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IIIDBEE X 2023
20 JANUARY 2023
*International Invention, Innovation & Design Exposition
for Built Environment and Engineering 2023*

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**Unleashing Potentials
Shaping the Future**

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THE MALAYSIAN GENERATIONAL ELDERLY-FRIENDLY HOUSING DESIGN FEATURES FRAMEWORK (MGens-ElderLyHD)

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INTRODUCTION

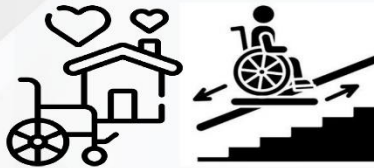
The continuous growth of the elderly population in Malaysia will render the country an aging nation status by the year 2030. The elderly population would escalate up to 15 percent out of the overall population in Malaysia. The increasing elderly group and soon retirement group among the Malaysian population should be interpreted as an important segment in determining the Malaysian elderly (seniors) housing needs and preferences. The role of the policymakers in upgrading the quality of life of the elderly (senior) is vital as the escalating ageing trends will have long-term implications for the nation's economy. Due to the growth and increase of longevity of the elderly (senior) population in Malaysia, initiatives should be taken by offering more housing concepts or living arrangements suitable for this unique generation. Thus, a housing concept with elderly-friendly design features is significant and highly needed to guarantee a good quality of life for the elderly (seniors) to age in place.

PROBLEM STATEMENT

Continually improved health conditions and life expectancy drives the aged generation to become more active (mobile) and independent

Poorly designed buildings, insufficient communal areas, limited mobility options, and few supportive services resulted in difficulty for people to remain active and engaged with friends, family & neighbours.

The environments incorporate design elements and promote opportunities for socialization, support and enrich the lives of individual residents (Kochera, et al., 2005).



RESEARCH OBJECTIVES

- To determine the Elderly-Friendly Housing Design needs and preferences features for the ageing population in Malaysia.
- To suggest a suitable Elderly-Friendly Housing Concept embedded with Elderly-Friendly housing design features to enhance the elderly quality of life for the Malaysian ageing population.

RESEARCH AIM

To provide a comprehensive overview of the Elderly-Friendly Housing Concept, and the Housing Design Features Preferences for the Malaysian Ageing Population.

METHODOLOGY

MIXED-METHODS: Qualitative & Quantitative

Literature Reviews

Qualitative – Industries

Pilot Study

Quantitative – Housing Consumers

Data Analysis & Findings

Develop Framework

FRATRY IN ELDERLY

- Unstable with changes in the floor level/surface
- Problem with eyes vision
- Decreased stamina
- Difficulties with wayfinding
- Fail to bend, stoop or stretch
- Difficulties in gripping
- Difficulties in pushing to open heavy doors



NOVELTY & COMMERCIALIZATION

THE MALAYSIAN GENERATIONAL ELDERLY-FRIENDLY HOUSING DESIGN FEATURES FRAMEWORK (MGens-ElderLyHD)

CONFERENCES & PUBLICATIONS

- Ismail, H., Nordin, M. S. A., & Abidin, A. W. Z. (2020). The Elderly-Friendly Housing Design Features Preferences by Generations in Malaysia. *Environment-Behaviour Proceedings Journal*, 5(15), 141-148.
- Ismail, H., Halil, F. M., Abidin, A. W. Z., & Hasim, M. S. (2020). The Elderly (Senior) Housing Preferences among Generations in Malaysia. *Environment-Behaviour Proceedings Journal*, 5(13), 145-154.



RECOGNITION

INNOVATION: GOLD AWARD
The Malaysian Generational Elderly Residential Environment Preferences (GenEREPs) Assessment Tool & Geographic Information System (GIS)

IIDEX2019, DATC, UiTM, Shah Alam (10th-15th September 2019).

MAIN FINDINGS

THE ELDERLY-FRIENDLY HOUSING DESIGN PREFERENCES BY GENERATIONS 3 main preferred features

Generation	Baby Boomers	Generation X	Generation Y
Elderly-Friendly Bathroom	1) Walk-in Shower 2) Grab/Holding Bars 3) Raised/Elevated Toilet Seat	1) Switches 2) Walk-in Shower 3) Raised/Elevated Toilet Seat	1) Walk-in Shower 2) Grab/Holding Bars 3) Switches
Elderly-Friendly Bedroom	1) Mobility aids 2) Call Button 3) Bed	1) Call Button 2) Electrical Switches and Outlets 3) Bed	1) Mobility aids 2) Bed 3) Electrical Switches and Outlets
Elderly-Friendly Floor	1) Floor material 2) Floor Design	1) Floor material 2) Floor Design	1) Floor material 2) Floor Design
Elderly-Friendly Kitchen	1) Refrigerator 2) Cupboards 3) Countertops height	1) Refrigerator 2) Stove 3) Cupboards	1) Manoeuvring 2) Cabinets 3) Cupboards
Elderly-Friendly Living Room	1) Lighting 2) Electrical Cords 3) Intercom system	1) Electrical Cords 2) Lighting 3) Intercom System	1) Lighting 2) Electrical Cords 3) Furniture
Elderly-Friendly Staircase	Staircase Geometrical Design: 1) Staircase Configuration 2) Number of steps per flight Staircase Handrail design: 1) Handrail existence 2) Handrail height 3) Handrail wall clearance Staircase Lighting: 1) Lighting Switches 2) Consistency of Lighting 3) Illumination level Staircase Steps Design: 1) Riser height 2) Going depth 3) Nosing	Staircase Geometrical Design: 1) Numbers of steps per flight 2) Staircase configuration Staircase Handrail design: 1) Handrail existence 2) Handrail height 3) Handrail cross-section Staircase Lighting: 1) Lighting Switches 2) Consistency of Lighting 3) Illumination level Staircase Steps Design: 1) Going depth 2) Riser height 3) Nosing	Staircase Geometrical Design: 1) Staircase Configuration 2) Number of steps per flight Staircase Handrail design: 1) Handrail existence 2) Handrail surface texture 3) Handrail-wall clearance Staircase Lighting: 1) Lighting Switches 2) Consistency of Lighting 3) Illumination level Staircase Steps Design: 1) Going depth 2) Step finishing material 3) Nosing

CONCLUSION

Different generations are equipped with different needs and preferences. However, the study shows **the older generations and younger generations of Malaysian housing consumers show similar preferences** for elderly-friendly housing design features.

