Quality Management Plan

Deliverable D9.8

WP9. Project Management and Coordination

NEED4B - New Energy Efficient Demonstration for Buildings

Grant agreement: ENER/FP7/285173/NEED4B

From 1/02/2012 to 31/01/2018

Prepared by: CIRCE

Report submission date: 31/05/2012

Disclaimer of warranties and limitation of liabilities

This document has been prepared by NEED4B project partners as an account of work carried out within the framework of the EC-GA contract no 285173.

Neither Project Coordinator, nor any signatory party of NEED4B Project Consortium Agreement, nor any person acting on behalf of any of them:

(a) makes any warranty or representation whatsoever, express or implied,

    (i). with respect to the use of any information, apparatus, method, process, or similar item disclosed in this document, including merchantability and fitness for a particular purpose, or

    (ii). that such use does not infringe on or interfere with privately owned rights, including any party's intellectual property, or

    (iii). that this document is suitable to any particular user's circumstance; or

(b) assumes responsibility for any damages or other liability whatsoever (including any consequential damages, even if Project Coordinator or any representative of a signatory party of the NEED4B Project Consortium Agreement, has been advised of the possibility of such damages) resulting from your selection or use of this document or any information, apparatus, method, process, or similar item disclosed in this document.

Document info sheet

Document Name:	Quality management plan
Responsible Partner:	CIRCE
WP:	9
Task:	9.3
Deliverable nº:	D9.8
Nature[1]:	R
Version:	1
Version Date:	31 May 2012

Dissemination level[2]: PU

Approvals and list of contributors

	Name	Company
Author/s	Elena Calvo	CIRCE
	María Izquierdo	CIRCE
	Ignacio Martín	CIRCE
Task Leader	Elena Calvo	CIRCE
WP Leader	Elena Calvo	CIRCE

---

[1] **R**=Report, **P**=Prototype, **D**=Demonstrator, **O**=Other

[2] **PU**=Public, **PP**=Restricted to other programme participants (including the Commission Services), **RE**=Restricted to a group specified by the consortium (including the Commission Services), **CO**=Confidential, only for members of the consortium (including the Commission Services)

Executive Summary

The present document is the report of the actuations carried out in the period between 01/02/2012 and 31/05/2012, when the definitive Quality management plan has been definitely established.

This report is developed in the framework of WP9, 'Project Management and Coordination', and concretely, is the output of task 9.3, 'Quality Management', and constitutes the results of the deliverable 'D9.8 Quality management plan', as shown in Figure 1.
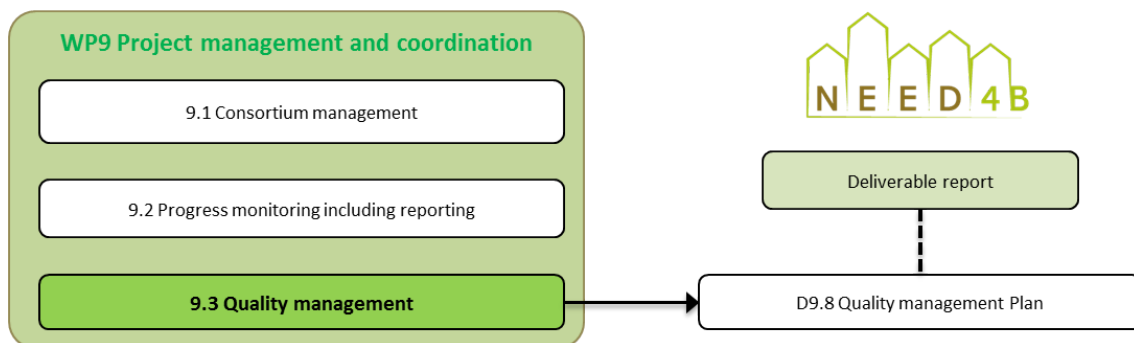

Figure 1: Situation of the deliverable D9.8 in NEED4B

The Quality Management Plan is the document setting out the quality practices and processes for the NEED4B project, ensuring that quality requirements are planned and fulfilled appropriately. The purpose of the plan is to describe the actions and measures that will be taken by the Consortium, in order to ensure the quality of the project and its full conformance with its contractual requirements. The main quality goals will be:

- To provide to all concerned a guide for the actions required by each one involved.
- Exhibit the performance of the project's quality plan in accordance to the contractual requirements.
- Decide which internal members will review the deliverables to ensure quality.

The QMP is applicable to all the project's activities and processes, and strict compliance with it is mandatory for all the participants involved. The QMP will be approved by the Steering Committee of the project. The description of the quality system will focus on the prevention of deviations during each task of the project and the fulfilment of the Grant Agreement in accordance to the quality standards.

CONTENTS

INTRODUCTION

NEED4B project consortium is deeply committed on assuring high quality results. In order to achieve these high standards, the project consortium has clearly defined the roles and responsibilities for each partner and the processes to be followed by them, creating a Quality Management Plan (QMP) with realistic objectives achievable through the whole project's lifecycle.

The Quality Management Plan is an integral and important part of the Project Management. It has been prepared in the early stage of the project under a specific task (Task 9.3), which is focused on quality management. The QMP has been issued in accordance to the ISO-9001 standard.

This Plan specifies the measures taken during the project definition and, which is of utmost relevance, the quality monitoring and supervising activities for NEED4B. The Coordinator leads this activity in close dialogue and cooperation with the Steering Committee. Far from being a general-purpose document, the QMP consists in the following chapters:

1. Quality requirements for the project
2. Planning and control
3. Organizational structure
4. Quality control of the deliverables
5. Quality control of the project
6. Files and archives
7. List of quality forms to be used
8. Risk Management

This document aims to be a guide for the quality requirements to be implemented in the activities carried out in NEED4B project, as well as for the evaluation processes and reviews that guarantee the goals of the project are achieved and the contractual links adopted in the Grant Agreement too.

1   Quality requirements for the project

The purpose of the Quality Management Plan is to describe the actions and measures that will be taken by NEED4B Consortium in order to ensure the quality of the project and its full conformance with its contractual requirements. The main quality goals will be there to:

- To provide to all concerned a guide for the actions required by each one involved in terms of quality assurance.
- To exhibit the performance of the project's quality plan in accordance to the contractual requirements.
- To decide which internal members will review the deliverables to ensure quality aspects.

The Quality Management Plan shall be used by:

- Consortium Partners and Third Parties involved in the project, responsible for preparing and amending the deliverables.
- Internal Reviewers appointed by the Steering Committee responsible for reviewing completed deliverables and sign-off
- Anyone working on behalf of a Partner or any external stakeholder that will be involved in the deliverables reviewing or definition.

The QMP is applicable to all the activities within the NEED4B project and hence, the compliance of its execution with this Plan is mandatory for anyone involved in the project. The Quality Management Plan will focus on the prevention of deviations during each task of the project and the assurance of the contractual quality requirements in the deliverables submission.

Regarding NEED4B project, and taken into account that there are no specific restrictions added by any partner beyond the ones specified in the Grant Agreement, the most relevant requirement for complying with the quality of the project is achieving the results expected in the Grant Agreement, which are listed below:

- Development of a control system for energy management at neighbourhood level and its associated new business and operation models.
- Reducing the energy consumption and the CO_2 emissions with the implementation of the NEED4B system.
- Producing a set of public recommendations for neighbourhoods urban planning, addressing the refurbishment of existing neighbourhoods as well as new ones.
- Pave the way to achieve zero-energy balance districts.

Once the objectives have been clarified, the quality plan should focus on detailing the quality orders for the project, as well as the criteria that should be used to measure and determine if the given results coincide with the expected ones. This process will be based on the quality policy held by the responsible organization, CIRCE, who will be to develop a plan to determine:

- The standards, regulations and quality orders that affect the project directly.

- The means to achieve quality conformity specified in these standards.
- The processes and plans to ensure a continuous improvement.
- The metrics that will be used to measure the project's results.
- The process that will be implemented to apply these metrics.
- The quality degree of the product, as well as the characteristics expected in the project deliverables.
- Internal audits.

The following sections will illustrate the structures and methods deployed to achieve the plan objectives.

1.1 Quality Management Plan Review

The Quality Management Plan will be reviewed within the project execution by the Steering Committee. The review will be done after the first 12 months of project execution, once all the partners have tested the Quality Management Plan, and the first review period passed.

The following items will be taken into consideration in this review:

- Results of project reviews
- The processes and methodologies for quality assurance
- Results from internal audits
- Official project deliverables
- Corrective and preventive actions requests from all the above issues
- Project deliverables deficiencies and problems

The outcomes from all the above mentioned bullets shall be discussed during a Steering Committee meeting and the results gathered in an internal document.

2 Planning and control

To ensure and determine every quality aspect required in the project, the efforts will be focused in the control and verification of quality, but also in monitoring if such validation is carried out, processed and transmitted. This process will therefore count on the following steps:

1. To determine what must be verified and controlled. As a general approach, deliverables and any important commitment that constitute a key to the beginning of their following activities, located in the critical path of the project.
2. To establish the most appropriate way of carrying out the control process. The review process is set by the Steering Committee of the project, which is the Management Body that gives the final approval to each deliverable.
3. To develop the planning of the quality activities. Most of the quality activities are carried out just before completing the associated deliverable, although if the development terms are long enough, intermediate actions must be programmed.
4. To determine the stakeholders and participants of the quality activities. They will be generally the partners responsible of the deliverables, but it must also be necessary the participation of experts, or even external stakeholders, in order to ensure a common understanding of the provided information.
5. To describe the quality tools and technics that must be used. They will guarantee that all the project's aspects have been taken into account, without spreading the efforts and the attention of the consortium members.

Moving on to the issue of the quality plan, it will have to be written with the aim of offering an easy access to the quality requirements. These are the contents the plan entails:

Management responsibilities: They describe the quality responsibilities of all the parties implied, as has been done in the section 3 of the present document "Organizational structure".

Quality system: It collects the existent quality procedures, which have been standardised and used by the responsible partner. In this way, CIRCE is in the process of implementing the methodologies set in the ISO 9001:2008.

Quality documents: Procedures to the maintenance of the quality registers (metrics, variability reports, checking lists) during the project execution and once it has finished. These documents are expected to be developed during the project implementation.

Design control: Methodologies for the design revisions, changes and exemptions from requirements.

Document control: Process to examine and verify the documentation related to every phase of the project.

Subcontracting: Quality requirements for subcontracting any part of the project. A specific section of the Grant Agreement is devoted to ensure a proper management of the third parties subcontracted, and it will be followed by the Consortium.

Acceptance criteria: Set of specific and measurable criteria that will be used to verify if the deliverables and project are finished appropriately.

Non-conformities: Procedures to manage and solve non-conformities. These processes include:

- Definition of responsibilities.
- Definition of conditions.
- Availability of needed documentation.

Corrective actions: Methodologies to carry out corrective measures for the problems found during the execution of the project activities.

Quality auditing: Measures for planning and implementing internal audits during each phase of the project. These audits will be carried out by the Steering Committee every 6 months.

The following chart shows how the project's tools and bodies responsibilities satisfy the different points of the quality plan:

	Deliverables submission methodology[3]	Steering Committee meetings[4]	Conditions specified in the GA	Specific Intranet tools[5]
Design control				X
Quality documents	X	X		X
Document control	X			X
Subcontracting		X	X	
Acceptance criteria	X			
Non-conformities		X		
Corrective actions		X		
Quality auditing		X		

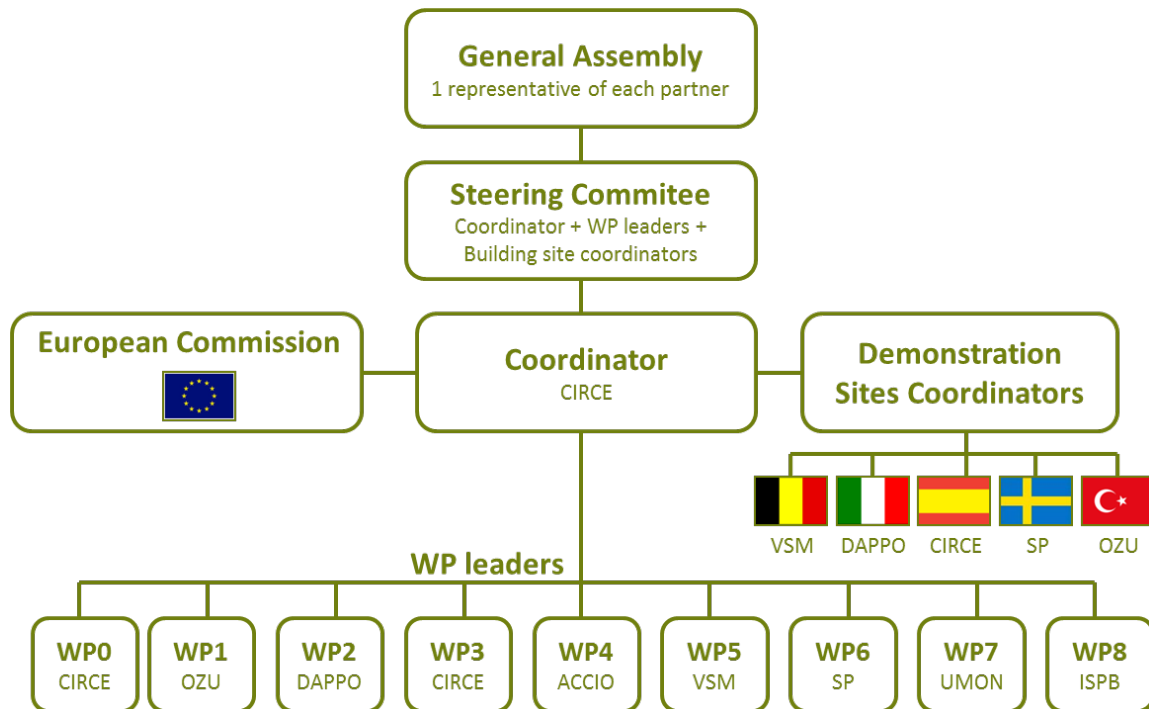**Table 1: Project tools answer to the quality plan points**

---

[3] The deliverables submission methodology is described in section 4.

[4] Steering Committee roles and responsibilities are defined in deliverable 9.1 *"Governance Structure, Communication flows and methods"*

[5] The intranet procedures are set in deliverable 7.5 *"Project web site"*

3 Organizational structure

The definitive governance structure of NEED4B is represented in Figure 2:

Figure 2: NEED4B governance structure

CIRCE is the project Coordinator and is responsible for leading NEED4B Management Structure and chairing the General Assembly (decision-making body) and Steering Committee (execution body). The Coordinator will be responsible for the overall management of NEED4B and will be supported by the Steering Committee in aspects related to progress monitoring and project coordination. On the other hand, the Demonstration Sites Coordinators will monitor the activities deployed in each building site due to the importance of the demonstrators for NEED4B project.

The Governance Structure is introduced in the DoW (Document of Work) of the NEED4B project and also agreed between the partners in the Consortium Agreement signed within the Consortium.

The competences, responsibilities and structure of the Management Bodies above mentioned in Figure 2 are explained in detail in the deliverable 9.1: "Governances Structure, communication flows and methods".

3.1 Responsibility for Quality

This hierarchized Governance structure and the procedures established in the NEED4B project will facilitate the continuous monitoring and the quality assurance. Each Management Body, as stated, has its roles defined, and the processes related to the quality management agreed. In the following sections, the procedures and tools for quality management are specified.

The Project Coordinator (PC) is the final responsible for Quality within the Project. The PC, assisted by the Steering Committee, formulates and safeguards the overall policy for quality and takes the necessary actions to ensure that no deviations are produced. The PC is also responsible for ensuring the quality of all the project's deliverables and the application of the procedures described in the QMP.

The Quality Management Plan has been developed by the PC with the support and advice of the Steering Committee will be accepted and reviewed by the Steering Committee in the first meeting.

The PC is responsible for the administration of the QMP and has the authority to:

- Identify problems during internal audits and initiate actions for conflicts or quality problems solving.
- Organize and verify all work affecting quality.
- Initiate an action to prevent the occurrence of any non-conformity in the project.
- Identify and record any relevant problem
- Initiate, recommend and/or provide solutions through the reporting system.
- Verify the implementation of quality solutions.
- Monitor and control the quality during the project execution.

The PC coordination, in conjunction with the Steering Committee will be responsible for:

- Ensuring the scientific and technical quality of the deliverables.
- Reviewing the technical reports produced
- Monitor the quality control of all deliverables submitted
- Ensuring that all the project outputs are consistent

Although the final responsibility relies on the Steering Committee and mostly in the Project Coordinator, according to this QMP, all the partners are responsible for ensuring high quality deliverables.

For each deliverable, a quality control process will be executed, which is described in the following section.

4 Quality control of the deliverables

Within the framework of NEED4B project, two levels of documents are considered. The first ones, and not concerning this Quality Management Plan, are the internal documents and reports, which serve for the day-to-day execution of the project. The second ones, and the most important thereto, are the external deliverables. A deliverable report generally aims to provide information concerning the research carried out, its progress or the results. Deliverables are the main project outcomes, and therefore, they have to be carefully drafted with rich content, a clear structure and professional presentation.

A quality control of the deliverables is crucial to succeed in the project execution, verifying that the objectives are achieved. In the present section, the process for the deliverables review, the quality control and the tools to proceed with it are explained.

4.1 Deliverables layout

Official project deliverables should follow the same structure throughout the project, in order to be consistent and regular. A template for external deliverables has been set and it is shown in Section 7. It will use the logo and page layout (headers / footers) suggested in that template. Furthermore, they should have the following sections:

- Cover Page
- Disclaimer of warranties
- Detailed information concerning each deliverable
- One-page executive summary
- List of contents
- Main conclusions
- Include References when necessary
- Include all detailed technical information and other in Annexes

4.2 Deliverables production process

In the previous section, the deliverables layout has been discussed. The most important part within them is the core of the text that is going to be the valuable part of deliverables. Accordingly, to ensure quality of the deliverables and the in time delivery, the processes and timing to take into account will be:

- At least four months prior to the deliverable submission, the deliverable responsible will propose the rest of the partners contributing, a list of content that covers the whole work and objectives the deliverable is supposed to. This list of contents will be agreed among all the partners taking part in the deliverable.

- At least one month before the delivery date, all the partners contributing to one deliverable should send to the deliverable responsible their contribution. It is the responsibility of the author to ask for these contributions to all the partners in time to check the quality and adequacy, and ask for modification or further content under his consideration.

4.3 Communications for the deliverables' submission

The process for the submission of the deliverables (see Figure 3), involves the communications between task & WP leaders and the coordinator, in order to revise if the deliverable complies with the following requirements established by NEED4B:
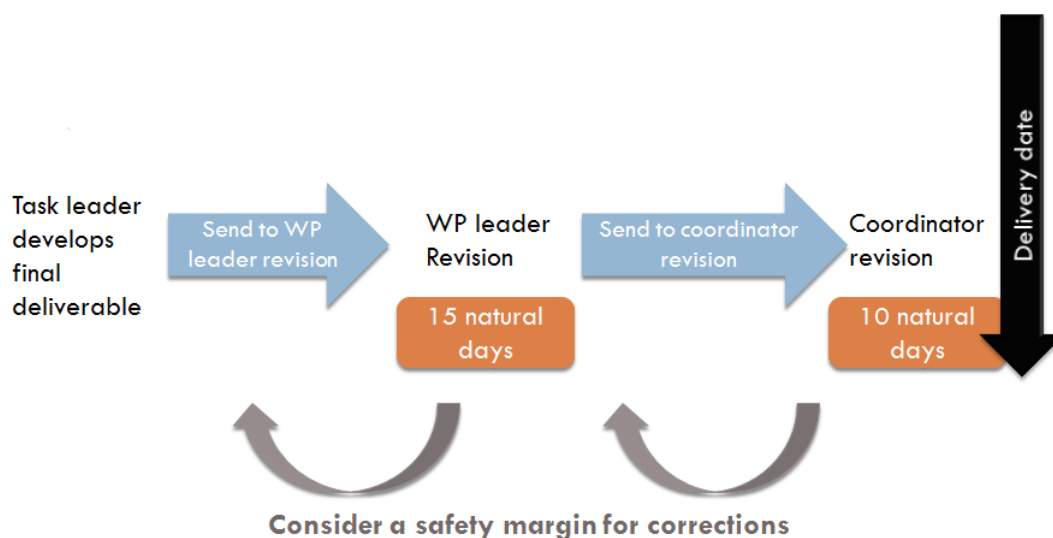

Figure 3: Procedure for the submission of deliverables

Then, this procedure is based on continuous revisions and feedbacks that will allow the task leader to analyze and solve the existing errors. The communications are explained below following the temporal sequence of the submission process:

- *Task leader to WP leader.* The task leader will send the deliverable to the WP leader, who will review it in a period of two weeks maximum.
- *WP leader to coordinator.* Once the WP leader review the deliverable, the coordinator will review again the deliverable judging the degree to which the objectives are met and whether the deliverable meets the quality expected.
- *Coordinator to task leader.* If it is the case, the task leader will be sent with the consolidated peer review file including all comments from the reviewers. The task leader will revise the comments and will send a final version.

When a final version is obtained, it will be communicated to the task participants. They will be in charge of developing a final revision analysing how the deliverable contributes to reaching the purpose and goals of the total project, the objectives of the work package in which is included and the specific achievements to be obtained by the deliverable

According to the present Quality Management Plan and the review process defined, two reviewers shall revise the deliverable once the deliverable responsible has sent the preliminary version. The ideal situation is the one where the deliverable responsible, the WP leader and the coordinator are different partners, but this situation is not given always during the whole project. Therefore, three additional possibilities may be given:

- The deliverable responsible and the WP leader are the same
- The deliverable responsible and the Coordinator are the same
- The deliverable responsible, WP leader and Coordinator are the same

In all that cases, a process for the selection of one/two reviewers will start, so as to ensure that two partners review the deliverable as the QMP envisages. The reviewers may be also external ones if the Steering Committee or the Coordinator believes it necessary.

4.4 Quality requirement definition

The content of each deliverable depends on the information provided, but, as general rule, it will follow the guideline set in section 4.1. As a general principle, the content and the body of the report will be under the deliverable beneficiary responsibility. Nevertheless, all the participants in the deliverable should agree the content and structure. Moreover, the reports should always meet a set of quality requirements, based on the criteria that are defined below.

Information must address all aspects related to the purpose the deliverable is covering. On the other hand, redundancy of information must be avoided, as in some cases it might be obscures the clarity of the findings and results. The quality criteria to be considered within the deliverables are the following:

1. Completeness: Information provided by deliverables must be complete, reliable and corresponding with reality. This means that all background information used in the report should be appropriately supported by references and the work been done consistently and clearly explained, in order to avoid misinterpretation of the foreground.
2. Accuracy: Information used in the deliverable should be focused on key issues and be written in a way that takes into consideration the scope of the specific research work and its targeted audience.
3. Relevance: All information used should be provided to the depth needed for the purpose of the reports and the project.
4. Depth: Appearance and structure. Although different partners within the framework of NEED4B project will author deliverable reports, it is important that reports are prepared with uniform appearance and structure. This will lead to provide a common appearance, as they are originated under a common initiative. For this purpose, a deliverable template is available.
5. Accordance to standard: Uniformity
6. Punctuality: This quality indicator is dealing with orthography and the correct grammar usage.

7. <u>Timing:</u> Delays in the deliverable submission.

4.5 Review procedure

The review procedure is executed in parallel to the deliverable production process and applies to all project deliverables that are defined as Public and Restricted. Nevertheless, whenever the consortium agrees, this procedure will apply to all deliverables of the project.

The deliverable under review process will be forwarded, through the deliverable responsible, to the reviewers. The deliverable, in the first draft version, should be sent to the reviewers 4-5 weeks before delivery date to start the review process.

The review process sets the key-mechanism for monitoring and compliance with the quality criteria. This degree of compliance is evaluated by assessing indicators, summarized in Table 2. These indicators concern categories of non-conformity and they are identified in the intranet during the deliverable evaluation.

Basic aspects	Quality criteria	Indicators	Indicator code
Content	Completeness	Missing content	MC
		Redundancy	RE
	Accuracy	Error in content	E
		References	R
		Insufficient documentation	ID
		Ambiguity	A
	Relevance	Irrelevant information	I
	Depth	Lacking detail	LD
		Excessive detail	ED
Appearance and structure	Accordance to standard	Lack of uniformity	U
	Punctuality	Spelling and grammar errors	SG
Timeliness	Timing	Delays	D

Table 2: Indicators for assessing the degree of compliance

The indicators shall be evaluated from 1 to 5. In case of rating an indicator from 1 to 3, a comment will be written by the reviewer.

All the indicators should be above 3 to be accepted of quality enough to be submitted to the EC. The final rating will be marked as:

- Fully accepted
- Minor revisions required
- Major revision required
- Rejected

The revision will be sent to the deliverable author in order him to perform the necessary corrections to overcome the quality review. This procedure should take less than 15 days in order to be carried out before the expected delivery date.

4.6 Intranet tools

4.6.1 Deliverables and Commitment widget

The Deliverables and Commitments widget shows the information of all deliverables and commitments in which the partner is involved, being the main responsible or a collaborator. The widget shows four sections:

- Deliverables that are not finished
- Deliverables delayed in relation to the initial timing established
- Upcoming deliverables. Deliverables that end in a month
- Pending documents that are requested to submit.

4.6.2 Reminders

The website counts as well on a useful tool which allows the user to be informed on all the project's changes and upcoming events: The reminders. These are messages that are sent automatically to the users in case they need to be informed on any issue related with the project's development. In Table 3 are shown the different kinds of reminder alerts that can be received by a user.

Type of reminder email	Moment / Frequency
Upcoming deliverables	15 days before planned start
	15 days before planned end
Upcoming commitments	7 days before planned end
New commitments	Day when it is assigned
Pending deliverables and commitments	Day after deadline
	Every 7 days after deadline
Update status	Each time a month passes by after the last status update
Invitation to a meeting	Once to confirm attendance
Revision of deliverables/commitments	*Task leader:* when document uploaded and applies for validation
	WP leader & Coordinator: when asked to revise a deliverable

Table 3: Email reminders

5 Quality control of the project

This section deals with the overall quality control of the project, of which, the Project Coordinator is responsible for. Apart from the particular procedure to assess the quality of the deliverables, this section deals with the issues related to the general performance and execution of NEED4B and the quality of their work outcome.

5.1 Corrective and preventive actions

An analysis of all the partners' reports and records shall be completed in order to determine areas for corrective actions, if they were necessary. Observations requiring corrective action are documented on a brief non-conformity report, with the following content:

- Deviation description
- Action list
- Partner(s) involved
- Author of the inspection

Any beneficiary of the project may raise such non-conformity with regard to the work of another partner or external suppliers / subcontractors.

The Project Coordinator is responsible for implementing and recording changes in the procedures, resulting from corrective actions. These procedures are established to ensure:

- Effective handling of all complaints
- Reports on non-conformities
- Assessment on the cause of non-conformities
- Recording the results of the research
- Determining the corrective and preventing measures needed to eliminate the cause of non-conformity
- Application of controls to ensure that corrective actions are taken and are effective
- Ensuring that relevant information on actions taken is submitted for review

The Project Coordinator is responsible for resolving issues under this procedure, within its own areas of responsibility. All complaints are to be assessed and corrective actions agreed. This has to be shown to the Steering Committee when happening and agreeing on the non-conformity analysis performed and the corrective measures proposed.

5.2 Control of quality records

The quality records are to be maintained by the Consortium and may be available when necessary. All quality records shall be stored and kept as confidential within the consortium and in a suitable support in order to avoid damages to the partners or the project itself. The records will be retained under the Grant Agreement.

5.3 Internal quality audits

In special cases, when a problem of paramount importance comes up during the execution of the project, the consortium will carry out an internal audit procedure. This will be done in the corresponding site where the problem has appeared.

The personnel listed below will try to solve the problem by an urgent videoconference or, otherwise, will have to travel to the site:

- Project Coordinator
- Two Consortium Representatives, selected among the partners on the basis of technical relevance and expertise for the problem under inspection.

The Project Coordinator will document all the findings and conclusions of the Internal Audit in a report. Then, corrective actions will be issued, in order to overcome all discrepancies within the appropriate time period. Follow-up actions will be arranged, so as to ensure the effectiveness of the corrective actions. The results of the Internal Quality Audits will be distributed to the General Assembly.

The Project Coordinator will be responsible for the implementation of this procedure. In all other cases, he/she will monitor the progress of the NEED4B project through contacts (mainly by email) with all the involved partners. All day-to-day and trivial barriers of the project have to be dealt within this described way.

5.4 Project monitoring and reporting

All beneficiaries of the NEED4B project are requested to send, in addition to all formal work and financial statement reports, a brief progress and financial report to the Project Coordinator every 6 months. These will be used by the Project Coordinator to produce milestones. Furthermore, when other key issues or problems are found, they will be evaluated and may cause alarm warnings by the Project Coordinator.

Warning alarm may be raised in the following cases:

- Budget related: If strong deviations are found out for any partner, concerning actual and pre-defined costs. This is valid for each partner and for each cost category.
- Time related to submission of deliverable: If 1 month before its delivery date no draft is available or 15 days after no deliverable is provided.

6 Files and archives

NEED4B provides formats with a standard visual image, to assist clear communication and comprehension. In this way, visual quality is also to be considered in all the documentation generated by NEED4B project. The following are the formats specified for use in partner communication, documentation, reporting, and deliverable production.

6.1 Reports and Deliverables

- Reports and Deliverables will be produced in Microsoft Word or completely compatible software: working drafts and editable working copies will be supplied to partners as Word documents. The Project Co-ordinator will make a final release version as a PDF file. This PDF version will also be made available to partners and will be regarded as the definitive version of the Report or Deliverable.
- Cost reports will be supported in Microsoft Excel or completely compatible software.
- Reports and Deliverables should have a consistently styled cover sheet and structure, based on the template contained in this document (available in the intranet). All pages should be numbered and the document identification number should be included in the footer.

6.2 Logos and acknowledgements

- All reports and deliverables should carry the logos of NEED4B and the Seventh Framework Program FP7
- All publications and public displays produced by the project must, in addition to the logos, carry the EU logo (available in the Member Area) and a text acknowledgement that "the project is co-funded by the European Commission, through the, 7th Framework Programme".

6.3 Illustrations

Photographs and illustrative material for print reproductions should be supplied as 360 dpi. Photographs and illustrative material for Web use should be supplied as 72 dpi RGB, JPEG, GIF, PNG or PICT files. Each partner shall be responsible for ensuring all necessary copyright clearances for illustrative materials they use within the project involving third party material.

6.4 Timesheets

In accordance with the terms of the Contract, all partners are required to maintain proper records of time worked on the project. There is no set format for time sheets, which should accord to establish company practice.

6.5 Presentations

NEED4B coordinator provides templates for project presentations in order to facilitate their production as well as to guarantee the consistency and quality of NEED4B images. The templates will be available at the intranet.

7   List of quality forms to be used

All the templates for the NEED4B project have been generated, are available in the intranet and may be seen in the Deliverable 9.1. These are:

- Agenda template
- Deliverable or report template
- Minutes of meeting template
- Power point presentation template

The quality management plan deals with more reports to monitor and ensure the quality of the work within the NEED4B umbrella. These reports will be supported by:

1. The intranet of the NEED4B project to perform the quality review of the deliverables.
2. The rest of reports should be built upon the report template that is already available with the list of contents that is named in section 5 at each respective kind of report.

8 Risk management

The risk management plan has been set on the basis of existing and effective risk management practices and more specifically the Continuous Risk Management paradigm.

Project risks describe the impact on the project such as diminished quality of the results, increased costs, delivery delays, loss of market share or failure.

8.1 Risk Management Plan overview

The risk management plan incorporates the following activities:

1. Continuous monitoring: Continuous assessing of risks
2. Risks assessment: Determining which risks are important to address
3. Contingency plans: Implementing strategies and actions to deal with those risks

8.1.1 Continuous monitoring

The continuous risk management approach is depicted in the following picture:

These elements are described below:

1. Identify: makes all know project risks explicit before they come up as problem
2. Analyse: transforms risk data into decision making information
3. Plan: translates risk information into decisions and mitigation actions and implement those actions
4. Track: monitors risks indicators and mitigation actions
5. Control: Corrects for deviations from the risks mitigation plans
6. Communicate: enables the sharing of all information throughout the project and it is the cornerstone of effective risk management among the Consortium

This continuous monitoring of the risks implies continuous updates during the whole project lifecycle. At each Steering Committee meeting, the Project Coordinator and the WP leaders will propose an update on the risks of the project and will evaluate their impact and probability (explained in following section) and will provide contingency plans if needed.

8.1.2 Risk assessment

Risk assessment is a measure of the risk created by combining the impact and probability of the risk. These terms are identified below at three levels for each of these two features.

Impact: the effect of the particular risk on the project, which is determined on the basis of the risk's effect on the project. The levels of impact are:

1. Low
2. Medium
3. High

Probability: the chance that a particular risk will occur. The levels of probability are:

1. Low
2. Medium
3. High

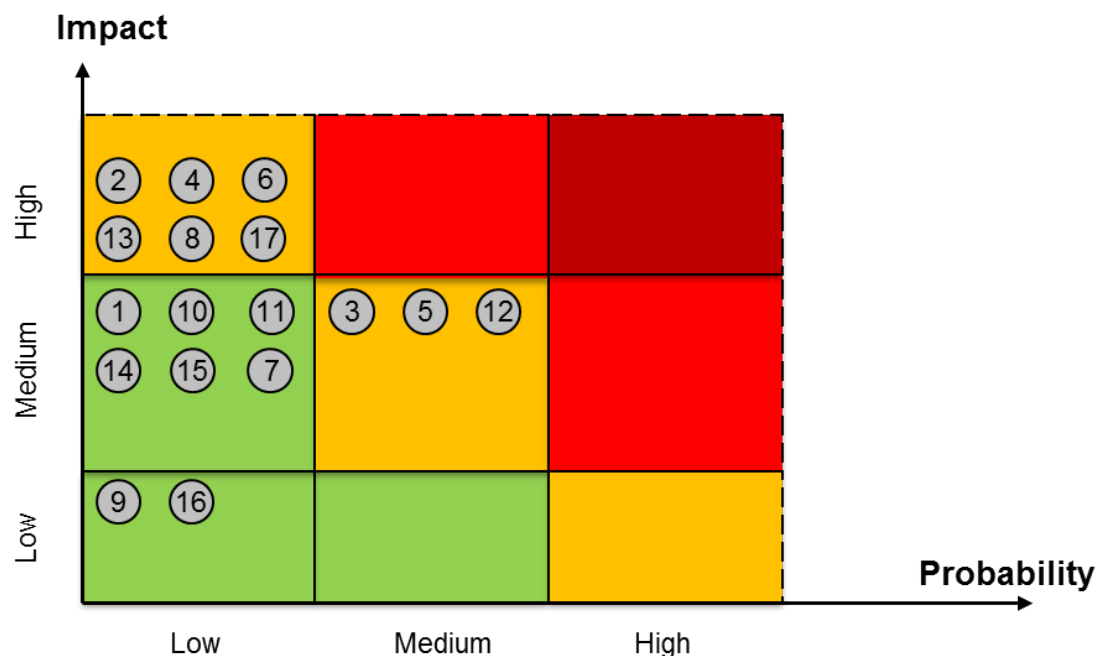In the following figure it can be shown the first analysis performed for the NEED4B project risks.

Figure 4: NEED4B risk's analysis

8.1.3 Contingency plans

For those risks where the exposure is not under the green part of the Figure 4, a contingency or mitigation plan shall be developed, in order to be ready to act in the case that the risk occurs finally in the framework of the project.

Following, a first list of the contingency plans of the NEED4B project is shown:

Nº	Risk description	Mitigation approach / contingency plan
1	The design doesn't fit with the efficiency requirements	• Previous detailed study of all the demo sites, including climate conditions, building end use and social behaviour has been already drafted during the proposal phase. • The study will be subsequently improved to achieve greater efficiency and operability taking into account the methodologies that are going to be developed (WP2) within NEED4B project. • In the consortium, architects have been included, in order to get a better implementation of the energy efficiency requirements with the building design. • There is also a specific task 4.1 for demo sites simulation through energy performance Software, which will allow knowing in advance the building energy operation.
2	The stakeholders identified are not involved from the beginning of the project	• Stakeholders are going to be considered from the very beginning of the project. There are specific tasks for that, 1.3 and 4.5 • The consortium counts with committed and interested stakeholders for the project, as shown in the commitment letters in Annex I of the DoW. • In addition, an IPD methodology (Integrated Project Delivery) will be applied.
3	Difficulties for engaging the technology providers	None of the partners of the project is a technology provider. The consortium decided not to include them in order to make a better selection attending to criteria and conditions developed in the methodology Work Package, between the various technological offers. • Mapping of the innovative technologies and providers is going to be carried out • A workshop will be held in each demo site and the providers will be invited so that they can offer solutions.
4	Security and safety conditions during construction works	• Specific training in security and safety aspects for the workers in each demo site will be carried out, according to the considered kind of buildings and construction techniques.
5	Delays in construction due to suppliers	• All the partners and investors are fully committed to follow the schedule of NEED4B project, and will ensure the achievement of the NEED4B scheduled.

		• An active monitoring of the construction works will be implemented to avoid delays and to seek fast and effective solutions that may arise.
6	Delays in construction due to natural hazards	• External assurances will be contracted in order to avoid this risk.
7	The execution is not in accordance with the design	• The stakeholders that are going to execute the construction works are going to be involved in the design process, as part of the Integrated Project Design (IPD) defined in the task 2.2 and 4.5. That minimizes the risk of discord between execution and design. • In addition, an active monitoring of the execution works will be implemented.
8	A demonstration site fails	• The coordinator has already established negotiations with two additional pilots interested in joining the project and able to substitute any demonstrator leaving NEED4B. (One in Israel and another in France) • In addition, as 5 demo-sites are involved in NEED4B, the project would be able to continue with the rest of the sites, reducing the activities from the failing site.
9	The scope of the guidelines and dissemination don't reach all stakeholders	• Showcases will be realized so that the stakeholders can be participants in the experience of NEED4B. • Partners has been selected looking to their visibility (see section B.3.2)
10	Poor contribution to standards in energy efficiency in buildings	• The efficiency scope for the Buildings in the demo sites is better than in the current European standards due to the consumption levels required. • NEED4B has established mechanisms and links to platforms, associations and networks through the project.
11	Poor replicability of the project results	• One of the aspects of the project is the involvement of companies of the construction sector with the purpose of get more replicability • The geographic areas, climatic zones, end use of the buildings and the users, have been selected carefully to cover as much as possible increasing the replication of the project. Special attention to eastern countries is paid in WP8 • The cost effectiveness of the measures and technologies applied in the demo sites are going to be taken into account from the beginning, as shown in task 2.4, to ensure replicability of energy efficient buildings.
12	Difficulties for the application of the methodology developed	• Early in the project, an IPD approach is going to be carried out, including in the WP2, the development of the new methodology. • All the stakeholders are going to be taken into account, to make easier the understanding, use and further application

		of the methodologies developed.
13	No availability of financial sources	• There is already a budget reserved in the infrastructure plans of the public and private entities for the development of the demo sites. See the commitment letters in Annex I of the DoW. • The investors for the project have been identified in the different sites. • There are public grants from the different Member States to co-finance these projects within national and regional programs for energy efficient buildings.
14	Change of stakeholders during the project at demo sites	• Solvency of every industrial partner has been assessed to ensure the commitment acquired. • A list will be developed to guarantee that there are stakeholders identified in case they are needed.
15	Limited cooperation with other platforms or initiatives in relation with NEED4B	• Many of the project partners are already part of the most relevant platforms and networks at European level such as shown in section B.3.1.1
16	Poor cooperation between sites	• The coordinator of the project has a lot of experience managing collaborative projects. • The NEED4B proposal has set up an adequate management structure, including conflict resolution and quality management. • Some workshops will be held to share the problematic rise in the development of the project, to accomplish decision making as a whole, making the most of the skills of each partner.
17	Partner leaving the project	• In the improbable case that a partner leaves the project, the consortium will first see if any other partner is able to deal with the tasks that were under the leaving partner´s responsibility. If no one is able to assume the role, a new partner will be chosen to join NEED4B following the rules and guidelines set by the European Commission, which would be informed in detail.

Table 4: Risks and associated contingency plans

9 Conclusions

This document presents the processes and responsibilities for assuring that the quality of the project is appropriate and the actions analysed in the relevant sections are in accordance to the standard ISO 9001:2008.

This document and the processes described within it, once accepted by the General Assembly, must be followed by all the project partners and members during the whole project life-time.