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Sustainability in Project Management ***A case study at University of Applied Sciences Utrecht***

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Abstract

When the project sponsor is responsible for the definition of the content of the project and the project manager for delivering this content, who then is responsible for incorporating sustainability in the process? Which project governance role has which responsibility to incorporate sustainability aspects in the project management process? This paper shows a project manager can influence the way sustainability is implemented in the project and the project management process. This perception is based on the notion that the project manager is intrinsically motivated to work on a sustainable project and achieve sustainable results.

1. Introduction

“In essence, sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development; and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations” (UN, 1987). This implies, as Nelmara Arbex has said that “We need to change the way we view things in order to change the way we do things”. One of the key concepts of sustainability is that sustainability is about balancing or harmonizing social, environmental and economic interests and it takes notice of both the short and the long term aspects. This is also known as the “Triple Bottom Line” (Elkington 1999): People (social), Planet (environmental) and Profit (economical). Change towards sustainability ask for change on all three pillars of this triple bottom line. However, the question remains if it is necessary in all cases to give each of the three pillars an equal amount of attention or would that lead to non-realizable situations. Project managers also have to ask themselves what the scope of sustainability is within their projects? Is the scope limited to the deliverables of the project or does it concern more and does it also relate to the organization within which the project takes place?

And are project managers able to integrate sustainability within the project's objectives and deliverables and in the project process? Silvius et al. (2010) say that the impact of sustainability is not really recognized yet. The way projects are managed, measured and reported does not reflect the different aspects of sustainability that can be derived from the concepts of sustainable development.

But then, what is sustainability? Sustainability is not a simple issue to grasp. Essentially it is not a methodology but a thinking dimension (Jaafari 2007). Alzami (2010) describes sustainability as each of us doing our part to build the kind of world – economically, environmentally and socially – that we want to live in, and one that we want our children and grandchildren to inherit. It means becoming aware of all interconnections – visible and invisible – in which our day-to-day choices affect the intricate balance of social, economic and ecological systems.

Thus, sustainability has to do with the use of resources that will not be exhausted over a reasonable period and that a system or process must not generate pollution. Furthermore, a definition of a project. OGC (2002) gives two definitions of a project:

1. A management environment that is created for the purpose of delivering one or more business products according to a specific Business Case
2. A temporary organization that is needed to produce a unique and predefined outcome or result at a pre-specified time using predetermined resources

Here it is therefore assumed that a project is a temporary organization created for the purpose of delivering a unique and predefined outcome at a pre-specified time and within in pre-determined resources.

1.1 Problem Area

Within projects, the project sponsor is ultimately responsible for the project. He provides the finances, provides direction on the content of the project and ensures that the attention is kept focussed on the business justification (Hermarij 2010). This means that the project sponsor is also responsible for incorporating sustainability in the content and the business justification. The project manager takes responsibility for all activities necessary to provide the project deliverables (Hermarij 2010). This would imply that the project manager can incorporate sustainability within his project management process. To what extent is able to do so? Are there parts of the project management process where his influence is the biggest and in which the smallest. The research question is defined as follows:

What influence does a project manager have on the way sustainability is implemented in the project and in the project management process?

2. Approach

This paper is based on a literature study and a case study. It is widely assumed that case study questions should either be 'why' or 'how' question. For this research also, a case study seems appropriate because the main purpose of this paper is to show whether or not a project manager does have influence on the implementation of sustainability within the project management process and little literature on this topic is yet available. This paper tries to contribute to the discussion which project management roles have what influence on aspects of sustainability within the project management process.

At first a literature study was conducted. Most literature was found through the 'Science Direct' data base. The key words that were used to find the papers were: 'sustainab*', 'sustainab* + project management', 'corporate social responsibility'. Other papers have been found by going to the reference list of the papers that were found. Some of the papers were found in an obscure way. One of the main professors on project management of the University of Applied Sciences Utrecht. Brought other literature, which could not be found in the relevant journal databases to the researchers attentions. My thanks go out to him for sending me these highly usable papers.

After the literature study the research question was redefined and a case study was prepared and conducted. Data was collected from this case. The data was processed, analysed and compared to the theory. Finally a conclusion was drawn from the data.

3. Literature Review

Project managers are instrumental in achieving strategic goals, as they hold the path to execution. The project manager is in a position to perceive and analyse socially relevant issues and situations that may not be obvious to senior management. It is his responsibility to ensure that issues are raised appropriately. The social issues, like discrepancies between the minimums that the law requires and what is appropriate for the community (e.g. sustainability issues) can be ranked the same way as all other project risks, by probability and impact (Russel 2008). Does Russel imply that dealing with sustainability, as a social issue, is synonymous to other project risks?

Gareis et al. (2009) have a different opinion. Although they argue that they suspect that the consideration of sustainable development in project management supports the achievement of sustainable project results. They say that content related definitions of sustainable development are not relevant when it comes to discuss a possible integration into project management, however the context related definition should be further explored. It is the context where the project manager can make a difference. Silvius et al (2010) say that the general insight is that sustainability in project management is about integrating economical, environmental and social

aspects in the management of projects, and that that sustainability in projects should be regarded on the level of the project, its results and its effect. Silvius et al. (2009) derived a the following definition of sustainable project management from combining the triple-P element of sustainability and the life cycle views:

Sustainable project management is the management of project-orientated change in policies, assets or organizations, with consideration of the economic, social, and environmental impact of the project, its result, and its effect, for now and for future generations.

Taylor (2008) argues succinctly that sustainability needs to be incorporated into every stage throughout the project life cycle.

Grevelman and Kluiwstra (2009) state, in line with Gareis et al (2009) that the alignment between sustainability and project management is still very rare. Their case study revealed no attention to sustainability within the project management process. It did however reveal that attention to sustainability was given to the project's deliverables, however attention to sustainability within the project process was absent. They claim that the reason for this is the lack of attention to sustainability in project management deliverables. Although that particular finding is not of great interest to this case study, it is an interesting finding. Grevelman and Kluiwstra (2009) also found that although there is a lot of awareness regarding sustainability, the link to defining a sustainable process and methodology for project management is still absent.

Labuschagne and Brent (2006) state that projects are the means by which sustainability on all three corporate levels (strategic, methodological, and operational) can be made, and that business has the responsibility towards society to actively engage in the sustainable arena. Furthermore, they argue that the current project management frameworks do not effectively address the three goals of sustainable development (social equity, economic efficiency and environmental performance).

This is underpinned by Silvius et al. (2010) who have found that sustainability is the big mission factor in major project management guidelines of PMBoK and ICB3. They give three reasons why they believe that sustainability should be on the agenda of project managers: (1) investments in projects that are considered sustainable are less prone to the financial crises as non-sustainable projects; (2) companies that have a strong sustainability image, like certain banks, show less loss of value than other banks; (3) public organizations are integrating criteria on sustainability in their procurement policies, thereby stimulating companies to be more active in this area.

Sustainability principles	Project management					
	Project objectives	Scope & Schedule	Resources & Income	Organization	Context	Design of the Process
1. Holistic approach	Hi	Hi	Hi	Hi	Hi	Hi
2. Long term view	Lo	Lo	Hi	Hi	Hi	Lo
3. Large scale	Hi	Lo	Lo	Lo	Hi	Lo
4. Risk reduction	Lo	Lo	Hi	Lo	Hi	Hi
5. Values and Ethics	Hi	Lo	Lo	Hi	Hi	Hi
6. Participation	Hi	Lo	Lo	Hi	Hi	Hi

Table 1: Sustainable development and project management (after Gareis et al, 2009). (Turner, 2010)

Turner (2010) takes a different perspective towards sustainable development and project management. He does not point towards business as a large, rather anonymous group, but addresses all project governance roles. He has looked into the responsibilities for key players on projects and programs for the implementation of sustainable initiatives. He argues that in project management, sustainability can be gained both in the product of the project and in the process of delivering the product.

He mentions six concepts of project management that are relevant for incorporating, aspects of, sustainability: (1) project objectives; (2) project scope and schedule; (3) project resources, cost, income, and risk; (4) project organization; (5) project context; (6) design of the project management process. He also argues that no research has been done as yet on responsibility for different participants on projects and programs for the implementation of sustainability. However, using the six principles of sustainability: (1) holistic approach; (2) long term view; (3) large scale; (4) risk and uncertainty reduction; (5) values and ethics; (6) participation (Gareis et al. 2009), coupled with a governance model for projects and programs, suggests what may be the responsibility for some of the key players.

Table 1 shows the relation between the six objectives of consideration and the six guiding principles of sustainable development. Table 2 shows the responsibilities that some of the role performers may have for the six principles of sustainability. Turner (2010) has changed the position of Values and Ethics because he believes that this is where it starts. What are the corporate values of both the client organization and the delivery organization, what is their attitude towards corporate social responsibility, and what is their ethical position on preserving the environment for our grandchildren?

In the final remarks of his paper, Turner (2010) furthermore mentions that the model presented is not offered as a solution, but as a suggested model to generate discussion.

Sustainability principles	Project governance roles					
	Client Owner	Program Manager	Sponsor	Project Manager	Senior User	Senior Supplier
1. Values and Ethics	Hi	Med	Med	Med	Med	Med
2. Holistic approach	Hi	Med	Med	Lo	Lo	Lo
3. Long term view	Hi	Hi	Med	Lo	Lo	Lo
4. Large scale	Hi	Hi	Med	Med	Lo	Lo
5. Risk reduction	Lo	Hi	Med	Hi	Hi	Hi
6. Participation	Lo	Med	Med	Hi	Hi	Hi

Table 2: Sustainable development and project governance roles. (Turner, 2010)

4. Case Study

4.1 Structure

Turner's model is interesting because it is the first model that tries to generate a discussion on the responsibilities that different project governance roles can have regarding the implementation of sustainability principles. He has made suggestions what may be the responsibilities of these key players. This paper will make a first attempt to test Turner's suggestions. For this, a case study approach has been chosen. The selected case is a project called "Duurzame Uithof"¹. This project is a part of the program "De Omslag", which means as much as "the turnaround". It is a program in which the University of Applied Science Utrecht intends to make the turnaround towards a sustainable educational institute. In this case study the PID and the Business Case of the project are studied and four interviews are conducted. The interviews are conducted from the program manager, the main project manager, one of the three minor project managers, and the client. The interview questions can be found in appendix A.

Yin (2003) has defined a case study as an empirical inquiry within its real-life context, particularly when the boundaries between phenomena and context are not clearly evident. A case study can best be conducted when (Yin, 2003) (1) "how" or "why" questions are being posed, (2) when the investigator has little control over events, and (3) when the focus is on a contemporary phenomenon within some real life context. This paper is based on case study research because two of the three preconditions are met. The case study method allows the investigator to remain the holistic and meaningful characteristics of real life events (Yin, 2003) and is therefore extremely suitable for this research on the big theme of sustainability. Here the holistic and meaningful characteristics are particularly important in trying to grasp the

¹ Duurzame Uithof means Sustainable Uithof. The Uithof is the area where most of the educational buildings of the Utrecht University and the University of Applied Sciences Utrecht are located as well as the Utrecht Medical Centre (a large hospital) and the Utrecht Botanical Gardes are located as well as some minor shops, a hockey club and some student housing.

true meaning and preconditions and influence of sustainability in projects and project management.

The goal of a case study is, in general, to expand and generalize theories, called analytic generalization. In this type of generalization, the basis is formed by a theory which is used as a template with which the empirical results of the case study are compared. In this multiple case studies are preferred over single case studies, since the latter is found vulnerable in proving or rejecting theories (Yin, 2003).

Turner's (2010) model, which is partly based on the findings of Gareis et al (2009) is the theory that is going to be tested in a single case. Turner has showed the responsibilities that some of the role performers may have for the six principles of sustainability. In this case study only two of the sustainability principles and three of the project governance roles are taken into account (table 3).

This is the starting point of the case study. It is investigated whether the assumptions made by Turner are also true for the project "Duurzame Uithof" of the University of Applied Sciences Utrecht.

	Project governance roles		
Sustainability Principles	Client / Owner	Program Manager	Project Manager
2. Holistic approach	High	Medium	Low
3. Long-term view	High	High	Low

Table 3: Case study starting point, derived from Turner (2010)

4.2 Case Description

At first there was some confusion about the name of the project "Duurzame Uithof". There appear to be two projects / programs with this name. The objective of the program "Duurzame Uithof" is to develop the entire Uithof area towards a sustainable Utrecht Science Park in 2040. Participants in this program are Utrecht Science Park, Universiteit Utrecht, Hogeschool Utrecht and Utrecht Medisch Centrum. This program is in line with the intention to aspire a sustainable and alluring Utrecht region. The Uithof wants to be the laboratory for innovative sustainable measures regarding energy, water, mobility and construction. Moreover, Utrecht Science Park wants to be the centre of the knowledge economy of the Utrecht province. The focus of the project is on four subjects: energy, water, mobility and sustainable building. The project objectives are:

- Energy: reducing the amount of energy used by businesses, promote the transition from fossil fuels towards sustainable energy sources;
- Water: optimising the water cycle and minimising waste, the ultimate goal is a closed water cycle;

- Mobility: stimulating the use of the bicycle and public transport, making the remaining car use energy-neutral;
- Sustainable building: developing sustainable new buildings and making existing buildings more sustainable in the area of recycling demolition and waste streams.

The project will deliver new concepts and methods regarding the sustainable development of the whole area. By developing and applying multi-disciplined knowledge, (system)innovations can be realised. Cooperation between the several partners is therefore an important prerequisite for the transition towards a sustainable Uithof.

The project “Duurzame Uithof” of the Faculty of Engineering is not a part of the program “Duurzame Uithof”. This project is an initiative of the Faculty of Engineering that fits perfectly within their program “De Omslag”. “De Omslag” means as much as “the turnaround”, it is a program in which the University of Applied Science Utrecht intends to make the turnaround towards a sustainable educational institute. Here several minor (student) projects are executed within the themes mobility, civil engineering and architecture, energy and installation engineering. The objectives of were not determined beforehand. What this project aims to deliver is an inspirational document that will form the basis of future programs and projects within “De Omslag”.

The project objectives all have to do with sustainability. Are just the objectives and with that the deliverables meant to be sustainable, or is it also important that these deliverables are developed in a sustainable way? And then, who is responsible for achieving this? Does the project manager have any influence on the developing process of the deliverables? In this project, the project manager has not been involved in the writing of the project plan, which could imply that he has no or limited influence on the way sustainability is implemented in the project. But, does this also say something about the way sustainability is / can be implemented in the project management process?

Turner (2010) states that the owner is ultimately responsible for the holistic approach. And that the program manager has a responsibility for instructing and guiding the project manager in the holistic approach. On the long-term view he states that again the client should set the policy for the long-term view, but it is the role of the program manager to ensure it is implemented.

The data collection strategy that is used is that first the questionnaire was set up and the project was selected in discussion the program manager. After that the Business Case and the PID were studied and finally four interviews were conducted. However, first the questionnaire was tested in an interview with the program director. The data collected from this interview has not been implemented in this research.

5. Case Study Results

In this case study the PID and the Business Case of the project are studied and four interviews are conducted. The interviews are conducted with the program manager, the main project manager, one of the three minor project managers, and the client. Of these four interviews², only three are valid for this interview. The interview with the perceived client/owner it became clear that she is partly responsible for the program “Duurzame Uithof” that is being set up by Utrecht Science Park, Universiteit Utrecht, Hogeschool Utrecht and Utrecht Medisch Centrum, but not for the project “Duurzame Uithof” of the Faculty of Engineering because this is not a part of the program “Duurzame Uithof” of these four major partners.

It is perceived by the interviewees that both holistic approach and long-term view are important aspects of sustainability and are both present within the project. However, a sustainability impact assessment has not been conducted, a baseline has not been set. That makes it difficult to really measure the impact of the projects within “De Omslag”. Within the several projects multi-criteria analysis are used in order to make the right decision within the projects. For instance in the architectural project multi – criteria analysis are used to make sure that all choices are not only based on sustainability aspects, but also on usability aspects. Unfortunately in this phase no other actors are involved in decision-making. Decisions are merely based on the expertise of the project managers and the input of the students working on the projects. In these decisions and in the consideration of issues and risks the needs of future generations are addressed. This is perceived as something that comes natural when dealing with sustainability aspects. This perception also goes for social learning aspects, innovation and design.

Sustainability Principles	Project governance roles					
	Client / Owner		Program Manager		Project Manager	
	Turner	Case	Turner	Case	Turner	Case
2. Holistic approach	High	High	Medium	High	Low	Medium
3. Long-term view	High	High	High	High	Low	Medium

Table 4: Case study starting point (derived from Turner (2010)) and results

All interviewees have been asked to fill out Turner’s table. In table 4 the deviations between Turner’s assumptions and the outcomes of this case study are made visible. In this research it is perceived that the program manager has a high responsibility for regarding the holistic approach and the long-term view and that the project manager has a medium responsibility regarding these two aspects. So, the program manager is perceived to have more responsibility in both holistic approach and long-term view. This is perceived to be so, because it is expected of the program manager to have the overview, she knows the ultimate goal and expected benefits of the whole program. Both project managers only focus on their own project, on the delivering of

² Appendix B shows the summarized outcomes of the four interviews.

the expected project results. The responsibility seems hierarchically defined. The program manager has more responsibility than the project manager and the client/owner has the highest responsibility as she sets the limits for the whole program. As one of the project managers said: "The client/owner has the highest responsibility for implementing sustainability in the project, because she has to determine whether or not to continue the program and thus to take the right steps. ... program and project managers must receive the right information from above". One of the project managers said about the influence of the program manager: "The long term view of the program manager must be high, the program must have a long term vision. This project is not a stand-alone within the University of Applied Sciences Utrecht. My long-term view is medium, because I am the general foreman". The program manager herself said about her perception of her holistic approach responsibility: "My responsibility for the holistic approach is high, because I am constantly switching between the different scale-levels".

6. Conclusion

It is perceived by the interviewer that the interviewees attribute a lot of intrinsic motivation and responsibility for sustainability to themselves and the other project governance roles. It is also perceived that they believe that one is being asked to fulfil a role in a sustainability project because of one's affinity with the context. Being both sustainability and one's own profession. The program manager only works with motivated project managers, because they are asked to do the job based on their affinity and expertise with the content and context of the project. The project managers are merely content project managers who do not have to execute project management tasks that do not connect with their profession, like communication with several stakeholders, budgeting, quality management.

The answer to the main research question of this paper is therefore that it is believed that a project manager can influence the way sustainability is implemented in the project and the project management process. His influence is regarded 'medium' for both holistic approach and long-term view. However, this perception is based on the notion that the project manager is intrinsically motivated to work on a sustainable project and achieve sustainable results. This is an interesting outcome that must be further explored in other case studies, because it also generates new questions. Does it mean that the degree to which sustainability is implemented in a project is dependent on the project manager's preferences while a project manager is only appointed to obtain a predetermined project result? Does it mean that a project manager can have content related knowledge and influence? Or is this conclusion just a reflection of the chosen case?

References

1. Alzamil, R.K. (2010) *How project managers increase the sustainability of their projects.* in Proceedings of IPMA Expert Seminar February 2010, Zurich, Switzerland.
2. Elkington, J. (1999) *Cannibals With Forks: The Triple Bottom Line of the 21st Century Business.* Wiley & Sons Ltd., West Sussex, United Kingdom.
3. Gareis, R., Heumann, M., Martinuzzi, A. (2009) *Relating sustainable development and project management.* IRNOP IX, Berlin.
4. Grevelman, L., Kluiwstra, M. (2009) *Sustainability in Project Management, A case study on Enexis.* Thesis, International MSc Real Estate Management at the University of Greenwich (United Kingdom), in collaboration with Saxion University of Applied Sciences Deventer (the Netherlands)
5. Hermarij, J. (2010) *The Better Practices of Project Management.* Dhirita B.V., Oudekerk a/d Amstel, The Netherlands.
6. Jaafari, A. (2007) *Thinking of Sustainability as a Dimension of Managerial Competency.* PM World Today, IX (IX).
7. Labuschagne, C., Brent, A.C. (2006) *Sustainable Project Life Cycle Management: the need to integrate life cycles in the manufacturing sector.* International Journal of Life Cycle Assessment 11(1), p.3-15.
8. Office of Government Commerce (OGC) (2002) *Prince2.* The Stationary Office, London, United Kingdom.
9. Russel, J. (2008) *Corporate Social Responsibility: What it means for the Project Manager.* in: Proceedings of PMI Europe Congress, Malta, Philadelphia, PA: Project Management Institute
10. Silvius, A.J.G., Brink, J. van den, Köhler, A. (2009) *Views on Sustainable Project Management.* In "Human Side of Projects in Modern Business", Kalle Kähkönen, Abdul Samad Kazi and Mirkka Rekola (EDS.), IPMA Scientific Research Paper Series, Helsinki, Finland, June 2009.
11. Silvius, A.J.G., Brink, J. van den, Köhler, A. (2010) *The impact of sustainability on Project Management.* Asia Pacific Research Conference on Project Management (APRPM), Melbourne, February 2010. (Winner Best Paper Award)
12. Silvius, A.J.G., Brink, J. van den, Köhler, A. (2010) *The Concept of Sustainability and its Application to Project Management.* in Proceedings of IPMA Expert Seminar February 2010, Zurich, Switzerland.
13. Silvius, A.J.G., Schipper, R. (2010) *A Maturity Model for Integrating Sustainability in Projects and Project Management.* 24th IPMA World Congress, Istanbul, November 2010.
14. Silvius, A.J.G., Brink, J. van den, Köhler, A. (2010) *Sustainability in Project Management; Questions and Responsibilities.* International Conference on Sustainability in Business (ICBS), Putrajaya, November 2010.
15. Taylor, T. (2008) *A Sustainability Checklist for Managers of Projects.* Available at <http://www.pmforum.org/library/papers/2008/PDFs/Taylor-1-08.pdf>.
16. Turner, R. (2010) *Responsibilities for Sustainable Development in Project and Program Management.* in Proceedings of IPMA Expert Seminar February 2010, Zurich, Switzerland.
17. Yin, R.K. (2003) *Case Study Research. Design and Methods.* Sage Publications, Thousand Oaks, California, USA.

About the Author



Debby Goedknecht is lecturer and project manager at the Institute for the Built Environment of the Faculty of Engineering of the University of Applied Sciences Utrecht (HU). Sustainability is the main theme in her work (in both education and practice). She is, for instance, the manager of the bachelor minor period called “People-Planet-Profit” in which students participate and execute practice based research on for instance the improvement of the waste management system in municipalities in South Africa. Within the scope of the professionalization of HU staff, she decided to get her master’s degree in project management (Master of Project Management – MPM). The theme of this master was and still is sustainability. Hence the choice for this master and the research on sustainability in project management. Both the research for this paper and the research for her master’s thesis were executed on sustainability in project management and in particular on the influence of different project management roles to adhere to sustainability principles in both the project’s process and its result. Ms. Goedknecht can be contacted at debby.goedknecht@hu.nl

Appendix A – Interview

Introduction

Good ..., let me start by saying thank you for your permission for this interview.

And may I introduce myself. My name is Debby Goedknecht. I am a student at the HU (Utrecht University of Applied Sciences), this is my first year of the Master of Project Management study. In line with my assignment for our subject SPM (sustainable project management) I would like to interview you about sustainability in project management. My goal is to investigate whether a project manager can influence the way sustainability is implemented in the project and the project management.

I would like to ask you for permission to record the interview. Your privacy will not be violated and your involvement is voluntary. You may withdraw at any time.

All questions are related to the project “Duurzame Uithof” in which you are involved. When I refer to project governance roles such as the client, the program manager and the project manager I would like you to think about these particular roles within this particular project.

- The client of this project is: Mrs. Ali Tiggelhof.
- The program manager is: Mrs. Erlijn Eweg
- The main project manager is: Mr. ...
- The minor project manager is: Mrs. Liza Looijen

The interview will last about 30 – 45 minutes.

Questions

General Questions

- 1) What are your name and age?
- 2) At what company do you work?
- 3) What is your role within the project “Duurzame Uithof”??
client/owner; program manager; project manager;
- 4) Which project management method is used in this project?
e.g. Prince2, PMBoK, PMW, Dynamic Systems Development Method, other
- 5) Can you give your definition of sustainability?

Holistic approach Questions

- 6) Are the three dimensions of sustainability (economic, ecological and social) integrated in the project policy?
Economic: Yes / No
Ecological: Yes / No
Social: Yes / No
- 7) How are these dimensions integrated in the project policy?
Economic: ...
Ecological: ...
Social: ...

- 8) Are sustainability impact assessments (SIA) performed?
 No.
- 9) Yes, please describe them.
- 10) Do you use decision support tools, for example a Multi Criteria Analysis (MCA)?
 No.
- 11) Yes, please describe how and when.
- 12) Are various societal actors involved in decision-making to foster legitimate choices about trade-offs between the three dimensions of sustainability?
 No.
- 13) Yes: who are involved and when are they involved?

Long-term view Questions

- 14) Do you consider the needs of future generations when you address issues or risks?
 No.
- 15) Yes, please explain.
- 16) Do you incorporate the key elements of social learning, innovation and design into your decisions?
 No.
- 17) Yes, please explain.
- 18) Please fill out this table; is there a high, medium or low responsibility by the project governance roles for each of the sustainability principles? Please relate your ideas to the project "Duurzame Uithof".

Sustainability principles	Project governance roles					
	Client Owner	Program Manager	Sponsor	Project Manager	Senior User	Senior Supplier
1. Values and Ethics						
2. Holistic approach						
3. Long term view						
4. Large scale						
5. Risk reduction						
6. Participation						

- 19) Can you explain why did you fill out the table this way? What are your assumptions?
- 20) Anything additional?

Thank you for your cooperation.

Appendix B – Summary of the four interviews

Interview 1

General Questions	
<i>Name</i>	Liza Looijen
<i>Company</i>	HU, FNT
<i>Role</i>	Project manager
<i>Project management method</i>	Geen
<i>Sustainability</i>	Energetica-principe – kijken naar vraagreductie Interactie met omgeving – wat zijn de mogelijkheden, materiaalgebruik Creëren van een duurzame omgeving, een duurzame samenleving
Holistic Approach Questions	
<i>Integrated in project policy: Economics</i>	Ja
<i>Integrated in project policy: Ecological</i>	Ja
<i>Integrated in project policy: Social</i>	Nee
<i>Economic:</i>	Kosten-baten analyse; terugwintijden
<i>Ecological:</i>	Life cycle analyse
<i>Social:</i>	Werkklimaat van studenten; interactie tussen mensen in gebouwen Interactie met de omgeving; geen beleid
<i>Sustainability Impact Assessment?</i>	Nee
<i>Multi criteria analysis?</i>	Ja
<i>Explanation:</i>	Niet alle duurzaamheidsaspecten, met name materiaalkeuze en installatiekeuze; ook technische gebruikaspecten
<i>Various actors involved in decision-making?</i>	Nee
<i>Explanation:</i>	-
Long Term View Questions	
<i>Needs of future generations considered in its and risks?</i>	Ja
<i>Explanation:</i>	Nadenken over verschillende toekomstscenario's (in relatie tot de techniek)
<i>Key elements of social learning, innovation & design incorporated in decisions?</i>	Nee
<i>Explanation:</i>	-
Sustainability Questions	
<i>What would you do different?</i>	Samenwerking met andere stakeholders
<i>Change for the better (regarding sustainability) in this project?</i>	Ook kijken naar bestaande gebouwen, onderhoudsplannen
<i>How can this be realized?</i>	Draagvlak creëren
<i>Anything additional?</i>	Wat beter kan als je naar duurzaamheid kijkt, zijn schaalvergroting en kennisoverdracht. De schaalvergroting door Alie Tiggelhof en Wilko Planje. De verschillende schalen zijn niet zichtbaar voor mij onderin de keten.

Interview 2

General Questions	
<i>Name</i>	Wilko Planje
<i>Company</i>	HU, FNT
<i>Role</i>	Project manager
<i>Project management method</i>	Geen
<i>Sustainability</i>	Duurzaamheid gaat over de vakgebieden heen. Het behelst de hele life cycle van een gebouw. Dat wij als maatschappij echt duurzaam verder kunnen, zonder voortdurend uitputtend te zijn op onze eigen aardbol of van onze collega-mensen in andere landen. Sustainability heeft wat mij betreft te maken met het totaalpakket.
Holistic Approach Questions	
<i>Integrated in project policy: Economics</i>	Ja
<i>Integrated in project policy: Ecological</i>	Ja
<i>Integrated in project policy: Social</i>	Nee
<i>Economic:</i>	Het moet wel betaald worden
<i>Ecological:</i>	Zoeken naar CO2 reductie naar alternatieven, betere doorstroom van De uithof
<i>Social:</i>	-
<i>Sustainability Impact Assessment?</i>	Ja, onderzoeken of de aangedragen oplossing werkelijk groen is
<i>Multi criteria analysis?</i>	Ja, maar dat is niet opgelegd aan de andere projectmanagers
<i>Explanation:</i>	PPP worden op elkaar gemeten
<i>Various actors involved in decision-making?</i>	Nee, voor deze fase niet
<i>Explanation:</i>	-
Long Term View Questions	
<i>Needs of future generations considered in issues and risks?</i>	Ja
<i>Explanation:</i>	Sustainability is per definitie iets wat generaties overstijgt
<i>Key elements of social learning, innovation and design incorporated in decisions?</i>	Ja
<i>Explanation:</i>	Een Klein project kan lerend zijn voor vervolg en grotere projecten
Sustainability Questions	
<i>What would you do different?</i>	Heldere doelstellingen (lange termijn), milestones, zorgen dat het klopt. Eerst consensus kweken.
<i>Change for the better (regarding sustainability) in this project?</i>	Naast comfort energiehuishouding bovenaan. Verder kijken dan de standaard; koploper zijn
<i>How can this be realized?</i>	Praten met early adaptors, koplopers op het gebied van duurzaamheid (marktgerelateerd) / publicatiewaardige vindingen
<i>Anything additional?</i>	nee

Interview 3

General Questions	
<i>Name</i>	Erlijn Eweg
<i>Company</i>	HU,
<i>Role</i>	Programmamanager
<i>Project management method</i>	Nee (wel Prince2 geschoold, maakt daar creatief gebruik van)
<i>Sustainability</i>	Brundtland definitie, dat ook een volgende generatie nog aan zijn levensbehoeften kan voldoen zoals wij dat ook kunnen. Je bent heel erg onduurzaam bezig als je rooibouw pleegt op de aarde
Holistic Approach Questions	
<i>Integrated in project policy: Economics</i>	Ja
<i>Integrated in project policy: Ecological</i>	Ja
<i>Integrated in project policy: Social</i>	Ja
<i>Economic:</i>	Aantrekkelijk onderwijs zodat er meer studenten worden aangetrokken studenten duurzaamheid ook oppakken in hun werkomgeving als ze zijn afgestudeerd
<i>Ecological:</i>	Zit in het thema
<i>Social:</i>	Niet in 1x de hele organisatie activeren, maar stapsgewijs
<i>Sustainability Impact Assessment?</i>	Nee, er is geen nulmeting gedaan en we kunnen daar dus straks niks over zeggen
<i>Multi criteria analysis?</i>	Ja
<i>Explanation:</i>	Er zijn wel een aantal criteria benoemd wanneer een project onder De Omslag mag vallen, maar dat is niet sterk neergezet
<i>Various actors involved in decision-making?</i>	Ja
<i>Explanation:</i>	Je gaat kijken welke personen betrokken zijn bij een bepaald onderdeel wie heb je nodig bij bepaalde beslissingen
Long Term View Questions	
<i>Needs of future generations considered in issues and risks?</i>	Nee
<i>Explanation:</i>	Ik kijk wel naar de toekomst, maar de Brundtland definitie is te algemeen te groot om te gebruiken om een beslissing op te baseren.
<i>Key elements of social learning, innovation and design incorporated in decisions?</i>	Ja
<i>Explanation:</i>	Ik probeer een goede mix te vinden tussen de ontwikkeling van medewerkers, internationalisering, aantrekkelijk betaalbaar onderwijs dat soort elementen neem ik mee in het programma waarmee ik bezig ben.
Sustainability Questions	
<i>What would you do different?</i>	Projectmanagers meer spreken, nieuwsbrief, meer docenten laten profiteren van de bijeenkomsten → kenniscirculatie
<i>Change for the better (regarding sustainability) in this project?</i>	Meer actie op de gebouwkant
<i>How can this be realized?</i>	-
<i>Anything additional?</i>	-

Interview 4

General Questions	
<i>Name</i>	Alie Tigghelhof
<i>Company</i>	Utrecht Science Park
<i>Role</i>	Lid kerngroep
<i>Project management method</i>	Nee
<i>Sustainability</i>	CO2 neutraal in 2040 (provinciaal beleid) Brundtland definitie is helder en bekend
Holistic Approach Questions	
<i>Integrated in project policy: Economics</i>	Ja
<i>Integrated in project policy: Ecological</i>	Ja
<i>Integrated in project policy: Social</i>	Nee
<i>Economic:</i>	De drie grote partijen zijn geen bedrijven, maar maatschappelijke instellingen De business case van elk project moet kloppen
<i>Ecological:</i>	Hooguit het gebruik van grondstoffen en de manier van energieopwek en hoe je daar mee om gaat
<i>Social:</i>	Doen we nog heel weinig mee, is de HR component binnen organisatie
<i>Sustainability Impact Assessment?</i>	Nog niet
<i>Multi criteria analysis?</i>	Nee
<i>Explanation:</i>	Misschien
<i>Various actors involved in decision-making?</i>	Nee
<i>Explanation:</i>	Het is allemaal nogal technisch van aard Het is lastig om partijen een stem te geven binnen het project vanwege verschillende belangen van de drie grote partijen (UMC, UU, HU)
Long Term View Questions	
<i>Needs of future generations considered in issues and risks?</i>	Ja
<i>Explanation:</i>	Lange termijn wordt meegenomen
<i>Key elements of social learning, innovation and design incorporated in decisions?</i>	Nee
<i>Explanation:</i>	De individuele component van het HR beleid van de bedrijven wordt niet direct meegenomen in dit project; social learning zit vooral aan de binnenkant van bedrijven
Sustainability Questions	
<i>What would you do different?</i>	Meer structuur, afbouwen naar een behapbaar project met een kop en een start Een programma opstellen waarbinnen verschillende projecten kunnen draaien
<i>Change for the better (regarding sustainability) in this project?</i>	Een stuurgroep samenstellen met mensen die echt het verschil kunnen maken Parkmanagement sterker ontwikkelen
<i>How can this be realized?</i>	Door de gezamenlijke verantwoordelijkheid meer te benadrukken Concrete afspraken maken
<i>Anything additional?</i>	Ik geloof dat we hier heel veel uit kunnen halen Door de economische crisis is er nu geen geld om een full time projectmanager aan te stellen die de boel van de grond zou kunnen trekken.