

PROGRAM – XI'AN 2004: parallel session 3 - Sustainable product and service design		
Monday 31 st of May:	0830-0930 Registration 930-1200 Plenary session	
Introduction to course and themes Material: Tischner, Ursula Van Hemel, Carolien	1200-1400 Lunch	
	1400-1500 Introduction of participants and lecturers Introduction to the separate course	FC, KK, LS, KSW All participants
	1515-1600 Design methodology –an introduction to Product Design Better by design + theory – the design process	Kristin Støren Wigum
	1615-1700 Summing up from the video Introduction to ecodesign,	Line Sommerfeldt
	Tuesday 1 st of June:	0830-0915 Sustainable principles Environmental emissions · First industrial revolution · Local and global problems · Consumer society “Product plus” – design failures
Sustainability- Product and service system solutions in a long term perspective. Local and global view Material: Mc Donough, Braungart Huber, Joseph Rohatgi and Mohan (Lowe, Ernest)	0930-1015 Strategies for hope and change (Materials and cyclic thinking) · WBCSD: eco-efficiency · The natural step & MBDC: cradle to cradle / life cycle thinking, · Technosphere- Biosphere; Materials and energy examples · Biomimicry	Kjersti Kviseth
	1030-1115 Industrial Ecology	Line Sommerfeldt
	1130-1200 Industrial Ecology	Line Sommerfeldt
	1200-1400 Lunch	
	1400-1500 Cradle to cradle – video 1515 - 1700 Workshop: Product Life cycle thinking Ecodesign strategies	Kristin Støren Wigum
	Wednesday 2 nd of June	0830-0900 Factor x -Global perspective in long term perspective -Local solutions -Scenario building

Material: Manzini, Ezio Manfred, Max-Neef Weizsäcker Dewberry and Sherwin Video	0915-1015 Product design for Human needs -Max-Neef Need-matrix related to satisfiers -How products support different lifestyles -Rebound effects Video	Kristin Støren Wigum
	1030-1115 Workshop: Product evaluation – Needs and satisfiers	KSW Everyone chooses a product for discussion
	1130-1200 Workshop: Presentation	KSW
	1200-1400 Lunch	
	1400-1700 Plenary Session	Lecture Julie Feilberg, prorektor
Thursday 3 rd of June: Sustainable Design Solutions- Design methodology and process Material: Morelli, Nicola Eco Indicator – Manual for Designers	0830-0915 Product design by sustainable criteria Company strategy level: Product design level:	Kjersti Kviseth
	0930-1015 Examples from company Håg HÅG , example of eco-management and eco-design criteria in practice	Kjersti Kviseth
	1030-1115 Extended product view: Product service systems (PSS) -User focus - critical aspects, rebound effects Method: user scenario	Kristin Støren Wigum
	1130-1200 Examples of PSS	Kristin Støren Wigum
	1200-1400 Lunch	
	1400-1700 Workshop: Eco indicator. Introduction and workshop	Line Sommerfeldt
Friday 4 th of June: Sustainable Design Solutions –Material and non-material values in design Chinese and Norwegian examples of meaning in design Material: Lerdahl, Erik (Papanek)	0830-0915	Fan Chaoran
	0930-1015 Products as value carrier -The conceptual model of Lerdahl Design for experience - method: product vision	Kristin Støren Wigum
	1030-1115 Sustainable mobility	Line Sommerfeldt
	1130-1200 Examples of sustainable mobility	Kjersti Kviseth
	1200-1400 Lunch	

	<p>1400-1700 Workshop: Introduction: Mobility how to use the strategy wheel to evaluate different solutions, Spark as an example, value wheel for human powered transportation Workshop: Division in groups for projectwork Mobility and values – Use of the pyramid model Value wheel, prepare for field study</p>	<p>Line Sommerfeldt, Kristin Støren Wigum</p>
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Project work: Human powered transportation for Xi'an

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<p>Saturday 5th of June</p> <p>Introduction of group work</p> <p>Material: Sustainable mobility, UNEP, -Facts and figures</p>	<p>0930-1015 We go through the tasks of group work and plan for the coming week</p>	<p>Kristin Støren Wigum</p>
	<p>1030-1200 Preparing for field study, define focus</p>	<p>Short briefing</p>
	<p>1200-1400 Lunch close by the field study</p>	
	<p>Excursion – field study: mobility in Xi'an</p>	<p>We observe, draw sketches and key words</p>
<p>Sunday 6th of June</p>	<p>Open day</p>	
<p>Monday 7th of June</p> <p>Group work – -Analyses of ecological aspects/impact, present solutions, user needs -Defining own focus and target group</p>	<p>0830-0900 Introducing task of the day</p>	<p>Line Sommerfeldt</p>
	<p>0900- Finding the target group by studying the material from the field work Evaluating the user situation of today</p>	<p>Guided process, Need analysis Check list</p>
	<p>Study of ecological aspects/impact, present and future solutions</p>	<p>Guided process MET-matrix</p>
	<p>1200-1400 lunch</p>	
	<p>1400-1545 Lecture: Transportation and urban planning in Xi'an</p>	<p>Prof. Harald Høyem</p>
	<p>1600-1700 Focusing the problem and defining scope of new solution : Environmental issues Human/social issues Design issues</p>	<p>Writing</p>
<p>Tuesday 8th of June:</p> <p>Group work – -Future scenarios -Defining a vision for new product service system</p>	<p>0830-0900 Introducing task of the day</p>	<p>Kristin Støren Wigum</p>
	<p>0900-1100 -future wished scenario for transportation in Xi'an Defining a vision for new product service system</p>	<p>Guided process (Value wheel)</p>

-Planning eco design strategies	1100-1200 Presenting the group vision	Guided process
	1200-1400 lunch	
	1400-1700 Setting up criteria From need analysis and ecological findings Planning eco design strategies	Guided process Ecodesign strategy-wheel Conceptual Pyramid
	1645-1700 Hanging up on the wall Ecodesign strategies	
Wednesday 9 th of June: Group work – -Idea generation Sketching solutions, -Evaluation through discussion of previous work	0830-0900 Introducing task of the day	Kjersti Kviseth
	0900-1200 Sketching solutions	Brain storming and other creative methods
	1200-1400 lunch	
	1400-1500 Sketching solutions	
	1500-1700 Evaluation of the three best concepts pr. group	Guided process -locking back at vision and strategies
Thursday 10 th of June: Project presentation	0830-0900 Introducing task of the day	
	0900- 1200 Preparing for presentation	All groups
	1200-1400 lunch	
	Presentation: 1400-1430 Group 1 1430-1500 Group 2 1500-1530 Group 3 1530-1600 Group 4 1600-1630 Group 5	All groups
	1640-1700 Discussion	
Friday 11 th of June: Exam	0830- 1330 Exam	All participants -individual writing
	1330-1530 lunch	
	1530-1700 Plenary session	
	Evening: Banquet for all participants	
Saturday 12 th of June:	Departure	

Project task: Human powered Individual transportation for citizens and/or tourists in Xi'an.

The bike shall be object of either redesign or it can be put into a new system service for improved flexibility, usability and image.

The groups can also choose to design new equipment for the bike to improve its functionality in city transportation.

Design process:

Analyses: Field Study, discussions, function and need analyses

Defining focus and scope

Future scenario: transportation situation for future generations

Vision and values for the new product /service

Idea generation, concept design

Evaluation of ideas

The three best ideas described visually and verbal are presented

List of readings

Day of main relevance	Theme	Article/chapters
Monday 31 st of May	Product design	Lawson, Bryan. <i>How designers think</i> . Ch.3. UK: Architectural press 1997
	Ecodesign	Fuad—Luke, Alastair. <i>The eco-design handbook</i> . P.8-15. UK, London: Thames and Hudson Ltd, 2002 Tischner, Ursula. "Tools for ecodesign and sustainable product design". <i>Sustainable solutions</i> . P 261-281. UK: Greenleaf Publishing, 2001 Hemel, Carolien van. "What sustainable solutions do small and medium –sized enterprises prefer?" . <i>Sustainable solutions</i> . P.188- 202. UK: Greenleaf Publishing, 2001
Tuesday 1 st of June	Sustainability, materials and energy	Mc Donough, Braungart. "The next Industrial Revolution". <i>The Atlantic Monthly</i> oct.1998 Rohatgi, P.K and S. Mohan. "Materials for sustainable development". <i>Materials for the Third Millenium</i> . USA: Science Publishers, INC., page 356-384, 2001
	Industrial Ecology	Huber, Joseph, Towards Industrial Ecology: Sustainable Development as a concept of Ecological Modernisation. <i>Journal of Environmental Policy and Planning</i> 2: 296-285, 2000 (Lowe, Ernest. "Eco-industrial parks: A foundation for sustainable communities?" www.indigodev.com)
Wednesday 2 nd of June	Human needs and ecology	Manzini, Ezio. "Scenarios of sustainable ways of living", INDACO, Politecnico di Milano Max-Neef, Manfred. <i>Human Needs and Human-scale development</i> , 1987, Summarized by Kath Fisher. www.Rainforestinfo.org.au
	Factor x , long term (visualisation)	Weizäcker, E.U.v, Lovins,A.B and L.H. Lovins. "Factor four, Doubling Wealth- Halving Resource use". Abstract of book, Wuppertal Insitute.Earthscan Publications: London, 1997 Dewberry, Emma and Chris Sherwin. "Visioning Sustainability through Design". <i>GMI</i> 37, Spring 2002 Wigum, K. S. and M. M. Keitsch, "Sustainable Qualitative Evaluation in the early Concept Phase of Eco-innovation". <i>Proceedings (CD) Sustainable Innovation 03, Towards SustainableProduct Design 8, 8th International Conference 2003</i> . Stockholm, Sverige: Cfsd, 2003
Thursday 3 rd of June	Product service systems	Morelli, Nicola. "Designing Product/service systems: A methodological Exploration". <i>Design Issues: V. 18, Number 3</i> . Massachusetts Institute of Technology, summer 2002
Friday 4 th of June	Values in design (pyramide) Guiding principles	Lerdahl, Erik. <i>Staging for creative collaboration in design teams</i> . Ch. 4.3 and 4.4., pge 96 – 114. Norway: Tapir 2001 Lawson, Bryan. <i>How designers think</i> . Ch.10. UK: Architectural press 1997

Working material

Aim	Methods	Source
User analysis	Need analysis, Check list Need-matrix	Brezet, Hemel, 1997 Max-Neef, 1987
Environmental assessment	MET-matrix	Brezet, Hemel, 1997
LCA –light version	Eco-indicator 99	Prè, Goodkoopf, 2000
Future perspective/ whished and possible setting and solutions	Scenario technique	Lerdahl, 2001 Weaver et al., 2000 Hanssen et. Al, 2004 Wigum, 2003
Building a product vision	Conceptual value pyramid	Lerdahl, 2001
Improvement strategies	Ecodesign strategy wheel	Brezet, Hemel, 1997
Idea generation	Brain storming Forced relationship The morphological chart method Biomimicry	Osborn/ Wikstrøm Biondi/Wikstrøm Cross, Nigel Benuys, Janine
User activity analysis	Use- case	Morelli, 2003