

**Group 4**

**Water and Wastewater Systems Project Plan**

**Lauri Ilmonen, Raju Gautam, Peyman Fathi and Liva Bruver.**

**Sustainable Building Engineering Programme**

**Metropolia University of Applied Sciences.**

**Kallio Campus, Helsinki**

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Group 4 Water and Wastewater Systems Project Plan ver. 1.3

Lauri Ilmonen, Raju

Gautam, Peyman Fathi and Liva Bruver.

## I. Project description

### 1.1 General description

The project consists of conducting an extensive research on the topic Water and wastewater systems conducted by a team of first year Sustainable Building Engineering students of Metropolia University of Applied Sciences (UAS) Helsinki, Finland.

The student team will follow the procedures outlined by the client: FIGBC and the head of the Sustainable Building Engineering program, Jorma Säteeri. The customers of this project consist of by the client: FIGBC, the entire student body as well as faculty of Metropolia UAS Helsinki Agricolankatu Campus.

### 1.2 Limitations

Limitations of this project are at present: the resources available to our team including, but not limited to: time, assessment equipment, IT hardware and software, capital needed to complete the project, and winter weather, transportation, and unforeseen limitations such as illness and accidents. Also, the cooperation of the between the client, FIGBC, and our project team may incur some differences of opinion.

### 1.3 Connections:

One connection may be drawn between the target of the project, to perform a research report, and the knowledge acquired by the client, FIGBC. Second, there is a connection between the project target and the Sustainable Building Engineering student body. Third, there is a connection between the project target and the professional community by way of presentation of the results of the project in front of an audience of sustainable building industry professionals.

### 1.4 Scope

The scope of this project is the target water and wastewater systems and all the people, companies, institutions, and organizations connected to the project.

### 1.5 Problem

The problem can be stated as the need to conducting an extensive research on the topic Water and wastewater systems using the FIGBC and the head of the Sustainable Building Engineering program's guidelines. The needs can be stated as following this project plan very closely in its entirety, abiding by Finnish law while following this project plan, completing all of the project tasks and milestones according to the time schedule and budget of the project goals, maintaining good cooperation with all of the participants of the project—chiefly the client FIGBC, following all guidelines of the reporting and communication section of this plan and planning all phases of the project thoroughly and identifying possible risks.

## II. Goals and objectives

### 2.1 Scale

Scale of the project is to provide the client of FIGBC and extensive research report and presentation on the topic water and wastewater systems.

Our aim is to conduct through a research and discover new technologies and new ways of thinking about water and wastewater sustainability in the urban environment.

Our project team will immerse themselves in the professional water management field and present their findings to an audience of professionals and then by reviewing and concentrating of the collected information try to criticize the findings by the view of new perspectives.

## 2.2 Project phases

Phase I: Planning phase. This project plan must be completed by: 15.02.2012

Phase II: Implementation phase. The environmental assessment completed by 30.04.2012.

Phase III: Closing phase. The report and presentation of our environmental assessment must be completed by 01.05.2012. We will present our project to a peer group during week 18, the first week of May. This will give us time to finalize the presentation which will be given on 24.5.2012 at a seminar of professionals in Helsinki.

## 2.3 Cost

The costs of this project are the student working hours that will be spent completing the project holistically. We have calculated that approximately 40 hours per week for 15 weeks = 600 working hours will be needed to complete this project.

# III. Project organization and responsibilities

## 3.1 Project manager

Project manager: Fathi, Peyman. Responsibilities: The project manager's responsibilities include ensuring that the project plan is followed and it is revised as needed in order to reach the goals and objectives of the project. As the head of the project organization, the project manager must also manage the entire project management team and subordinates and strive for clarity and transparency in all lines of communication and work policies. In addition, the project manager is the member of the team whom is ultimately responsible that the task, milestones and phases of the project are completed according to the time schedule. The project manager will also assign a team member to the director of communications and other important positions.

## 3.2 Team members

Gautam, Raju; Ilmonen, Lauri and Bruvere, Liva. The responsibilities of the team members are to abide by the project plan and all local laws and ordinances. Furthermore, all team members must complete all tasks given by the project manager and assume the responsibilities of a director or managers position in the project organization.

## 3.3 Contacts:

Antti Lippo

Head of Finnish Green Building Council

[antti.lippo@figbc.fi](mailto:antti.lippo@figbc.fi)

Jorma Säteeri

Head of Sustainable Building Engineering Dept.

Metropolia University of Applied Sciences (UAS)

[jorma.sateeri@metropolia.fi](mailto:jorma.sateeri@metropolia.fi)

Eeva Hara-Lindström

Instructor

Metropolia University of Applied Sciences (UAS)

[eeva.hara-lindstrom@metropolia.fi](mailto:eeva.hara-lindstrom@metropolia.fi)

### 3.4 Customers

Our customers are the Finnish Green Building Council (FIGBC) and all of the students and faculty of Metropolia University of Applied Sciences (UAS) Helsinki, Finland.

## IV. Scale and managing it

### 4.1 Service

The service to be performed is performing an extensive research on the topic Water and wastewater systems conducted by a team of first year Sustainable Building Engineering students of Metropolia University of Applied Sciences (UAS) Helsinki, Finland. The subtopics to be researched will be 1.) Novel approaches to minimize the production of wastewater. 2.) Heat recovery of waste waters. 3.) Urban water reuse. In addition, we will present our results to an audience of sustainable building professionals.

### 4.2 System

Working methods:

- Literature & research overview
- state-of-the-art
- main environmental impacts
- tools and measures used to tackle the problems and challenges

Expert interviews

- future expectations and needs for adaptation in Finland
- Workshops
- With invited experts and FIGBC and Metropolia staff

Deliverables:

Group

- Meeting minutes with resolutions
- Intermediate progress report 7.3.2012 (10 % of grade)
- Suggestions paper (30 % of grade)
- Presentation in a workshop 24.5.2012 (10 % of grade)

Individual

- Learning diary (25 % of grade)
- Documentation of own contribution to the project
- Reflection of the learning objectives
- Peer evaluation (25 % of grade)
- Written evaluation of the other group members (10% of grade)

### 4.3 Official documents and paperwork

Followed

### 4.4 Managing changes

Any changes that arise during the project will be voted on possible outcomes in the general meetings. Then, if it is considered needed the project manager will inform the client of any significant changes to that will affect the outcome, maintaining schedule of milestones or the finished quality of the research report.

## V. Implementing

The project manager will be in charge of splitting work responsibilities and dividing the project team into work groups including: director of communications, director of final presentation and poster, and director of time management.

### 5.1 Phases

#### 5.1.1 Phase I: Planning phase

Phase I will be completed between the weeks 4 and 5. Lauri Ilmonen will be heading the Director of Communications and will ensure that all parties involved in the project will be sent clear and consistent communications periodically. He will be in charge of the project wiki page and the project group's Linked In group page.

Our group project task is to conduct extended research on the topic Water and Wastewater Systems. We have split the project into some topics.

Peyman Fathi (Project manager): Director of Media.

Lauri Ilmonen: Director of Communication.

Raju Gautam: Director of Time management.

#### 5.1.2 Phase II: Implementation phase.

Phase II will be completed between weeks 5 and 16. All group members will conduct research on their respective subtopics divided in the meeting.

- Compiling '*Meeting minutes*' documents of all general meetings into one folder.
- Creation of an '*Intermediate progress report*' to be given on 07.03.2012.

Division of workloads (see attachment 2.1) MS project Gantt chart

#### 5.1.3 Phase III: Closing phase.

Phase III will be completed between weeks 16 and 18.

##### 5.1.3.1 Final presentation

Creation of a twenty-minute final presentation summarizing our results and conclusions.

Creation of accompanying final presentation power point visual presentation.

##### 5.1.3.2 Peer evaluation

Written evaluation of peer members by other group members.

### 5.2 Tasks

See attachment 1.2 (MS Project 2010)

### 5.3 Managing time schedules

See attachment 1.3 (MS Project 2010)

### 5.4 Managing resources

Project manager: Peyman, Fathi. The Project Manager is responsible for monitoring the whole project and he is also assigned to make the final presentation of the project.

Director of Communications: Lauri Ilmonen. Communication is the most vital part in setting up the project. He will act like bridge between the teachers, Antti Lippo and the group members and provide information on the progress reports of the project. He is also in charge of ensuring that all parties involved in the project will be sent clear and consistent communications periodically. He will be in charge of the project wiki page, the Group's Linked In Group page and making amendments to the project plan and ensuring that all if any legal requirements will be completed.

Director of Media: Peyman Fathi. In charge of ensuring that the Environmental assessment poster will be completed by week 4; no later than Monday 23.01.2012. He will ensure that the

team works together and collectively contributes to complete the final presentation task of the project.

Director of Time Management: Raju, Gautam. Time is another element which plays major role in project and the task of managing the time and schedules. He will be in charge of ensuring that the project time schedule is followed and deciding when appropriate actions are to be taken to ensure that all project milestone dates and project phase time periods are met punctually.

## **VI. Investments and procurements**

Since this is done for the educational purposes we do not have any financial costs for researching on the project except time. The beneficiaries of the project are FiGBc, Metropolia UAS and as are we.

## **VII. Budget and costs**

### **7.1 Budget**

#### **7.1.1. Time budget**

- 40 hours per week @ 10 hours per project team member
- 15 weeks = 600 student working hours

#### **7.1.2. Financial budget**

As we mentioned in the previous topic we merely have any costs on the project. This is an academic procedure so we don't have any customer that's why we don't have finance and no question about controlling it.

### **7.2 Costs**

Since this is done for the educational purposes we do not have any financial costs for researching on the project except time. We have calculated the cost of one student working hour is equal to € 0, 00. Therefore, our project staff is working solely for educational purposes. There are no other related costs in this project since all resources are provided to by our own means or Metropolia UAS. The beneficiaries of the project are FIGBC, Metropolia UAS and as are we.

### **7.3 Cost reporting and controlling**

Should any unforeseeable costs arise during the completion of this project our project management team will have a budget meeting and determine the best possible solution to increased costs exceeding allocated budget.

## **VIII. Reporting and communication**

### **8.1 Project group agreements**

Our group will arrange a general meeting weekly to come together and share information about their researches and the progress of the project.

Attendance for all general meetings is mandatory for each project team member. On the event of illness or reasonable obstruction the person(s) involved are obliged to inform the project manager as soon as possible.

For each general meeting project team members will provide a copy of his or her '*Weekly research summary*' in order that other members can share their ideas and point of views.

## 8.2 Documentation

### 8.2.1 General

This project plan will be available at all times on our group's Wikipedia webpage.

All forms of communication will be documented and filed by the communications manager.

### 8.2.2 Meeting documentation

In every meeting one person will be nominated secretary and he or she will record the minutes of the meeting and draft it so that it can be used in the final documentation.

Each group member will submit a '*Weekly research summary*' on their research findings.

After each general meeting all submitted '*Weekly research summary*'s' will be re-documented and provided to the Project manager. The documents will be saved in the Z drive provided to us in the school computer network and our USBs.

## 8.3 Meetings

### 8.3.1. Location and time

Our group will meet weekly on Wednesdays at 14:00 in the studio room at school. Weekly meeting locations and times are subject to change. At the occurrence of a change in either the communications manager will inform all project team members as early as possible of changes.

### 8.3.2 Meeting procedure

All meetings will be headed by the meeting chair: the project manager. Also, for each meeting a rotating secretary will be nominated who will record and document the meeting minutes. Said meeting secretary will type out the meeting minutes according to '*Meeting minutes*' template document and submit it to the director of communications before the next meeting. In addition the said secretary will work together with the director of time management to create a '*Meeting agenda*' document for the following general meeting. This meeting agenda will be posted on the project group's wiki page no later than one day prior to the following general meeting.

All general meetings will be followed according to the procedures outlined in template documents: 1.1 '*Meeting agendas*' and 1.2 '*Meeting minutes*'.

For each general meeting project team members will provide a copy of his or her '*Weekly research summary*' in order that other members can share their ideas and point of views.

### 8.3.3. Meeting documentation

Each meeting will follow the guidelines of section 8.2.2.

## IX. Risks

### 9.1 Managing risks and estimations

The risks of this project have been identified during the planning phase with the aid of a SWOT analysis.

First, the SWOT analysis this project's top three internal risks are described below.

- Interviewing experts in our group's chosen topics is difficult, because they might live abroad.
- Receiving enough fully completed questionnaires to make suggestions maybe difficult.
- The project schedule is realistic, but unforeseen interpersonal conflicts may occur.

Second, the SWOT analysis this project's top three external risks are described below.

- If one or more of the project team becomes ill then it will bear an enormous load on the remaining members.
- The budgeted working hours for the project might not be enough, because of other student obligations. Thus, the project would fall behind deadlines.
- The catastrophic event of total loss of project material is possible if data is not backed-up.

These are only estimations of some of the possible external and internal risks that may affect the completion and quality of the finished service product presented to the customers.

## 9.2 Description of success factors and potentials

Similarly, the successes of this project have been identified during the planning phase with the aid of a SWOT analysis.

First, the SWOT analysis this project's top three internal strengths are described below.

- The project team has the necessary skills-(communications, research, written and presentation) to complete project.
- The project will be kept in budget.
- Upon completion of project both the client FIGBC and the students and staff of Metropolia will learn about the topic.

Next, the SWOT analysis this project's top three external opportunities are described below.

- If this project is completed to a high degree of success it may provide the project team with invaluable contacts in the sustainable building industry.
- These contacts might later be key in the securing of internships and work placement positions.
- Completing the project might divulge a possible niche in a new emerging technology or sustainability approach that can be capitalized.

These are only our envisioned success factors and potentials of completing this project to a superior level of execution. Actual success factors will be measured by positive peer evaluation, constructive criticisms and acceptance by an audience of professionals.

- The ultimate potentials from of completing this project might only become noticed post completion when recognition from contacts makes possible the securing of internships, work placement positions and future construction management positions.

*\*See SWOT Analysis attachment 1.4*

## X. Quality management

The quality of the project will be ensured by each member of the project team at all times. The following procedures will be abided by at all times during the project:

- How to conduct research and evaluate sources. *\*See Conducting Research attachment 1.5.*
- How to reference sources according to the Vancouver system of referencing. *\*See Vancouver system of referencing attachment 1.6.*

In addition, the quality of the research will be controlled by the Director of time Management, Raju, If the quality of the research has not been completed to a superior level of execution Raju will bring the issue up during a regular meeting. Effectively, there will be many levels of quality control along the project schedule. Next, the by the editor, the Director Communications, Lauri, will ensure that the quality of each section of the written paper is completed so that this project reaches a superior level of execution. Then, the quality of the final presentation including media will be reviewed by the members of the project team. Lastly,

the presentation will be given orally at least twice by two different members of the project team in the event that the presenter of the final presentation is obstructed from giving the presentation. These two rehearsal presentations will have peer audiences who will give criticisms and review the presentations. This will enable the final presentation given to an audience of professionals to be executed with superior quality.

## **XI. Environmental Impacts**

This project will strive for a minimal impact on the environment in all aspects. Firstly, the project group has decided to minimize the need to print every document. For instance this project plan will be printed only by request of the client and the head of the Sustainable Building Engineering program. This project plan will be available on the Water and Wastewater Systems wiki page for future reference. To access this website address will be provided on the Water and Wastewater Systems Linked In group page. Likewise, the group will conduct all of its surveys as e-questionnaires to conserve resources.

The group has also vowed to lower their carbon footprint even more by electing to not travel further than the Uudenmaan province of Southern Finland when conducting research. Most research will be conducted via teleconferencing or via other electronic means.

## **XII. Other aspects**

Any changes the project itself that are noticed by a team member should be brought to the attention of the project manager. The project manager will then bring these concerns to the client and head of the Sustainable Building Engineering program. In addition, any changes to a team member's ability- to attend a scheduled meeting or to complete an assigned task should also be brought to the attention of the project manager.

Acceptance procedures will be managed by the Director of time Management, Raju. It is his responsibility to submit all of the project team's deliverables to the required person before the deadline.

Checking completion will be ensured by the Director of Communications, Lauri, as a check and balance. The Checking of acceptance will be the responsibility of the project manager.

Any problems that arise should be addressed as soon as possible to the project manager.

Attachments

References