Helping Those in Need:
Technology, Equity, & Ethics

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Our Topics

- Housing
- Commerce
- Politics
- Bio-Engineering
- Computing

The Durakit Instant House

- Recycled, Coated & Treated Fibreboard

- Quick Erect, Fixed Wall Buildings

- Resists Wind, Snow, Rain, UV

- Resists Mold, Mildew, Pests & Rodents

- www.durakit.com

What It's Made Of

- Built from triple-corrugated ¾-inch cardboard treated to resist fire, water, & termites
- Walls are 2 layers of cardboard supported by 3-inch paperboard box posts
- Exterior coated with elastomeric cement
- Doors & windows from recycled vinyl
- Roof
  - 100% recycled organic fibre sealed with asphaltic membrane
 - 50 year warranty

Built To Last

- Withstand wind gust speeds of 141 mph
- Roof made to support rain or snow
- Tested to 8.1 on the Richter Scale
- Meets most North American building codes

DuraKit employees climbed aboard The Instant House to show off its strength.
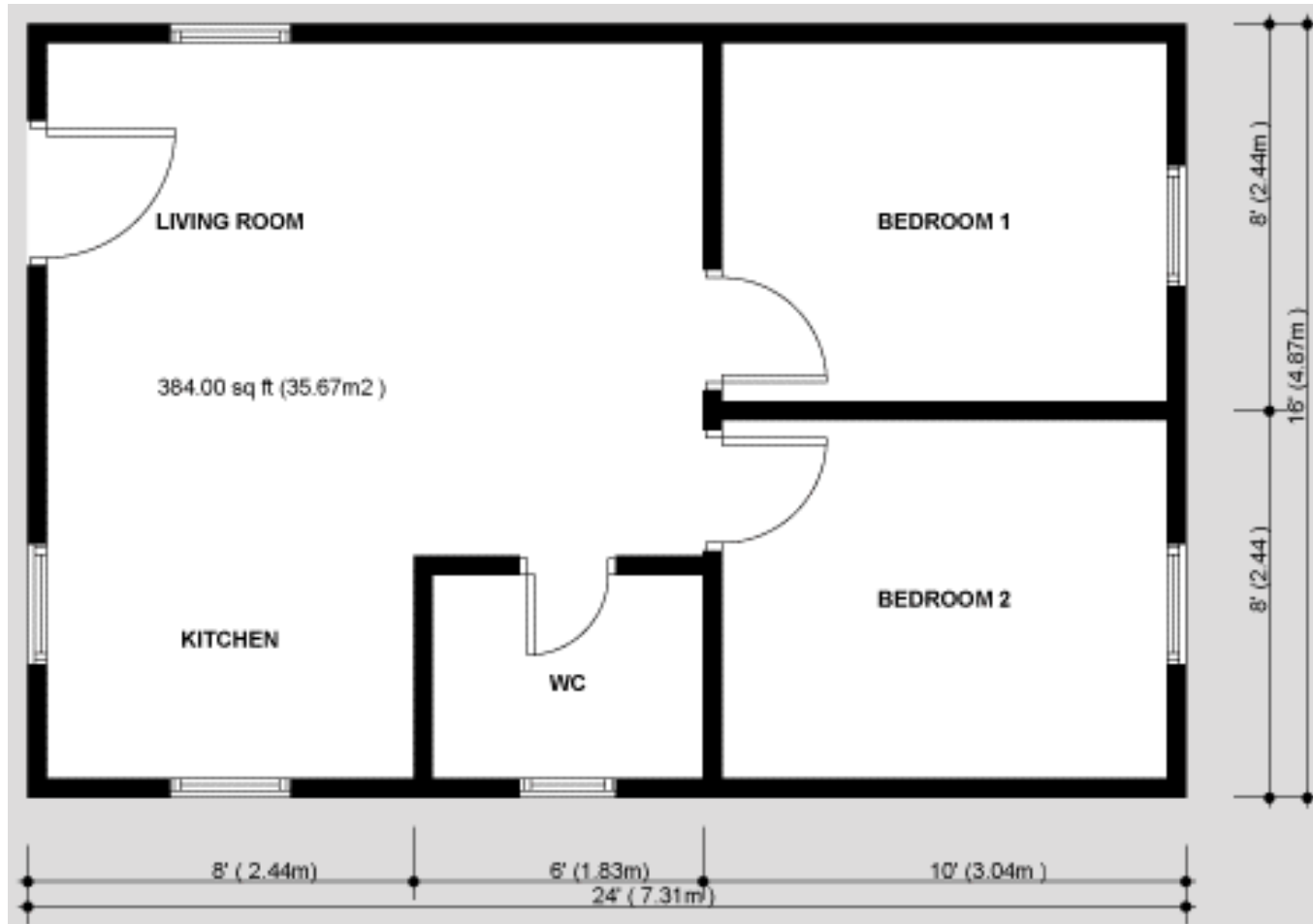
Sell To Third World Countries

- 20 12 x 16-ft. cabins pack in a 40-ft. container
- Easy to ship
  - Via air when timing is critical
  - To remote areas where trucking is difficult
- 3 unskilled workers can assemble one in a day

Typical 16' x 24' Layout
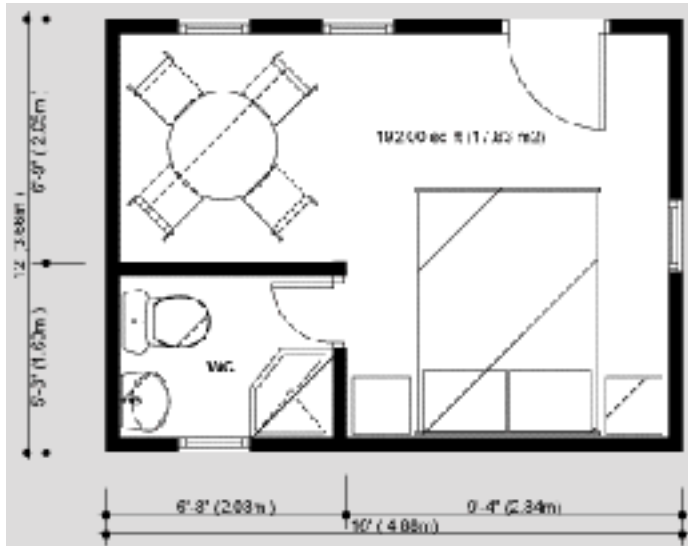

OPTIONAL FLOOR PLAN
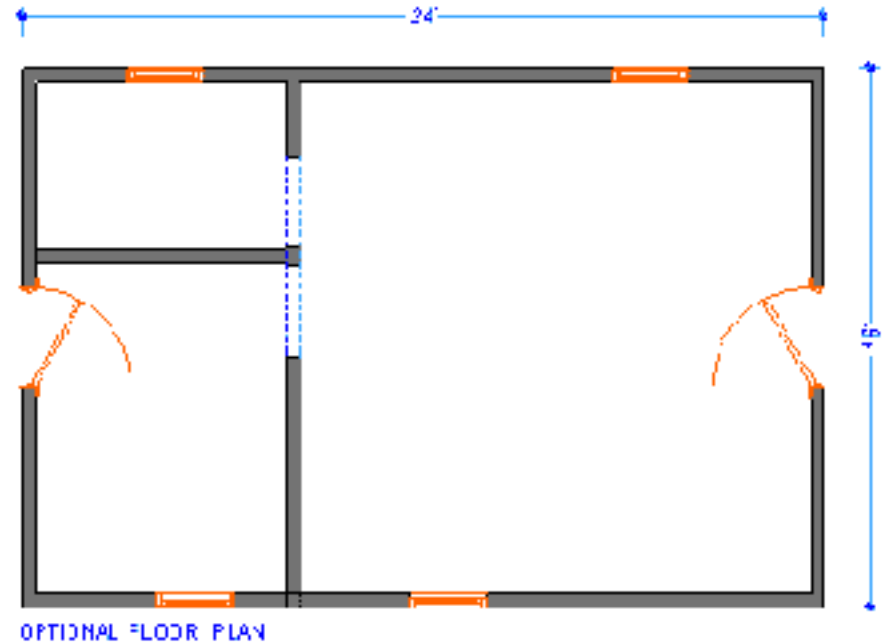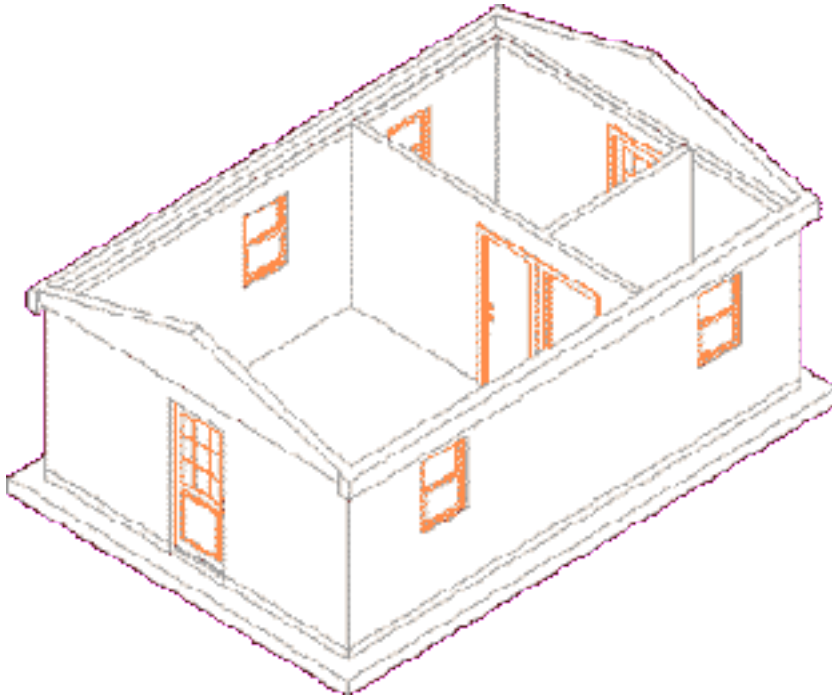
Other typical configurations include 12' x 16' & 16' x 20'

Instant House: Family 400

More Instant Houses

Tourist

192 sq. ft.

Bunkhouse

512 sq. ft.
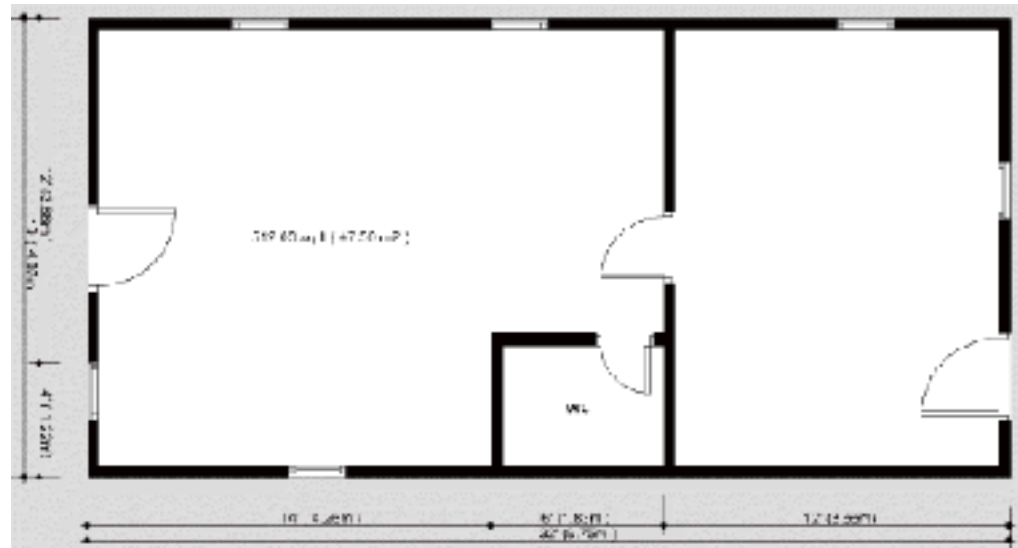
Cost Comparisons

	Cost / Sq. Ft.
DuraKit	$15
Conventional	$30
Trailer	$50
Metal Kit	$45
Fabric/Tent	$15

All price estimates are for a shell structure without plumbing, electrical and other options.

Catalytic's Problem

- Catalytic Software's HQ in Kirkland, Washington
- Looking to India for programming talent
- Want to avoid immigration problems for 1000s for programmers, so they will remain in India
- Need to build a small city to house all the programmers
- … but how to build such a city affordably?

New Oroville

- 4,000+ monolithic domes
- Dome is stronger than box & requires 1/3 less concrete
- 26 ft. High, 32 ft. diameter, 3 floors, 2250 sq. ft. for 7 people
- $10,000 each
- 5 days to build one dome
- Features
  o Fiber-optic connections to every home
  o Self-contained water supply
  o Reliable electricity
- See www.monolithicdome.com

M-vironment Exterior

Created by Michael Jantze, renowned artist & architect

M-vironment Interiors

M-vironment System

- Easily movable
- Endlessly expandable
  - Interchangeable components
  - Connected to a matrix of modular support frames
  - Frames can be assembled and disassembled
- Both insulated & uninsulated panels so rooms can be exposed or heated & cooled
- Self-sufficient in energy, using sun & wind for power

Good For Third World Countries

- Nonflammable composite concrete panels
- Can withstand 80 mph winds
- Panels can be made of fabric, wood, or glass
- Can be assembled or disassembled by 2 people with wrenches

Commerce

Novica

- www.novica.com
- Opened small offices around the world
- Distribute art & handicrafts directly from the artists
- Everything is one-of-a-kind, handcrafted

Novica Around The World

Novica Is Disintermediation

- No middlemen, so prices are dramatically lower
    - Pottery at Bloomingdales: $350
    - Same pottery at Novica: $11
- Artists make more money selling through Novica for $11 than through distribution channels for $350

The Net Makes Novica Different

- Supply and demand
  - Artists check online inventory at the Novica offices
  - Allows artists to adjust work to meet market demand
- Easy to sell handcrafted art
  - In paper catalogs, you can't include one-of-a-kind items unless they are expensive
  - On the Web, it's easy to include unique pieces & remove them when they are sold

Global Interconnections

- People in India guard office buildings in California
- How? Security pictures sent by satellite

Politics

Zimbabwe Voted No

- Robert Mugabe, president since 1980
- Fanned flames of racial chaos & mayhem
- New constitution would have given Mugabe sweeping powers & lifelong immunity from prosecution
- 55% of Zimbabweans voted "No" in February 2000

Why Did Zimbabwe Say No?

- In weeks before the election, 6 words flashed across 100s of 1000s of cell phones: "No fuel. No forex. Vote No."
    - No fuel: crippling fuel shortages since 1999
    - No forex: country stripped of foreign exchange capital since Mugabe interfered in Congo's civil war
    - Vote No: opposition parties were banned from broadcast & print, but people passed the message from phone to phone

Bio-Engineering

Zimbabwe Is Starving ...

- Zimbabwe and 5 other southern African nations -- Lesotho, Malawi, Mozambique, Swaziland and Zambia -- face widespread food shortages due to 2 years of drought & floods
- Half of Zimbabwe's 12 million residents are about to starve ... 6,000,000 people

... And There Is Corn Available ...

- 10,000 metric tons of corn from the U.S. Agency for International Development (USAID) has been shipped to a port in Tanzania

- A second ship carrying 17,500 metric tons of US corn has arrived in the South African port of Durban

... But Zimbabwe Refuses It

- The corn remains on the docks
- President Robert Mugabe to the Parliament, 23 July 2002: "We fight the present drought with our eyes clearly set on the future of the agricultural sector, which is the mainstay of our economy. We dare not endanger its future through misplaced decisions based on acts of either desperation or expediency."

Why?

- The corn is a patented hybrid of conventional varieties & bio-engineered kernels bred to protect against insects

Issues With The Corn

- Genetic contamination of local crops
- Intellectual property
  - Farmers not allowed to save patented seeds gathered from harvest for replanting in following years
  - Subsistence farmers cannot afford to buy new seed every year
  - "If these crops get in, then farmers basically lose their rights to their own agricultural resources." (Carole Collins, senior policy analyst for the Africa Faith and Justice Network)

More Issues

- Some European countries want to ban the importation of cattle fed bio-engineered corn
- How would Zimbabwe sell cattle abroad?
- Others contend that bio-engineered exports, done for humanitarian reasons, are part of a strategy to spread such crops around the world & further American control of agriculture

This Has Happened Before

- India previously balked over a humanitarian shipment of gene-altered food
- One U.S. official was quoted: "Beggars can't be choosers."

Ethical Solutions?

- Perhaps the US should pay for milling costs?
- Neil E. Harl, professor of economics at Iowa State University: "It is highly unethical not to just cover the costs for milling. Tell me how much it costs to drop one bomb on Afghanistan. Who is starving whom here?"

Computing

Cost Per Month For Internet Access

	Cost	Speed (Kbps)
Albania	$49.00	56
Egypt	$44.00	56
India	$43.00	56
Yugoslavia	$36.00	56
Nepal	$35.00	33.6
Lebanon	$30.00	56
Japan	$27.00	56
Morocco	$20.00	33.6
Uruguay	$20.00	33.6
Turkey	$19.00	56
Italy	$16.00	56
Philippines	$16.00	56
Greece	$15.00	33.6
France	$14.00	56
Hong Kong	$14.00	56

Note: As of June 2000

Is Broadband a Right?

- Kentucky Housing Corporation has listed broadband Internet access among the inalienable rights of its low-income housing residents
- All new housing units funded more than 50% by KHC must be equipped with access to high-speed Internet service

http://www.wired.com/news/politics/0,1283,57249,00.html

KHC Knows That's Not Enough

- KHC also working on programs to provide poor families with ...
  - Low-cost computer hardware
  - Subsidized Internet service
  - Special online portal where they can ...
    - Search for jobs
    - Learn about available health-care & financial resources

Jhai Foundation

- Bringing computers & Internet to Phon Kham village on the outskirts of Vientiane, Laos
- Currently, no phones, no electricity, no Internet
- Allows villagers to ...
  - Monitor rice & vegetable prices
  - Sell handicrafts
  - Email relatives
- Problem: how do you power computers in a remote village without electricity?

The Solution

- Headman Tavee Pularmjit pedals a bike-powered generator that brings electricity to the computer in foreground
- One minute of pedaling = 5 minutes of power

Ghana Takes the Other Tack

- On 8 February 2003, Ghana Telecom put all Ghana ISPs on one-way circuits so they can no longer dial out

- Effectively, GT shut down Internet access in Ghana

- Why? GT claims it is losing money due to citizens using the Net to make VOIP (Voice Over IP) calls

http://lists.elistx.com/archives/interesting-people/200302/msg00189.html

Maybe, Maybe Not

- GT has lost money
  - Used to earn $42 million/year on int'l phone traffic
  - Lost $14 million over the last 4 years
- VOIP seems like a convenient but poor excuse
- Other reasons GT is losing money:
  - Email
  - Competition from Westel, the 2nd national carrier
  - Cell phone usage

The Lesson?

- Government-sanctioned monopolies, or near monopolies, will act to preserve their businesses in the face of threats to their traditional ways of doing business

The "Hole in the Wall" Project

- Sugata Mitra, IT researcher in New Delhi, launched the project

- Imbedded a PC with a high-speed Net connection into a concrete wall in a poverty-stricken area
  - Left computer on at all times
  - Anyone could use the computer
  - All activity was filmed

- Who used the computer the most?

http://www.greenstar.org/butterflies/Hole-in-the-Wall.htm

"Hole in the Wall" Results

- Most avid users? Ghetto kids aged 6-12
  - Most have little or no education
  - Did not speak English
- Within days, they figured out how to draw & surf the Net
- They later figured out how to ...
  - Play MP3's of Hindi music
  - Create documents using the Windows character map

"Hole in the Wall" Lessons

- Children "get base level computer literacy almost instantly"
- Didn't know it was a computer
- Develop own metaphors: instead of an hourglass, it's a "damru" ("Shiva's drum")
- The adult reaction?
  - "What on earth is this for? Why is there no one here to teach us something? How are we ever going to use this?"
  - Asked children to do tasks for them (look up Hindi horoscopes)

Simputer

What Is The Simputer?

- "Simple, inexpensive, multilingual computer."
- Designed to meet the needs of rural villagers in countries like India, Malaysia, Nigeria & Indonesia
- Many potential users are illiterate & have never seen a computer
- Simputer will sell for about $250 ($300 for a color screen)

Aid An Entire Village

- A village can buy one device
- Everyone in the village could ...
  - Access the Internet
  - Perform transactions
  - Keep track of agricultural prices
  - Educate the children

Simputer Specifcations

- Intel Strong-ARM processor (low power consumption)
- 64 MB of RAM
- Modem
- Runs on Linux (free, powerful, & customizable)
- Touch-sensitive screen that uses a stylus for input: no keyboard or handwriting-recognition

How Will Illiterate People Use It?

- Simple interface
  - Each page shows only a few commands
  - Users will learn by trial and error the purposes of icons & buttons
- Text into speech software
  - Simputer holds a database of phonemes (basic sounds) that it can read aloud
  - Will work for various Indian languages, including Hindi, Kannada, & Tamil

Loaves and Fishes

This is not
the age of information.

This is NOT
the age of information.

Forget the news,
and the radio,
and the blurred screen.

This is the time

of loaves
and fishes.

People are hungry,
and one good word is bread
for a thousand.

-- David Whyte

Thank You!

- Final thought: How do we address these issues?

- Email me: scott@granneman.com

- Visit my Web site: www.granneman.com

- Join GranneNotes, my listserv for people interested in technology & the Internet, by visiting www.granneman.com & signing up

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