Joining urban land parcels to reduce disaster risk:
Facilitating earthquake-resistant housing in the Philippines

Image Credit: J. Futrell

Janae Futrell, Urban Planning Consultant

Concept of Land Assembly (LA)

Definition:

Process of joining contiguous/adjacent land parcels to form a larger parcel

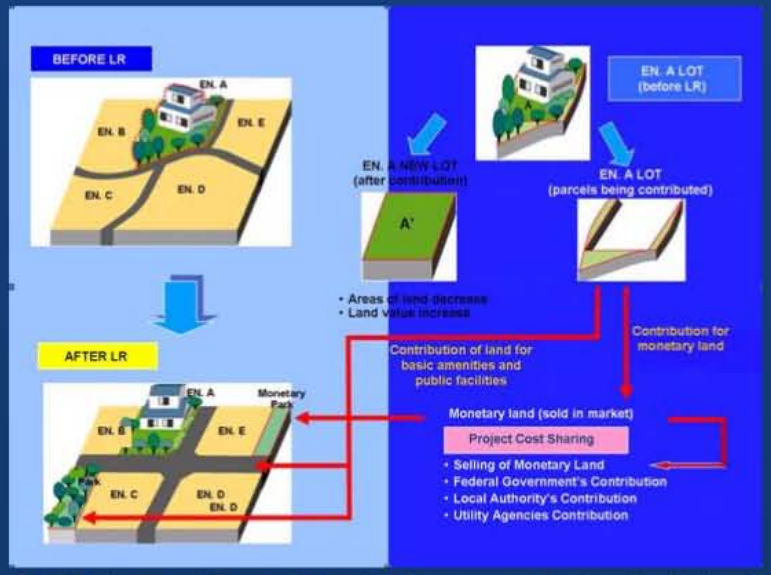
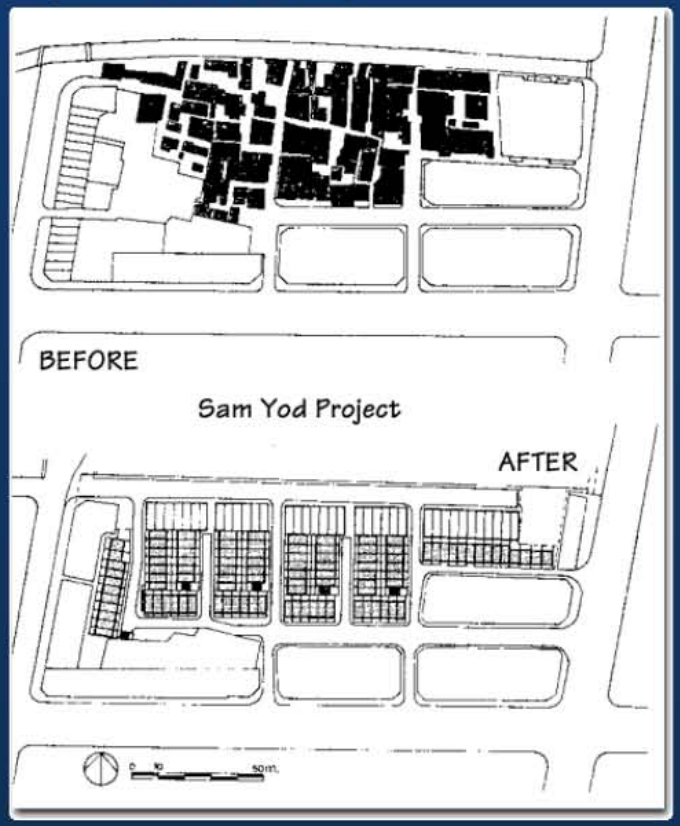


Image Credit: Town and Country Planning Department, Peninsular Malaysia

Image Credit: World Bank Group

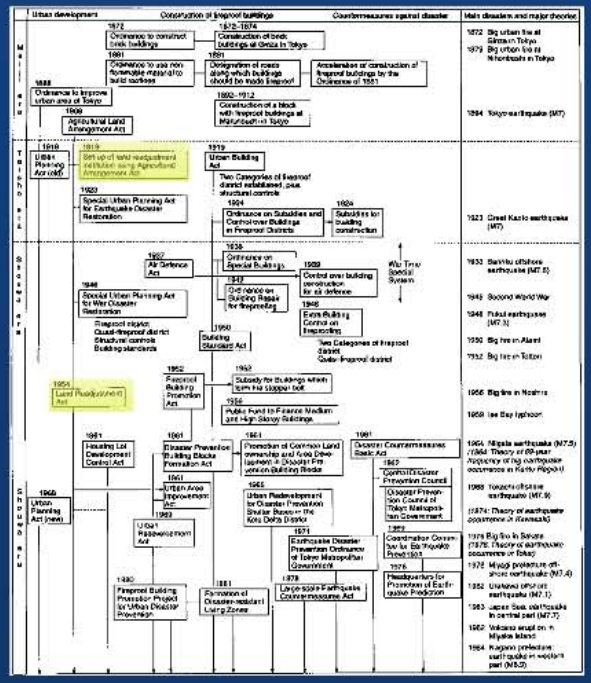


Common Purposes:

- Settlement/infrastructure upgrading
- Sprawl prevention
- Rural to urban conversion

Related Terms:

- Land Pooling (legal consolidation)
- Land Readjustment (notional consolidation)



Disaster Legislation - Japan
Image Credit: Tokyo Metropolitan Government

Japan

Primary purposes:

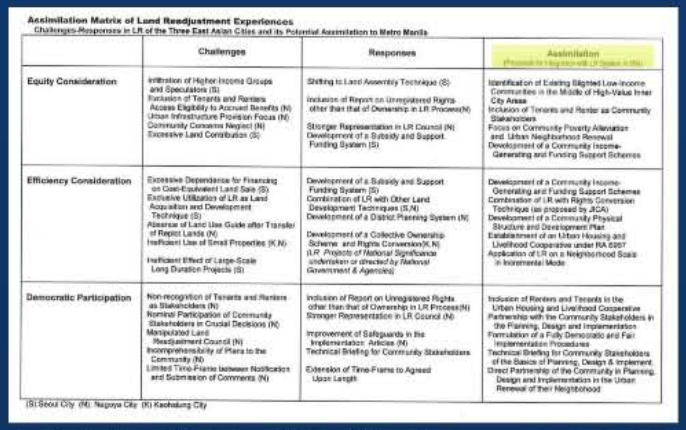
- Urban renewal following WWII & natural disasters
- Sprawl prevention

Nagoya:

- War Disaster Recovery Project (1946)
- 2/3 of urban areas developed through LA
- 35% of each land parcel for infrastructure

International Scope

- Germany, France, Sweden
- Australia, South Korea, Turkey
- India, Taiwan, Indonesia, Nepal



Assimilation Matrix of Land Readjustment Experiences
Challenges-Responses in LR of the Three East Asian Cities and its Potential Assimilation to Metro Manila

	Challenges	Responses	Assimilation
Equity Consideration	Infiltration of Higher-Income Groups and Speculators (S) Exclusion of Tenants and Renters Access Eligibility to Accrued Benefits (N) Urban Infrastructure Provision Focus (N) Community Concerns Neglect (N) Excessive Land Contribution (S)	Shifting to Land Assembly Technique (S) Inclusion of Report on Unregistered Rights other than that of Ownership in LR Process(N) Stronger Representation in LR Council (N) Development of a Subsidy and Support Funding System (S)	Identification of Existing Blighted Low-Income Communities in the Middle of High-Value Inner City Areas Inclusion of Tenants and Renter as Community Stakeholders Focus on Community Poverty Alleviation and Urban Neighborhood Renewal Development of a Community Income-Generating and Funding Support Schemes
Efficiency Consideration	Excessive Dependence for Financing on Cost-Equivalent Land Sale (S) Exclusive Utilization of LR as Land Acquisition and Development Technique (S) Absence of Land Use Guide after Transfer of Reject Lands (N) Inefficient Use of Small Properties (K,N) Inefficient Effect of Large-Scale Long Duration Projects (S)	Development of a Subsidy and Support Funding System (S) Combination of LR with Other Land Development Techniques (S,N) Development of a District Planning System (N) Development of a Collective Ownership Scheme and Rights Conversion(K,N) (LR Projects of National Significance undertaken or directed by National Government & Agencies)	Development of a Community Income-Generating and Funding Support Schemes Combination of LR with Rights Conversion Technique (as proposed by JICA) Development of a Community Physical Structure and Development Plan Establishment of an Urban Housing and Livelihood Cooperative under RA 6957 Application of LR on a Neighborhood Scale in Incremental Mode
Democratic Participation	Non-recognition of Tenants and Renters as Stakeholders (N) Nominal Participation of Community Stakeholders in Crucial Decisions (N) Manipulated Land Readjustment Council (N) Incomprehensibility of Plans to the Community (N) Limited Time-Frame between Notification and Submission of Comments (N)	Inclusion of Report on Unregistered Rights other than that of Ownership in LR Process(N) Stronger Representation in LR Council (N) Improvement of Safeguards in the Implementation Articles (N) Technical Briefing for Community Stakeholders Extension of Time-Frame to Agreed Upon Length	Inclusion of Renters and Tenants in the Urban Housing and Livelihood Cooperative Partnership with the Community Stakeholders in the Planning, Design and Implementation Formulation of a Fully Democratic and Fair Implementation Procedures Technical Briefing for Community Stakeholders of the Basics of Planning, Design & Implement Direct Partnership of the Community in Planning, Design and Implementation in the Urban Renewal of their Neighborhood

(S) Seoul City (N) Nagoya City (K) Kaohsiung City

Assimilation Matrix - Metro Manila Image Credit: J. Oaña

International Application of Land Assembly (LA)

Variety of International Characteristics

1. Project leadership (i.e. individuals, associations, local governments, developers)

2. Compulsory vs. voluntary participation

3. Cost burden (i.e. local government, low-interest loan, subsidy)

4. Cost recovery (i.e. selling plots for finance)

5. Land valuation methods

6. Project area size

7. Legal framework

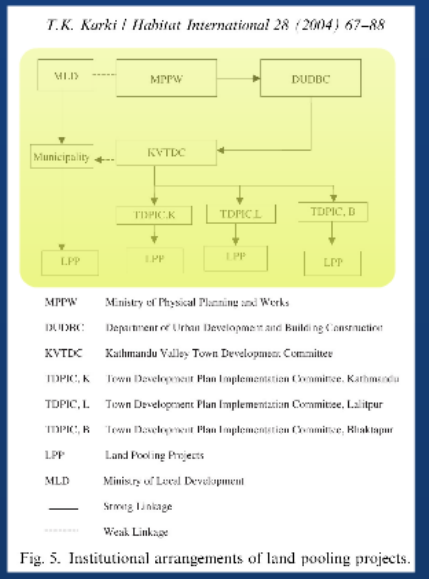


Image Credit: T.K. Karki

Institutional Arrangements - Nepal

Land Assembly (LA) in Philippines: Research Project Background

Developed with the support of the Earthquakes and Megacities Initiative (EMI) in the Philippines as Master's Thesis

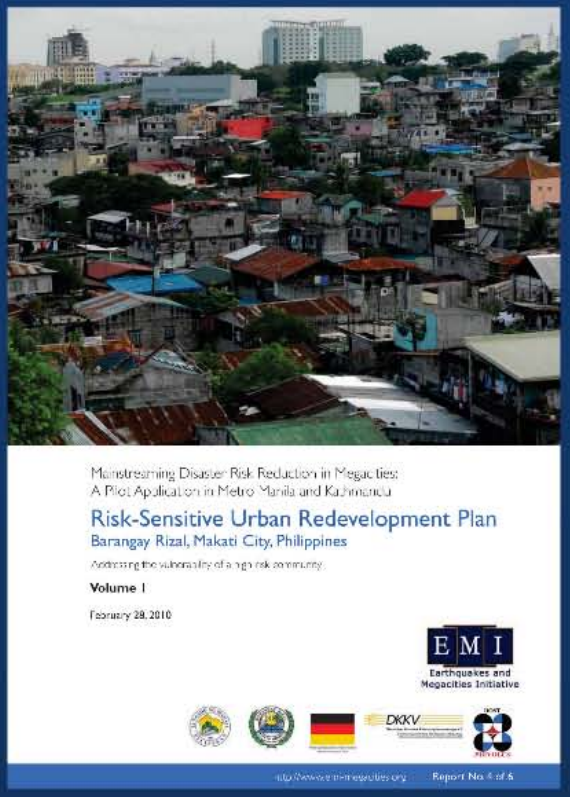


Image Credit: EMI

Image Credit: EMI, J. Futrell

Project input for the Risk-Sensitive Urban Redevelopment Plan (RSURP) for Barangay Rizal, Makati City, Philippines

Purpose of applying LA concept locally to facilitate earthquake-resistant housing

*** RSURP supported by the German Federal Foreign Affairs Office through the German Committee for Disaster Reduction (Deutsches Komitee Katastrophenvorsorge - DKKV) and Philippine Institute of Volcanology and Seismology (PHILVOCS)

Site Visit in Barangay Rizal
Image Credit: J. Futrell

Purpose: Reduce earthquake risk by relocating people living on the fault line

Strategy: Redevelop larger land parcels formed through LA in areas with lower earthquake risk

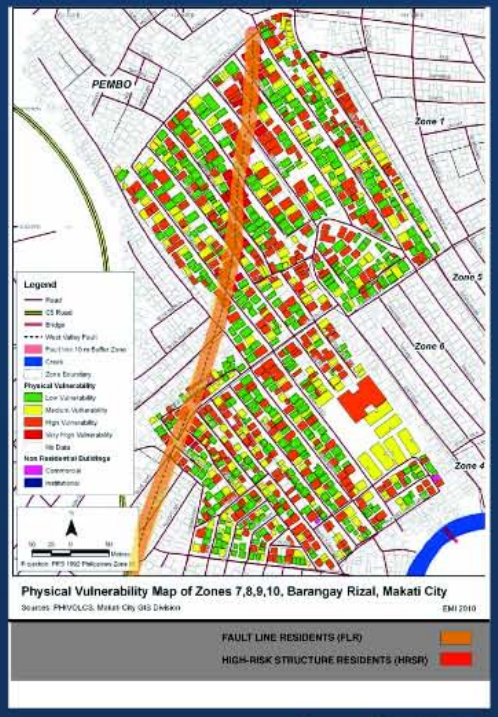


Image Credit: EMI

Figure 5.6G. Conceptual Site Development Aerial View

Image Credit: EMI

Figure 5.6F. Conceptual Site Development Map

Image Credit: EMI

Method: Replace non-engineered, 1-2 storey housing inclusive of current residents and Fault Line Residents (FLR)

Processes: Land Assembly depends on 1) project self-finance and 2) stakeholder engagement

National Opportunities

- Reduced legal barriers (Urban Development and Housing Act of 1992)
- Government housing loan scheme (i.e. Pag-IBIG Fund)

Table 4.2K. Employment Status of Adult Population

Status	Percentage
Employed	45%
Unemployed	55%
Total	100%

Table 4.2L. Employment Status by Type of Employment

Employment Type	Percentage
Permanent	49%
Contractual	24%
Business (Self-Employed)	16%
Services (Self-Employed)	5%
Retired	4%
Pensioner	1%
Total	100%

Table 4.2M. Type of Employment by Individuals

Employment	# Individuals	%
Office Staff/Employee/Clerks	596	25%
Government/City/Barangay Employee	239	10%
Driver	211	9%
Elementary Occupation	208	9%
Services & Sales	200	9%
Professionals	150	6%
OFW/Seaman/Caregiver	143	6%
Businessmen	117	5%
Teacher	115	5%
Call Center Agent	112	5%
Technician/Mechanic	109	5%
Manager/Supervisor	66	3%
Arts and Crafts	64	3%
Medical and Allied Fields	61	3%
Police/Military	37	2%
Total	2,428	100%

Image Credit: EMI

Employment Figures

Monthly Compensation	Percentage of Monthly Compensation	
	Employee Share	Employer Share
P1,500 and below	1%	2%
Over P1,500	2%	2%

Pag-IBIG Employer & Employee Contributions

Image Credit: Pagibig

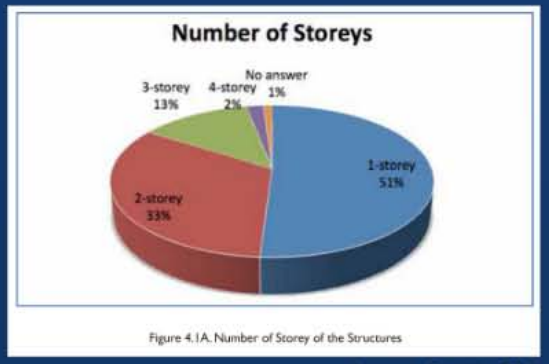


Figure 4.1A. Number of Storey of the Structures

Image Credit: EMI

Local Opportunities

- Land titles to be awarded (2010 Free Patent Act on Residential Land)
- Local stable income
- 84% 1-2 storey buildings
- Appreciating land values near commercial district

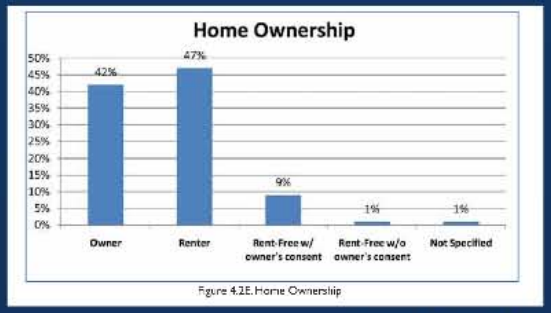


Figure 4.2E. Home Ownership

Image Credit: EMI

Image Credit: J. Futrell

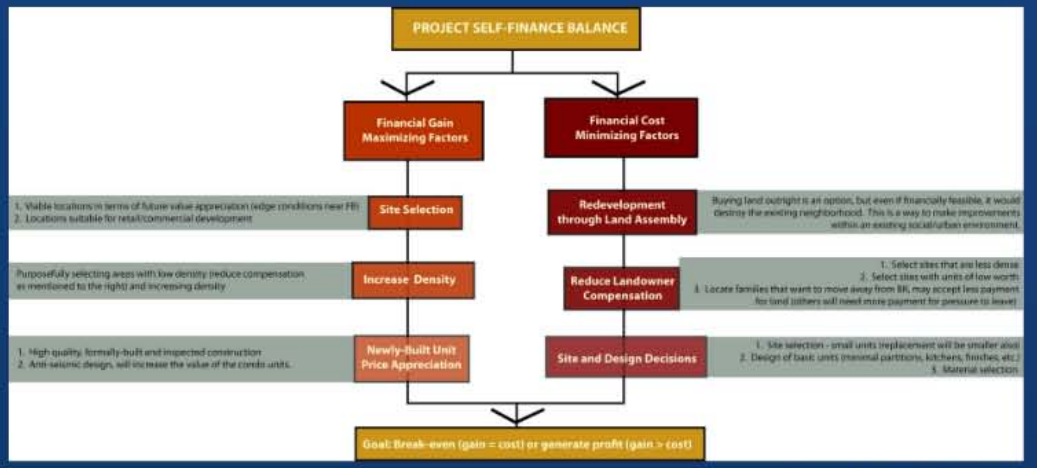
High Risk Structure

Project Opportunities

Project Self-Finance

- Gain maximization vs. cost minimization factors
- Increases replicability by reducing subsidy

- Inputs - land and finance (i.e. €, loan)
- Outputs - apartment/commercial units
- Scenario - 60% of participants contribute 100% construction finance (i.e. 24 x $6,000 = $144,000)



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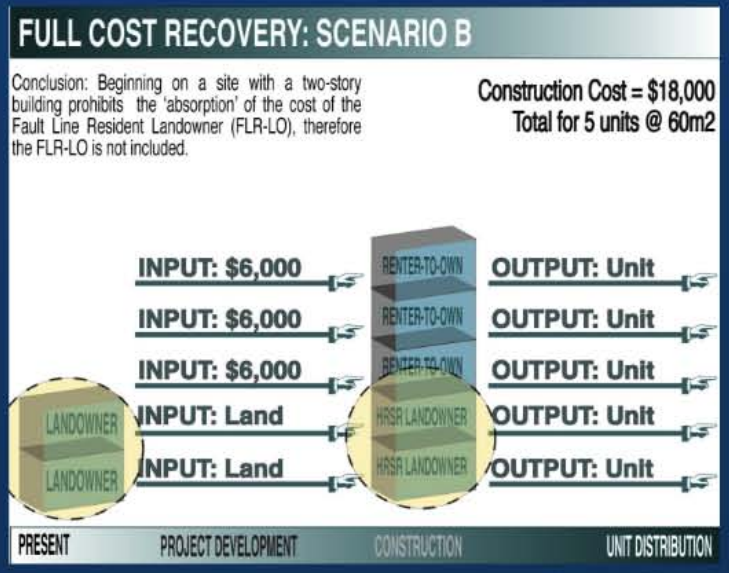

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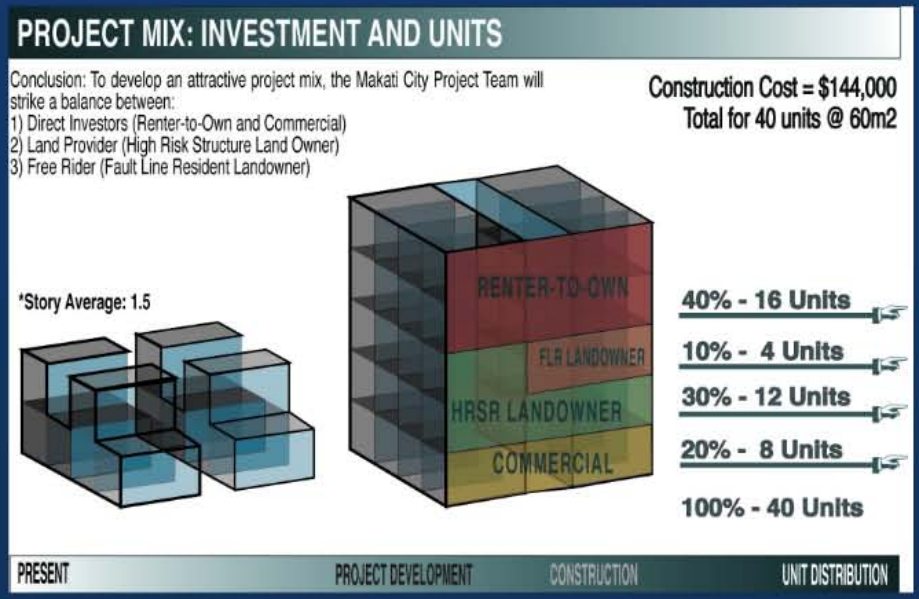

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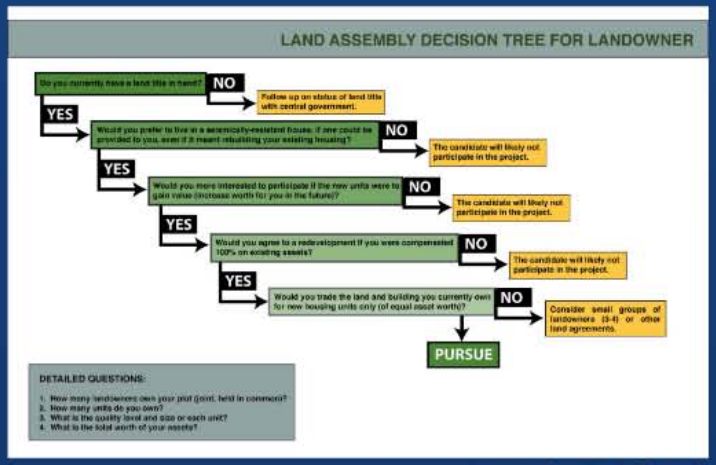

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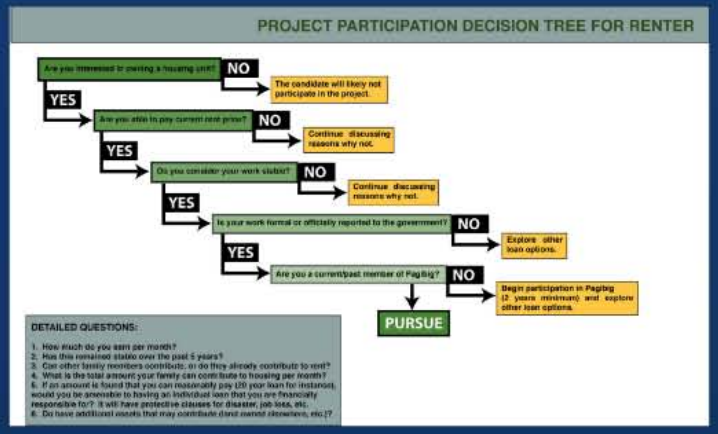
Stakeholder Groups

- Local government and related institutions (i.e. housing agency, banks)
- Community members (i.e. land owners, renters)



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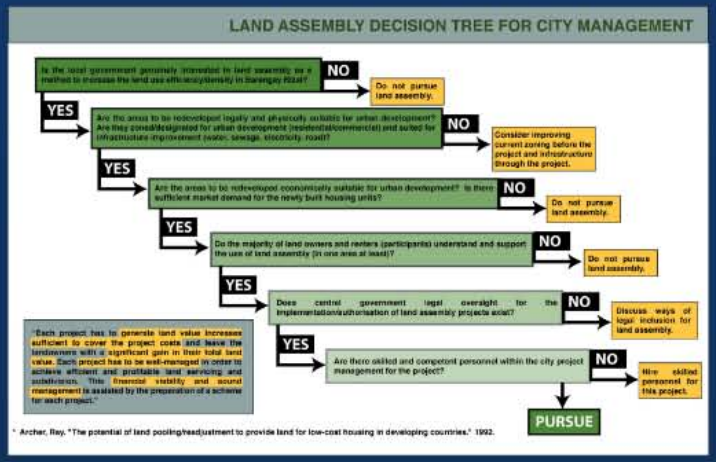

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- Project is dependant on stakeholder interest, engagement and trust
- Interests include family safety, asset improvement and value appreciation

Stakeholder Engagement

Pilot Project Mapping

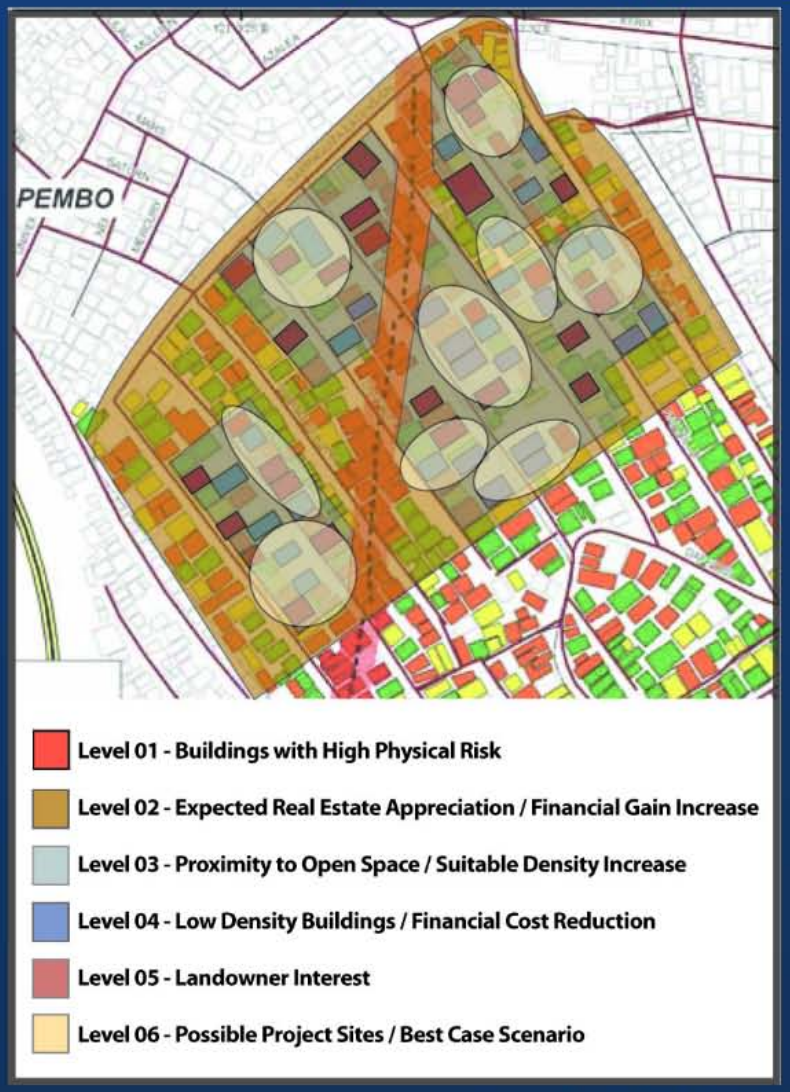

Image Credit: EMI, J. Futrell

- Mapping "enabling factors" to pinpoint pilot project site
- Areas of overlap illustrate "best case scenario"
- Project transparency (i.e. clear graphics and data)
- Clarity for stakeholders (i.e. site selection, project cost)

Image Credit: EMI, J. Futrell

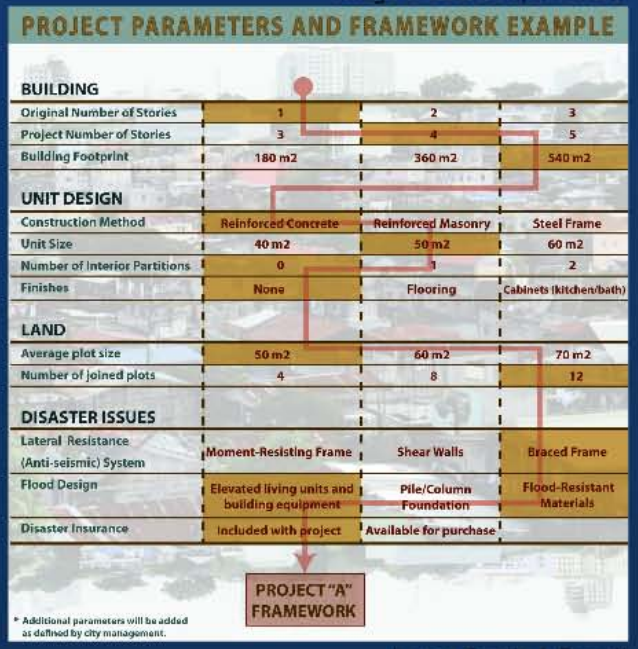

Image Credit: J. Futrell

Benefits of Land Assembly

Image Credit: J. Futrell

- Reduces project cost (i.e. land acquisition, construction, developer profit)
- Maximizes land as both natural resource and financial asset
- Keeps community in-place

Image Credit: J. Futrell

Image Credit: J. Futrell

- Generates larger building footprints to increase effectiveness of anti-seismic design
- Improves housing for "upper-lower" income groups, not often served through social or developer-driven housing

Thank you for your time and attention!

Image Credit: J. Futrell

Questions? Requests for related documents? Feel free to email me at janaefutrell@gmail.com!