

SURE STATUS SEMINAR 2022

CHARMS

Urban Residents'
perspectives on the
preservation of
vernacular houses in
Chiang Mai, Thailand



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PRESENTATION OUTLINE

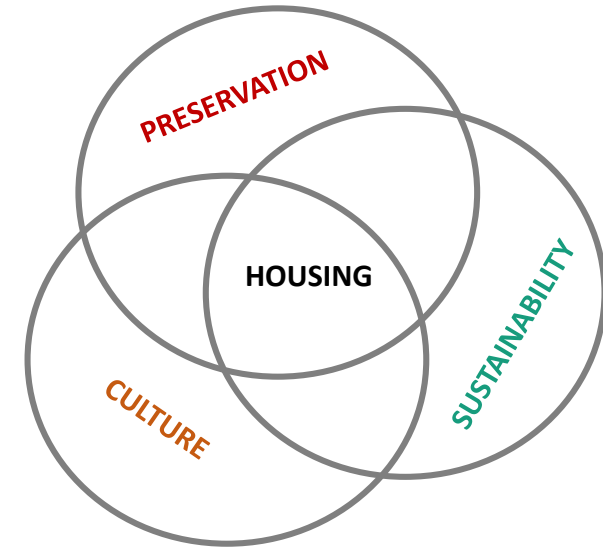
1. Housing preservation as sustainability practice
2. Sustainability in urban and real estate development: the Thai context
3. The preservation of vernacular residential houses in Chiang Mai: situation & approach
4. First insights: the meaning of and tensions in preservation according to relevant social groups
5. Anticipated outcomes & relevance

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1. **Housing preservation as sustainability practice**
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Environmental, economic, social and cultural sustainability:

- mixed urban land use ~ „compact city“ model pursued in Thailand
- maintenance rather than new construction >> recycling of materials and „embodied“ energy
- remodeling for increased energy efficiency
- fostering awareness of sustainable building practices reflected in cultural heritage
- also labor practices and urban planning practices



(Refs.: Asikainen et al, 2017; Avrami, 2016, Soini & Birkeland, 2014, Dessai et al, 2017; Rypkema, 2005)



Chiang Mai, April 2022, Photo: U. Kaiser

„Architects and developers should bear in mind that we may be destroying the planet even as we create new structures.“ (Singh Intrachotoo, ecological designer in Thailand, in Grossman et al, 2017(1), p. 338).

„...sustainable development ... includes more than simply asking, „Is this building LEED certified?“ (Rypkema, p.2)

„To find out what is sustainable or energy-efficient in a particular region, look to vernacular homes.“ (Malina Palasathira, urban designer in Bangkok in Grossman et al, 2017(2), p. 319)

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- **35% reduction in real estate CO2 emissions is required by 2030** to stay within the 2-degree Celsius global temp. Threshold established by the Paris agreement.
- **Energy consumption** has increased with population and GDP growth >> 14% of energy consumption are residential.
- **Energy diversification and savings:** also at individual household and consumer level through new programs and initiatives, e.g. EGAT's (Electricity Generating Authority of Thailand) Demand Side Management program
- **Promising energy solutions at household level, include:** PV rooftops, microgrids and smart grids promise
- **In 2007 first LEED** (Leadership in Energy and Environmental Design) certification in Thailand for manufacturing plant and various school, government, company structures operating on key sustainability principles have been built. But cost 3-10% higher than for normal building.
- Thailand's Green Building Institute (TGBI), founded in 2009, offers **eco-friendly certification: TREES**
- Financial incentives to build eco-friendly through banks' „**green loans**“ at low interest.
- New law: **wood for construction** can now be sourced from own land & farmers can convert land to teak wood growth (focus group and interviews in April 2022)

Refs.: Grossman, et al (2017) (1) and (2)



The workshop where architects and residents of own wooden house transfers knowledge to trainees. Chiang Mai, April 2022
Photo: U. Kaiser



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Old wooden residential houses in Chiang Mai are a product of Middle Thai culture influence (business with Bangkok) and technology from abroad, Chinese and UK merchants, as well as Northern Thai heritage.

Structure of traditional wooden house is associated with residents' lifestyle, traditionally: agricultural needs (storage for rice, etc.), thermal comfort (natural cooling by wind), religious beliefs.

Sustainable practices in the past:

- Passive cooling systems through structural design of wooden houses
- Cooling through mud and brick
- Chicken holding in house to keep insects at bay



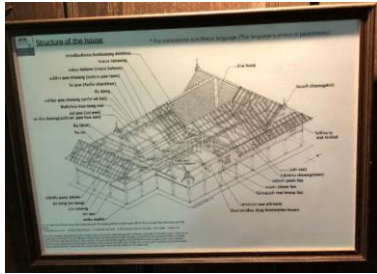
Vernacular residential (above) and new, modern residential structures (below), Chiang Mai, April 2022
Photo: U. Kaiser



Challenges

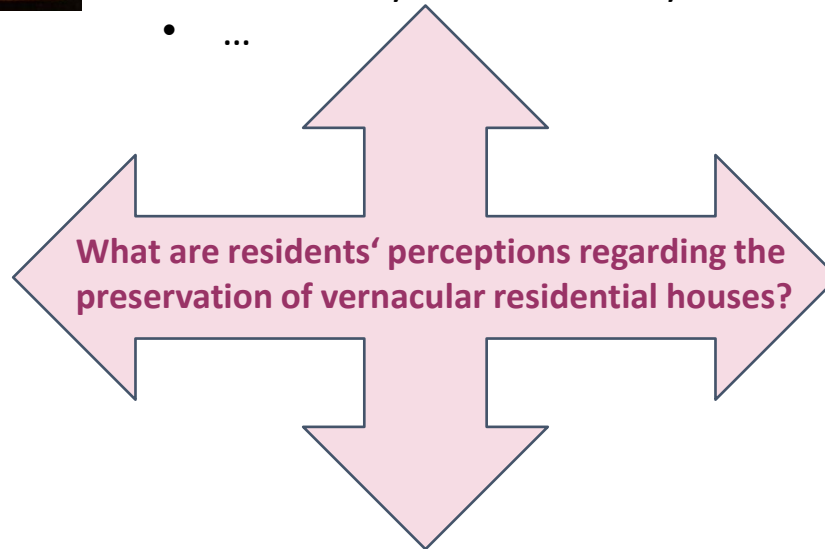
- Thermal comfort inside the house >> new materials (lifestyle changes), loss of trees across city
- Crowded surroundings with new high buildings >> impact air circulation and wind
- Heat islands
- AC in wooden house > high energy consumption
- Landscape, rapid urban growth and transportation needs: Air pollution: PM 2.5
- Ribbon development style urbanization: land prices in center shoot up.

Refs.: Grossman, et al (2017) (1) and (2), focus groups & interviews in April 2022



PRESRVATION OF...

- Buildings or style
- Hi-STORY
- (original) use(s)
- Lifestyle
- Self/family/cultural identity
- ...



TYPES & FUNCTIONALITIES

- Types of „old wooden residential buildings“
- Needs and requirements of residents, owners, investors
- Functions and uses in context
- ...

BUILDING TECHNOLOGIES & TECHNIQUES

- New, renewable materials for insulation
- Water retention areas outside for cooling
- Green energy options
- One-room AC
- ...



URBAN AND REGIONAL CONTEXT

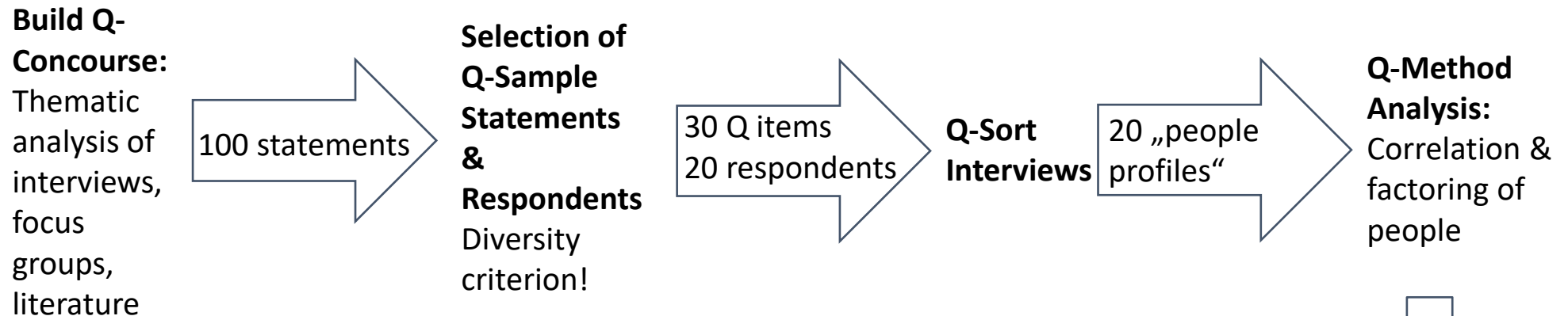
- Land uses and values
- Property and inheritance regimes
- Cultural and religious practices
- Policy and regulatory frameworks
- ...



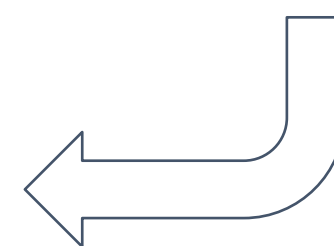
Photos: U. Kaiser, Chiang Mai, April 2022

Social construction of technology (Aibar, and Bijker, 1997; Bijker, et al, 2012): explains evolution of a technology or technological system through, amongst others, the concept of „interpretive flexibility:“ the different meanings that an object holds for various relevant social groups influence its development trajectory. Meanings include practices, views, perceptions.

Q-Methodology (Brown, 1980) to identify relevant social groups based on perceptions, views and practices:



X Social groups = X types of people differentiated by the specific meanings that the preservation of vernacular residential houses holds for them.

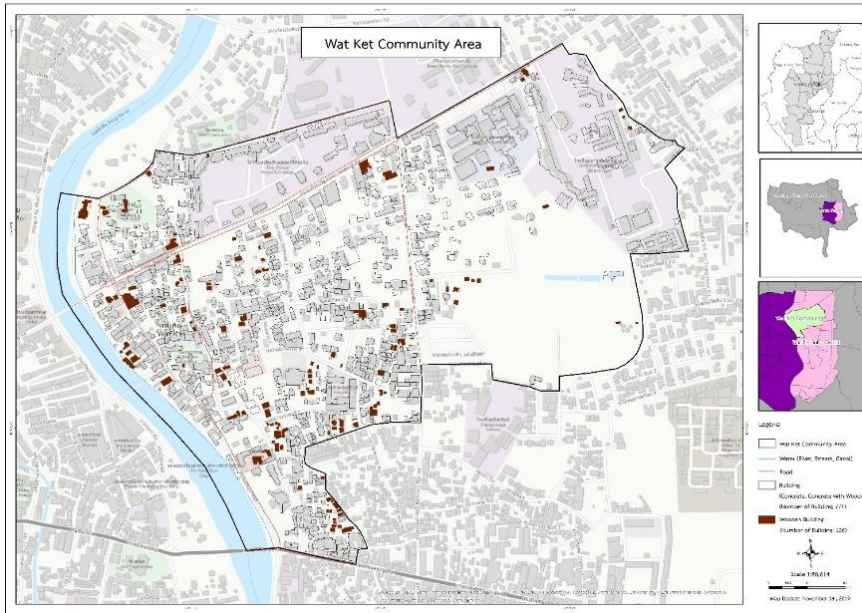


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- **In Nov 2021:** 8 interviews with academia, media and NGO representatives active in culture/heritage in Chiang Mai
- **April/May 2022:** additional 10 interviews and 2 focus groups with residents of the two neighborhoods:

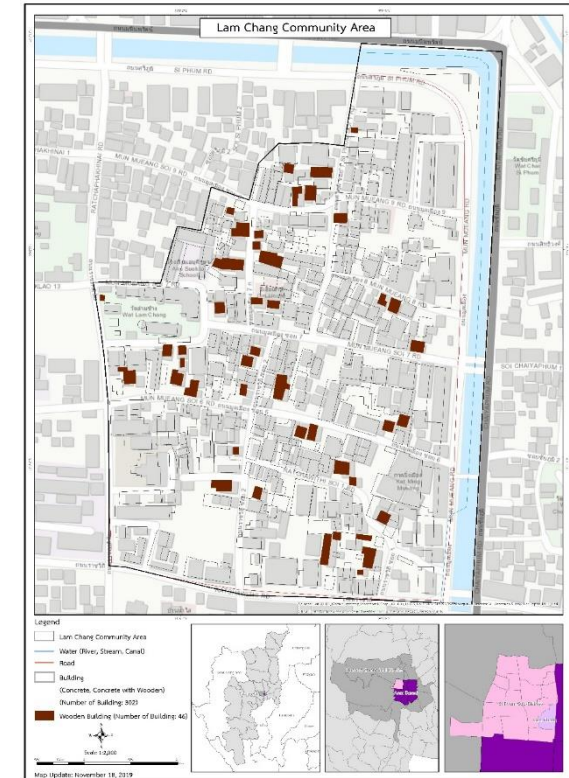
Wat Ket



First thematic clustering:
Meanings of preservation
Tensions in preservation
Needs for preservation

Relevant Social Groups

Lam Chang



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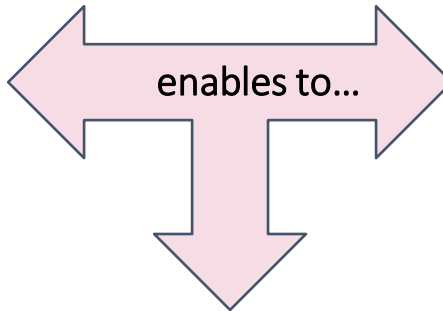
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Social groups, to whom the preservation of vernacular residential buildings holds different meanings...

such as...

- ... People, who have inherited and are willing to preserve residential use as family legacy, but who need improve indoor air quality and cannot afford remodeling.
- ... People, to whom preservation means a conservation of old structures as they are and who can afford maintenance.
- [... and so forth]

... **learn about and foster place specific (existing) practices** and how these contribute to sustainable urban living.



...**identify and tailor to specific needs and requirements** for preservation through use.



... design appropriate ways of **addressing and communicating with different groups** in policy and planning discourses, through participatory processes and for education and awareness raising.



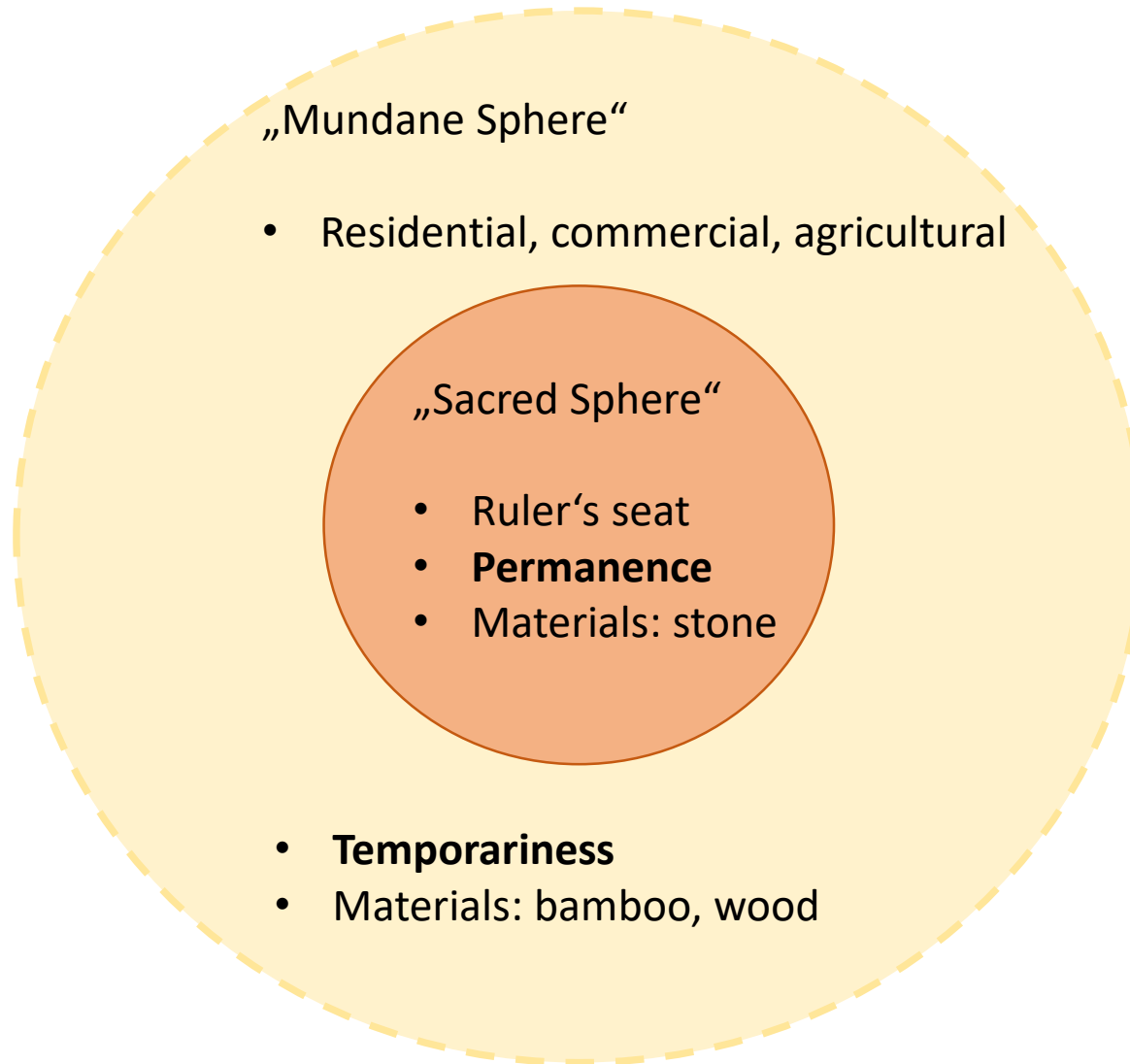
Photos: U. Kaiser, Chiang Mai, April 2022

THANK YOU FOR YOUR ATTENTION.

? Questions
Comments
Suggestions

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Simplified model of the SE Asian city according to interview with professor in architecture at Chiang Mai University, 28 April 2022



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