

Innovative Solutions in the Provision of Public Housing in Hong Kong

Professor Geoffrey Q.P. SHEN
Chair Professor of Construction Management
The Hong Kong Polytechnic University

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PolyU Campus

PRESENTATION OUTLINE

01 Introduction

02 Demand Analysis

05 Innovative Solutions

03 Supply Analysis

04 Policy Responses

1. Introduction

01 Definition

Public Rental Housing (PRH) is Hong Kong's core subsidized housing scheme, managed by the Housing Authority, providing low-rent accommodation for low-income families.

02 Social Value

Broad Coverage:
Approximately 2.76 million residents (about 30% of Hong Kong's population) live in PRH.

Social Stabilizer: Provides essential housing security for grassroots citizens, alleviating pressure from high property prices.

03 Challenge

Constrained by land resources, housing supply has long been unable to meet the huge grassroots demand, resulting in a persistent supply-demand imbalance.

2. Demand: Application Overview

Public housing application stock statistics as of end-June 2026

General Applications (Family & Elderly Singles)

100,500

Covers family households and elderly singles, forming the foundation of public housing applications and reflecting the rigid demand for family housing.

Non-elderly One-person Applications

81,000

Targets young and adult singles, with demand continuously backlogged, reflecting the urgent desire for housing security among single individuals.



Severe Living Conditions: Subdivided Units

Many applicants currently live in cramped, poorly equipped subdivided flats, lacking basic living space and privacy, with urgent need for improvement.



Long Waiting Periods: High Time Cost

Non-elderly singles face particularly long waiting times, with housing demand backlogged for years, underscoring the tight supply and need for optimization.

2. Demand: Key Drivers



01 Affordability Pressure

Chronic high private housing rents and prices push low-to-middle-income households towards subsidized public housing.



02 Demographic Shifts

Ongoing miniaturisation of family structures, an ageing population, and more single-person households have increased the number of applicants.



03 Income & Asset Limits

The income and asset limits for PRH cover a large portion of Hong Kong households, expanding the pool of eligible applicants.

2. Demand: Waiting-Time



Composite Waiting Time (CWT) - Overall Baseline

The current average waiting time is **4.8 years** (covering families and elderly singles), down from a historical peak of 6.1 years but still high; it is a key reference for assessing public housing supply efficiency.



Urban PRH: >6 years (scarce resources)

> 6 years Avg. waiting time

Supply is tight in core urban areas with high density and demand, leading to waiting periods far exceeding the overall average.



NT Light Public Housing: ~2 years (fast allocation)

~ 2 years Avg. waiting time

Ample supply from new projects and simplified approval allow applicants willing to move to the New Territories to shorten waiting time significantly.



Non-elderly Singles: >10 years (severe backlog)

> 10 years Avg. waiting time

Affected by policy priorities, single applicants face the most severe backlog, with waiting times far exceeding families and the elderly.

3. Supply: Sources of Supply

01 New-built Conventional PRH

The primary long-term source of supply, providing stable and standardized housing units.

02 Light Public Housing (LPH)

Temporary quick-delivery units rolled out from 2025 to ease short-term pressure for long-waiting applicants.

03 Recovered Existing Flats

Units become available when former tenants move out, forming a considerable part of the supply pool.

3. Supply: Targets and Output



10-Year Vision (2026-2036)

294,000↑

Covering public housing, light public housing and subsidised sale units, a multi-level housing security system is established with long-term and stable supply.



5-Year Drive (2026-2031)

115,000↑

Implement new-build traditional public housing projects, accelerate the supply of housing resources, and prioritise easing the housing needs of middle- and low-income groups.



Annual Delivery (2026-2027)

34,500↑

Including newly-completed and recycled housing units, allocation and occupancy can be realised within the year, directly benefiting thousands of households.

3. Supply: Major Constraints

01 Severe Land Scarcity

Acute shortage of developable land, with lengthy planning and consultation processes.

02 Infrastructure Constraints

New housing estates require supporting transport, water, and power supply facilities, adding complexity and time.

03 Long Construction Lead-time

From site identification to completion and intake, public housing projects typically take several years.

4. Policy Responses



01 Light Public Housing

An interim buffer to shorten effective waiting times for applicants in urgent need.



02 Increase Land Supply

Boosting land supply through reclamation, developing New Territories sites, and optimizing plot ratios.



03 Estate Redevelopment

Redeveloping aging public housing estates to yield more new units on the same land.



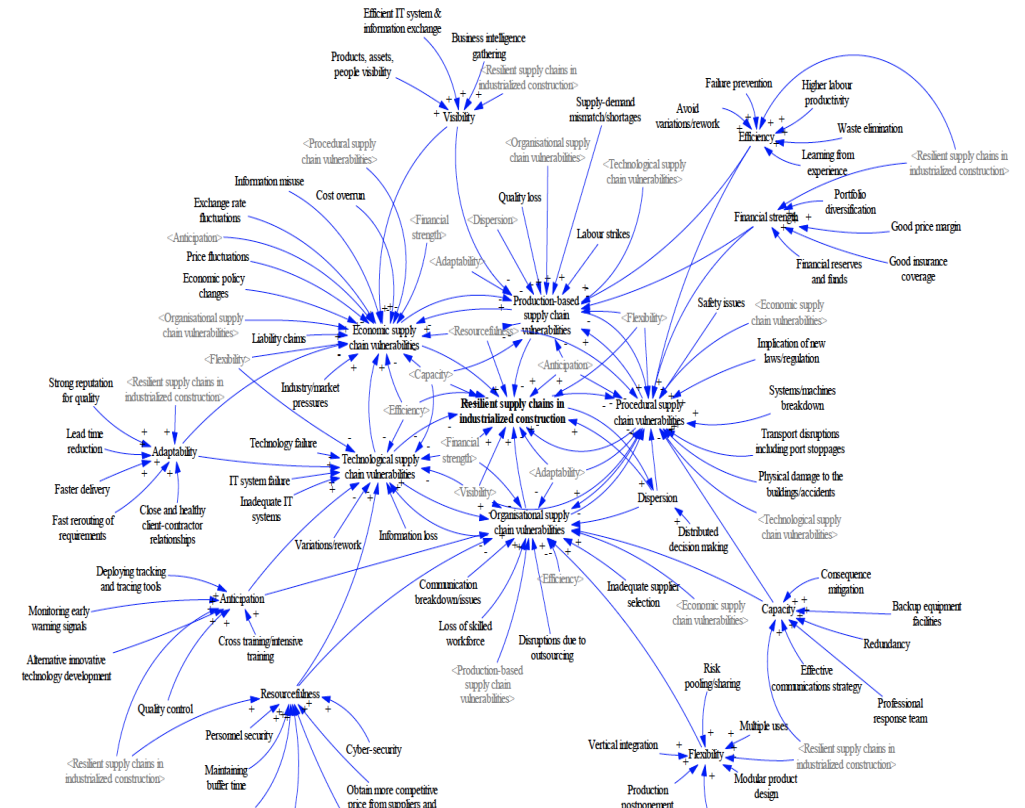
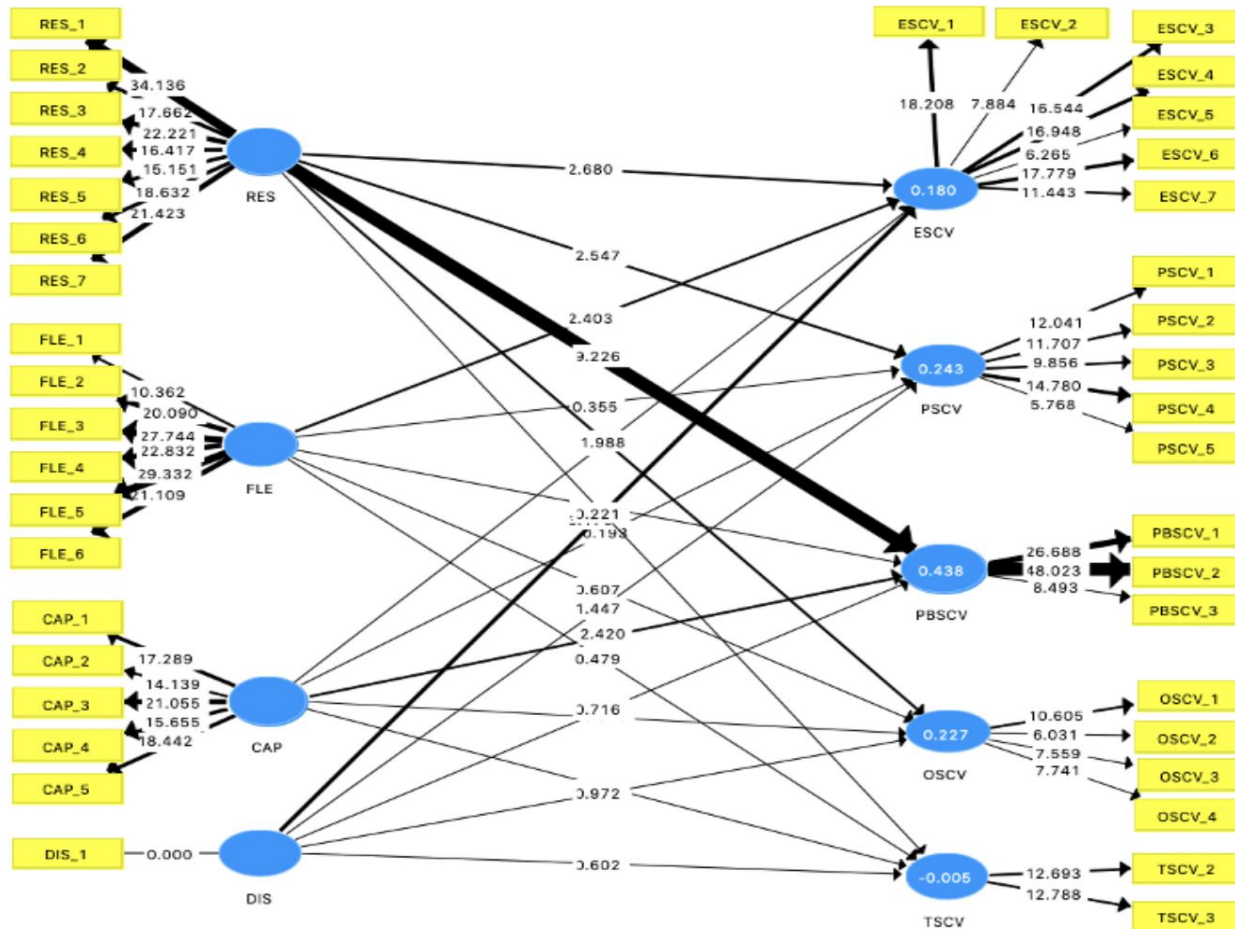
04 Optimize Flat Turnover

Reviewing policies for well-off tenants to improve the recycling of existing PRH units.

Innovative Solutions: Ensuring Value for Money in Large and Complex Construction Projects



Innovative Solutions: Supply Chain Resilience of Industrialised Construction in Hong Kong



Innovative Solutions: RFID-enabled BIM Platform for Prefabricated Housing Production in Hong Kong

- Capture real-time data of **precast elements**
- Share real-time data among **major stakeholders**

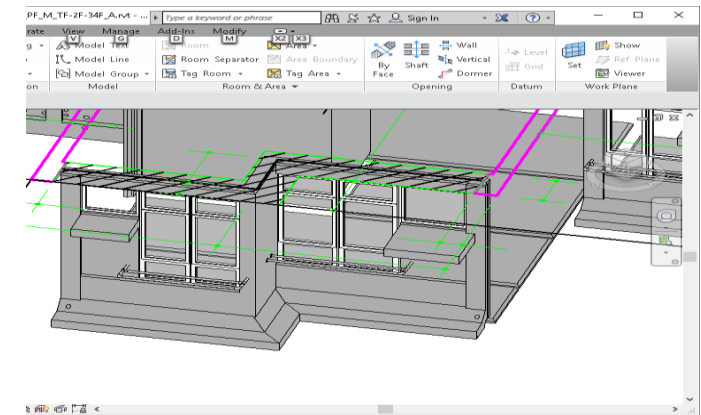
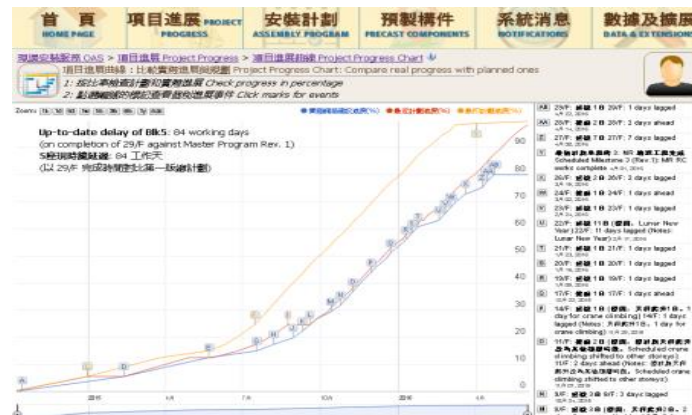
Smart Construction Objects



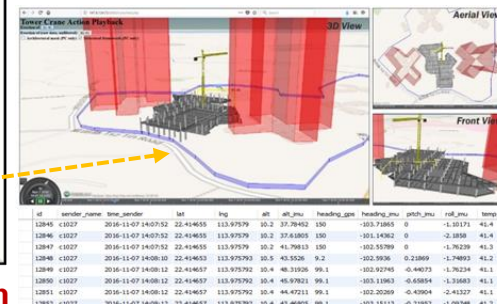
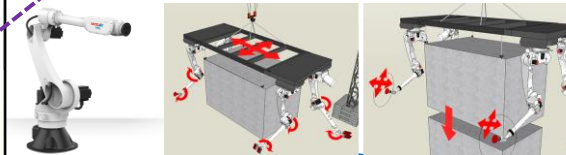
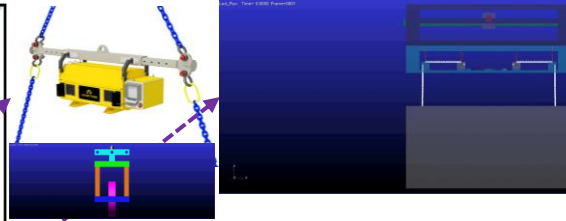
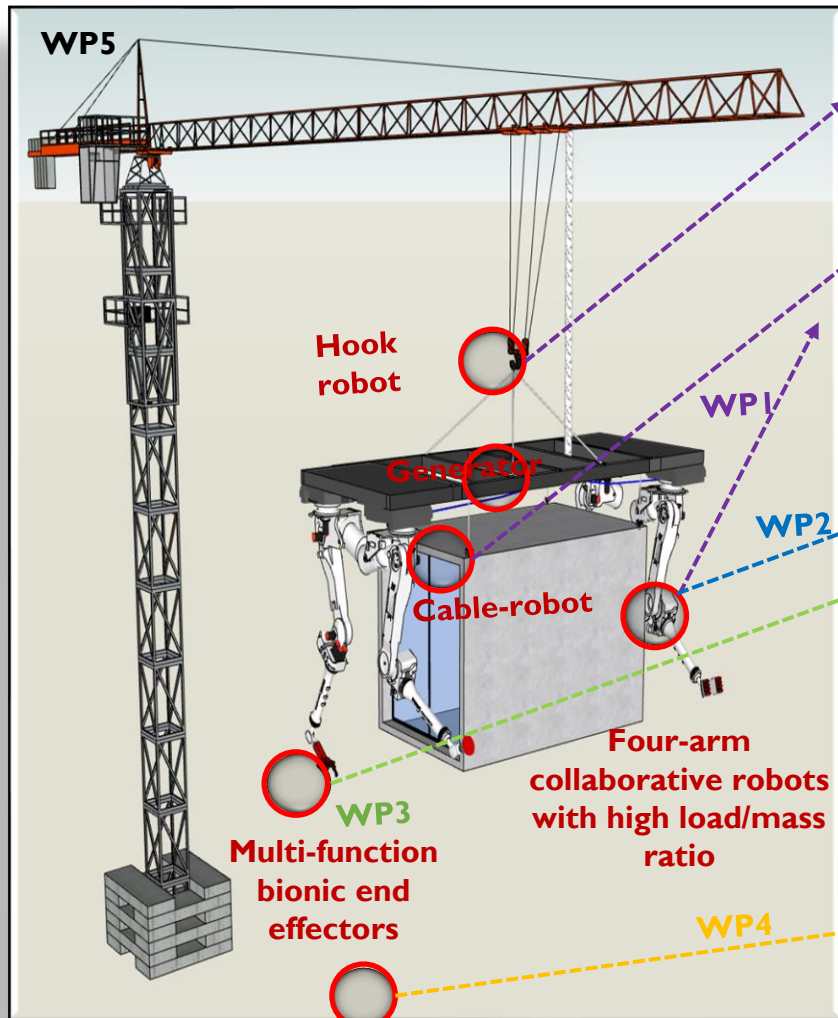
Innovative Solutions: RFID-enabled BIM Platform for Prefabricated Housing Production in Hong Kong

- Coordinate orders for **major stakeholders**
- Track and monitor individual components in a real-time manner
- Anticipate problems in **supply chain management**

Smart Decision Support



Innovative Solutions: Intelligent Modular Integrated Construction (MiC) Assembly Robots



Multi-modal digital twin for human-robot collaboration

✳ Mission:

- ✳ To design and develop i-MARs for achieving **safe**, **quality-assured**, and **productive** assembly of **large-scale** and **heavy** modules under **complex construction environments** in Hong Kong and other parts of world.

✳ Goals:

- ✳ Optimal robot configuration & design
- ✳ Collaborative & adaptive control methods
- ✳ Bionic end-effectors and feedback controls
- ✳ Human-robot symbiosis methodology
- ✳ i-MARs experimental platforms (Lab & field)

✳ Deliverables:

- ✳ 1 i-MARs prototype & **≥ 10** accessories
- ✳ **6** Control and precision compensation systems
- ✳ 1 Digital twin platform with **≥ 3** interfaces
- ✳ **≥ 30** High-quality patents and publications
- ✳ **1-3** Pilot projects, **≥ 3** technical standards
- ✳ **≥ 30** talent cultivation

Conclusion



01 Core Demand & Backlog

Strong demand, driven by high private housing costs, represented by over 180,000 outstanding applications and a 4.8-year waiting time.



02 Supply-side Constraints

Supply is constrained by land shortage and long project lead-times.



03 Dual-track Policy Initiatives

The government is expanding conventional PRH output and rolling out Light Public Housing as an interim measure.



04 Innovative Solutions via Research

Innovative solutions are needed to address the grand challenge problem of balancing the supply and demand for public housing.

Thank you for your attention!

Professor Geoffrey SHEN, BEng, PhD, VMF, FRICS, FHKIVM

Associate Vice President (Global Partnerships)

Chair Professor of Construction Management

The Hong Kong Polytechnic University

Hung Hom, Kowloon, Hong Kong, China

Tel: (+852) 34008101, Fax: (+852) 23339974

Email: geoffrey.shen@polyu.edu.hk

<https://www.polyu.edu.hk/bre/people/academic-staff/prof-geoffrey-qp-shen/>