



SUMMARY REPORT

Asko Sarja

Technical Research Centre of Finland, VTT

CONTRACT N° : G1RT-CT-2002-05082

ACRONYM : LIFETIME

TITLE : Lifetime Engineering of Buildings and Civil Infrastructures

PROJECT CO-ORDINATOR : Technical Research Centre of Finland (VTT),
VTT Building Technology
Professor, Dr. Asko Sarja

PARTNERS :

Principal Contractors:

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| Taylor Woodrow Construction ltd | UK |
| Centre Scientifique et Technique du Batiment, | F |
| Imperial College of Science Technology and Medicine, (T H Huxley School of Environment, Earth Sciences and Engineering) | UK |
| Universitaet Karlsruhe (University of Karlsruhe) Facility Management and Institut f. Maschinenwesen im Betrieb | <u>D</u> |

Members: Totally 92 Members

Observers: Totally 2 Observers

PROJECT START DATE : 01. 06. 2002

DURATION : 38 Months

Date of issue of this report : 30th September, 2005

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| | <p>Project funded by the European Community under the 'Competitive and Sustainable Growth' Programme (1998-2002)</p> |
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Buildings, civil and industrial infrastructures are the longest lasting and most important products of our societies. However, traditionally most of the considerations and methods in design and management have been focused on a quite short term, and long term economy and performance of structures have been taken into account quite implicitly only.

Lifetime engineering includes:

- Lifetime investment planning and decision making
- Integrated lifetime design
- Integrated lifetime management and maintenance planning
- Modernisation, reuse, recycling and disposal, and
- Environmental monitoring and impact assessment.

The integrated lifetime engineering methodology is aiming at regulating optimisation and guaranteeing the life cycle human conditions, economy, cultural compatibility and ecology with technical performance parameters. With the aid of lifetime engineering we can thus control and optimise the human conditions (safety, health and comfort), the monetary (financial) economy and the economy of the nature (ecology). Beside these, also social and cultural aspects have to be taken into consideration.

LIFETIME Thematic Network is to contribute to European and worldwide development of a more sustainable built environment with the following principles and objectives, which were stated in the project plan as follows:

- We are willing to generate, promote and support actions to change the current practice
- We aim to contribute this change with: principles, processes and methods of lifetime engineering.
- The overall **objective** of the LIFETIME Thematic Network is to contribute to European and world-wide development of a more sustainable built environment.

The Network involves all key stakeholders of buildings and civil infrastructures , including mining, whose activities concern investment planning, design, facility management and maintenance, reuse and recycling.

The objectives have been reached with world-wide discussions, information exchange and Workshop meetings between stakeholders. Internet and Website database: "LIFETIME Network Room" has been the main tool in the working, and all documents will be collected into the LIFETIME database. The work of the LIFETIME Network included:

- benchmarking of current practice, ongoing international and national R&D program
- state of the art reports, recommendations for future R&D
- bridging gaps between best know-how / research results and their introduction into practice
- raising awareness of all stakeholders in the fields of building and civil infrastructures, informing of best practices and R&D works and results, and development potential
- proposals for development of international and national regulations and standards
- proposals for development of stakeholder education and training
- dissemination and exploitation of systematic lifetime principles and methodology in practice.

The work was carried out in six Working Packages under the coordination of Principal Contractors. Important role for the dissemination of information and results are having the National Dissemination Groups, which are working under the coordination of the NDG Leader in each participating country. Three Workshops: in the years 2002, 2003 and 2005 have been organised. The final results are mainly written documents. These results can be transformed into commercial products of partners in form of technical manuals, databases, guidelines, educational and training concepts and packages, publications etc.. These commercial products can be aimed for local, national, European and worldwide distribution and use.

The following final deliverables are included in this website:

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| <p>Deliverable 1.1: Report and systematised “LIFETIME Engineering “ database of Best Practice, Best Research Results and Advanced Implementation Activities of lifetime engineering in building and civil infrastructures.</p> |
| <p>Deliverable 2.1 A report on international state-of-the-art in Lifetime Engineering and educational activities, gaps in training.</p> <p>Deliverable 2.2 A database covering the international state-of-the-art and practice in Lifetime Environmental Impact Assessment.</p> |
| <p>Deliverable 3.1: Generic technical model and description of lifetime engineering of buildings, civil and industrial infrastructures.</p> |
| <p>Deliverable 4.1: Report on current sources, future demands and systematics of lifetime data for all stakeholders.</p> |
| <p>Deliverable 5.1: Dissemination material, Workshop reports, generic and individual Exploitation model plans, and short reports on experimental exploitation examples and their experiences. Planning and execution of training courses.</p> |
| <p>Informative reports, presentations and references</p> |

10. References

1. 2nd International Symposium ILCDES 2003, Integrated Life-time Engineering of Buildings and Civil Infrastructures. December 1-3, 2003 Kuopio, Finland:

1. Asko Sarja, FINLAND, A Process Towards Lifetime Engineering in the 5th and 6th Framework Programme of EU. Proceedings of the 2nd International Symposium ILCDES 2003, Integrated Life-time Engineering of Buildings and Civil Infrastructures. December 1-3, 2003 Kuopio, Finland. Association of Finnish Civil Engineers, RIL and Technical Research Centre of Finland, December 2003, INBN 951-758-436-9, ISSN 0356-9403. pp.7-12.
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