

High Performance Insulated Wall System

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Building industry currently facing multiple challenges

1

Environment

-  Demand for Green, low carbon and sustainable building material
-  Energy saving building
-  Site pollution and building waste

2

Shortage of labour and high construction cost

Advantage of Palmeco® Geo-Panel Wall System

- **Lighter weight** - reduce structural loading and thus foundation and structural cost
- **Manufactured in factory** - quality control
- **High performance building** - envelope save heat/cooling energy
- **Eco-friendly** - Used recycle material under low energy production save energy & natural resources
- **Cost saving** - save labour cost & construction time
- **Reduce jobsite waste**



Insulated Wall System Composite panel

Structural facing

Palmeco Board

Foam core

Geo-insulator

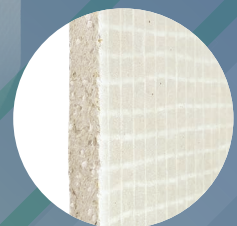
Patented invention
Palmeco Board



Moisture
resistant



✓ Class A1
fire resistant
Non-combustible



✓ Termite
resistant



Natural mineral as
binding agent

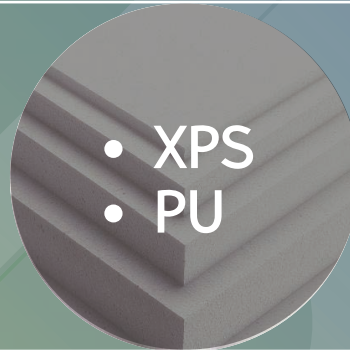


Recycled Oil Palm fibre
added to increase
impact strength

Insulated foam core

Existing insulation material not matching with the green standard

Organic



- ✗ Toxic
- ✗ Combustible - Fire Sensitive

Mineral fibre



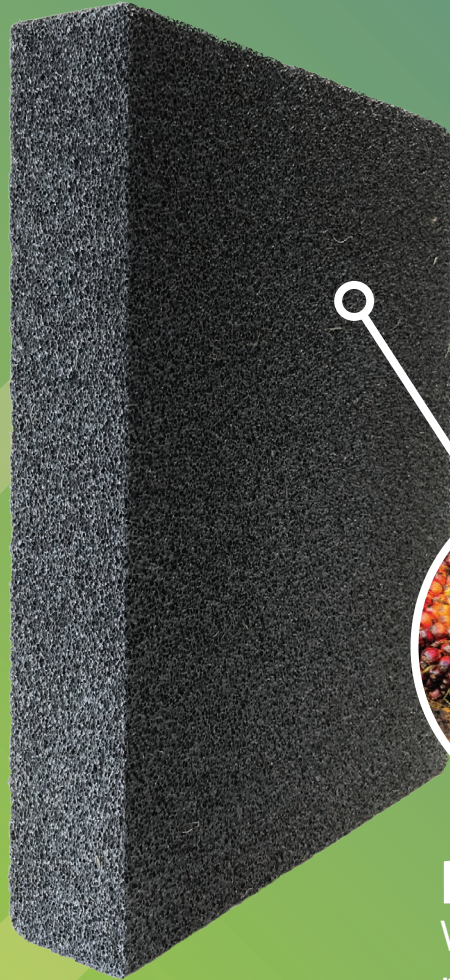
- ✗ High water absorption
- ✗ Mold & health hazard
- ✗ High energy production

Inorganic



- ✗ High energy production
- ✗ Expensive

Palmeco® Geo-insulator



palmeco



Collaboration with
Nano Advanced Material Institute (NAMI) &
Geopolymer Institute

Research funded by
Hong Kong Innovation and
technology Bureau



Palm Fibre
Wastes from
palm oil plant



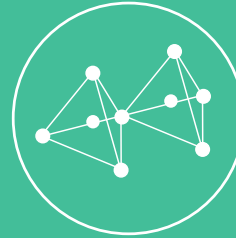
Slag
Wastes from
steel factory



Fly Ash
Wastes from
power plant

Geopolymer technology

Research in 2016:



- Largely made of industrial by-products, such as ground granulated blast furnace slag & fly ash
- Unique features of geopolymer. Rapid early strength, excellent chemical resistance, & cost competitive

Palmeco[®]
Geo-insulator



Palmeco®
Geo-insulator

Excellent Performance

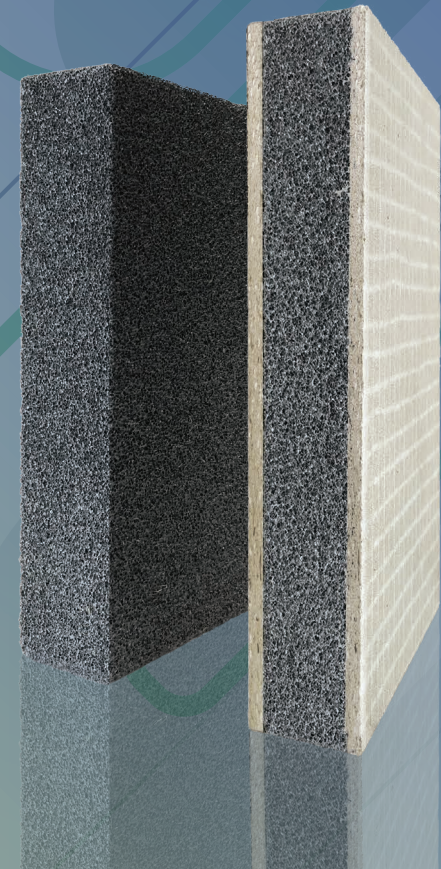
Palmeco® Geo-insulator Technical Data

Density	200 kg/m ³
Fire Rating	GB 8642-2006 A1 Rating
Compression	≥ 0.3
Thermal Conductivity	< 0.058 w/mk



An award-winning product

Palmeco® Geo-Panel



47th Invention Geneva
Switzerland 2019
Gold Award

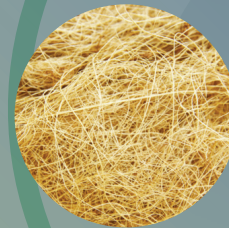
1st Asia Invention
Hong Kong 2018
Grand Award

Palmeco® Geo-Panel wall system



Excellent acoustic
insulation (42db)

Non-toxic
green material



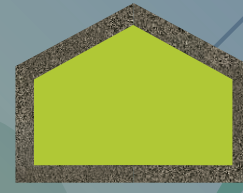
Made from
recycled material



Excellent
thermal insulation
U value: 0.72



4 hours fire rating



Performance

Thermal Transmittance U value: 0.72

Sound Insulation (42dB) – BS EN ISO 717-1:1999

4 hours fire rating

Classification of Reaction to fire – A1 – BS EN 13501-1:2007

Fire Rating – 2 hours fire. BS EN 1364-1:1999

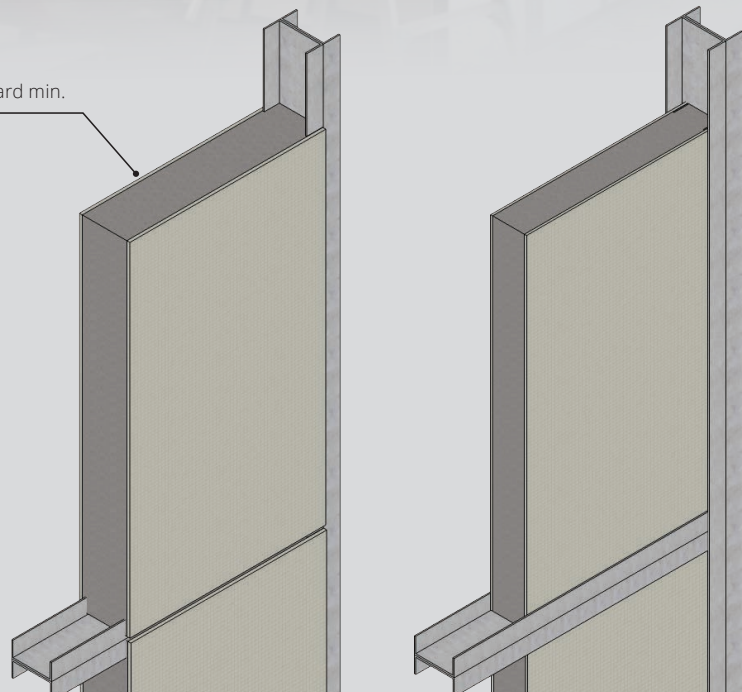
Fire Rating – 4 hours fire. BS EN 1364-1:1999



• Connection A

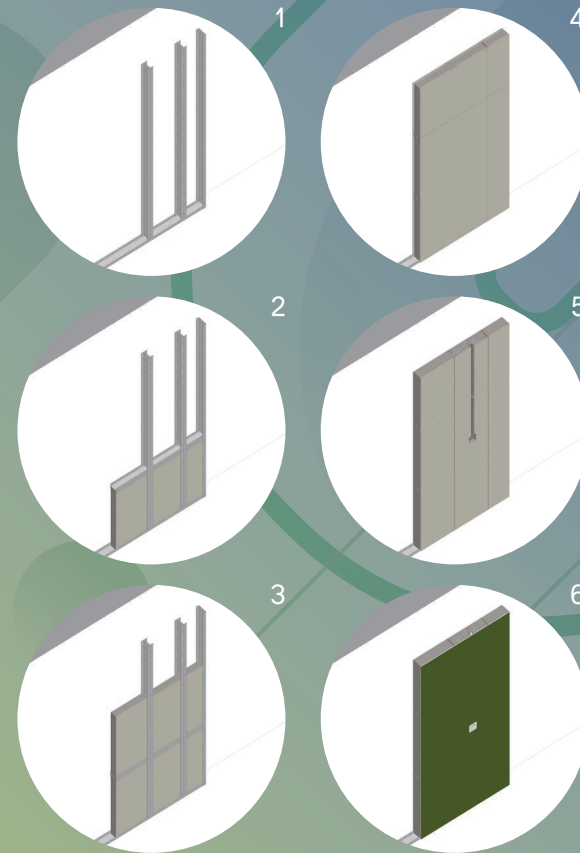
• Connection B

6mm board min.



Palmeco® Geo-Panel wall system

Easy installation





Boys' Brigade,
Ma Wan

Palmeco® Geo-Panel wall system

Public Sector Trial Scheme

- Boys' Brigade, serving ~30,000 trainees annually, providing personal & team development training
- Require partition walls with excellent thermal & acoustic insulation, fire & water resistant for offices & functional halls

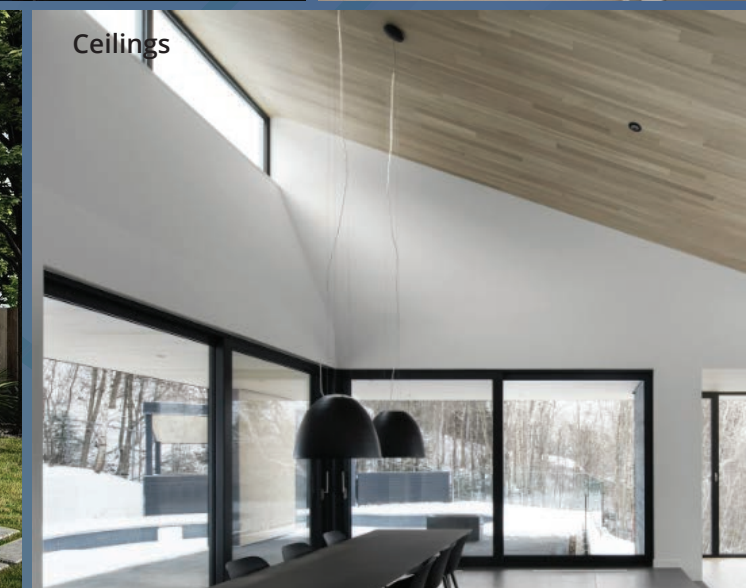


**Palmeco® Geo-Panel
wall system**
Public Sector Trial
Scheme

Boys' Brigade, Ma Wan

Palmeco® Geo-Panel wall system

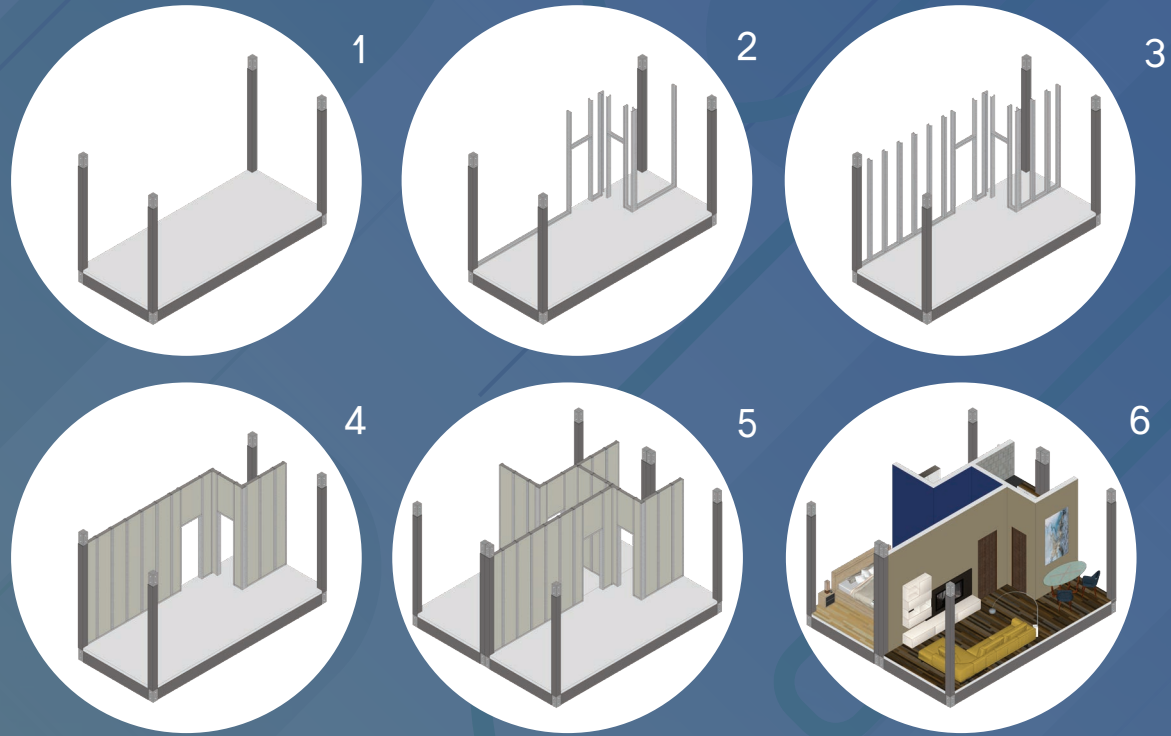
Market Potentials



Palmeco®
Geo-Panel
wall system

Market Potentials

MIC/
Modular
Integrated
Construction



- Reduce cost of transportation
- Overcomes crane loading restrictions
- Saves the cost of foundations
- Reduces the overall building weight.

Palmeco® Geo-Panel wall system

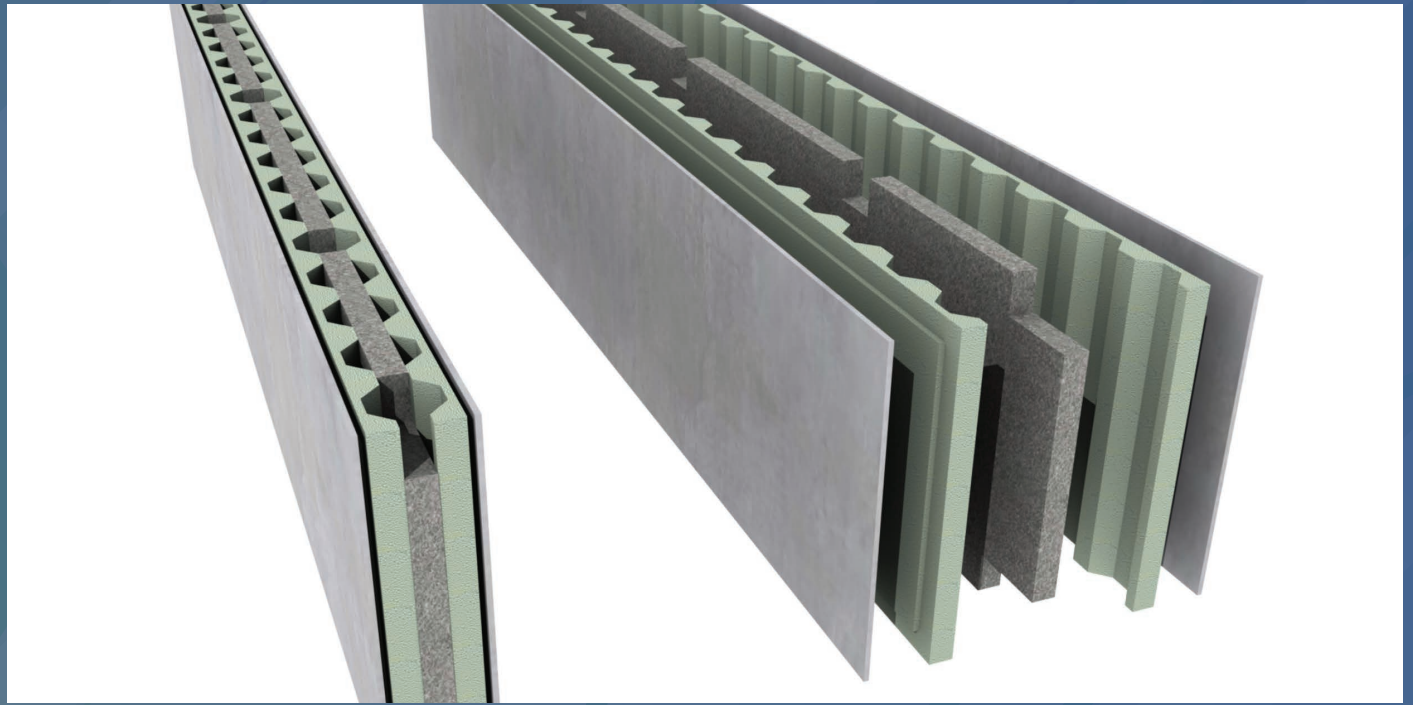
Market
Potentials

Hybrid Structure



TECTA Systems™
a simple, energy efficient, affordable
future-proofed building system

Collaboration with Tecta Australia



Palmeco® Geo-Panel wall system

Market
Potentials

Hybrid Structure



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Palmeco®
Geo-Panel
wall system

Diverse
applications

Pre-fab
House

Houses in
the
Philippines



Palmeco®
Geo-Panel
wall system

Diverse
applications

Pre-fab
House

Saprano in
Malaysia



Palmeco® Geo-Panel wall system

Diverse
applications

Pre-fab House

Office in Tahiti



Palmeco®
Geo-Panel
wall system

Diverse
applications

Pre-fab
House

House in
Peru



Palmeco®
Geo-Panel
wall system

Diverse
applications

Pre-fab
House

Palawan Low
Cost House
in the
Philippines



Utilizing local recycling resources
to build a better and greener
tomorrow for all

Thank you

