Seminar Nasional
Membedah UU Arsitek: Perkembangan Arsitektur
sebagai Katalis Ekonomi Kreatif
Aula Timur ITB. 3 Agustus 2017

Arsitek (Bambu) dalam Rentang Waktu dan Pusaran Dunia

Konsistensi Karya dan Jejaring yang Diperlukan

Dr.-Ing. Andry Widyowijatnoko

School of Architecture, Planning and Policy Development
Institut Teknologi Bandung
Indonesia

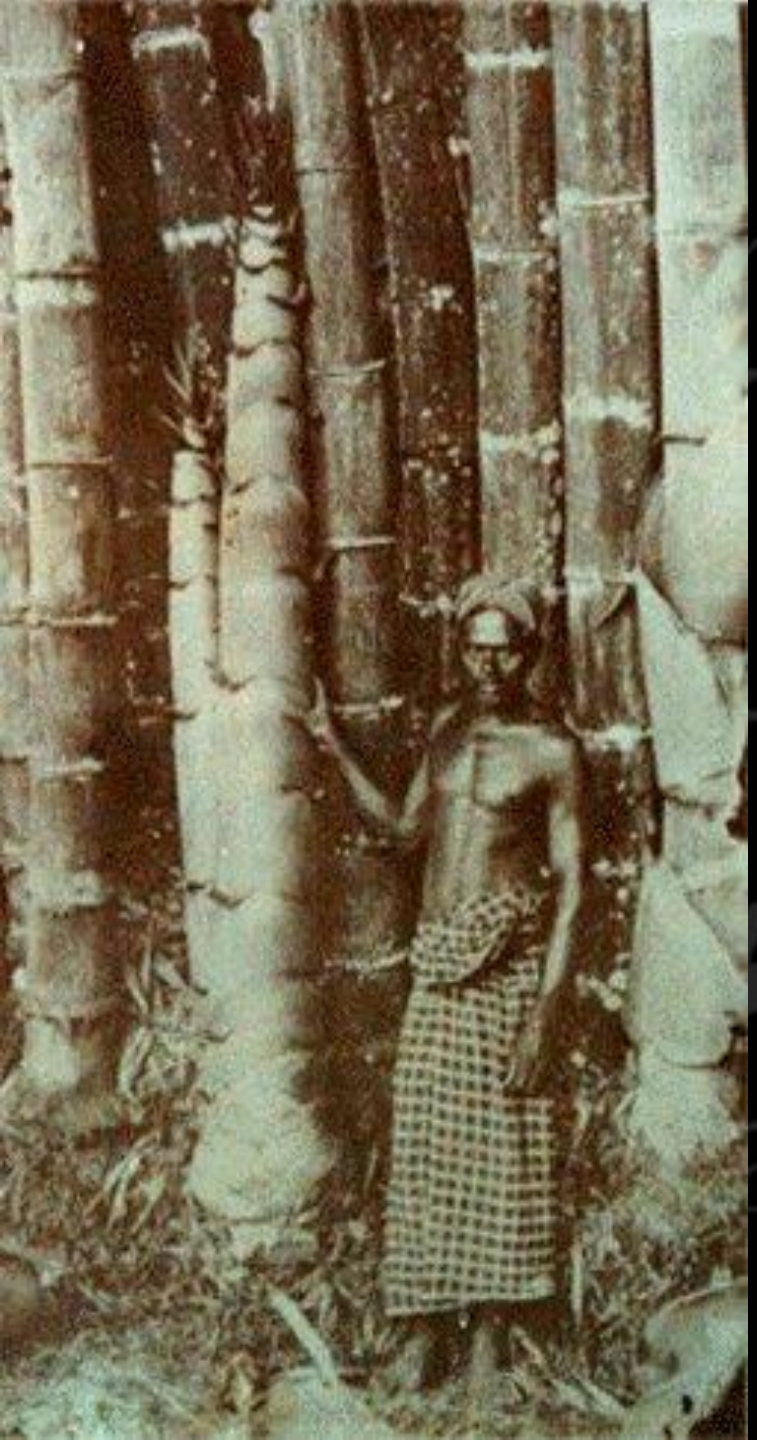
1999…fall in love at the first sight…



Ex-sugar factory in Jatiroto, Lumajang, East Java, built in early 1900

Pictures were taken in 1999

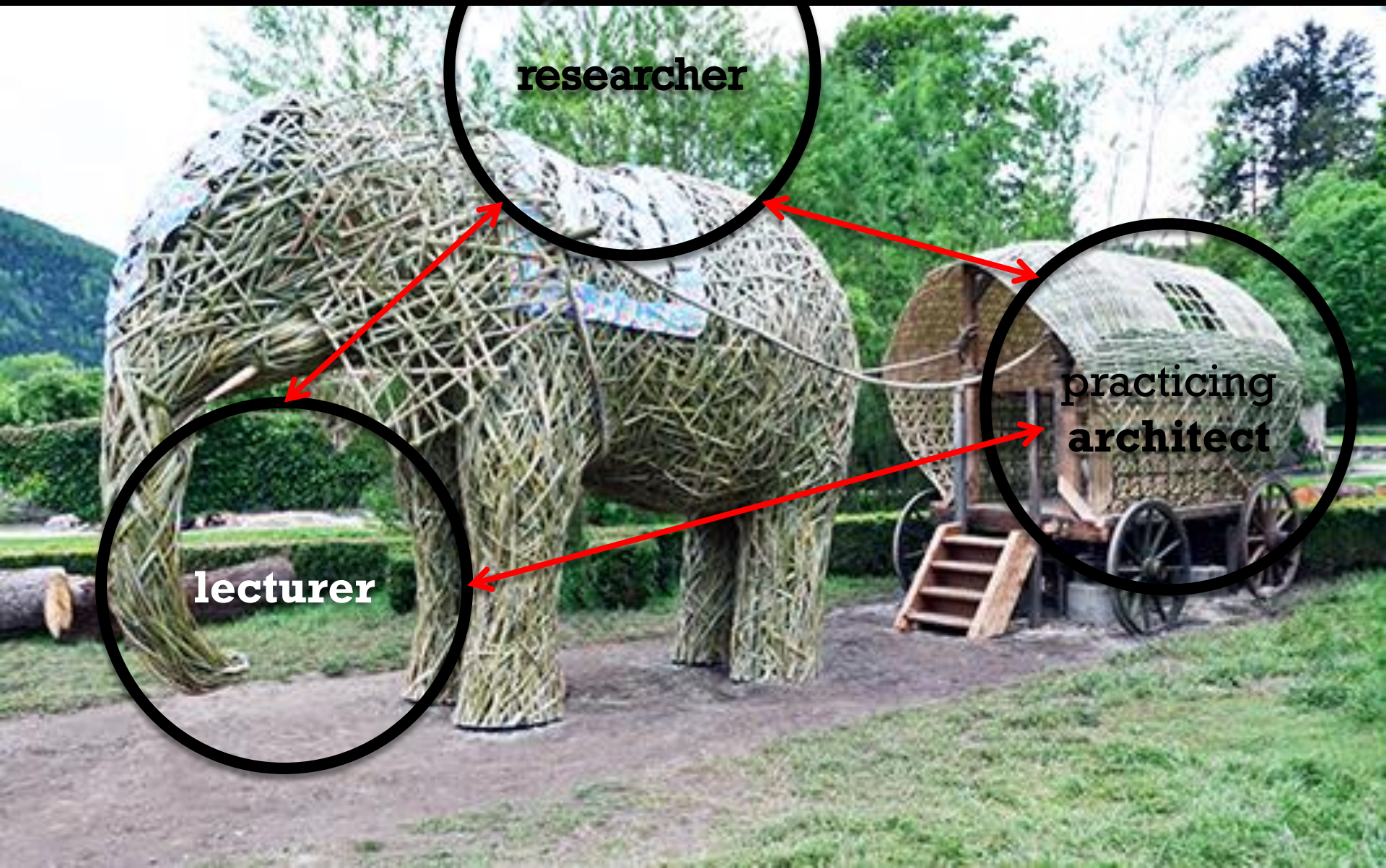




why bamboo

- renewable resource
- bamboo grows in a variety of conditions
- conserve land
- conserve water
- no fertilizer, pesticides, or herbicides needed
- amazing growth rate
- high biomass productivity, CO_2 sequester
- very little waste
- versatility
- economic development

STRENGTH





Integrity and Competence are the Building Blocks of Trust

Having high integrity as first building block of trust is a good foundation, but it alone will not enable you to complete complex tasks.

For that you need competence. Your proficiency in completing tasks, developing solutions, and implementing process changes is the second building block of trust.

UU AR:
Praktek Arsitek berasaskan diantarannya intergritas dan persyaratan sebagai arsitek salah satunya memiliki kompetensi

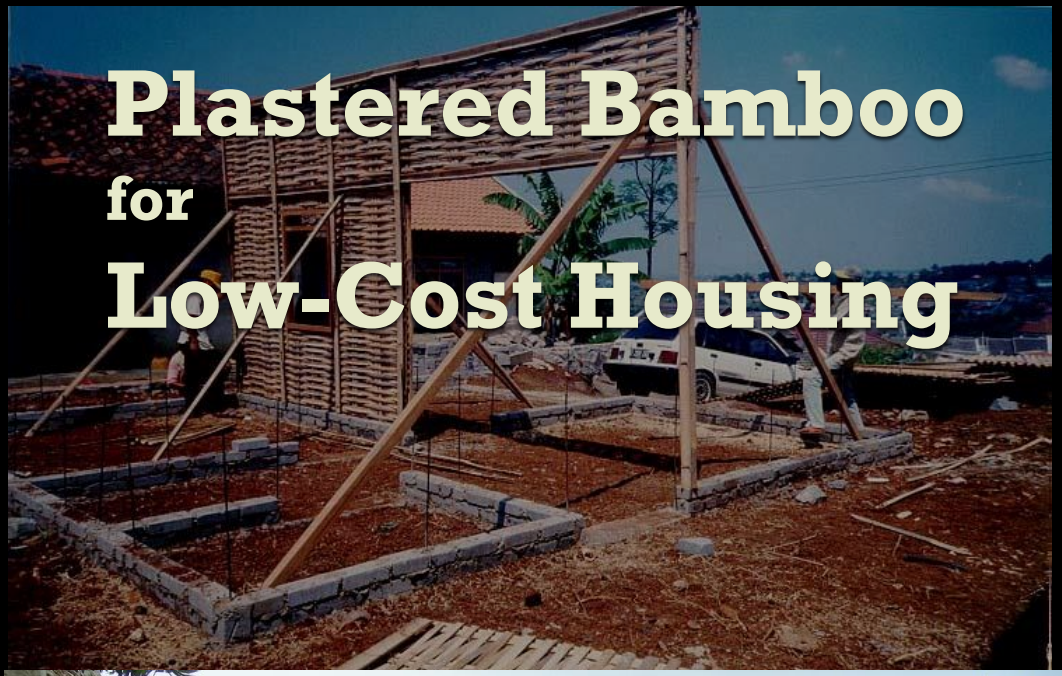






Pasir Impun, Bandung, 2000

Plastered Bamboo for Low-Cost Housing





plastered bamboo construction





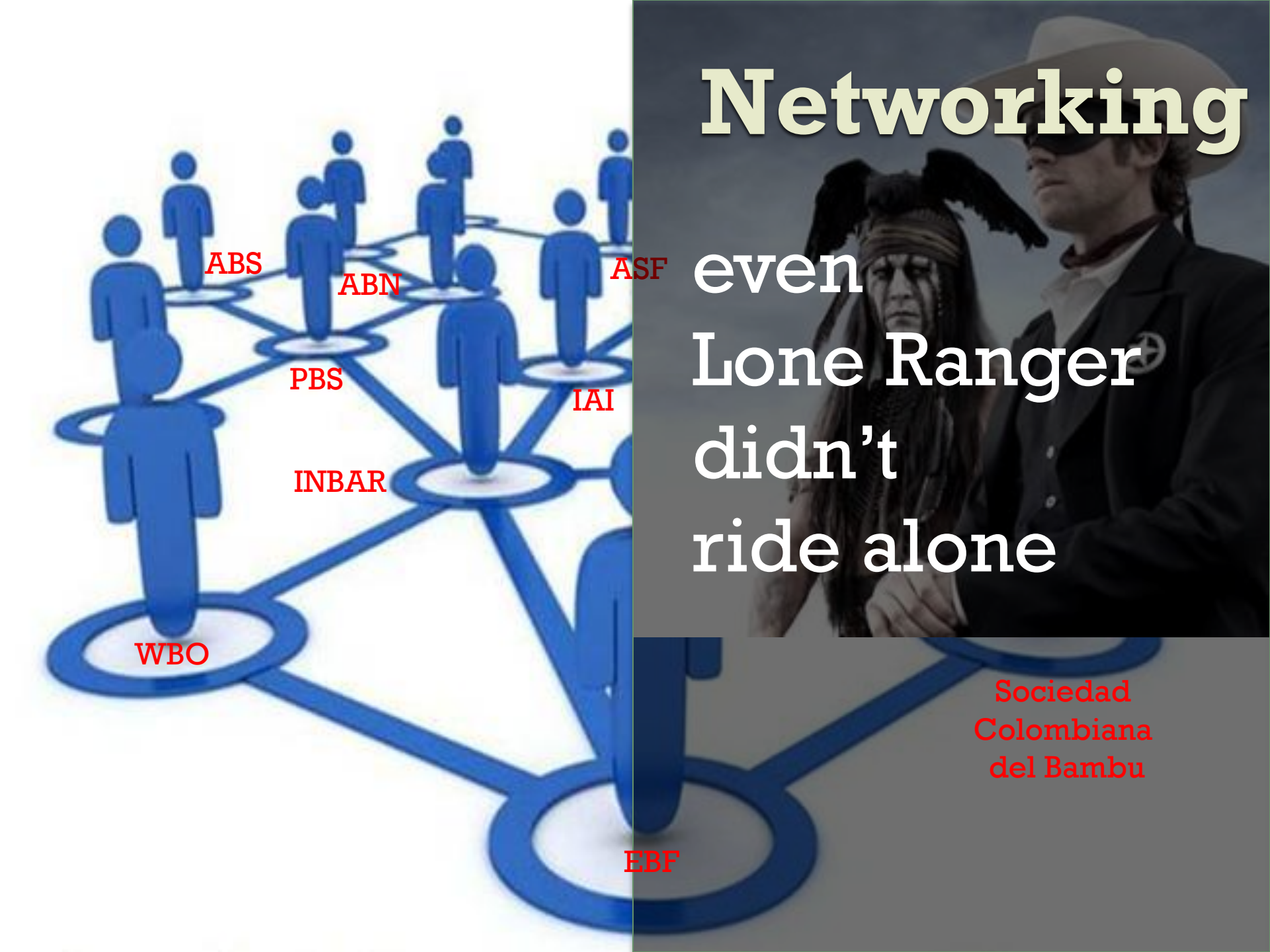


Nagalawan, North Sumatera, 2005



Jatinangor, 2005

Networking



even
Lone Ranger
didn't
ride alone

Why Network?

Better Networks Create Health, Wealth, and Happiness

- Because we is always stronger than me
- To help others and ourselves
- To pursue our passions
- To live longer
  - Active/diverse networks are a source of well-being

All Rights Reserved John E. Kobara







2006 > journey to colombia

turning point

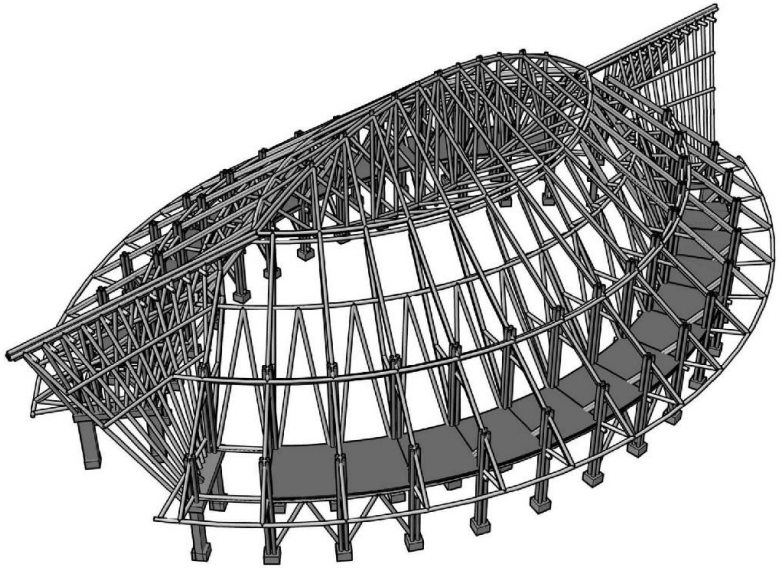





great hall OBI
Jatiluhur, Purwakarta, 2009-2011

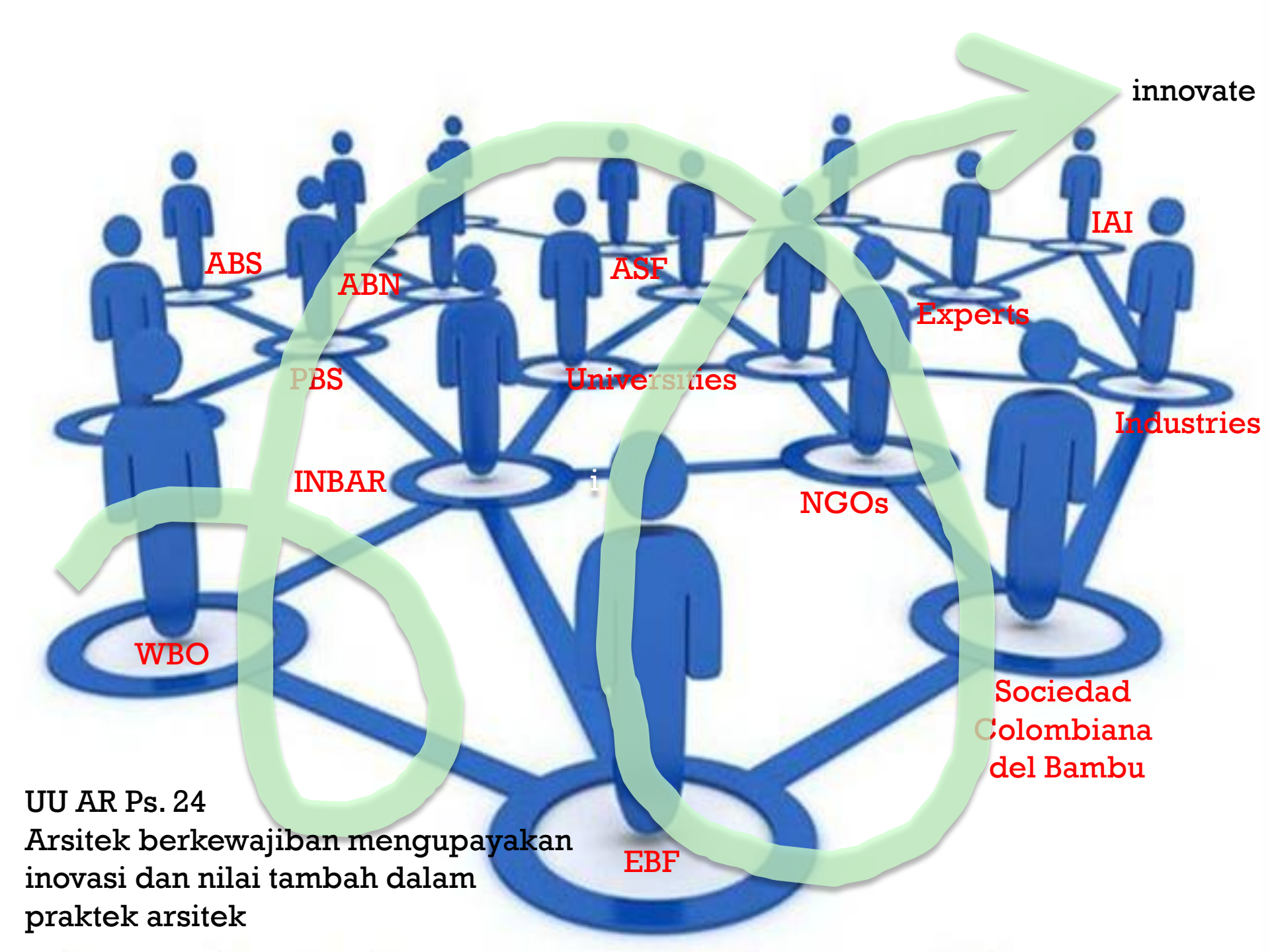
great hall OBI

- 20x31 m free column
- 8000 bamboos





Jatiluhur, Purwakarta, 2009-2011



UU AR Ps. 24
Arsitek berkewajiban mengupayakan inovasi dan nilai tambah dalam praktek arsitek

research innovation

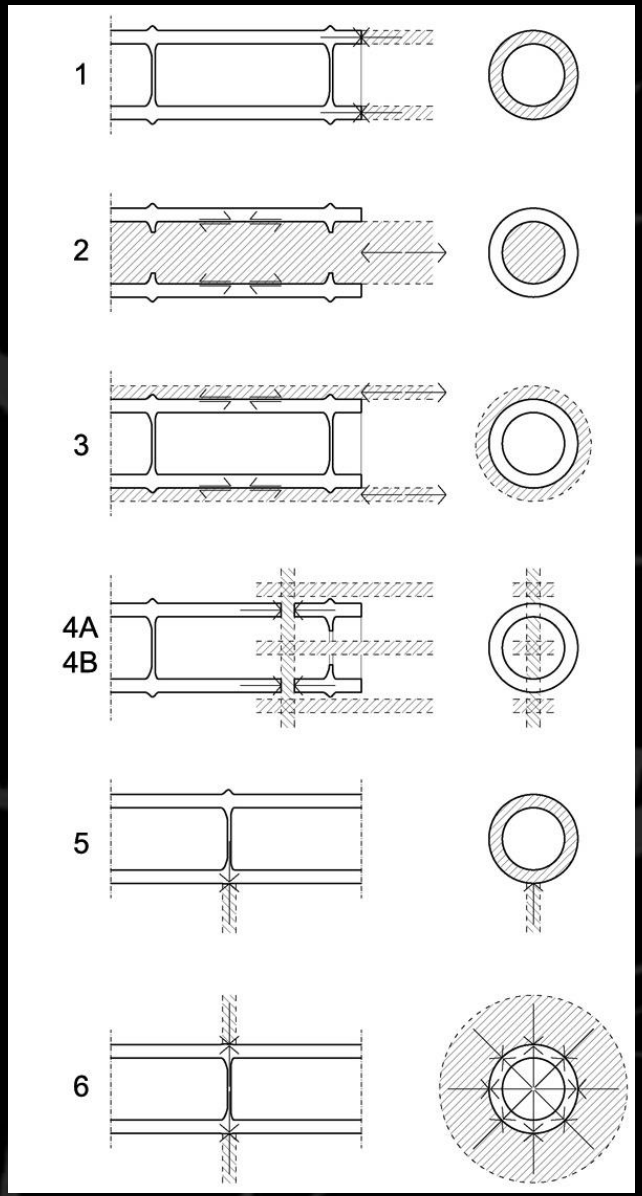
2009-2012 > going deeper

research on traditional and innovative joints in bamboo construction
in rwth aachen germany

+ 2016

joint research with fh erfurt germany

Classification of Bamboo Joints: Basic Principles



1. Transferring compression through contact to the whole section

2. Transferring force through friction on the inner surface or compression to the diaphragm

3. Transferring force through friction on the outer surface

4. Transferring force through bearing stress and shear to the bamboo wall from perpendicular element connected from inside (4A) or outside (4B)

5. Transferring force perpendicular to the fibers

6. Transferring force perpendicular to the fibers to the center of the pole





Development of Bamboo Joints: Tests

Bamboo joints with tensile strength:

1. Barcom Joint: average 34.09 kN

2. Barcom Joint with Multiknots: average

   76.91 kN



Traditional and innovative Joints in Bamboo construction

Autor: Andry Widyowijatnoko

Auflage: 1

Seiten: 190

Einband: Paperback

ISBN 13: 978-3-86130438-4

Preis: 49,00 EUR

inkl. 7% MwSt

zzgl. Versandkosten

architectural practice innovation

2012 > going further

new approaches to design bamboo construction

tensile structure -

tensegrity -

reciprocal frame -

parametric design approach -

Barcom Joint's Application: Three Mountain Building



Pulau Serangan, Bali, 2014

Barcom Joint's Application: Three Mountain Building



Pulau Serangan, Bali, 2014

Bamboo Reciprocal Frame



Bamboo Tunnel, Parongpong


Bamboo Reciprocal Frame
Summer Camp ITB-UII, 2015

Parametric Approach on Split BC



Parametric Approach on Split BC



Parametric Approach on Split BC



Bamboo Geodesic Dome



WBC 2015 Damyang, Korea


Bamboo
Geodesic
Dome
WBC 2015 Damyang, Korea



WBC 2015 Damyang, Korea

Bamboo Geodesic Dome



SENA, Bogota, Colombia 2016

Tensegrity Structure





pagoda
rwth aachen germany 2011

Tensegrity



9 bamboos
hasso-plattner institute germany 2012

Tensegrity Structure



Saint Benilde College, Manila





tensegrity bamboo wheel
creative market
south tangerang 2015
with nusantara bamboo academy

Tensegrity



tensegrity bamboo wheel
creative market
south tangerang 2015

Tensegrity



tensegrity bamboo dome
institut teknologi bandung

Tensegrity



bamboo tensegrity dome as
meeting hall
jcc 2014

Tensegrity



bamboo tensegrity dome as
meeting hall
jcc 2014


reciprocal tension – indonesialand 2016
institut teknologi bandung

terima kasih

when you are living
the best version
of yourself
you inspire others
to live the best
version of
themselves



steve maraboli