Status Report
SHC / BCS Task 28 / Annex 38:
**Sustainable Solar Housing**

52\textsuperscript{nd} Meeting of the SHC ExCo
Brussels, B
18-20. November 2002

Swiss Federal Office of Energy represented by:
R. Hastings, AEU GmbH
1. Overview

**Duration:** April 2000 – April 2005

**Objective:** Market penetration of sustainable solar housing

**Means:**
- Buildings Docu.
- Design Handbook
- Demonstration Projects
- Workshops

**Scope:**
- Energy
- Ecology
- Economy
2. Progress last six months

Overview:

• Analysis of market successes started
• Regional refer. houses analyzed, Energy targets for strategies set, Modelling in progress.
• Drafts of handbook tech. chapters reviewed.
• Work begun on brochures presenting demo projects
• Monitoring data from built exemplary housing projects analyzed
40 Experts from:
Austria
Australia
Belgium
Canada
Czeck Rep.
Finland
Germany
Italy
Japan
Netherlands
New Zealand
Norway
Sweden
Switzerland
UK / Scotland

6th Expert Meeting
Goteborg, S: 18-20. September 2002
**Administrative**

**Anne Lien (N)** now leads Subt. C documentation of demonstration projects with help from K. Voss (Subtask D) monitoring / evaluation.

**Richard Hyde (AUS)** now leads the Working Group: Hot Climate Sustainable Housing.

**Albrecht Stoecklein (NZ)** has joined the Task.
Analysis of Marketing Successes:

**Goal**: identify reoccurring strategies which led to success.

**Analysis begun** on 17 cases from 13 countries

Output: advice for market penetration.

**Subt. A: Market Assessment**

Lead: P. Erdtsiek (NL)
Subtask B: Design Analysis
Leads: M. Wall (S) & R. Hastings (CH)

Heating Targets set for the Strategies
- Detached house: \(20 \text{ kWh/m}^2\text{a}\)
- Apts. & Row houses: \(15 \text{ kWh/m}^2\text{a}\)

End Use Energy Target (kWh/m²a)
Strategies to meet the target heat demand:

I. Minimize Heat Loss

II. Maximize Useable Solar

Fig. 4: Simulated correlation among solar gains, building heat losses and auxiliary heat demand. (K. Voss)
Subtask C: Demonstration
Anne Lien (N)

- Work started on broshures presenting demo-projects begun.
  - **Cold**: Can, N, S, Fin, UK.
  - **Temp.**: A, CH, CR, D, USA
  - **Mild**: I, CH
  - **Hot**: AUS, BR, J
Prototype House: "Sunflower", Rudolfe, CR (Factor 2.5)
Freiburg Apts.

Strategy I:
Maximum heat loss reduction,
(passive solar benefit minimal)

Subtask D: Monitoring & Eval.
Lead: K. Voss (D)

Heat capacity $W/m^2$

$Q_i = 0 W/m^2$
$Q_i = 2.1 W/m^2$

7 $W/m^2$ Heating Capacity

$10^\circ C$ Balance Temperature

$T_{ambient}$

(K. Voss)
### Building Documentation Sets

<table>
<thead>
<tr>
<th>Country</th>
<th>Sets</th>
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<tbody>
<tr>
<td>A</td>
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<tr>
<td>CAN</td>
<td>1 +</td>
</tr>
<tr>
<td>CH</td>
<td>5 ++</td>
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<tr>
<td>D</td>
<td>16++++</td>
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<tr>
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<td>3 +</td>
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<tr>
<td>I</td>
<td>2 +</td>
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<tr>
<td>NL</td>
<td>4 ++</td>
</tr>
<tr>
<td>S</td>
<td>1 +++</td>
</tr>
</tbody>
</table>

**No goodhouses?**

B, CR, J, N, UK,
4. Next six months:

A. Market Analysis:
- Complete analysis & docu. of Marketing successes
  A, Aus, Can, CH, CR, D, FIN, I, J, N, NL, NZ, UK

B. Design Analysis
- 2nd drafts: tech. chapters
- Optimize strategies I + II by bld. types & climates
- LCA of projects
- 1st chapters: Sustainable Housing in Hot Climates
C. Demonstration:
- 1rst brochures of Demo-projects
- Manuscript: *Guidelines for Design Briefs*

D. Monitoring & Evaluation
- Complete data sets of built projects
- Complete Working Doc.
- Task results to practice: 1rst national language pub.
- Continued analysis of monitored data
Next Task meetings (2003):

Internal workshops:

• 26-27. January
  Subt. B Analyses Group (Siegen)
• 28. January
  LCA Working Group (Cologne)

Expert Meeting
• 07-09. April (Prague)
• 04-07. November OK?
  (N.E. Australia)
ExCo in Wellington
• 17-21. November
5. Issues for the ExCo

• SHC T28/38 Home Page: No funding, No expert, No work.

• Building Documentation Sets: Need ExCo push to complete!!!

• Handbook: Principles/Strategies/Technologies Main Task publication (350 p)

• Delayed contributions: Push for timely delivery of work!

• Joint Tasks: An illusion with potential conflicts:
  - Dual chain of command
  - Poor communication