

Annex C: Monitoring Progress Report

COST

Domain Committee "Transport and Urban Development"

COST Action (C23)

Strategies for a Low Carbon Urban Built Environment

MONITORING PROGRESS REPORT

Period: from 10th May 2005 to 10th September 2006

This Report is presented to the relevant Domain Committee and contains two parts:

- I. Management Report prepared by the COST Office***
- II. Scientific Report prepared by the Chair of the Management Committee of the Action***

The report is a "cumulative" report, i.e. it is updated annually and covers the entire period of the Action.

Confidentiality: the documents will be made available to the public via the COST Action web page except for chapter *II.C. Self evaluation*.

Based on the monitoring results, the COST Office will decide on the following year's budget allocation.

I. Management Report prepared by the COST Office



I.A. COST Action Fact Sheet

- **COST Action** *C23 – Strategies for a Low Carbon Built Environment*
- **Domain** *Transport and Urban Development*

- **Action details:**

CSO Approval: (15/03/2005)

End date: (12/10/2009)

Entry into force: (09/06/2005)

Extension:

- **Objectives**

The main objective of C23 is to investigate, across the European Union, how carbon reductions can be achieved through appropriate design and management of the urban built environment. This will involve:

- minimise energy use and associated emissions from buildings,
- examine the indirect energy impacts of infrastructure developments.

Specific objectives of the research include:

- 1) *Case study selection and analysis* - Identify and examine case studies to exemplify good practice of developing a low carbon built environment. This will provide an opportunity for professionals at all levels to learn from others and to demonstrate the impact that legislation and other drivers are having on practice. The case studies will also provide information to feed into the other following objectives.
- 2) *Performance Criteria* - Review and compare existing legislation, technical regulations and policy relating to low carbon built environment in partner countries. Components of the built environment have to operate efficiently and effectively throughout their lifetime whilst minimising carbon emissions. This Action will therefore investigate how the performance of the built environment can be maintained or improved whilst incorporating methods to reduce carbon emissions. The principal aim will be to identify what criteria are used to assess different aspects of the performance of the urban built environment. An investigation will be made into how low carbon technologies are encouraged or enforced in buildings, planning and infrastructure in partner countries at an EU, National and local level to identify what methods are successful.
- 3) *Decision making* - Identify decision making structures and chains of responsibility in each member state, as the context in which efforts to reduce carbon emissions take place. Guidance is required in order for the most appropriate decisions to be made. All stakeholders within the built environment should be well informed as to how best to reduce carbon emissions. This includes decision makers through to the public as all have important contributions to be made to assist with low carbon built environment. There is a need for behaviour to change, led by understanding of why behaviour needs to change.

- 4) *Cost analysis* - Develop an understanding of cost attached to low carbon development and energy conservation among policy and decision makers, designers and other built environment professionals, and the general public. Investigation of the costs relating to incorporation of low carbon into the built environment is difficult due to indirect costs and cost benefit over time. Many developments take place with a short term view considering capital costs only. There is a need for long term assessment of capital, operational and other costs to be considered to enable a holistic view of environmental, economic and social benefits.
- 5) *Guidelines* - Produce guidelines to assist built environment professionals with procedures to ensure maximum consideration for low carbon are made for all built environment construction and renovation.

• **Signatories:** *list of countries and date of signature*

Austria	09/06/2005
Belgium	09/06/2005
Cyprus	12/09/2005
Denmark	09/05/2005
Finland	09/06/2005
Germany	09/06/2005
Greece	19/08/2005
Italy	20/06/2005
Lithuania	19/06/2006
Malta	15/03/2006
Netherlands	03/05/2005
Norway	21/06/2005

Poland	12/04/2006
Portugal	05/09/2005
Serbia and Montenegro	21/11/2005
Slovenia	30/08/2005
Spain	21/09/2005
Switzerland	10/01/2006
United Kingdom	21/06/2005

- **Intentions to sign:** *none*
- **Participating Institutes of non-COST countries:** *none*

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Administrative Officer: *Isabel Silva,
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- **Action Web site:** <http://www.lcube.eu.com>
 - **Working Groups** (*list of WGs and name*)
Working Group 1 – New/existing buildings
Working Group 2 – Urban infrastructure
Working Group 3 – Dissemination and reporting
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I.B. Management Committee member list

Austria	Mr. Konrad WILDENAUER
Austria	Professor Gerald LEINDECKER
Belgium	Professor Marc FRERE
Cyprus	Dr. PETROS LAPITHIS
Denmark	Mr. Torben DAHL
Denmark	Dr. Morten ELLE
Finland	Mr. Kari OJALA
Finland	Mr. Pekka LAHTI
Germany	Professor Geralt SIEBERT
Germany	Dr. Werner LANG
Greece	Demetris BOURIS
Greece	Professor Christopher KORONEOS
Italy	Dr. Rossano ALBATICI
Lithuania	Mr. Juozas RAMANAUSKAS
Lithuania (delegate)	Raimondas BLIUDZIUS (full details not available)

Malta	Dr. Vincent BUHAGIAR
Netherlands	Mr. René WANSDRONK
Norway	Professor Anne Grete HESTNES
Norway	Professor Oyvind ASCHEHOUG
Poland	Dr. Adam RYBKA
Portugal	Professor Paulo PINHO
Serbia and Montenegro	Professor Aleksandra KRSTIC-FURUNDZIC
Slovenia	Dr. Marjana SIJANEC ZAVRL
Spain	Professor FERNANDO RODRIGUEZ
Switzerland	Dr. Veronique STEIN
Switzerland	Mr. Willi HÜSLER
United Kingdom	Professor Phillip John JONES
United Kingdom	Dr. Chris TWEED



***I.C. Overview activities and expenditures
2006 Budget***

Total Action Budget
Remaining Action Commitment

70000
2260

Meetings

Meeting Type	Date	Place	Cost	Total
Joint Management Committee/Working Group	12/01/2006	Porto (PT)	19698	
Joint Management Committee/Working Group	19/06/2006	Trondheim (NO)	25503	
Working Group	14/09/2006	london (GB)	3339	
Working Group	4/12/2006	trento (IT)	19200	
				67740

STSM

Beneficiary	Date	From	Cost	Total
				0

Workshops

Title	Date	Place	Cost	Total
				0

General Support Grants

Title	Date		Cost	Total
				0

Schools

Title	Date	Place	Cost	Total
				0

67740

II. Scientific Report prepared by the Chair of the Management Committee of the Action

II.A. Results achieved during the period x to y

Describe in no more than 2 pages the main results achieved, indicating the key scientific and technical outcomes of the Action compared to the international state-of-the art, and with an assessment of the results obtained compared to the objectives. Describe briefly the progress with respect to timetable and possible scientific problems encountered. Additional documentation such as extended scientific reports, proceedings of workshops, seminars or conferences may be provided separately as an annex to the annual progress report, and should be referenced in the report. Describe the efforts made and success achieved in involving younger scientists.

The Action 'kicked off' in May 2005 with a meeting in Brussels. At this meeting it was agreed that Phil Jones should chair the Action and three working groups were set up:

WG1	New and existing buildings (Chair Chris Tweed)
WG2	Urban Infrastructure (Chair Paulo Pinho)
WG3	Dissemination (Chair Phil Jones)

C23 vice-chairs are the chairs of WG1 and WG2 (Chris Tweed and Paulo Pinho). It was also agreed that Phil Jones would be responsible for setting up the website. Since May 2005 three Management Committee meetings have been held:

Cardiff, UK	13 th -14 th October, 2005
Porto, Portugal	12 th -13 th January 2006
Trondheim, Norway	19 th - 20 th June 2006

At each of these meetings separate WG meetings were also held.

The main objective of this Action is to investigate how carbon reductions can be achieved through appropriate design and management of the urban built environment. This involves:

- minimising energy use and associated emissions from buildings,
- examining the indirect energy impacts of infrastructure developments.

Working group 1 progress

WG1 considers carbon reductions in the design and construction of new buildings and in the improvement of the existing building stock. The WG has embarked on two main tasks.

1. The first task (Task 1.1) is to collect information about how each member state in the EU is implementing the requirements of the Energy Performance Building Directive (EPBD). This will allow comparisons across the member states to be made and to elaborate the legal, economic and social frameworks as a context for new carbon legislation.

In Task 1.1, the working group has succeeded in collecting preliminary information about the implementation of EPBD in 9 member states with further information being prepared for more. The next step in collating the information is to structure it according to the headings listed in Figure 1 and to gather the information needed to fill any gaps.

2. The second task (Task 1.2) is identifying cases that will illustrate interesting aspects of developing and implementing low carbon strategies in new and existing buildings. It is worth emphasising that these cases are not necessarily examples of ‘best practice’ but are intended to promote discussion, debate and learning.

Task 1.2 has considered 22 candidate case studies that fall within the remit of this Working Group and currently has developed three of these for more detailed description.

The relationship between case studies and guidelines is illustrated in Figure 1 below. The figure also lists, on the left side, the headings to be used to collect information about the design and construction of new and existing buildings and to analyse this material. The overall aim of the working group, therefore, is to identify and study examples of interactions between people and the conceptual structures loosely labelled as ontologies.

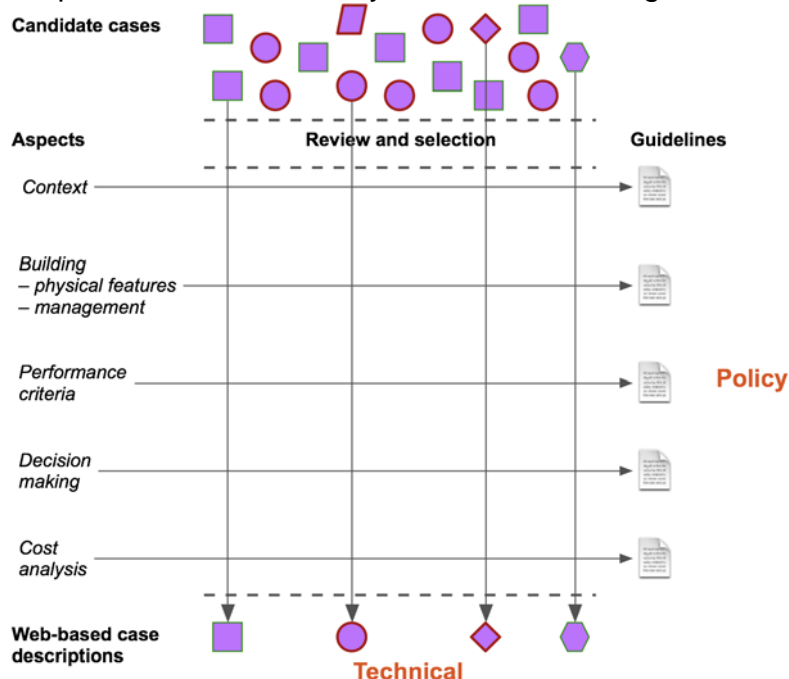


Figure 1: deliverables for WG1 showing main headings for analysis of cases to arrive at guidelines.

Working group 2 progress

WG2 emphasised the vital role of urban infrastructures to reduce the energy bill of cities and the wide scope of the examination of the indirect energy

impacts of infrastructure developments. The need to focus the objectives of the WG2 was generally felt, through a disciplinary perspective that is bound to touch on urban planning, urban design and urban engineering, and through a subject matter perspective touching transport and land-use, water and sewage, wastes and blue/green structures.

Task 2.1 has involved WG2 looking for innovative experiments, in the fields of urban infrastructure and urban planning, to promote a low carbon built environment to collect case studies, at national level, of best practices in the provision of urban infrastructures and in the formulation and implementation of urban plans and projects, designed to reduce fossil fuel derived energy consumption in urban areas and/or promoting the use of renewable energies. It has been recognised that there is a need to adapt a common structure to organise the information of each case study. A proposal was made including the following headings:

- a. Short description of the case study,
- b. Context of the case study,
- c. Aims of the project – benchmarking,
- d. Decision-making processes,
- e. Funding schemes,
- f. Overall assessment from a low carbon perspective,
- g. Lessons learnt.

A number of interesting case studies have already been collected. Information is being collated using the agreed template that is expected to provide, at the same time, a common basis for the evaluation of the merits of each and every case study.

WG2 members also agreed to collect national and regional planning guidelines and regulations for each country aimed at reducing the energy burden of urban areas, related to the general theme of the action – strategies for a low carbon urban built environment – Task 2.2. This task has proved to be far more difficult to carry out, because so far, very few, if any, interesting planning guidelines have been found showing that, at the planning level, a lot has to be done, at both national and regional level, to reduce the energy burden of cities. As a result a decision was made at the last meeting in Trondheim to start to look not just for planning guidelines, but also for more general planning policy documents, addressing the energy issue in cities along the objectives of this action. It is hoped that this slight adjustment to the initial remit of WG2 will soon produce satisfactory results.

At the meetings in Cardiff, Porto and Trondheim, case studies from both WGs were introduced and some of the presentations from end users that were invited to the meeting are to be developed into case studies. Each case study will examine the identified themes:

Theme 1 – Case study selection and analysis

Theme 2 – Performance Criteria

Theme 3 – Decision making processes

Theme 4 – Cost analysis

WG3 involves dissemination which is discussed in section II.B.

II.B. Dissemination of results

Action related Publications and Reports

Guidelines will be produced to assist built environment professionals with procedures to ensure maximum consideration for low carbon are made for all built environment construction and renovation. These will focus on carbon reduction strategies identified and reviewed from working groups 1 and 2 relating to new/existing buildings and urban infrastructure. Each of these factors will be considered at different stages of development, for example:

Conferences and Workshops

Conference

The first C23 L-CUBE conference will take place on 17th April 2007 in Vienna, Austria. This will disseminate the preliminary findings of the WG1 and WG2. The proposed programme of the conference is as follows:

Time	
8.30	Registration and coffee
9.15	Welcome
9.30	Presentation of C23 Action (Phil Jones)
9.45	Keynote speakers (x2)
11.00	Coffee
11.30	WG1 – New/existing buildings - Introduction
11.50	WG2 – Urban Infrastructure - Introduction
12.10	Panel discussion
12.45	Lunch
14.15	WG1 Session (Chris Tweed to lead)
16.15	Coffee
16.40	WG2 Session (Paulo Pinho to lead)
18.00	Close

Website

The Cost Action C23 L-CUBE website can be found at <http://www.lcube.eu.com> . This website includes the sections:

- An introduction to L-CUBE,
- Management Committee - list of members and meeting venues, dates agendas, minutes and additional documents,
- Descriptions of WG1, WG2 and WG3 together with tasks and meeting venues, dates agendas, minutes and additional documents,
- Memorandum of Understanding,
- A list of the participants,
- A list of the case studies (currently password protected as work is in progress – available to C23 participants only. When documents have been approved they will become publicly available)
- Link to the COST home page.

The website has had over 2,000 page requests over the reporting period.

Scientific and Technical Cooperation - List briefly cooperation and contacts established with scientific institutions, with other research programmes (especially in the EU Framework programme), and with potential users.

We plan to liaise with other COST Actions including C20 'Urban Knowledge Arena', and C21 "Towntologies". We will discuss with them their attendance and presentation of their results at the C23 Conference taking place in Vienna in April 2007.

Transfer of results List briefly cooperation and contacts established with the Commission, with normalisation and standardisation bodies, with industry and operators.

C23 is promoted to relevant national and regional governments and other regulatory bodies and organisations by partners in an informal manner where appropriate.

End users have also been invited to attend and make presentations at C23 meetings. At the meeting in Trondheim in June 2006 Wolfgang Schoelkopf of ZAE Bayern, Munich made a presentation on 'Solar District Heating Plants' and Jorgen Munch-Andersen of SBi presented a 'Comparison of energy efficiency of buildings build to different standards and rules'.

Local end users will continue to be invited to meetings to make presentations and be involved in discussions.

Contacts in the ERA List the contacts, if any, with other activities in the Community R&D programmes, EUREKA, the European Science Foundation and other European cooperative research frameworks etc.

Information has been used in connection with the Asian Link project 'Sustainable urban housing : strengthening capacity in policy formation an implementation in the city of city of Xi'an china' which has partners in the Xi'an Urban/Rural Construction Committee , Xi'an University of Architecture and Technology, WWF UK and Joanneum Research, Austria (also a WG2 member of the COST ACTION).

II.C. Self evaluation Indicate in no more than 1 page what, in the opinion of the MC, were the main successes, drawbacks (if any) and the key difficulties encountered (if any).

Information has already been collected for more than 20 case studies which explore a range of low carbon technologies and approaches to design and planning for new/existing buildings and urban infrastructure. These are from 18 different countries from both in and outside the European Union. The case studies cover a range of different built environment structures from an education building for unemployed in Belgium, refurbishment of a retail shop in Slovenia to the construction of a biomass power station in Austria. Some of the case studies also investigate in detail the use of tools to evaluate sustainability.

Preliminary information has been collected regarding the implementation of Energy Performance of Buildings Directive in the following member states: Belgium, Denmark, Finland, Germany, Greece, Italy, Serbia and Montenegro, Slovenia, and United Kingdom. Further information is being prepared for Austria, Cyprus, Norway and Poland.

National and regional planning guidelines and regulations for are being collected for each country. This task has proved to be far more difficult to carry out than expected as so far, very few, if any, planning guidelines have been identified. This does indicate that at a planning level, there is still a lot to do at both national and regional level to reduce the energy burden of cities.

In order to provide evidence of what further developments that are required in the future for planning guidelines it has been agreed by WG2 that in addition to planning guidelines, general planning policy documents that address energy issues in cities will be identified.

Overall, the membership of the Action is expanding which is enriching the content of the discussions and outputs. Presentations by end users during C23 meetings have provided stimulation for interesting and relevant discussions and debate.

Annex D: Final Evaluation Report

COST

Domain Committee " "

COST Action (*number*)

Title

FINAL EVALUATION REPORT

The Report is prepared to the relevant Domain Committee and contains three parts:

- I. *Management Report*** prepared by the COST Office
- II. *Scientific Report*** prepared by the Chair of the Management Committee of the Action.
- III. *Evaluation Report*** prepared by the “ad hoc” Evaluation Panel established by the Domain Committee and edited by the Rapporteur.
- IV. *DC Remarks*** prepared by the Domain Committee

Confidentiality: the documents will be made available to the public via the COST Action web page except for chapter *II.C. Self evaluation* and *IV. DC Remarks*

I. Management Report prepared by the COST Office
(see Annex C: Monitoring Progress Report)

II. Scientific Report prepared by the Chair of the Management Committee of the Action. (see Annex C: Monitoring Progress Report)

III. Evaluation Report prepared by the “ad hoc” Evaluation Panel established by the Domain Committee and edited by the Rapporteur

- *Evaluation panel and evaluation procedures*
List the members of the panel: *Title, name, affiliation, Tel., Fax, E-mail.*
Describe briefly the evaluation activities the documents made available to and used by the members of the panel and the procedures followed for the evaluation.
- *Results versus objectives*
Describe briefly how and to what extent the results obtained match the objectives.
- *Outcome and achievements*
Describe the main outcome and the main achievements, and the significance of these, including the dissemination of results.
- *Impact of the Action*
Describe the importance and benefits for international science and technology.
- *European added-value*
Describe how the Action used the COST Framework to achieve its goal and what synergies and added value resulted from COST cooperation.
- *Coordination and management*
Describe briefly the effectiveness of coordination and management.
- *Dissemination of results*
Describe briefly the effectiveness of the dissemination of results.
- *Strengths and weaknesses*
- *Recommendations*
Include recommendations on new Actions.

IV. DC Remarks prepared by the Domain Committee

DC comments on the quality of the Action. It should illustrate in 1 or 2 sentences the “success story” (if applicable) of the Action.