

# TEACHING GUIDE

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IGNER'S ATLA SUSTAINABILIT



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"My goal is to put the Atlas in the hands of every teacher in our state."

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# NTRODUCTION

This teaching guide helps professors and lecturers explore with their students the concepts presented in the book *The Designer's Atlas of Sustainability* (Island Press, 2007). It helps if you are familiar with the book's contents, but the resources are useful even if not.

# BENEFITS

This guide ties its exercises and briefs to specific readings in the *Atlas*, and it provides additional background for each topic. Most briefs also suggest additional reading or case studies, and often these are available as web links or downloadable files.

# **O** THER TEACHING RESOURCES

There are of course many other teaching resources specific to sustainable design. This is a less than comprehensive list to start us off:

• <u>Okala Ecological Design Course Guide</u> by Philip White, Steve Belletire and Louise St. Pierre, developed by the ecodesign section of the Industrial Designers Society of America, March 2004.

- <u>Toolbox for Sustainable Design Education from</u> <u>Loughborough University (2004)</u>
- <u>DEEDS: Design Education and Sustainability</u>, a pan-European effort to catalog and develop tools and case studies for sustainable design education
- <u>The Lens network</u>: a multi-university initiative that collects teaching materials
- Designer's Accord sustainable design <u>edutoolkit</u> offers some background, but also a range of actual teaching material
- Autodesk sustainable design video tutorials
- The 2012 Imperative and teach-in on sustainable design (particularly ecological literacy) This is a Ning <u>network/forum</u>
- <u>The Sustainability Information Teaching Exchange</u> (SITE) at the University of Plymouth (UK) offers workshop materials suitable for all disciplines.
- AIA COTE (Committee on the Environment) report "Ecology and Design: Ecological Literacy in Architecture Education" by Kira Gould and Lance Hosey et. al. The report looks at the degree to which ecological literacy and sustainability are playing a role in American architecture education, and reviews a number of programs and their curricula.

# SUMMARIES

This Section provides short summaries of each teaching resource. Complete descriptions are found in the section following this one.

# ECOLOGY

## **ECOLOGY** Design briefs [6]

**2.1 Eco-baby** — Infants are particularly vulnerable to environmental contaminants: design an infant product or environment with particular attention to reducing its impact, on both babies and ecology.

**2.2 Biomimicry** — Students use one of two approaches

to create a design inspired by nature's structures and function

#### 2.3 Ecological Lit-

eracy — research the answers for the bioregion quiz and create an interactive presentation for a specific audience within the region.



### 2.4 Monitoring — per-

vasive computing puts "intelligence" into more of our products and buildings, investigate what aspects of the environment we should or could know about to enhance sustainability.

**2.5 Chemicals** — all designed objects typically have a worrisome chemical footprint, create an image of this footprint and its meaning.

**2.6 Health** — students look at the contrast between a "medical view" of health and a more holistic view, with a task of identifying constructive roles for design to help us move toward holistic health.

# Ecology Exercises [5]

**2.1 Biomimicry Lab** — includes 5 stations such as movement without muscles, patterns in nature, fractals and composites

**2.2 Massive Scale Estimation** — Students evaluate quantities of a consumer item or building component and estimate how many of the item there are and how frequently the item is replaced or updated.

**2.3 Invisible Materials** — Students examine a range of objects (or a building or an interior) and evaluate the visible and invisible aspects of its materials.

**2.4 Structure and Concentration** — Students evaluate a product's (or building's) life and think about how and where the materials are either (a) structured and concentrated or (b) dissipated.

**2.5 Climate Change** — Students examine the assertion that climate change is not strictly an "environmental problem" and investigate a range of roles for design in finding solutions.

# Ecology Events [7]

**2.1 Biomimicry Field Trips** — Observation trip(s) to zoo, plant conservatory, woods, garden etc.

**2.2 Biomimicry Film/Video** — nature and wildlife videos — the BBC and National Geographic.

**2.3 Video** — "The Next Industrial Revolution: William McDonough, Michael Braungart & the Birth of the Sustainable Economy."

2.4 Guest speakers — Local Government

**2.5 PBS video series** — Design e2: The Economies of being Environmentally Conscious

**2.6 Basel Action Network film** — "Exporting Harm: The High Tech Trashing of Asia."

**2.7 Short films on eco architecture** — hosted by the Guardian (London) architecture critic's Glancey.

# **ECOLOGY** Writing [2]

**2.1 Invisible Materials** — students pick a current/recent art piece or design (object, building or media piece) and identify which materials involved in making it are typically invisible to designers and consumers and why.

**2.2 Rapid Prototyping**: consider a rapid prototyping method (such as 3D printing) and reflect on its implications for sustainability.

# Есоному

**E**CONOMY Design briefs [6]

3.1 Transparency – After conducting research on a

product or a building, students design a version that shows (or makes transparent) some aspect(s) that are not reflected in the market price of the product.

**3.2 Economic Innovation** — Students examine a standard sector, (e.g. consumer goods or housing) and conduct a need-finding exercise from the perspective of a public sector or nonprofit sector client to develop an innovative version.

**3.3 Power of 10** — students design something using material that comes from a radius of 10 miles around the studio, a budget of \$10, and input from 10 local people (in the 10 mile radius).

**3.4 Local/Global** — students consider the possibility of a design practice that maximizes the use of local materials around a few globalized components.



**3.5 Shrinkage** — society constantly pressures us for expansion and growth, but here students examine a range of contexts to find viable, appealing design solutions in which proactive reducing in size, or shrinking, results in improvement.

**3.6 Consumerism** — students propose design processes and solutions that use non-pur-

chase, shared, self-provisioned, or community-provisioned options to meet peoples' needs. These are approaches that minimize the use of "purchased" solutions.

# **ECONOMY** Exercises [5]

**3.1 Economy Quiz** – a pop quiz on the economy.

**3.2 Three Sector Economy** — Students review a case study of sustainable design to identify which sectors (private, public, nonprofit) of the economy were involved and how.

**3.3 The Business Case for Sustainability** — students role play the part of consultants to a large company that needs help finding a "business case" for sustainability, or enhancing their sustainability profile.

**3.4 Fair/ethical trade** — exploring what would it mean to create a fair trade product, building or item of clothing

**3.5 Design Activism** — an exploration of models of practice that facilitate design as a tool for change.

ECONOMY Events [3]

**3.1 Video** — "Blue Vinyl," a documentary about PVC vinyl siding and its effects on people and the environment.

**3.2 Field trip** — Visit the offices of your local campaigning group such as Greenpeace, elder care, youth/ crime, immigrants, homeless or peace.

**3.3 Short film** — "Costing the Earth," Stephen Fry plays "the earth" and talks about the environmental damage he is suffering and the fact that this damage is not captured by the economy.

# **Есоному** Writing [2]

**3.1 The Good Company** — pick a recent/current commercial design brief and evaluate ways in which you argue the "business case" for sustainability.

**3.2 Local versus Global** — use a specific design (object/building) to consider the strategies you could employ for an art/design outcome that would respect and reinforce local communities.

**3.3 Green Marketing** — Analyze a recent campaign (either commercial or public service) that involved green marketing and assess how art and design choices affected its success.

# CULTURE

# CULTURE Design briefs [8]

4.1 Rites of Passage — students design a contemporary

rite of passage that helps people navigate transitions in life without so much reliance on commercial images and material wealth.

**4.2 Slow design** — Students design something that causes people to slow down.



**4.3 Open Design** — Students use a process inspired by open source methods to develop a design solution.

**4.4 Sensual Prototype experience** — Students design something based largely on felt experience, rather than visual appearance.

**4.5 Discovering history through memorial** — the brief challenges students to uncover a tragedy or celebration within a community and propose a relevant way to

memorialize it.

**4.6 The spiritual side of life** — find out about a community's spiritual (or contemplative) situation and use design skills to support the community's spiritual growth.

**4.7 Aging** — Students develop a design approach that better includes older people in daily life, such as housing, transportation, health care, socializing or shopping.

**4.8 Long Termism** — Students formulate a 100-year product, or a 300-year structure/building/landscape.

## CULTURE Exercises [3]

**4.1 Happiness Barometer** — Students go through 33 indicators of "happiness," in a survey format, and rank their own score for each indicator, then they go back and reflect on the role of material goods (or architecture etc.) and the media in contributing to each indicator.

**4.2 Advertising Audit** — Students spend a set period of time, such as one hour, doing a routine task during which they count and record the number of commercial messages that they encounter.

**4.3 Deep Ecology** — through these experiential exercises students attempt to forge a personal, even mystical, connection to nature through some of the practices of deep ecology.

### **C**ULTURE Events [1]

**4.1 Guest speaker** — Find an anthropologist to talk to your students about the symbolic value of material goods and the relative changes over time

### CULTURE Writing [2]

**4.1 Time and Design** — given a specific design project, evaluate the potential for scenario planning

**4.2 Human Needs** — examine how a particular design encourages internal methods of meeting human needs versus external methods of meeting human needs.

# FRONTIERS

### **FRONTIERS** Design briefs [4]

**5.1 Change Triangle** — Students use the perspective of three large systems for change—technology, policy and behavior—to come up with three distinct approaches to a

design challenge.

**5.2 Better outdoor lighting**— recent research suggests outdoor lighting could be more energy efficient and more culturally and ecologically sensitive. Using a specific place or neighborhood, develop an improved lighting design that hits all these notes.

**5.3 Supermarket sustainability** — imagine that a supermarket turns to you to help them with a complete redesign that enables the store itself as well as the shoppers to contribute to sustainability.

**5.4 Small interventions** — students examine the nature of small, or incremental change, and propose a "small change" that improves social, economic or ecological sustainability in the context of everyday life.

# **F**RONTIERS Exercises [1]

**5.1 Codes of Practice** — Students critique a code of practice from a relevant professional design organization and assess how it treats sustainability across the dimensions of ecology, economy and culture.

## **F**RONTIERS Events [1]

**5.1 Professional Organization** — students visit the local office of a professional design association, or invite a representative of the group, to speak about the organization's professional code of practice/code of ethics.

## FRONTIERS Writing [3]

**5.1 Central Debates of Sustainable Design** — choose one of the central debates summarized in Part 5 of the Atlas and use it to explore a given design area, such as new urban housing or fashion clothing.



#### 5.2 How Should it Look

 Considering a particular type of artifact or building, make an argument about how sustainable design should look.

**5.3 Manifesto** — Take a critical look at several of the sustainable/humanist design

manifestos and accords of the past 20 years.

# FULL RESOURCES

# 2. ECOLOGY

# **DESIGN BRIEFS (D)**

# ECOLOGY D 2.1 Eco-Baby

Atlas Book pages: part 2: first sections are most central to this brief: pages 22-42. Remainder of part 2 would also be helpful.

Brief: A children's advocacy group is launching a new line of products for infants and toddlers (under the age of 3) under the tag line "maybe baby deserves better." The objective for this assignment is to design a product for this new line - such as a seat, cup, or bed - with particular attention to reducing the impact of materials used in the product on the health of children and the environment.

**Suitability:** primarily eco/green design, potentially any year group. The brief suits product/industrial design, but could be adapted (e.g. children's nursery for interior design, or children's classroom/nursery at a school/hospital for architects).

Context/aims: The context for this brief is recognizing the notion of human health and its relation to environmental health. The emphasis is on young children because they are among the most sensitive to environmental hazards. They are biologically sensitive because they are growing rapidly and their developing organs cannot withstand attack as well as adults' can. Their bodies absorb more of what they eat and drink, including pesticides or other contaminants.

They also explore their environment in a way that presents more hazards than adults would normally encounter. For more information see readings, below. As Ken Olden, Director of the National Institute of Environmental Health Sciences (part of the National Institutes of Health) has stated, "A little kid goes from a single cell to a laughing, sociable, intelligent, friendly human being over a course of two years-that's dramatic growth and development."

**Launch:** kick off the brief with a small group activity

in which students examine actual products (or environments) and consider the "pathways" for exposure (e.g. where and how children would be exposed, how often, how much [quantity]). You can ask students in advance to bring the products/environments or you can provide them, depending on what you want to emphasize with the assignment. It is also useful to have students observe young children or see a video/film that captures actual behaviors. Students are often unwilling or unable to accomplish this observation on their own, so if it is important, staff may have to provide it.

Duration: as needed depending on what you ask students to accomplish and on their other academic load.

Credits: developed with Julian Lindley at the University College for the Creative Arts in the Product Design Sustainable Futures Programme

Sources/Readings: Children's Environmental Health Network (www.cehn.org), particularly the publication "An Introduction to Children's Environmental Health"

Our Stolen Future by Theo Colborn, Dianne Dumanoski, and John Peterson Myers (New York: Plume) 1996.

Newspaper searches on chemical in the environment and their effects.

Keywords: persistent synthetic chemicals, environmental contaminants, pathways of exposure, hormone disruptors

# **E**COLOGY D 2.2 Biomimicry

Atlas Book Pages: part 2 sections on biomimicry pages 44-54 (assuming students have read earlier sections on the ecosphere, pages 24-27)

Brief: Students use biomimicry techniques to come up with a new or improved product

concept. Generally there are two ways to approach this brief. The first is to identify a product problem and look for solutions in biology. The second is to observe biology in nature to find some ideas that could apply to design, with particular attention to achieving added functionality with humble materials.



Suitability (year/discipline): although we ran the project with younger students, I think older students would get more out of it and feel less overwhelmed by the subject of biology, which they seem to know little about. It might make sense, given enough time and advance planning, to actually partner with students in biology or engineering.

**Context/aims:** Nature's way of designing results in products that make up systems that are sustainable over the very long term. Nature has found ways to make strong, lightweight structures without using life-threatening temperatures or pressures, to make plants move without muscles and to keep animals temperature-controlled in extreme climates. Although biological materials are quite ordinary, the functionality achieved with these materials is the allure of nature's designs.

As designers we can perhaps learn from biology and indeed borrow ideas for how to get better functionality, ideally with less environmental cost. This is the concept behind biomimicry (or imitating biology) in design. The classic example of biomimicry is Velcro, which was invented when a man observed how effective burrs are



at sticking to clothing and animal fur.

Launch/setup: As mentioned, we found that students felt out of their element trying to look for inspiration from nature. For this reason, if time permits it is useful to launch this project using a range of "warm up" activities such as the Biomimicry laboratory (see other teaching resource for part 2) appropriate readings (see readings below), field trips (see other

teaching resources for part 2) and nature videos that are watched either as a class group or assigned for out-ofclass viewing ahead of time by small groups. If you have a biologist or engineer at your university who could talk to the students and discuss some examples, that also helps.

**Structure/follow-up** (as applicable): As a refinement to the general brief, it may also be useful to have students work in groups, at least to do initial research. It may be useful, especially for younger students, for groups to be pre-assigned to a given bioregion as a constraint on their research. For example, one group could be assigned to arctic climates, another to deserts, a third to mountainous regions, a fourth to swamps, a fifth to grassy plains and so on.

Throughout the project they can report to each other on

what they are learning and what inspirations are arising. Another alternative would be to pick your university's bioregion and have students get out and learn what's unique about how it functions and so forth. This latter approach has the benefit of opening up a range of local resources for guest lectures and field trips. Finally, you may also consider approaching the project by function: "where does nature have to \_\_\_\_\_\_" and fill in the blank with such terms as insulate, conserve energy, make hard materials, eliminate wastes etc. – or even how does nature do one or more of these things in a given bioregion.

**Duration**: Due to the challenges associated with this brief, allow more time for your own planning and set up as well as a generous amount of time for the students to come to terms with the topic.

Credits: developed with Julian Lindley in consultation with by Professor George Jernomidis from the Center for Biomimicy at Reading University

**Sources/Readings**: This field has blossomed since we first ran this project in 2002, so there are more web resources available, many of which I have not had time to explore fully.

It's useful for this brief to have a good range of picture books, in addition to Janine Benyus' book *Biomimicry*, which remains the only layperson's technical overview that I know of for now.

Most design libraries will have some of the older books on the design of nature's forms, and then within the further reading section for this topic at the end of part 2, *Zoomorphic* has the strongest collection of images of designs (buildings only) that have tried to take nature's inspiration and *By Nature's Design* has the best simple images and explanations of nature's basic forms (e.g. hexagons, spirals etc.). *Nature in Design*, although containing many pictures, is more about borrowing visually from nature, which is not the main point of biomimicry.

<u>Centre for Biomimetics</u> at the University of Reading and its <u>Bionis network</u>.

The Centre for Biomimetic and Natural Technologies

<u>The Biomimicry Institute</u>, which is working on a biomimicry design portal, has a good newsletter and is based in the US.

**E**COLOGY D 2.3 Ecological Literacy

*Atlas* Book Pages: part 4, section "nature as culture" (includes eco region definition and quiz) pages 170-173; part 2, section on structure and concentration (e.g. blue jeans example) pages 40-42; part 3 section on local/global, pages 102-105.

**Brief**: Using the ecoregion quiz from the book (or the full quiz from below), have students research the answers and create an interactive presentation (quiz, game, advocacy piece, exhibition etc.) for a specific audience within the region (e.g. policy makers, church group, primary schoolers, business people, general public somewhere on the main street, etc.).

**Suitability (year/discipline)**: suits any year group, could be adapted to a variety of disciplines.

**Context/aims**: The purpose of this brief is to engage the students with the local bioregion and develop their understanding of it and potentially to build, if not a connection to nature, at least more of an appreciation for what is around us. This project might run well as a series with the local/global brief.

The original quiz is purely about the biology of a region, but it might be possible to extend this to some questions about the indigenous building and making traditions of the region and how they were connected to the ecoregion (e.g. building materials, making processes).

**Launch/setup**: This project cries out for a "before" and "after" set of answers to the quiz, so that you launch

the brief with students trying to answer the questions, perhaps in groups, from scratch, then having them later compare these answers to the ones they find through research.

**Structure/follow-up** (as applicable): You can start with the original bioregional quiz, "Where You At?" with scoring, see below, and decide whether to include all the questions from this quiz, or just a subset. Moreover, the research phase, if not the interactive presentation itself, might best be tackled in groups. It may make sense to divide the questions into sets of 4 or 5 and have each group work on one set, then report back to the larger

group on what they've found. This is a good opportunity to have the students work on how to handle academic sources, since they will likely need to use a variety of non-book resources.

For follow-up you can have the students reflect on how knowledge of their bioregion affects their thinking about

design (if at all) and as well as the nature of the balance between global pressures and local issues.

You can also turn the issue around and ask if it would make sense for them to find out about the local bioregion where a particular design or component was being manufactured, printed etc. overseas –how would they go about getting such information and how could they use it?

**Credits**: based on the quiz by Leonard Charles, Jim Dodge, Lynn Milliman, and Victoria Stockley

Sources/Readings: Quiz, included below.

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#### Where You At? A Bioregional Quiz

Developed by Leonard Charles, Jim Dodge, Lynn Milliman, and Victoria Stockley.

Coevolution Quarterly 32 (Winter 1981): 1.

- 1. Trace the water you drink from precipitation to tap.
- 2. How many days till the moon is full? (Slack of 2 days allowed.)
- 3. What soil series are you standing on ?
- 4. What was the total rainfall in your area last year (July-June)? (Slack: 1 inch for every 20 inches.)
- 5. When was the last time a fire burned in your area?
- 6. What were the primary subsistence techniques of the culture that lived in your area before you?
- 7. Name 5 edible plants in your region and their season(s) of availability.

8. From what direction do winter storms generally come in your region?

9. Where does your garbage go?

10. How long is the growing season where you live?

11. On what day of the year are the shadows the shortest where you live?

12. When do the deer rut in your region,

and when are the young born?

13. Name five grasses in your area. Are any of them native?

14. Name five resident and five migratory birds in your area.

15. What is the land use history of where you live?

16. What primary ecological event/process influenced the land form where you live? (Bonus special: what's the evidence?)

- 17. What species have become extinct in your area?
- 18. What are the major plant associations in your region?
- 19. From where you're reading this, point north.
- 20. What spring wildflower is consistently among the

first to bloom where you live?

#### Scoring

- 0-3 You have your head in the sand.
- 4-7 It's hard to be in two places at once when you're not anywhere at all.
- 8-12 A firm grasp of the obvious.
- 13-16 You're paying attention.
- 17-19 You know where you're at.
- 20 You not only know where you're at, you know where it's at.

# **ECOLOGY** D 2.4 Monitoring

*Atlas* **Book pages**: book sections to be chosen based on the emphasis of the brief (e.g. ecological emphasis versus cultural)

**Brief:** students design an object or class of objects that use built-in monitors to provide users with information that somehow improves well being and ecological sustainability.

**Suitability:** The project could be modified to suit most disciplines, probably most year groups

**Context/aims**: This brief is inspired by some of the interesting work on "smart products" and smart buildings going on in places like MIT's media lab as well as our increasing ability to monitor the environment. Given that we can monitor so much of our environment, what do we want to know and how can we use the information. Bruce Sterling (Shaping Things, MIT press, 2005) suggests that at some point we'll be able to collect so much information about an object we'll have more bits of information about it than the object has molecules. And this information will come not only from the material aspects of the object, but also from monitoring the object's use and its environment. Similar capabilities are pervading our buildings.

For example, one of MIT's projects explores sensors in a coffee mug, "The Chameleon Mug introduces one way of making handheld computers for the kitchen. Using LCDs, bimetal strips, thermoresisters and Thermochromic ink as sensors, Chameleon Mug is a vessel which changes color, displays safety messages and/or springs a handle to demonstrate whether the fluid in it is hot or cold." Similar ideas yield the knives that can detect bacteria or spoons that can sense the nutritional elements (or lack thereof) in food.

The challenge of this project is for students to balance what can feasibly be monitored against its usefulness in a world where most people already suffer information overload. In theory this brief could constitute two large and separate projects: 1. Examining the issues of what can be feasibly monitored (the data collection equipment and its size, shape and durability, the data analysis and display and so forth) 2. Examining the types of information that would actually add value to well being and somehow improve ecological sustainability and working out how that fits into our physical, day to day environment.

"Bruce Sterling suggests that at some point we'll be able to collect so much information about an object we'll have more bits of information about it than the object has molecules"

**Launch**: MIT's project centered on the kitchen, and choosing such a focus maybe a useful way to structure this brief. A natural way to launch such a brief would be to either visit or recreate (to a certain degree) the context to be investigated.

**Structure/follow-up**: depending on the age group and the discipline, as well as the duration of the brief, you may want to set some specific parameters to guide the students. For example, you may choose to assign a particular type of monitoring equipment such as RFIDs (radio frequency identification that can simply track location), or a particular context such as an issue (e.g. health) a place (e.g. the classroom) or an activity (e.g. traveling). Another approach would be to explore in smaller groups things we might want to monitor for given contexts, then find out what is possible to monitor. This information could be shared with the whole group and form the basis for the design project.

#### Sources/Readings:

MIT media lab, www.media.mit.edu (possibly research in smart cities, responsive environments and changing places) and related groups and projects. It is worth checking what kind of work may be going on at your own university.

Other good sources about the information future include books and reports such as:

Ryan, C., Digital Eco-Sense: Sustainability and ICT – a New Terrain for Innovation, in Lab 3000. 2004,

RMIT University: Melbourne. Available online at www. lab.3000.com.au

"Anticipation" by David Rejeski in Pamlin, D., ed. Sustainability at the Speed of Light. 2002, WWF Sweden: Solna. Available online at www.panda.org/news\_facts/ publications/ict/index.cfm

Sterling, B., Shaping Things. Mediawork Pamphlet Series, ed. P. Lunenfeld. 2005, Cambridge: The MIT Press.

# **E**COLOGY D 2.5 Chemical Footprint

*Atlas* **Book pages**: Part 2: first sections are most central to this brief, pages 24-43. Remainder of Part 2 would also be helpful.

**Brief:** Students examine the pervasive nature of chemicals in design to better "see" the chemical footprints of their work. After conducting research, student use visual methods to paint a chemical picture of a typical artifact or material found in their discipline (e.g. a shirt, tool, structure or landscape).

**Suitability:** This exercise probably suits any discipline and perhaps suits students in the later part of their studies.

**Context/aims:** The purpose of this brief is to improve student's understanding of the problems with chemicals, and to consider the issues across the whole chemical lifecyle of a product or a building material.

The lifecycle starting point is the production of chemicals per se and the movement lobbying for "green chemistry." Next is the exposure of designers themselves to chemicals through regular contact with constructions materials, material samples and material processes. Along with designers, other workers in the construction, maintenance and distribution of goods are exposed to chemicals. The "use" phase is next with potential long term exposure of consumers to chemicals contained in designed products and structures. Finally comes the end of a product or building's useful life, at which point both the people who recycle or process the waste and the environment are exposed to the chemicals.

Most people assume that if a chemical is available on the market, it has been tested and found safe, but this is far from the truth. Of the 80,000 or so chemicals in use, only about 1200 are actually regulated and most have not been tested for health effects. About 1000 new chemicals are introduced each year and most are not tested for their effects on human health.

The green chemistry movement aims to change the very

framework underlying the chemical industry. A basic tenet of green chemistry shifts the "burden of proof" from the government (proving that a chemical is dangerous) to the industry (proving that a chemical is safe in terms of human health and the environment).

The source articles below cover each aspect of the lifecycle:

- Green chemistry -"Mr. Clean"
- Exposure of designers and consumers "Plastic paper." and "Collaborative High Performance Schools" and "California tests..."
- End of life CBS segment with the Basel Action Network report on the High Tech Trashing of Asia and the downloadable report "The High Tech Trashing of Asia"

**Structure/follow-up:** For this brief it probably makes sense to identify types of chemicals that are frequently represented in your design discipline. For architecture and interiors places to look might include glues/adhe-sives (such as used in particle boards), fabric treatments (fire retardants), coatings (wood preservative, paints and other finishes) or insulations (under carpets, in walls etc.). It may also be worth a look at how these have been regulated, as this will provide clues to what the key concerns (so far) about the chemicals are.



For products, places to look may include plastics (and additives to plastics) of all kinds, paper products and composite fiber boards. For graphic design, fiber products and inks and coatings. For textiles, perhaps dyes, fibers and fabric treatments (wrinkle and stain resistance, fire retardants). For landscape, one could look at garden chemicals (pesticides, fertilizers etc.), but also treatments on garden furniture and materials such as wood preservative, mold resistance and so forth.

Unfortunately in most cases there is not a single, handy source that will clearly outline all the chemical issues concerning one product or even one material. This project requires some detective work, and the use of a range of sources, from newspapers, books and magazine articles to government regulators or local experts who can be interviewed. It is a good opportunity to help students learn both how to use indexes (e.g. newspaper indexes) and how to think through potential bias in sources, for example, a chemical report issued by a chemical industries association or a plastics industry association.

The format of visual presentation of the findings might best be left up to the students, as this is likely to yield some interesting results, but the visual format could also be directed by the instructor's needs for the project. Examples of visualizations might include poster diagrams, color coded models, chemical "maps," or photographic essays.

#### Sources/Readings:

#### Articles

"<u>Mr. Clean: Michael Wilson wants the chemical indus-</u> try to make products safe before they get to the market" By Marilyn Berlin Snell in California Magazine 2008 September / October

"Plastic Paper: Stop making books out of trees." By Karen E. Steen in Metropolis, August/September 2002

Collaborative for High Performance Schools has been involved in testing emissions for hazardous chemicals from school furnishings. They produced the <u>Low-Emitting Materials (LEM) Table</u>

The Center for Health, Environment and Justice has published a <u>series of reports</u> addressing potential environmental health hazards in schools

"<u>California tests conventional and 'green' products for</u> <u>emissions</u>" By Ted Smalley Bowen in Architectural Record, June 2004

CBS 60 minutes news video segment "<u>The Electronic</u> <u>Wasteland</u>" (about 12-minutes long) via the Basel Action Network: http://www.ban.org with the downloadable report, "<u>The High Tech Trashing of Asia</u>"

#### Books

Fletcher, Kate. *Sustainable Fashion and Textiles: Design Journeys*. London: Earthscan, 2008. Note: chapter one

contains a review of environmental impacts of fabrics.

Colborn, Theo Diane Dumanoski and John Peterson Myers. *Our Stolen Future: Are We Threatening our Fertility, Intelligence, and Survival? A Scientific Detective Story.* New York: Plume, 1997.

McDonough, William and Michael Braungart. *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press, 2002.

## **ECOLOGY** D 2.6 Holistic Health

*Atlas* Book Pages: Part 4, pages 170-173, the connection between nature and mental health and Part 2 sections on the ecosphere, pages 24-27.

**Brief:** students look at the contrast between a "medical view" of health and a more holistic view, with a task of identifying constructive roles for design to help us move toward holistic health.

**Suitability (year/discipline)**: The brief probably suits most design disciplines and students in later years of study.

**Context/aims:** The context for this brief is the recent criticism of the separation of medicine from the context daily life in urban and suburban environments. For example, several groups have released reports showing a link between suburban development patterns and poor health, such as obesity (from reliance on cars), depression (from suburban isolation) and asthma (from spending too much time inside "sick" buildings).

Dr. Richard Jackson (see sources, below) contends that our car-dependent suburban environment is killing us. His "aha!" moment occurred when he saw an elderly woman carrying two shopping heavy bags along a treeless, 7-lane road with no sidewalk in 95-degree heat and 95% humidity. Later he realized, "If that poor woman had collapsed from heat stroke, we docs would have written the cause of death as heat stroke and not lack of trees and public transportation, poor urban form, and heat-island effects. If she had been killed by a truck going by, the cause of death would have been 'motor-vehicle trauma,' and not lack of sidewalks and transit, poor urban planning, and failed political leadership."

Along these lines, other groups have examined additional links. Research suggests that mental health is improved by access to green spaces as well as "green exercise." Other research highlights how social networks contribute enormously to a person's physical health, and examines how design might have a role in facilitating successful social, health networks (see RED report, below).

**Structure/follow-up:** this brief probably suits a project that allows time for students to research areas of health that interest them, and to examine in particular the medical treatments versus preventative care and context-driven causes of health problems. Such an understand-ing allows them to find unconventional roles for design processes and outcomes in human health.

"If that poor woman had collapsed from heat stroke, we docs would have written the cause of death as heat stroke and not lack of trees and public transportation, poor urban form, and heatisland effects."

#### Sources/Readings:

<u>"Ecotherapy – the green agenda for mental health</u>," May 2007. A report by the English nonprofit organization MIND which notes that, "participating in green exercise activities provides substantial benefits for health and wellbeing."

"<u>Our Ailing Communities: Public-health advocate</u> <u>Richard Jackson argues that the way we build cities and</u> <u>neighborhoods is the source of many chronic diseases</u>." In Metropolis October 2006.

now defunct RED group at the UK Design Council penned the report "RED Paper 01 Health: Co-creating Services," <u>downloadable here.</u>

"<u>Vikram Sheel Kumar: Software Design</u>" by Marc Kristal in Metropolis Magazine January 2006 patient level instrumentation for health care and maintenance

# ECOLOGY: EXERCISES (EX)

### **E**COLOGY EX 2.1 Biomimicry Laboratory

*Atlas* Book Pages: part 2 sections on biomimicry pages 44-54 (assuming students have read earlier sections on the ecosphere, pages 24-27)

**Brief**: groups of 2 or 3 students will rotate around 5 stations, each of which investigates some aspect of nature's design, such as packing, moving or composites

**Suitability** (year/discipline): probably any year, works best with "materials" oriented designers such as product designers or architects

**Context/aims**: The aim is to give students some handson experience with nature's structures and functions in order to spur their further investigations in this area.

**Launch/setup**: The lab requires a fair amount of space and a range of equipment and items from nature, which are indicated by station, below.

**Structure/follow-up** (as applicable): see "Laboratory Stations" below

Duration: several hours should be enough

**Credits**: developed in collaboration with Professor George Jernomidis at the University of Reading's Centre for Biomimicry

**Sources/Readings**: The laboratory is well complimented by the heavily illustrated book, By Nature's Design by Pat Murphy, San Francisco: Chronicle Books, 1993. The book shows pictures and diagrams of many of the issues presented in this lab. In addition, you can refer to the "further reading" section from Part 2, Ecology in the Designer's Atlas of Sustainability.

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#### **Laboratory Stations**

#### Station 1: Movement without muscles

1. Document a pinecone and a carrot (draw them out or trace outline on a piece of paper) then, immerse a Pinecone in warm water while you proceed to the carrot. Cut the carrot lengthwise and immerse in water for a few minutes. What is happening to the shape of the carrot? After about 20 minutes observe the changes to the pine cone. What has happened to it? While you are waiting for the pinecone, observe the growth pattern of the pinecone's 'kernels' and the roses petals.

Equipment: 2 bowls of water, pinecone, carrot (x 5), rose

#### or two

Comments after students undertake the activity: these items in nature can 'move' without muscles because they control the water pressure in their various cells. In the carrot, the cells inside can absorb more water and become larger than the external cells. The expansion on the inside stretches that side of the carrot, causing it to bend.

#### Station 2: Patterns in nature: Spheres and packing

#### 1. Drawing exercise:

Draw four dots (in the formation of the corners of a square) on a piece of paper. Try connecting the dots with lines. In what formation do you get the shortest overall amount of line

*Equipment*: paper, ruler, pencils, protractor to measure angle

2. Generate and observe Soap bubbles

Spheres: most volume for least surface area (hexagonal packing of bubbles on a surface), also can keep things warmer (sleeping cat).

Equipment: bowl of water, washing up liquid,

3. Husk and observe corn on the cob

Equipment: ear of corn

Comments after students undertake the activity: The configuration where the lines meet at 120 degree angles is the shortest. Nature uses this pattern of 120 degree angles (forming hexagons) because this is the way to accomplish the most with the least. This formation is found in many natural patterns—honeycombs, soap bubbles or kernels on an ear of corn

# Station 3: Patterns in nature: spirals and helixes

#### 1. Drawing exercises: spiral

On a drawing of spiral #1, draw several lines out from the center of the spiral. Measure and compare the angles that the line makes with the outer wall of the spiral

*Equipment*: protractor, spiral template

2. Observe and map the spiral pattern in:

- Pinecone

- Sunflower with seeds in

Equipment: pinecones and sunflower



Comments after students undertake the activity: this is an equiangular spiral where all the angles of the intersecting lines will be the same. This spiral is the only one that retains the same shape while growing at only one end. Animals (such as snails) in shells can only add on to their homes at one end, but that end stays the same shape as the animal. Plants that grow by adding identically shaped elements of steadily increasing size use this spiral as well. Two other forms of spiral are:

Helix: in a helix each loop of the curve is identical (DNA comes in helix form)

Archimedes spiral: each successive whorl is the same width as the one before

#### **Station 4: Fractals**

1. Observe fractal pattern in fern, possibly also clouds: draw the overall shape (silhouette) of the fern frond. Now draw the overall silhouette of one of the leaves on the frond. How do they compare?

Comments after students undertake the activity: Fractal geometry was invented in the 1970s to mathematically describe nature's irregular shapes. But not every irregular shape is a fractal. A fractal shape has 'self-similarity' which means that its details look similar to its larger dimensions, as with the fern frond and its leaves. A jagged coastline is another example: at many different levels of magnification, the jagged coastline will look much the same. Another characteristic of fractals is that the length depends on the size of the ruler you choose for measuring. If you measure the coastline from a satellite photo, you'll get one result. If you measure the same coastline walking along it with a ruler, you would get a larger number because you would measure more details that are not visible in the satellite image. If you had an ant walk along and measure every irregularity, you'd get an even bigger number.

#### Equipment: fern fronds

#### 2. Branching in leaves/trees

Draw a line that connects the center dot in a group of dots with all the other dots. Experiment with spiral, me-

ander, starburst and branching patterns. What are the merits of each in terms of length of line and directness of connection?

*Equipment*: ruler, template of dots

3. Observe and map the branching patter in leaves, trees and root systems

Comments after students undertake the activity: The spiral reaches all the points with the shortest path but follows a very circuitous route. The starburst offers

much more direct paths but much more length of line. The branching path is much more direct than spiral and much shorter than that of the starburst.

#### Station 5: Fibres and composites

Take an A4 sheet of paper and cut several strips, some lengthwise and some horizontal. Glue a horizontal strip to a lengthwise strip and glue two similar strips together. Now expose the various layered strips to steam. What happens when each side of the layer is exposed to the steam? Why do you think this happens?

# *Equipment*: A4 paper, scissors, glue, source of steam (kettle)

Comments after students undertake the activity: You've created a composite with two dissimilar layers. In this case the dissimilarity is that the fibres are oriented in different directions. When you expose one of the layers to steam, the fibres change, exerting a force on the opposing layer and creating movement. How do you think the fibres are changing?

Additional biomimicry lab ideas (need help in developing these further):

- Make composites using rubber mold, see how orientation of fibres affects strength, compare with nature, examine range of possible fibres and their performance (hemp, wood, jute, agricultural waste etc.)
- Water flow in plant cells (carrot/dandelion), low power microscope observation of plant materials, insects
- Textiles: structures of weave and braiding (artificial muscle, ladies stocking compare to skin etc.)
- Testing: deforming, bending stretching

# **ECOLOGY** EX 2.2 Estimation

*Atlas* Book Pages: part 1, section on development pages 6-9; part 2, section on invisible materials and lifecycle 36-39.

**Brief**: Students evaluate a consumer item or building component and estimate how many there are in circulation and how frequently the item is replaced or updated, to get a sense of the volume of material flow for a given object.

#### Suitability (year/discipline): This

exercise should work with any year group and any discipline.

Context/aims: This exercise is meant to help students

think through the massive scale of material use in a more specific way, by considering just one item, such as sunglasses or a mail order catalogue or a window frame. In addition, it also helps students become familiar with the practice of "back of the envelope" estimation so that they can use this tool as they proceed to look at other issues and questions.

They should see that they can start with a rough estimation and then refine it through specific research. This is important as many of the concerns about sustainability do have quantitative roots (e.g. the amount of carbon in the atmosphere, the acreage of old growth forest left on earth, and so forth). Sometimes it is useful to do estimates of how different types of design interventions might affect overall quantities (e.g. "this design, if deployed nation wide, could reduce the overall amount of plastic going in to landfills by X amount").

Launch/setup: Organize students into groups of about four. Give each group a different consumer item, something that one of the students may even have on them (for example a pair of sunglasses or shoes, a mobile phone, a watch or a handbag/backpack, a wallet, or a pen or pencil).

You can adjust the items for the type of students you have, for example if you have architects or interior designers you could use some element involved in architecture that has a more consumerist flavor, perhaps lighting (light bulbs), paint, carpeting or window frame. For graphic designers you could use the IKEA catalogue or other mail order fare. You can also adjust the items if you want to study a specific kind of item or material (or green house gas emission, etc.).

**Structure/follow-up** (as applicable): Ask the student to estimate:

- the types of materials used in the item

- how many of these items there are in the country. This involves considering the population of the country

(something you should check in advance), the fraction of the population that uses the item (e.g. how many people probably have sunglasses? Just adults? Some children?), and how many of the item a person might have (e.g. a person might have 3 pairs of sunglasses or two watches).

In the case of an architectural ex-

ample, the estimates would revolve around the existing building stock and changes to that stock over time. You might need to ask students to discuss their best estimate of building stock etc. but have some numbers that you



have checked in advance to provide them with for the estimation process (e.g. the number of single family homes)

- how many of these items there are in the world. Check the world population in case students don't know it. At this writing about 6 billion. Consider if people in poorer countries have the item, or have as many as we do in industrialized countries. Consider the distribution of people around the world (e.g. how many in "developed" countries and how many in "developing countries").

- what is the lifespan of the item. For example, how often do people loose or replace their sunglasses?

The students can then reflect on the volume of this item in the course of a year. For example, say 20% of the world has a pair of sunglasses that they replace every year. That's 1.2 billion pairs of sunglasses (and the

requisite plastic and plastic cases) cycling through the system every year, currently ending up as waste. They can further reflect on what might happen to this item at end of life in different places throughout the world, consider what it would mean if sunglasses were part of an organic and technical nutrient system, and then extend that to the problem of making most everyday things into a technical or organic nutrient system.

This exercise would also work well in conjunction with the exercise on invisible materials and the one on structure and concentration.

**Duration**: this can be a short exercise of about half an hour if students do not report back extensively to the group and you do not draw out the discussion. If you want them to note their process on a flip chart as they go along, and discuss the whole group results at the end, you'll have to allow longer.

**Sources/Readings**: some good set-up or follow-up readings are those that trace the life of a single consumer item. For example:

*Stuff: The Secret Lives of Everyday Things* (New Report, No 4) by John C. Ryan and Alan Thein Durning (Seattle, Northwest Environment Watch, 1997)

The Travels of a T-Shirt in the Global Economy: an Economist Examines the Markets, Power and Politics of World Trade by Pietra Rivoli (Hoboken, NJ: John Wiley and Sons, Ltd., 2005.

Fran Abrams and James Astill, "Story of the Blues" in

The Guardian (London) May 29, 2001 (available from the archives on http://www.guardian.co.uk/).

The *Story of Stuff* is an online film that also deals with the issues of materials and their connections to other issues. The film looks at the linear industrial system and why it is not a pretty picture.

# **ECOLOGY** EX 2.3 Invisible Materials

*Atlas* **Book Pages**: part 2, section on invisible materials and lifecycle 36-39 and recycling 40-42.

**Brief:** students examine a range of objects (or a building or an interior) and evaluate the visible and invisible aspects of its materials.

Suitability (year/discipline): probably suitable for most

disciplines and year groups

**Context/aims**: the aim is to give students a chance to think more specifically about aspects of materials that are typically invisible to designers and consumers by examining an actual object, building or graphic design piece. This exercise can also work with stills from a film, since there are many "invisible" materials that go in to making action films etc. An interesting discussion might arise, however, over how much "effect" can be created by digital animation and how much requires the use and/or destruction of real things. A similar question pervades the field of advertising (TV commercials and so on).

**Launch/setup:** It's possible that students will be completely unaware that mobile phones and even everyday upholstery contain, to some degree, substances known to be toxic. In the same vein they may not be aware of recent discoveries of worker exposure to these toxins, of unfair labor practices, or of environmental damage resulting from the harvesting of resources.

In this regard it may be worth setting aside time for a thorough case study in which these aspects of invisibility are highlighted before they attempt to do the exercise. There are some ideas in the "Sources" below as well as the sources for the following exercises.

To launch the exercise you need to have something for students to examine. These can either be ready to hand objects such as the tables and chairs (and other things students have on them) already in the room, or you can orchestrate something more elaborate, for example



study or the element of

invisibility that you

are most interested in.

If you're looking at a

type of object, such

as a mobile phone, you can use some key-

by tying it in to a field trip, or by assessing objects related to some other element of your overall design program or faculty. As a variation, students could review a case study and look for all the instances of "invisibility" they find.

ditional sources for this exercise is in terms of the type of object Students may be comyou want the students to pletely unaware that mobile phones and even everyday upholstery contain, to some degree, substances known to be toxic.

Structure/follow-up (as applicable): The book's section on invisible materials highlights four ways that materials are invisible:

- Scale: how many of these objects are there in the world and how fast do they "turn over"? - see the in class exercise on estimation for an elaboration on this aspect of invisibility
- Content: what chemicals and material types does the object contain?
- Origin: where have the components of the materials come from?
- Escape: how do bits of the object, or the whole object, get back into the environment?

But there are some other ways to look at the invisibility of materials in the context of sustainability. For example, we can consider:

- Local versus global
- Relative size of components versus relative potential harm from toxins in the components (e.g. in mobile phones, some of the smallest quantities contain the biggest potential toxic harm)
- Pure materials versus hybrids (is there such a thing as a pure material anymore? What about coatings, protective coverings and chemical treatment for wrinkle-free or stain resistance?)
- Labels on materials (are they present, what do they really tell us?)
- Relative exposure to materials (workers, transporters and distributors, and end users)

It may help students in their thinking process if the also consider the lifecycle "wheel" (see Atlas page 39) for the object(s) in question. The factors of invisibility may become more apparent in light of the objects entire lifecycle.

**Duration**: flexible, the exercise could be done in one session, or students could do some additional research between sessions and present to each other at the end (for example if they worked in small groups or pairs)

Sources/Readings: A way to think about finding ad-

word searches to find out about toxins involved. As to case studies, the film Blue Vinyl (about vinyl house siding) and possibly Exporting Harm: The High Tech Trashing of Asia (about high tech equipment such as computers) might work as introductory case studies. I'm not sure yet if any of the Design E2

segments would be suitable for this kind of exercise.

Also consider the sources for exercise 2.4 below.

# **E**COLOGY EX 2.4 Structure & Concentration

Atlas Book Pages: part 2, chapters on structure and concentration pages 40-42, invisible materials 32-39, nutrient cycles 44-45.

Brief: Students observe real life objects to estimate how a product is made and used. They observe it in use, documenting it with sketches and notes, possibly digital photography. Then they assess how and where the materials in the object are either (a) structured and concentrated or (b) dissipated.

Suitability (year/discipline): the brief could probably be adapted to any discipline, see context/aims below.

Context/aims: The aim is to work in a small group to make real world observations and then participate in a "studio" atmosphere to explore the concepts of structure and concentration of materials. In order for the notion of "dissipation" to be clear, it helps to choose items that have, during their use, at least one component of relatively rapid dissipation. For this reason I had product design students choose one of the following:

- kitchen tool
- piece of furniture
- something with wheels (bicycle, shopping
- trolley, wheel barrow etc.)
- footwear

In reality, everything "wears" and thus dissipates in use, but it is easier to conceive of this when you look at the

tread on a running shoe or tire, or you can see patterns of wear on a piece of furniture or a tool. In the case of architecture, students might consider roofing and siding since these tend not only to wear, but also to collect contaminants that are released back into nature (e.g. from rainwater on the roof). It also helps to think about the scale of material use, and in that sense it could be useful to run this exercise in conjunction with the other two exercises (2.2 and 2.3), estimation and invisible materials.

**Launch/setup**: You might consider launching this brief with a sort of "walk through" discussion of the example of Styrofoam packaging in Cradle to Cradle (bottom paragraph on page 140) or shoes (pages 13-14).

**Structure/follow-up** (as applicable): Students need to find or be provided with an object to assess. They should draw a few views of it, or otherwise visually document it. They should do a rough materials inventory during this visual assessment and note on their drawings the materials used. If possible they should either watch the object in use or sketch out scenarios of use to consider how else the material could dissipate in use. In addition, they should start thinking about how the object (and its materials) move around before and after use. Students could use a lifecycle wheel diagram to help with this discussion.

Based on the consideration of the object's lifecycle, students then assess how and where the materials in the object are either (a) structured and concentrated or (b) dissipated throughout the lifecycle. During and after a discussion of this question, they should make a diagram, chart or mind map that shows the patterns of structuring and dissipating throughout the lifecycle. They can then consider ways to revise the product to reduce or eliminate problematic dissipation and costly structuring (this could lead on to a design brief). They can consider what it would mean to put the object into a "nutrients" system (organic and technical nutrients).

Duration: I ran this as a four to five-hour workshop, but the time could be reduced if you provide suitable items or specific places for students to do their observations.

#### Sources/Readings:

Lewis, Helen and John Gertsakis. *Design* + *Environment: A Global Guide to Designing Greener Goods*. Sheffield: Greenleaf, 2001. Probably the best book around on eco-design, has sections on lifecycle assessment (chapter three) that may be of use if students want to take this investigation further.

Chemical World (special insert) The Guardin newspaper www.guardian.co.uk/chemicalworld. See especially part

3 and the articles "A Sharp Intake of Breath" and "Close Encounters"

McDonough, William and Michael Braungart. *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press, 2002. Particularly the following two sections:

- Known harmful substances:166-170
- Crude products 37-42

### **ECOLOGY** EX 2.5 Climate Change

*Atlas* **Book Pages**: Part 2 pages 24-31, an overview of earth's "ecosphere" and the carbon cycle; Part 5 pages 180-185, an examination of our larger systems of change (technology, policy/pricing, and behavior).

**Brief**: students examine potential roles for design in addressing the climate change problem.

**Suitability (year/discipline)**: suits any year group, could be adapted to a variety of disciplines.

**Context/aims:** In the past couple of years, the public consciousness has become alert to climate change as a central threat to humankind. As one of the authors cited below says, "Time is not on our side…if we fail to act in the next decade, it will have catastrophic economic and social consequences." Yet governments are slow to act, and individuals feel powerless.

Although most people would agree that climate change is most directly linked to energy use (see sources below), energy use is far from simply a "technical" issue. Our



lifestyle choices, often based on concepts such as belonging, identity and participation, all affect our energy use, along with technological and political factors.

"We need new approaches that will succeed," says Stephen Hale (also in sources, below). The aim of this exercise is to develop a good understanding of climate change and explore how designers can help develop and deliver these new approaches.

**Structure/follow-up:** This brief probably suits shorter projects as an exercise, but could be made into a design

brief, given longer term projects where students have time to do background research and then go forward with design processes or outcomes that build on the research. Start with the two readings below as a way of examining the science and the politics of climate change.

Ask students to reflect individually on how design thinking intersects with the climate stabilization effort. Perhaps have small groups brainstorm on possible directions for design intervention, then let teams or individuals go forward with design projects.

If you have the time this type of project would benefit from having design students interact with students from other disciplines who are also studying the climate change problem (medicine, law, economics, ecology and so forth)

**Credits**: thanks to Stephen Peake at the Open University.

#### Sources/Readings:

<u>Sustainable Energy – without hot air</u> by David JC MacKay. Use Part I, Chapter 1, "Motivations" which lays out the basic numbers and myths, takes poor news reporting to task.

"The New Politics of Climate Change: Why we are failing and how we will succeed" by Stephen Hale. London: Green Alliance, 2008. Examines why framing climate change as an environmental problem has not worked, and how a broader approach is needed

Caculate your carbon footprint:

bioregional carbon calculator

Carbon Trust's carbon <u>footprinting tools</u> for products and organizations

Energy consumption tracking with WattzOn

# ECOLOGY: EVENTS (EV)

**EV 2.1 Biomimicry Field Trips:** Observation trip(s) to zoo, plant conservatory, woods, garden etc.

**EV 2.2 Biomimicry Film/Video**: nature and wildlife videos —the BBC and National Geographic are good for this (e.g. "The Secret Life of Plants," and so forth)

**EV 2.3 Video**, "The Next Industrial Revolution: William McDonough, Michael Braungart & the Birth of the Sustainable Economy." Morhaim, Shelley, Producer. Earthome Productions, 55 minutes, 2001. Available from Bullfrog Films. The show profiles several of Mc-Donough's projects such as Oberlin College, Designtex fabric and Herman Miller headquarters.

#### EV 2.4 Guest Lecturers from Local Government:

check if you local government has a group within the waste management section working on product stewardship, waste minimization etc. the natural resources or environment group may have expertise in resource monitoring, design for environment (buildings or products) or regulations that do, or soon will, affect designers.

**EV 2.5** <u>PBS video series Design e2</u>: The Economies of being Environmentally Conscious. Although I have not seen these, I'm optimistic that they could be useful in teaching particularly for architecture, as that is their focus. The series promoters say, "Eight different topics—from sustainable architecture to water culture to alternative energy to organic farming to recycled clothing and more—are each presented in six thirty-minute episodes, challenging us to live smarter, live greener and live with the future in mind." There are video and audio clips on their website.

EV 2.6 Basel Action Network documentary film, " $\underline{Ex}$ porting Harm: The High Tech Trashing of Asia". I have not yet seen this film, but have read about it and think it is worth investigating.

**EV 2.7** <u>short online films on eco architecture</u>, hosted by the Guardian (London) architecture critic's Jonathan Glancey.

# ECOLOGY: WRITING TOPICS (W)

W 2.1 Materials are invisible: Students pick a current/recent art piece or design (object, building or media piece) and identify which materials involved in making it are typically invisible to designers and consumers and why. This is a deceptively simple question that requires far more analysis than most student realize at the beginning.

In my experience students tend to treat this as a book report on the making of a material (e.g. this is how steel is made, first a, then b then c) rather than critically assessing the issues of how and why aspects of steel are invisible to designers or consumers (are there contaminants in it from a recycling process? Where is it shipped from? Is the steel a recognizable element of the piece?). Students doing this essay would benefit from exercise 2.3 Invisible Materials.

**W 2.2 Rapid Prototyping**: Consider a rapid prototyping method (such as 3D printing) and reflect on its implications for sustainability. In what ways could it detract

from or support sustainability?

Note that although I've placed this topic here in ecology, it also has implication for culture and economic geography such as building local. Acknowledgements to Frank Gilks, one of my students at the Bartlett School of Architecture who came up with this topic and loaned it to me for this guide.

# 3. ECONOMY

# **DESIGN BRIEFS (D)**

# **Есоному** D 3.1 Transparency

*Atlas* **Book Pages**: part 3, introduction through to labeling 58-71 and section on going global and fair trade, 102-105; part 2 section on lifecycle and invisible materials 36-39.

**Brief:** After conducting research on a product type (such as a mobile phone or a running shoe) students design a version that shows (or makes transparent) some aspect(s) of the product that is not reflected in the market price of the product.

**Suitability (year/discipline)**: the brief might be a bit too challenging for first year students. The brief is set for designers of consumer goods such as clothing or products, but might possibly be adjusted for architecture if the focus were narrowed, for example to toxic materials or greenhouse gases.

**Context/aims**: The aim of this project is to get students to engage with the aspects of everyday items that are "hidden" by commerce. We chose running shoes and mobile phones because of their notoriety in the areas of labor practices and toxins respectively. However, each consumer item makes invisible a range of costs and

values that are not counted in money terms. For example:

- Products contain harmful materials
- overseas labour practices are often degrading and unjust
- non-renewable materials and energy are squandered
- international trade agreements favour rich countries at the expense of the world's poor majority
- large corporations control the markets



making decisions that adversely affect local communities

· discarded products pile up or are shipped overseas

Over the past century, environmental problems—and indeed problems leading to unsustainable development—have become more global with concerns such as deforestation, climate warming and the hole in the ozone layer. And it is exactly their global nature that makes many of these problems increasingly invisible on a dayto-day basis. The same is true with other aspects of our consumer goods as we become increasingly separated from the workers who produce them, their raw materials, and even our own waste.

One of the central debates of sustainable design is about how it should look. Should it look the same as 'normal' (or to our knowledge 'unsustainable design')? Or should sustainable design be readily identifiable to the consumer by how it looks. To date, 'eco-design' has a bad reputation because it tends to look unsexy...limited colors, clunky, rough materials and so forth.

The short-term solution to this debate has been to institute various labeling systems such as Green Cross in the US, Green Dot in Germany or the Nordic Swan label in Scandinavian countries. Many appliances now carry energy performance labels. Some of these are visual in terms of energy costs relative to other appliances in the same range. Wood may be certified as sustainably harvested by the Forest Stewardship Council. These labels, however, have tended to be quite limited in terms of what they reveal about a product. More broadly, there are increasingly calls for more transparency across the supply chain so that everyone, including the consumer, knows who made the product, out of what and under what conditions. Moves in California for publicly accessible "toxic release inventories," that list the amount of toxins individual companies release, also exemplify this trend.

This brief asks student to push beyond standard labels to

explore creative and inventive aesthetic approaches to making some of these hidden elements more transparent to the end user.

Launch/setup: This brief works best in two stages. In the first stage students research a conventional product to investigate its hidden aspects. In the second stage they design a version of the product that shows one or more of the hidden elements identified. A simple way to launch the brief is to find images that show some of the problems outlined in the table below—for example people/children working in sweatshop-like conditions, waste pickers in piles of electronics in China, unsafe work conditions, deformities from pollution (e.g. frogs and other indicator species), ecological destruction at mines, forests etc. and so forth. You could also consider having students read a short article in preparation or seek out a television news short or a segment of a documentary on one of these topics. Part of the assignment could in fact be for them to find these "visceral" images/video clips to share with the group to make the project more real for them.

**Structure/follow-up (as applicable)**: In the first stage students try to answer the questions: what costs and values associated with this product are not counted in money terms? This segment can be done effectively in small groups. We ran the brief with one half of the class researching a running shoe and the other half a mobile phone. The groups presented to one another then students were free to proceed with either of the two products.

In order to aid students' thinking about aspects of products that are not visible in the price, we suggested that they think about the main companies that manufacture the product and seek information around them. In addition, they could consider some of the keywords shown in

the table below as 'potential topics'	'potential topics'	as	below	able	the
---------------------------------------	--------------------	----	-------	------	-----

Aspect	Potential Topics
Labor	<ul> <li>Fairness/exploitation (sweatshops, labor practices, right to collective bargaining, working hours, worker literacy, gender/ child issues)</li> <li>Pay differential: factory worker vs CEO</li> <li>Safety (exposure)</li> <li>Pay scales</li> <li>Jobs</li> <li>Fair trade/community trade</li> </ul>
Materials	<ul> <li>Efficiency</li> <li>Renewability</li> <li>Safety/toxicity</li> <li>Reuse (actual/potential)</li> <li>The product as waste (e-waste, WEE, second hand, secondary markets)</li> </ul>

Markets	• Share of the market by large companies
	Stock prices and ownership
	• Distribution patterns – distance to mar-
	ket (energy)
	• International trade issues (trade barri-
	ers, protectionism, intellectual property
	rights)
	• Control of the market
	• Leaders of the market
	Corporate responsibility
	Businesses for social responsibility

In stage two the students worked individually to design a version of the product that showed one of more of the hidden aspects. In this stage of the project there is leeway to emphasize design skills (model making, sketching, ideation, etc.) and presentation techniques that mesh with your broader program needs. For example, we ran this project as a joint, international project and had students communicate with an overseas partner by email and then post their results as web pages on a central website.

Duration: flexible to meet scheduling needs

**Credits**: developed with John Wells, then a visiting lecturer in the Industrial Design program at the University of Washington.

### **ECONOMY** D 3.2 Economic Innovation

Atlas Book Pages: part 3, pages 58-101, part 5 180-184.

**Brief**: students examine a standard consumer goods sector, such as sports equipment, soft furnishings, or white goods (or housing or offices in an architectural context) and conduct a need-finding exercise from the perspective of a public sector or nonprofit sector client to develop an innovative product.

**Suitability (year/discipline)**: this brief probably could suit any year group

**Context/aims**: the first aim of this brief is for students to try wearing the "hat" of someone who is not situated in the private sector. For many of them, this will be quite foreign, and it may help to assign specific clients or even try to develop the brief as a live project with local organizations in your region (see "sources" below). The second aim of this brief is to get students thinking more deeply about the difference of scope for sustainability between the public, private and nonprofit sectors. Design has been situated largely within the private sector and has typically been assigned the task of expanding or pioneering new markets by improving consumer appeal of products, improving profitability and so forth. But because of the way the economy is structured and the necessity of economic growth (e.g. economic expansion), the private sector has had difficulty undertaking effective sustainable design. It has to leave things out. Could designers include more considerations towards sustainability if they were not so beholden to the profit agenda? How might that work through the public and nonprofit sectors.

This economy is not a system that any of us have chosen, but rather it has accumulated over time. Its rules and procedures have been developed more and more by those experts in finance who appear, to those of us without economic literacy, as masters of a mysterious world. No one has been in charge of reviewing the economy to make sure that it "does no harm," or even to identify what some of the costs of continuous expansion have been.



A key question becomes what form of economic organization allows the best pursuit of sustainable design. Each branch of the economy—private, public and nonprofit—holds different opportunities and limitations for sustainable design. Moreover, designers themselves participate in the economy not only as designers, but also as consumers and citizens, roles that offer them a range of opportunities to affect sustainable design actions.

**Launch/setup**: this brief could be well launched in combination with one of the guest speaker ideas from the economy section of the teaching guide and exercise 3.2 would also be very helpful. For example, students could choose or be pre-assigned to a group that works with a public or nonprofit client. Even if the organization did not want to host a live project, it still might be possible for students to visit the organization and see some of their projects, or at a minimum for a speaker from the organization to give a talk to students and show some of the organization's work.

You may also choose to distribute a few different short articles to students and have them report back to each other and discuss the issues/opportunities (see reading/ sources below).

**Structure/follow-up** (as applicable): My experience with running this brief suggests to me that students need to choose a specific client in order to more fully explore and understand the dimensions of the public and nonprofit sectors. So while it is possible to run this brief in a theoretical context (e.g. choosing a theoretical environmental organization) there is a great deal to be gained from selecting a regional organization that deals with a specific area. For example:

- A nonprofit group dealing with environmental preservation or renewal in the urban context
- Organizations (public or nonprofit) dealing with vulnerable groups such as immigrants, children or the elderly
- The waste management group of a city or county
- The social services group of a city or county
- Public or nonprofit health organizations

Depending on the duration of this brief, you have the opportunity of exploring a wide range of research techniques, particularly getting the students out there to look at what is going on in whatever context they've chosen. Similarly the design and development phase can be brief or extended depending on what you want to emphasize—does the student investigate a manufacturing strategy that the client organization can endorse? Does the student need to create a prototype for users to test? And so forth.

Duration: flexible depending on course emphasis

**Sources/Readings**: See also readings listed under exercise 3.5 Design Activism.

#### For the public sector:

Margolin, V. and S. Margolin, A "Social Model" of Design: Issues of Practice and Research. Design Issues, 2002. 18(4): p. 24-30. This article presents an example of social services for the elderly.

#### for the nonprofit

• The <u>Five Ways</u> project website includes the example of the nowash shirt. The project was a grant funded aca-

demic-based project run by practicing designers

• Downloadable publications such as, "<u>Linking Innova-</u> tion, <u>Design and Sustainability</u>" which profiles a university program funded by a public agency (Ecorecycle Victoria)

• this site for the <u>nonprofit organization Bioregional</u> points to their ecovillage development bedzed, which involved a variety of nonprofit organizations as well as an architect.

"<u>Contentious Citizens: Civil Society's Role in Cam-</u> <u>paigning for Social Change</u>," a Young Foundation report by Paul Hilder with Julie Caulier-Grice & Kate Lalor. The introduction provides an overview of social campaigning, though with a slight "British" context.

# **E**CONOMY D 3.3 Power of Ten

*Atlas* Book Pages: part 3, local and global, alternatives to money 102-105; part 4, nature as culture, 170-173; possibly also section on the concentration of wealth in the economy in part 3, pages 76-101,

**Brief**: students work with materials and processes found within a 10 mile radius of the studio, on a "money" budget of £10 using input from 10 strangers (within the 10 mile radius) that they must meet in person to do the project. The result must speak to the "local" in some way. They can devise an object, a process, a structure or a service.

**Suitability** (year/discipline): It's not clear to me that this would work in an architectural context...it also strikes me as a project for older students who have mastered the basics.

**Context/aims**: The aim of this project is to focus specifically on the idea of a local economy and to think of both money, and the values beyond it. We know that in many locations, money flows out of local places and local (typically small scale) institutions, in favor of large-scale global institutions. We see this divide between rich and poor places, just as we see the divide between rich and poor people.

To work locally requires a different mindset and a determination to forge links among organization and individuals. It also requires thinking about local values, both those that have a price and those that don't. For example, is there a way to use barter rather than money exchange? Can you find "in kind" rather than cash support for the project? Are there forms of alternative currency such as a LETS scheme (explained in the *Atlas* reading above)? In many cases the result is making a living instead of making a killing, which is perhaps a good trade off if you're doing something you enjoy and feel good about.

**Launch/setup:** Provide the students with a fairly detailed map of your region so that they can draw a 10 mile radius and start thinking about local needs, sources of support, and the issues they might want to address.

**Structure/follow-up** (as applicable): The project requires a good deal of self direction in that students need to find an issue and then pursue it. They need to develop (or you need to provide) a structure for tracking and reporting the materials/processes and their location within the radius, for documenting the 10 newly met people and how they have contributed, and for keeping track of expenditures against the  $\pm 10/\$10$ . It will be up to you to draw the line on what has to be counted against the \$10 budget. For example, perhaps it's reasonable that typical running costs (such as transport, regular tools of the trade and day to day communications) don't have to count against the budget, but materials, processes and special output (e.g. printing) do have to be counted.

**Credits**: inspired by a design competition that I heard about from London-based product designer Sam Johnson, where the brief was: 10 designers, working within a 10 mile radius of the studio, with a budget of  $\pounds 10$ .

# ECONOMY D 3.4 Local/Global

*Atlas* **Book Pages**: part 2: local and global materials 36-47, part 3: going global 102-105, part 4 nature as culture 170-173, possibly also section on time and speed, 152-161.



**Brief:** students develop a design approach that uses predominately local materials with a few strategic global components.

**Suitability (year/discipline)**: The brief could probably be adjusted to a variety of disciplines.

**Context/aims**: this brief explores the balance between local and global – to what degree can we really be locally self sufficient? When does it make sense to use global components? The brief is inspired by Stewart Walker's work on this topic. In his book Sustainable by Design he notes, "Where appropriate, products and parts could be made using locally available resources, but there would remain many components that would be more appropriately manufactured in high quantities. For example light sockets, bulbs and electronic parts would be difficult to manufacture at the local level and it would be inappropriate to do so. It is important to retain standardization of these types of components for safety reasons and to ensure compatibility. Sustainable product design must, therefore, combine and integrate scales -using locally and regionally produced parts from regional materials in combination with mass-produced parts. If the massproduced parts are designed so that they are not specific to a particular product, they can be recovered and more easily reused in other applications" (Walker, 2006 p. 93).

He goes on to give examples of standard global components such as a lamp socket, threaded rod, electrical cable or keypad. He also provides pictures of his own design prototypes, which are striking in how they break the mold of expected product form.

By looking to structures and building materials, a similar exploration could take place, and indeed, some projects such as the UK's BedZed housing development sourced most materials locally (within 30 miles). See also sources in previous exercise.

Launch/setup: You will need to decide whether you are going to assign some global components, or let students present and argue for what they see as suitable global components. You also need to decide whether students should focus on reusing local materials (e.g. recycled materials) or whether they can use any locally available materials. This would make a good opportunity to discuss what constitutes a local or regionally available material.

**Structure/follow-up** (as applicable): Students begin with the agreed global components and undertake a project to design with local/regional materials. The project could simply be for them to come up with design solutions that can be made in ongoing local batch production.

Walker also addresses the issue of using local labor, thus suggesting the need to create designs that can be made in generalized local workshops, rather than requiring specialty production facilities.

**Credits**: inspired by Stuart Walker's work in *Sustainable by Design* (London, Earthscan, 2006) is the inspiration, particularly pages 89-97.

## **E**CONOMY D 3.5 Shrinkage

*Atlas* **Book Pages**: the following pages discuss the pressures for economic growth and some of the effects: economic expansion 62-65, discounting 72-75, global-ization 102-103.

**Brief:** Students examine a range of contexts to find viable, appealing design solutions in which proactive reducing in size, or shrinking, results in improvement.

**Suitability** (year/discipline): The brief probably suits most design disciplines and students in the later years of study.

**Context/aims**: Society constantly pressures us for expansion and growth – economic growth, financial expansion, globalization. "Growth" is often equated with "improvement," yet plenty of evidence suggests that more isn't always better. Consider for example, the growth of a cancerous tumor. There are many familiar arguments in favor of quality over quantity.

Yet arguably, aside from electronic gadgets, we find very few examples of active planning or design to accomplish shrinkage. Few cities or companies aspire to shrink in size; Americans have typically not aspired to smaller cars or houses. This brief aims to help students explore how improvement can arise from pro-active shrinkage rather than expansion or growth.

Aggressive shrinkage is quite common in personal electronics and other gadgetry. But this is shrinkage only is the size of an individual object, while the overall number of gadgets increases. This is partly because although gadget size is shrinking, individuals tend to own more gadgets — more than one phone, computer, portable music player or digital camera per person. A typical household has more than one television and more than one car.

But what about shrinkage in total—such as smaller houses (but still only one house per family unit), smaller lots, but only one per family, or simply owning fewer consumer goods or fewer clothes? What role does design have to play in this approach?

In what sense does shrinking one thing mean that something else grows? For example in the case study below, shrinking space for cars in Copenhagen means growing space for pedestrians. Similarly in the case study of Premsela's "power free" day, shrinking exposure to distracting television and internet means an increased amount of time in social relations and authentic experience.

**Structure/follow-up:** Kick off this brief with a discussion of one or more of the case studies from below.

Students might either focus on how to cut down on the overall amount of stuff (e.g. gadgets, clothing etc.) or they might look at other dimensions of "shrinking."

Alternatively, students could take a look at things that we want to "grow" – to grow these things, what should shrink?

#### Sources/Readings:

"The Incredible Shrinking City: Facing steep population decline, Youngstown,

Ohio, is repositioning\_ itself." By Belinda Lanks in Metropolis, May 2006. Youngstown Ohio creatively and proactively plans for shrinkage rather than growth.

There are very few examples of active planning or design to accomplish shrinkage. Few cities or companies aspire to shrink in size; Americans have typically not aspired to smaller cars or houses.

Tiny living cube trialed in Munich with college students (see the <u>website</u> for the micro compact

<u>home company</u>). Also an article in ID Magazine (article not available online) by Brad McKee, "Squeeze Play" in ID May 2006.

"<u>Revenge of the Small: Portland, Seattle, and Vancou-</u> ver are creating strategies to encourage the development of modest, more affordable houses." By Karrie Jacobs in Metropolis December 2006. Northwest cities stop saying no to large and start saying yes to small.

"Starting Out Small: By building a single-family house on land too tiny for other developers, one young Toronto firm is making a name for itself." By Tim McKeough in Metropolis October 2006.

<u>"From Farm to Closet: Dutch designer Christien</u> <u>Meindertsma makes knitwear that celebrates its prov-</u> <u>enance."</u> By Nancy Nowacek in Metropolis December 2006. Produces only the amount of garments that can be generated by one sheep in real time...the opposite of mass production.

"Lights Out" by Aric Chen in Metropolis June 2004. Unfortunately this article is **not available online**. Premsela, the Dutch government-funded design foundation conducts a "power-Free day"— 4 times per year they observe a self-imposed blackout. Staff members brew coffee on a camp stove and use daylight and light amplifying candles. Phones, computers, and any other electrical equipment are forbidden and work is conducted face to face, with papers and pens.

"Pedestrian Cities: Encourage walking and cycling.

Discourage cars and parking." By Paul Makovsky in Metropolis August/September 2002. A series of small steps gradually transformed the city of Copenhagen from a car-dominated to a people-oriented city. Contains a good map showing the time series change in car-free space in Copenhagen.

See also: "<u>Pedestrian Cities: An interview with Danish</u> <u>architect Jan Gehl on how public spaces work</u>." By Paul MakovskyIn Metropolis magazine in August/September

2002

"A Is for Adaptable: Today's most progressive school designs put the stress on flexibility" by Thomas de Monchaux in ID may 2007 (**not available online**). The article reviews a range of school design innovation, and in several cases observes, "It's politi-

cally and financially impractical to build new individual public schools as small as they should be."

# **ECONOMY** D 3.6 Sustainable Consumption

Atlas Book Pages: Part 4 pages 116-151 covers the psychology of human needs, the "owning and watching" of consumerism, and design's role as "pusher."

**Brief**: students propose design processes and solutions that use non-purchase, shared, self-provisioned, or community-provisioned options to meet peoples' needs. These are approaches that minimize the use of "purchased" solutions.

**Suitability** (year/discipline): this brief probably suits most design disciplines and most year groups.

**Context/aims**: There is rising interest in the area of sustainable consumption. Until recently, many people conceived of sustainable consumption as a technical question of making environmentally better products or buildings and convincing people to buy them. But proponents of sustainable consumption have recognized that technical solutions alone cannot accomplish sustainable consumption. We also need to bring about lifestyle changes, particularly among people in western countries.

The emphasis on lifestyle and behavior change is supported by research that suggests consumerism is costly not only in environmental terms, but also possibly in other ways. Psychological research, for example, shows that beyond a basic level (food and shelter), material goods do not make us happy. Sociological research suggests there may be a downside to using "things" as the main way of creating a sense of identity.



So why do we consume? The most compelling evidence suggests that material goods offer us a way of constructing meaning and identity—we use goods to make sense of our world and ourselves. Material objects might express goals or show how they are being achieved, for example professional cookware attests to the goal, and perhaps the achievement, of becoming a gourmet cook.

However, others have argued that increasingly, the "meaning" embedded in our material goods is controlled by profit seeking corporations, rather than by communities or individuals. Companies create "narratives" and "identities" through costly and elaborate advertising and marketing campaigns that target specific consumer groups (such as children, young men, or older adults) at the level of raw human desire. The result is that our desires are fueled, but our true needs are infrequently met. At the same time, companies offer apparently "quick" solutions to social problems (the process of commoditization - making into a commodity) such as paid dating services, plastic surgery or anti-depressants. Yet these quick solutions have become symptomatic of a decline in social capital, a decline in the number and density of trusted, social relationships.

Although not every aspect of social relations and identity are commoditized, there are an increasing number of social needs that we meet through individual purchases. How much do we rely on appearances of clothes, tools, vehicles or houses as an essential part of our identity? Commercial services now overtake social relations in areas as diverse as food and cooking, day-care, healthcare, elder care, cleaning, dating, and entertainment. As vested commercial interests mine these profitable services, the "purchase" solutions are the ones that are researched, perfected and patented. They then begin to appear to "work better" than under-supported alternatives such as providing for ourselves, maintaining social capital (e.g. maintenance and preventative care), or developing cooperatives (such as car sharing).

What are the alternative methods of creating identity and social meaning. Is there a way of conceiving of a role for design that does not involve fueling desires in the commercial arena?

At first glance, solutions that use non-purchase, shared, self-provisioned, or community-provisioned options to meet peoples' needs (either for goods or meaning) might appear to be non-design solutions. But in reality they are solutions that call upon an alternate economic framework within which to organize design activities. For example, instead of forming a consulting business, designers may need to join public sector efforts, form a non-profit design studio (a social "enterprise", we are not talking about volunteering), or join an organization that focuses on social issues. In general these non-purchase solutions are being characterized as social innovation and as building social capital.

**Structure/follow-up** Use the Meroni report (see below), *Creative Communities*, as a starting point. The introductory essay offers an overview of the project and the notion that, "Design can help creative communities not to withdraw into isolation, but build up an overall framework that we can all directly or indirectly refer to, and can work towards reaching a balance between demands arising from different living contexts and people's ability to deal with them."

#### And further

"We are talking about the contribution to the quality of interaction required between the many individuals involved in the solutions. This means shifting the focus of design from results to processes that bring them about, and so to what is materially and organizationally required to achieve them."

The objective is to look at the notion of creative communities and reflect on how existing communities might meet their own needs using creative approaches. In this case you want students to look at "needs" in the broad terms as outlined in the *Designer's Atlas* on pages 114-115.

One approach would be to look at existing assets within a community and use design processes to identify creative new uses for these assets. See the case studies below from Jegou et al. Another approach would be to look at an existing or emerging creative community and try to apply design processes in the service of the community. Failing these

In setting up the project, the instructor can either identify a general area of work, such as community gardening/ farming, or if some members of the group know a community well, they could propose potential directions for the project.

**Credits**: this brief is derived largely from the work of Anna Meroni, Ezio Manzini (both at Polytechnic Milan), and Francois Jegou (Strategic Design Solutions of Brussels) and their European collaborators.

#### Sources/Readings:

Meroni, Anna (editor), "<u>Creative Communities: People</u> <u>inventing sustainable ways of living</u>." (Milan: Edizioni POLI design) 2007. The report contains short profiles of a range of community solutions to community problems, in selected countries around Europe. Cases include housing, urban farming, community gardens, neighborhood cultural centers, kindergartens, clubs, senior centers and the like. Essays analyze the significance of the cases in design terms.

Jegou, Francois, Joelle Liberman, Sara Girardi and Anna Bernagozzi, "<u>Design for Social Innovation: Enabling</u> replication of promising initiative for sustainable living in Brussels and Paris" (Turin: Allemandi Conference Press) 2008.

- urban hitch-hiking project in Belgium where riders and drivers sign up to a "hitchhiking service" in which cars are clearly labeled and riders can specify, for example, the gender of drivers and preferred destinations

- inter generational housing in Paris where students who can't afford central accommodation are paired with seniors who already have central accommodation but might otherwise be isolated.



# ECONOMY: EXERCISES (EX)

### ECONOMY EX 3.1 Economics Quiz

Atlas Book Pages: part 3, roughly pages 58-87

**Brief**: students take a "before" quiz about the economy to get them thinking about the topic

**Suitability (year/discipline)**: any discipline, probably any year group

**Context/aims:** Design students tend to shy away from economics. This quiz is designed to get them thinking about it with some provocative facts. The aim is to (a) make it seem interesting (b) show its relevance to sustainability (through the issue of fairness and "good causes") and (c) introduce the idea that they can begin to think critically about the economy and how it relates to their own world.

#### Launch/setup:

**Structure/follow-up** (as applicable): I usually let the students take the quiz in pairs or groups of 3 so they can compare what they already know, or what they think they know. As we go over the answers I try to emphasize that it is a learning tool and draw out not only the right answers, but also how they are currently thinking about the economy -- which questions were the most difficult, which had the most disagreement in the group, which answers most surprise them, and so forth.

**Duration**: 10-15 minutes to take the quiz, 10-15 minutes to discuss

Sources/Readings: The quiz itself, see below

#### •••••

#### **Thinking About Economics: Quiz**

- 1. An economy:
- a. Is a system for distributing resources
- b. Is a way of measuring how much is bought and sold
- c. has to do with using money to buy things
- d. excludes things that can't be traded for money
- 2. Economic growth is a good measure of :
- a. amount of improvement in well being
- b. amount of money changing hands
- c. amount of new money being introduced into the market
- d. all of the above
- 3. our market system concentrates wealth: it is estimated

that:

- a. 5% of the US population holds 95% of the wealth
- b. only 1% of the worlds wealth is held in the names of women
- c. 3 ultra wealthy individuals (Bill Gates, Paul Allen and Warren Buffet) have a combined net worth that is greater than the national economic output of 41 of the poorest countries that have a combined 550 million residents
- d. all of the above

4. when we make decisions about investments, generally we consider £1 today as being worth:

- a. the same as  $\pounds 1$  in the future
- b. more than  $\pounds 1$  in the future
- c. less than  $\pounds 1$  in the future
- d. the same as  $\pounds 2$  in the future
- 5. finance is:
- a. the ability to buy things before you have the money to pay for them
- b. a form of collateral that you would use to get a loan
- c. related to interest payments
- 6. In the US, the creation of new money is a function of:
- a. private companies that make a profit off of creating new money
- b. the government, which issues new money into the public realm
- c. the united nations, which assures that each country has enough money
- 7. The economy is different than the market because:
- a. The market lies mostly within the private sector of the economy
- b. The market cannot allocate some resources that are difficult to price
- c. The economy also includes the public sector and the non-profit sector
- d. All of the above
- 8. The public sector of the economy is made up of
- a. Publicly held corporations
- b. Local, state and federal government
- c. Citizens of the country
- d. All of the above
- 9. The non-profit sector of the economy generally
- a. Tries to meet needs that are neglected by the private and public sectors
- b. Has its history in religious organizations
- c. Has grown rapidly over the past 50 years

d. All of the above

Answers: 1 a; 2 b; 3 d; 4 b; 5 a; 6 a; 7 d; 8 b; 9 d

## ECONOMY EX 3.2 Three Sector Economy

Atlas Book Pages: the whole of part 3 would be helpful

**Brief**: students review a case study (or several) of sustainable design to identify which sectors of the economy were involved and how. This also gives them the opportunity to begin identifying specific stakeholders within the process. As a variation or follow-up students consider a recently released or in-the-works design and, wearing hats of different public, private and non-profit stakeholders, they assess how to make the design more sustainable.

**Suitability** (year/discipline): the exercise can be adjusted to any discipline and is probably suitable to most year groups.

**Context/aims**: The aim of this exercise is to help students better see the three sectors of the economy, and the stakeholders within those sectors, in the context of sustainable design.

Launch/setup: students need to read (or view) one or more case studies of sustainable design projects. You may choose to have this review happen during the exercise itself, giving students the initial 30 minutes or so to read/view and think about a short article, or you may ask them to read and think about it ahead of time. You also have to decide whether everyone views the same case study and then compares notes later, or whether small groups review different case studies and then report back to each other.

**Structure/follow-up** (as applicable): Have students analyze which sectors of the economy were involved and how. You can introduce the notion of different stakeholders in the process, sitting in different sectors of the economy with different agendas. For example, in which sector is the client, and where does their money come from? Which sectors threw up the biggest hurdles to sustainability features? How do the results from private, public and non-profit clients differ? Which seem more "advanced" as far as sustainability is concerned. How do stakeholders in the different sectors critique each other with regard to sustainability? How well do the "sustainable designs" fare in the market place as indicated by the longevity of the companies that make them?

Follow-up or Variation: instead of looking at an explic-

itly sustainable design, present students with a recently released design or one that is "in the works," but one that is not advertised explicitly as being "sustainable." Then ask students in small groups to assume the role of designers in one of three sectors: non-profit, public, or private. Wearing these "hats," students brainstorm on ways to make the design more sustainable.

You can facilitate these exercises by giving the students a list of some typical types of organizations in public and non-profit sectors (see an examples A and B that I developed, below), with which they may not be familiar. In addition, you can review with them some of the typical strategies that stakeholders from different sectors use (see example C that I developed, below) in order to achieve sustainability – and ask them to study the cases for any evidence of these or other specific approaches.

**Sources/Readings**: Examples A, B, and in appendix p. 53-55.

This kind of exercise is where "catalogue"-style books of sustainable design are really useful, such as:

Datschefski, Edwin. *The Total Beauty of Sustainable Products*. Hove: Rotovision, 2001.

Fuad-Luke, Alastair. *The Eco-design Handbook: A Complete Sourcebook for the Home and Office*. London: Thames & Hudson, 2002.

You can use these books to identify potential examples and then do some (probably internet) investigation to find a newspaper or magazine profile, or even an internet profile on the website or the client or designers.

Locate architecture case studies by checking for award winners in sustainable design categories of architectural association competitions, or for projects that score high in green building rating systems such as LEED. **Suitability** (year/discipline): probably suits students in the last 2 years of study and I think it could be adjusted to a range of discipline. See launch/setup below.

**Context/aims**: There is a great deal of writing on both Corporate Social Responsibility and on making the business case for sustainability, as well there should be. The corporate sector is perhaps the most powerful in our society and every effort should be made to steer it toward sustainability. The Buried Treasure report is concise and specific, which makes it useful for this exercise, although there are probably other equally suitable materials.

Launch/setup: I set the students up as consultants to a company that wants to improve its "sustainability" profile while still maintaining a strong "business" position. The specific type of company I used was a theoretical media conglomerate that has divisions that publish magazines, produce films and publish books. Yet it is easy to imagine a different sort of global conglomerate that produces buildings (e.g. a Skanska-type company) or products (e.g. a Sony-type company) and so forth. I divided the students into 8 groups and each group examined one of 8 (out of the 10) areas profiled in the report:

- Shareholder value
- Revenue
- Operational efficiency
- Access to capital
- customer attraction
- brand value and reputation
- human and intellectual capital
- risk profile

In addition to providing the spread from the report that covered their area, it's useful to provide several actual corporate annual reports to circulate so students have a chance to see how companies present themselves. In addition to the approaches outlined in the report, students can also refer to the options suggested in the book's section on "The Good Corporation" (p.86):

- shareholder activism
- investment screening
- corporate philanthropy
- CSR policy

**Structure/follow-up** (as applicable): I ran this on one day, but I think it would work better to have a short launch on the first day, where you discuss the overall project and hand out the relevant sheets for the students to read on their own, away from class. They can think about ideas for the

# ECONOMY EX 3.3 Business Case

*Atlas* **Book Pages:** part 3, design for profit, good and bad company, pages 86-97.

**Brief**: the students do a role play in which they are consultants to a large company that needs help finding a "business case" for sustainability. Using the report, Buried Treasure, as a guide, they explore eight areas of potential opportunity, including customer attraction, brand value, revenue and access to capital, among others.



theoretical company and make some initial notes, before coming to class for the next session and working with other students.

In the second session students can compare and refine their ideas, and then come back together as a large group to "assemble" all the ideas into a plan for the theoretical company. Depending on how far you want to take the exercise, you could have students discuss the relative strengths and weaknesses of all the ideas and choose a subset of them all to include in the consulting report to the company.

**Sources/Readings:** Although the document "Buried Treasure: Uncovering the business case for corporate sustainability" done by the nonprofit group SustainAbility, leans toward the technical, it is convenient in that (a) it exists and (b) it can be downloaded from the web www.sustainability.co.uk. If there are more conducive documents out there, I'd like to know about them.

# ECONOMY EX 3.4 Fair Trade Artifacts

*Atlas* **Book Pages**: part 3 Economy, p102-105 on globalism and fair trade, also invisible materials p36-39

**Brief:** Students reflect on what it would mean to create a "fair trade" artifact, such as a consumer electronic product, a building or a soft furnishing.

**Suitability** (year/discipline): This exercise could probably be adapted to any year group or design discipline.

**Context/aims**: Fair trade has so far been associated largely with agricultural products such as coffee, bananas, or chocolate. But with more and more artifacts, or their components, being made overseas where labor and environmental laws are notoriously lax, fairness and justice (or lack of it) are also an issue for designers of artifacts.

This exercise has three main aims. First, it should help students probe how far a designer's responsibility goes. Can we really assign responsibility to designers when they apparently have "no control" over some aspects of production (e.g. construction or factory workers) or material harvesting? What could they do to gain more control?

Second, it should help students explore the question of how we "frame" debates and what we accept as the norm. For example, at the moment fair trade products create this picture in your mind that "fair trade" is on a higher plane and all other products are "normal." Whereas if you think about it, fair trade should be the "norm" and all other products should be viewed as exploitative and unfair. Yet people continue to assume that the "norm" (e.g. non-fair trade) meets some sort of minimum standard for ecological integrity and human decency when often, it doesn't. For a few articles containing examples of brick, carpet and cotton, see Sources, below.

Third, it should make clearer the moral dilemmas we confront in the absence of valid fair trade schemes around building and product materials.

**Launch/setup**: students can either read some case studies in advance, or they can read some short ones in class. Here are some of the issues to consider:

- "green design" so far focuses largely on handling of the materials rather than the people who harvest and process materials (e.g. forest stewardship council wood)
- Helping those in most need demographic criteria for selection versus geographic criteria for selection (the local versus global argument)
- Monitoring how people are treated (if people are not local then how do you do it? The role of accredited "fair trade schemes.)
- What is fair or just? Given widespread poverty, many children are working to support their families. Yet

these industries are very profitable, so why aren't some of the profits deployed to the bottom of the pyramid? The UN sets standard on human rights that says children have a right to an education and should not work. But when we boycott these poor producers does their income further dwindle?

#### Sources/Readings:

<u>United Nations conventions</u> on the rights of the child (as well as other human rights definitions and documents).

<u>Human Rights Watch</u> also monitors and investigates abuses of children's rights.

<u>The Fair Trade Labelling organization</u> provides information about products that are currently labeled as well as the standard one must meet to gain the label.

"<u>The Ethics of Brick</u>: Giving priority to social equity can lead to surprising conclusions that subvert some of the widely accepted principles of green design." By Lance Hosey in Metropolis Magazine, Posted May 16, 2005.



"<u>The Ethics of Rugs</u>: Can designers help eliminate child labor in the rug industry? The Rugmark Foundation thinks so." By Laurie Manfra in Metropolis Magazine, Posted January 16, 2006.

"<u>Working flat out</u> - the child labour behind your Egyptian cotton sheets" By Dan McDougall in The Observe on Sunday June 8 2008.

"<u>Worker Abuse Alleged in the U.A.E.</u>" by Sam Lubell in Architectural Record, July 25, 2007.

and the follow-up to this article:

"Few Assurances Made on UAE Worker Rights" By Sam Lubell in Architectural Record April 23, 2008.

### ECONOMY EX 3.5 Design Activism

*Atlas* **Book Pages**: part 3 Economy, p 102-105 on globalism and fair trade, and p 90-101 on the economic organization of design.

**Brief**: Students examine the issues that arise when designers become activists.

**Suitability (year/discipline)**: This exercise could probably be fashioned to suit any year group or discipline

**Context/aims:** In my own research on design activism I characterize it as taking intentional action to instigate change on behalf of a neglected or wronged group. This is a wide ranging definition that captures everything from natural ecosystems to victims of disease or poverty. At its core, this kind of activism is looking at the moral deficiencies of the status quo. Activists push for change, not because it will make money, not because they want to comply with regulations or policy, but because they have a vision for the right thing to do.

Design education is gradually incorporating more activist notions—steadily directing design students to consider what is the right thing to do, rather than simply accepting that making money and complying with rules is enough. But how does design reconcile its conventional role as servant to commercial clients and their users (service for hire) with its potential role as transformative change agent and societal leader (doing the right thing)? Does it have to? Will it remain primarily a 'change agent for hire'?

Students generally aren't being presented with any models of practice that go beyond the conventional service-for-hire configuration. Students are not equipped with a strategy for how to position themselves within the economy so that they can actually apply activist design. The aim of this exercise is to get students to examine some cases studies of design activism and consider the models of practice that actually exist so far.

Some of the areas where design activism is emerging include the following:

- Humanitarian aid (natural disasters and post war reconstruction)
- Eco-design
- Services to the poor or excluded (e.g. homelessness, physical disability, elderly)
- Design for development (e.g. products for the developing world)
- Human rights (e.g. fair trade and ethical trade)



Some interesting cases of design activism include:

- Rural studios affordable rural homes
- Architecture for Humanities fund-raising and competitions on humanitarian causes
- Architecture without Frontiers examination of the architectural effort in reconstructing post war cities
- Public Architecture's nonprofit, San Francisco based studio
- Adbusters culture jamming
- Design that Matter products for poverty stricken countries
- Project H Design also for humanitarian product design solutions

Launch/setup: There are several ways to present this exercise. I would have students read several short articles such as the ones listed in the "sources" section below and then have them come in and discuss the different cases. The discussion could then serve as a springboard to an exercise where they break into small groups and propose various models of "activist practice."

**Structure/follow-up** (as applicable): In analyzing the cases and in proposing a model of practice students should consider the following components:

- Causes to be addressed—what kinds of change would they push for?
- Types of actions how would they push for change.

Traditionally activists have held protest marches, strikes or demonstrations. What are the design activists in the cases doing?

- Who is the client?
- Where does the funding come from?

If you wanted to build upon this exercise, then it might be worth having students look at some of the work on social enterprises or the "4th sector." This work suggests that society needs a new form of enterprise that is neither a business (in the traditional sense) nor purely a charity. One expert characterizes it as a "non loss" enterprise rather than a "for profit" enterprise, and its mission is to "do good" in a self sustaining way. The micro lending of Garmeen bank is one of the most prevalent examples. I've written a bit about the 4th sector (see Sources below).

#### Sources/Readings:

My blog on design activism has a lot of material on the issue: http://designactivism.net. A few particular items of interest might be:

- Activism and the Economy
- Is there a Fourth Sector?
- books on design activism

The design press also reports on this issue and here a few articles that might serve as preparation reading:

"<u>Civic Duties</u>: San Francisco's Public Architecture forges a model for fitting pro bono services into a firm's regular practice." By Andrew Blum in Metropolis Magazine, Posted April 1, 2004.

"<u>Nonprofit work experience</u>: beneficial for all, but far too rare" By Casius Pealer in Architectural Record, August, 2007.

"Preservation Movement Grows in South Lebanon" By Jessica Dheere in Architectural Record, April 19, 2007.

"<u>Architecture for Humanity</u> Kicks off Latest Design Competition" By Deborah Snoonian, P.E. in Architectural Record, July 22, 2004.

"<u>It Takes a Village</u>: The nonprofit Architecture for Humanity finally starts to get results." By Anna Holtzman-Posted May 15, 2006.

# ECONOMY: EVENTS (EV)



Atlas Book Pages: N/A

Brief: view the film and use it as a jumping off point to discuss the different sectors of the economy, the stakeholders, and how design might fit into it all.

**Suitability** (year/discipline): suits all year groups and probably would be enlightening for most disciplines.

**Context/aims**: the point of showing the film is to get behind the surface of the object to understand its lifecycle. The woman who makes the film is prompted to investigate a piece of blue vinyl siding when her dad wants to use it to reside the family house in preparation for selling it.

**Launch/setup:** the viewing of this film could be in conjunction with in class exercises on invisible materials (2.3) or the three sector economy (3.2).

Structure/follow-up (as applicable): Although design isn't explicitly brought up in the investigation, designers and design students themselves should be able to draw out some relevant insights. For example, the woman making the film is an activist using her own money to produce the film. Her parents are typical cost-conscious consumers (they are at the same time participants in the private sector, but also concerned citizens of the public sector). The scientists who explain the dangers of PVC to them are from non-profit organizations (as I recall). There are also companies, workers, lawyers, and citizens involved in the story. In the end she can't accomplish what she sets out to do: find a cost effective alternative to PVC house siding, so again she uses her own money (private resources/altruism) to pay for reclaimed wood siding.

If students put on their public and nonprofit hats, can they imagine alternative approaches to the problem? What about a nonprofit organization that helps phase out PVC by subsidizing alternative until the true costs of PVC are captured in the economy? What about a team of designers/scientists/engineers working together under the auspices of a public agency or a nonprofit on alternatives to PVC siding? Some governments are banning PVC – but under what conditions? And in terms of invisibility of materials, what do students "see" about PVC, that they hadn't "seen" before? What about the existing stockpile of PVC? The filmmaker and her parents cut the siding up into small "warning" tags – is this a useful approach?

These questions and issues could also be the basis of an extended research project or studio project.

Duration: film running time 90 minutes

Credits: Directed By Judith Helfand and Daniel B.

Gold, Produced by Daniel B. Gold, Judith Helfand and Julia D. Parker

Sources/Readings: The film's website provides good insights into what to expect from the film. http:// www.bluevinyl.org/

For example she says, "Everyone assured me vinyl siding was safe, and would only let off toxic gas in the rare event of a house fire. But after my experience with cancer caused by DES [a synthetic estrogen and

Students aren't being presented with any models of practice that go beyond the conventional service-for-hire configuration. They have no strategy for how to position themselves within the economy so that they can apply activist design.

film featuring Stephen Fry as Planet Earth and Al Murray as a cynical Moon will be shown at the launch. The film aims to help illustrate the fact that, in many cases, no financial value is placed by organizations on the wider cost of the Earth's depleting resources. This was an issue highlighted by Lord Stern in his recent report, in which he said: 'Those who produce greenhouse gas emissions are bringing about climate

change, thereby imposing costs on the world and on future generations, but they do not face the full consequences of their actions themselves.""

# ECONOMY: WRITING (W)

W 3.1 The Good Company: pick a recent/current commercial design brief and evaluate ways in which you argue the "business case" for sustainability (e.g. why sustainability in that particular design would be good for business).

W 3.2 Local versus Global: use a recent or current design (object, building or media piece) to consider the strategies you could employ for an art/design outcome that would respect and reinforce local communities.

W 3.3 Green Marketing: Consider the notion of "green" marketing-- using sustainability claims to help sell your product or service or to prompt behavioral change. Analyze a recent campaign (either commercial or public service) that involved green marketing and assess how art and design choices affected its success. Also reflect in general on the advantages and disadvantages of engaging in green marketing.

# 4. CULTURE

# **DESIGN BRIEFS (D)**

CULTURE D 4.1 Rites of Passage

Atlas Book Pages: part 4 pages 112-135, it may also be

#### anti-miscarriage drug prescribed to my mother and millions of other women], I figured any material so loaded with synthetic chemicals had to pose some kind of risk. Later I asked my dad, 'If you had known that over the course of its lifecycle, from the factory to the incinerator, vinyl produces a wide array of deadly pollutants that threaten our future with a global toxic crisis, would you still have put it on the house?' 'I hope not, honey,' he said. 'But they didn't write that on the box.' So, with a piece of vinyl siding firmly in hand (a remnant from my parent's house) I took off - on a journey to re-write the outside of the box."

### ECONOMY EV 3.2 Field Trip

Visit the offices of your local Greenpeace organization, an elder care group or a youth/crime group (or other interests: immigrants, peace/tolerance, homeless). Find out why they were organized, how they are organized, where their funding comes from, what they see as a role for designers within the work their organization does. This type of trip could also work for a public agency and a relatively large corporation. Students could be divided up to go out to each of these, and then report back to each other.

### ECONOMY EV 3.3 Short Film

"Costing the Earth," a humorous yet serious short (approx 5 minutes) film where Stephen Fry plays "the earth" and talks about the environmental damage he is suffering and the fact that this damage is not captured by the economy. Available in the website's "media center."

The film does not appear downloadable, so you need an internet connection to play it. What they say, "A new

helpful to read in part 2 Economy, pages 58-71.

Brief: This brief has two parts. In the first part, students work in teams to develop an understanding of "rites of passage." In the second part students work individually to design a contemporary rite of passage that helps people navigate transitions in life without so much reliance on commercial images and material wealth.

**Suitability (year/discipline)**: this is probably adaptable to any year group and any discipline

**Context/aims**: Reflecting on the concept of human needs and human well being, the aim of this brief is for students to design a contemporary rite of passage intended to help people navigate a threshold of transformation. The particular challenges in the assignment are to 1) decrease people's reliance on external sources (e.g. image and material wealth) for meeting our needs and instead focus on internal sources of well being and 2) apply design skills and thinking to an aspect of culture that is not commercially driven.

To set the context, we can visit the work of Joseph Campbell, a well known historian who has studied myths and practices of the past. He comments on the "numerous strange rituals that have been reported from the primitive tribes and great civilizations of the past" by noting that:

"The purpose and actual effect of these (rituals) was to conduct people across those difficult thresholds of transformation that demand a change in the patterns not only of conscious but also of unconscious life. The so-called rites of passage, which occupy such a prominent place in the life of a primitive society (ceremonials of birth, naming, puberty, marriage, burial, etc.), are distinguished by formal, and usually very severe, exercises of severance, whereby the mind is radically cut away from the attitudes, attachments and life patterns of the stage being left behind."

rites "It has always symbol been the prime function of mythology and rite to supply the symbols that carry the human spirit forward, in counteraction to those other constant human fantasies that tend to tie it back. "

and

-Joseph Campbell



"It has always been the prime function of mythology and rite to supply the symbols that carry the human spirit forward, in counteraction to those other constant human fantasies that tend to tie it back. In fact it may well be that the very high incidence of neuroticism among ourselves follows from the decline among us of such effective spiritual aid."

- Joseph Campbell in The Hero with a Thousand Faces 1949

Launch (and setup): you can launch this brief with a clip from a feature film that depicts a rite of passage—a wedding, funeral, college initia-

tion etc. and have the students note down some of the key elements (as below)

• The main participants

• The setting (may include elements of theatre, architecture or exhibition design)

• Physical objects or costumes

• What happens-what are the main activities and how do they unfold?

• How you envision it will contribute to human well being (might be useful to reference the universal human needs...)

And use these to discuss the role of design in this rite of passage.

**Structure** of the project: For part one of this brief students work with a team to uncover and share information and ideas about rites of passage. After an initial strategy meeting, the team will split up with each individual researching a particular rite of passage. They many choose to divide themselves up according to different parts of the world, different periods in history or by demographics (e.g. rites targeting teenage boys, rites targeting couples etc.) or any other way that makes sense. The team can consider both historical rites as well as present day ones such as those found in religion, scouts, the military or education, to name a few. This individual research will be recorded in the format provided (see below, "individual research sheet") and individuals will make copies of this form from their own research to share with other team members. At the conclusion of this period the group meets to present what members found out and discuss as a group your findings. In particular, the group should answer these questions:

- What are the common features among the different rites that you researched?
- What are some of the more extreme aspects among all the rites and what purpose do you think they serve?
- Which one would you participate in if you were required to choose one?
- What are the different ways these rites appear to "carry the human spirit forward"?
- What are the proper "boundaries" to consider something a "rite of passage" – can an annual holiday meal, or other seasonal activity (e.g. "the harvest") be a rite of passage? Or must a rite of passage be a "once in a lifetime" occurrence (e.g. "passage into woman hood"). Depending on your answer, brainstorm on occurrences today that might fall into the category of "rite of passage"
- When viewed in a contemporary light, do you see any ethical considerations surrounding elements of these rites?

In part two of this brief students go back to individual work. Reflecting on what they learned about rites of passage and on class discussions of human well being and how we are increasingly relying on external sources for meeting our needs (e.g. image and material wealth) instead of internal sources of well being, they will design a contemporary rite of passage intended to help people navigate a threshold of transformation. The challenge here is to apply design skills and thinking to an aspect of culture that is not commercially driven.

It may help students to imagine that their proposed right of passage is funded by the community through a grant that comes from a percentage of the money spent on advertising by large corporations. This percentage serves as payment to the community for the privilege of assaulting us with 3000 commercial messages per day.

In the design for a contemporary rite of passage students should use visual communication as much as possible to describe:

- The main participants
- The setting (may include elements of theatre, architecture or exhibition design)
- Physical objects or costumes
- What happens-what are the main activities and how do

they unfold?

• How they envision it will contribute to human well being (might be useful to reference the universal human needs...)

As students go through the process they should also try to also prototype the experience, in other words try to imagine what it would feel like to go through this rite of passage. They should also think also about rites of passage they have been through or have helped with. Consider the tension and release that is often present in these events, for example a period of serious or intense work, punctuated by relatively raucous drumming, dancing or singing; or a wedding with serious vows and sermons followed by a reception with food, music etc. Consider the purpose that these serve.

Individual Research Sheet

- Descriptive name of the rite of passage
- Period in history
- Approximate geographic location
- Describe what happens in this rite of passage (include an image or sketch)
- What is the purpose or purposes of this rite of passage?
- Who is involved and what roles do they play?
- What is the setting for the rite? (elements of theatre or exhibition design?)
- What material things are involved, including any types of objects, tools, exhibits, buildings, interior settings, costumes [include images or sketches]
- How might it contribute to human well being (reference the universal human needs...)

# CULTURE D 4.2 Slow Design

*Atlas* Book Pages: part 4, sections on time pages 152-169.

**Brief**: students design something that causes people to slow down.

**Suitability** (year/discipline): probably suits students in their second or third year, adaptable to most disciplines.

**Context/aims:** The aim of this brief is to get students thinking about the issue of speed and how design might influence it. In particular, how is speed related to having enough time? Why do we never have enough time? What do people not have time for? What are the elements that allow them to slow down and what is desirable about it?

Many of us perceive the hitches of daily life that slow us down as an irritation (waiting in line at the cash machine, waiting for the computer to boot up, and so



forth) rather than as a welcome pause in the rush of the day. Does this suggest that we have to adjust our mindset about rhythms of activity and inactivity? Do we need retraining? Or can things and environments bring about an altered mindset? How can a pause or slowing down be accepted for itself rather than being seen as a "waste of time"? Can wasted time be reclaimed? What is design's role in all of this?

There are several techniques to consider in slowing people down, or making people mindful of speed and time. Slowlab (see sources/readings, below) has a good range of projects that illustrate the techniques.

#### Evolution: highlighting the passage of time.

The passage of time might be manifest is physical changes in an object (a ceramic glaze that changes slowly over time—slowlab example) or it might be manifest in the way people create stories about the object and attach the stories to the object (e.g. labels, inscriptions, personalization)

# *Physical restriction: things that make you physically slow down*

This approach might involve something that physically restricts your personal movement (e.g. big fluffy slippers that make you walk slowly—slowlab example) something that physically restricts (e.g. slows) your access speed to something so that you don't get things instantly (water that doesn't flow instantly from the tap), or something that requires you to perform with an object in an unexpected way (a glass with holes in the side that you must cover with your fingertips so that the water doesn't leak out—project by Kristina Niedderer, see sources).

#### Process: intentionally taking the "slow road"

We often have choices between faster and slower processes for accomplishing tasks and projects. For example if you need a book, going to a local bookstore is probably slower than ordering it from an online bookseller. If you need to regenerate a local park, it's probably slower to organize community members to do it than to hire a

#### landscaping firm.

#### Environment: getting away from fast

This technique involves creating environments that are "slowed down" in some way, typically detached from the everyday fast pace of commerce and industrialized efficiency. These environments might actually be rural and isolated, or they might be contained within a bustling urban environment, as a sheltered (station, booth, building) or unsheltered (an "outdoor room") place.

Launch/setup: As this is a fairly wide open brief, it will be useful to have students reflect on the context within which they want to explore slowing down/taking time out, such as at home, during errands, meal times, daily chores. They might also think about context in terms of physical places: their own neighborhoods, a home environment, a school, an office, a bus stop, and so forth.

**Structure/follow-up** (as applicable): it may be useful to have students do some time studies of their chosen context, either studies of their own time, or studies of how others (peers, family members, etc.) use and perceive time. In order to begin addressing how to slow people down in a way that is perceived as beneficial.

#### Duration: adjustable

#### Sources/Readings:

Slow Lab website

Niedderer, K., Designing Mindful Interaction: The Category of Performative Object. Design Issues, 2007. 23(1): p. 3-17. (available as an ejournal at most universities)

### CULTURE D 4.3 Open Design

*Atlas* **Book Pages**: part 4, sections on open design p.144-151.

**Brief**: students use a process inspired by open source methods to develop a design solution

**Suitability (year/discipline)**: probably suits students in their second or third year, adaptable to most disciplines.

**Context/aims**: Open source methods were developed for software creation. The process has a range of characteristic, most often along these lines:

- Legal framework governing the project's output (any new work must be freely made available in the way that the original work was)
- powered largely by volunteers
- Low barriers to entry (very small chunks can be con-

tributed and still add value)

- Transparency of information and process
- Shared goals and common standards



- Leadership that sets

direction and ethos - Peer reviewed and iterative work

The hope is that open source will allow us to arrive at better outcomes and make better decisions because its use of distributed networks allows more people to contribute, thus capturing more of the best and relevant information. In addition, as the Atlas points out, it also appears to have the potential to

engage people more than simple "consumption" can.

Aspects of open source methods have travelled beyond software and are now found across a range of activities such as the following:

- help-seeking and giving
- matching and trading (e.g. loans, ebay, freecycle)
- peer reviews and comments (e.g. amazon, epinions or blogs)
- sharing of hardware to generate new knowledge or create a supercomputer: seti@home, fightaids@home, folding@home,
- "click workers" example of the NASA project to identify craters on mars
- sharing in the storage, search and retrieval of files (e.g. napster) and the follow-on of Skype (sometimes known as peer to peer sharing)
- resources created by individuals that are then posted and traded and potentially "remixed" or aggregated, examples of this include the original projects in open source code, but also wikis (e.g. Wikipedia), videos on YouTube, images on myspace, or comments on a blog.

Analysts have noted why open source methods are particularly suited to computer code and may not translate well into the material world. For example, with computer code specific solutions are typically obvious to everyone, once "Open source methods are particularly suited to computer code ... These are questions that have answers, as opposed to questions of value."

they are discovered. These are questions that have answers, as opposed to questions of value. There are many areas of life where problems involve moral questions that are not so easily agreed upon (see for example Mulgan, Steinberg et al. 2005; Sunstein 2006).

Second, the peer review and iterative development approach works well when the "good," in this case the code, is a non-rival good. My use of the code doesn't infringe on your ability to use it however you want. This is not the case with most physical goods such as land, gadgets or food. Finally although the output is generated collectively, individuals typically do not work together, but rather each individual contribution is aggregated into a collective whole. Collective is a term to describe the assembly of many individual pieces of work. Some also suggest that ultimately open source lends itself better to incremental improvements rather than pure creativity.

Designers have historically taken up some elements of open source, for example in design consultations with users. Landscape architects meet with various community members and groups before designing a new park. In one case designers working in conjunction with a city set up a telephone hotline for people to phone in their design ideas – these callers were viewed as potential cocollaborators in the design. How far can we take these approaches?

**Launch/setup**: I would recommend having students do some reading in advance of the launch, "Wide Open"

(see below) is a useful overview of the origin, strength and weakness of the OS model.

Structure/follow-up (as applicable): there are several ways I can see for structuring this brief. Most of them take some degree of advance work on the part of the organizer. Out of necessity all of them involve some website base where designs can be viewed, assessed, downloaded etc. and possibly also blogs where comments and images can be bandied about. The trickiest part is tapping into some wider community that will serve as the "open source" community that contributes design ideas for the brief. This brief also seems to suggest small groups working together, rather than solo projects

1. It may be particularly effective to partner with an outside organization not only to get a viable brief that a wider group of people are interested in, but also to gain access to those people for input on the design process—so that this wider community forms your open source design community. For example, imagine partnering with a magazine (or website) that deals with cooking to gain access to cooking enthusiasts who might respond to a call for design input on kitchen tools or kitchen design etc, or partnering with a nonprofit group (healthcare, environment etc.) and getting not only their brief, but access to their members as potential contributors to design solutions.

2. You could use a pre-existing forum such as www. openarchitecturenetwork.org where in theory there is already a global community presence. Admittedly I have not experimented with any of these, and I don't know how active they are, but that is what they are there for...

3. In a variation on number 1, it might be possible to partner with a cause oriented design organization (e.g. architecture for humanity), or even with an interest group within your local professional design association (AIA, IDSA etc.) to generate a wider audience for the exercise.

4. would it be possible to get an OS design community out of an interest group in yahoo groups or in a social networking group (e.g. facebook, myspace etc.?) I'm not sure at this juncture...

5. as a fall back, you could use yourselves, your department or you school as the OS community, although this is less representative of a real OS process, it may still



uncover some of the strengths and weaknesses associated with transferring the method to physical design.

Assessment (grading or marking): the nature of open source makes the assessment of the project potentially difficult. It suggests that you will need to establish some clear criteria upon which they will be judged, and these are likely to include things like:

- how frequently did they feedback to their community to keep interest high?
- What techniques did they develop to motivate and "lead" their community?
- How effectively did they evaluate, synthesize and manage the input they got?
- It might also be useful to have them sit down at the beginning with the brief and think through their own ideas about it, then sit down at the end to find out how their own ideas either were validated or blown out of the water (or something in between) by capturing more of the best and relevant information available from the wider community.
- Their reflection on the strengths and weaknesses of the method

#### Duration: adjustable

**Sources/Readings**: the website for *The Designer's Atlas* of Sustainability contains <u>a web page with a number of</u> <u>links to useful (often free) documents</u> and websites about open source and design, including a link for the abovementioned free document "Wide Open."

The expanded book section of the book's website also includes links for cause oriented design organizations.

### CULTURE D 4.4 Sensual

*Atlas* **Book Pages:** part 4, sections human needs and the senses p. 116-129 and 140-143

**Brief**: students design something based largely on felt experience, rather than visual appearance.

**Suitability (year/discipline)**: probably suits students of any year, adaptable to various disciplines. It's not yet exactly clear to me how this brief might work for architecture, but I am optimistic that there is some possible way.

**Context/aims**: The aim of this brief is to get students to step back from visual issues such as form and surface styling to immerse themselves in the senses by prototyping experiences, rather than objects or spaces. The aim is for students to explore the question, "With increasing social and commercial pressure on the visual, how can we reconnect with other senses?" One method is to prototype the experience rather than the thing. A good example, shown in the book, is prototyping the experience of sleeping in economy class on the airplane.

The aim is to put yourself, very physically, in the position of the user and have the experience you are trying to design for.

We should note that this approach has also been used

to help designers gain insights into the experiences of wheelchair users, and others with diminished physical abilities (e.g. restricted sight and movement of elderly people). In all these cases it is important to recognize that a day in a wheelchair can never rival the experience of a year, or a life in a wheel chair, and so on. Designers must be sensitive to the subtle, complex realities (both emotional and physical) of their users.



Launch/setup: younger students may benefit from having a condition set for them. For example, setting a context of a "confined space" offers a relatively accessible version of this brief; that is, students can fairly easily grasp the sensual constraints and simulate the experience. I've had students look at dressing rooms, sailboat "kitchens," and work in manholes or large conduits.

Another relatively easy condition is protective, survival or safety gear that is worn or carried. For example, sports equipment might be pads, helmets etc. and survival gear might be life jackets, radios, first aid kits, or other tools. What is it like to carry or wear any of these in real life situations—running, jumping, swimming etc.? What if you actually had to jump out of the airplane wearing that life vest? These experiences are things that students should inventively be able to simulate.

**Structure/follow-up** (as applicable): You can simply assign the condition (e.g. confined spaces) and let them sort it out, or you can suggest that students find someone or something (a situation) where they can "tag along" to gain the experience first hand as well as interview someone who regularly has the experience. This was revolutionary for some of my students when they actually tried to climb down a manhole wearing a cumbersome toolbelt or cook a meal on a sailboat. It completely changed their thinking about design.

**Assessment** (grading or marking): For this project it is essential to get evidence of how the student simulated

the experience to identify the salient sensual aspects. This probably should include some photo documentation of their experiments (you may want to pair them up to assure this is accomplished and to lend moral support), but it is useful for students to challenge themselves to portray their experiences to others using some non-visual dimensions as well.

#### Duration: adjustable

**Sources/Readings**: The IDEO article profiling their use of prototyping experience is good, but is contained in a huge, heavy book. The article is "What is an inclusive design process?" by Martin Bontoft and Graham Pullin in Inclusive Design: Design for the Whole Population (London: Springer-Verlag, 2003). This big book is good in its own right as well.

Some groups that advocate on behalf of elderly people offer "sensitivity training" that helps younger people temporarily feel the effects of age. In the UK groups such as Age Concern might be persuaded to work with student groups. My own experience of this training took place at a big box retail store where, wearing sight constraining glasses and movement restrictors, we had to try to select and put in our baskets a list of items on a carefully crafted shopping list.

### CULTURE D 4.5 Memorial

#### Atlas Book pages: part 4, Culture

**Brief**: one way communities create meaning for themselves, either out of tragedy (e.g. terrorist attack, natural disaster) or celebration (e.g. discoveries, events, achievements) is to create memorials. This brief challenges you to uncover a tragedy or celebration within a community and propose a relevant way to memorialize it.

Suitability: adaptable to any discipline

**Context/aims**: Over the past several years we've seen high profile memorials in the design press, particularly the World Trade Center memorial for the victims of 9/11, but among others, we also find the following:

- memorial to the victims of the Madrid train bombings
- memorial to the murdered Jews of Europe
- Princess Diana memorial fountain
- Irish Hunger Memorial

Events such as 9/11 also prompted many "grassroots" memorials erected by everyday citizens, and this reflects the fact that memorials cross many scales and levels of formality. Some are temporary, whereas others are permanent. Some are functional (such as a memorial bridge)

and others are non-functional artistic pieces. Some memorials use artifacts from the event (pieces of wreckage or clothing, for example) others are entirely abstract. The community appropriates some memorials-even against the will of "officials"while other memorials are virtually ignored.

In memory<br/>fromSome memorials useissue to har<br/>Sour<br/>Sour<br/>The<br/>es of wreckage or clothing, for exam-<br/>ple) others are entirely abstract. The com-<br/>munity appropriates some memorials—even<br/>against the will of "officials"—while other<br/>memorials are virtually ignored.

there is an obvious community issue to hand.

Sources/Readings: The following is a list of articles from the trade press that ndiscuss various aspects of built /en and proposed memorials. er Most of these online articles have images associated with them,

some present opposing

The aim of this brief is to explore

the notion of memory and community and to explore how we find meaning in dramatic events, whether tragic or uplifting. Some things to consider include:

- Connection what connects people to the event personally, what does it mean to them?
- Formality—what is the "official line" on the matter and how does that resonate with or clash with informal public feeling?
- Degree of abstraction what is the spectrum between literal representation and abstract suggestion
- Interaction how do people interact with the issues, either in daily life or in the visiting of the memorial

The articles in the sources section below present a range of actual and proposed memorials along with a variety of perspectives on what makes a successful memorial.

**Launch:** As with many of the briefs, there are several possible launch activities:

- Visit to an existing memorial—meet with people somehow affected by the memorial
- Guest speaker from a group that wants a memorial or has been responsible for a memorial
- Read-ahead assignment the lays the groundwork for a discussion about memorials and their development
- Assignment to research as specific memorial, then take lessons learned forward into a local project

**Structure/follow-up**: This brief could be heavily directed, where students are asked to develop proposals for a pre-determined event – even a national event such as 9/11. Or it could be an exploratory brief where part of the process is to research a local community to find out about its events and try to bring those to life for current residents and visitors. It might be the case that your university itself has the grist for a memorial, or perhaps

views on a single memorial (e.g. Irish Hunger Memorial).

"<u>The New Irish Hunger Memorial</u> provides a cautionary tale for designers and planners downtown." By Philip Nobel, in Metropolis, November 2002.

"<u>The Irish Hunger Memorial: Between Two Worlds</u>: Remembering the Hungry" By Roger Shepherd in Architectural Record.

"<u>Memorials and Amnesiacs: Soon a national memorial</u> will be built in the Pennsylvania hills. Will it reflect our place in history?" By Susan S. Szenasy in Metropolis Magazine, Posted March 21, 2005.

"<u>How Architecture Commemorates Tragedy</u>" By Eva Hagberg in Metropolis, Posted June 28, 2005.

"<u>The Eternal Glow</u>: Studio FAM's memorial to victims of the 2004 Madrid train bombings" By Stephen Zacks in Metropolis, Posted June 20, 2007.

"<u>Design Unveiled for Shanksville, PA's Flight 93 Me-</u> morial" By Jennifer Lucchino in Architectural Record, September 15, 2005.

"<u>Exhibition Explores Phenomenon of Grassroots 9/11</u> <u>Memorials</u>" By Leigh Batnick in Architectural Record October 16, 2006.

"<u>Memorial to the Murdered Jews of Europe</u>: Peter Eisenman's vision for Berlin's Memorial to the Murdered Jews of Europe" By Suzanne Stephens in Architectural Record. (Only first part of the article online).

"<u>Winner Chosen for National AIDS Memorial Grove</u> <u>Landscape Competition</u>" By Lisa Findley in Architectural Record, May 10, 2005.

"Living Memories, Living Memorials" By Paul Ma-

kovsky in Metropolis, Posted January 16, 2004.

"<u>25 Year Award: Vietnam Veterans Memorial</u>: A Place to Mourn, Individually and as a Nation" By Clifford Pearson in Architectural Record.

### CULTURE D 4.6 Spiritual Side

Atlas Book pages: part 4, Culture

**Brief:** what do people in a community associate with their spiritual practices (whether religious or philosophical)? This brief challenges you to find out about a community's spiritual situation and use design skills to support the community's spiritual growth.

**Suitability**: probably could be directed to suit any design discipline, varying year groups depending on the structure provided by the instructors.

**Context/aims**: On the one hand, in western society explicit religious practices appear to be on the decline, with fewer people attending church regularly and fewer couples opting for religious weddings. Yet on the other hand, with recent traumatic events –such as 9/11 terrorism, middle east unrest, religious violence surfacing in Germany and the French uproar over head scarves in school—religion is as much on the front burner as ever. For those who do not pursue religious practices, there are an increasing number who have taken up philosophically spiritual practices ranging from Yoga and meditation to the "simplicity" movement, and arguably even the "slow" movement.

The Center for Contemplative Mind in Society (se sources below) offers this explanation of contemplative practices:

"Contemplative practices quiet the mind in order to cultivate a personal capacity for deep concentration and insight. Examples of contemplative practice include not

only sitting in silence but also many forms of single-minded concentration including meditation, contemplative prayer, mindful walking, focused experiences in nature, yoga and other contemporary physical or artistic practices. We also consider various kinds of ritual and ceremony designed to create sacred space and increase insight and awareness to be forms of contemplative practice."

Launch: There is a range of

"Contemplative practices quiet the mind in order to cultivate a personal capacity for deep concentration and insight."

-The Center for Contemplative Mind in Society

possible approaches for kicking off this brief (mentioned below) which will set various "tones." The instructor will need to decide how much direction to give students. For example, will you dictate a place, a building or an object associated with spiritual practices and assign students to redesign or improve it? Or will you provide some background information and set students the task of defining their own



context for the brief. The Reading/Sources section below has some examples of "spiritual" design projects as well as some background information on contemplative practices.

Possible Kick offs:

- visit to a place recognized for some reason as "spiritual" – use the experience to discuss the broader issues and help students begin identifying possible contexts for the project
- bring in a guest speaker/practitioner who can lead a meditation session (for example) or otherwise discuss contemplative/spiritual practices and offer some view on contemporary issues
- assign students an "advance" research project of reflecting on the community's spiritual situation – either in their own terms, or on terms you give them--then launch the design brief with the students reporting on what they've found
- find student volunteers from outside your class or department and have them come in and talk about their spiritual/religious life – either current, or experiences growing up.

**Structure/follow-up**: Other ways to narrow the brief would be to target a specific demographic, such as the elderly, immigrants, youth or a specific religious group.

#### Sources/Readings:

The Center for Contemplative Mind in Society The website has a section called "About Contemplative Practices" that might help students better understand the notions of "spirituality," "reflection" and "contemplation."

"<u>Faith-Based Interiors</u> – Toronto architects create a lightfilled center that exudes religious symbolism—without getting specific." By Alex Bozikovic in Metropolis Magazine, Posted December 19, 2007.

"<u>Little Chapels on the Prairie</u>: Six North Dakota architects design mobile spaces for viewing a local painter's work." By Tim McKeough in Metropolis Magazine, Posted July 25, 2007.

Stewart Walker has written a fair amount about sustainability and spirituality in his book *Sustainable by Design* for example, Chapter 7: Design, Sustainability and the Human Spirit (originally published as an article in Design Issues vol 16, no 1 spring 2000 – if your university has access to e-journals you could get this online).

# CULTURE D 4.7 Aging Beautifully

*Atlas* Book Pages: Part 4, pages 168-169 "embodying time" briefly presents the example of "design for our future selves" as a way to connect to ourselves in old age.

**Brief:** Students develop a design approach that better includes older people in daily life, such as housing, transportation, health care, socializing or shopping.

#### Suitability (year/discipline):

this is probably adaptable to any year group and any discipline

**Context/aims**: most industrialized nations are facing a demographic trend in which a much larger percentage of the population than ever before is already, or soon going to be, elderly. Not only are populations getting older, but also birthrates are going down, so that there will be fewer younger, able-bodied

people available to serve as companions or care providers. The aim of this brief is to get students to take a careful look at the circumstances of older people and to develop an understanding that results in an improved design solution.

Recent work on the issue tends to fall into roughly three distinct categories described below. In the sources section at the end, I provide some case studies that illustrate each of these three categories.

A fair amount of work is aimed at helping elderly people live at home, independently, for longer. Evidence suggests that many people prefer the option of staying at home rather than moving to a "retirement community" or "assisted living." Accordingly, work on aging in place tends to emphasize "smart environments" that can help elderly residents in several ways, for example "sensing" changes in behavior that might indicate health issues, "reminding and guiding" such as taking medicines or shopping, and help with physical functioning.

#### Age-friendly gadgets and environments

A widening range of gadgets and environments are also aimed at including older people. One segment of this work focuses on projects dealing with improving environments, such as a grocery store designed explicitly to serve older people better and a road-sign typeface designed to be more readable to older drivers and night drivers (see case studies below).

#### Social Innovation

There is an emerging third strand of design work on social innovation and social capital. These approaches attempt to include older people by mixing uses, rather than segregating functions that address older people, and by looking more holistically, for example, at "ag-

Recent research suggests that many home-bound older people feel lonely much of the time, casting a shadow over the good intentions and seeming comfort of "aging in place."

ing in community," rather than aging in place. Recent research suggests that many home-bound older people feel lonely much of the time, casting a shadow over the good intentions and seeming comfort of "aging in place."

One of the more interesting examples from the sources, below, is the case of a nursery school that was purposefully built into a retirement home to facilitate inter-generational learning and com-

panionship. In more dire circumstances, some designers have also looked at new configurations of housing to address the population gap left by the AIDS epidemic in Africa where many adults have died leaving children and the elderly behind.

**Structure/follow-up** : For this brief it may make sense to narrow the area of exploration for younger students or for shorter projects. Otherwise the brief could be thrown open, requiring that students conduct some preliminary research to identify their area of work, then proceed with design research and proposals.

#### Sources/Readings:

#### Aging in place

"The House of the Future Has Arrived: Researchers at MIT are revolutionizing house design and construction so that aging Baby Boomers can grow old at home." By Sara Hart in Architectural Record

#### Age friendly gadgets and environments

"Senior Momentum: Can design and technology deliver a golden age of aging?" by Juanita Dugdale, ID May 2007.

"Riding into the Future: In the Land of the Elderly, hands-free walking is the most enviable way to go" by Barbara Flanigan in ID, May 2007. **not available online** 

"Message in a Bottle: Designers find that the cure to a pervasive health-care problem lies in the pill container itself." By Kristi Cameron in Metropolis Magazine, December 2005

"Super Values: The design of a Berlin supermarket addresses the needs of an aging population." By Kimberly Bradley in Metropolis Magazine, June 2007

"Improved Visibility: Five experts weigh in on international highway typefaces." By Andrew Yang & Paul Makovsky in Metropolis October 2005

"<u>Boomers Teeter at Edge of Vision Crisis</u>" by David Sokol in Architectural Record 2007

Intergenerational community: mix uses, shared housing, mixed communities, mentoring, older workers

BBC Report, "<u>More than one million older people say</u> they often or always feel lonely, a report by Help the <u>Aged suggests</u>." 31 October 2008

"The Evolution of Eden: Oklahoma tests Eden Alternative Principles with the first public school-nursing home." By Jennifer LeClaire in Metropolis Magazine, October 2002. Grace Living Center combines nursing home with public preschool to mix generations in care. (**not available online**). See this online article about the <u>Eden Principles in nursing home care</u> and this article in *Preschool Matters* about the school-nursing home.

Nyumbani Village Concept Folio in ID September/October 2005. A proposal for the AIDS orphans and seniors in this rural African village. (scroll down the page to find this very brief case study)

"The Politics of Play: There is a movement afoot to create recreational spaces that better serve our cities and

our children."By Linda Baker in Metropolis November 2006. Successful intergenerational playgrounds transform "playgrounds" into a space for the whole community to gather and exercise.

"Senior Momentum: Can design and technology deliver a golden age of aging?" by Juanita Dugdale. **Weblink as above.** Note: includes a bit on aging in community.

### CULTURE D 4.8 "Eternal" product/structure

*Atlas* Book Pages: Part 4, pages 152-169 ("Towards Time," which includes sections on "fast," "slow," "the long view," "evolving artifacts," and "embodying time"). Also some sections from Part 3 as noted below.

**Brief**: Students formulate a 100-year product, or a 300-year structure/building/landscape.

**Suitability (year/discipline**): probably adaptable to most disciplines.

**Context/aims**: The purpose of this brief is to encourage students to think long term, and in doing so gain a better understanding of current short term approaches. As Louise St. Pierre points out, "the way we designers think when we are designing a product—knowing it will be out of date in a year—is radically different from how we would think about a design if we believed it might be handled with care and respect for generations."

St. Pierre highlights design research that illustrates three levels at which the longevity question must be answered:

- Behavior—creating emotional (or other) attachments to objects/structures so that consumers want to keep them over the long term;
- Technology—developing products/structures that retain their quality over time that age well; and
- Policy—offering a support infrastructure or organizational support for products over the long term dealing with maintenance, backward compatibility (where applicable), upgradability and related issues.



**Structure/follow-up** If the brief is for a short student project or exercise, it could work to run it as a scenario

planning process, described in the *Designer's Atlas* on pages 166-167, adapted from *How Buildings Learn*, cited below.

If the brief is for a longer, more wide ranging student project, then it makes sense to explore the economic elements of short and long term thinking. In this case one could begin with a discussion about the types of objects or structures that are suited to long life. Certain types of objects—furniture, buildings, books—historically had long lives but now have shorter ones. A great deal of "short termism" is driven by the needs of commerce, and indeed, the examples below of long-life products or structures are by nonprofit organizations, governments or individuals, rather than profit seeking businesses.

- Space exploration
- Historical preservation/archive: the rosetta disk, old books in British Library
- Long term hazards: nuclear waste

After doing some reading, student groups might be able to analyze these cases against commercial ones and articulate some of the economic reasons why artifacts have short lives. The *Designer's Atlas* covers this economic material in general terms on pages 60-71, with a specific section on time and money, "No more classics" on pages 72-75 which feature the Eames lounge chair and ottoman from 1956. In addition, the teaching guide exercise 3.2 Three Sector Economy and the design brief 3.2 Economic Innovation both could explore the issue of how various sectors of the economy allow for sustainable (eg long term) thinking.

Is it conceivable that commercial products would ever be designed for the very long term? One of the most viable models of this outcome concerns products that are leased, rather than sold. Carpet tiles are one of the most familiar cases, where a carpet manufacturer leases carpet tiles instead of selling them, then the company has a direct incentive to make sure that the tiles are easy to install, maintain, update and replace. A similar logic has been described for electronics – a company that leased rather than sold a computer would have an incentive to make it easy to upgrade or recycle. Yet leasing continues to be perceived a "second class" to many consumers and very few commercial examples exist, the cases that do exist work on a business to business model. Examples that are starting to work on a consumer level include car sharing or tool sharing libraries, although these are often set up as nonprofit undertakings.

**Credits**: developed by Louise St. Pierre as the "100 year product workshop" at Emily Carr Institute of Art and

Design (Vancouver BC, Canada) from original materials of the Eternally Yours Foundation, the Netherlands.

#### Sources/Readings:

#### Articles:

"Here Today, Here Tomorrow: Design Strategies to Lengthen Product Life Spans" by Louise St. Pierre in Innovations: Quarterly of the Industrial Designers Society of America, Spring 2008. **Not available online**.

#### Case studies

An entry for the Bulletin of the Atomic Scientists' <u>Plutonium Memorial competition called "24110"</u> in ID magazine, August 2003.

Long Now Foundation has pioneered the 10,000-year clock and the Rosetta Disk project to conserve all known human languages (see *Designer's Atlas* pages 168-169).

"Decolonizing the Colonel: The Afterlives of KFCs" By Jesse Ashlock with Photographs by Camilo Jose Vergara in ID May 2007. (scroll down to the article title to download a PDF, more photos are contained in the full article in ID but are not available online). A photographer documents the rise and decline of buildings in poor urban areas and has a series on the after lives of former Kentucky Fried Chicken (KFC) buildings.

"Slow Games and the Quest for Play Everlasting" By Nick Fortugno & Katie Salen in Metropolis, April 2006. game designers ask, "What would it mean to design a game that takes 25 years to play?"

"Tending The Herd: At a farm in rural Holland, Claudy Jongstra raises sheep, revives the ancient art of felting, and creates singular textiles." By Jennifer Kabat in Metropolis August 2005. A dutch designer raises her own rare-breed sheep for felting raw materials. She says, "It's not about being trendy but making something for the long run. You see, this care for the materials, for the sheep, it takes time. You can't buy it by the meter. It's about providing your own raw materials."

#### books on products:

Chapman, Jonathan. *Emotionally Durable Design: Objects, Experiences & Empathy*. London: Earthscan, 2005.

Walker, Stuart. *Sustainable by Design*. London: Earthscan, 2006.

Van Hinte, Ed and Liesbeth Bonekamp. *Eternally Yours*. Rotterdam: 010 Publishers, 1997.

Brand, Stewart. *The Clock of the Long Now: Time and Responsibility*. London: Weidenfeld and Nicolson, 1999.

#### books on buildings

Brand, Stewart. *How Buildings Learn: What Happens after They're Built*. New York: Penguin, 1994.

books on fashion

Fletcher, Kate. *Sustainable Fashion and Textiles: Design Journeys*. Lodon: Earthscan, 2008.

# CULTURE: EXERCISES (EX)

# **C**ULTURE EX 4.1 Happiness Barometer

#### Atlas Book Pages: Part 4, Cutlure, pages 112-135.

**Brief**: students go through 33 indicators of "happiness," in a survey format, and rank their own score for each indicator, then they go back and reflect on the role of material goods (or architecture etc.) and the media in contributing to each indicator.

**Suitability (year/discipline)**: fairly versatile and would work with any year group or discipline

**Context/aims:** This exercise explores the issue of human well being (or "happiness"), and investigates the notion of internal (such as friendship and personal development) and external means (such as watching and owning) of finding well being. The aim of this exercise is twofold. First, the intent is to have students think about some specific parameters for happiness in terms of their own lives—to make them reflect on just what is important to them. The second aim is then to question specifically how material things (products, architecture, interiors, etc.) and images/media could potentially contribute to or detract from these parameters of happiness.

Launch/setup: I typically start by having the students do the survey (included below) on their own in class as the first step (allow 10-15 minutes) and rank their own score for each indicator in the first column. In the first pass through the indicators, there may be a certain mild shock on the part of students in the realization that few of the indicators seem to involve material things or imagery at all. Some of the indicators may make them feel uncomfortable. They may feel a certain tension between their designerly values of being/appearing "cool" and having "cool" things and the realization that the large importance they, or others they know, attach to it does little to support well being and could perhaps detract from it.

**Structure/follow-up** (as applicable): After the launch, there are several ways to run this exercise.

#### Version 1:

Sometimes I preface this exercise with a short talk, taken from the book, arguing that as a society we rely increasingly on external means of meeting needs (or seeking well being) and that this squeezes out the chances for us to use internal means of meeting needs. Further, I argue that designers are essentially pushers, pushing material goods and media images onto us, thus further squeezing out other, ultimately better, ways of meeting human needs. I then ask students to go through the indicators and make a specific case against my argument, to find ways that material things and imagery DO support well being in terms of these indicators. This works best if students are given another 15 minutes or so on their own to come up with some initial ideas, then work together in a small group to test out their ideas.

#### Version 2:

You can also simply ask students to go through the indicators and reflect on how they think their particular design discipline (be it fashion design or architecture or other) can contribute to or detract from the indicators. In this approach you can walk them through a few of the indicators as examples.

laughing (the first indicator)—what is the difference between laughing while watching a sitcom (other people's fictional story) and laughing with friends over your own actual experiences and ideas (your own story). Is there a qualitative difference, and how does the second (your own story) spill over into the other indicators, versus watching a sitcom?

Risk—what do you have to do to expose yourself to risk? Can watching do this? Can owning something do it? why should you expose yourself to risks?

Tasks and activities—a couple of indicators examine these and it may help to probe a spectrum of tasks/activities—all the way from those that take little real skill (watching TV?) to those that take a great deal of skill. Does shopping take skill? Does developing and maintaining friendships take skill? What about the range of other possible skills? Similarly there is a spectrum from "doing" alone, to pairs and large groups. Students might reflect on how these various tasks/activities either do or do not spill over into other indicators.

#### Version 3

You might consider breaking the list down into sections and having small groups work on different sections and report back. It may also be interesting to have students do the questions together in small groups the first time through, depending on the maturity of the group, and discuss how they interpret the various indicators (eg is "safe" about a physical place or is it about an emotional stance? Or how broadly are they thinking about "talents"? and so forth).

#### Version 4:

Have the students first develop a set of 10 or 12 of their own "indicators" for happiness, then hand out the barometer and have them compare and assess their indicators against the barometer. Then proceed to an evaluation and discussion of how material goods, architecture or the media influences the indicators.

**Credits**: The happiness barometer was developed by Matthis Wacknagel, now the executive director of the <u>Global Footprint Network (http://www.footprintnetwork.</u> <u>org)</u>. I got it from him at a Natural Step Conference in Portland, OR in 1999. At that time he was running the indicators program at Redefining Progress.

**Sources/Readings:** Happiness Barometer in Appendix D of this Guide (p. 56-57).

## **C**ULTURE EX 4.2 Advertising Audit

Atlas Book Pages: part 4 Culture, pages 120-133.

Brief: students spend a set period of time, such as one hour, doing a routine task during which they count and record the number of commercial messages (such as logos, advertisements and commercials) that they encounter.

**Suitability** (year/discipline): probably would suit any year group or discipline. It could be adapted to a particular type of commercial message (eg commercial messages on buildings or structures, or commercial messages contained on objects and so forth)

**Context/aims**: Various sources cited in the book estimate the number of commercial messages that we are

each exposed to during the course of a day, or during television watching during a year. This exercise gives students a chance to find out for themselves how dense the commercial haze surrounding them actually is.

I tried this brief informally (eg it wasn't a formal in-class exercise) by asking students to track the number of commercial messages they saw in the 24 hour period from when they left class. The problem turned out to be that it was too overwhelming and most gave up pretty quickly. By limiting the audit period to one hour (or 30 minutes), students can then extrapolate how many commercial messages they might be seeing over their 16 (roughly) waking hours in a day, or over a year and so forth.

Launch/setup: To launch this exercise you need to set a "routine task" for students that will get them going into "everyday" environments where they can then do their commercial message audit. I would imagine that for urban campuses you could ask them to do a set of tasks such as:

- go to a particular nearby post office and check a price, then pass by a park to check if the opening hours are posted on the sign and finally check the price at a parking lot.
- do a routine errand that they need to do anyway
- follow a route delineated on a map

In addition to setting a time limit, you need to discuss what the group agrees constitutes a commercial message. Here it may be useful to have a few examples, either in photographs or physical objects. In my view logos on backpacks, pairs of shoes, or electronic devices etc. count as commercial message (trademarks), as do labels and other forms of advertising (eg on signs, packaging, internet sites, or in printed matter). It may help to remember the definition of commerce, which is ultimately aimed at generating a profit. So a public service announcement to stop smoking is not technically a commercial message and neither is a public service sign or logo.

In terms of counting and recording the number of commercial messages, students could either be given a handheld counter that they can just click, rapid-fire, as they see commercial messages around them, or they could be given a tracking sheet.

**Structure/follow-up** (as applicable): There are several ways you could structure the exercise. For example, you could send some students on a task that would seem to be less commercially intense, for example a walk in the park or a trip to some academic buildings, while sending some groups on tasks that might be more commercially intense, such as to shopping areas.

When students return they share with each other how many commercial messages they experienced



during the task and estimate how many that would be over the course of a day. They can consider whether or not there are environments that are, or should be, commercial free. Students can also consider in what ways imposing advertising on the public, who then do not have a choice about whether they see it or not, is or is not fair. This discussion may involve the consideration of the context for the advertising (eg at a school, on a public stadium etc.) and questions about what is potentially "for sale" in terms of "your advertisement here." Students routinely wear advertising voluntarily, but where is the line that they would not cross in terms of selling themselves as advertising space?

#### **Duration**: probably several hours

#### Sources/Readings:

The book *Marketing Madness* though difficult to find, has some good sections on this topic. In addition, the brief article below from Fast Company Magazine could get the discussion going.

Jacobson, Michael F. and Laurie Ann Mazur. *Marketing Madness: A Survival Guide for Consumer Society*. Boulder, CO: Westview Press, 1995

#### .....

"Can Your Banner Ad Do This?: The future of advertising may be ... in the toilet." By: Jennifer Pollock in Fast Company Magazine, Issue 107 | July 2006 | Page 51 |

Online advertising is growing 30% a year--but there's more innovative stuff happening in the physical world, where the message isn't confined by the dimensions of a browser screen.

In the ongoing struggle with message clutter, ads that are creative, strange, and often three-dimensional can be the most effective. The future of advertising, says Charlie Jones, chief marketing officer of RedPeg, an Alexandria, Viginia–based agency, will be about creating unexpected connections to memorable, real-world experiences in ways that bring brands to life.

So how about electrical outlets in airport terminals? Bradley and Montgomery's new campaign for Chase Commercial Banking slaps ads just above 90 outlets around Indianapolis International Airport. Plug in your laptop, see the ad.

Or take your typical



urinal. (Please.) Clients such as Viacom's Country Music Television and Molson beer are spreading the word via the Wizmark, which fits inside a urinal and delivers sound and images when it senses a new, uh, customer. "We feel we have the most captive audience," says Richard Deutsch, director of Healthquest Technologies Inc., Wizmark's proud parent.

And the next time you step out of your car, you may find your parking space talking to you. Parking Stripe Advertising has placed vinyl-strip ads in lots on behalf of Ford Motor Co., Qwest, and others--with recorded-pitch versions coming soon. Some 80% of consumers say they remember the messages. Try that with a banner ad.

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### CULTURE EX 4.3 Deep Ecology

*Atlas* Book Pages: Part 2 pages 22- 53 provide a foundational understanding of nature's systems. Images of manufactured products in nature may also facilitate a discussion about the Council of All Beings (see below). Part 4, pages 114-135 (an overview of how commercial design "pushes" us away from real nature) and "Nature as Culture" pages 170-173.

**Brief**: through this set of exercises students attempt to forge a personal, even mystical, connection to nature through some of the practices of deep ecology.

**Suitability (year/discipline)**: fairly versatile and would work with any year group or discipline

**Context/aims:** The context for this exercise is the increasing awareness of our isolation from nature and wilderness and the potentially negative effects this isolation might have. As more people live in cities, they spend more time in buildings and have less access to green spaces and wilderness. A recent book by Richard Louv (*Last Child in the Wilderness*) theorizes that children are suffering "nature deficit disorder" and suggests that "exposure to nature is essential for healthy childhood development and for physical and emotional health of children and adults." Ecopsychology (see *Designer's Atlas* book pages, above) also suggests that a connection to nature is central to mental health.

Arguably designers have a direct connection to our society's "loss of nature." For example, product designers and fashion designers feed our addictions to technology and material things. Architects and interior architects create the structures that closet us away from nature. Landscape designers often "sanitize nature" for presentable, safe (and low professional liability) exposure away from wilderness.

The aim with these exercises is to recognize that design might separate us from nature and then take experiential steps to rebuild our own connection with nature in order to better use design as a process for helping others reconnect to nature.

**Structure/follow-up:** This set of exercises could be done in one long day in a sort of "nature retreat" or, perhaps more effectively, over a period of at least a few days, if not a few weeks. For this exercises it is important for you, as the instructor, to go through some, if not all, of the exercises yourself prior to acting as a guide that you bring some of your own authentic "deep ecol-

ogy" work to the process.

The set of exercises involve both group and individual work. The descriptions for the exercises are long and somewhat detailed due to the fact that many of us may not have had the chance to participate in, let alone lead, these kinds of gatherings.

Below I outline the main steps through these exercises, but the summary is as follows:

- set the expectation in advance that it is normal to have "mystic" experiences and students should expect these in the process of doing the exercises
- help students find or gain access to a green space (ideally a wilderness or quasi wilderness space)
- "bookend" the exercises with ceremonies that help students enter the mental and emotional "space" for deep ecology work and to leave that space with a sense of moving forward

below I provide some notes on setting expectations and bookending.

#### Setting Expectations

The exercises ask students to step outside of their "rational" selves and get in touch with their spiritual, metaphysical side. In order to do this, it is helpful to cultivate the expectation that most people do have mystical or "paranormal" experiences. These often suggest a universalism — a connection of the individual to a universal, or natural, energy. David Kowalewski, who has taught



deep ecology courses and written about it, suggests that it may be useful to point out several things:

- People have more than 5 basic senses, all necessary for our survival—and if we discontinue using some of our senses, we threaten our own survival.

– Although many of us have actually had what might be termed "paranormal" experiences, we rarely hear about them, or share them, because they are dismissed by mainstream institutions (religion, government, science).

- At the same time, mounting scientific evidence supports the validity of the paranormal. Research in physics (quantum non-locality), biology (mind body modalities) and photography (Kirlian imaging-- makes the electromagnetic field around an object visible) all support it.

> A way of further cultivating the validity of these experiences is to ask students to write down any mystical/paranormal experiences they have had, and to share them with the group if they feel comfortable. This may lead to a very animated discussion.

I don't frequently have paranormal experiences, but I have had a few significant ones, and for the

sake of example, I share a couple of my own experiences here:

- In the 1990s I lived in a shared house in Seattle and one Friday afternoon I set off for a weekend ski trip with a friend. From the first moments of the trip, I had a strong sense of something being wrong, and I told my fried several times to drive carefully. I had an "uneasy" feeling all weekend. When I returned to the house on Sunday afternoon, I learned that one of the women who shared the house with us had died suddenly of a brain aneurism on Friday night.
- Similarly, the day after Christmas in 2005 I also had a strong sense of foreboding. I was scheduled to travel to the States from England and I felt worried that something might go wrong with the flight. However news reports of the Asian Tsunami that hit on December 26th made me realize immediately that my feelings were directly connected to Tsunami's huge tear in the fabric of living energy around the planet.

Bookending the exercises

After setting the expectations as mentioned above, you are ready to launch the series of exercises with a simple ceremony, the purpose of which is to "enter into a different mental space" than the group has been before. Before starting the ceremony, explain to students the purpose of opening and closing the exercises in this way. Explain that ceremonies have served human kind throughout the ages and only recently have we lost this tradition. Explain that ceremony is about emotion and feeling, about letting the heart guide the rational mind. There is no right way to react to a ceremony, but students should expect ceremony to be more powerful than they realize.

As the instructor you will be playing the role of "guide" for the ceremonies and exercises, unless you bring in another person to do it, and you join the group as a participant. One good starting ceremony is the affirmation talking stick, and I provide a general narrative for it in the sources, below.

After conducting the ceremony, students begin under-

taking exercises on whatever schedule you have developed. When the set of exercises is complete, it may be useful for students to participate in a closing ceremony, where the notion of "moving forward with new eyes" is celebrated and affirmed. A possible closing ceremonies is outlined below.

There are countless possible experiential exercises that students can undertake in deep ecology

work. I have chosen a few that strike me as accessible. In most cases the outlines I provide (see below) for the exercises are interpreted compilations from the sources credited. Depending on your timeframe, you may choose some or all of these exercises, or you might substitute your own (e.g. straight tree hugging).

- Nature walk/sensations
- Council of all beings
- Thanksgiving/Blessing/Acknowledgement
- My element therapist

It is probably useful for students to keep a journal recording their experiences of the exercises, for which you should promise confidentiality when you review them. Although the journal does not need to be graded, it can provide you with important input as to the usefulness of the exercises.



**Credits**: formulated from the work of David Kowaleski, Joanna Macy and Molly Young Brown, and Ashoka.

### Sources/Readings:

David Kowalewski, "Teaching Deep Ecology: A Student Assessment" in The Journal of Environmental Education, 2002, Vol. 33, No. 4, 20-27.

David Kowalewski, *Deep Power: The political ecology* of wilderness and civilization. Huntington, NY: Nova Science, 2000.

Joanna Macy and Molly Young Brown, *Coming Back to Life: Practices to Reconnect Our Lives, Our World.* Gabriola Island, Canada: New Society, 1998.

Stephanie Kaza, *The Attentive Heart: Conversations with Trees*. Berkeley, Shambhala, 1996.

Richard Louv, *Last Child in the Wilderness: Saving our Children from Nature Deficit Disorder*. Chapel Hill: Algonquin Books, 2005.

# Descriptions of the ceremonies and exercises

For group ceremonies and exercises, talk the group through it first, then proceed.

# CEREMONIES

Simple opening ceremony: pass the stick

If the longer ceremony below

does not appeal to you, consider a simpler version. Have students stand in a circle while you say, "we dedicate this circle to celebrating our connection with nature. We pass this affirming stick around the circle, pass it from hand to hand," the guide takes a stick found in advance and passes to the person on either side saying "to affirm our physical connection to nature in the trees that shade us and produce our oxygen, the air we breath, the soil we walk upon, the water we drink, the landscapes we contemplate."

The stick is passed in silence and when it returns to the guide, the guide says, "nature feels us" and the ceremony ends.

### Opening ceremony: Affirmation talking stick

Participants sit in a circle with a found, staff-sized stick in the middle. The guide begins by bringing the group's attention to the circle and asking people to leave behind any unfinished thoughts or work they may be thinking about, to be present in the moment. The guide says something along these lines:

- "come with me on a journey to our past experiences of nature. Perhaps a childhood experience or something more recent, a time and place where you felt a real connection with the natural world."

– "We begin with the heart beat. Place your hand over your heart and feel this beat. Listen to this beat. Follow this beat back through all your experiences in nature."

The guide pauses and there is silence in the group while people experience the heartbeat and think back over their experiences in nature.



The guide then enters the circle and picks up the talking stick saying, "this stick will help us focus our attention on nature. We dedicate this circle to celebrating our connection to nature. Now we will step into the circle and take up the stick one at a time, spontaneously. While holding this talking stick we will share our favorite past experiences of connection to nature. We may come in to the circle more than once or not at all; there is no pressure on us to enter. We will speak briefly. In brevity, words are powerful. After each person has spoken, as they put down the stick to rejoin the circle, let us acknowledge their experience by saying "we hear you." When the guide senses people are finished, the guide suggests they invite the final one or two comments and then the ceremony is finished.

#### Closing Ceremony

The group convenes in a standing circle. The guide notes, "we dedicate this circle to our connection with nature. We have each been listening to nature during this session (or this week or over these past days) and now it is time to go forward taking nature with us more closely. Close your eyes and think about your experiences. Breathe slowly and feel nature around you. We pass this affirming stick around the circle, pass it from hand to hand," the guide takes a stick found in advance and passes to the person on either side saying "to accept nature into the core of your being, To cultivate and honor our connection to nature."

The stick is passed in silence and when it returns to the guide says, "nature hears us" and the ceremony ends.

### EXERCISES

#### Nature walk/sensations

1. Techniques for success: cultivate an inner stillness by

 giving yourself time in which you will not be disturbed

- turning off phones, iPods and media players

- being open to feelings and emotions, letting go of judgement and evaluation

Try to stay focused on observing and sensing nature, and let go of other distractions. If your mind wanders, observe that it is wandering and bring back its focus on nature. If you feel bored or fidgety, observe that. If you think of other things you would rather be doing, observe them and put them away. Become aware of the part of you that is observing nature.

2. instructions: do this exercise on your own, allow 45 minutes to 1 hour

Move through nature observing everything. Use observation as your basic tool of awareness. Observe what you are normally not aware of, to become aware. You may notice small insects, a dead leaf, colors on a tree or birds or other wildlife.

Begin sharpening your observation with all your senses. Close your eyes and cover your ears while breathing gently through your nose and smelling your surroundings. Put your whole awareness into your sense of smell.

Next close your eyes and use one hand to close your nose while you listen to your surroundings. Observe the sounds you encounter. Try to put your whole awareness into your sense of hearing.

What do you hear or smell that you do not see?

With eyes and nose closed, breathing through your



mouth, try to "taste" the air—try this in a few different spots.

Return to the sense of sight. Observe light and dark, movement and color, form and pattern.

Finally touch your natural surroundings. Hug a tree, feeling its bark, its roots below, and branches in the breeze above. Touch whatever is around you, gently, and feel the textures and shapes of leaves, soil, water, rocks, moss, mud, berries, or flowers.

Now let your mind wander over the surroundings. Observe how you feel. Become aware of yourself as a part of your surroundings.

Repeat this process as desired.

### Council of All Beings

Techniques for success: this is a group exercise requiring about 3 hours. In some forms, the Council is convened to give voice to the life threats experienced by all beings today. However, the Council has also been used to consult All Beings regarding design decisions. For example Macy and Young Brown report on how architects have

used the Council to reflect on plans to build in a particular green spaces (see Appendix C). In this case the Council starts with All Beings reflecting on the proposed site for building, then halfway through, an architect sits in the middle of the gathering and listens to the council's concerns about the proposed building project.

"I am earthworm and I speak for all soil insects."

Extending from that, the Council of All Beings could be used to reflect on a design discipline's general relationship to nature (e.g. what does the Council of All Beings have to say about fashion design, or furniture making, or industrial design? Graphics and packaging, or architecture and landscape architecture). Beyond that the Council could be asked to reflect on the relationship of All Beings to "design" in general.

#### Instructions:

following an opening ceremony, participants offer themselves to be chosen by another life form for whom they will speak at the Council of All Beings. Participants prepare by reflecting on the life form (such as through an on-the-spot nature walk), making a mask representing it, and then joining a formal gathering to speak on behalf of the life form.

Opening: try some simple rhythmic drumming and at some point during the drumming, call upon all beings and the four directions to support this Council of All Beings.

#### Being chosen as a life form

Allow 20 minutes or so for people to relax and open their minds, encourage them to stay with their first impression. They don't need to choose a species they know a lot about, but one that welcomes them and perhaps even surprises them. Choices might include plants (flowers, grass, moss, trees etc.), animals (insects, birds, fish, mammals, reptiles etc.), or ecological features such as rocks, swamps or mountains.

Encourage participants to envision the life form, to ask it for permission to represent it and how it wants to be represented in mask form. Participants should try to assume the role of the life form as a way of channeling what it has to say on the Council's topic.

#### Mask making

Lay out materials and allow people to gather their materials (supplemented by materials from nature). Everyone works in silence, allow about 30 minutes and give a five minute warning before the time is up.

#### The Council

the Beings are summoned to the Council by drum beat. The guide, in the guise of her adopted life form, welcomes them to the Council on the chosen topic (e.g. life threats to Beings in general, or the Council's input to a particular design discipline). Each life form introduces itself around the circle saying, "I am earthworm and I speak for soil insects" or "I am pond and I speak for waters of the world" and so forth.

#### Stage 1

After introductions, Beings step forward spontaneously to give their thoughts on how humans (or "design") impact them and what could be done to improve the situation. After each comment, the other Beings respond, "we hear you, earthworm (or "pond")."

#### Stage 2

After a dozen such statements, the guide invites humans (or "designers") to hear the council. Several people put down their masks to come to the center of the circle facing outward towards all Beings. Beings continue to express their concerns, but directly to the humans..."Oh humans, ..." The humans listen in silence, while the other beings continue to acknowledge the statements with "we hear you." After more beings have spoken, the humans rejoin the circle and pick up their masks, while new humans enter the center of the circle to listen. The rotation continues until all have had a chance to listen as humans.

#### Stage 3

The guide observes that the human are worried, uncomfortable, afraid and suggests that they now need the power available from All Beings. Each Being has the chance to offer to humans the powers needed to stop destruction of the natural world (or powers needed to improve how design relates to nature). For example, "As Eagle, I offer you my far seeing eye, that you may have the power to look ahead, and constructively plan for what you see."

Humans and Beings rotate through the center of the circle as before so that all have a change to offer and receive.

#### Closing

The council may end in different moods, depending on the group. One may be silent in reflection where another is raucous in animal calls and drumming. The Council should have a formal ending in which the guide calls upon participants to privately thank their assumed life form and return its energy to the earth, perhaps by placing their hands and foreheads on the ground.

#### Thanksgiving/Blessing/Acknowledgement

Techniques for success: quiet your mind as needed, use techniques from "nature walk".

#### Instructions:

Enter into a wilderness and take a few minutes to quiet your mind and bring your full attention to your surroundings. Find something in your surroundings that seems to be calling you. It might be a tree, an animal, a stream, a patch of soil or something else.

Go to it and offer it your thanks, your acknowledgement of its part in the great ecology of life, your well wishes (or blessing, if you prefer) for its life. Then remain in silent meditation on this thanksgiving until you feel it is time to move on. Repeat this process as desired.

#### My element therapist

Techniques for success: this exercise can be done in a wilderness setting or elsewhere. Quiet the mind but also recall all the senses in relation to your element.

Instructions: consider a personal problem you are having and consult one or more of the natural elements for advice:

- Water: ponds, lakes and streams, clouds, precipitation, fog, dew
- Earth: rock, soil, sand, mud
- Air: breath, the atmosphere, wind
- Fire: temperature, metabolism, energy and light from the sun

What would water do to solve this problem? What qualities does water have that affect his problem? How does fire suggest a way forward?

# CULTURE: EVENTS (EV)

### CULTURE Ev 4.1 Guest Speaker

Anthropologist: If you are at a large university, you may be able to get an anthropologist to talk to your students about the symbolic value of material goods and the relative changes over time, they may alternatively or additionally be able to a provide perspectives on "consumption," perhaps give tips on observation skills for finding out more from a subject population. You will probably get the most out of this if you can tie the talk in to the launch of a brief, such as the rites of passage, or in to an exercise such as the happiness barometer.

# CULTURE: WRITING (W)

## **C**ULTURE W 4.1 Time and Design

for a design project that is currently in the planning stages (object, building or media piece) describe a scenario planning process and assess what, if any, you think are the main contributions from scenario planning.

### **CULTURE** W 4.2 Human Needs

using a recent or current art/design brief, examine in what ways the results encourage internal methods of meeting human needs versus external methods of meeting human needs. How do you think the result could have done a better job of helping people access internal methods of meeting human needs.

# 4. FRONTIERS

# DESIGN BRIEFS (D)

# **FRONTIERS** D 5.1 Chage Triangle

*Atlas* **Book Pages:** part 5, 180-185, especially diagram on page 184.

**Brief**: students use the perspective of three large systems for change—technology, policy and behavior—to come up with three distinct approaches to a design challenge. For example, the design challenge could be improving (from a sustainability standpoint) a consumer product, creating public furniture or responding to an interior architecture need (such as doctor's office waiting room).

**Suitability** (year/discipline): probably suits students in their second or third year, any discipline.



**Context/aims**: To reach more sustainable systems and processes, we need change, but how can do we accomplish change? What do we want or need to change? The aim of this brief is to get students thinking about the tools for change, and how they work together or at odds, how they can or cannot actually be separated. Can you change behavior without a new technology or policy? In what instances has new technology driven policies?

Given a certain design challenge, is one of these dimensions of change more powerful than the others?

Launch/setup: One way to launch this brief would be with a case study that explores the forces of policy, technology and behavior in the evolution of "practices," where practices are the sets of behaviors that constitute our day to day routines and activities. I am familiar with one case, Nordic walking (see sources, below) that explicitly involves design. This case is presented by sociologists using sociological terms (primarily in the introduction) but the actual case is fairly straight forward. It would be a question of whether you want to present the case in a selective way, or whether you want students to look at it as a piece of academic work that they can analyse and critique from the standpoint of mechanisms for change. I'm keen to hear about additional cases studies that might serve to launch this brief.

**Structure/follow-up** (as applicable): There are several options for structuring this brief.

For students approaching the end of their studies, it might work to send them off and have them tackle the brief in their own way, choosing how and in what order to explore technology, policy and behavior.

An alternative approach would be to have the students all approach the three mechanisms of change in the same order, one after the other. So for example first they would all go off and explore technological solutions, then come back and share, then go off and explore behavior and so forth.

A third approach would be to divide the students into three groups and have them each pursue a different mechanism for change to start with, then come back and compare results.

A final approach would make a individual/group project. You could set groups of three students and for the first part of the brief, ask each one to research and brainstorm solutions from one perspective of change (eg one student does behavior, one does technology, one does policy). In the second phase the group comes together and tries to synthesize the best ideas for all the different mechanisms for change into one design solution.

It may become apparent that solutions have different levels of feasibility depending on whether they are in the private, public or nonprofit sector. What does this suggest about change and design?

#### Duration: adjustable

#### Sources/Readings:

The Nordic walking case study: Shove, E. and M. Pant-

zar, Consumers, Producers and Practices: Understanding the Invention and Reinvention of Nordic Walking. Journal of Consumer Culture, 2005. 5 (1): p. 43-64. Available at universities as an ejournal.

## FRONTIERS D 5.2 Outdoor Lighting

*Atlas* **Book pages**: Although the book doesn't deal specifically with lighting, issues brought up in part two, Ecology and part five Frontiers, may spark some ideas.

**Brief**: recent research suggests outdoor lighting could be more energy efficient and more culturally and ecologically sensitive. Using a specific place or neigh-

borhood, develop an improved lighting design that hits all notes: economy (saves energy or otherwise reduces costs), culture (improves safety, visibility, community engagement, etc.), ecology (reduces light pollution, improves nighttime sky visibility, etc.)

**Suitability:** outdoor lighting cuts across industrial design (fixtures), space design (architecture and landscape architecture) as well as, of course, lighting design. The brief probably

suits more advanced students, unless the in-

structor provides a lot of structure for younger students. May not suit graphic design.

**Context/aims:** Outdoor lighting is set to increase with the worldwide growth of urban populations and the push for "24 hour" cities. At the same time, the original motivation for current lighting standards, developed to help "unload" unwanted energy during off peak evening hours, is no longer relevant. This finding prompted the group Civil Twilight to propose developing street lighting that could respond to the moon's brightness –dimming streetlights when the moon's light is brightest (see article in Sources, below).

Meanwhile our understanding has improved on two important fronts:

- how the human eye works with light and dark and its implications for safety
- the effects of light pollution

Although floodlit spaces may at first glance be perceived as the safest, recent research suggests that even, nonglare lighting produces the best visibility for the human

As lighting designer Nancy Clanton says, "blasting light doesn't necessarily increase vision."

eye, while also reducing the energy-use and light pollution of outdoor lighting. As lighting designer Nancy Clanton says, "blasting light doesn't necessarily increase vision" (see article in sources, below). Her project lighting a prison yard in Vermont demonstrates this assertion.

In terms of light pollution, research shows that artificial light emanating from streetlights and shop lights can be a factor in sleep disorders. In addition, bright city lights reduce our ability to see stars and planets in the night sky. Ecological psychology suggests that reconnecting people to the stars in the sky could support human well being. There is also evidence that outdoor artificial lighting at night has adverse effects on animals such as birds and bats.

> Launch: The launch will depend on whether you assign a specific place for the students to use as their design location, or you ask them to propose specific locations that interest them. Since night time lighting will often be difficult to observe during class sessions
> (unless you live in northern latitudes where the days are short) you may not be able to visit a site without scheduling the visit "out of hours."

It might be possible, if you have a room that can be completely darkened, to conduct some "vision" experiments where students in small groups try to view something ahead of them in oncoming glaring light (simulated by a flashlight, for example) or try to view something with indirect lighting. They could also experiment with how much light is "enough" for various circumstances, and perhaps measure moonlight brightness. This sort of exercise would take some experimentation by the instructor ahead of time to ensure the locations (rooms or outdoor settings) are dark enough and the equipment (movable lights or flashlights, light meters) are available. An alternative approach would be to have students research various lighting effects then assign them to create the exercises in which various lighting conditions and visibilities are simulated.

**Structure/follow-up**: this brief presents the ongoing challenge of the need for darkness, possibly also for evaluating how well a proposed solution might work. Arrangements for conducting some class sessions during evening hours will have to be made well ahead of time so that students can book the times.

#### Sources/Readings:

"<u>In a Different Light</u>: Lighting designer Nancy Clanton helps energy-strapped California rethink outdoor illumination." By Rachel Weissman in Metropolis Magazine, October 2001.

"Lunar Light" By Karen E. Steen in Metropolis Magazine, Posted May 18, 2007.

General Design Award of Honor for "<u>Chess Park</u>," Glendale, California.

<u>The international dark sky association</u>: Their "news/media" section has a range of reports on night lighting. "The mission of the International Dark-Sky Association (IDA) is to preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting."

#### FRONTIERS

#### D 5.3 Supermarket

*Atlas* **Book pages:** part 3 Economy, p102-105 on globalism and fair trade; part 4 130-139 on commerce and on design and relationships; part 4 Culture, p152 -161 on fast and slow design (includes note on slow food).

**Brief:** For the purposes of this brief we imagine that the work of social campaigners has led to government requirements that supermarkets tackle sustainability more holistically in a way that makes sense to everyday shoppers. One supermarket turns to you to help them with a complete redesign that enables the store itself as well as the shoppers to contribute to sustainability.

**Suitability:** The brief is wide ranging and probably has something in it for many design disciplines, particularly interior architecture, graphics, and product.

**Context/aims**: supermarket profits are on the rise, yet some critics suggest that supermarkets, despite their pivotal role in society, are doing little to support sustainability. Common areas of concern within the supermarket include:

- Packaging from plastic shopping bags through to prepackaged food such as "individual servings"
- food miles how far the food has traveled to get to the supermarket, whether or not the food is in season, how the food is stored/transported
- organic/fair trade produce how the food is grown relative to pesticides, farm worker exposure, labor practices etc.
- animal welfare
- raw vs. processed food health issues related to the

degree of processing of our food

- nutritional labeling (sugar, fat, salt, artificial ingredients, etc.)
- physical accessibility is the space and physical aspect of the store friendly to the elderly, to children? (see Sources, below, for article on supermarket for the elderly)
- economic justice supermarkets often abandon poor neighborhoods in inner city areas, leaving the residents with few options for regular food shopping
- personal transport can people who use public transport access the store? What about cycling facilities or pedestrian access?
- Food waste food thrown out (se Sources, below, for article on food waste)

Supermarkets separate us from the realities of the food economy, while at the same time creating a highly frequented yet strangely non-social setting. The position of items on the shelves is highly negotiated and engineered, the layout of the store is determined entirely on a profit basis. The aim of this brief is to explore the supermarket phenomenon in sustainability terms and consider future directions for sustainable supermarkets.

Launch: As always, many possible launches. I would probably opt for a discussion launch. I would ask students to take a notepad with them into the supermarket on a shopping trip before the brief starts. I'd ask them to note down anything they notice that seems to either support sustainability or detract from it. I would start the discussion by asking them what they found, with an aim of drawing out ways in which supermarkets are "central" in society.

For example, I would be listening for the elements of ecology, economy and culture. If these points don't emerge from what students find, I would draw them out with further questions and discussion:

*economy*. everyone needs food and most people shop

for it at least once per week, often more frequently. Most people use supermarkets to meet this need. Are there other ways people could meet this need (grow their own, farmers markets, corner shops, veggie boxes from local farms—farm coops) how realistic are any of these options in your area?

*culture*. many people use the same supermarket every time – to what extent does this constitute community?. Is



there any "duty" associated with this role? In what way is food connected to culture (perhaps consider the "slow food movement" that encompasses both the social aspect of food as well as its connection to biodiversity)



ecology. in what way is food connected to ecology (issues to consider include topsoil loss, biodiversity, environmental contaminants such as pesticides, solid and biodegradable

waste generated along the food chain, food transport, energy use etc.).

The next step would be to overlay design onto these areas of concern. This is the main task of the brief but you could begin the discussion as a group.

**Structure/follow-up:** Students will have to make a few visits to a supermarket in order to do this brief and it probably makes sense to try to contact a few supermarkets and find out if any are willing to formally participate. You could also put the burden on students to try to win participation in small groups. If may also make sense to assign small groups of students to a variety of different supermarkets in order to lessen their impact.

A way to narrow the brief and make it more feasible would be to break the assignment up among groups, with different groups addressing different aspects of supermarket "sustainability."

**Credits**: Inspired by KT Meany adjunct professor at the College of Design, North Carolina State University. (see sources below)

#### Sources/Readings:

"<u>Greening the Grocery Store</u>" by KT Meaney as presented on the Design Observer blog (with some nice images)

"Super Values: The design of a Berlin supermarket addresses the needs of an aging population." By Kimberly Bradley in Metropolis Magazine, Posted June 20, 2007.

"<u>One Country's Table Scraps, Another Country's Meal</u>" By Andrew Martin in The New York Times May 18, 2008.

"<u>Cows aren't part of a climate-healthy diet, study says</u>," By Clark Williams-Derry on Worldchanging, June 8, 2008 12:38 PM.

## **FRONTIERS** D 5.4 Small Interventions

*Atlas* **Book Pages:** Part 5 Frontiers, "Systems of change" thru "Design for change" p.184-199.

**Brief**: students propose a "small change" that improves social, economic or ecological sustainability in the context of everyday life.

**Suitability (year/discipline)**: This exercise ostensibly suits structures and spaces, such as shelters, public spaces, landscapes or interiors. Yet to the extent that products, furnishings or graphics are part of these structures and spaces, the brief may be suitable to those disciplines as well.

Context/aims: The aim of this brief is to get students thinking about incremental change as well as the stakeholders involved in change. The context is daily life and the opportunities to improve sustainability in small steps. For example, many cities have unused spaces that could be put to more creative uses – arguably there are also interiors, products and graphics that are also underperforming. But the notion of a small scale intervention suggests that we look at improving things incrementally, rather than always looking to clear away the old and build new; we look for assets rather than deficiencies. In some respects, the movement for small interventions is a reaction to a string of big-name architecture projects meant to "revitalize" cities. But celebrity architecture is becoming "commonplace" according to Joel Kotkin, author of The City: A Global History, and is not the automatic fix it was once thought to be.

Instead many cities are turning to small scale interventions. In some cases the project may be about "reclaiming what's left over" in the case of derelict spaces or places, as one designer says in the sources, below ("Finding Public Space in the Margins"). In other cases, run of the mill businesses and organizations (funeral homes, laundromats or barber shops) are mobilized through community design competitions that recognize successful small scale design interventions.

In many cases, these interventions result from a study of the "found conditions." What are people already trying to do to upgrade the situation? In some of the examples in the source, below, designers used photo studies of existing conditions or they held consultations with the relevant communities.

Examples involving products include clothing and medical equipment. For clothing, the designer observed, "people need more places to carry things" without relying on endless plastic bags and without having to remember to take reusable bags. The solution in that case was to design into clothing expandable pockets/bags that are supported by hidden shoulder straps (see sources, below).

Another designers looked at medical equipment for kids. "When I looked at the hospital, a lot of attention is paid to the decoration of the corridors and entertainment for children," Verdonk says, "but not to the instruments and the rooms. I wanted to change that." Her combination of a tricycle with an IV- drip stand introduces an element of play to a typically awkward medical device (see sources below).

Improvements are aesthetic, but also functional, such as shade for pedestrians, places to sit or interact, or added utility in a product. Yet the small scale has the potential to highlight larger implications. In a case involving guardhouses for bicycle parking lots in the Netherlands, one participant observed, "We are working on the edges of the disciplines—architecture, design, and art—with subjects such as mobility, private versus public space, and functional art." (see sources, below). At the same time, small changes can gradually add up to a large change (see Pedestrian Cities, below).

Launch/setup: a good place to start looking for opportunities for this project would be in areas of conspicuous functional infrastructure, such as street furniture (bike racks, sidewalks, fences and railings, derelict spaces, bridges, fountains), public buildings (libraries, job centers, city public offices, prisons, hospitals), or derelict spaces or spaces that are completely unused at certain times of day (abandoned parking, parking garages, verges, public "yards", median strips).

Another place to look is at neighborhoods in transition, such as former light industry or warehouse neighborhoods being converted to mixed uses. This was the site for Public Architecture's proposal to help these neighborhoods respond to new population "by replacing street parking a few spaces at a time with paved sidewalk popouts programmed inexpensively with seating, a skate park, a small dog run, an outdoor community gym, or a bus stop café."

**Structure/follow-up** (as applicable): As a number of the sources below suggest, this type of brief would work



well as a "live project" if you can find the right context. This brief also provides the opportunity to explore a few other concepts:

- Systems of change

- Sectors of the economy, and their roles in change

The systems of change, described in the *Designer's Atlas* on pages 184-185, help examine how dimensions of policy, technology and behavior affect small interventions. For example in "Urban Oasis" below, a progressive city and merchant approach led to an innovative solution. Yet that solution was largely based on existing

behavior (behavior that was technically illegal—a policy implication) and structuring and organizing that behavior in a more productive way. Technical components such as "lamp shade canopy" and "art panel" allowed designers to channel behavior and policy. In policy terms, the result was so successful that the city is going to replicate the project elsewhere in the city. For more on these systems of change, see Design Brief 5.1 "Change Triangle" elsewhere in this Teaching Guide.

Similarly this brief enables an examination of the different sectors of the economy: public, private, and nonprofit. What is the role of each of these sectors in the design projects described in the sources? In "urban oasis" the private sector, in the form of merchants, banded together to demand improvements for a commercial strip. The public sector, the city, responded by approaching a non-profit group—the university—to come up with some possible solutions. For more on how design can utilize the different sectors of the economy see *Designer's Atlas* pages 98-101 (public and nonprofit sectors) as well as pages 86-97 (the private sector), and elsewhere in this Teaching Guide see also design brief 3.2 Economic Innovation or exercise 3.2 Three Sector Economy.

Finally, in terms of scale, it may be useful for students to contrast their own proposed small change with possible big changes that might also benefit the area. At what point is a big change necessary or desirable?

#### Sources/Readings:

"<u>Urban Oasis: A commercial corridor in Phoenix promis-</u> es better sales for merchants—and shade for pedestrians" by Stephen Zacks in Metropolis, August 2005

<sup>–</sup> Scale

"Montreal's Modest Proposal: By encouraging design at the community level, the city is improving its streets one business at a time" by Tim McKeough in Metropolis, October 2006.

"Pedestrian Cities: Encourage walking and cycling. Discourage cars and parking." By Paul Makovsky in Metropolis August/September 2002. A series of small steps gradually transformed the city of Copenhagen from a car-dominated to a people-oriented city. Contains a good map showing the time series change in car-free space in Copenhagen.

"Expandable Urban Mobility Jacket/Kate Ludwig/Cranbrook Academy of Art, Bloomfield Hills, MI" in ID, September/October 2005

"Good Shelter: SCI-Arc students create a place for L.A.'s homeless to take shade." By Jade Chang in Metropolis, April, 2005

"Habitat for Mobility," Dutch public arts group works with the city to overhaul bicycle watchman's guardhouses, by Karen E. Steen in Metropolis, April 2004. **Not available online** 

"<u>Civic Duties: San Francisco's Public Architecture</u> forges a model for fitting pro bono services into a firm's regular practice." By Andrew Blum in Metropolis, April 2004.

"Projects and Principles: The work of students in the United States and Europe provides an intriguing glimpse into emerging trends in product and industrial design." (NOTE for example Jetske Verdonk's and Pjotr Goessen's playful medical devices for children) By Stephen Zacks in Metropolis, April 2007

"Fantastic Duo: Two young architects in a red camper take on Norway's architectural ills." By David Sokol in Metropolis, December 2007. The designers "spent 30 months traveling to a dozen cities, identifying local ailments...and inviting residents into their mobile office to brainstorm solutions."

# FRONTIERS: EXERCISES (EX)

### **FRONTIERS** EX 5.1 Code of Practice

*Atlas* **Book Pages:** part 5, 186-197, especially diagram on page 187.

**Brief:** students obtain a copy of a professional code of practice from a relevant professional design organization

(eg architecture, industrial design, interior design, graphic design etc.) and assess how it treats sustainability across the dimensions of ecology, economy and culture. They propose modifications to improve the code's sustainability perspective.

**Suitability** (year/discipline): probably suits students in the latter part of their studies, any discipline.

**Context/aims:** The aim is to get students to reflect on the framework for professional practice in their design discipline, and consider what that framework contains in terms of sustainability, then critically evaluate what they think it should consider based on the knowledge they've gained from the *Atlas*, from other sources and from their experiences in studying sustainability.

Launch/setup: An ideal way to launch this exercise would be to either visit the local office of the professional design organization or to have a speaker from that organization come to the class and present the code of practice (see events 5.1). If it isn't possible to have direct contact with the professional organization, it would be useful to find out from them in advance how their code of practice is developed, how it can be changed and how it is enforced. Some of the information may be available on the organization's website.

**Structure/follow-up** (as applicable): This exercise could involve some variations, for example:

- comparing codes of practice among different design organizations
- seeking out codes from related organizations (eg does the US Green Building Council have a code of practice? Do some of the nonprofit design organizations with humanitarian concerns have codes of practice?)
- comparing codes of practice for design disciplines with codes of practice for other professions (law, medicine, etc.)

In addition, you might want to allow students a chance to review the code first, perhaps before the session starts, then during the session brainstorm on critiquing/improving it, then have each student or each group write out the "improved code." You might consider providing these to the organizations in question, or even have them come (back) to the class to discuss what the students propose.

Duration: adjustable



Field Trip: students visit a professional design association, or invite a representative of the local professional design association to speak to the class about the organization's professional code of practice/code of ethics.

# FRONTIERS: WRITING (W) FRONTIERS W 5.1 Central Debates

Choose one of the central debates of Sustainable Design summarized in Part 5 of the Atlas and use it to explore a given design area, such as new urban housing or fashion clothing.

# **FRONTIERS** W 5.2 How Should it Look?

There is a great deal of disagreement over how sustainable design should look. Some argue it should be sexy enough to rival the most alluring of non-sustainable design, others argue that sustainability by virtue of its materials and processes, not to mention is cultural component, will ultimately mean an emergent aesthetic. Considering a particular type of artifact or building, make an argument about how sustainable design should look.

# **FRONTIERS** W 5.3 Manifesto

Several design manifestos and accords have been written over the past 20 years (see a partial list of these at <u>http://</u><u>designactivism.net/archives/36</u>). Take a critical look at several of these. Are they really all just saying the same thing? What are the advocating and do you think they serve a good purpose?



# APPENDICES

- A. Examples of typical nonpofit groups
- B. Examples of typical government agencies

C. Approaches to sustainability typical of differnt sectors of the economy

D. Happiness Barometer

# A. NON PROFITS

#### Some Typical Nonprofit Organizations

#### Greenpeace

Stop climate change, Save our seas, Protect ancient forests, Demand Peace and Disarmament, Say no to genetic engineering, Eliminate toxic chemicals, End the nuclear age, Encourage sustainable trade

#### Amnesty International

AI's mission is to undertake research and action focused on preventing and ending grave abuses of the rights to physical and mental integrity, freedom of conscience and expression, and freedom from discrimination, within the context of its work to promote all human rights.

#### Age Concern

Our mission is to promote the well-being of all older people and to help make later life a fulfilling and enjoyable experience.

#### Sustain: The Alliance for better food and farming

Sustain advocates food and agriculture policies and practices that enhance the health and welfare of people and animals, improve the working and living environment, promote equity and enrich society and culture. Children's Food Campaign Eat Somerset Farming & Trade Project Food Access Network Food & Mental Health Food Facts Good Food on the Public Plate London Food link The Orchards Project

#### **Cancer Research UK**

the UK's leading charity dedicated to cancer research. websites has information about cancer, our research, how to donate and more ways to support us.

#### Shelter

Shelter understands the damage that bad housing causes. Every day we deal with the effects it has on people's lives. This is why we're working hard to ensure that everyone has a suitable, decent and affordable home. In 1966, Shelter was set up to do what the Government, housing bodies, and local agencies were failing to do: prevent bad housing and homelessness from taking a terrible toll on people's lives.

**London Cycling Campaign**'s vision is to make London a world class cycling city.

Get your workplace cycle-friendly!

With Transport for London's Take a Stand scheme London-based employers can apply for free cycle stands for up to 40 bicycles

LCC and CTC groups support appeal against conviction of inconsiderate cycling

Women's Cycle Coaching

The first of a series of women's coaching days taking place this winter.

#### Mind: for better mental health

Are you compatible with your environment? Mind is looking in to the impact of the built environment on our mental health

Also:

Depression and anxiety awareness

Access all ages: towards addressing the often inadequate provision for older people using mental health services

#### Waste Watch

promoting and encouraging action on waste reduction, reuse and recycling

#### **New Economics Foundation**

- an independent think-and-do tank that inspires and demonstrates real economic well-being.
- promoting innovative solutions that challenge mainstream thinking on economic, environment and social issues.
- combining rigorous analysis and policy debate with practical solutions on the ground, often run and designed with the help of local people.

# **B.** GOVERNMENT

#### Some Typical Government Agencies

#### **UK Central Government**

Department of trade and industry Europe & World Trade Business Sectors Innovation Employment Matters Regional Economic Development Energy Science

#### Department of food and rural affairs

Animal Health & Welfare Economics & Statistics Environmental Protection Exports & Trade Farming Marine & fisheries Food & Drink Horticulture Plants & Seeds Rural Affairs Science Sustainable Development Wildlife & Countryside

### **DEFRA Environmental Protection**

Air Ouality Business & the Environment Chemicals Climate Change **Consumer Products** Economics & Analysis Energy: Sustainable Energy Environmental Liability Farming & the Environment GM (Genetic Modification) Land - soil & contamination Local Environment Quality Noise Pollution Prevention & Control Radioactivity Recycling & Waste Statistics Sustainable Development Water issues Other material

Department for Culture, Media and Sport (DCMS) Department for Education and Skills (DfES) Department for International Development (DfID) Department for Transport (DfT) Department for Communities and Local Government (DCLG)

#### London City government

Mayor's Strategies Crime, Policing and Emergencies Culture Economic Policy Education Environment Equality and Diversity Health Housing and Homelessness International Planning and Development Sustainability Transport

#### London Food

On 22 May 2006 the Mayor and Jenny Jones, Chair of London Food, launched London's first ever strategy designed to improve London's food and reduce the environmental impact of the food industry. They were joined by Eric Schlosser, author of 'Fast Food Nation' and 'Chew on This'.

The strategy, Healthy and Sustainable Food for London, provides an overview of London's food infrastructure involving growers, producers, transporters, wholesalers, retailers and consumers.

#### **Other Organizations**

London Development Agency UK Government Sustainable Development Unit at DE-FRA UK Sustainable Development Commission GOL Sustainable Development Unit European Sustainable Towns and Cities Campaign DTI Sustainable Development Strategy London Sustainability Exchange (LSx) London21 Sustainability Network

# C. APPROACHES

Some typical approaches of stakeholders in different sectors of the economy

### **Business Case for Sustainability**

Make money while doing good... customer attraction/brand

operating efficiency, doing more with less: eco efficiency (lower operating cost for energy, toxics, etc.)

shareholder value/revenue (profits)

risk profile (lower risk of govt or npo action, lower risk of customer outrage. Lower risk of worker harm)

human resources (healthy workplace, fair practices)

philanthropy/volunteerism

shareholder screening

shareholder activism

public reporting/auditing

corporate social responsibility

partnerships

barriers: costs more, takes time, requires specialized knowledge

### **Government approaches**

Regulation (end of pipe/performance based)
Incentives (tax breaks or subsidies for desirable/ demonstration projects)
Disincentives (taxation of undesirable activities eg smoking, burning fossil fuels)
Purchasing policies (eg buy recycled)
Ban on undesirable substances/activities
Licensing laws (eg to handle/store chemicals)
Policy formation (congestion charge for city center, minimum energy efficiency standards etc.)

#### Non-profit approaches

Boycott Labeling Policy advocacy/lobbying Protests (tree hugging etc.) Education/support and advice (eg media campaigns, consulting, research, etc) Demonstration projects (eg any number of design projects originating in academia) Live projects (eg EDF projects with McDonalds) Lawsuits (eg sue govt for not enforcing regulations) Bearing witness, undercover reporting

# **D.** HAPPINESS

Happiness Barometer		Design
For each question enter a number between 1 and 5 as directed	You	Contribution
Q1. I laugh		
1=not often enough, 5=enough		
Q2. I feel my life is		
1=not at all in balance, 5=perfectly in balance		
Q3. I feel safe and secure		
1=never, 5=always		
Q4. I have time to focus on what's important to me		
1=not often enough, 5=often		
Q5. If I could lead my life over, I would change almost nothing 1=strongly agree, 5=strongly disagree		
Q6. I would say in general that my health is		
1=poor, 5=excellent		
Q7. Overall, I feel that		
1=my life always controls me, 5=I always control my life		
Q8. I get emerged in activities I feel energized by		
1=too rarely, 5=often		
Q9. I expose myself to risks		
1=too often, 5=enough		
Q10. I feel the need to escape from day to day reality		
1=too often, 5=never		
Q11. I do tasks (with or without pay) that make me feel useful		
and worthwhile		
1=never, 5=always		
Q12. I feel like I use my talents to the fullest potential		
1=far too seldom, 5=often		
Q13. I get enough rest and sleep		
1=never, 5=always		
Q14. I spend my time on things I don't enjoy		
1=always, 5=never		
Q15.1 get enough happiness out of my life		
1=never, 5=always		
Q16. The amount of time I spend with the people that matter to		
1-too little 5-enough		
017 The sublity of time I mend with these who metter to me		
Q17. The quality of time I spend with those who matter to me		
1=unfulfilling, 5=fulfilling		
O18 I feel lonely		
1=often, 5=never		
O19. I feel accepted		
1=never, 5=often		

Happiness Barometer, page 2	You	Design
Q20. I feel part of a community I love and which supports my		
needs		
1=never, 5=always		
1=disagree, 5=agree		
Q22. I trust the people in my community and the areas where I live and work 1=not at all, 5=completely		
Q23. Justice prevails in my community 1=disagree, 5=agree		
Q24. In my community I help others and find help easily 1=never, 5=always		
Q25. I have a haven 1=never, 5=always		
Q26. If I had to move away from my community tomorrow, I would feel 1=delighted, 5=terrible		
Q27. My community is vibrant and a great place to live 1=never, 5=always		
Q28. Nature gives me joy 1=never, 5=often		
Q29. I am happy that my childrend and grandchildren will grow up in this world 1=not happy at all, 5=very happy		
Q30. In general when I hear about world events I feel 1=depressed, 3=neutral, 5=good		
Q31. I feel connected to the world 1=the wrong amount, 5=the right amount		
Q32. Overall, I feel my contribution to the world is 1=negative, 3=neutral, 5=positive		
Q33. Generally, how happy do you feel 1=extremely unhappy, 5=extremely happy		