INNOVATIVE TECHNOLOGIES IN FORESTRY AND FOREST MANAGEMENT IN ASIA AND THE PACIFIC

"Rubberwood: Valuable Source of Plantation Grown Timber for High Value Added Products in Malaysia"





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AREAS OF PREVIOUS COLLECTIONS



Boim/Wickham, 1876 Amazonas Acre Rondonia Mato Grosso

1876 - COLLECTION BY HENRY WICKHAM 1981 - IRRDB EXPEDITION 1995 - RRIM & BRAZIL EXPEDITION

Various *Hevea* spp (10 species)



BREEDING CHALLENGES

- Breaking the yield barrier (can achieve 5000 kg/ha/yr)
- Reduction of Immaturity Period
- Disease Resistance and clones suitable for marginal areas
- Latex Quality (interspecific crosses)
 - Wood Quality

Rubber Plantation

SUCCESS OF HEVEA BREEDING

- Yield increases from 400 kg/ha/year to more than 3500 kg/ha/year with new clones
- Most effective cost reduction increasing productivity per unit area
- From Latex Timber Clones (LTC) to Timber Latex Clones (TLC)
- Disease resistant clones

Increase In Latex Yield Through Breeding



The increase in latex yield from 550 kg/ha/yr by the unselected seedling to 2850 kg/hayr by RRIM 2001 indicated the tremendous success of the RRIM rubber breeding programme

LATEX TIMBER CLONES (LTC)



TIMBER LATEX CLONES (TLC)



80% of high value furniture exported from Malaysia is made from rubberwood



70% of global natural rubber supply goes to the tyre industry. Airplane tyre comprised 95% natural rubber

CURRENT STATUS OF FOREST PLANTATION DEVELOPMENT PROGRAMME (MPIC/MTIB) A PUBLIC – PRIVATE PARTNERSHIP

Program 2007-2022 (15 years)

Total Budget :RM1.04 billion (USD250 million)

Agreement: 77 with 65 companies

Approved Plantation: 124,766 Ha

Rubber Plantation: 86,380 Ha (69%)

Timber Species : 35,841 Ha (31%) - 7 Species

MTIB/MPIC FOREST PLANTATION PROGRAMME (PPLH) : 9 APPROVED SPECIES



FROM LOGS TO HIGH VALUE ADDED TIMBER PRODUCTS



MILAN DESIGN WEEK, i-SALONI, ITALY

2015-2016 COLLECTION

Product Sze

375mm [h] x 1400mm [w] x 780mm [d]



400mm [n] x 390mm [w] x 440mm [d]

Description SIMMS chair behad from the monal one server empty space of Matory restriction from were by encoding the moniteration of pure eity and lightness profile. The usage of bornoos police on the more structure meas with various texture of termolets and outlined bordbox, produce a worth and hering final compasition.

Product.



Poduct

Product Sze

630mm [n] x 340mm [w]



Product Description

A well organised console table is a necessity for a minimalist home. A space for everything where it should be. The design features lend from the Space Pendants minimalist contours.

Product Size 1000mm (n) x 1000mm (w) x 380mm (e)



500mm [n] = 210mm [w] = 210

PROTOTYPE COLLECTION of i-SALONI MILAN 2017











PAPAN SERIES 2018's COLLECTION UNDER TANGGAM LABEL



Brocks Common, UBC, Vancouver, Canada



CLT Supplier : KLH

Time Completed : 9 Week

Site area: 2,315 m²

Quantity: 404 units

Storeys: 18

Timber Used: 2,233 m³

FUTURE TIMBER AS HIGH RISE AND GREEN BUILDINGS-SWEDEN



Anders Berensson proposes that the 40storey structure (133 metre) could be made from <u>cross-laminated timber (CLT)</u> with decorative facades, a type of engineered wood made from sections of laminated wood. The material is considerably stronger and more stable than regular timber, <u>allowing architects to propose</u> <u>bigger and taller wooden structures</u> than ever before.

40-STOREY WOODEN SKYSCRAPER PROPOSED FOR STOCKHOLM'S CITY CE

A new skyscraper made from Cross Laminated Timber proposed for Stockholm's city centre will also likely be its tallest. 40-storey 'Trätoppen' (the tree top) will be erected above an old car park 'Parkaden' on Regeringsgatan 47, a well-known Swedish structure designed by Hans Asplund.

The building stands inside the car park leaving the existing car park facade intact. It will retract six metres from the existing car park facade to utilise an existing building on the lower floors after



In artist's impression of Trätoppen. Photo credit: Anders Berensson Architecto

an extensive reconstruction footprint will also enable large public terrace on the

33 floors will be bui carpark, of which 31 are f purposes, two for public the remaining seven floors "If we want to reduce t

cars in the city and at the sar space for more housing wit on green areas, then replac with housing, shops and feels obvious," said a so

from Anders Berensso The firm was comm the Stockholm Cent conceptualise a buildir accommodate the cir population density.

The new building also retain Hans Asplur design, which correspo actual floor one is on. o of the facade include building cool and ener

FUTURE PLANS FOR MULTISTOREY TIMBER BUILDING-OAKWOOD TOWER, LONDON



- PLP Architecture JV with University of Cambridge plans 80-storey 'timber tower' (300 METRES TALL) 93,000-square-metre floor plan. to showcase potential for lightweight and more environmental friendly construction
- Four times lighter than concrete structures

FUTURE TALLEST BUILDING FROM TIMBER



Sumitomo ForestryCountry: JapanHeight: 350 meterWood Consumption cu/ft: 6.5 millionYear : 2041Architect : Nikken SekkeiSystem/Concept: Hybrid Wood – Steel (9/1)

CHALLENGES

- Important industrial raw material produced by smallholders 90% world's production
- Productivity, price and quality issues
- Reducing immaturity period (tappable in 4 5 years)
- Need for skill in harvesting
- Suitable clones for planting in marginal areas

OPPORTUNITIES

- Environmental friendly reduces carbon emission.
- More than 50,000 products from NR.
- Production of high value chemicals.
- Effective in poverty alleviation suitable for rural economy.
- Furniture industry.
- Scope for growth in Africa.

THANK YOU



