humanities are becoming more important

Based on these trends, Cotts developed a new Facility Manager profile. This means that the Facility Manager moved to a technical focus to an expended business leader who helps the organization take a strategic view of its facilities and the impact on productivity. These success factors of a Facility Manager, according to the abovementioned trends are summarized in the following table.

Table 3.3 FM success factors (Cotts, 2010)

A successful Facility Manager is a(n):

. Business leader	. Strategic business planner/implementer
. Resource obtainer	. Financial Manager
. Spokesperson and advocate	. Purchaser/contractor with regard for ethics
. Information Manager	. Environmentalist
. Networker	. Mentor
. Innovator	. Risk taker
. Survivor	

The following figure was developed by Foresight, and it shows that **Sustainability** remains a dominant challenge or trend in FM. It emphasis shifting from cost control to a more balanced approach that emphasizes corporate responsibility, the bottom line and image. (Foresight, 2009)

Also, risk management awareness is increasing and becoming more complex in response to:
. Increasing potential of terrorism
. Threats related to large scale natural disasters
. Enhanced awareness of health threats and the related responsibilities
. Increasing reliance on data and information for business continuity
The following image shows the five main trends FM is facing today with its reasons and meaning to it.

Figure 3.2 The five main trends and their meaning (Foresight, 2009)

The following table illustrates FM trends and by what organization this trend has been identified. The table summarizes the trends mentioned above as well as additional ones. The trends mentioned are all important for NSCC's project and should be taken into consideration during the project.

Table 3.4 Summary of trends (IFMA, 2011) (LOOFD, 2010)

Trend	Organization
1. Sustainability	IFMA
2. Emergency preparedness	IFMA
3. Change management	IFMA
4. Emerging technology	IFMA
5. Globalization	IFMA
6. Broadening diversity in the workforce	IFMA
7. Aging buildings	IFMA
8. Technological developments accelerating	LOOFD
9. New ways of working	LOOFD
10. Increasing importance of internationalization	LOOFD
11. Socially responsible service provision	LOOFD

The IFMA trends:
1. **Sustainability**
   In addition to the abovementioned about sustainability, IFMA states that organizations that are not paying enough attention to sustainability will eventually *'beat a competitive advantage'* (IFMA, 2011). A shift in attitude is occurring from focusing on the operating expenses to the total costs over the lifecycle.
2. **Emergency preparedness**
   A more understanding and preparedness of possible emergencies is need from facility managers such as: natural disasters, terrorism, workplace violence and the flu.
3. **Change management**
   The responsibilities of a facility manager are difficult to define, which asks for more skills and knowledge of the facility manager, as well as flexibility. Greater interaction and collaboration on strategical level such as finance, HRM and information technology are needed.
4. **Emerging technology**
   Technology is constantly hanging which creates the expectation that technology will become more user-friendly and standardized. Technology is used in any kind of organization: e-mail, laptops, wireless communication, conferences over the internet, virtual presentations, machinery and so on. Technology is constantly improving itself in order to serve businesses on a higher level.
5. **Globalization**
   The meaning and impact of globalization in the FM field are the increasing distances of work that is done, which need to be facilitated by facility managers. This increasing distance leads to the need to dealing with cultural differences, different expectations and different environments.
6. **Broadening diversity in the workplace**
   The list below describes this trend, according to IFMA:
   - Age
   - Workplace expectations
   - Work styles
   - Cultural diversity
   - Language differences
   - Education
   - Gender
   - Personal lifestyles
7. **Aging buildings**
   Existing buildings will need improvement, change and replacement, according to IFMA. This, in turn, asks for other maintenance and other issues, and therewith different management. (IFMA, 2011)

LOOFD also defines 'the most important environmental developments'. Again, only the trends that are important for the project of NSCC are mentioned.
8. **Developments in ICT**
   Information and Communication Technology (ICT) and FM will influence each other increasingly. The facility organization can learn much from the standardization of ICT management systems. This in turn means that the facility manager should have

knowledge of ICT systems. Laptop, Smartphones and iPads will appear more often, which should be taken into account when setting up work areas.

9. **New ways of working**
Developments swift towards a more knowledge-based economy. Besides that, the environment is becoming increasingly complex. Also, the rise of new generations creates more possibilities in the workplace. As mentioned before, the increasing development of technology plays an important part in new ways of working, too. At last, there is a constant pressure on financial performances which asks for new ideas and possibilities.

10. **Increasing importance of internationalization**
In the preceding ten years the European F market has grown substantially, especially because more multinational service suppliers entered the market. Besides that, there is worldwide attention to durable entrepreneurship, durable purchasing and durable workplaces. FM educations should pay more attention to internationalization of their curriculum, which makes it possible for graduates to operate in international contexts.

11. **Social Corporate Responsibility**
Social Corporate Responsibility (SCR) has a good effect on the company image, because it revolves around the relationship between financial and business economic operations, environmental care and concern for fellow people.
The trend of environmental-conscious policy concerns with the increasing attention for SCR and durability. "Green" is the new trend; buildings have energy saving techniques and cleaning and catering cannot ignore the ecolabel. An interesting and challenging addition to the portfolio of the modern facility manager is added by SCR. (LOOFD, 2010, pp. 22-26)

Combining the abovementioned trends and linking them to the project, provides the following list of trends in the field of FM that are crucial to take into consideration when developing an exchange program for NSCC's students at the Hanze University, with the focus in FM.

❖ The constant changing *technology* and changes that it brings to an organization. The constant need for FM to adapt to those changes is essential, which leads to the suggestion that every FM education must be organized as such that it is easy to embrace those changes.

❖ *Sustainability* and the understanding and correct use of buildings and energy. This topic must be part of any FM education in order to be in line with the market. However, the Trades & Technology program of NSCC already plays an important part in this, and educates its students the importance of sustainability.

❖ *Internationalization/globalization*. Within a FM study program, cultural awareness, international classes and international experiences are suggested, because these aspects have effect and will be a great learning experience for students.

❖ *Human aspects*: emergency preparedness, diversity and understanding of the workforce, for example. The **people** aspect of FM is becoming more important. If this is the case in Nova Scotia will be researched in the next report: *field research.* However, human aspects are hard to manage and should be taught through experience, for example, through a co-op.

- ❖ Facility managers should always pay attention to what different trends and developments are visible all over the world instead of just focusing on Europe and Northern America.
- ❖ The shift from being a 'technical' manager towards being a business leader that also participates actively on the strategic level is another trend for facility managers. This has a great influence on a FM study program, as well, because it suggests that focus must be placed on technical issues as well as business issues at the same time.
- ❖ In North America security and emergency management has become much more important to both the public and private sector since September 11, 2001. (Cotts, 2010)

3.5 The future of Facility Management in Europe

The future of FM has to deal with the current trends, like the constantly improving technology which will lead to more flexibility and new ways of working.
Seeing the amount of trends and the constantly changing trends in today's business world, facility managers constantly have to adapt; they need to respond quickly and they should be pro-active. Facility managers and the field of FM need to be able to predict the future to some extent.

Besides that, managers need to develop approaches that enable them to foresee future challenges and an environment in which they work and develop strategies and skills needed to retain an advantage (Alexander, 2009).
However, predicting the future is a difficult task. EuroFM's Research Network Group created a research project, called 'FM Futures' supported by EuroFM member organizations and coordinated by Professor Keith Alexander. The project created scenarios and suggested implications for research, practice and indication.

The agenda for Facilities Management in Europe is set by the Lisbon Agenda. EuroFM defined its contribution to the Lisbon Agenda and the *'Europe 2020, a European strategy for smart, sustainable and inclusive growth'*, according to the following areas:

- ➢ Knowledge-based economy
- ➢ Sustainable growth and employment
- ➢ Social and environmental objectives

The main goal of the Futures project of EuroFM was to find out *'how organizations can find the appropriate balance of facilities that enable opportunities for wealth creation provided by globalization and technology whilst respecting the needs of people and the planet.'* (Alexander, 2009) Facility managers should take their own responsibility for their organization development and engage in creating the best possible future.

Facility Management should take a leading role in transforming organizations and contributing in a sustainable way, in the next generation. According to FM Futures project, there are five views of the future to be seen: (EuroFM, 2011)

1. ***Vision – the desired future***
    The vision is the desired future, where Facility Management takes a leading role in making Europe the most dynamic and competitive knowledge-based economy in the world. Respect for the environment is an important aspect. FM will become an influential partner as well: creation of more and better jobs, high contribution to sustainable economic growth, promoting better social interrelations and create respect for the environment.
2. ***Strategy – the created future***
    The focus should be on open innovation and creativity, and FM should create an environment in which enterprises and individuals are able to grow and be recognized.
3. ***Opportunities - the possible future***
    FM should recognize the need for change, where organizations combine with public, private and social partners to share knowledge and invest in FM education. FM will also conduct more research on building a future for professional Facility Management.
4. ***Assumptions - probable future***
    FM fails to evolve and only focuses on short-term interests and goals. Products and services of FM become more efficient by meeting strict costs and performance criteria, but adding no real value.
5. ***Discontinuities - the unexpected future***
    FM practices become irrelevant to the society and needs and is replaced by a more community-based approach in relation to the personal needs of users and technologies. (Alexander, 2009)

It can be concluded that FM will change in terms of being more pro-active rather than being re-active and will put more emphasis on the scope of FM to be able to meet the strict costs and performance criteria mentioned above.
Current facility managers are aiming for creativity on how to offer the best services and products for low production and organizational costs. Creativity could be an unexpected combination of different fields in businesses, that will lead to a product or service that best fits its end users. Besides that, the broad and unique network of FM practitioners will help create a better understanding, knowledge and education of FM. On the long term, this could lead to becoming a more influential partner in Europe as different fields of the business are combined.

3.6 Conclusion

When looking at the market of FM in Europe, its influence, standards, trends and future perspective, it is possible to imagine the content of the current study programs of FM. For example, the large market share of FM indicates that there is a great market for future facility managers in Europe. The standards, such as the EN 15221 and ISO, are guidelines to which extent topics should be part of a study program, because these standards defines the basics for Facility Management.
Besides that, FM consists of even more tasks nowadays than in the past and is expected to participate more on strategic level than tactical level, due to the fact that FM has received more

recognition in Europe over the years. The future perspective of FM has created possible developments, but these can only be proven by time.

All these aspects are indicators and ideas on what should be taken into consideration when finding suitable courses or setting up a new study program for the Canadian students. For example, facility managers should be able to know the market. Also, communication, operating and managing are skills that should be taught and maybe developed during possible placements. It is by practice and experience where people tend to earn more, instead of reading about how to do it. This is certainly an aspect that needs to be taken into consideration during the *co-ops* of NSCC. Of course, this all depends on the Canadian market as well, which will be researched in the second report of this project: *field research.*

Chapter 4 The Education System in the Netherlands

The Dutch education system is significantly different than the Canadian education system and therefore essential to outline and explain. First, an explanation of the Dutch education system is given, such as Bachelor, Master and PhD programs. After having understood the basics of Higher Education in the Netherlands, a closer look at the FM education in the Netherlands and throughout Europe, to some extent, will be taken. The programs, the level, the accreditation, the credits and study years will be discussed.

The differences between both education systems need to be bridged, in order to come to an appropriate program for the students. To illustrate: it is important to know the crediting and grading system, when NSCC wishes to offer its students the possibility to study in the Netherlands. However, this chapter only discusses the education system in the Netherlands. The Canadian education system and FM related studies in Canada will be discussed in the following report: *field research.*

4.1 Explanation

The Dutch education system is unique in a sense that students always have the possibility to switch from one level to another. The study plan is structured in a way that the final degree can be reached by several different study routes. Higher education is subsidized in the Netherlands, which means that tuition fees can be kept relatively low. (EuroGates, 2011) Besides that, according to Nuffic, the education system in the Netherlands emphasizes quality, research and an international study environment as highly valuable. (Nuffic, 2011)

Children are allowed to begin school at the age of four. Primary education lasts eight years and during the last year, pupils are advised on the type of secondary education they should continue. Secondary education begins at the age of twelve and is compulsory until the age of sixteen. It is offered at different levels (see table 4.1). The last two years of the HAVO and the last three years of VWO are meant to focus on subject clusters, which emphasize a certain field of study and are designed to prepare pupils for their higher education.

The Netherlands has two types of higher education institutions: research universities and *universities of applied sciences.* Research universities focus on research-oriented work such as projects, in an independent and academic setting. *Universities of applied sciences* offer professional programs in the applied arts or sciences that are meant to prepare students for specific careers related to their study program. (Nuffic, 2011)

Students who enroll in higher education programs, will obtain degrees upon completion of different phases.

- o **Bachelor's degree**
  A bachelor's degree program offered by *universities of applied sciences* require 4 years of study (240 credits), and the name indicates the students' field of study. Acquiring

practical work experience through placements is an important part of the study
programs offered at the applied science institutions.

The Hanze University of Applied Sciences, Groningen, works with the **9 competences**,
set up by the IFMA. See chapter 5.3 for a list of these competences.
Besides these competences, HPE (Higher Professional Education) Bachelor professional
competences related to Facility Management need to be taken into consideration.
Students will have to be able to show they have these skills and competences during
their graduation period, before obtaining their Bachelor's Degree. Please refer to
Appendix 2 for an outline of these skills and competences.

o **Master's degree**
A master's degree obtained in the *applied (*Universities of Applied Sciences) arts and
sciences requires the completion of 60-120 credits, which means 1 or 2 years. Graduates
obtain a degree which indicates the field of study.

o **Doctorate (PhD) degrees**
In the Netherlands, PhD degrees are only offered by the so-called research universities
and not the universities of applied sciences. Some institutions have the right to confer
this doctorate degree; other institutions prepare students for admission to the doctorate
at universities. (Nuffic, 2011)

However, this report will only focus on *universities of applied sciences*, and obtaining a Bachelor's
degree. The Hanze University is one of the Universities of Applied Sciences in the Netherlands.
When looking at the following table, it can be seen that NSCC can be seen as *Middle Vocational
Education* in the Netherlands, with the possibility of obtaining a Bachelor's degree. (Nuffic,
2011)

The following table shows secondary education and post-secondary education in the
Netherlands, as well as the possibility to continue one's study at a higher level.

Table 4.1: Education in the Netherlands. Information based on EuroGates (EuroGates, 2011)

Dutch students are prepared to entering universities by graduating secondary school with:		After secondary education, students move on to higher education, that, based on the level of secondary school, includes:
Middle-level Applied Education (VMBO) 4 years	→	Middle Vocational Education (MBO) 1-4 years = **Diploma**
Senior General Education (HAVO) 5 years	→	Higher Professional Education (HBO); *University of Applied Sciences* 3-4 years = **Bachelor's degree** 1-2 years = **Master's degree**
Pre-University (VWO) 6 years	→	University Education/ Research Universities (WO) 3 years = **Bachelor's degree** 1-2 (or longer) years = **Master's degree** 4 years = **Doctorate (PhD) degree**

As mentioned before, the Higher Professional Education (HPE – *universities of applied sciences*), curriculum focuses on job training, which means:

1) a realistic and representative image of the future employment has to be given within the framework of professional orientation, and

2) the contents of each part of the program have to be related to real-life cases from the professional work field

With this in mind, the following ten core qualifications have to be elaborated on the final qualifications of the education and the level of each should be evaluated:

- Broad professionalization
- Multidisciplinary integration
- Transfer and broad availability
- Creativity and complexity in operation
- Enquiry-based working
- Methodical and reflective thinking and performing
- Social communicate ability
- Core qualification for management positions
- Consciousness of social corporate responsibility (LOOFD, 2010, p. 14)

4.2 Credit & grading system

In the Netherlands, the general grading scale is from 1 to 10. 1 is the lowest and 10 is the highest grade here. The pass mark for a single subject is 5,5 or 6. The most common grades given are 6 and 7. Grades 1 to 3 are not given often, as well as the grades 9 and 10. This differs from for example the United States, where high grades are given occasionally. University admission is not necessarily based on high grades but more on having the relevant certificate from previous education. The type of secondary school, and the examination subjects are mostly considered to be more important than the grades obtained by students. Besides that, the universities in the Netherlands are considered to have the same level of teaching and research because of similar requirements. (Nuffic, 2011)

A student's workload in Europe is measured in **ECTS credits**. ECTS stands for *'European Credit Transfer and Accumulation System'*, and is a tool which enables students to collect credits for their learning achieved through the entire higher education program. Its aim is to increase transparency of learning outcomes and learning processes. ECTS credits are based on the workload students need in order to achieve learning outcomes expected by the institution. *Learning outcomes* describe what a student is expected to know, understand and be able to do after successful completion of particular parts of the program. *Workload* indicates the time students need to complete all learning activities required to achieve the expected learning outcome. The number of credits linked to each activity is based on its weight in terms of the workload students need in order to achieve the learning outcomes (European Commission, 2012).

According to the Dutch law, one credit represents 28 hours of study and 60 *credits* represent one year of full-time study. The academic year in the Netherlands covers 42 weeks (Nuffic, 2011). The Academic year in the Netherlands starts at September 1st and ends at August 31st.

The following table shows one academic year and its related credits:

Table 4.2 Academic years and the related credits (European Commission, 2012)

Academic Year	ECTS
1	60
2	120
3	180
4	240
5	300 and so on

So, 60 ECTS credits are equal to the workload of a full-time year of learning. In most cases, student workload ranges from 1,500 to 1,800 hours for one academic year; in the Netherlands this is 1,680 hours. One semester normally equals 30 ECTS credits and a trimester equals 20 ECTS credits.

The abovementioned information is important to take into consideration. The Netherlands has to work according to the European standards; Canada does not. Different terms are used, different agreements are made and, therefore, it is important to do research on the Canadian education system, which will be carried out in the next report: *field research.*

4.3 Requirements for students

The main requirement for admission and acceptance to a bachelor's program is a secondary-school diploma at the required level (see table above). The minimum access requirement to universities of applied sciences is either a HAVO diploma or a MBO diploma. Also, pupils are required to have completed at least one of the subject clusters that fulfill the requirements for the higher education program in question.

Foreign students must have a diploma that is equal to the minimum diploma required. There are some study programs for who set their own requirements, for example in arts. For admission to a master's degree program, applicants must have at least a bachelor's degree or a degree or diploma similar to this.
Besides that, foreign students must be able to speak, read and write English well, and must have passed an English language test such as IELTS and TOEFL, which are commonly accepted.
(Nuffic, 2011)

4.4 Quality assurance and accreditation

Study programs have to meet certain requirements. There are several organizations that provide study programs with accreditation that is based on the requirements set by the European Commission. A standard of higher education is maintained through a system of legal regulation and quality assurance.
Quality assurance in the Netherlands is carried out through a system of accreditation, administered by the Accreditation Organization of the Netherlands and Flanders (NVAO). According to the Dutch Higher Education Act, all degree programs offered by research

universities and universities of applied sciences must be evaluated according to criteria that are set by this act. Programs that meet these criteria are accredited (recognized) for a period of six years (Nuffic, 2011). Accreditation can be provided by specific accreditation organizations and other associations/organizations.

4.5 FM study programs in Europe

The Facility Management Education Guide of EuroFM, (2009), provides a clear overview of FM and FM related studies in Europe:

Table 4.3 FM and FM related studies in Europe (EuroFM, 2009)

Country	Study Programmes (#)	Study Programmes (%)	Institutions (#)	Institutions (%)	Students (#)	Students (%)
Austria	5	10,2	3	7,1	202	2,1
Belgium	1	2,0	1	2,3	130	0,1
Denmark	1	2,0	1	2,3		
Estonia	2	4,0	1	2,3	200	2,1
Finland	3	6,1	3	7,1	320	3,3
Germany	7	14,2	7	16,6	658	6,9
Hungary	1	2,0	1	2,3		
Ireland	1	2,0	1	2,3	12	0,1
Lithonia	2	4,0	1	2,3	560	5,9
Norway	6	12,2	4	9,5	862	9,1
Spain	1	2,0	1	2,3	11	0,1
Sweden	2	4,0	2	4,7		
Switzerland	1	2,0	1	2,3	214	2,2
Netherlands	13	26,5	12	28,5	5602	59,1
United Kingdom	3	6,1	3	7,1	697	7,3
Total	49	100	42	100	9468	98,7

Table 4.2 shows that there are 15 European countries that offer a total of 49 FM and FM related study programs divided over 42 institutions Obviously, the Netherlands offers the most FM study programs (26,5%), followed by Germany (14,3%), Norway (12,2%), Austria (10,2%), the United Kingdom (6,12%) and Finland (6,12%). When looking at the institutions, it is again the Netherlands that takes the lead with 12 institutions. The number of students per country that studied FM in 2009 starts again with the Netherlands with 5602 students.
It can be concluded that *the Netherlands is by far the country where the most FM study programs are offered and has the highest number of students.*

In FM or FM related studies, there is often referred to hard and soft services:

- *Hard services:* mainly technical, physical and functional aspects such as space allocation, software and air quality
- *Soft services:* service oriented, sensory, behavioral and ergonomic aspects such as the design of furniture, human resource management and management in general (EuroFM, 2009)

In Europe, FM programs focus on both hard and soft services. As mentioned before in chapter 2.3, Facility Management in North America focuses more on the hard, and thus technical, aspects of FM. This leads to the goal of this project; finding the right balance between hard and soft services of FM for NSCC's students exchange program.

Chapter 5 will outline the International Facility Management (IFM) program of the Hanze University of Applied Sciences, Groningen, which will be of value for this project.

4.7 Conclusion

With knowing what Facility Management in the Netherlands and in Europe looks like, it is easier to understand the project and the need for Facility Management in businesses. Table 4.3 can provide a better understand of FM and its content, and might be used as an example when finding out what courses students from NSCC should follow at the Hanze University. Besides that, understanding the Dutch education system, it makes it easier to compare the differences with each other and to create a 'flow' between the Netherlands and Canada, with regard to credits, grading and the time frame. The Canadian education system will be researched in the next report: *field research.*

Chapter 5 IFM at the Hanze University

"Providing services is all about people. It is a proven fact that people function better in a pleasant environment, whether at work or in their spare time. Facility Managers are responsible for creating this pleasant atmosphere in a building like a school or an office building or an event such as a concert or festival." (Hanze University, 2012)

This states the brochure of the Hanze University of Applied Sciences, Groningen, about International Facility Management. This chapter describes the study program; the organization, its content and courses and the 9 FM competences.

5.1 Organization

The Facility Management study program at the Hanze University was the first school in the Netherlands with an IFMA certification, and is currently the only program in the Netherlands that is acknowledged and certified in Germany (GEFMA certification). Therefore, graduated students can apply for a knowledge-based credential by IFMA: the Facility Management Professional (FMP) title (IFMA, 2011). The Hanze University is also a member of EuroFM, the British Quality Foundation and British Institute of Facilities Management. (Hanze University, 2012)

The IFM program trains students to become a "*broad service provider at management level with the following key concepts:*

- *People in their working and living environment*
- *Buildings, installations, facilities and technology that makes people's work and/or accommodation more pleasant."* (Hanze University, 2012)

This, in turn, relates to the EuroFM definition of Facility Management (chapter 2.3):

- People & Organization
- Space & Infrastructure

The School of Facility Management implies personal attention in small classes. Team spirit is important in this field of study and is enhanced in the study program as well. Besides that, the program offers activities with the work field: company visits, guest lectures, professional advisors and lecturers who are also active professional in the FM work field.

Students are guided by a study coach, which is called 'Academic Career Planning.'

5.2 Content and courses

The Bachelor program of the School of Facility Management at the Hanze University of Applied Sciences is called **'International Facility Management (IFM)**' and consists of 4 years of study, so 240 ECTS. The program is completely taught in English and starts at the beginning of September each year.

Each year is divided into four blocks, two semesters. Every block consists of *ten weeks* and relates to one specific theme. Theory is assessed by final exams but also practically by means of projects and assignments carried out both alone or in groups of (international) students. These

fit the theme of the particular block (Hanze University, 2012). The projects are inspired by the FM work field and give a realistic idea of the skills needed in the work field. Projects also develop students' social communication and cooperation skills.

Figure 5.1 shows the IFM program of the Hanze University, divided over the 4 years. The course outline will be described below.

Figure 5.1 IFM program of the Hanze University (Hanze University, 2012)

The first two years of IFM focus on providing a basic but thorough understanding in the area of International Facility Management. After that, there are options for students to determine their personal course of study, which is shown in figure 5.1. The arrows indicate the points within the IFM program where students can choose how they would like to continue their studies. This allows them to decide on the type of Facility Manager they would like to become: Corporate or Commercial Facility Management. To illustrate the differences, the two specializations are listed below:

Table 5.1 Commercial vs. Corporate FM (Hanze University, 2012)

Commercial FM	Corporate FM
• External view	• Internal view
• Manager of the primary processes	• Manager in the secondary process
• Accent on the processes	• Accent on place (building)
• Prepared to take risks	• Organizational sensitivity
• Sales and negotiation position	• Strategic position
• Suppliers role	• Technique and real estate role
• Focus on turnover and profit	• Focus on costs and efficiency

After graduation, students will have a 'Bachelor of Business Administration' degree that provides access to the labor market and the opportunity to obtain a Master's in Business Management.

The following table, table 5.1, shows the four years of IFM and its related blocks and courses. This should give a better understanding of the IFM study program in relation to the project for NSCC.

Table 5.2 IFM blocks and related courses (Hanze University, 2012)

Year	Block	Courses	Explanation
1	Block 1.1 Block 1.2 Block 1.3 Block 1.4	What is FM? Processes & Analysis The Workplace Services	Introduction to FM; students gain insight in policy making, sustainable work environments, the service level and managing and structuring services like cleaning & catering.
2	Block 2.1 Block 2.2 Block 2.3 Block 2.4	Developing new services Sustainable Buildings Purchase & Tender Quality Management	The second year prepares students for choosing 'Corporate' or 'Commercial' where corporate focuses on skills with regards to purchasing, products and policy planning, and commercial focuses on creating marketing strategies and improving quality of the facility performance.
3	Study abroad International placement		Students will specialize further in either corporate or commercial. Students will study abroad for five months at one of Hanze's partner institutes, and students will put all their knowledge and skills into practice during a five-month placement at an organization or company.
4	Block 4.1 Block 4.2 Graduation Project	Commercial FM Strategy **or** Corporate FM Policy Commercial FM Change Management **or** Management of Change	The first semester offers a program matching the specialization of the student. In both profiles students learn to deal with change management. The graduation phase involves a graduation project where students will act as a junior FM advisor and will execute a(n) (research) assignment in an internationally focused company.

Figure 5.2 below, shows the grading system used by the Hanze University, called Progress. It shows that the different courses have different codes to separate them from each other, and grades are put into this system; also if they are insufficient. Students can see their own records at any time. Progress also shows the credits (ECTS) obtained in relation to the courses.
Each block consists of 15 ECTS, divided over the courses, group project and other assignments. This figure shows year 4 of the IFM program.

Code	Titel	EC	Score	Percentage	Behaald
6I1CM1	**Commercial FM Strategy**				
IFVH0CMM5	Ethics	3.0	9.7	100%	3.0
IFVH1CMM1	ResearchExternalEnvi	3.0	8.0	100%	3.0
IFVH1CMM3	Commercial Plan	5.0	6.3	100%	5.0
IFVH1CMM4	StrategicMarkManagem	4.0	8.0	100%	4.0

Code	Titel	EC	Score	Percentage	Behaald
7I1CM2	**Commercial FM Change Management**				
IFVH1CMM8	Change Plan	4.0	6.6	100%	4.0
IFVH1CMM8A	Change Plan	75%	6.5		
IFVH1CMM8B	Research	25%	7.0		
IFVH9CMM10	CMS	2.0	V	100%	2.0
IFVH9CMM11	Ethics	1.0	V	100%	1.0
IFVH9CMM6	Organization analyss	3.0	7.0	100%	3.0
IFVH9CMM7	Mm of change: theory	2.0	7.9	100%	2.0
IFVH9CMM9	Commitment&Resistanc	3.0	8.0	100%	3.0

Code	Titel	EC	Score	Percentage	Behaald
9I1GRA	**Graduation Project**				
IFVH1GP	Graduation Project	28.0			
IFVH9ACP9	Acad. Career Plan. 9	2.0			

Figure 5.2 Example of Progress – grades and ECTS in relation to IFM courses

5.3 The 9 Competences

The *'Dutch Association Facility Management Education'* (in Dutch: LOOFD), developed a competency profile for Facility Management programs in the Netherlands. (LOOFD, 2010) All Higher Professional Education (HPE) FM programs in the Netherlands grant graduates the **"Bachelor of Business Administration"** (BBA) degree, and the FM competency profile of LOOFD is based on six BBA competencies, complemented by two social/communicative and self-directive HPE competences. These competencies are all fine-tuned for FM.

The competencies are based on the following formulations of the FM mission and vision:

> **FM mission:** *"FM creates and adds value to organizations by facilitating, in a hospitable and flexible manner, the work activities and accommodation of individuals and groups in the areas of services and property management."*
> **FM vision:** *"User-oriented, transparent provision of services with a special attention to social sustainability, wherein increasing client experience is of leading importance, resulting in the creation of value."* (LOOFD, 2010, pp. 5-6)

The following competencies are distinguished for the FM competency profile:

1. **Creating added value for people and organizations in the areas of property management and services**
   A facility manager should create such conditions, that the organization is able to realize its goals at all times. He/she should create an optimal work environment and accommodation for the people in the organization and he/she is also responsible for effectively and efficiently synchronizing the supply of services and products with the continually changing demand of different clients. Social corporate responsibility should be taken into consideration here.

2. **Developing a vision of changes and trends in the external environment and creating relations, networks and chains**
   The facility manager has to be able to translate both internal and external, including international, developments to strategic facility policy, and communicate this on different levels.

3. **Analyzing policy issues, translating them into policy objectives and alternatives and decision making**
   A facility managers translates the policies of an organization into a strategic facility policy in the areas of housing, services and means, after which he/she defines concrete (SMART) goals. Therefore, it is important to carry out an internal and external analysis in order to be able to determine a correct and effective policy strategy.

4. **Applying human resource management in the organization's strategy**
   The facility managers also operates as the leader of the department of services, having hierarchical, functional and operational powers. He/she must be able to select and employ the most suitable employees. The facility managers must be capable of maintaining a leadership style that enables full growth and employee satisfaction.

5. **Setting up, controlling and improving business and organizational processes**
   One characteristic of FM processes is the effect of progress and results on large groups of people with diverse backgrounds and intentions, and with an impact on different levels of the organization. These diverse FM processes also take place in a dynamic environment, where the facility manager should monitor and fine-tune in different directions.

6. **Analyzing financial and legal aspects, internal processes and the business or organizational environment in order to improve coordination and interaction**
   Costs are an important motive for the effectiveness of the facility manager. This requires good insight into economic actors and factors, for example. A Facility Management Information System (FMIS) is supporting this skill.
   With the increasing outsourcing trend of facility services, the purchasing policy becomes a greater aspect of FM policy. Professional planning and choices in the areas of demand management, contract management and the process of controlling demand/supply will increase in importance. Also, the facility manager has to take European (and global) rules and legislation in consideration, in the areas of purchasing policy, personnel management and labor conditions, for example.

7. **Developing, implementing and evaluating a change process**
   A facility manager should have a critical eye for developments within and outside the organization and the changing expectations. The facility department is involved in the dynamic development of the primary processes of the organization and should be flexible in responding to it.

8. **Social and communication skills (interpersonal, organizational)**
   The facility manager should be able to clearly and professionally communicate with different parties on different levels, both within and outside of the organization. He/she should be able to clearly present and correctly write results, plans, conclusions and recommendations. Within the facility department, the facility manager should be able to exercise his/her skills as a leader in both formal reviews as well as being able to motivate employees.

9. **Self-managing skills (intrapersonal, professional)**
   The facility manager should be able to critically assess his/her own functioning. He/she is open to feedback and asks for this during peer supervision, where the feedback will be used as stepping stones for personal growth. Last but not least: the facility managers knows exactly who he is, what he wants, what he is capable of doing and is able to explain and clarify this to others. (LOOFD, 2010, pp. 6-9)

These competences are important for Facility Managers and Facility Management students, to develop, evaluate oneself based on these competences and practice with it during placements, studying abroad and other activities during the study program. For this project, it might be interesting for students visiting the Hanze to get an understanding of these competences and also evaluate themselves.

Chapter 6 Final Conclusion

Facility Management has shifted from the USA to the European Countries. Its main concern was focused on building operations maintenance. This has shifted over the years to a broader focus. In addition, FM has become a player on the strategic level rather than only on the operational and tactical level, which is considered to be one of the many trends FM is dealing with. The facility manager's profile has changed in relation to this. Instead of being strongly focused on the technical aspects, their concerns shifted to being a business leader and the aspects that come along with that position. In relation to this, the definition of FM has changed from a broad definition to an even broader and more specific definition by IFMA, EuroFM and Cotts.

It is important to mention that due to historical as well as cultural environments, FM has developed differently per country. This is especially important for this project, since FM is to be considered different in the Netherlands compared to Canada. This will be further research in the next report: *field research.*

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Appendices

Appendix 1: IFMA Accreditation

Appendix 2: HPE Qualifications Bachelor professional competences FM

This information was derived from the Hanze University of Applied Sciences website: (Hanze University, 2012)

Table 1: Translation of the Dublin descriptors to generic qualifications for the HPE bachelor

European bachelor descriptors. Bachelor's degrees are awarded to students who:	Translation to description generic qualifications HPE bachelor	Following on from generic core qualifications HPE bachelor in report Cie Franssen (pages 36-37)
Knowledge and understanding: *Have demonstrated knowledge and understanding in a field of study that builds upon and supersedes their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study*	*Wide, multidisciplinary base:* *The graduate is equipped with up-to-date and multidisciplinary knowledge, viewpoints, attitudes and skills in order to independently perform the tasks of a starting professional*	*1. Broad professionalization* *2. Multidisciplinary integration*
Applying knowledge and understanding: *Can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study*	*Work is focused on solving problems:* *The graduate is able to apply relevant (scientific) knowledge, viewpoints, attitudes and skills in defining, analysing and solving complex problems in the practice of his profession*	*3. (Scientific) application* *5. Creativity and complexity in acting* *6. Work is focused on solving problems*
Making judgements: *Have the ability to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues*	*Thinking and acting in a methodical and reflective manner:* *The graduate is able to collect and analyse relevant information in order to work thematically and reflect on acting professionally, also in view of ethical and social issues*	*7. Thinking and acting in a methodical and reflective manner* *10. Awareness of social responsibility*
Communication: *Can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences*	*Social-communicative proficiency:* *The graduate is able to communicate internally and externally, work together as a team and take control of projects in a multidisciplinary and international work environment*	*8. Social-communicative proficiency* *9. Basic qualifications for management positions*
Learning skills: *Have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy*	*Professionalization:* *The graduate has developed the cognitive ability that allows him to continually professionalise from his own practice and perform in a range of situations within his profession*	*4. Transfer and broad availability* *1. Broad professionalization*

The above qualifications are indicative for the nine competences of the FM study programme; Competence profile 2010. This contains a summary of competences the students acquire in the study programme.

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                            │                     │
                            │  competence profile │
                            │                     │
                            └─────────────────────┘
          ┌────────────────────┐              ┌─────────────────┐
          │   competences       │◄────────────►│   core tasks    │
          │  + per competence   │              │                 │
          │  aspects for        │              │      1-5        │
          │  performance        │              │                 │
          │  indicators         │              └─────────────────┘
          └────────────────────┘                       │
                    │                                   │
          ┌────────────────────┐              ┌─────────────────┐
          │ performance         │◄─────────────│ complexity level 3│
          │ indicators          │              │                 │
          │  level 3            │              └─────────────────┘
          └────────────────────┘                       │
          ┌────────────────────┐              ┌─────────────────┐
          │ performance         │◄─────────────│ complexity level 2│
          │ indicators          │              │                 │
          │  level 2            │              └─────────────────┘
          └────────────────────┘                       │
          ┌────────────────────┐              ┌─────────────────┐
          │ performance         │◄─────────────│ complexity level 1│
          │ indicators          │              │                 │
          │  level 1            │              └─────────────────┘
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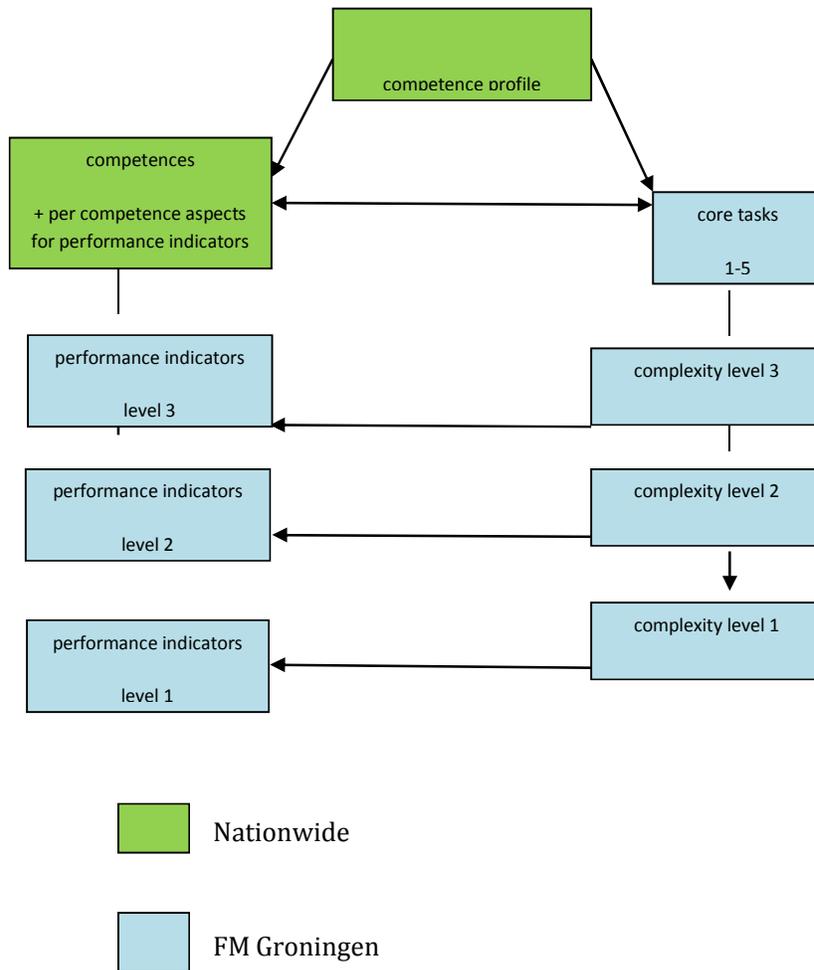■ Nationwide

■ FM Groningen

Figure 2.1 The level is determined by the number of competences passed and the context of the assignment in a block.
Source: Foundation of the training profile FM, Hanze University Groningen training profile

Below are the level and complexity distinctions respectively, which can be useful in specifying the complexity level of a core task

Phase level	Complexity	Transfer	Responsibility
Suits the profession (end of year 1)	Works mainly in a routine, listens to instructions and demonstrably goes deeply into the complexity of the work.	Is able to routinely show his knowledge and skills in one in-school project, possibly as ordered by an external client.	Takes responsibility for his own range of duties and gives account of the progress.
Trainee-proficient (end of year 2)	Has basic knowledge and is skilled in working with guidelines and procedures in more complex situations, and accepts the superior being in control.	Has a sufficient amount of knowledge and experience for working and performing in various organisations.	Is able to formulate his own targets, set out his own procedures and do his own negotiations, is results-oriented and gives account for his actions accordingly.
Shaped into his profession (end of year 3)	Applies knowledge and acts independently in practice in accordance with guidelines and procedures, and develops creativity in his actions.	Has sufficient foreknowledge and experience to work in various organisations and fills the gaps in his own knowledge through self-study.	Works proactively and can give account for his actions at any level.
Start-proficient (end of year 4)	Analyses problems and bottlenecks in complex circumstances, takes decisions and develops new procedures or a new plan of action.	Has a far transfer and can think or work beyond the industry or organisation.	Can account for collecting information, building theories and the chosen solutions. The responsibility is toward a client. Is open for critical judgements from his peers. I.e. not the answer, but the manner of taking responsibility is essential.

Source: HPE Council / generic accreditation framework

Variable	limited	small	large
Complexity of the product/service	Simple product	Complex product	Complex product
Complexity of the process	Linear process	Complex process	Complex process
Personal situation	Working individually	Working together in a team	Working together in a team
	Under direction of		self-responsibility
Sphere of influence	Problem definition within one department	Problem definition within one organisation Problem definition at national level	Problem definition within one organisation Problem definition at national level Problem definition at international level
Project situation		Stakeholders from max. 3 different disciplines	Stakeholders from max. 3 different disciplines Stakeholders from more than 3 different disciplines
Level 1	Controlling secondary task and simple overall task; basic knowledge and skills; supporting skills		
Level 2	Controlling overall task with simple and conveniently arranged context; starting level controlling skills		
Level 3	Controlling overall task with complex context; full control over all skills		

Three levels of control, Source: W.A. Verreck (2005)