

A Review on Barriers, Policies and Governance for Green Buildings

C.K. Chau, T.M. Leung, T.P. Lützkendorf, M. Balouktsi

Department of Building Services Engineering,
The Hong Kong Polytechnic University

School of Economic and Business Engineering,
Karlsruhe Institute of Technology



INTRODUCTION

- Although green buildings have been growing in numbers, the rate of increase is still lower than anticipated
- A number of barriers to green building developments have been identified
- Up to date, only a limited number of government policy instruments have been implemented to overcome these barriers



OBJECTIVES

- Identify the types of policies and governance that have been implemented to overcome green building barriers
- Identify potential policies that can deal with other green building barriers
- Identify unresolved barriers to green building developments

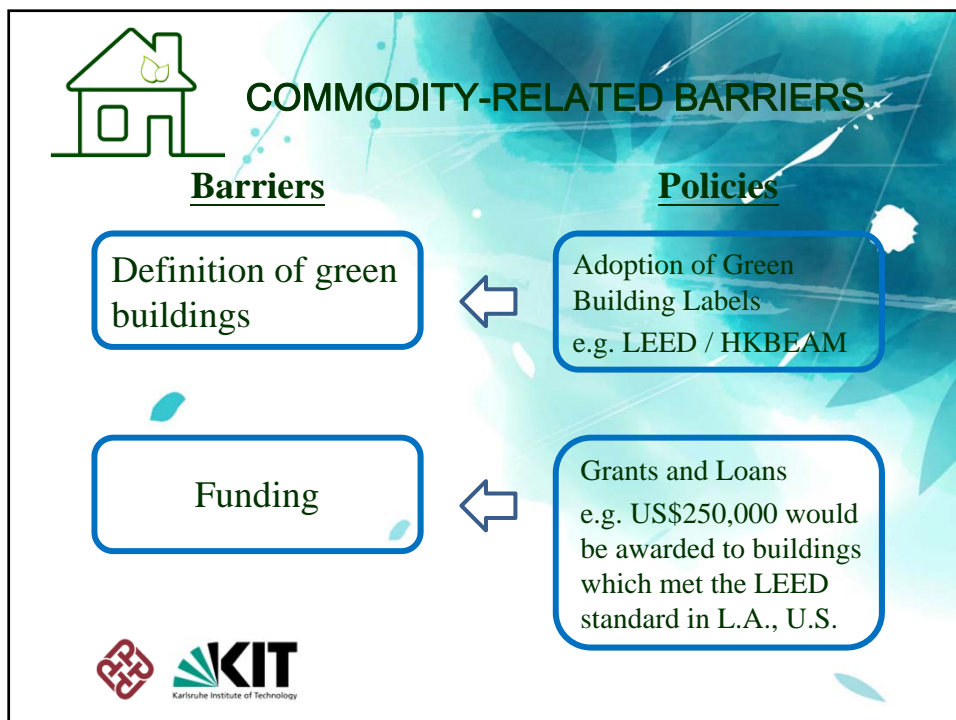


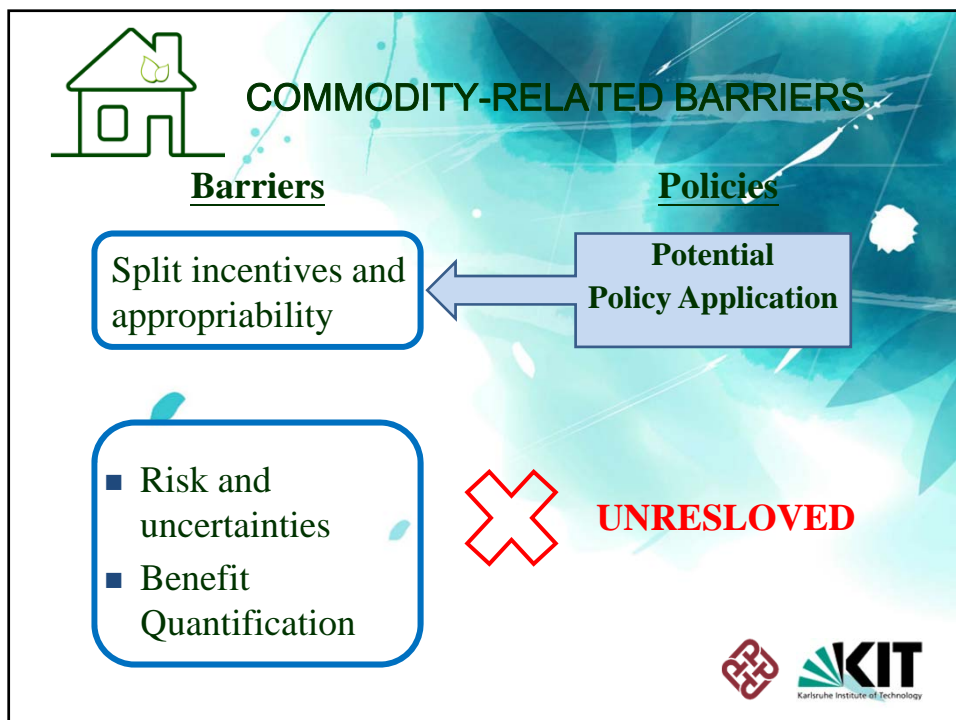
Barriers To Green Building Development



THREE
main types of barriers









ORGANIZATIONAL AND PERSONAL BEHAVIORAL BARRIERS

Barriers

Lack of Incentives

Policies

- **Density Bonus**
e.g. GFA Concession in HK
- **Tax Credits**
e.g. Tax Exemption for LEED Buildings
- **Expedited Permit Process**
e.g. Green Permit Program in Chicago








ORGANIZATIONAL AND PERSONAL BEHAVIORAL BARRIERS

Barriers

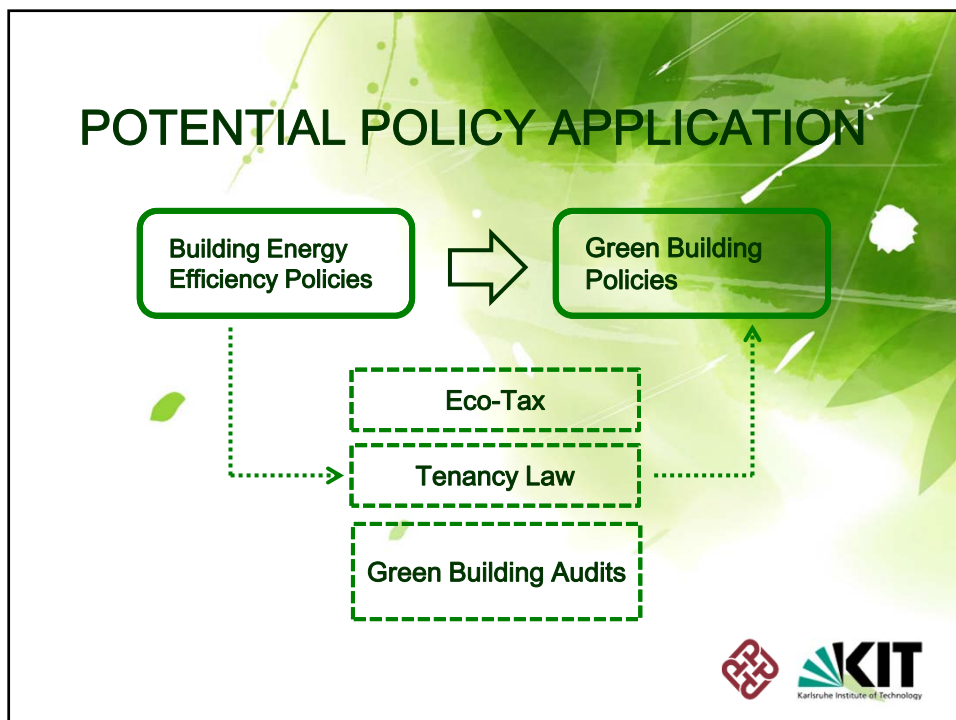
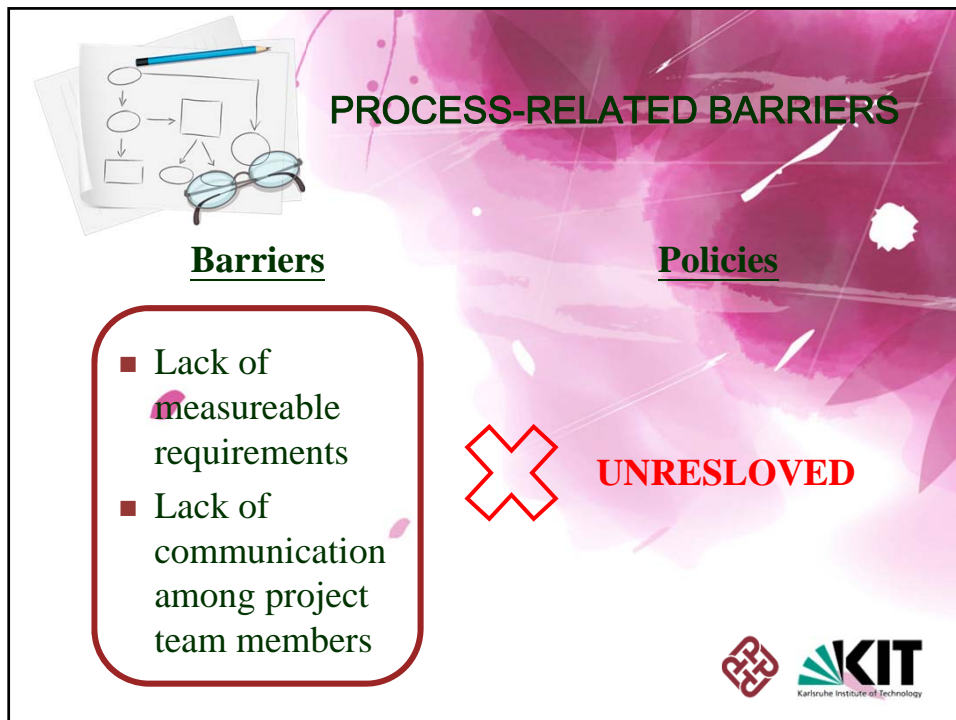
- Lack of commitments from the administrative leaders
- Lack of communication between the public and administration
- Personal resistance to change

Policies



UNRESLOVED



POTENTIAL POLICY APPLICATION

Eco-Tax



- Imposition of an eco-tax on conventional buildings may indirectly encourage developers to make their buildings greener
- Increase financial incentives



POTENTIAL POLICY APPLICATION

Tenancy Law



- Landlords can be allowed to increase the rent until the costs of green building measures have been recovered
- overcome the barrier of split incentives



POTENTIAL POLICY APPLICATION

Green Building Audits



- **Green Building Audit:** Idea similar to Energy Audit Policy in Germany
- Raise the awareness



UNRESOLVED BARRIERS

- Commodity-related Barriers
 - Risk and Uncertainties
 - Benefit Quantification
- Process-related, Organizational and Personal Barriers



UNRESOLVED BARRIERS

Risk and Uncertainties



- Developers are not sure whether they can recoup their investments on green building measures in a short time
- No specific policy to deal with this barrier



UNRESOLVED BARRIERS

Benefit Quantification



- A methodology gap in quantifying the intangible benefits of green buildings
- Research results for intangible benefits might not be readily transferred to and realized by laypeople (who are the major decision-makers in house sales and rentals)



UNRESOLVED BARRIERS

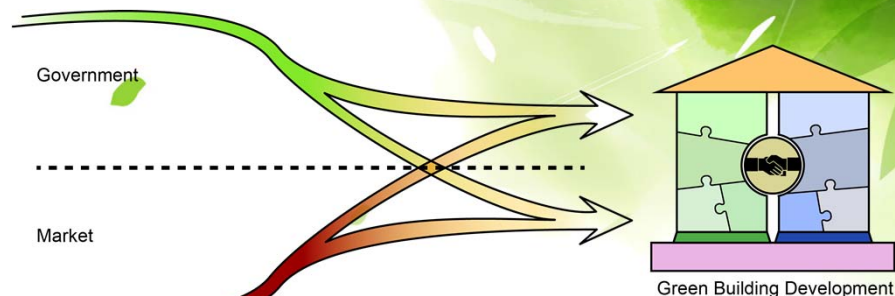
Process-related, Organizational and Personal Barriers

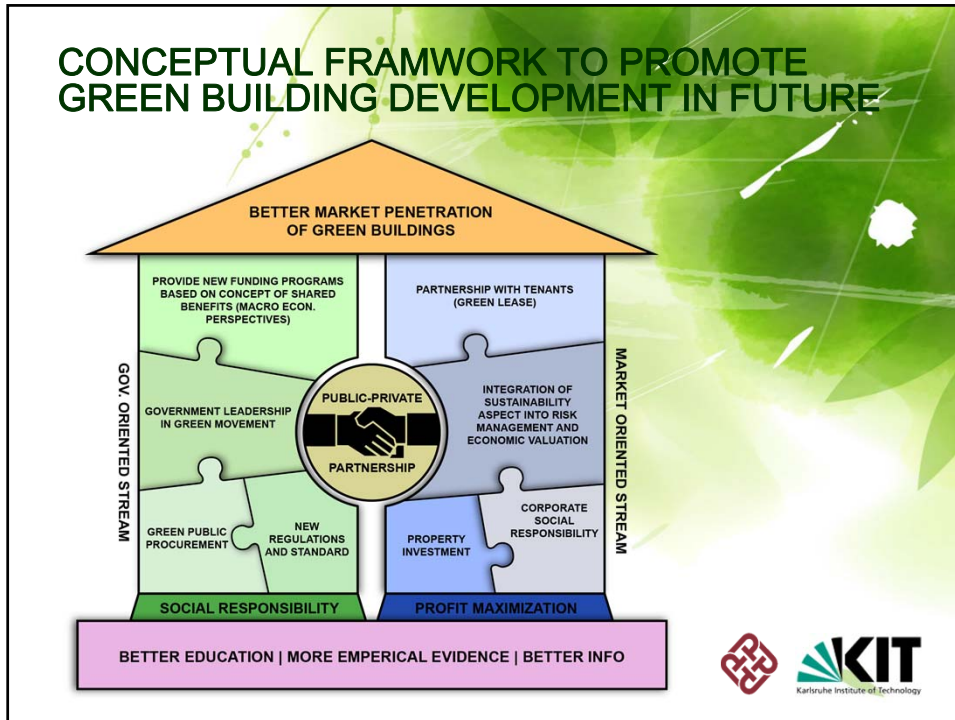
- Absence of specific policy instruments to deal with process-related, or other organizational and personal behavioral barriers
- Need extensive educational campaigns



CONCEPTUAL FRAMWORK TO PROMOTE GREEN BUILDING DEVELOPMENT

- Government and market need to join hands to promote green building developments





THANK YOU!