

EUREKA PROJECT E!777 - EUROCARE SERVLIFE

1. General description

Project	E! 777 - EUROCARE SERVLIFE	Status	Finished - 20-OCT-1995
Title	Control System For Durability And Service Life Of Building Products		
Class	Sub-Umbrella	Technological area	Environment
Start date	01-AUG-1991	End date	01-AUG-1994
Duration	36 months	Total cost	0.6 Meuro
Partner sought	No		
Summary	Work Will Result In Documents On Building Products, Their Durability/Service Life Under Action Of Different Agents, Evaluation/Prediction Methods For Durability/Service Life, Experts' Judgement/Service Life Concept And Its Application		

Budget and duration

Phase	Budget(Meuro)	Duration (Months)
Total	0.6	36

Member contribution

Member	Contribution	Position	Since
Finland	90.00%	Notified Finished	20-OCT-1995
Sweden	10.00%	Notified Finished	20-OCT-1995

Participants

Company	Country	Type	Role
Ril - Association Of Finnish Civil Engineers (Helsinki)	Finland	Governm./Nat. Admin.	Main
Kth - Royal Institute Of Technology/Heating/Ventilation Lab.	Sweden	Research Institute	Partner

2. Project outline

Project description

The project is based on the performance approach as formulated by ISO 6241 and RILEM 31-PCM. A guidance document outlining the working procedure of the project has been published by RIL. The project will be performed by means of editorial compilation and working up of documents from concluded and ongoing R & D projects. The documents to be written are summarised briefly below:

Group 1:

Definition of the object of study:

- buildings
- building elements and their interfaces
- external walls
- roofs
- horizontal space dividers
- other elements
- components and their interfaces
- materials, their internal structures and surfaces
- interfaces of materials.

Group 2:

Agents affecting building products:

- general description
- individual groups of agents
- climatic agents
- air impurities
- cold and hot climates
- microclimates
- sea water
- ground
- synergy of agents
- evaluation methods for agents.

Group 3:

Evaluation methods:

- general description
- feedback studies
- tests in practice
- test houses
- experimental building
- field exposure tests
- large testing facilities
- defect and failure studies
- condition assessment
- laboratory tests
- degradation mechanisms
- methods of material science
- models and calculations
- service life predictions
- tests performed with several methods.

Group 4:

The role of experts in the treatment of service life problems.

Group 5:

Service life studies, their results and applications

- life cycle costs (LCC)
- rules for service life requirements.

Group 6:

Transfer of knowledge to the building process:

- formulation of the knowledge to be transferred to the

different stages of the building process

- building regulations
- description of new technologies
- product information.

The building process is defined as follows:

Basic Education:

- research
- product development
- design
- authorities.

Before end use - factory:

- raw materials
- manufacture
- storage.

Use:

- operation
- maintenance
- reparation
- replacement.

After use:

- demolition
- re-use
- disposal.

The project aims to create a control system for the management of durability and service life of building products.

Technological development envisaged

The documents based on the systematic treatment of the problem will result in a kind of handbook on durability and the service life of building products and on the way the different stages of the building process may deal with them. It is believed that this handbook can be developed further in order to support decision-making, quality control and, possibly, the development of Expert Systems in the field.

Markets application and exploitation

The project deals with the durability and service life of different building products which are outlined in the list presented in the Group 1 documents. All participants of the building process - as listed in Group 6 - are expected to contribute to the work and will also benefit from the project. The treatment of the problems is very systematic and the expected result can be seen as a handbook where durability and service life problems and their solutions are linked to the different parts and participants of the building process. The possibility to develop Expert Systems on this basis exists but immediate effects on decision-making are to be expected and the results will also serve quality control.

As the Finnish part of the project is already running, documents will be provided for discussion during 1992. A steady flow of documents will then take place.

Project codes

BSI

GD
GE
RBJ.D
RXH

air pollution
water pollution
building conservation
construction materials

NACE

7310

Research and experimental development on natural sciences
and engineering

3. Main participant

Company	Ril - Association Of Finnish Civil Engineers (Helsinki) Meritullinkatu, 16a 001 70 Helsinki Finland Tel +358 9 135 6300 Fax +358 9 135 7670
Contact	Prof. Tenho Sneek Project Leader Tel Fax
Organisation type Participant role	Governm./Nat. Admin. Main

Contribution to project

Expertise

4. Partner

Company	Kth - Royal Institute Of Technology/Heating/Ventilation Lab. (Not Available), 801 02 Gaevle Sweden Tel +46 26 14 77 00 Fax +46 26 11 81 54 www.kth.se
Contact	Dr. (Eng.) Christer Sjoestroem Tel +46 26 14 77 00 Fax +46 26 11 81 54
Organisation type Participant role	Research Institute Partner

Contribution to project

SIB has expertise in most of the proposed working fields of the project. Especially, SIB is interested in participating in the compilation of the documents of Group2 Agents, Group3 evaluation methods and Group5 service life.

Expertise

is conducting a continuous research programme in the fields of housing, building, construction and physical planning. The materials and structures division, being one of eight research units, focuses research on the durability and service life of building materials and components under in-use conditions, methods to measure, register and predict the performance over time and on the measurement and description of the degradation environment. Research is also being carried out to investigate the technical status of the building stock. Another main research activity is the study of deformations, dimensional accuracy and tolerances.