

WEDNESDAY AM WORKSHOP #5: NATURAL BUILDING

Workshop Session	Natural Building
Names of presenters	Linda Zhu, China Nawab Ali Khan (with Aga Khan Planning and Building Service) Kim Thompson, Canada
Name of rapporteur	Diederik Prakke

PRESENTER 1

Presenter #1 Linda Zhu
Title of Presentation: Straw Bale Housing
The <u>Innovative Practice or Strategy</u> that the speaker is presenting. Straw Bale Housing
The " <u>Mainstream Practice</u> " the speaker says their strategy is an alternative to. 1. Brick construction requires energy 2. Substandard houses do not protect the inhabitants against cold: Requiring more fuel (of which price has doubled) 3. Bricks are unsafe with earthquake
The <u>Alternative Vision</u> presented by the speaker (i.e. this innovative practice contributes to this vision) 1. Compressed Straw Bale House has a coal (energy) consumption: 60% less 2. Also cost efficient, less earthquake prone

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Success Factors: factors that the speaker attributes to the success of their innovative practice or strategy.

Key Challenges: the main challenges the speaker identifies in implementing the strategy

1. Straw is considered backward technology: Hard to convince people with many doubts
2. Brick is a symbol of wealth and success: Cultural prevalence hard to change
3. Low general environmental awareness specially among rural farmers (they consider environmental preservation as government propaganda)

Overcoming Challenges: the ways the speaker says that challenges have been overcome.

Overcoming economy

1. Provide subsidy and demonstration school
2. >From third project onwards government and residents co-finance (25% farmer contribution). The subsidy convinces the farmers more than the technology
3. Later dramatic subsidy reduction, as trust was build

Overcoming environmental unawareness through awareness raising among inner-Mongolian resettlers

Additional innovations:

1. No blue glass window facing the South
2. Also make middleclass straw houses, so not to stigmatise straw again as low class technology

Moving from the Fringe to the Mainstream: the ways the speaker says this work will move from the fringe to the mainstream.

Lessons Learned from this Experience - lessons learned identified by the speaker

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Remaining challenges:

1. Lack of industrialised system to supply straw bales (too small demand)
2. Baling machine is expensive and labour intensive: Individual farmer can't own the machine
3. No building code: To get drawings approved they check it against brick standard
4. Brick is not yet banned and still available rurally
5. Construction season not convenient

Crisis = Danger + Opportunity

Large population is problem and opportunity, China is still more sustainable in ecological footprint, choosing for energy efficiency

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PRESENTER 2

Presenter #2 : Nawab Ali Khan (with Aga Khan Planning and Building Service)
Title of Presentation: Integrated Water supply and sanitation Programme (WASEP)
The <u>Innovative Practice or Strategy</u> that the speaker is presenting. Objective: Reduce diarrhoea death by 50%
The " <u>Mainstream Practice</u> " the speaker says their strategy is an alternative to. Government is top-down centralised imposing solutions on communities, without participation, undermining sustainability. 80% of schemes failed due to poor O&M. Realised a need for integrated approach, including health and hygiene awareness
The <u>Alternative Vision</u> presented by the speaker (i.e. this innovative practice contributes to this vision) 6-components together: <ol style="list-style-type: none">1. Community management, bottom-up. Establish or strengthen including O&M fund raising beforehand2. Health and hygiene education, women (community programme with CHIP) and children (schools)3. Potable water to door step4. Different in-house designs depending on cultural needs5. Drainage of waste water6. Water quality management (source, storage, household testing) Covered 87,000 people. From 3% (pre) to 83% (post) WHO water standards of water quality. Diarrhoea dropped by 25-50%
<u>Success Factors</u> : factors that the speaker attributes to the success of their innovative practice or strategy.

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Key Challenges: the main challenges the speaker identifies in implementing the strategy

- Funding agencies have their own agenda (while Aga Khan wants integrated wholistic approach)
- Need for cross-disciplinary staff
- Unstable political and law- and order situation

Overcoming Challenges: the ways the speaker says that challenges have been overcome

Moving from the Fringe to the Mainstream: the ways the speaker says this work will move from the fringe to the mainstream.

Lessons Learned from this Experience - lessons learned identified by the speaker

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PRESENTER 3

Presenter #3: Kim Thompson
Title of Presentation: Natural Building in Canada
The <u>Innovative Practice or Strategy</u> that the speaker is presenting. <ol style="list-style-type: none">1. Use renewable2. Low-tech3. Therefore community building: Involving youth and others
The " <u>Mainstream Practice</u> " the speaker says their strategy is an alternative to.
The <u>Alternative Vision</u> presented by the speaker (i.e. this innovative practice contributes to this vision) <ul style="list-style-type: none">• New range of technology with local resources and low negative impact on the environment. Heating of building is a huge chunk of energy consumption• Straw Bale does not need any wooden frames (for strength; just some light frames are put up for the shaping and filling in): Just Straw Bales, can be large and at least two-stories high.• All shapes are possible, and all foundations and roofings: Straight, round, etc.• Plaster was first cement mortar, but now more and more natural plasters• Over twelve years also experience with O&M e.g. with leakage repair, taking out a bale and refixing• You can use chainsaws to shape the Bales• 'Bales' can be anything, such as beer boxes, earth bags...

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- Options, fun and deep satisfaction to make art on the walls: Putting in colourful stones, clay paints, before coating to make it water tight
- Thatch (roofing)

Success Factors: factors that the speaker attributes to the success of their innovative practice or strategy.

Key Challenges: the main challenges the speaker identifies in implementing the strategy

Overcoming Challenges: the ways the speaker says that challenges have been overcome.

Moving from the Fringe to the Mainstream: the ways the speaker says this work will move from the fringe to the mainstream.

Lessons Learned from this Experience - lessons learned identified by the speaker

Looking at how birds build their nests, we can get so many creative ideas that we can experiment with and implement ourselves...

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SUMMARY OF WORKSHOP DISCUSSION

Workshop Discussion: Summarise statements, questions, responses:	
Name	Comment
How to do this in urban areas, where people aren't connected to natural materials around	Baling cloths and newspaper are there. Else why not get straw bales in: Bring in resources. Natural building started rurally, but you can do it in cities.
Growth and culture	Hopefully exponential growth will take place, get it out of the fringe. Low ecological footprint. Let legislation follow rather than put up barriers. Different motivations: People in Mongolia want cheap and warm houses, and have slight cultural preferences (but that's not the main thing). So connect to that motivation first; bring in spirituality and ecology later in this case of Mongolia and China. Benefit to the dweller (in terms of wholesomeness) is as large as the positive impact on the environment.
What inspired straw bale building?	Started very practical: Temporary shelters of new settlers in the new world, then finding out they were lasting. 40 years later people shifted to buying building materials...