

Out of sight, Out of Mind : How to ensure building material selection – real sustainability beyond what's on the brochure

Don Kamarga
Managing Director, b-panel®

Green Building Council Indonesia Conference
Jakarta, may 8-9 , 2014



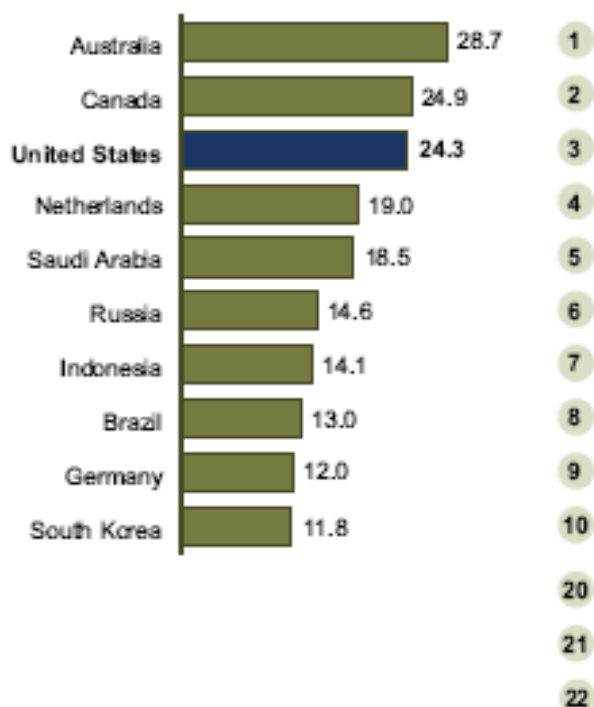
Exhibit 2

GHG EMISSIONS BY POPULATION AND GDP – 2005

Top 10 per-capita emitters

Tons CO₂e* per capita (*High to low*)

Rank



* Includes emissions associated with deforestation and land-use changes

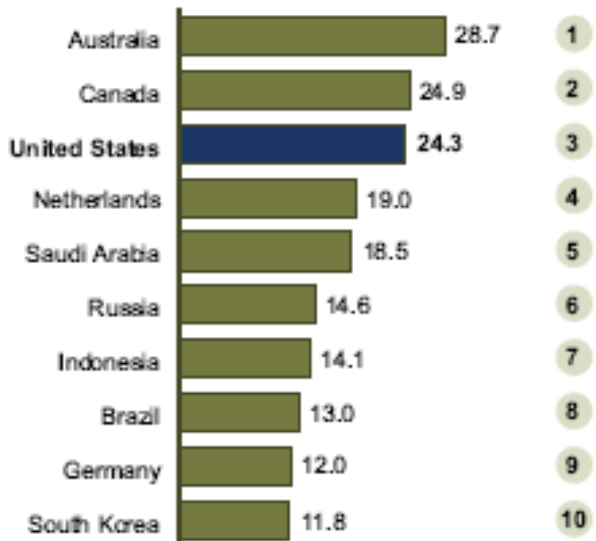
** Includes only countries with annual greenhouse gas emissions greater than 250 megatons CO₂e

Source: UNFCCC; IEA; EPA; Global Insight; McKinsey analysis

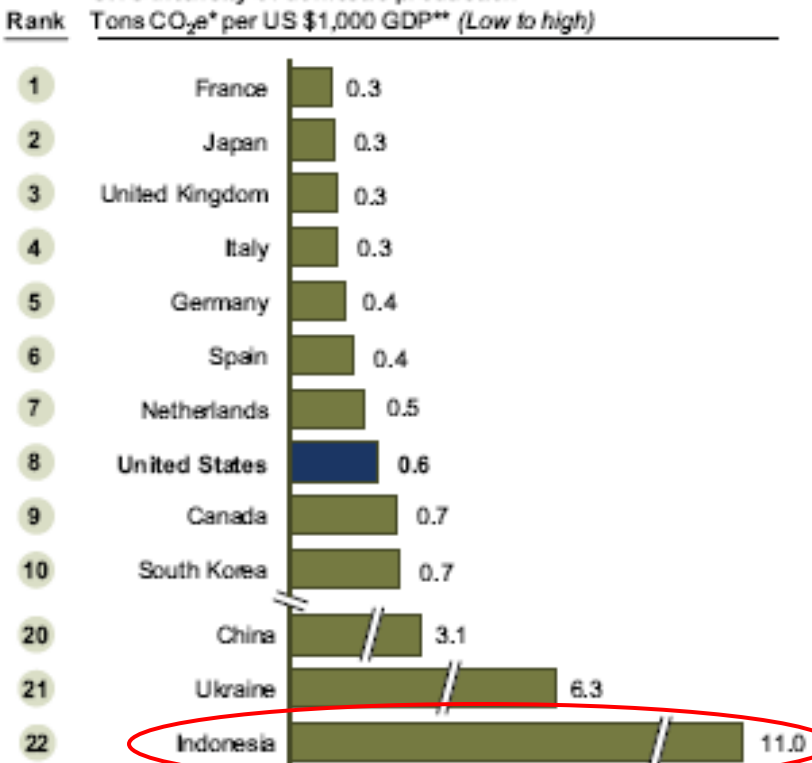
Exhibit 2

GHG EMISSIONS BY POPULATION AND GDP – 2005

Top 10 per-capita emitters
Tons CO₂e* per capita (High to low)



GHG intensity of domestic production
Tons CO₂e* per US \$1,000 GDP** (Low to high)



* Includes emissions associated with deforestation and land-use changes

** Includes only countries with annual greenhouse gas emissions greater than 250 megatons CO₂e

Source: UNFCCC; IEA; EPA; Global Insight; McKinsey analysis

Career progression correction

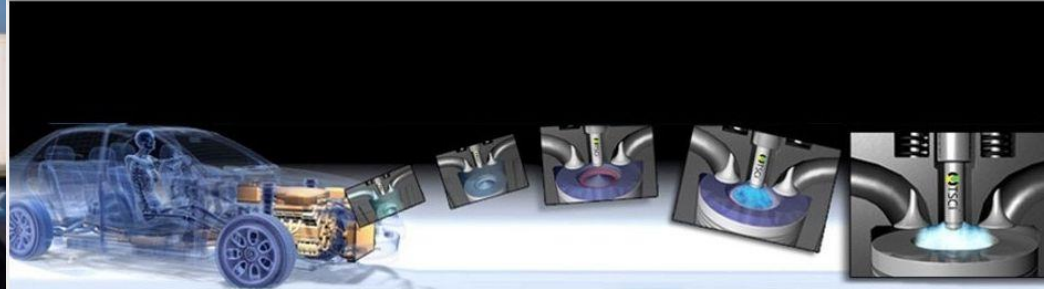
1995



2008



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Transonic's Value Proposition is increased efficiency with reduced emissions

Welcome to Transonic Combustion

Transonic Combustion is a developer of next-generation fuel injection systems. Transonic Combustion's Fuel Injection System delivers precisely controlled injection of heated fuel up to

NEWS

- Awarded GoingGreen Global 200 Top Private Companies

khosla ventures
venture assistance, strategic advice, venture capital



Environment, Schmenvironment



CHEVROLET TAHOE HYBRID (USA)



6000cc V8

Konsumsi BBM : 21 mpg (sekitar 9 km/L)

Berat : 5600 lb (lebih dari 2 x Avanza)



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Power Plants

GREEN CONCRETEx..

"A DEDICATION TO ECOBUILD"

[Thermal Power Plant](#)

[Hydel Power Plant](#)

[Location](#)

Thermal Power Plant

A thermal power station is a power plant in which the prime mover is steam driven. Water is heated, turns into steam and spins a steam turbine which drives an electrical generator. After it passes through the turbine, the steam is condensed in a condenser and recycled to where it was heated; this is known as a Rankin cycle. The greatest variation in the design of thermal power stations is due to the different fuel sources. Some prefer to use the term energy centre because such facilities convert forms of heat energy into electrical energy.

Advantages of Thermal Power

1. The fuel used is quite cheap.
2. Less initial cost as compared to other generating plants.
3. It can be installed at any place irrespective of the existence of coal. The coal can be transported to the site of the plant by rail or road.
4. It requires less space as compared to Hydro power plants.
5. Cost of generation is less than that of diesel power plants.



our products are made by recycled marble which is obtained from the waste of cutting natural blocks in quarries

5th of June
 WORLD ENVIRONMENTAL DAY
 save green with us





Arti tanggungjawab lingkungan untuk kami



Produk2 yang bertanggung jawab



Metode Pemesanan dan installasi yang bertanggung jawab

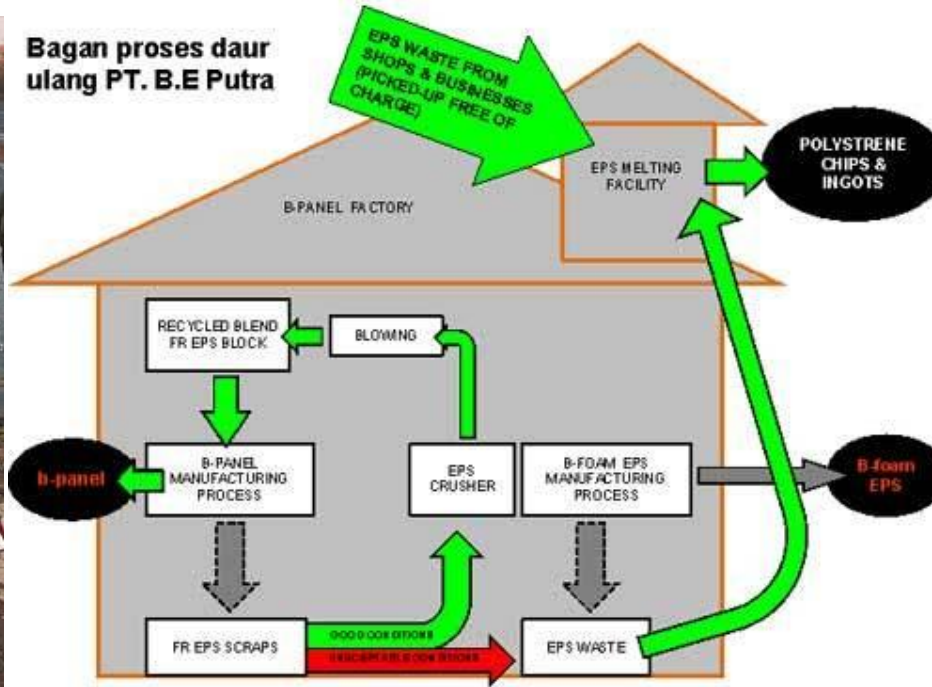


Proses Produksi yang bertanggung jawab

Comprehensive recycling operations



Bagan proses daur ulang PT. B.E Putra



Tahun 2012 masih bakar batu bara.... APA KATA DUNIA?

Konversi boiler pabrik kami dari batubara menjadi cangkang sawit (Palm kernel shell) pada Q1 2010



VS.



MANAGEMENT AIR HUJAN



ATAP PABRIK DAN TANGKI AIR TADAH HUJAN

SUMUR RESAPAN



Efficient fleet

Arti tanggungjawab lingkungan untuk kami



Produk2 yang bertanggung jawab

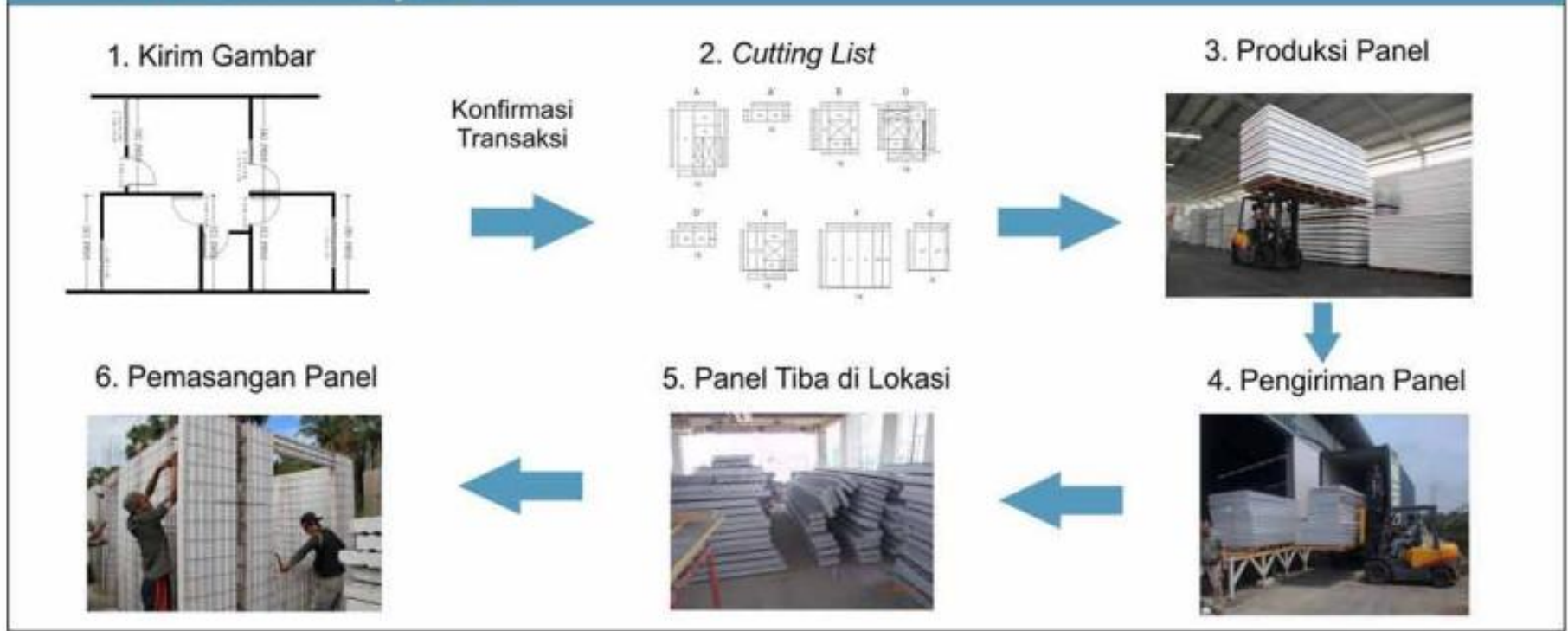


Metode Pemesanan dan installasi yang bertanggung jawab



Proses Produksi yang bertanggung jawab

Cara Pemesanan b-panel®



Filosofi pemasangan: mengambil manfaat dari *labor cost* Indonesia yang masih relatif rendah, namun jauh lebih efisien kebutuhan tukangya dibandingkan dengan menumpuk bata

... tidak tergantung investasi alat berat, dan **dengan produk akhir yang unggul.**



Arti tanggungjawab lingkungan untuk kami



Produk2 yang bertanggung jawab



Metode Pemesanan dan installasi yang bertanggung jawab



Proses Produksi yang bertanggung jawab

THERMAL EFFICIENCY

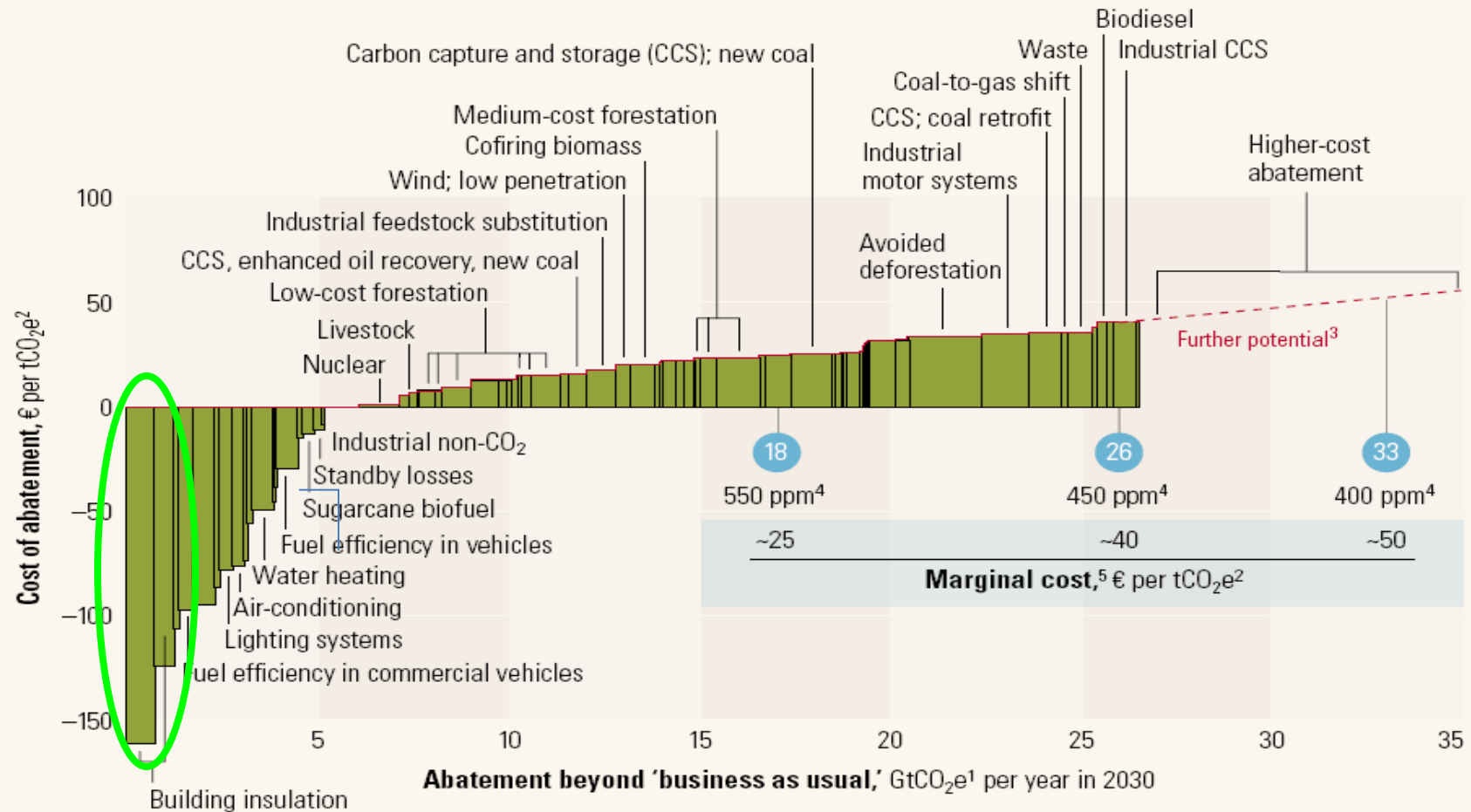


Living in a **b-panel**® dwelling
is like this

Wonder why your A/C
consumption is so low?

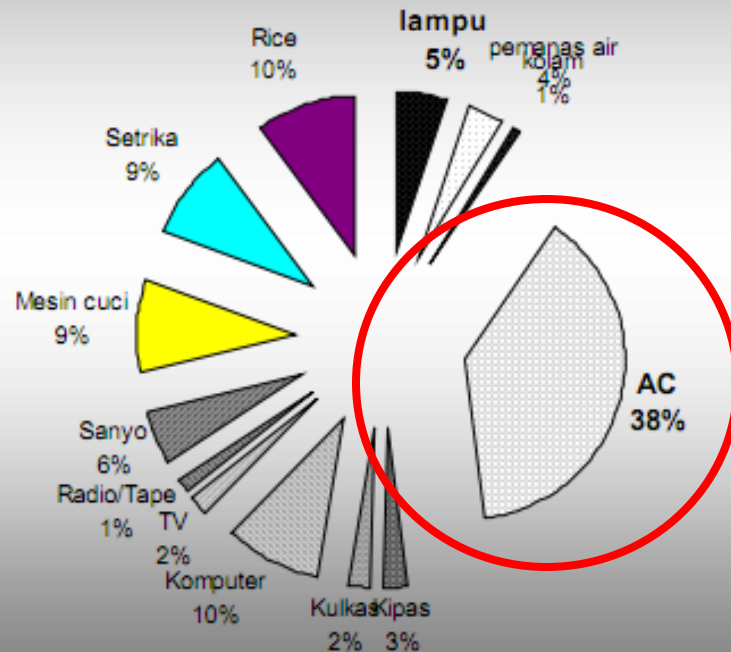
Global cost curve for greenhouse gas abatement measures beyond 'business as usual'; greenhouse gases measured in GtCO₂e¹

● Approximate abatement required beyond 'business as usual,' 2030



Building thermal insulation: Most cost effective method in reducing CO₂ emission on a per Ton basis

konsumsi pemakaian listrik dalam rumah tangga (dari study rumah type 21,36,45,60&90)



Gambar 01

Profil prosentase konsumsi listrik dalam rumah tinggal

Source: Prianto, E, Energy-Efficient Tropical House

A/C: the biggest source of electricity consumption in your home

Recent reduction in subsidy

SABTU, 19 APRIL 2014 | 10:23 WIB

Begini Skema Kenaikan Tarif Listrik 2013-2014

PT. PLN (Persero) Distribusi Jakarta Raya dan Tangerang
Area Pelayanan Pasar Minggu
Daftar biaya pemasangan Baru (PB)

Tarip	Daya	BP		UL		Jumlah
		Rp / VA	Rp / BP	Rp / VA	Rp / UL	
R1	450	300	135.000	150	67.500	30.000
	900	300	270.000	150	135.000	45.000
	1350	300	390.000	150	202.500	60.000
	2250	300	660.000	150	360.000	105.000
R2	3500	350	1.225.000	175	407.500	1.540.000
	4400	350	1.595.000	175	520.000	2.060.000
	5500	350	2.210.000	175	617.500	2.827.500
	6600	350	2.685.000	175	742.500	3.427.500
	7700	350	3.160.000	175	867.500	4.027.500
	8800	350	3.635.000	175	992.500	4.627.500

Seorang petugas memasang daftar biaya pemasangan baru dan penambahan daya listrik di kantor PLN area pelayanan Pasar Minggu, Jakarta, Jumat (11/9). Tempo/Panca Syurkani

Majority of electricity generation mode of Java-Bali: Fossil Fuel

Proportion of Power Plant Capacity
Java - Bali

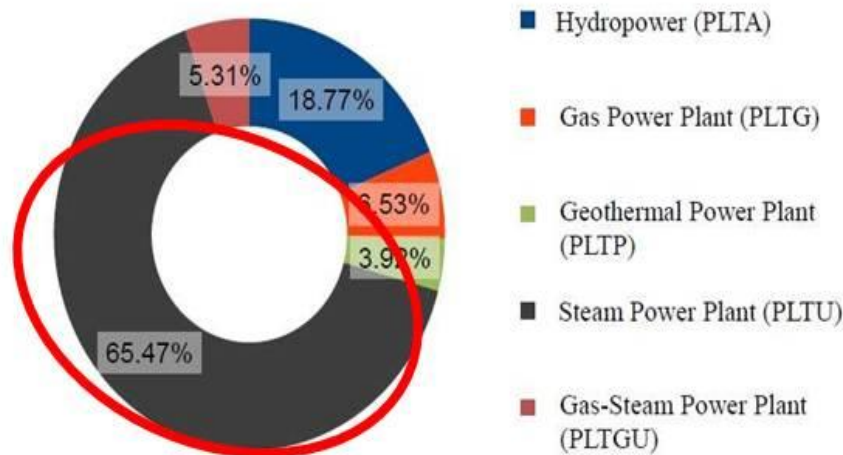


Diagram 3. Power Plant Capacity Proportion of Java – Bali

Source: *List of Power Plants in Indonesia*, [http://id.wikipedia.org/wiki/September 2011](http://id.wikipedia.org/wiki/September_2011)

Recent Nat Geo
Indonesia
edition: PLTB

Lots of A/C usage = lots of \$\$\$
=lots of CO2 into our atmosphere

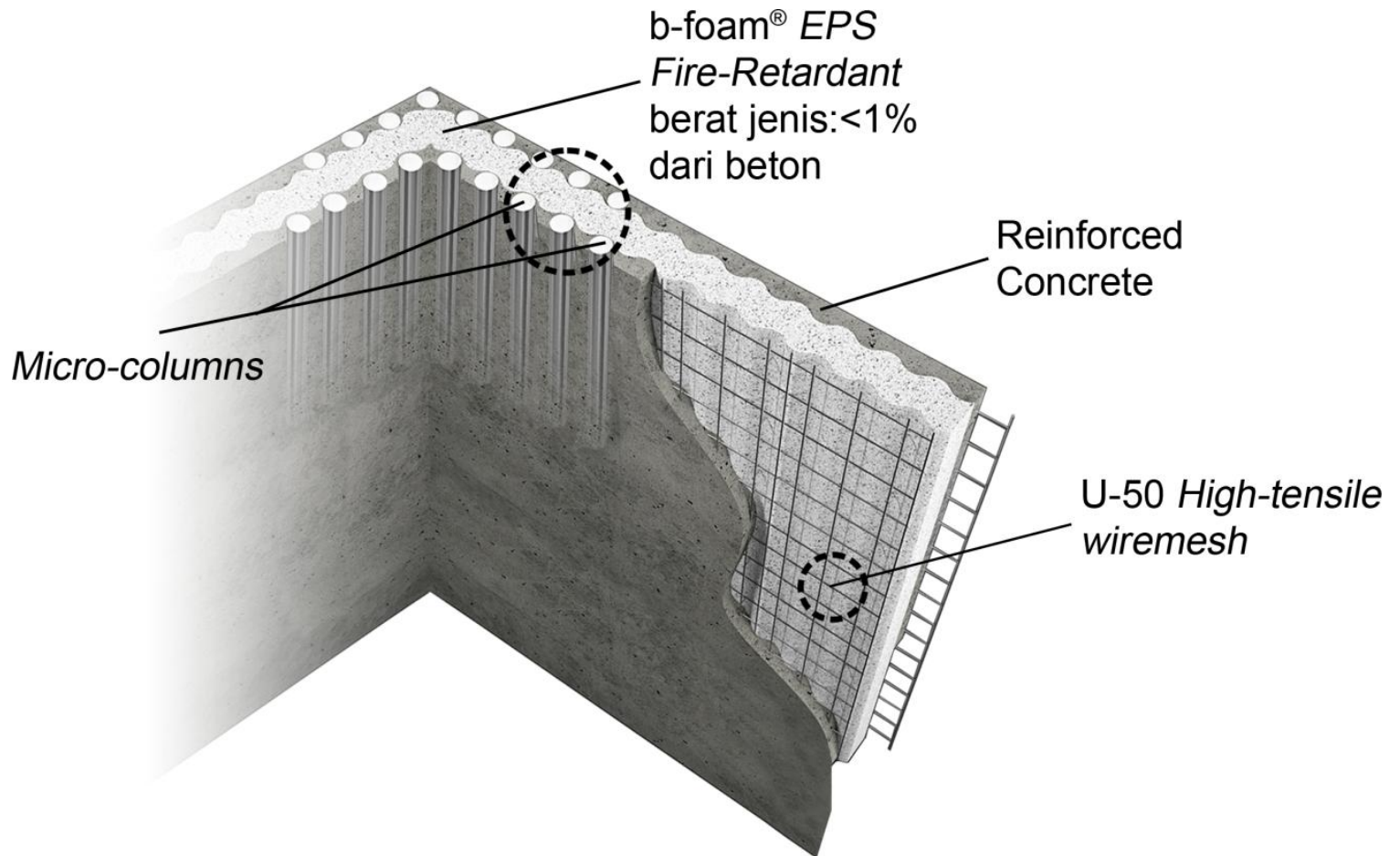
3

Source: List of electrical powerplants in Indonesia, [http://id.wikipedia.org/wiki/September 2011](http://id.wikipedia.org/wiki/September_2011)

STRUCTURAL EFFICIENCY

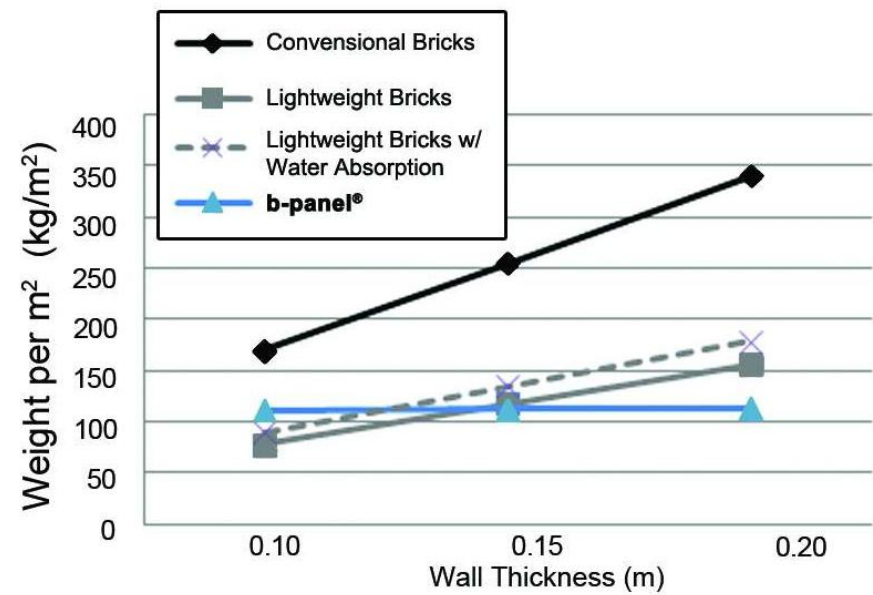
Kekuatan yang sangat tinggi dibandingkan dengan beratnya
(*Excellent strength-to-weight ratio*)

Lapisan beton terdiri dari banyak *micro-columns* yang bersambung kesatuan (monoque), sedangkan berat jenis lapisan insulasi EPS kurang dari 1/100 nya beton



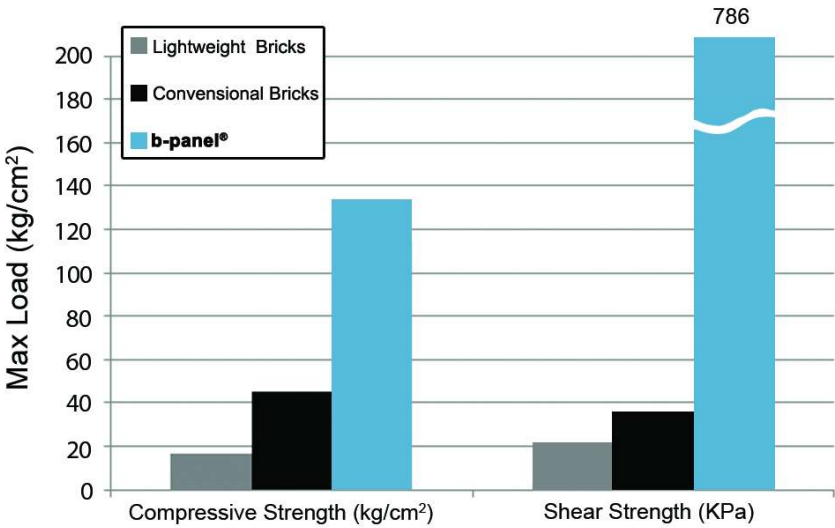
STRUCTURAL EFFICIENCY

WEIGHT COMPARISON



Sources : PT. Beton Elemenindo Putra R&D

COMPRESSIVE AND SHEAR STRENGTH COMPARISON



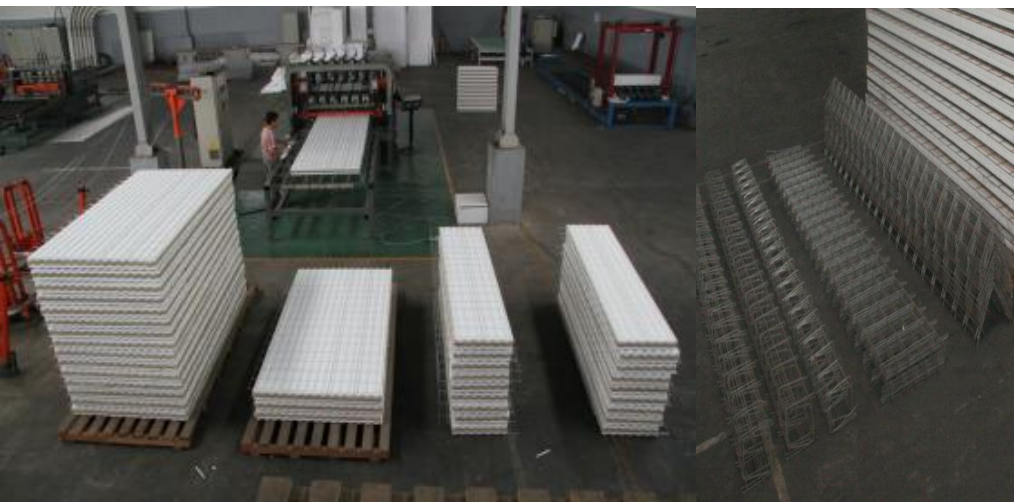
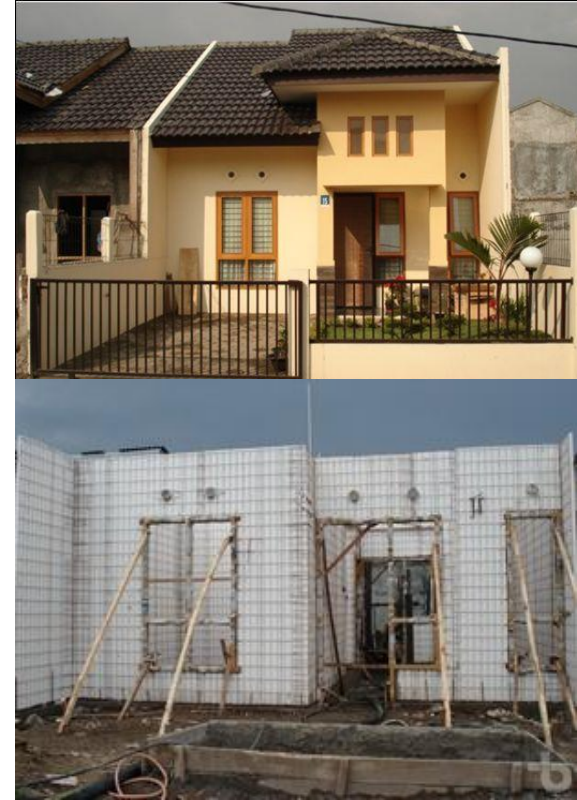
Sources : PT. Beton Elemenindo Putra R&D, ITB Civil Engineering Lab
M. Z. Kabir and M. H. Nasab "Mechanical Properties of 2D Wall Panels Under Shear and Flexural Loading"

Hunian prefabrikasi predesain Kedap suhu & tahan gempa

Kendaraan anda dirancang dengan **komponen2 bermutu pabrikan**, mengapa rumah anda tidak?

Mengapa anda masih sudi buat rumah dengan bata (*teknologi jaman faraun Mesir sejak proyek piramid*) **bom waktu** maut ketika gempa, dan bukannya sistem bangunan terkini super kokoh dan berinsulasi thermal dan akustik unggul?

Saatnya anda miliki rumah tahan gempa abad 21 dengan sistem **b-panel®** yang berinsulasi thermal menyeluruh : selamanya menghemat listrik A/C secara signifikan



- Struktur optimisasi b-panel®: exo-skeleton monolit
 - Tahan gempa dan pembobolan
 - Pembangunan cepat tanpa bekisting dan cor kolom. 10 hari selesai (Tipe 36 & 45)
- Insulasi termal pada seluruh permukaan dinding – penghematan energi A/C minimum 40%
- Set kit modul rumah lengkap termasuk asoseris perkuatan - siap terkirim 72 jam dari pemesanan

Solusi fasad arsitektur ultra-ringan

Untk fitur dekoratif posisi tidak padat lalu-lalang (low-touch/low traffic)



Keunggulan:

1. Sangat ringan, hanya sekitar 10kg/m² (kurang dari 1/20 atau hanya 5% fasad pracetak konvensional)
2. Mengurangi beban bangunan secara signifikan and meningkatkan ketahanan ketahanan dan keamanan ketika gempa
3. Dikirim sudah finishing aci siap cat
4. Pemasangan cepat dan tidak mengandalkan alat berat

Other Innovations

Floating structures



Automotive geofoam



Road barriers



Arti tanggungjawab lingkungan



- Produk2 yang bertanggung jawab
 - Selama penggunaannya akan menghemat energi listrik bangunan, membantu resapan air tanah, mengurangi efek heat island
 - Selamanya tidak mengeluarkan racun
 - Penggunaannya mengurangi volume pemakaian material
 - Masa layan tahan lama dan/atau tahan gempa, sehingga mengurangi material reparasi

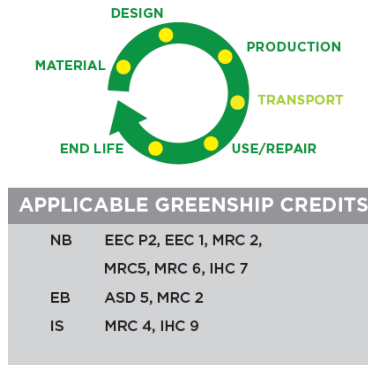


- Metode Pemesanan dan installasi yang bertanggung jawab
 - Sistem material pra-fabrikasi sehingga mengurangi limbah/ sisa material di lokasi proyek



- Proses Produksi yang bertanggung jawab
 - Bahan baku lokal / sumber yang tidak jauh dari pabrik dan lokasi proyek
 - Proses produksi dengan menggunakan bahan daur-ulang
 - Proses produksi dengan energi terbarukan
 - Praktik2 operasional pendukung peduli lingkungan lainnya (atap tadah hujan, sumur resapan)

Pemakaian material yang secara signifikan meningkatkan green rating sebuah bangunan



Level of Final Assessment Achievement

Platinum	Minimum percentage 73% with 74 points
Gold	Minimum percentage 57% with 58 points
Silver	Minimum percentage 46% with 47 points
Bronze	Minimum percentage 35% with 35 points

EEC P2: Energy Efficiency Measures

Penggunaan produk b-panel dapat membantu mengurangi beban panas luar untuk menghemat penggunaan AC melalui OTTV dengan mereduksi konduksi panas pada dinding.

EEC 1: Energy Efficiency Measures

Tiap penurunan 3 W/m² dari nilai OTTV 45 W/m² (SNI 03-6389-2000) mendapatkan nilai 1 poin (sampai maksimal 5 poin).

MRC 2: Environment Friendly Materials

Menggunakan material yang merupakan hasil proses daur ulang minimal bernilai 5% dari total biaya material.

MRC 5: Prefab Material

Desain yang menggunakan material modular atau prafabrikasi (tidak termasuk equipment) sebesar 30% dari total biaya material

IHC 7: Acoustic Level

Tingkat kebisingan pada 90% dari nett lettable area (NLA) tidak lebih dari atau sesuai dengan SNI 03-6386-2000

MRC 6: Regional Material

Menggunakan material yang lokasi asal bahan baku utama dan pabrikasinya berada di dalam radius 1.000 km dari lokasi proyek minimal bernilai 50% dari total biaya material.

Menggunakan material yang lokasi asal bahan baku utama dan pabrikasinya berada dalam wilayah Republik Indonesia bernilai minimal 80% dari total biaya material.

EB - MRC 2: Material Purchasing Practice

Adanya dokumen yang menjelaskan pembelanjaan material sesuai dengan kebijakan pra syarat dari material yang ditetapkan pada "Daftar Material Ramah Lingkungan" dalam 6 bulan terakhir untuk sertifikasi perdana*.

IS-MRC 4: Low Environmental Impact Material

Menggunakan material atau produk finishing yang ramah lingkungan berdasarkan perhitungan kalkulator material.

Our principles

Industries we do not serve



Our hiring policies

BUSINESS DEVELOPMENT OFFICER

"Develops market acceptance for b-panel® revolutionary building technology to build earthquake-resistant and energy-efficient dwellings rapidly"

- Min S1 GPA 2.75 (Civil Engineering / Architecture with interest in marketing building technology, OR other technical degree/Marketing/Business degree with interest in marketing technical product and advanced building material)
- Deep understanding and passion in issues related to energy-efficient dwellings, latent earthquake risk, and climate change
- Preferably min. 1 year of technology product marketing experience
- **Non-smoker**
- Plus point: excellent mastery of English (TOEFL > 580)
- Can explain a new technical concept clearly and convincingly
- Can maintain business relationships and communicate well
- Resilient self-starter, highly-motivated and hard worker
- Location of work: West Bandung or Jakarta

LEAD STRUCTURAL ENGINEER

"Lead an engineering team responsible for analyzing a revolutionary building technology, which allow the use of b-panel®, without additional columns/structures, to build structurally efficient, thermally-insulated and environmentally-responsible earthquake-resistant dwellings"

- Min. S1 Civil Engineering GPA 3.2
- Interest and knowledge in developing most advanced earthquake-resistant structures and environmentally responsible building solutions.
- **Non-smoker**
- Possess leadership skills and tenacity to ensure team complete tasks with high standards, on time
- Min. 3 years experience in designing structures in earthquake zones, using software such as SAP / ETABS / SANS PRO
- Mastery in MS Office, 2D & 3D CAD & Sketch up

Join our team

Online application

[Apply Now](#)

Send your resume and cover letter via post:

PT. Beton Elemenindo Putra
(U/P: HR Department)
Jl. Raya Batujajar KM 5 No. 8
Cangkorah, Kab. Bandung - 40561

Via email

career@b-panel.com

Statement of Nondiscrimination

In hiring and advancing our employees, PT Beton Elemenindo Putra does not discriminate on the basis of race, tribes, skin color, hair color, religion, family background, gender, or age. We do discriminate against non-performance, dishonesty, and we reserve the right to consider in our recruitment, undesirable traits, such as cigarette smoking*.

Employee
Cooperative

Our culture



The river you can't see for RUBBISH: Former Indonesian paradise is now clogged with household waste and toxic chemicals dumped by textile factories

- The Citarum in Java is now said to be the dirtiest river in the world
- More than 35million people still rely on it for drinking and washing
- Greenpeace report last year claimed one of the largest textile manufacturers on the Citarum – PT Gistex Group – has had a "business relationship" with Gap, H&M and J. J. J.
- One fisherman's experience on river is revealed on C4 documentary Unreported World tonight

By ALAN DAVIES, GUY RILEY and LAUREN COOK
PUBLISHED: 22:11 GMT, 10 April 2014 | UPDATED: 14:13 GMT, 11 April 2014

Facebook Twitter YouTube LinkedIn 5,107 views 240 comments

If it were not for his boat, you would think this fisherman was sitting on a landfill site. In fact, he is travelling the river for waste plastic to help him eke out a living. Once a tropical paradise, the Citarum in Java, Indonesia, is now said to be the dirtiest river in the world. Scroll down for video



What does this means?

Companies/factories do not need to wait to be much bigger first, to do the right things (This is NOT CSR)

When we ARE bigger, we should be *even* more capable to continue these practices

Build brand equity and reputation



Confronting and addressing humanity's challenges makes work MORE INTERESTING, and it FEELS good

We are not radicals. This is what businesses should practice

Do what is right.

What is legal today is not always moral nor ethical



What story you want to tell your kids in your old days?



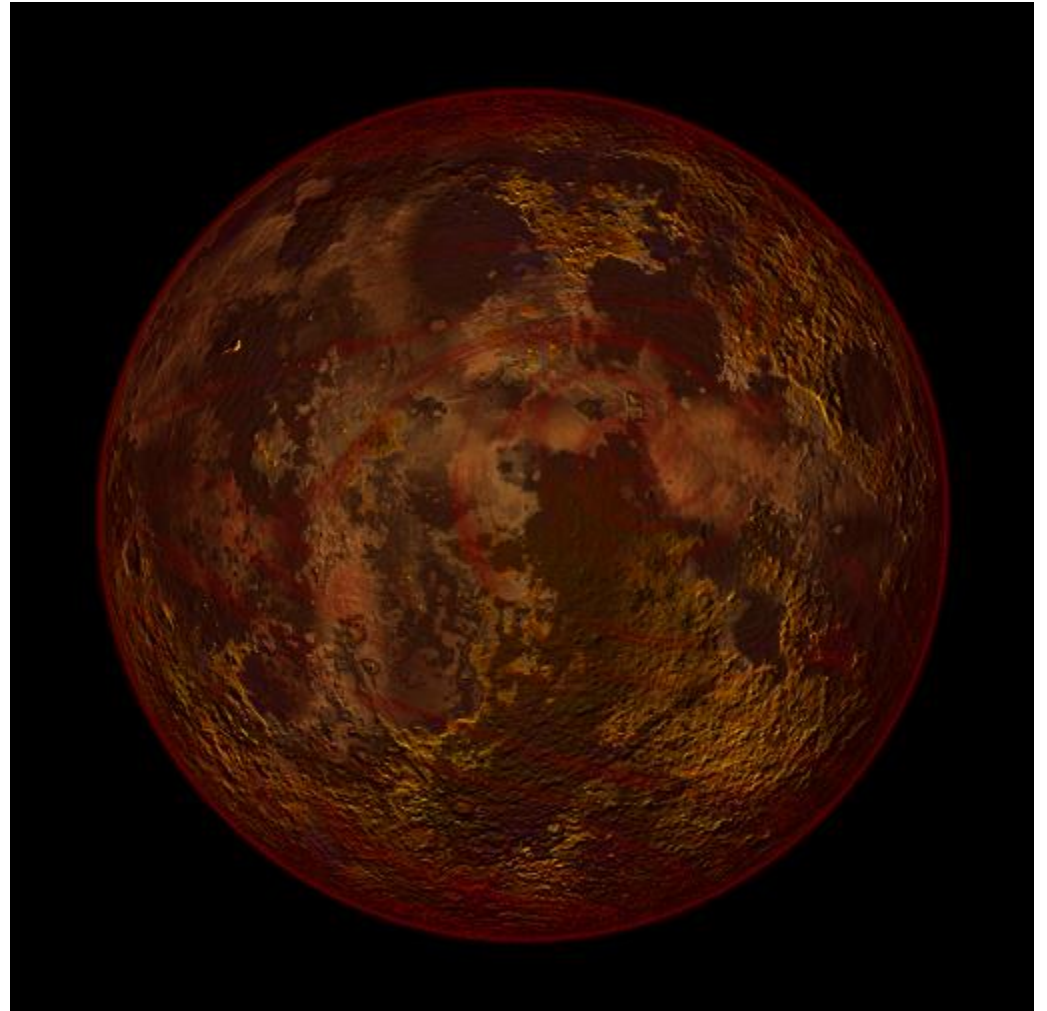
Was I part of the problem?



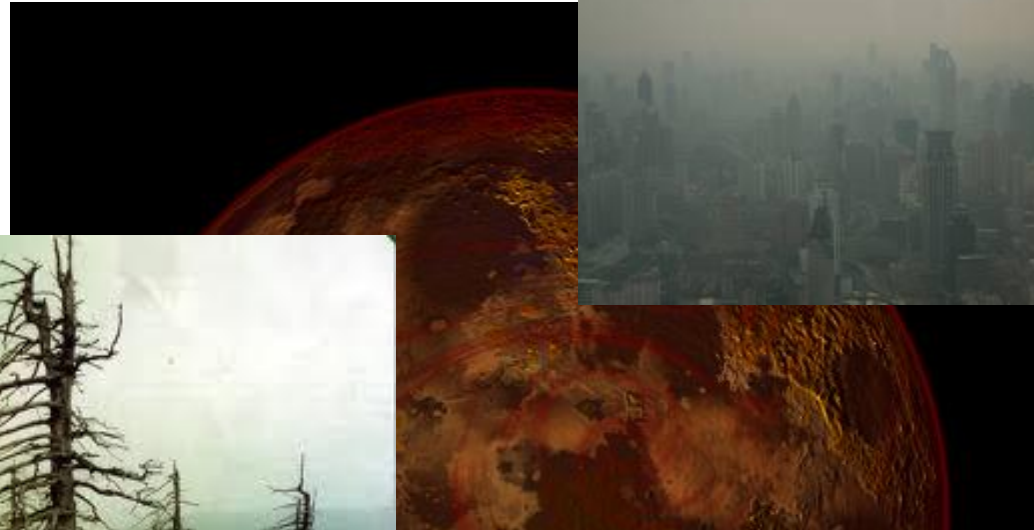
or the solution?



Sorry kids, I ruined your world. But the money was good then, and I gave you lots of inheritance \$\$\$ anyway



Sorry kids, I ruined your world. But the money was good then, and I gave you lots of inheritance \$\$\$ anyway



**"DO WHAT YOU CAN, WITH WHAT
YOU HAVE, WHERE YOU ARE"**

-Teddy Roosevelt

**Only when the last tree has died
and the last river been poisoned
and the last fish been caught
will we realize we cannot eat money**

Cree Indian Proverb

Everyone talks about leaving the planet
a better place for our kids.

We should also
leave better kids
for our planet.



someecards
user card

TERIMA KASIH

www.b-panel.com

Wait.....EPS.... STYROFOAM?
STYROFOAM = Environmentally-friendly?



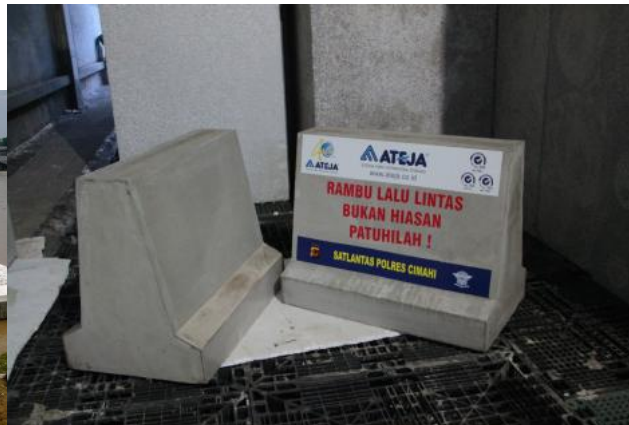
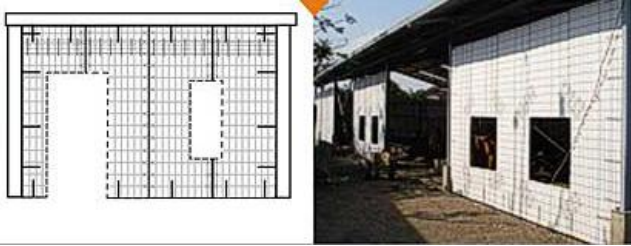
Most of usage is for packaging and decoration

- One-time use
- Usually NOT recycled

•Since nature takes a long time (hundreds of years) to degrade EPS, waste are accumulated overtime



EPS as construction solutions: the *right* EPS applications



- Usage duration: very long (many years) vs one-time use
- Building service life not affected since EPS is not easily biodegradable
- Significant energy savings throughout the service life of the dwelling (Neutral carbon trail achieved within ≤ 6 months of operation*)