



*TOM  
BENDER*

*THE INNER HEART  
OF SUSTAINABILITY*

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## Friday Fun: A Laugh a Day Keeps the Blues Away

If you could use a good laugh amid the budding pandemic, financial crisis, terrorism and torture news, [consider the example of tiny Manzanita, Ore.](#), a town of 700 on the Pacific coast.

Four weeks ago, a handful of residents began gathering at 12:05 p.m. every Thursday in the town square for a group laugh-in, says Michael Burkett, [editor of the North Coast Citizen](#), the local biweekly newspaper. The bookstore owner dons a mullet wig, a local artist carries a stuffed flamingo on his shoulder, another resident wears a rainbow-hued clown wig – just for laughs. Resident Craig Mackie arrived yesterday sporting a handmade plastic-dinner-plate chapeau worthy of the Mad Hatter. For three minutes, the sound of laughter echoes through the town.



Laughing in Manzanita, Ore. CREDIT: Michael Burkett, The North Coast Citizen, Manzanita, Oregon

**GLOBAL WARMING  
WATER LEVEL**



**1/2 GLOBAL WARMING  
WATER LEVEL**



ECONOMICS  
HAS NO  
BOTTOM LINE

Bottom-lines exist only in linear calculus.

Single focus, ignoring the multitudiness of life.

Life is a web of webs. Any change pulls here, loosens there.

Everything is touched, and shifts. Bringing all again into true.

Feel and dance with those tugs of life.

*remember . . .*

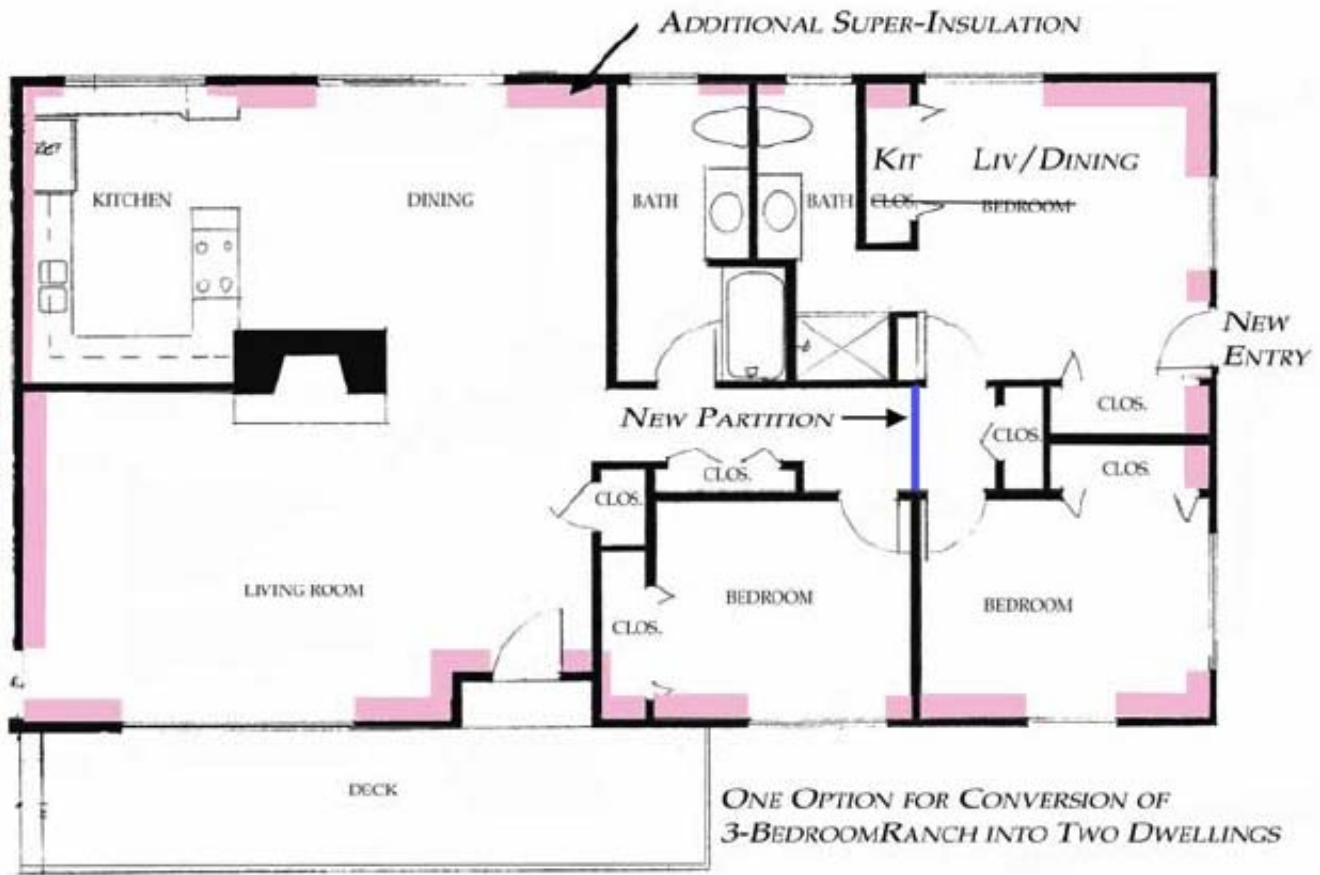
*EXTRAVAGANCE*

*is the economics  
of nature*



**TILLAWATTS:** Net-Zero-Energy retrofits of existing homes can reduce energy use by 80%. An Accessory Dwelling Unit Ordinance can permit splitting existing 3-bedroom ranch homes that are 50% of our housing stock. Together, they can give us:

- **"Negawatts" for the electric utility** (ie. us) cheaper than any new generation, cutting fossil fuel use, global warming, and foreign debt.
- **"Storm-proof" homes** for residents, who can stay warm in power outages or whatever economic collapse occurs.
- **Affordable housing** at a fraction of the cost of construction.
- **Potential income to retirees** who have lost income from the stock market crash.
- **Enhanced ability of existing infrastructure** to serve twice as many residents.
- **Local-employment-intensive investments**, 100-year returns.
- **Better transportation and community** from improved housing density with very little investment.
- **Capacity for electric vehicle transportation** within our renewable hydro-based electrical allotment.



Here two one-bedroom units are created with just a hall partition.

## WHAT THE ADS DON'T TELL US:



**What is the REAL cost of an island to fill an oversized kitchen?**

Cabinetry purchase \$1000  
Space cost: 60 sq.ft. x \$150 = \$9000  
Finance cost: 30 years = 1.28 = \$11,520  
Energy for space: \$9,000  
Subtotal: \$30,520  
Income tax on earnings to pay @25% = \$7630

**Total cost: \$38,150**

More than a year's wages for many people - just for an island to fill an oversized kitchen.



**What is the REAL cost of a guest bedroom to fill an oversized house?**

Furnishings: \$1000  
Space cost: 150 sq.ft. x \$150 = \$22,500  
Finance cost: 30 years = 1.28 = \$28,800  
Energy for space: \$22,500  
Subtotal: \$74,800  
Income tax on earnings to pay @25% = \$18,700

**Total cost: \$93,500**

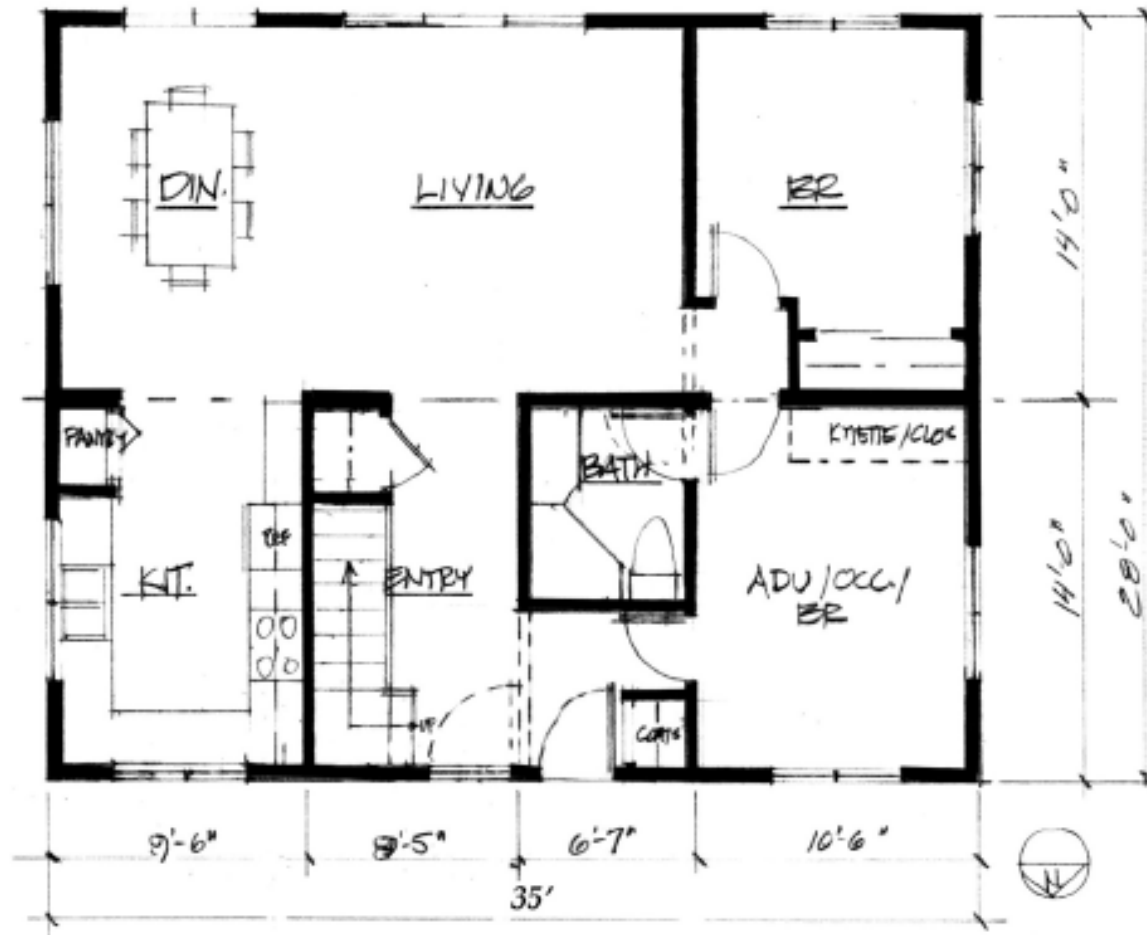


# FLEX-PLEX HOUSING

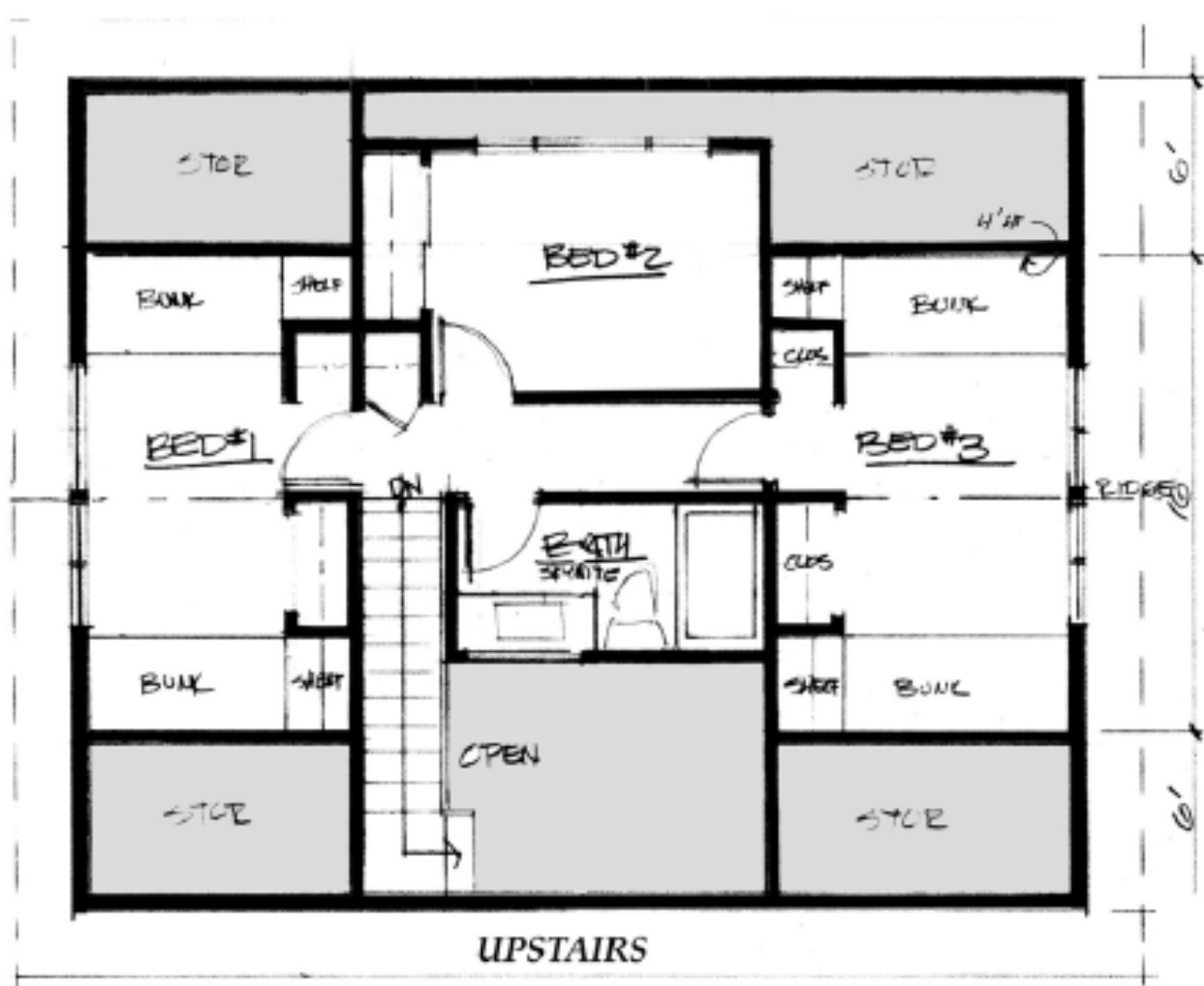


# FLEXPLEX BASIC CONFIGURATION

DOWNSTAIRS



1540 sq.ft. total



*FLEXPLEX BASIC CONFIGURATION*



## *VALUE SHIFTS*

can give us easy, multiple paths to reduce our energy use by 80-90%, and have better lives in the process.

## **GROWTH:**

**Stabilizing growth can totally avoid somewhere between 33% and 40% of our total work.**

Every generation we double the number of our houses, cement plants, electrical generating plants, coal mines, cities, roads, and water systems - and prematurely demolish existing ones - to accommodate more people and more "things". And we spend even more educating more people. What do we gain, anyhow, from more people?

## **INEQUITY:**

**An equitable society could totally eliminate poverty and support EVERYONE at the current median income, using 47% less work, and equivalently fewer resources than our current society uses to maintain poverty and inequality!**

**Without growth and inequity, every American could live as well as the average American family does now. At the same time, we would save TWO-THIRDS (67%) of the resources, energy, work, and ecological damage involved.**

## DEBT:

**Debt costs represent more than 20% of our cost of living.**

Interest costs on home purchases double and triple the actual cost of a home. We finance 13 cars in our lifetimes -one automobile after another for 40 or 50 years, gaining nothing out of the process beyond the first purchase. Interest on continuing credit card balances amounts to over \$300 billion per year. **We can't buy any more on credit. We just end up paying more for what we buy - up to 20% more.** Here again, consumer debt represents 20% of disposable income. Corporate debt loads represent a similar 25% surcharge.

**These three "value questions" show potential for 75% savings before even looking at the potential for 90% reductions in HOW we do thing.**



## AND THEN, WHAT IF WE:

- **Eliminate EXCESS.** The European economy is 50% "consumer" loaded. Ours is 70%. **Reducing our consumerism of geegaws by 30%, we would still live as well as Europeans, and cut work and energy use by almost 25%.**
- **Eliminate CORPORATIONS.** Localize, network, share. Ads = 20%, corporate hierarchy 10%, layer inefficiency 10%??
- **Improve DURABILITY: A home that lasts 200 years rather than 20 years costs 90% less.** A car or light bulb or roof on a house that lasts twice as long only costs half as much. Much of our energy consumption is producing things that don't last and aren't repairable. **Durable products mean less work and energy to replace, with a positive impact on quality of life in the process.**
- **Find RIPPLE EFFECTS.** If we cut unnecessary stuff by 20%, use those \$\$\$ to get out of debt, we cut energy, financial, and resource consumption *another* 20%. Not building means our forests can recover, restock, sequester CO2.

*EASY CHANGES  
IN OUR EVERYDAY  
LIVES*

can also easily reduce our energy use by 80-90%, and also give us better lives in the process.

## HOUSING:

- **Smaller size - Cutting our excessive space use in half cuts our energy use in half.** Average new home size in 1968 was 1200 sq.ft. vs today's 2400 sq.ft. IKEA has demo homes in their stores showing how to live comfortably in 590, 375, and even 235 sq.ft.
  - **Two-story** - 1.5 story construction **reduces construction costs and energy use 20%.**
  - **Super-insulated/passive solar** - Heating constitutes a third of home energy use. European Passivhaus homes are insulated to levels that need no heating systems, thus **eliminating 33% of home energy use.**
  - **Appliance load reduction** - Eliminating TV; using cool-boxes and under-counter freezers instead of mega-refrigerators; demand, solar, and heat-pump water heaters; CFL light bulbs; gas, not electric stoves; and high-spin speed clothes washers to reduce drying loads can **cut appliance primary energy use roughly in half.**
  - **Stairstep electrical tax** - Doubling electrical rates for large users, investing those funds in efficiency improvements and renewable electricity, can save even more.
  - **Solar PV** - Reducing electrical use to non-heat appliance loads, and reducing those loads allows affordable rooftop solar PV to further reduce total fossil fuel energy use.
- These options can approach net zero energy in new homes, and 80% reduction in retrofitted homes.** They also give security during power outages and disruptions.

**TRANSPORTATION:** We still love cars, and available options can give us massive improvements in both efficiency and amenity:

- **More efficient cars** - This doesn't mean fancy hybrids. The 55 mpg Honda Civic VX, back in 1992, or the 74 mpg VW Polo now available in Europe can make this possible quickly. **A 66 mpg car (VW Polo) reduces fleet energy use by two-thirds.**

- **45 MPH speed limit - can reduce energy use by 25%.**

- **European workweek** - Adopting the European 32 hr workweek **would lower our transportation energy use by 20%.**

- **CarShare** - CarShare systems avoid car ownership, storage space, maintenance, insurance costs. Each car-sharing vehicle replaces as many as 7 private cars. The average CarShare member spends \$540 and drives 435 miles per year, vs. 10,000 miles. **Adjusting for transit use, this probably represents an 80% reduction in mileage/energy use.**

- **Smart Jitney** - Jitneys are shared taxis that carry multiple passengers over a regular or flexible route on a flexible schedule. They provide anywhere - anytime - anyplace pick up and drop off. *Smart jitneys* add a GPS cell phone for efficient accessing. This is already in development in Britain and Germany. **Tripling occupancy cuts energy use threefold.**

- **Live where you work, walk and bicycle** - Obviously simple ways of reducing energy use.

**These can reduce personal transportation energy use by 70-90%.**

**FOOD:** U.S. agriculture currently consumes 10 times the energy that it produces in the food. We can:

- **Switch to organic food** - A 2007 UN study showed **organic production using an average of 50% less energy than conventional**, while producing more nutritious food.
- **Eat less** - Americans consume 3,600 calories per day vs. need of about 2,500. **Stopping overeating and ending obesity can reduce energy use by one-third.**
- **Buy local - 40% of energy use in food goes into processing, packaging and distribution.** Buying direct from local producers, or from your own garden, avoids such costs.

**Bio-intensive home gardens reduce energy use by 90%**, provide fresh food under your own control. Small U.S. farms, under 27 acres, are 10 times more productive than the largest. Standard U.S. agricultural requires 45,000 square feet to feed a person on a high-meat diet, or about 10,000 square feet for a vegetarian. Bio-intensive gardening can provide for a vegetarian's entire diet, plus the compost crops needed to sustain the system, on only 4,000 square feet. You can produce 40% of your food needs around your house on a standard 50'x100' urban lot.

- **Eat lower on the food chain** - An industrial meat-based diet consumes twice the energy as a plant-based one. **Cutting meat consumption in half reduces diet energy by 25%.**

**Just these four measures can reduce food energy expenditures by 85%.**

**And finally, let's consider "techie" energy efficiency directly. Think about things in your own home:**

- New toilets only use one gallon of water to flush - an 80% improvement over the 5-gallon flush of 20 years ago.
- Compact fluorescent light bulbs save 75% of the energy used by incandescent bulbs.
- Refrigerators reduced their energy use by 86% from 1972 to 1997.
- High-speed-spin clothes washers reduce dryer energy use 90%.
- Laptop computers use 90% less energy than older desktops.
- NAHN R-60 / 40 homes cost less than conventional.



*This is the world  
our culture  
and architecture  
are  
shifting into.*

*Your welcome  
awaits . . .  
come within!*

