HMW Workshop:
Experiences from the sustainable development programme at Stellenbosch University and the Sustainability Institute

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  http://www.crses.sun.ac.za
  http://www.sustainabilityinstitute.net
Four main clusters
School of Public Leadership:  
http://www.spl.sun.ac.za
School of Public Leadership: BPhil/MPhil with four specialisation streams

1. Sustainable development
2. Sustainable development planning
3. Managing sustainable agriculture
4. Renewable and sustainable energy
Overview

Potted History of the Sustainability Institute

The Sustainability Institute, established in 1999 by Eve Annecke and Mark Swilling, focuses on learning for sustainable living and is based within the Lyndoch EcoVillage Development, Stellenbosch. The focus has been combining practice with theory in a way that integrates ecology and equity in support of a sustainable South Africa, with special reference to ways of reducing and eradicating poverty.

Summary of current initiatives:

- A home base at the Lyndoch EcoVillage Development which demonstrates child-centred sustainable living in practice
- Mphil in Sustainable Development Planning and Management (130 participants in 2006)
- PhD (up to 10 candidates)
- Early Childhood Development (50 participants in 2006)
- Job creation for youth through Sustainable Construction training (40 participants)
- Community Development Management and Practice focusing on capacity building and career pathways in the HIV/Aids sector and then impacting on civil society as a whole
- Further projects (applied research) on strategic design of sustainable neighbourhoods at Phillipi Agri-Business Place, Oude Molen and other locations
- Ongoing research such as Government’s Economic Policy, Sustainable Cities, the Non-Profit Sector, complexity theory, leadership development
Who is the TsamaHUB

The institutional structure for the TsamaHUB is a Centre at Stellenbosch University (SU) located in the Faculty of Economic and Management Sciences. The Centre is an academic structure established to facilitate and coordinate the Doctoral Programme as well as to engage all the relevant knowledge-holding stakeholders with a view to conduct applied solution-based sustainability research in the Stellenbosch area. The governance and management of the TsamaHUB is conducted by its Governing Body and Management Committee respectively. The Governing Body is chaired by the Dean: Economics and Management Sciences and consists of representatives of all the participating faculties as well as representatives of the Council for Scientific and Industrial Research (CSIR), Human Sciences Research Council (HSRC) and Sustainability Institute (SI).

The TsamaHUB acts as a coordinating mechanism that utilises the transdisciplinary potential that exists among various faculties and departments of the University that have interests and expertise in sustainability, sustainable development and complexity. In this regard, collaboration with existing Centres, such as the Centre for Renewable and Sustainable Energy Studies (CRSES) led by Prof Wikus van Niekerk (Mechanical Engineering) as well as the Centre for Studies in Complexity (CSC), initiated by Prof Janine Hofmeyr (Biochemistry) and Paul Gillies (Philosophy), are of particular importance. The TsamaHUB, with partners such as the CSIR, HSRC and the SI, also serves to optimise the interface and flow of intellectual, human and financial resources between the University and its partners as well as other institutions that may be interested in joining this initiative in future.

The TsamaHUB was initially conceptualised in late 2006 as a result of joint discussions between academics and researchers from a variety of disciplines within the University, the CSIR, HSRC and SI. A key Workshop on Transdisciplinarity co-funded by the National Research Foundation (NRF) and the University’s Strategic Fund took place in 2005 at the Stellenbosch Institute for Advanced Study (STIAS), hosted by the University’s School of Public Management and Planning (SOPMP). The keynote presenters at this workshop were renowned transdisciplinary economist Prof. Manfred Max-Neef (Chile) and quantum physicist Prof. Bassarab Nicolescu (France). The discussions at this workshop, plus the wider subsequent discussions led to the joint realisation that what is needed is to seek more effective ways of achieving sustainable development impact through the country’s National System of Innovation Chains (DST). The outcome of these discussions has been the establishment of a well-connected network of academics at SU spread out across several different faculties who all share a common interest in sustainability research, complexity theory, and transdisciplinary ways of working. This core group of academics have established themselves as a Panel of Supervisors, which plays a crucial role in the co-supervision of PhD students’ dissertations as part of the Doctoral Programme.
Centre for Renewable and Sustainable Energy Studies:
http://www.crses.sun.ac.za

1. Academic programme coordination
2. Public awareness
3. Contracting research
4. Consulting
Lynedoch Eco-Village: Vision

- Authentic integration
  - Socially mixed and child-centred
- Ecologically designed to reduce
  - Capital cost
  - Monthly household costs
  - Footprint
- Democratically governed
- Non-profit
  - No private power
- Spirit of place
  - Rest for the soul

A place of living and learning
Urban-rural integration
Making clay bricks on site
Stacking bricks
First house – 40 m² plus loft room, unfired clay bricks
Adobe brick – clay and straw
First adobe brick house
Principles of Lynedoch

- North facing
- 60% less electricity
- 45% less water
- No sewage leaves the site
- Reduced/zero solid waste
- Walking distance to public transport
  - Rail
- Minimal cement
  - Less CO₂
- 25% of normal monthly CO₂ release
Also applicable to middle-class houses
BIPVs
Wind chimneys
Natural rock store cooling system
Biogas digester
Primary sewerage treatment: shared septics
Secondary sewerage treatment: integrated wetland
Secondary sewerage treatment: biolytic filter
SUSTAINABLE BUILDING
Best Practice Award

WINNER

Africa Region
2004

for projects that are
noteworthy examples of sustainable building
in Africa

is presented to

LYNEDOCH COMMUNITY &
EDUCATION CENTRE
Stellenbosch, Cape, South Africa

in the category

Community Projects

[Diagram showing various performance metrics with scores]
Linkage to other initiative in the Western Cape Province

- http://www.wescapelife.co.za
Response to the Cape Town five-year integrated development plan
Wescape
Wescape

- Comprises more than 3,000 hectares of land and will include over 200,000 households focused on community and the upliftment of previously disadvantaged families
- This will be achieved through whole-system thinking, where the design is based on a holistic-development approach and not just a ‘housing project’, which would often only result in the creation of a slum
Wescape

- Regenerating e-linked community of neighbourhood
Wescape whole-system

- 75% of the envisaged 200,000 homes at Wescape will be available to families earning a combined household income of less than R15,000 per month
  - The viability of this is the result of the employment creation strategy during and after construction within Wescape and the subsidisation from participation in the Wescape Friendly Society and community owned business enterprise
Wescape whole-system

- Monthly ‘bond and SMME loan installments’ paid by the Homeowners to Wescape Friendly Society will earn Homeowners a profit share, which shall be paid-out as Bond, Utilities, Healthcare and Education subsidies.
  - All SMME Business Loans include business management support from a dedicated Wescape Friendly Society Business Consultants, insuring the success of the qualified Wescape Start-up Enterprise
Wescape whole-system

- Wescape Friendly Society Funding:
  - Industrial Development Corporation (IDC)
  - Public Investment Corporation (PIC)
  - Development Bank of Southern Africa (DBSA)
  - National and International Investment Loans and / or Grant
The philosophy of whole-system or multiple cashflows, contribute to an above average Return on Investment (ROI) and overall financial viability of Wescape for investors.
Wescape employment

- Matching people and job opportunities through a community job placement and entrepreneurial model

- Registration and Assessment of Resident Work Seekers
  - Major personal barriers
  - Ready but lack skills
  - Social assistance
  - Skills Training
  - Placement

- Registration and Assessment of Resident Entrepreneurs
  - Job-ready (Go)
  - Link Entrepreneurs with Business Opportunities
  - Venture Capital Funding
  - Set-up SMME Business Ventures
  - Business Support and Mentorship
Wescape employment

Creating employment and providing education and services

- Smart Design and Engineering
  - Education Consulting, M&E
  - Food Agriculture
  - R&D Hub
  - Component Manufacturing
  - White Goods Installation and Maintenance
  - Carbon Trading
- Expo Centre and Related Events
  - Design Professionals and Services
  - Design Education
  - R&D Hub
  - Venture Capital
  - Young Entrepreneurs
- School Based Education Support
  - Entrepreneurial Training Hub
  - Construction, Call Centre and Green Training Hubs
  - University
  - Publishing
  - Other Educational Resources
- Technology Design
  - Technology Manufacturing
  - Installation, Management and Maintenance Services
  - Training
  - BPO Hub
  - ICT Hub
- Transport Sector Jobs
  - Transport Training Hub
  - Logistics Centre
  - BPO Hub
  - ICT Hub
  - Educational Centres
  - Young People Entertainment Services
Wescape employment

- Attracting residents and creating local, sustained employment

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>Industries related to Magnets</th>
<th>Magnets</th>
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<tbody>
<tr>
<td>Affordable Housing</td>
<td>In addition to the obvious, Construction and Settlement Economic activity, Wescape aims to attract a number of specialised Industries based on its MAGNETS, for example:</td>
<td>Fast and reliable Broadband, Green Settlement, Innovation Hub – Green &amp; Construction University, Technicon &amp; Community College Safety – Walkable Communities</td>
</tr>
<tr>
<td>Upper GAP Housing</td>
<td>•Green Manufacturing industries •Educational Publishing •Educational Training Companies</td>
<td>Entrepreneurship Support, Worker Share-Schemes, Safety - Walkable Communities, Education &amp; Training opportunities</td>
</tr>
<tr>
<td>Lower GAP Housing</td>
<td>•ICT-Hub linked to Broadband •Call Centres capitalising on Broadband</td>
<td>Worker Share Schemes, 24/7 Transport, Safety – Walkable Communities, Education &amp; Training opportunities</td>
</tr>
<tr>
<td>Subsidised Housing</td>
<td>•24/7 BPOs (Business Process Outsourcing) Centres</td>
<td>Jobs - Unskilled, 24/7 Transport, Safety - Walkable Communities</td>
</tr>
</tbody>
</table>
Wescape housing

- Proposed 200,000 affordable energy efficient dwellings comprise:
  - 22% - 26% Subsidised Housing
    - Household income less than R3,500 per month
  - 25% - 30% Lower-GAP Housing
    - Household income less that R7,500 per month
  - 26% - 34% Upper-GAP Housing
    - Household income is below R15,000 per month
  - 18% - 24% Freestanding Affordable Housing will be an option for families with higher than R15,000 combined household income
Wescape regenerative

- Manage water catchment system and increase water sources with interventions that support multiple outcomes
- Develop diverse sources of renewable energy to reduce fossil based and nuclear energy use
- Effective recycling (to products) and usage of organic waste to generate biogas
- Multiple categories of local food production
Discussion