

1/6/2012

***n*SCC**

THESIS

FACILITY MANAGEMENT EDUCATION ACROSS THE ATLANTIC

EXPLORING EXCHANGE OPPORTUNITIES BETWEEN NSCC AND THE HANZE
UNIVERSITY



Hanze
University of Applied Sciences
Groningen

School of Facility Management

NSCC | Magreet Kooij

Facility Management Education across the Atlantic

*Exploring Exchange Opportunities Between
NSCC and the Hanze University*

Nova Scotia Community College
2012

Date: 1-6-2012
Name: Magreet Kooij
Student nr: 319487
Tutor: Mr. Reitsma
Mentor: Ms. Boyle

Management Summary

General Information

The Nova Scotia Community College (NSCC) has 13 campuses throughout Nova Scotia, providing the majority of technical and apprenticeship training, educating over 25,000 students per year. NSCC highly values delivering education without boundaries and wishes to offer students the ability to acquire new knowledge when they need it and when it suits them best. While doing so, NSCC focuses on the economy of Nova Scotia and improving the overall quality of life.

While keeping this in mind, NSCC wishes to implement an additional Advanced Diploma year, with a focus on internationalization, Facility Management and supporting the industry and economy of Nova Scotia.

Assignment

As Facility Management studies merely exist in Canada, NSCC saw potential in implementing an additional year for students with a strong focus on Facility Management, where the courses are in line with the industry needs. The research was carried out by a graduating student, me, to successfully give the best possible recommendations on implementing NSCC's wish.

The final goal for NSCC is to implement an additional Advanced Diploma study year for the *Architectural Engineering Technology (AET)* and *Construction Management Technician (CMT)* programs, as well as people from the industry who already obtained one of these diplomas. For this project, however, NSCC would like to receive recommendations on how they could implement this additional study year best and in line with the current and future industry needs. To carry out the assignment and to form recommendations for this advisory report, the

What is the best way for NSCC to implement an additional year with an emphasis on Facility Management, by offering its students an international experience at the Hanze University of Applied Sciences, Groningen?

following research question has been composed:

Research Methodology

In order to answer the research question, the following methodology is chosen for this project. It consists of two main research parts: **Desk Research** and **Field Research**.

Both researches will help to gain enough information on the *Field of Facility Management*, which outlines the definitions of FM and the importance of it for organizations in general. Besides that, the research will help illustrate *Facility Management in the Netherlands and Europe*, to create a thorough understanding of the current situation on FM. In turn, *Facility Management in Nova Scotia & Canada* will be outlined to be able to compare the fields of FM in both countries. This section will outline the current market needs in relation to the project. Subsequently, a *comparison and gap analysis* will be drawn to specify what is missing to help the additional study

year to be implemented. At last, *recommendations* followed by implementation ideas for NSCC will be listed to create a detailed list of steps of what actions should be taken by NSCC.

What is Facility Management?

Facility Management (FM) is a fairly new field of expertise and has grown fast over the past years. It was only in the year 1978 that the three founders (George Graves, Charles Hitch and David Armstrong) of the nowadays named IFMA (International Facility Management Association) took a first step towards the formation of the organization (EuroFM, 2011).

FM was first introduced in Europe in the year 1984. In the following years FM gained importance and awareness in different countries and its development has been diverse and rapid. FM is still diverse and is developing according to global trends and influences, which makes it hard to write or state one best definition of FM. Research shows that definitions by IFMA (2011), EuroFM (2011), Atkin & Brooks (2009) and Global FM (2009) have the following in common:

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

In regard to the project, the definition of FM as defined by IFMA, can be used best: *“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) In this definition, the hard- and soft services of FM are aligned, and therefore important for NSCC (technological focus) as well as the Hanze University (human and management focus). 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.

Facility Management in the Netherlands & Europe

Research shows that FM is one of the largest service providers in Europe. FM associations such as the IFMA and EuroFM support this market by focusing on advancement of the field in terms of education, research and practice. The FM field is expected to continue to develop over time, which indicates great opportunities for future facility managers.

The IFM program of the Hanze University of Applied Sciences, Groningen, prepares students for this changing market and 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)

It is essential to find courses that have the right fit for students of NSCC, where they should have a chance to follow courses that **add** to their knowledge they already obtained at NSCC.

Facility Management in Nova Scotia & Canada

Canada has a fairly strong market, due to the fact that it has a close trading relationship with the USA, as well as globally. However, the economic situation reacted on the recession as any other economy and is constantly responding to (global) trends. Investing in education in times of

recession is a good idea for students, where they increase their skills and knowledge. This in turn leads to an increase in job opportunities.

When comparing the education system of the Netherlands and of Nova Scotia with each other, there are significant differences. For example, the crediting between different study programs of NSCC is different, whereas in the Netherlands, this is the same for every study program offered. It is important to overcome these differences when writing recommendations for NSCC.

As can be concluded from the questionnaires conducted among NSCC students, industry and FM professionals, Facility Management in Canada is still mainly focused on the building and technical (hard) side. However, the soft sides of Facility Management (communication, people skills, Human Resource Management) are seen as equally important: these skills are beneficial for the students in finding a job, are essential skills employers are looking for and are what the industry needs now and in the future. However, these skills are not offered at NSCC currently. Creating awareness by means of the link between Facility Management and the *people* skills that are equally important as the technical skills, will eventually make employers from the industry recognize the great benefits of the Advanced Diploma that NSCC wishes to offer.

Comparison & Gap Analysis

The following three points are gaps derived from the information in the previous sections:

- *Facility Management in general has a different meaning in the Netherlands & Canada:* in the Netherlands, FM focuses on both managerial and technical aspects, in Canada merely on technical aspects, whereas there should be a balance between the two.
- *The industry of Nova Scotia needs Facility Management skills, however, NSCC does not offer these skills currently:* the industry is not aware that the skills they are seeing as essential now and in the future are linked to Facility Management.
- *Differences in education: learning methods, costs, international experiences, credit systems:* the educational system of both countries is very different from each other, whereas a good fit for students from NSCC and the Hanze University should be made.

Recommendations

Based on research on the field of FM in theory, the field of FM as applied in Europe and the Netherlands, the field of FM as understood in Nova Scotia and the Nova Scotia market need in terms of FM education and skills, the following recommendations are meant to support NSCC and Nova Scotia as a province to implement an additional Advanced Diploma study year with a focus on Facility Management.

It is important to note that there are two main target groups to focus on: NSCC students who are currently enrolled in either the AET or CMT program, or people who are currently working in the related industry and who have work experience.

In relation to courses and credits, the following is recommended for NSCC:

- **Courses:** Table 0.1 shows the list of courses linked to the four blocks of the second year of the IFM program, which seems most suitable for NSCC students
- **Credits:** For receiving their Advanced Diploma, students will gain a total of **15** NSCC credits, divided over two 15-week semesters and a research project:
 - o **Study Abroad** 6 credits; 360 hours
 - o **Co-op1** 6 credits; 450 hours

- **Research project** 3 credits; 150 hours

Table 0.1 Second year IFM courses at the Hanze University

	Block	Subjects
Semester 1 <i>September – January</i>	1 <i>“Developing new services”</i>	<ul style="list-style-type: none"> ▪ “Develop an innovative, new service for an existing organization which is an external provider of facility services.” ▪ Management skills; innovation/creativity training; marketing; financial management; Corporate Social Responsibility. ▪ Project covers writing a business plan.
	2 <i>“Sustainable buildings”</i>	<ul style="list-style-type: none"> ▪ “Realization of new housing or radical renovation and maintenance of new housing.” ▪ Financial management; (sustainable) housing; research training; Communication Management Skills (CMS) training. ▪ Writing a Maintenance Plan
Semester 2 <i>February – July</i>	3 <i>“Purchase and Tender”</i>	<ul style="list-style-type: none"> ▪ “A Facility Manager is responsible for the acquisition and maintenance of buildings, premises, inventory and installations, which are put out to tender nowadays.” ▪ Negotiating and CMS training; cultural awareness; purchasing theory training; law and procurement; financial management. ▪ Writing an invitation to tender + proposal
	4 <i>“Quality Management”</i>	<ul style="list-style-type: none"> ▪ “Improving an organization’s quality of products and services, while being aware of the employees.” ▪ Human Resource Management training; leadership; personal leadership; quality awareness game. ▪ Project covers writing a Quality of Service Support report.

Option 1: Block 1 & 2 (*September – January*)

Option 2: Block 2 & 3 (*half November – half April*)

Option 3: Block 3 & 4 (*February – July*)

It is recommended to provide course outlines to students before they decide in which semester to participate. Students need to choose what courses will add value to their knowledge, personal and professional life and what their interests are, according to their own future goals. The courses that they choose to follow need to be in line with what they would like to achieve in the future: it needs to add value to them. An important aspect is that both institutions are not

offering similar programs, but the Facility Management program of the Hanze is *complementary* to the NSCC programs, which makes further opportunities for students available.

Implementation

Certain steps are needed that will lead to the best circumstances for implementing the additional Advanced Diploma year for NSCC. The following list shows the steps and additional information needed to implement this year successfully.

- Step 1**

• Research

Further research will be required for the implementation of the additional year and the finalization of the remaining steps. In addition, the possibility of obtaining a Bachelor’s Degree after this additional year needs to be researched. Another student from the Hanze or someone from within NSCC would be suitable for doing this additional research. The research should focus on what skills are still lacking in the work field and how the focus of FM can increase those in relation to the need of the industry.
- Step 2**

• Approval by board

The Advanced Diploma additional year needs to be approved by the board of governors of NSCC. This happens at strategic level and Lisa Boyle would be responsible for this.
- Step 3**

• Finalize contract with the Hanze University

The contract between NSCC and the Hanze University about the exchange program for students should be finalized. It may be necessary for someone from NSCC International to visit the Hanze University to do so.
- Step 4**

• Creating Awareness

Marketing among students and the related industry should convince them that the additional year will be an investment in their professional and personal life, as well as it will increase their job opportunities in the current market. The field of FM creates many great benefits. The additional year will provide students with an Advanced Diploma and they will have the opportunity to apply for obtaining a Bachelor’s Degree, which students should be made aware of thoroughly. The list below gives an idea of what tools can be used to create and increase awareness.
- Step 5**

• Add FM courses to FM related study programs

By providing FM (related) courses to students who are studying Construction, Engineering, Architecture or any other FM related field of study, students become aware of the benefits FM will give them in relation to their personal and professional life and job opportunities. More awareness of FM will be created already from the first year of the study program the student follows, and this works as a great marketing tool at the same time.

After these first 5 steps, NSCC should have created sufficient awareness of Facility Management in their current study programs and industry field. The Advanced Diploma has been approved,

and the target groups become more aware of the benefits of FM and the investment this additional year will be to them. The additional year is ready for implementation.

Step 6

• Implementing the additional 'Advanced Diploma' year

After the board has approved the Advanced Diploma application, it should be implemented as from September 2013 or February 2014, as it is not dependent on the academic year. It is recommended to create as much awareness as possible, as well as give all necessary information to students and people from the industry. There will be more awareness of the field of FM, as well as the study programs offered at NSCC will be in line with skills and requirements the industry asks for.

Step 7

• Setting up contracts with higher education institutions

When the implementation of the Advanced Diploma and exchange with the Hanze University is finalized and students have participated in it, it might be the right time to contact other colleges in Canada to set up a contract. Research is required on this, but it may be a good idea to cooperate with other institutions that have a partnership with the Hanze University, as well as other institutions:

- Conestoga College, Kitchener, Ontario, Canada
- Holland College, Prince Edward Island, Canada

Financial Consequences

NSCC will have expenses before and after the Advanced Diploma program is implemented. The start-up costs, for example, are costs related to *research, travel costs, labor costs, marketing costs and licenses & fees if necessary*. Operating costs, the costs that need to be taken into consideration after the implementation of the program are: *labor costs, research costs, travel costs, regular marketing costs and regular industry research*. It is important for NSCC to realize these costs, which can be seen as a great *investment*, according to the following list of **financial consequences**:

- Increase of awareness of Facility Management
- Better marketing of Advanced Diploma program, international experience to the Hanze University of Applied Sciences and Facility Management
- Advanced Diploma with a focus on FM will be more recognized in the industry
- Facility Management in Canada will become as 'balanced' as it is in the Netherlands: it will emphasize both the hard and soft sides of FM
- NSCC will support the industry by delivering graduate students with skills that employers are looking for

The recommendations will lead to supporting the current and future industry needs, where NSCC delivers graduate students with skills employers are looking for, but also to more recognition and awareness of the field of Facility Management, which can eventually have a positive influence on the economy of Nova Scotia.

Therefore, these are the best opportunities for the Nova Scotia Community College in terms of education, Facility Management and serving the community and economy of Nova Scotia.

Preface

The study that I am following is International Facility Management at the Hanze University of Applied Sciences, Groningen. This project is the last part of this study, the graduation placement. The placement took place at the Nova Scotia Community College (NSCC), located in Dartmouth, Canada.

The reason why I have chosen for NSCC, is thanks to the assignment provided by both NSCC and the Hanze University. The assignment is closely related to Facility Management (FM) and NSCC, the Hanze University and I will profit from this project. This placement is very different from my third year placement, which will give me additional experience in another work field. NSCC will receive recommendations, which I can give due to my familiarity with knowledge they request. This project is another great learning experience where I can practice the knowledge that I have gained during my four years of Facility Management education.

This report is the result of a four month placement during the period from the 6th of February until the 4th of June, 2012.

I would like to give thanks to my placement tutor, Mr. A.G. Reitsma, for his support, feedback, advice and knowledge during the placement period. Because of NSCC I could do this project. Therefore, I would like to thank NSCC for giving me this opportunity and for trying to make everything as comfortable and good as possible for me. I would like to thank Lisa Boyle especially, for being a great placement mentor, being very flexible and leaving decisions about the project mainly to me. I also want to thank the International Director of NSCC: Katie Orr, who was not only very supportive with my project, but also showed me a lot of Nova Scotia itself.

Besides that, I would like to thank all of those who participated in my research: the respondents of the three questionnaires conducted, the faculty of NSCC that were very welcoming and open and the Facility Management department of NSCC.

This placement has been a very unique and great experience for me. I hope that this report will support NSCC in reaching their goals and implementing an additional study year with a strong focus on Facility Management, so that the understanding of the importance of Facility Management in Canada will increase.

Magreet Kooij
June 2012

Table of Contents

Table of Contents	11
List of Tables	13
Appendices	13
Introduction	14
Chapter 1 – Research Methodology	15
1.1 Goal of the project	15
1.2 Research question	15
1.3 Methodology	16
1.4 Stakeholders	17
What is Facility Management?	18
Chapter 2 – Field of Facility Management	18
2.1 History of Facility Management	18
2.2 Definition of Facility Management	19
2.3 Scope and development of Facility Management	19
2.4 The Facility Manager	20
Conclusion	21
Facility Management in the Netherlands & Europe	22
Chapter 3 – The Facility Management market	22
3.1 Facility Management market size	22
3.2 Facility Management Associations	23
3.4 Facility Management Accreditation	24
3.5 Facility Management trends	25
3.7 Conclusion	26
Chapter 4 – Education in the Netherlands	27
4.1 Education in the Netherlands	27
4.2 IFM at the Hanze University	29
4.3 Conclusion	30

Facility Management in Nova Scotia & Canada 31

Chapter 5 – External Analysis 31

5.1 DESTEP Summary 31

5.2 Conclusion 33

Chapter 6 – Higher Education in Nova Scotia..... 34

6.1 Education in Nova Scotia..... 34

6.2 Credit system..... 34

6.5 Conclusion 35

Chapter 7 – Facility Management in Nova Scotia & Canada 36

7.1 The Industry 36

7.2 Students questionnaire 37

7.3 Facility Management professionals questionnaire..... 38

7.4 Conclusion 38

Comparison & Gap Analysis 40

Recommendations 43

Chapter 8 – Recommendations..... 43

8.1 Courses..... 43

8.2 Credits..... 45

8.3 Entrance Requirements Hanze University 46

8.4 Conestoga College..... 47

Chapter 9 – Implementation 49

9.1 List of Steps 49

9.2 Financial Aspects 52

Chapter 10 – Final Conclusion 54

Bibliography..... 55

List of Tables

Table 1.1	Overview of the Research Methodology
Table 3.1	FM market size in Europe
Table 3.2	Facility Management associations
Table 3.3	Summary of current FM trends
Table 4.1	Academic years and the related credits
Table 4.2	IFM blocks and related courses
Table 6.1	NSCC and its credit system
Table 6.2	Amount of credits and hours for the Architecture & Construction programs
Table 8.1	Second year IFM course at the Hanze University
Table 8.2	Credits comparison between the Hanze University and NSCC

Appendices

Appendix 1	Information Booklet – sample International Student Guide – Hanze University of Applied Sciences
------------	--

Appendices Booklet

Appendix 1	Graduation Plan
Appendix 2	Desk Research
Appendix 3	Field Research
Appendix 4	Course outlines Hanze University

Introduction

Facility Management (FM) is a rather new and quite unfamiliar field of expertise in today's market and has grown rapidly over the past few years. It was only in 1978 that the International Facility Management Association (IFMA) was formed. IFMA is an association that certifies *'facility managers, conducts research, provides educational programs, recognizes facility management, certifies programs and produces World Workplace, the world's largest Facility Management conference and exposition'* (IFMA, 2011). As FM finds its origin in the United States of America, the field of expertise also became of need in Europe. It was in the year 1984 that FM was brought to Europe by the European Facility Management Network (EuroFM). EuroFM is a European network which mission is *'the advancement of knowledge in Facility Management in Europe and its application in Practice, Education and Research'* (EuroFM, 2011).

Due to the ever changing global environment, both economically as well as technologically, the field of FM emerged and the need for it increased with it. As a result, FM has changed fast over the last years and became more popular. However, there are many differences as well as similarities of FM between countries. For example, FM in the Netherlands focuses mainly on **people**, whereas FM in Canada and the United States focuses more on the **building and technological** side.

Canada is a country where FM is a rather new field and there is only one college in Canada that offers a Facility Management related program – Conestoga College. Because FM in Canada focuses more on building maintenance and technology, this research project was conducted for NSCC; to create more awareness of the **people** side of Facility Management.

This report is the result of a thorough research over the period of four months and will cover all the necessary information, recommendations and steps required to implement an additional year of study for NSCC's students with a focus on Facility Management. In the long term, this additional education and increase of knowledge for the students will help improve the awareness and recognition of FM in Nova Scotia and FM being in balance in terms of people, place and process.

All this will lead to *Facility Management across the Atlantic*; recommendations on how NSCC can implement an additional study year with a focus on FM to serve Nova Scotia's market best.

Chapter 1 – Research Methodology

The chapter *Research Methodology* provides an insight into the goal of this project, the research question and sub-questions and the methodology that was carried out throughout the project. This chapter can be seen as a summary of the *Graduation Plan*, which was made at the beginning of this project to give a clear overview and to have a good start right from the beginning of the project. The *Graduation Plan* can be found in Appendix 1 of the separate Appendices booklet

1.1 Goal of the project

The goal of this project, as well as the wish of NSCC, is to give recommendations on implementing an additional study year to their Architectural Engineering Technician & Construction Management Technology programs, which should start in September 2013. The additional year that NSCC wishes to develop, will give students the possibility to gain international experiences, as well as work experience as part of their study. This extra year offers students the possibility to receive their ‘Advanced Diploma’ (which is a diploma to be received after 3 years of study at a Nova Scotia College).

“The graduating student will do research on Facility Management (FM) and the FM program of the Hanze University, the Canadian market, the Canadian educational & grading systems and benchmark the Conestoga College in Kitchener with the help of one FM student from the Hanze. Based on these outcomes, an advice for NSCC will be set up, which outlines the best solution to develop an additional study year with an emphasis on Facility Management to their current program.”

1.2 Research question

The following *research question* is formulated, based on the information mentioned above. The sub-questions are meant to support the research question and have been formulated in order to attain the best possible answers that lead to the research question.

What is the best way for NSCC to implement an additional year with an emphasis on Facility Management, by offering its students an international experience at the Hanze University of Applied Sciences, Groningen?

1. *What is Facility Management and what are its important areas?*
2. *How is the International Facility Management program at the Hanze University of Applied Sciences, Groningen, structured?*
3. *How is the Canadian educational (credit) system structured and what are the differences with the Dutch educational (credit) system?*
4. *What are the Canadian market needs with regard to Facility Management?*
5. *What courses will be especially useful for exchange students from NSCC that come to the Hanze University of Applied Sciences, Groningen?*
6. *How do the two different educational systems fit together, which gives students the possibility to receive their Advanced Diploma?*
7. *How can Conestoga College play a role in this additional year?*
8. *What recommendations can be given for the implementation of an additional study year at NSCC with regard to courses, credits and organization?*

1.3 Methodology

The book *Business Research Projects, a Solution-Oriented Approach* by J. Keizer and P. Kempen (2006) supports the project to ‘systematically develop a solution that is adopted and implemented’ (Keizer & Kempen, 2006, p. xi). The approach of this book created a main path of the project and the topics as discussed in the book are used as a framework. Table 1.1 provides an overview of the research conducted, with information on which activities this included and what sub research questions were to be answered. The phases refer to a period during which the activities were to be executed, and are in line with the setup of the book.

Table 1.1 Overview of the Research Methodology (Steenhuizen, 2011)

Phase	Activities	Purpose	Question	Chapter
1: Orientation	. External orientation . Intake interview . Orientation interviews . Work planning . Project organization	Getting familiar with NSCC, the environment and set clear goals. Understanding the need for the project. Result: Graduation Plan	N/A	N/A
2: Research & Solution	Desk Research	Theoretical knowledge; FM in the Netherlands and Europe	Questions 1, 2, 5	Chapters 2, 3, 4, 8,
	Field Research	Practical knowledge; the Nova Scotia market, education and needs	Questions 3, 4, 6, 7, 8	Chapters 5, 6, 7, 9
3: Implementation	Implementation	The implementation of the recommendations is up t NSCC	N/A	N/A

The methodology for this report consists of two main research parts:

- Desk Research
- Field Research

The reason why this method was chosen as best suitable for this project was because both theoretical and practical information was needed to write the best recommendations for NSCC. *Desk Research* requires research by means of literature, internet and journals among others. During this project, the focus of *Desk Research* was on FM in the Netherlands and Europe, which created a solid foundation for the project. *Field Research* requires a different approach: investigating the environment by means of interviews, visits and surveys. The focus here was on the market (needs) of Nova Scotia and the meaning of FM here. The combination of both will lead to recommendations that are based on facts mentioned in theory and applied in practice. Both reports can be found in the Appendices booklet.

1.4 Stakeholders

Stakeholders are people who might have an interest in the final results of the project. These parties can differ from people, resources, information and money between NSCC, the project and outsiders that have an interest in the project. The following list shows individuals and/or organizations that have an interest in this project:

- **NSCC.** The main contact person to this project is Ms. Lisa Boyle, who is the Academic Chair of the Trades & Technology department of NSCC and is the main contact person assigned to this project. 
- The institute of Facility Management of the **Hanze University** of Applied Sciences, Groningen. The researcher of this project is a fourth year IFM student at this institution and the person assigned to be the placement supervisor is Mr. A.G. Reitsma. Besides that, the project will be of importance for the Hanze University because an exchange will be set up between the two institutions. 

The following list outlines other parties that might be influenced by this project and could play a role during the implementation phase:

- Current FM professionals
- Future Facility Managers
- Nova Scotia, Canadian and international organizations
- Educational institutions: NSCC; Conestoga College; Holland College, P.E.I; Hanze University of Applied Sciences, Groningen
- Internationalization of the FM market and further development of the FM field
- Increasing the field of FM knowledge in Nova Scotia
- Credential and accreditation organizations such as CCTT, CTAB, TechNova and IFMA

What is Facility Management?

Theoretical Framework

Chapter 2 – Field of Facility Management

Facility Management (FM) is a relatively new field of expertise, and because it covers a very broad area as well, it is hard to define and explain what Facility Management exactly is. However, for this project, it is important to understand where Facility Management is coming from, where it is today and where it will be in the future. The differences in FM between the Netherlands and Canada can be defined as big, and therefore it is essential to outline the basics of FM first.

This chapter is meant to understand the field of FM, the definitions and how FM developed over the last years. It also outlines the position of FM in the current market, as well as it discusses the current trends in the field. The information described is derived from books, websites, articles and other resources.

Research Question 1:

*“What is Facility Management
and what are its important
areas?”*

2.1 History of Facility Management

The introduction of Facility Management was in 1978, when the *International Facility Management Association* (IFMA) was founded. Years later, in 1984, FM crossed the Atlantic to Europe where it was accepted by several countries: the United Kingdom, the Netherlands and Germany were some of the first countries to adopt this field of expertise.

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

2.2 Definition of Facility Management

As mentioned before, Facility Management is a very broad field and therefore, there is not just one definition for it. Definitions by IFMA (2011), EuroFM (2011), Atkin & Brooks (2009) and Global FM (2009) have the following in common:

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

However, there are differences as well. 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 processes of an organization.

In regard to the project, the definition of FM as defined by IFMA, can be used best: *“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)

In this definition, the hard- and soft services of FM are aligned and therefore important for NSCC (technological focus) as well as the Hanze University (human and management focus). 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 and development of Facility Management

Facility Management 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. FM is different in every organization because every organization has a different core process where FM has to adapt to. EuroFM defined Facility Management (see chapter 2.2) based on the three core values of FM, developed by Armstrong: **people, process and place**. (EuroFM, 2011) Two main groups within the field of FM can be formed, which represents these three values:

- **Space and infrastructure**
Work-space related aspects: space planning, workplace, design, construction, lease, occupancy management, building operations, maintenance, furniture, equipment, technical infrastructure and cleaning.
- **People and organization**
Health services, catering, event management, ICT, hospitality, security, safety, human resource management, logistics, office supplies, document management, accounting and marketing.

The world market changed over the years: internationalization and technology might be the largest ones in relation to this project. The market is still under constant change nowadays. The European Union and the Lisbon Agenda set a strategy and an agenda for European Facility

Management, which states that the European market will continue to change. (European Union, 2010)

FM has a strong relation to the constant and rapid changing market and other external factors such as the global economic welfare and globalization. Facility Management has been on the market for several years, and is still developing itself, which it will probably always do. A constantly changing environment asks for a constant high quality supportive system (FM) to be in line with these changes and growth.

2.4 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. However, the facility manager is still a manager: he needs to be able to manage a department and with that he must be able to play different roles: leader, coach, Human Resource Manager and mentor, for example.

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)

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

In regard to this project, it is important to state the Global Job Task Analysis (GJTA), set up by IFMA, which defines 11 core competences for Facility Managers:

1. *Communication*
2. *Emergency Preparedness and Business Continuity*
3. *Environmental Stewardship and Sustainability*
4. *Finance and Business*
5. *Human Factors*
6. *Leadership and Strategy*
7. *Operations and Maintenance*
8. *Project Management*
9. *Quality*
10. *Real Estate and Property Management*
11. *Technology* (IFMA, 2011)

Conclusion

FM is a very broad field of management and covers many visible as well as invisible aspects from an outsiders' point of view. A constant awareness of the constant changes in the market is necessary; an assumption of what might happen and being prepared for it is crucial in order to support the core processes of an organization. Because Facility Management covers so many aspects, there is no 'right' definition; this depends on the organization and the facility manager itself, which means FM should be defined per organization. At the same time, FM study programs must be flexible enough to support any kind of organization to prepare students for the broad work field they will be working in. That means a FM study program needs to focus on all the aspects FM covers so students understand the broad field of FM.

Facility Management started with a strong focus on the technological aspect of it, and organizations and individuals did not necessarily take other disciplines into consideration, such as Human Resource Management (HRM) and catering. These disciplines developed quickly in the FM study programs offered in, for example, the Netherlands, but in the USA and Canada the focus is still mainly on technology and the building (maintenance and construction).

In relation to the project, it is important for NSCC and its students to know and understand the field of Facility Management, what it means and its related skills and activities. This will make it easier for students to decide if they would like to follow an exchange semester in the Netherlands, if it will broaden their knowledge, if it is interesting for them and if it will add value to their professional and personal life and future opportunities.

The field of FM in theory is explained and understood now, and it will be necessary to take a closer look at the field of FM in practice. This will be described in the next chapter: Facility Management in the Netherlands & Europe, which will create a full understanding of Facility Management.

Facility Management in the Netherlands & Europe

Chapter 3 – The Facility Management market

Chapter 3 gives an insight into the position of Facility Management in Europe and the Netherlands, the added value of FM and the trends for the future. This chapter focuses on the European and Dutch FM market, whereas the next part of this report will focus on the Canadian and Nova Scotia FM market. This is meant to create a better understanding and ability to compare both markets with each other. The European Union (EU) can be seen as the market in this chapter, which is large and diverse. Most importantly, Facility Management, as mentioned before, is seen differently in every country, even in the EU. Therefore it is important to find out the FM market in Europe and the Netherlands, before continuing to the FM market in Canada. For more information, please refer to Appendix II in the Appendices booklet.

3.1 Facility Management market size

Facility Management is a quite new field of expertise in the European market, as well as the Dutch market. FM has a strong relation to the constant and quickly changing market and other external factors and trends such as globalization, internationalization and technology. A facility manager must be pro-active instead of reactive on these aspects.

International changes have influenced the field of FM in many different ways. Recently, the EuroFM started to develop a contract with the European construction industry, the European Union and real estate networks. This indicates not only the broad field of FM; it also shows that FM is seeking relations with different fields in the European market. In addition, this shift can lead to added value of FM within the European market in terms of employment, productivity and competitiveness. (Steenhuizen, 2011)

According to Mr. Sven A. Teichmann's research, today's FM market in Europe is estimated to be € 640 billion (Teichmann, 2009). With this number, FM is the largest business service market in Europe. He obtained 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 developed a table in which all European countries are listed demonstrating their share. In regard to the project of NSCC, not all European countries are interesting to list here. Table 3.1 provides an overview of the most influential countries with the strongest economies and important

countries in the development of FM, including their national FM market size expressed in Euro’s and percentages by their market share.

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

Ranking	Country	Market size (billions)	FM in 2008	Percentage
1	United Kingdom	€ 204,39		31,20%
2	Germany	€ 73,38		11,20%
7	Netherlands	€ 25,93		3,96%
12	Austria	€ 12,72		1,94%
17	Ireland	€ 8,38		1,28%
Total selected countries		€ 324,80		49,57%
Total Europe (41)		€ 655,13		100,00%

It can be indicated that the market size of FM in Europe is indeed large and that the European market is in need of FM; otherwise these large amounts of money would not be spent on FM services. It can be concluded that FM is necessary for organizations, even in times of recession. Of course, the recession has had an impact on the size of FM and its market: cost reductions, more efficient use of square meters and bankruptcy of companies. However, there is always a facility manager needed to, for example, foresee change and maintain the building, also if this is with a tighter budget.

The reason why organizations spend such a large amount of money on FM services is due to the market’s increasing need on *costs efficiency, higher customer satisfaction* and proper *building maintenance* and *safety*. Within these aspects of FM there are many services provided such as security, catering, cleaning, technical maintenance and purchasing.

3.2 Facility Management Associations

The development of FM in Europe has developed differently in each country, which means that every country has a different view on FM. In some countries the main focus of FM lies on real estate; in other countries on services or on maintenance. The largest FM associations are IFMA and EuroFM, but there are a few FM associations in the Netherlands as well. The following table includes the well-known associations, as well as the most important ones in the Netherlands.

Table 3.2 Facility Management Associations (Steenhuizen, 2011)

Association	Country	Mission	Educational features
IFMA	International	“Advance the FM profession.” (IFMA, 2011)	Provides accreditation for education, certificates (Certified FM and Sustainable Facility Profession) and a credential (FM Professional).
Global FM	International	“Promote the strategic value and progress of FM.” (GlobalFM, 2009)	Provides workshops for professionals on topics such as: Education, Sustainability, FM now

			and the Future, Economy and Culture Across Borders, Risk Management and Innovation.
EuroFM	European	<i>"The advancement of knowledge in FM in Europe and its application in Practice, Education and Research."</i> (EuroFM, 2011)	Existence of the Education Network Group (ENG) which aim is to 'act as a platform, form which mutual interest and support can be exchanged.' (EuroFM, 2011)
FMN	The Netherlands	<i>"Development and promotion of the branch, bring members together and keep them informed."</i> (FMN, 2011)	FMN initiates, promotes and supports scientific research in the field of FM. FMN also strives to link education with facility practitioners.

Most European countries have national FM associations, such as the FMN listed above. These are mostly directly related to one of the international or European focused associations. A national association works together with organizations and individuals who have a common interest in the field of FM. Together they work towards higher quality, improved exchange of knowledge and better FM conditions within a country. (Steenhuizen, 2011)

3.4 Facility Management Accreditation

Accreditation is a way on how study programs can assure their quality. There are multiple accreditations based on the study direction, level and country. The IFMA Foundation has developed standards to recognize quality professional FM degree programs at colleges and universities. 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, 2009, pp. 25-36)

The IFM program of the Hanze University is already approved by IFMA and therefore it is decided to not go into detail into this accreditation program. It is important to mention the Accredited Degree Program, but not necessary to explain it in detail for this project. The IFMA Accreditation outline can be found in the appendices of the *desk research* report; Appendix II of the separate booklet.

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 FM 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, and because trends present an image on a specific aspect of a market, these should be taken into consideration for this project. Facility managers should be able to predict these developments and trends to some extent.

In the *desk research* report, research was done on trends that might be of importance for (future) facility managers and this project. A summary of the current trends related to Facility Management are given in Table 3.3.

Table 3.3 Summary of current FM trends (IFMA, 2011); (LOOFD, 2010); (Cotts, 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
12. Focus on cost reduction and shareholder value	Cotts
13. Outsourcing	Cotts
14. Individualization of societies	Cotts

Combining the abovementioned trends and linking them to the project, the following list of conclusions related to the trends in the field of FM are crucial to look at. These should be taken into consideration when developing an exchange program for NSCC’s students at the Hanze University, where the focus on FM is the main goal.

- ❖ 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.
- ❖ 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 relation to the project, NSCC's students will gain these skills in addition to the current programs offered at the college.
- ❖ 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)

3.7 Conclusion

Research shows that FM is one of the largest service providers in Europe. FM associations such as the IFMA and EuroFM support this market by focusing on advancement of the field in terms of education, research and practice. The FM field is expected to continue to develop over time, which indicates great opportunities for future facility managers.

All these aspects are indicators and ideas on what should be taken into consideration when finding suitable courses 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 learn 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. Therefore, chapter 5 is to provide information in order to write the best recommendations that are written for the Canadian and Nova Scotia market. However, the organization of education in the Netherlands and IFM at the Hanze University of Applied Sciences will be summarized first.

Chapter 4 – Education in the Netherlands

This chapter provides detailed information on 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 in relation to this project. The way Facility Management is taught in the Netherlands is an example for many others who wish to focus more on the soft sides of FM. Therefore, it is crucial to outline the International Facility Management program of the Hanze University of Applied Sciences, Groningen. This will include the content, the organization and the grading system.

The differences between both education systems need to be bridged, in order to come to an appropriate exchange program for the students of NSCC. It is important to know, for example, the crediting and grading system, when NSCC wishes to offer its students the possibility to study in the Netherlands. The Canadian education system will be explained in the next part of this report.

Research Question 2:

“How is the International Facility Management program at the Hanze University of Applied Sciences, Groningen, structured?”

4.1 Education in the Netherlands

The Dutch education system is unique because students 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 ways. Higher education is subsidized in the Netherlands, which means that tuition fees can be kept relatively low. (EuroGates, 2011)

In the Netherlands, the traditional grading scale is from 1 to 10, where 1 is the lowest and 10 is the highest. The pass mark for a subject is often 5,5. The most common grades given are 6 and 7. 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 learning achieved through higher education. Its aim is to increase transparency of learning outcomes and learning processes. 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 4.1 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 attached to the workload of a full-time year of formal 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.

30 ECTS credits are normally allocated to a semester and 20 ECTS credits to a trimester.

The Netherlands has two main types of higher education institutions: research universities and *universities of applied sciences*. Research universities focus on the independent practice of research-oriented work in an academic setting. *Universities of applied sciences* offer professional programs in the applied arts and sciences that prepare students for specific careers. (Nuffic, 2011) Students who enroll in higher education programs, will obtain degrees upon completion of different phases.

- **Bachelor’s degree**
A bachelor’s degree program offered by *universities of applied sciences* require 4 years of study (240 credits), and this degree indicates the field of study. Acquiring practical work experience through internships is an integral part of the professional study programs offered at these applied science institutions.
- **Master’s degree**
A research-oriented master’s program requires 1, 2 or sometimes even 3 years of study (60-180 credits). Graduates obtain a Master of Arts or Master of Science degree. A master’s degree awarded in the *applied* arts and sciences requires the completion of 60-120 credits, so 1 or 2 years. Graduates obtain a degree indicating the field of study.
- **Doctorate (PhD) degrees**
In the Netherlands, PhD degrees are only offered by research universities. Some institutions have the right to confer this doctorate degree; other institutions prepare students for admission to the doctorate at universities. (Nuffic, 2011)

By understanding the Dutch education system, it makes it easier to compare the differences with the Canadian education system with each other and to create a better ‘flow’ between the Netherlands and Canada, in regard to credits, grading and the semester schedule. Besides that, FM is different in both countries as well, which needs to be taken into consideration thoroughly.

4.2 IFM at the Hanze University

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.

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.’

Each year is divided into four blocks which equals two semesters. Every block takes *ten weeks* and deals with one specific theme. Theory is assessed by exams but also practically tested by means of projects and assignments carried out both alone and 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.

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 4.2 IFM blocks and related courses (Hanze University, 2012)

Year	Block	Courses	Explanation
1	Block 1.1	What is FM?	Introduction to FM; students gain insight in policy making, sustainable work environments, the service level and managing and structuring services like cleaning & catering.
	Block 1.2	Processes & Analysis	
	Block 1.3	The Workplace	
	Block 1.4	Services	
2	Block 2.1	Developing new services	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.
	Block 2.2	Sustainable Buildings	
	Block 2.3	Purchase & Tender	
	Block 2.4	Quality Management	
3	Study abroad		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.
	International placement		
4	Block 4.1	Commercial FM Strategy or Corporate FM Policy	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.
	Block 4.2	Commercial FM Change Management or Management of Change	
	Graduation Project		

4.3 Conclusion

The courses that have the right fit for students will be outlined in the *Recommendations* part of this report, where there should be a chance for students to follow courses that **add** to their knowledge they obtained at NSCC already.

Facility Management in Nova Scotia & Canada

Chapter 5 – External Analysis

The goal of this chapter is to understand the Canadian and Nova Scotia environment and situation in terms of Demographic, Economic, Social-Cultural, Technological, Ecological and Political aspects; the DESTEP model. It was decided to combine information about Canada, as well as Nova Scotia, to create a clear image of their current position. The Canadian and Nova Scotia market will be understood, which is crucial in order to know what courses of FM would best fit in that market. Regulations were researched, as well as budgets, the population, the culture, cultural differences and the development of technology.

A full DESTEP research was conducted; below the main conclusions of this analysis are listed. It is important to note that an emphasis was placed on specific areas of the market that have relation to the project and Facility Management. Please refer to Chapter 1 of the report *field research* in Appendix III of the Appendices booklet for the full DESTEP analysis.

5.1 DESTEP Summary

The population of Nova Scotia was 946,397 in 2011. This number covers 3% of the Canadian population, which was estimated at 34,030,589 in 2011. The education expenditure, which stresses the 'public expenditure on education as a percentage of the GDP' (Indexmundi, 2011), was 4.9% in 2007 and decreased to 4.7% in 2009. This could indicate that *people have less money to spend on education*, which can be of negative influence to the project.

A total of 45,195 immigrants are living in Nova Scotia, estimated in 2006. The influence of these immigrants can have a positive influence on the project. The Canadian population consists of multiple different cultures, which would make the people more tolerant to these differences.

Canada resembles the USA in its market-oriented economic system, its production pattern and living standards. The USA is Canada's main trading partner: it covers about three-fourth of Canadian exports each year. (Indexmundi, 2011) The Gross National Product (GNP) of **Nova Scotia** was CAD\$ 33 billion in 2011. The 2012-2013 provincial budget of Nova Scotia assumes that the province's economic growth will accelerate over the coming years, with GDP growth of 1.7% in 2012 and 1.9% in 2013 (Government of Nova Scotia, 2012).

The unemployment rate in 2009 was 8.3%. In 2010, this was 8%, which means a slight decrease in unemployment. More job seekers could fulfill job openings, which is a very important aspect to take into consideration when writing recommendations for NSCC.

The Canadian **culture** is diverse, due to the open and welcoming immigration policy in the 1900s. People are encouraged to retain their cultural identities, traditions, languages and customs, and are treated respectfully. Canadians have a strong allegiance to their region, which results in some differences between them. In regards to Nova Scotia, people are seen as somewhat reserved and sometimes as 'old-fashioned'. Canadians are generally tolerant, polite and community-oriented people. Canadians prefer to use tact, diplomacy and common sense. A very direct communication style, as the style is in the Netherlands, might be threatening; the Dutch might be seen as blunt. An interesting fact is that the Netherlands is slightly more rule-oriented than Canada, which means Canadians are more flexible and change-adapting. The Canadian culture is apparently slightly more risk-taking, which could be very positive in relation to the project: students might be more flexible, open for something new, ready for change, and willing to take the risk.

Technological developments are factors that change rapidly. These aspects focus on technical factors such as telecommunications and information systems like the internet. Thanks to globalization and the rapid growth of technology, FM largely consists of technology these days. Due to the fact that technology and social media are becoming more and more important in students' daily life, online classes are developing fast. Using webcams is a trend that is sometimes used, too, to remain the 'classroom atmosphere.' Distance learning is becoming more popular, which is a large part of online learning, where students do not have to be in the classroom at all, and can, for example, follow online classes in Nova Scotia when they are located in British Columbia.

The additional study semester at the Hanze University should discuss technical aspects such as business supportive systems, for example, Facility Management Information Systems (FMIS). Perhaps there should be an emphasis on costs and international technical developments in order for future professionals to be aware of this.

Issues that Canada is facing in relation to **ecological** aspects include air pollution, metal smelting and water (ocean) pollution. These issues are mainly due to human behavior, and are not only a problem for the country itself, but globally. Companies are discovering that improving environmental and social performance and enable them to reduce production and operating costs, manage risks, attract business partnerships and investors, improve stakeholder relations, attract employees and expand new market opportunities.

NSCC received LEED certifications for two of its buildings, which means sustainability is highly valued, also in their study programs. However, the study programs still mainly focus on the building aspects, whereas the additional FM year will offer the people and managing side of sustainability, which is and will be equally important now and in the future.

5.2 Conclusion

This chapter described and explained the current situation of Canada and Nova Scotia with the use of the DESTEP method. The DESTEP method highlights different aspects of the Canadian market in order to create a thorough understanding of its current functioning and how the additional study year could support the market.

It can be stated that Canada has a strong economy, due to the fact that it has a close trading relationship with the USA, as well as globally. Canada is an exporter of many goods and services. However, the economic situation reacted on the recession as any other economy and is constantly responding to (global) trends and situations.

Facility Management takes trends in relation to internationalization, technology, sustainability and the new way of working (leadership) into consideration, which is apparently highly valued in the current Canadian market when combining the information of the DESTEP. However, finding a job due to the recession can still be rather difficult, which means increasing skills and knowledge would be a great investment for students.

Looking at the many possibilities Facility Management could offer to organizations, an additional study year for students with a focus on FM would be in line with the current global trends, as well as giving students the opportunity to increase their chance of a good job position. It would be a great addition and investment in terms of education, as well as for the Canadian market because FM covers the aspects that are seen as important currently (sustainability, globalization, efficiency, higher productivity, cost savings).

Chapter 6 – Higher Education in Nova Scotia

The educational system of Canada is significantly different than the system of the Netherlands. Every province of Canada has a different educational system. It is important to analyze it carefully, so it is understood completely when writing recommendations for NSCC.

This chapter explains the educational sector of Nova Scotia, the education system, the grading system, as well as different degrees and legal bodies. This information is necessary to create an equal flow of students exchange between NSCC and the Hanze University of Applied Sciences.

Research Question 3:

“How is the Canadian educational system structured and what are the differences with the Dutch educational system?”

6.1 Education in Nova Scotia

In Canada, the education system of each province is regulated by the provincial governments via the Department of Education. This sub-chapter will focus on Nova Scotia, because it will be more interesting for the project.

Schools in Nova Scotia attract students from around the world, which accounts for around 11% of the total students enrolled, while the national average of international students is 7%. This is an interesting fact for the project, because Nova Scotia is already further with their exchange programs than other provinces in Canada.

The education system in Nova Scotia can be summarized as following:

- Universities granting degrees: Bachelor’s, Master’s and PhD’s
- Colleges (NSCC) granting: certificates (1 year); diplomas (2 years) or advanced diplomas (3 years)

Canadian students have about 190 school days annually, and the academic year generally starts in September and ends in June.

6.2 Credit system

Colleges and universities throughout Canada usually use the Grade Point Average (GPA), with either percentage grades or letter grades. This differs per province, as well.

At NSCC, credits are used, which is shown in table 6.1 below.

Table 6.1 NSCC and its credit system

Credits	Hours
0.5	30
1	60
1.5	90
2	120 and so on...

It is shown that 1 credit equals 60 hours. However, these hours do not include homework and self-study hours, but merely hours in the classroom; the time scheduled for classes in the academic year schedule.

Table 6.2 Amount of credits and hours for the Architecture & Construction programs

	Architecture Program	Construction Program
Credits	1 st year: 14 2 nd year: 17 Total: 31	1 st year: 17.25 2 nd year: 15 Total: 32.25
Hours	2,040 hours	2,217 hours

Besides that, credits are different for every program. The two programs most important for this project, *Architectural Engineering Technician* and *Construction Management Technology*, were researched in the second report, *field research*. This created a clear overview and understanding of both programs and their credits and class hours. The research showed that the credit system of NSCC is significantly different than that of the Hanze University, were the amount of credits is the same each semester. This is important information when coming to recommendations for NSCC and needs to be taken into consideration to come to an equal flow of exchange.

6.5 Conclusion

It can be concluded that there are large differences when comparing the Nova Scotia education system to the one in the Netherlands. There are differences in names, grading, semesters and year schedules, for example. The most important difference is, however, the credit systems.

The Nova Scotia education system is quite complicated, especially when comparing it to the Dutch education system. This is mainly because even the crediting between different study programs of NSCC is different. However, it is important to state all this information clearly, to have an overview of it when writing recommendations for an exchange semester.

Chapter 7 – Facility Management in Nova Scotia & Canada

Because it is not only interesting to know information concerning Canada as a country and the educational system of Nova Scotia, information on why and if this additional education is needed is of importance for the project. Therefore, the industry in relation to Architecture & Construction in Nova Scotia will be described. This will be done by conducting a questionnaire and the results will be discussed.

Besides that, it is of great importance what students think of the idea, and therefore a student questionnaire for both *Architectural Engineering Technician* and *Construction Management Technology* programs was conducted in the classroom.

Facility Management professionals in Canada and the United States were approached to conduct a third questionnaire, where their opinion and view on Facility Management in Northern America was asked. Through questionnaires with these professionals who are currently working in a FM or FM related field, a clear view on FM will be created, according to their opinions and ideas.

Research Question 4:

“What are the Canadian market needs in regard to Facility Management?”

7.1 The Industry

The Human Resources and Skills Development Canada (HRSDC) developed and maintained Canadian Occupational Projection Systems for around 140 occupations. In the second report of this project, *field research*, four occupations were chosen and analyzed, which were the fields found to be as closest to the project as possible:

- Managers in **Construction** and Transportation
- Technical occupations in **Architecture**, Drafting, Surveying and Mapping
- **Facility** Operation and Maintenance Managers
- Administrative Services Managers (Financial, **Human Resources** and Purchasing Managers)

For all four occupations, the retirement rate will be above average in the 2011-2020 period, which means that many job openings will be results of that. Job seekers will come from the colleges and universities, but also from related occupations, because labor market experience is often required, especially for management positions. Some job seekers will have completed studies, or will be experienced workers who returned to school to improve their skills – mainly management trainings.

It was concluded that there are more job seekers than job openings for the coming 8 years. Students will **need** additional (management) skills to have more possibilities and opportunities in the market. For all occupations, management skills are seen as important; experienced workers even return to school to follow management trainings to develop these skills. Therefore, it is a great and apparently necessary opportunity for students to already follow these courses and obtain these skills as part of their program. There is competition in the job market, which means that students need to obtain additional skills to make them **stand out from the rest**.

A questionnaire was conducted among the 'Industry Program Advisory Committee' from both the Architecture and Construction programs. The main goal of the questionnaire was to understand the market needs of Nova Scotia better, as well as to gain opinions, views and ideas from professionals in these fields.

A total of **6** people responded to the questionnaire. The current Construction industry of Nova Scotia can be described as steady; there is a need for students with the right skills. Therefore, the future prospects of students are very good, mostly because of retirement. Leadership and mentoring are important aspects to strengthen every business. There are current gaps in the industry, where students do not have these skills but merely technical ones. **People skills** are needed to fill these gaps.

The current Architecture industry of Nova Scotia is busy with many prospects; there will be a lack of qualified personnel in the future. Most employers will allow additional training for leadership and Human Resources if required and might only be seen as important when they are **required** for the job. Project Management might be a very important part of the additional study year, because construction supervisors, for example, are often involved in projects, which require them to plan, manage, supervise and organize.

7.2 Students questionnaire

Senior students of both the *Architectural Engineering Technician & Construction Management Technology* programs were asked to fill out questionnaires, to gain their opinion, views and comments on the project and to arrive at better recommendations for NSCC.

A total of **27** students filled out the questionnaire:

- **15** of these students are from the Construction program, where from 13 are male and 2 are female. Their average age is **24.6**.
- **12** of the students are from the Architecture program, where from 7 are male and 5 are female. Their average age is **24.8**.

The ages in both programs are almost similar, but the male/female rate is significantly different. The majority of students would like to receive a Degree and have job prospects in relation to project management and other supervisor related jobs. Therefore, people skills are necessary because it will make them stand out from the rest, it will increase job opportunities and they will be better at their job in general. The Construction program students were not very interested in obtaining an Advanced Diploma, or investing in an additional study year, mainly because it will be too expensive. These students might want to enter the job market as soon as possible,

because they believe they obtained the right skills required already. The Architecture students were much more interested in obtaining an Advanced Diploma and half of the students thought this additional year is a great investment in their education and in them. This might be because the Architecture program is seen as a higher level and a ‘management’ program.

7.3 Facility Management professionals questionnaire

Facility Management professionals in Northern America were requested to fill out a questionnaire. The goal of this questionnaire was to gain their opinions, views and ideas to arrive at better recommendations for NSCC when taking the FM industry in Canada into consideration.

4 out of 25 responses were received. All the respondents were professors of FM (related) courses. According to them, the following **subjects** should be offered in a FM program:

- Knowledge of buildings, finances, technology and systems
- Knowledge of construction, materials, sustainable and green design
- Besides these technical aspects, the ability to interact with personnel, management, accounting, business law, communication skills, ethics, problem solving, real estate and leadership are also very important.

The respondents were very positive about the **job prospects** for Facility Managers. There is always a need for well-trained Facility Managers and because of many retirements and no specialization among current FM employees, graduates will be more marketable with their skills. There is a lack of Human Resources skills in FM currently, as well as leadership and management skills among FM employees. However, all the respondents are from the USA so this does not give a reliable overview of the FM market in Canada.

7.4 Conclusion

It can be concluded that Facility Management in Canada is still highly focused on the building and technical (hard) side of it. However, more than half of the respondents of the questionnaires was of the opinion that the soft sides of FM are equally important to have: these skills are beneficial for the student in finding a job, are essential skills employers are looking for and are what the industry needs now and in the future. However, these skills are not offered at NSCC currently.

It is important to make students, first of all, **aware** of the importance of Facility Management, as well as the relation to the Construction and Architecture programs. Especially the soft side of FM needs to be recognized, as people skills are becoming more and more important in both industries. Students see costs as a large disadvantage, which means they should be made even more aware of the investment the additional study year with a focus on FM will be for their professional and personal life, as well as the increase in job opportunities it will give them. Also people from the industry should be made aware of this great FM investment.

It is also important to note that there is a lack of *awareness* of the soft sides of FM. Awareness should be created so that the Advanced Diploma with the focus on Facility Management will be recognized in the market of Nova Scotia. Employers in the field do ask for these *people* skills such as leadership, communication skills, team-building and Project Management, but the relation between these skills and Facility Management is not completely there yet, simply because Facility Management is mostly related to the technical and construction aspects currently. Therefore, creating awareness by means of the link between Facility Management and the *people* skills that are equally important as the technical skills, will eventually make employers from the industry recognize the great benefits of the Advanced Diploma that NSCC wishes to offer.

The *Theoretical Framework* and sections about the *field of Facility Management in the Netherlands and Nova Scotia*, provided information on FM in theory and in practice, the educational system in Nova Scotia and the opinion on Facility Management and the Advanced Diploma year from NSCC students, Construction & Architecture industry people and FM professionals. It is NSCC's wish to receive recommendations on how to implement this additional Advanced Diploma year with a Facility Management study abroad semester, combined with the need of the Nova Scotia. Therefore, it is necessary to combine these wishes and needs on Facility Management; this will be done in the next section: *Comparison & Gap Analysis*.

Comparison & Gap Analysis

As outlined in the *Graduation Plan* (see Appendix 1), NSCC wishes to develop an additional study year for their Architecture & Construction programs, where students have the opportunity to study abroad for one semester at the Hanze University of Applied Sciences, Groningen. This study semester will have a focus on Facility Management. Together with the study semester, a co-op and a research project, students will receive their Advanced Diploma after this additional year. *It is important to note that people from the industry are able to enroll for this diploma, too.*

The need of the Nova Scotia market is in line with this wish. Industry members have expressed their need of Facility Management and people-related skills that will be developed by students participating in this additional year. The differences in Facility Management in Canada and the Netherlands plays a large part in this: FM in Canada focuses more on the technical and building aspects, where in the Netherlands it is more a combination of both hard and soft FM aspects.

The **people** side of FM needs to be more recognized in Nova Scotia. Currently, FM focuses on building maintenance, construction and technical aspects. The fact that people are equally important as the building is barely recognized; this is not what Facility Management *means* in Northern America. Therefore, it is important that this additional study year focuses on the soft sides of FM, which will make it an *addition* to the hard aspects that are already taught.

Research showed that the job opportunities for Construction and Architecture students will be good, in general. Retirements create more job opportunities in the fields. However, there will probably be more job seekers than job openings in the coming years. The additional study year gives students the opportunity to increase their knowledge and have an international experience, which will create more job opportunities. It will make students **stand out from the rest**, because these skills are not only important for their future job, but also for their job interviews and even their personal life.

The target group is not only the students from the first and second year Architecture and Construction programs of NSCC, but also people from the industry that already have obtained these diplomas and might be interested in increasing their knowledge in relation to FM. Having two programs and groups of people that are very different from each other, makes the target group *broad and diverse*. The structure of the classes differ, for example: the female/male ratio is different, as well as the age structure. Besides that, the credit system in both programs is different, which is important to be aware of. As NSCC uses the same marketing tools for both students and people from the industry, this should not cause any problems.

This chapter compares all research that was done in the previous sections, based on the *desk research* and *field research* reports (see Appendices II and III of the Appendices booklet), to the desired situation as expressed by NSCC and the industry of Nova Scotia. The goal of this is to create a full understanding of what the gaps are currently influencing the project and need to be dealt with before the implementation of the additional study year. In other words, what obstacles are to be overcome in order for an additional study year to be implemented?

- ❖ Facility Management has a different meaning in the Netherlands than it has in Canada. Research showed that FM can take different forms, depending on the country and the core business. In Europe, a high emphasis is placed on two main features within the field of FM: Space & Infrastructure and People & Organization. In Canada, the focus lies merely on the building, maintenance and construction side of FM: the hard sides. The separation of these two aspects of FM does not support its added value that companies need. The three basic principles of FM (People, Place and Process), are separated accordingly. Workplace management is related to People aspects such as Human Resource Management, furniture and other office equipment. Place and Process are related to technical matters such as the Information and Communication Technology (ICT), installations, air quality and property management.

The goal of the study abroad program for NSCC students is that they will follow courses at the Hanze University that are in line with their program at NSCC, but in a way that it will give them additional knowledge and experiences.

In Europe, the Facility Management market is highly supported by several FM associations that are influential because of their contributions to the FM market: research, large networks and information

sources. In Canada, FM is not very well-known, however, there is a need for FM skills in the current market.

Gap 1

Facility Management in general has a different meaning in both countries

According to FM

professionals in the current

FM market in Northern America, a facility manager is *always* needed, if it is recession or not. Although Facility Management is not as highly recognized in Canada as it is in Europe, there is a great market for it, simply because FM covers all the skills industries are looking for. Facility Management is not yet linked to these people skills, therefore, creating awareness is necessary.

- ❖ According to Architecture and Construction field representatives, FM skills, especially people-focused skills, are essential in the current and future market. The skills are needed, however, current employees do not have these skills. The future prospects for the coming years are quite good because of many predicted retirements, however, there might be more job seekers than job openings. Students need additional skills that the industry is asking for to increase their job opportunities and stand out from the rest. These skills will not only add value to their professional life, but also to their personal life, because of the great international experience they will always keep.

Gap 2

Industry needs Facility Management skills, however, NSCC does not offer these skills

NSCC does not offer these skills that are necessary in the current and future Construction & Architecture market.

- ❖ Education at the Hanze University of Applied Sciences is generally based on theory learning. Application of theory is highly valued, but it can be said that NSCC offers more practical based learning. This might lead to the conclusion that the level of education is different at both institutions, and that may be experienced differently, depending on the student. Entrance requirements might need to be set for students to participate in the study abroad program, both by NSCC and the Hanze University.

Education in the Netherlands is seen as an investment, especially higher education. Students are receiving a financial aid to pay for their study programs, which makes it easier for students to continue their education. In Nova Scotia, however, students can apply for financial aid, but only in certain circumstances. As seen in the results of the student survey conducted, costs are a big disadvantage of this additional study year and exchange program to the Netherlands. Students are not yet aware of the investment this additional study year will be in their professional and personal life, as well as the increase in job opportunities it will give them.

The IFMA Foundation conducted a research project in 2010, where none of the US or Canadian institutions that offer FM-related programs required student participation in a study abroad program. In Europe, study abroad programs are part of some FM degree programs and are very common and popular nowadays. In Nova Scotia, students generally do not see the need to leave Nova Scotia for additional education. This is mainly because they are already learning what their future job expects from them: they learn what is required and do not see the need for additional skills that might make them stand out from the rest and give them more job opportunities not only after they graduated, but also in the work field.

Gap 3

Differences in education: learning methods, costs, international experiences, credit systems

As the last point of comparison, the credit systems of NSCC and the Hanze University, Groningen, are different and it is necessary to find a solution that creates an equal flow for students to participate in the study abroad program.

Recommendations

Chapter 8 – Recommendations

Based on research on Facility Management, the field of FM in the Netherlands and Europe, the field of FM in Nova Scotia and Canada and the Nova Scotia market need in terms of FM and FM education, this chapter provides recommendations that should support NSCC in implementing an additional study year with a focus on following an FM exchange program in the Netherlands. There are many factors to be taken into consideration in relation to this project. The best possible recommendations for a FM exchange program for NSCC's Construction & Architecture students are listed.

8.1 Courses

Students from NSCC participating in the exchange program at the Hanze University, will already have completed 2 years of study at either the Architecture or Construction program. For that reason, it may be most useful for students to follow **second-year** International Facility Management (IFM) classes.

At the IFM program, quite some students quit in the first year because the study program was not what they expected from it or were not interested in the subjects taught. Second year IFM students made it through the first year and will be more motivated than first year students. NSCC students will be motivated as well; they paid an extra year tuition to participate in this exchange program, and therefore want quality for their money.

Fourth-year classes might not be useful for NSCC's exchange students, because it goes deeply into management subjects, whereas in the second year, the subjects are still quite basic but applying into group projects, assignments and exams is necessary, which creates a challenge.

It is recommended to provide course outlines to students before they decide in which semester to participate. Students need to choose what courses will add value to their knowledge, personal and professional life and what their interests are, according to their own future goals. The courses that they choose to follow need to be in line with what they would like to achieve in the future: it needs to add value to themselves. An important aspect is that both institutions are not offering similar programs, but the Facility Management program of the Hanze is **complementary** to the NSCC programs, which makes further opportunities for students available.

One academic year at the Hanze University covers 2 semesters. Each semester is divided into 2 blocks, which means there are 4 blocks each year. Students from NSCC should follow 2 blocks, so 1 semester. The following table, 8.1, shows the 4 blocks of the second year with its subjects. It is important to note that peer assessment is an important part of the grading system at the Hanze

University. Students need to fill out assessment forms about themselves and their group members. There will be a group grade, as well as an individual grade, which makes it fair to students who might did more work during the group project. So, the examination is often a combination of project work and theory testing (written or oral exams, reports or presentations).

Research Question 5:
“What courses will be especially useful for exchange students from NSCC that come to the Hanze University of Applied Sciences, Groningen?”

Table 8.1 Second year IFM courses at the Hanze University

	Block	Subjects
Semester 1 September – January	1 <i>“Developing new services”</i>	<ul style="list-style-type: none"> ▪ “Develop an innovative, new service for an existing organization which is an external provider of facility services.” ▪ Management skills; innovation/creativity training; marketing; financial management; Corporate Social Responsibility. ▪ Project covers writing a business plan.
	2 <i>“Sustainable buildings”</i>	<ul style="list-style-type: none"> ▪ “Realization of new housing or radical renovation and maintenance of new housing.” ▪ Financial management; (sustainable) housing; research training; Communication Management Skills (CMS) training. ▪ Writing a Maintenance Plan
Semester 2 February – July	3 <i>“Purchase and Tender”</i>	<ul style="list-style-type: none"> ▪ “A Facility Manager is responsible for the acquisition and maintenance of buildings, premises, inventory and installations, which are put out to tender nowadays.” ▪ Negotiating and CMS training; cultural awareness; purchasing theory training; law and procurement; financial management. ▪ Writing an invitation to tender + proposal
	4 <i>“Quality Management”</i>	<ul style="list-style-type: none"> ▪ “Improving an organization’s quality of products and services, while being aware of the employees.” ▪ Human Resource Management training; leadership; personal leadership; quality awareness game. ▪ Project covers writing a Quality of Service Support report.

- Option 1: Block 1 & 2** (September – January)
- Option 2: Block 2 & 3** (half November – half April)
- Option 3: Block 3 & 4** (February – July)

A fourth, still uncertain, option might be: Block 4 from the first IFM year ('Services') and Block 1 from the second IFM year. This will create a gap of around 8 weeks for students to travel and/or work. However, further research is required on legal and judicial aspects if this is allowed.

It seems semester 2 might be most useful for students from NSCC. As seen in the *field research* report, students have quite similar future goals: being a (contracting) supervisor or project manager in the construction or architecture field. Purchase and tender might be a very useful block for students who wish to be a contractor. Because project managers are required to work with a certain amount of people and clients, quality management might be very useful when improving quality of services, with a focus on Human Resource Management and leadership. However, as said before, it is recommended to leave the choice on which semester to choose up to the students, because it needs to be in line with their future goals and interests.

Students already mentioned in the questionnaire that they would be interested in obtaining skills related to these courses, and as the industry asks for and is in need of these additional skills, it is highly likely that there will be a great fit for students in the second year of IFM. The students are already educated in techniques and other hard services related to FM, which means that the focus on managerial skills such as communication and negotiation and knowledge concerning contracts and FM services are the skills that need to be developed in the additional year.

8.2 Credits

Credit transfer requires academic recognition of credits. *“Recognition of credits is the process through which an institution certifies that certain learning outcomes achieved and assessed in another institution satisfy certain requirements of one of the programs they offer.”* (European Commission, 2009) Flexible approaches are recommended, which means that the recognition should be based on what a person knows and is able to do instead of on the formal procedures. For the Construction and Architecture programs, Facility Management seems in line, according to the previous research done. It is most important that the **learning outcomes** are equivalent.

Research Question 6:

“How do the two different educational systems fit together, which gives students the possibility to receive their Advanced Diploma?”

The credit systems of both NSCC and the Hanze University are significantly different. At NSCC, credits differ per program, per semester and per year. At the Hanze, all credits are set and each block, semester and year consist of an equal amount of credits. Since the semesters of both schools are different, too, it is important to take a closer look at both credit systems and conclude what the best solution is for students who will participate in the exchange program.

They need to gain a certain amount of credits to pass for the exchange program, as well as to gain their Advanced Diploma from NSCC. As derived from the *desk research & field research* reports, the following conclusion can be made:

Table 8.2 Credits comparison between the Hanze University and NSCC

Hanze University		NSCC	
1 credit:	28 hours	1 credit:	60 hours
1 semester:	30 credits = 840 hours	1 semester:	6 credits ¹ = 360 hours

Students participating in the exchange program will receive NSCC credits, because they pay tuition to NSCC and it is an exchange program. However, to receive these credits, they need to pass all the courses and assignments during the semester at the Hanze University. All the grades need to be sufficient in order to receive their credits.

Because the amount of hours at the Hanze University is more than the amount of hours at NSCC to receive the same amount of credits, there is no need for students to do extra assignments while at the Hanze University. However, it is important to note here that at the Hanze University, homework hours are integrated into the credits received. It is also important to note that students from NSCC need to follow two blocks, so 1 semester, at the Hanze University to receive these credits.

For receiving their Advanced Diploma, students will gain a total of **15** credits, divided over two 15-week semesters and a research project:

- **Study Abroad** 6 credits; 360 hours
- **Co-op1** 6 credits; 450 hours
- **Research project** 3 credits; 150 hours

8.3 Entrance Requirements Hanze University

The **School of Facility Management** of the Hanze University decides on its own partnerships and contracts, and therefore also decides on applications for exchange students. Because partnership between the Architecture & Construction programs of NSCC and the Facility Management program of the Hanze University is a new exchange opportunity, the Hanze University needs to set certain requirements for students to participate in the exchange program. The School of Facility Management has many partnerships with *universities*, however, not with *colleges*, like NSCC. Therefore, some extra advice on the quality of education between both institutions is necessary to make the exchange as suitable as possible for students.

¹ It was decided by Lisa Boyle, Academic Chair of the Trades & Technology Department, that the amount of NSCC-credits for students participating in the exchange program will be **6** NSCC credits.

Possibilities for student requirements could be:

- An essay for students about Facility Management with questions such as:
 - Why are you interested in Facility Management?
 - How will this study abroad program add value to your professional and personal life?
 - What is your opinion on the soft-side of Facility Management (communication, Human Resource Management, leadership, team-building, project management) and how would these aspects be important in an organization?
 - What are your future goals and how would Facility Management fit in with this?
- Students could also be asked to write a single page application letter, where they explain what they expect to learn, why they want to increase their knowledge and why this international experience will add value to their education.

It is important for the School of Facility Management to take all applicants seriously, and contact with NSCC is necessary. It might be a good idea for students to add references in their test or letter, so that the Hanze can contact teachers of NSCC to ask about the student, study behavior and motivation.

Because this exchange will be new, it is important to take these aspects into consideration to be on the same page with both institutions. A new exchange program requires this process of some sort, because there are no past experiences from students yet, and expectations from both institutions may differ. After a couple of exchanges, this process might not be necessary anymore, but at the start of the exchange, it is an important learning process for both institutions.

Students that wish to follow a study abroad program at the Hanze University, should first consult NSCC International, because the preparation and selection procedure of exchange students will be NSCC's responsibility. Once students are accepted by NSCC, the **International Student Office** (ISO) of the Hanze University arranges the following aspects for exchange students:

- The application process
- Obtaining the right visa
- Information about living in the Netherlands, Groningen, the Hanze University, costs and accommodation

8.4 Conestoga College

The *field research* report, Appendix 3, showed the results of the benchmark with Conestoga College, Kitchener, Ontario. Research done by Hanna Niebuur consisted of Conestoga's Facility Management-related program, the courses that this program offers, as well as the differences in credit and semester systems. Hanna Niebuur researched this information and came up with solutions on how an exchange program should be organized between Conestoga College and the Hanze University according to the facts.

Research Question 7:

“How can Conestoga College play a role in this additional year?”

In relation to the project of NSCC, it is decided that NSCC should set up this exchange with the Hanze University first. It does not add any value to partner with Conestoga, at least not for now. It is important to set up the exchange, have students participating in the study abroad program at the Hanze University, and to reflect on this. Maybe in the future NSCC and Conestoga can set up a partnership and send a group of students on exchange. However, for now, it is not relevant.

Students from Conestoga are participating in a Bachelor’s Program, whereas, according to Hanna Niebuur, they should participate the fourth year of IFM at the Hanze University. NSCC’s students would best fit in the second year of IFM, due to the differences in educational levels. This would not create a group of students from both institutions that follow a semester at the Hanze University all at once and in the same group, this is simply not possible because of the differences in educational levels of both institutions. Therefore, it is decided that Conestoga should not play a part in this exchange between NSCC and the Hanze University right now, but maybe in the future it might be a great opportunity for all the involved institutions.

Chapter 9 – Implementation

This chapter gives insight on how the recommendations can be implemented and what the further steps for NSCC are, after this research project is finished. Certain steps for the implementation phase are laid down for NSCC, to successfully implement an additional study year with a study abroad semester at the Hanze University of Applied Sciences, Groningen. In addition, financial consequences linked to these steps are identified.

Research Question 8:

“What recommendations can be given for the implementation of an additional study year at NSCC?”

9.1 List of Steps

Implementing the additional Advanced Diploma year right after this project is not considered to be sufficient in order to reach the goal of NSCC, as well as according to regulations from within NSCC. Certain steps are needed that will lead to the best circumstances for implementing an additional Advanced Diploma year. This extra year is for students of NSCC and people from the particular industries that are interested in increasing their knowledge with a focus on FM. The following list shows the steps and additional information needed to implement this year successfully.

Step 1

• Research

Further research will be required for the implementation of the additional year and the finalization of the remaining steps. In addition, the possibility of obtaining a Bachelor’s Degree after this additional year needs to be researched. Another student from the Hanze or someone from within NSCC would be suitable for doing this additional research. The research should focus on what skills are still lacking in the work field and how the focus of FM can increase those in relation to the need of the industry.

Step 2

• Approval by board

The Advanced Diploma additional year needs to be approved by the board of governors of NSCC. This happens at strategic level and Lisa Boyle would be responsible for this.

Step 3

• **Finalize contract with the Hanze University**

The contract between NSCC and the Hanze University about the exchange program for students should be finalized. It may be necessary for someone from NSCC International to visit the Hanze University to do so.

Step 4

• **Creating Awareness**

Marketing among students and the related industry should convince them that the additional year will be an investment in their professional and personal life, as well as it will increase their job opportunities in the current market. The field of FM creates many great benefits. The additional year will provide students with an Advanced Diploma and they will have the opportunity to apply for obtaining a Bachelor’s Degree, which students should be made aware of thoroughly. The list below gives an idea of what tools can be used to create and increase awareness.

- **Posters**
- **Facebook:** the Waterfront Campus has a Facebook page that should be used to create awareness among students; international Facebook page as well
- **E-mail** is not necessarily a good idea, according to the NSCC International Department, because students generally do not read these emails
- **Information sessions and classroom visits:** a presentation on the exchange program, the benefits it will bring, the Hanze University and Groningen could be given here. There will be three students from the Hanze participating in an exchange program at NSCC in September 2012. These students should be asked to be present during this presentation to answer questions and give more information about the Hanze University. Also students who participated in the Summer School at the Hanze University could be present to give additional information. The NSCC International Department could organize these sessions, with the school of Trades & Technology.
- **Course outlines:** the additional year should be added in the course outlines for the Construction & Architecture programs. This way, students know from the first year that they have this additional opportunity after their graduation, which gives them the chance to gain additional information, save extra money and decide if they want to participate and which semester and courses would be most suitable for them.
- **Information booklet:** see **Appendix 1** of this report; this information booklet sample should provide all the information necessary for students before **and** after they decide to apply for this additional year and study abroad program.

This list represents several ideas to create awareness among students and the industry, which happens at the same time because NSCC uses the same marketing tools for both. They can be used combined, separate or as a list of steps. The list shows ideas only, and it is up to NSCC which ones to use. NSCC International is mainly responsible for creating awareness about the study abroad program, the Trades & Technology Department about the Advanced Diploma.

Step 5

• Add FM courses to FM related study programs

By providing FM (related) courses to students who are studying Construction, Engineering, Architecture or any other FM related field of study, students become aware of the benefits FM will give them in relation to their personal and professional life and job opportunities. More awareness of FM will be created already from the first year of the study program the student follows, and this works as a great marketing tool at the same time.

People from the industry, who are mainly technically educated, have pointed out their need in education or training of ‘soft FM services’, like Human Resource Management, communication skills, team-building and leadership. A solution for this could be offering more FM related courses to FM related programs at NSCC like Construction, Engineering and Architecture. This will not only lead to better skilled workers in relation to the industry needs, but might also deliver broadly educated Facility Managers and the great benefit of FM to organizations. In addition, this will create more awareness of FM among students, already in their first year of their study program, which works as a marketing tool at the same time.

After these first 5 steps, NSCC should have created sufficient awareness of Facility Management in their current study programs and industry field. The Advanced Diploma program has been approved by the board, students show interest and become more aware of the benefits of Facility Management and the investment that this additional year will be to them. Now that the awareness is created, there is a market for the Advanced Diploma and the additional year can be implemented.

Step 6

• Implementing the additional ‘Advanced Diploma’ year

After the board has approved the Advanced Diploma application, it should be implemented as from September 2013 or February 2014, as it is not dependent on the academic year. It is recommended to create as much awareness as possible, as well as give all necessary information to students and people from the industry. There will be more awareness of the field of FM, as well as the study programs offered at NSCC will be in line with skills and requirements the industry asks for.

Step 7

• Setting up contracts with higher education institutions

When the implementation of the Advanced Diploma and exchange with the Hanze University is finalized and students have participated in it, it might be the right time to contact other colleges in Canada to set up a contract. Research is required on this, but it may be a good idea to cooperate with other institutions that have a partnership with the Hanze University, as well as other institutions:

- Conestoga College, Kitchener, Ontario, Canada
- Holland College, Prince Edward Island, Canada

9.2 Financial Aspects

It is most likely that NSCC will have expenses before and after the Advanced Diploma program is implemented. There are several costs to take into consideration, before the implementation can take place, but also afterwards. It is not the wish of NSCC to find out about these amounts exactly, but whether it would be a good investment for the institution and related industry to implement an additional study year with a focus on Facility Management.

The expenses that NSCC will have **before** the program is implemented are called ‘*startup expenses*.’ Startup expenses are expenses that happen before the beginning of the plan, before the implementation (Berry, 2012). Table 9.1 identifies these startup expenses for NSCC in relation to the recommended list of steps mentioned earlier in the chapter.

Table 9.1 Startup expenses for NSCC

	Description	Predicted Expenses
Step 1	Research	<ul style="list-style-type: none"> ▪ Research & Development costs ▪ Labor costs
Step 1	Approval by board	-
Step 3	Finalize contract with the Hanze University	<ul style="list-style-type: none"> ▪ Travel costs ▪ Labor costs
Step 4	Creating Awareness	<ul style="list-style-type: none"> ▪ Marketing costs ▪ Labor costs (mostly <i>NSCC International</i>)
Step 5	Add FM courses to FM related study programs	<ul style="list-style-type: none"> ▪ Research & Development costs ▪ Laws/regulations/licenses/fees ▪ Additional labor costs for these courses + finding the right faculty

Once the Advanced Diploma program has been approved by the board and is ready for implementation, the expenses that are made will shift to be **operating costs**.

Operating costs are ‘*expenses associated with administering a business on a day to day basis*’ (Investopedia, 2012).

For NSCC, this means maintaining the flow of students and people from the industry applying for the Advanced Diploma program and maintaining the study abroad exchange with the Hanze University. Once the program is implemented, these costs will ‘always be there’, since it is necessary to offer student the best education as possible. Table 9.2 shows the predicted *operating costs* that NSCC should take into consideration after the program has been implemented.

Table 9.2 Operating expenses for NSCC

	Description	Predicted Expenses
Step 6	Implementation	<ul style="list-style-type: none"> ▪ Labor costs
Step 7	Setting up contracts with Higher Education Institutions	<ul style="list-style-type: none"> ▪ Research & Development costs ▪ Travel costs ▪ Labor costs ▪ Regulations/licenses
General	General Costs after Implementation	<ul style="list-style-type: none"> ▪ Labor costs ▪ Regular marketing costs ▪ Regular travel costs to maintain relationship(s) ▪ Regular (industry) research so the program is in line with skills needed in the work field

It is important to note that these expenses are an estimation and an example of the predicted expenses NSCC will likely have before and after the implementation of the additional study program. Obviously, NSCC will also *make* money, since students have to pay Advanced Diploma tuition to NSCC to participate. For the costs students should take into consideration, please refer to the *Information Booklet* sample in Appendix 1 of this report.

Financial Consequences

Besides costs to take into consideration, there are also financial consequences to implementing this additional study program that are for the greater good such as the industry, instead of only NSCC. These consequences are listed and described below.

- Increase of awareness of Facility Management
- Better marketing of Advanced Diploma program, international experience to the Hanze University of Applied Sciences and Facility Management
- Advanced Diploma with a focus on FM will be more recognized in the industry
- Facility Management in Canada will become as ‘balanced’ as it is in the Netherlands: it will emphasize both the hard and soft sides of FM
- NSCC will support the industry by delivering graduate students with skills that employers are looking for

As can be seen in the list above, offering an Advanced Diploma program with a focus on Facility Management, available for both students and people from the industry, will increase the awareness of Facility Management, not only at NSCC but also in the field. This will work as a great marketing tool for the Advanced Diploma program at the same time. By investing in the Advanced Diploma, students and organizations will become more aware of the added value that FM brings, as well as the link between FM and the essential *people* skills they are looking for. In addition, the Advanced Diploma will then be more recognized and appreciated as the industry understands the added value of FM.

Because FM in Canada generally focuses on the technical side, the field of FM will eventually become more in balance, as it is recognized for both the hard and soft (people) sides of it. NSCC supports the industry by delivering graduate students with skills employers are looking for, which is a win-win situation for both the industry, NSCC and students among others.

Chapter 10 – Final Conclusion

NSCC wishes to implement an additional Advanced Diploma year to its *Architectural Engineering Technician* and *Construction Management Technology* programs. This report provided clear recommendations on how NSCC can do so best. These recommendations are based on thorough research on important aspects that are related to the research question: *‘What is the best way for NSCC to implement an additional year with an emphasis on Facility Management, by offering its students an international experience at the Hanze University of Applied Sciences, Groningen?’*

First, *the field of FM* in theory is described. Research shows that the most important principles of FM are: People, Place and Process. These principles are divided over two main divisions: Space & Infrastructure and People & Organization. In addition to this standard, literature and internet sources provide NSCC with information and guidelines on FM< such as the profile of the Facility Manager, the scope of FM and FM associations.

Facility Management in the Netherlands & Europe, as noted in this report, is concerned with the FM market and education. The field of FM is widely accepted in Europe, although having a different meaning depending on the country. For example, FM in the Netherlands is very much concerned with managerial aspects, whereas in the United Kingdom FM is more concerned with technical aspects. This is seen as Hard (technical) and Soft (managerial) services. Facility Management is highly dependent on the continuously changing environment, and is therefore expected to keep on developing over time.

The Canadian and Nova Scotia market, as part of the section *Facility Management in Nova Scotia & Canada*, are fairly strong, due to the strong trading relationship with the USA and many export products. However, the recession still has its impact, which means investing in education is a good option for students. They will increase their skills and knowledge, which in turns leads to an increase in job opportunities.

Facility Management in Canada is mainly focused on the building and Hard side. However, the soft sides of FM are seen as equally important: these skills are beneficial for students in finding a job, are essential skills employers are looking for and are what the industry needs now and in the future. However, these skills are not offered at NSCC currently. The link between FM and these skills is not there yet, either. Creating awareness by developing this link, will eventually make employers from the industry recognize the great benefits of the Advanced Diploma with a focus on FM that NSCC wishes to offer.

As there are gaps between the *definitions* of Facility Management in both countries, the *industry needs* and skills/programs offered by NSCC and differences in *education*, the recommendations have to take those into consideration.

The recommendations to NSCC are to implement the Advanced Diploma year in several steps. As the awareness of FM and the link with the people skills the industry is asking for is lacking, this awareness needs to be created among the target groups first. After that, the additional year can be implemented. The recommendations will lead to supporting the current and future industry needs, where NSCC delivers graduate students with skills employers are looking for, but also to more recognition and awareness of the field of FM, which will have a positive influence on the community and economy of Nova Scotia.

Bibliography

- (2011). Retrieved February 13, 2012, from NSCC:
http://en.wikipedia.org/wiki/Nova_Scotia_Community_College#History
- Atkin, B., & Brooks, A. (2009). *Total Facilities management*. Chichester: Wiley-Blackwell.
- Berry, T. (2012). *Estimating Realistic Startup Costs*. Retrieved May 16, 2012, from Bplans:
<http://articles.bplans.com/starting-a-business/estimating-realistic-start-up-costs/62>
- Cotts, D. (2010). *The Facility Management Handbook*. New York City: Amacon.
- EuroFM - IT2. (2011). *eurofm.org*. Retrieved March 2, 2011, from <http://www.eurofm.org/>
- EuroFM*. (2011). Retrieved from EuroFM: <http://www.eurofm.org/about-us/what-is-fm/>
- EuroGates*. (2011). Retrieved from EuroGates:
http://www.eurogates.nl/en_dutch_education_system/
- European Commission. (2009). *ECTS Users' Guide*. Brussels: Education and Culture DG.
- European Commission. (2012, January 27). *European Commission*. Retrieved March 5, 2012, from European Commission: http://ec.europa.eu/education/lifelong-learning-policy/ects_en.htm
- European Union. (2010). *Europe 2020, a European strategy for smart, sustainable and inclusive growth*. Retrieved March 1, 2012, from European Union:
http://ec.europa.eu/europe2020/index_en.htm
- FAQ Canada*. (2011). Retrieved February 5, 2012, from FAQ Canada: <http://www.canadafaq.ca/>
- FMN. (2011). *FMN*. Retrieved March 16, 2012, from Facility Management Nederland:
<http://www.fmn.nl/cms/showpage.aspx?id=147>
- GlobalFM*. (2009). Retrieved from http://www.globalfm.org/what_is_gfm.asp
- Government of Nova Scotia. (2012, April 30). *Nova Scotia Statistics*. Retrieved May 1, 2012, from Government of Nova Scotia: <http://www.gov.ns.ca/finance/statistics/default.asp>
- Hanze University. (2012). *International Facility Management*. Retrieved March 6, 2012, from Hanze University:
<http://www.hanze.nl/home/International/Schools/School+of+Facility+Management/Programmes/Bachelor+Programmes/Facility+Management/Programme/>
- IFMA*. (2011). Retrieved 2012, from IFMA: <http://www.ifma.org/>
- IFMA Foundation. (2009). *IFMA Foundation*. Retrieved March 23, 2012, from IFMA Foundation:
http://www.ifmafoundation.org/files/Ed_Directory.pdf
- Indexmundi. (2011, July 12). *Indexmundi*. Retrieved March 26, 2012, from Indexmundi:
<http://www.indexmundi.com/canada/>

Investopedia. (2012). *Operating Costs*. Retrieved May 15, 2012, from Investopedia:
<http://www.investopedia.com/terms/o/operating-cost.asp#axzz1v2Y0dcZh>

Keizer, J., & Kempen, P. (2006). *Business Research Projects. A Solution-Oriented Approach*. Taylor & Francis Ltd.

Keuning, D. (2009). *Management; A European Perspective*. Groningen: Noordhoff.

LOOFD. (2010). *National Facility Management Competency Profile*. The Netherlands: Dutch Association Facility Management Education.

NSCC International. (2005). Retrieved February 14, 2012, from NSCC International:
<http://www.international.nsc.ca/Strategy/>

Nuffic. (2011). Retrieved February 19, 2012, from Nuffic: <http://www.nuffic.nl/international-students/dutch-education/education-system>

Steenhuizen, D. (2011). *A Portuguese Journey: The Road to Facility Management*. Groningen: Hanze University of Applied Sciences.

Teichmann, S. (2009, September). FM Market Size in Europe. *European Insight FM*, pp. 5-7.

Appendices

Appendix 1 – Information Booklet



Information Booklet - *Sample*

ADVANCED DIPLOMA PROGRAM
2013-2014

NSCC would like to announce an opportunity for students from the *Architectural Engineering Technician & Construction Management Technology* programs to apply for the Advanced Diploma program, which will include the following three aspects:

	<i>Credits</i>
1. Study Abroad at the Hanze University of Applied Sciences, Groningen, the Netherlands	6
2. Cooperative	6
3. Applied Research Project	3

The Advanced Diploma program will provide an opportunity for students and others to gain international experiences and increase their knowledge in addition to their diplomas. Additional skills in relation to Facility Management will be developed, which are highly recognized in the current Construction and Architecture work fields.

Admission Requirements Advanced Diploma

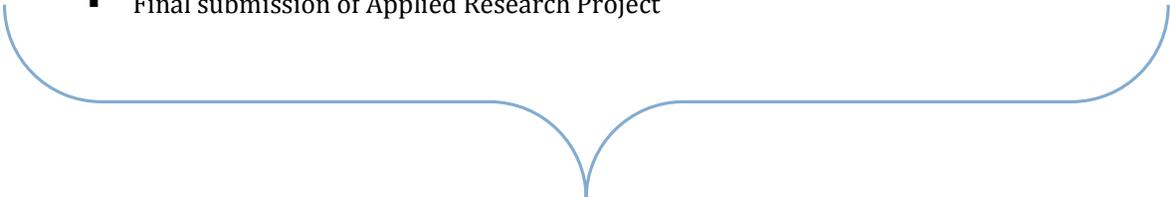
- Diploma in *Architectural Engineering Technician, Construction Management Technology*, or equivalent.
- Portfolio submission & presentation to include: future goals, how FM fits with these goals and how this additional year will add value to their professional & personal life

Costs for students take into consideration:

- Advanced Diploma 1 year tuition \$ 3,811
- Plane ticket to the Netherlands \$ 1,500
- Accommodation, meals, insurance etc. \$ 1,000 /month
- Passport & passport photos \$ 110

Evaluation Criteria Advanced Diploma

- Final exams, projects and assignments need to be passed as 'sufficient', according to the Hanze University's standards
- Portfolio submission, which includes international differences, skills learned and future prospects; written by the student and evaluated
- Successful completion of the Cooperative
- Final submission of Applied Research Project



Study abroad: the Hanze University & Groningen

The “Facility Management” study abroad program will provide an opportunity for students to gain international experiences by travelling to Groningen, the Netherlands, while learning additional skills and increasing knowledge about Facility Management in addition to their Diploma. Courses that are offered include Human Resource Management, Change Management, Sustainable Housing, Management and Communication Skills and Project Management: all in line with the current Construction & Architecture industry needs. Students will be required to write an essay submitted to the Hanze University to apply for the study abroad exchange program.

Groningen (<http://www.cityoftalent.nl/en>) is the most northern city in the Netherlands and is known as “little Amsterdam” for its canal lined streets and historical architecture and is a popular student town with 50,000 Dutch and international students studying at the Hanze University and the University of Groningen. Most people in Groningen speak English, and the language of the study abroad program will be English.

NSCC and the Hanze University are not only partnering in study abroad programs, but also Summer School Programs and the “Energy Efficiency in the Built Environment (EEBE)”. For more information: www.hanzeuniversity.eu/home/International

Learning Outcomes:

- Develop and refine the skills needed in the current Construction and Architecture industries to increase job opportunities
- Increase knowledge of Facility Management and **people** related skills: leadership, mentoring, team-building and project management, for example
- Experience a different culture in an international context
- Add value to professional and personal life by developing additional skills that are not offered during the programs at NSCC

Study Abroad Application Timeline:

Option 1 <i>Sept. – Jan. 2013 - 2014</i>	Option 2 <i>Nov. – April 2013 - 2014</i>	Option 3 <i>Feb. - July 2014 - 2014</i>
<ul style="list-style-type: none"> ▪ March 2013 ~ Student Application ▪ April 2013 ~ Student interviews ▪ June 2013 ~ Pre-departure Session 	<ul style="list-style-type: none"> ▪ June 2013 ~ Student Application ▪ July 2013 ~ Student interviews ▪ September 2013 ~ Pre-departure Session 	<ul style="list-style-type: none"> ▪ October 2013 ~ Student Application ▪ November 2013 ~ Student interviews ▪ December 2013 ~ Pre-departure Session