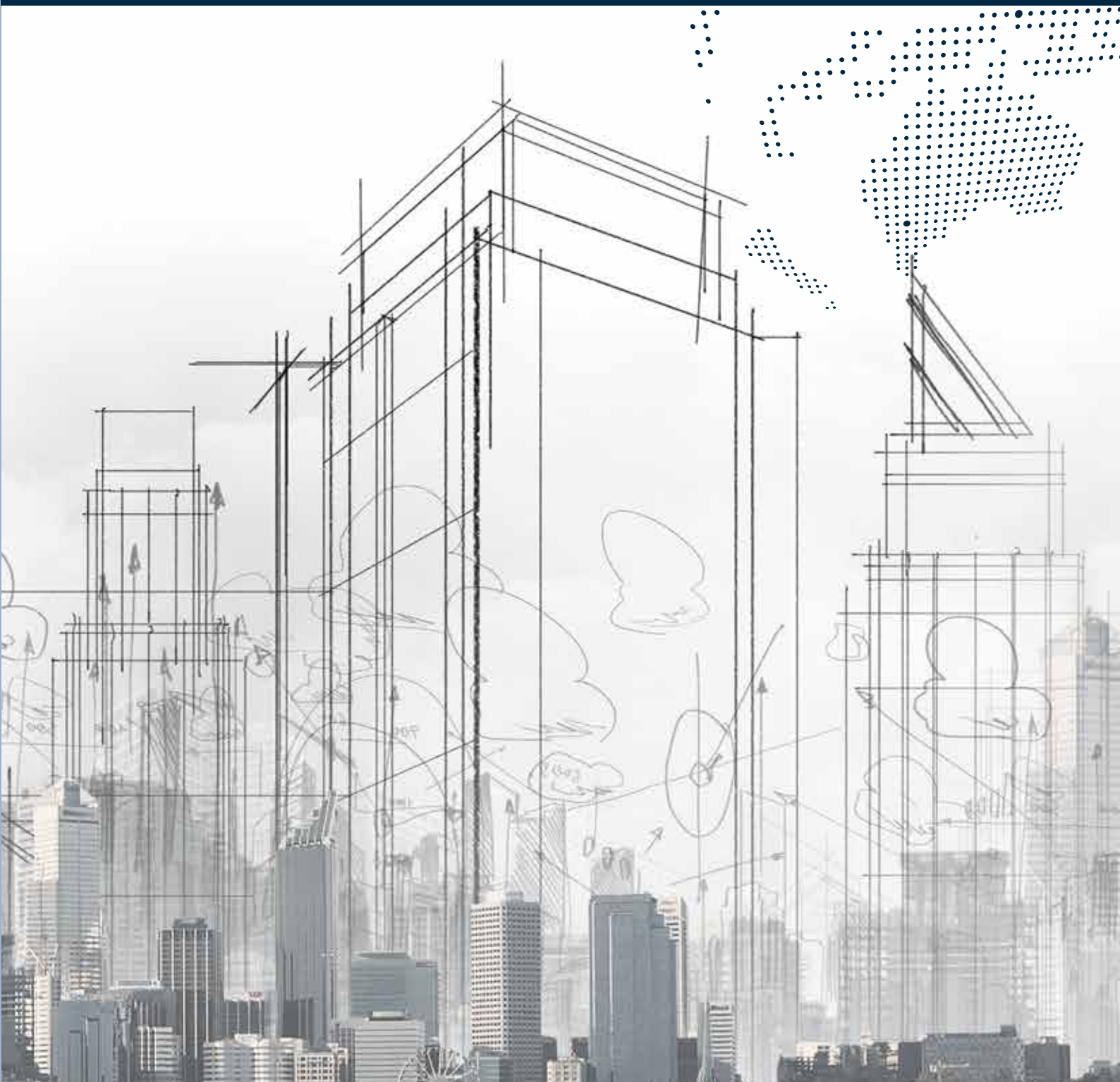
CIDB AFFORDABLE HOUSING DESIGN STANDARD FOR MALAYSIA

CIDB TECHNICAL PUBLICATION NO: 205

CIDB MALAYSIA



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MALAYSIA

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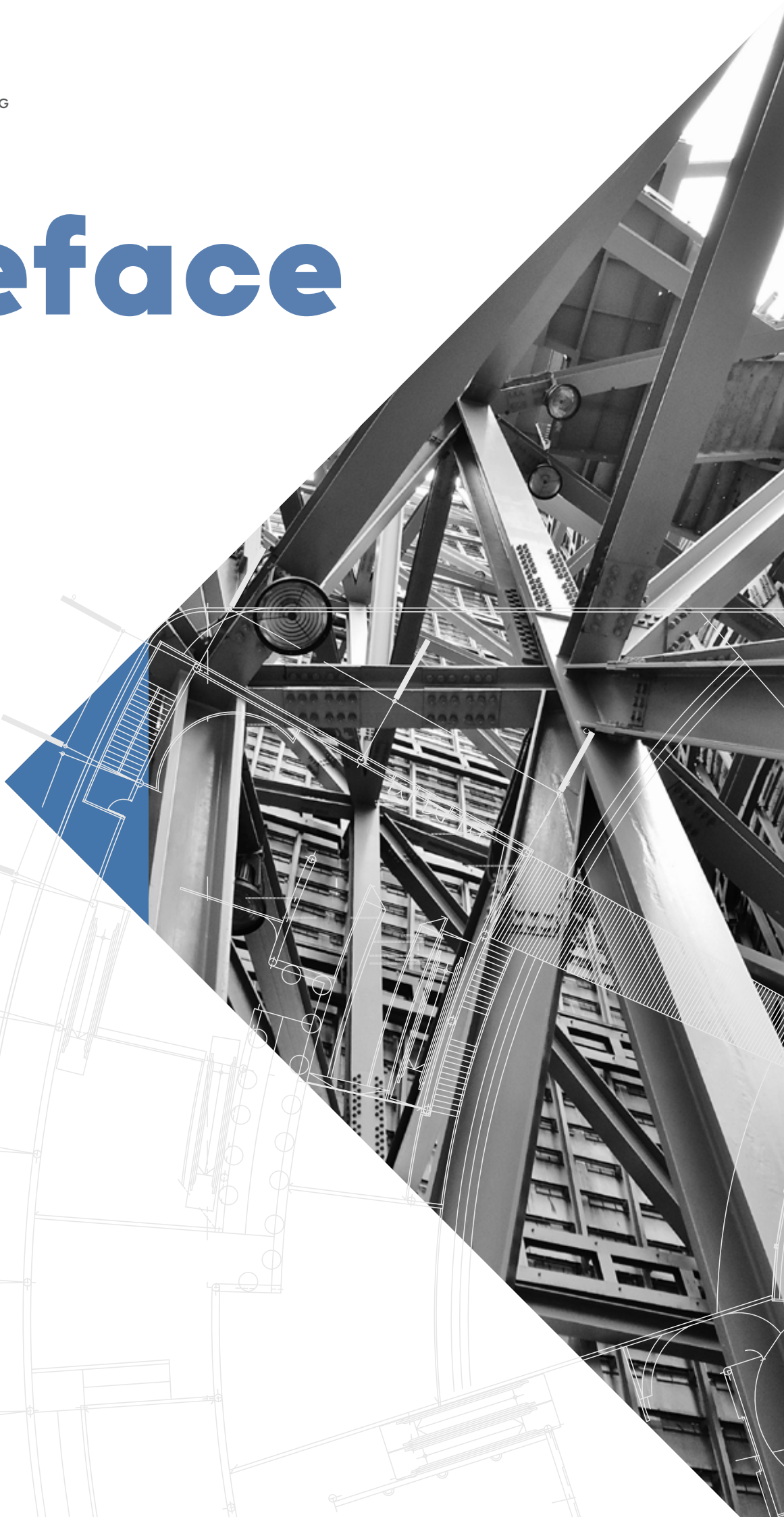
Contents

Preface



Delivering and constructing affordable housing for the people is a main agenda in the provision of quality, habitable, and decent houses. This is in line with Dasar Perumahan Mampu Milik Negara (DRMM) and Construction Industry Standard (CIS 26): 2019 Standard Perumahan Kebangsaan which outline standards, specifications, prices, and guidelines for affordable housing developments. Standard, system, and simple are the main factors influencing the production of affordable housing using the Industrialised Building System (IBS). The adoption of IBS can lead to faster construction and design uniformity. Therefore, a standard reference for affordable housing design needs to be developed to assist the government and private sector in applying IBS to accelerate the construction time and produce quality outcomes to meet the target of 70 IBS Score for government projects and 50 IBS score for private projects.

The **CIDB Affordable Housing Design Standard for Malaysia** book is a compilation of design standards for affordable housing developed by the Construction Industry Development Board (CIDB) which comprise three design concepts namely D3, DeLIGHT Homes, and MyIOS. This book aims to facilitate industry needs as a reference material with the following aspects: design layout, features, IBS component, IBS score, and cost estimation for building construction. The compilation of designs included in this book will be the standard design for the National Affordable Homes.

The design concepts in this book are combinations of four **housing design principles** which **are (1) build functional homes, (2) use sustainable solution, (3) humanise quality of life** and **(4) adoption of technology.** These principles generally include household varieties such as single, family, elderly and disabled. To improve air circulation and energy efficiency, the layout arrangement and building orientation have been integrated to allow natural day lighting and natural ventilation. The housing design layout promotes safety and security for occupants by incorporating transitional and open spaces without compromising privacy. The adoption of technology is through using standardisation such as modular coordination to achieve a considerable and acceptable quantity of IBS components. Henceforth, the construction industry needs to embark on innovative construction methods through volumetric modules. Open plan design concepts such as adjustable internal floor layouts to fit user needs should also be considered. Thus, through the various designs that have been compiled, CIDB expects to help change the perception of affordable housing in Malaysia.

INTRODUCTION

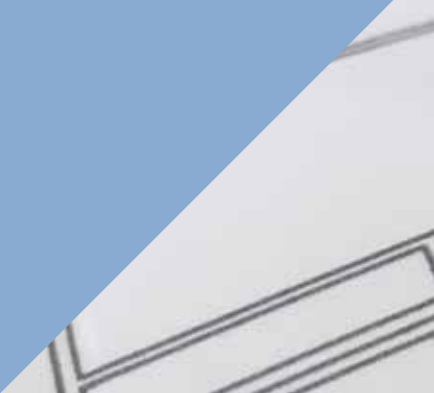
Housing Design Principle

01 *Build Functional Homes*

02 *Use Sustainable Solution*

03 *Humanise Quality of Life*

04 *Adoption of Technology*



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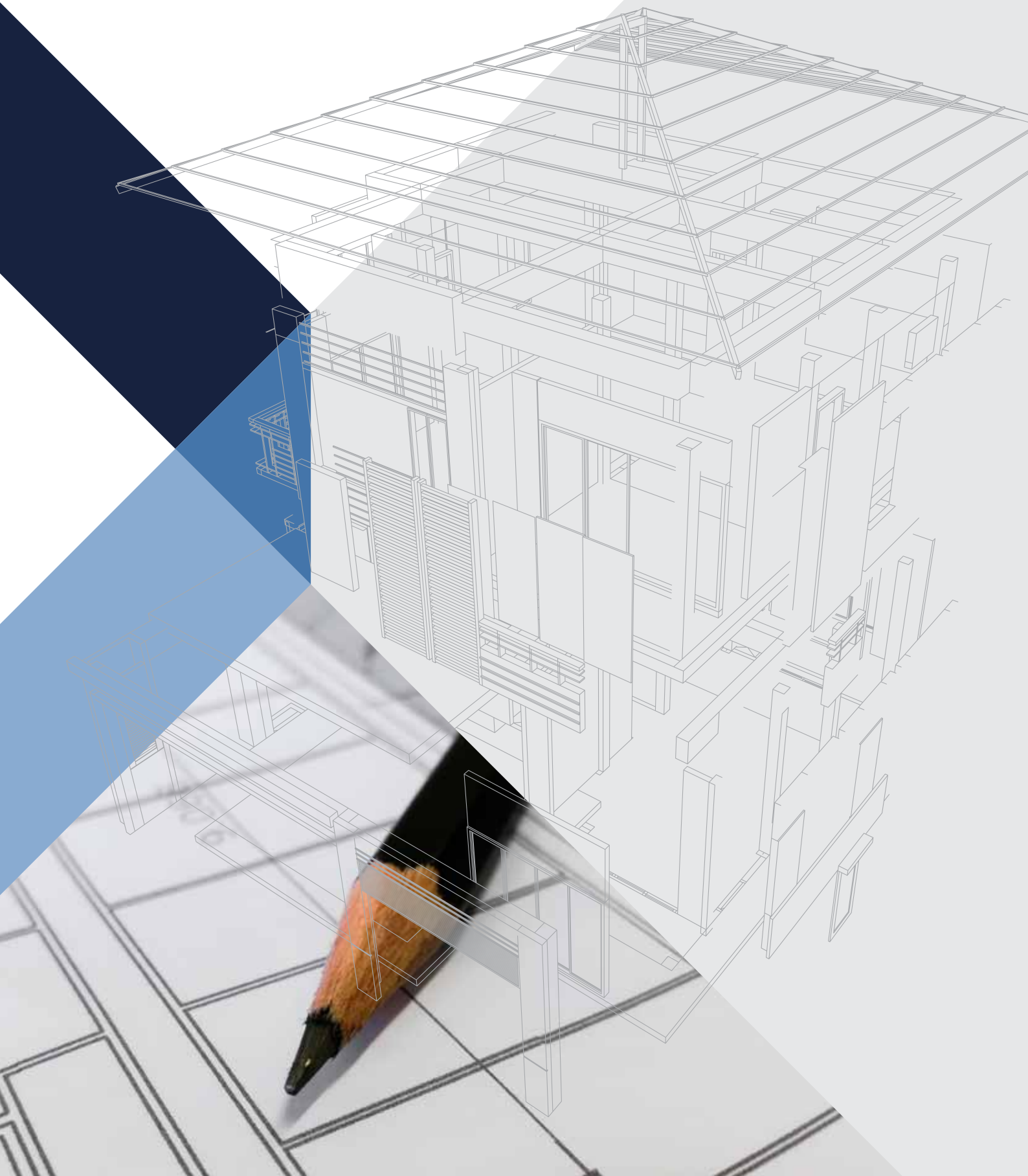


Background

The need for affordable housing design standards has become a priority for the government to overcome the inconsistent design of affordable housing projects and programs. This inconsistency contributes to the numerous non-systematic and non-standard costs of one project over another. The adoption of the Industrialised Building System (IBS) can lead to faster construction and design uniformity. Therefore, a standard reference for affordable housing design needs to be developed to assist the government in applying IBS to accelerate the construction time and produce quality outcomes. In addition, it will assist the construction industry in utilising IBS extensively to build affordable homes.

The Construction Industry Development Board (CIDB) Malaysia has developed an affordable housing standard which is intended to serve as a reference and guideline to the construction industry players for affordable housing development. This is in line with Dasar Perumahan Mampu Milik Negara (DRMM), a policy developed by the Ministry of Housing and Local Government (KPKT) to outline standards, specifications, prices, and guidelines for affordable housing developments.

As a result of previous research, CIDB has been able to produce a number of products namely D3, DeLIGHT Homes, and MyIOS home designs for use by the construction industry for home furnishing especially affordable homes. In general, the purpose of these design concepts is as stated below:

- **D3** stands for Divergent Dwelling Design which focuses on affordability, adaptability, and value purpose for the construction of sustainable housing on a massive scale especially in building low, medium cost, and affordable housing in a tropical country.
- **DeLIGHT Homes** stands for Design for Low-Income Group Housing Through Technology that aims to humanise low-income housing using technology and innovation. This research seeks to find ways to improve and humanise homes through design and efficient methods of building for quality affordable housing.
- **MyIOS** stands for Malaysian IBS Open System that allows greater flexibility of design where a potential user would be able to choose the best IBS design and product according to their preferences. The MyIOS design should be able to fulfil the standard requirements of the M40 and B40 income groups.

A compilation of design standards for affordable housing entitled **CIDB Affordable Housing Design Standard for Malaysia** has been developed by CIDB which includes D3, DeLIGHT Homes, and MyIOS to act as industry reference for affordable home design. The objective is to develop a comprehensive design standard as reference material with the following features: detailed design layout, sustainable features, suitable IBS components with IBS score, and estimated cost per unit. The compilation of designs that have been developed will be the standard design of National Affordable Homes.

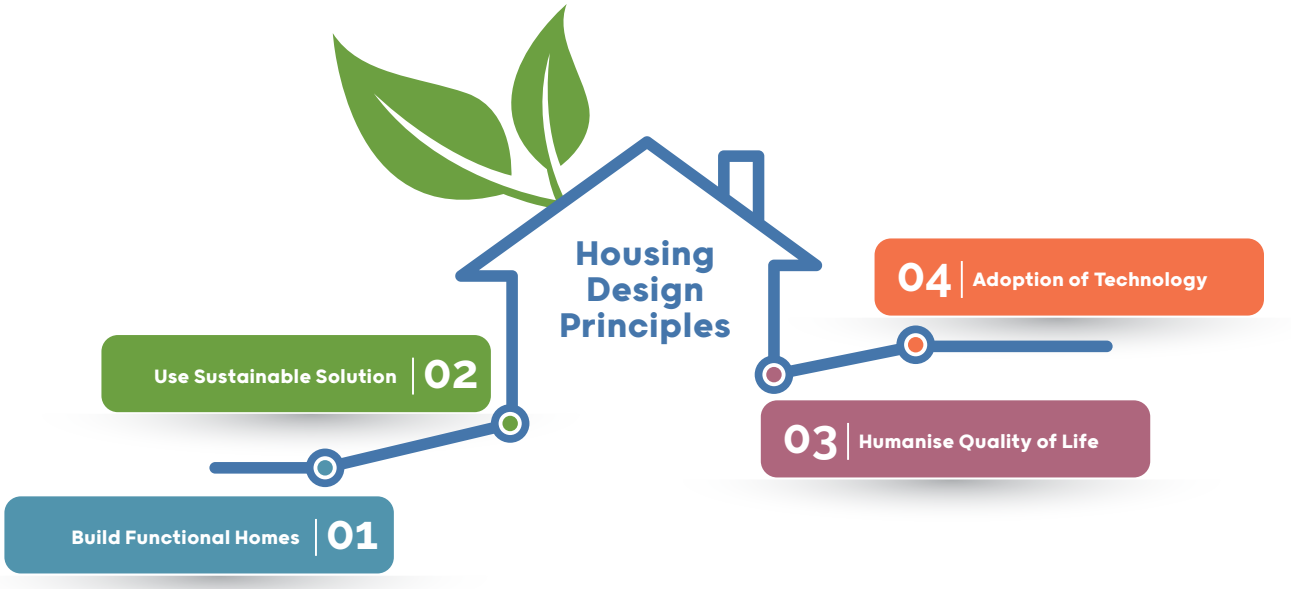
Housing Design Principle

Good quality housing can play a significant role in facilitating residents by improving their health and wellbeing. Healthy homes stimulate physical performance and mental health. Good health depends on having homes that are safe and free from physical hazards. In contrast, poor quality and inadequate housing contributes to health problems such as chronic diseases and injuries and can have harmful effects on childhood development. Poor indoor air quality, lead paint, and other hazards often coexist in homes; placing children and families at great risk of multiple health problems. The wrong choice of building system in construction also can lead to low building performance, durability, and resilience of homes.

Along with conditions in the home, the surrounding neighbourhoods where homes are located can also have powerful effects on health. The social, physical, and economic characteristics of neighbourhoods and community have been increasingly shown to affect short- and long-term health quality and longevity.

A safe neighbourhood's characteristics may promote wellbeing by providing places for children to play and for adults to exercise that are free from crime, violence, and pollution. Social and economic conditions in neighbourhoods may improve health by affording access to employment opportunities and public resources including efficient transportation, an effective police force, and good schools.

In order to achieve a humanised quality of housing, four principles of housing design have been identified in this book.



01 BUILD FUNCTIONAL HOMES

Good housing design should achieve functionality for a variety of household types, including families with children. The design should consider the unique needs of today's diverse families, accommodate a variety of physical abilities, adapted to changing household composition and changes in the developmental needs of family members, and balance competing demands for privacy and community. These are important criteria present in today's society. To be functional, the homes should be designed to accommodate household variety.

Household Variety

While there is a strong need for family housing, a full range of housing types that reflect our current household needs must be considered as well. Adult children living at home with parents, older residents, singles, adults sharing units to reduce housing costs, and shared housing for seniors are all very common practices. For housing with a variety of household types, some of the most compelling solutions provide a variety of unit types and sizes. In addition, there is a need to provide units that will accommodate residents with physical disabilities and units with children's play areas.

Demographic		House Type
	Single Person	➤ 1-Bedroom Home
	Young Couple	➤ 1-Bedroom Home ➤ 2-Bedroom Home
	Nuclear Family	➤ 2-Bedroom Home ➤ 3-Bedroom Home
	Extended Family	➤ 3-Bedroom Home ➤ 4-Bedroom Home (universal plan)
	Elderly Couple	➤ 1-Bedroom Home ➤ 2-Bedroom Home (universal plan)
	Living with a Disabled Person	➤ 2-Bedroom Home ➤ 3-Bedroom Home (universal plan)
	Elderly Couple with one Adult	➤ 2-Bedroom Home ➤ 3-Bedroom Home (universal plan)

Examples of demographics and house types for household variety

Adaptable Plans

Many homes built today cannot effectively accommodate changes in family sizes, physical abilities, incomes, and ages. Given that an important attribute of sustainability is the ability to meet today's needs as well as tomorrow's, designs that allow for adaptability over time play a role in sustainability.

Defined Circulation

In small units, the area for circulation oftentimes limits the usefulness of rooms. Walkways cut through living areas, kitchens become passageways, and dining areas are little more than hallways. In public areas (living rooms, dining areas, and kitchens), circulation routes pass by, rather than through, the furnishings. In private areas (bedrooms and bathrooms), circulation patterns can be used to help maintain privacy. Similarly, residents are not required to go through a bedroom to get to the only bathroom in a unit. A unique need with non-traditional households is to provide access to the private area without going through the public space of the unit.

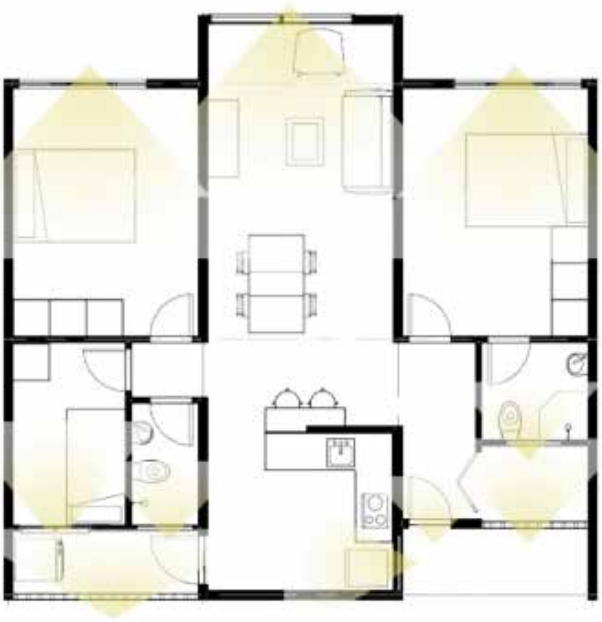
Example of dedicated public and private spaces in a home

02 USE SUSTAINABLE SOLUTION

In a world of diminishing natural resources and increased populations, it is important that all new residential developments be designed with sustainable practices in mind. The designs should recognise the importance of sustainability of the building using sustainable technologies, resource conservation, and energy efficiency. The principles in this category deal with passive design strategies and enhancing sustainability.

Natural Lighting

Units that have little respect for the orientation of the sun or the desirability of balanced natural light are not very pleasant to live nor efficient in terms of energy use. To achieve the best possible advantages of capturing natural lighting, more opening should be provided in north-south direction. Louvred panels, sliding glass panels, and ventilation blocks are used to allow natural lighting into internal spaces.



Example of natural daylighting in all the rooms

Natural Ventilation

Natural ventilation for a home is required to eliminate the maximum usage of air conditioning in hot weather. The designed units have natural ventilation patterns that maximise air circulation from cross and stacked ventilation. The use of operable windows for light and ventilation can also reduce energy usage as well as provide a more attractive environment.

Example of adequate well-ventilated space for private outdoor activity

Green Roofs

Green roofs are one effective way of enhancing sustainability. While the traditional pitched roof has many aesthetic and practical benefits, it is difficult to incorporate into sustainable strategies. Green rooftops have begun to appeal to homeowners and even businesses as an attractive way to promote the green concept while solving the problems of conventional roofs. Green roofs last longer than conventional roofs, reduce energy costs with their natural insulation, and create peaceful retreats for people. They also minimise water run-off, potentially lessening the need for complex and expensive drainage systems. On a wider scale, green roofs improve air quality and help reduce the urban heat island effect, a condition in which city developments absorb and trap heat.

Example of green roof on top of apartment building

Sustainable Building Materials

Most housing incorporate sustainable building materials and practices such as high-efficiency windows and doors, recycled and environmentally friendly materials, and low-maintenance materials to reduce energy use and to maintain a sustainable environment. The more successful courtyards minimise hard surfaces such as concrete and asphalt, and effectively reduce the urban heat island effect.

03 HUMANISE QUALITY OF LIFE

Courtyard housing allows occupants to share outdoor spaces that can meet the needs of families with children and serve as a gathering place for residents. Landscaped courtyards can serve a variety of community functions, such as common open spaces, gardens, child play areas, and recreational areas. It also can provide a functional role for environmental benefits, extending far beyond simply providing aesthetic benefits.

Shared courtyards

Courtyard housing projects should address the relationship between indoor and outdoor spaces in a way that balances community orientation with privacy needs, as this balance is a central design issue for housing oriented to shared courtyards. To promote a strong sense of community, engagement with the street, a safe and secure environment, and compact design to assist in issues of sustainability and affordability are among the requirements.

Example of shared courtyard with green open public spaces around the housing property

Common greens

Common green areas should be centrally located for all units. This is especially important for the safety of small children. Landscaped courtyards can also serve a valuable environmental role in providing opportunities for stormwater management. Common green areas work well in conjunction with shared courts designed to serve as an expansion of the people-only courtyard space when not in use by cars.

Example of landscaped courtyard in central location

View on Open Spaces

Open spaces like courtyards, streets, and sidewalks that are visible from the units are likely to benefit from surveillance by residents. This type of surveillance has security benefits as well as liveability benefits. This concept promotes safety and security for residents as public spaces face the street or courtyard and parents can monitor their children playing in the courtyard. The concept offers returns beyond the functionality of the areas themselves.

Example of view out

Transitional Spaces

The importance of transitional spaces between interiors and exteriors is to eliminate potential privacy problems. These transitions are made with porches, landscape buffering, balconies, and front-door gardens. These zones help to ensure that window coverings would not always be required for privacy. Hence, units with these transitional spaces could have an outward-focused orientation to provide eyes on common open spaces without compromising privacy.

Example of outdoor private space

Engaging the Street

A housing design which effectively engages with the street provides a positive relationship between the public realm of the street and pavement and the more private space of the buildings. This principle is also facilitated by minimising the width of dropped kerbs for vehicles, avoiding placing parking structures and areas along the street frontage, and by orienting doors and windows to the street instead of blank walls.

Courtyard housing provides unique opportunities to use open spaces for landscaping to continue neighbourhood patterns. Other approaches utilise courtyard space to provide trees and other plantings that can help blend into the neighbourhood where lush vegetation is a key part of neighbourhood character.

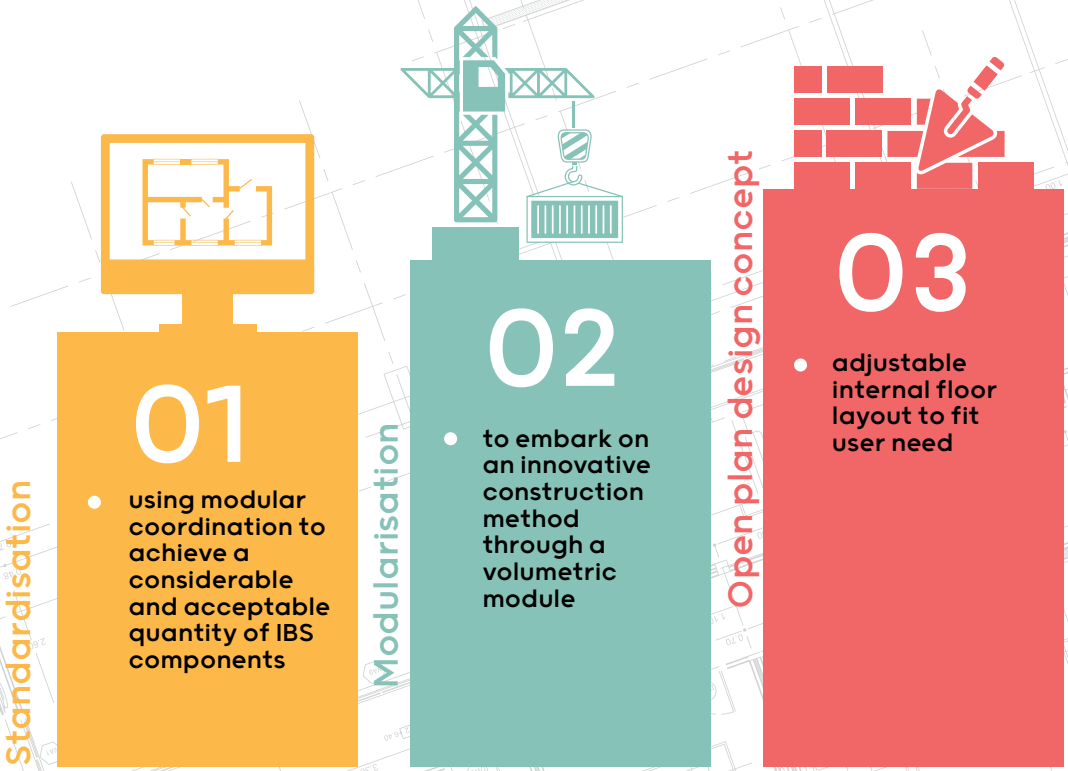
Example of sidewalk around the building

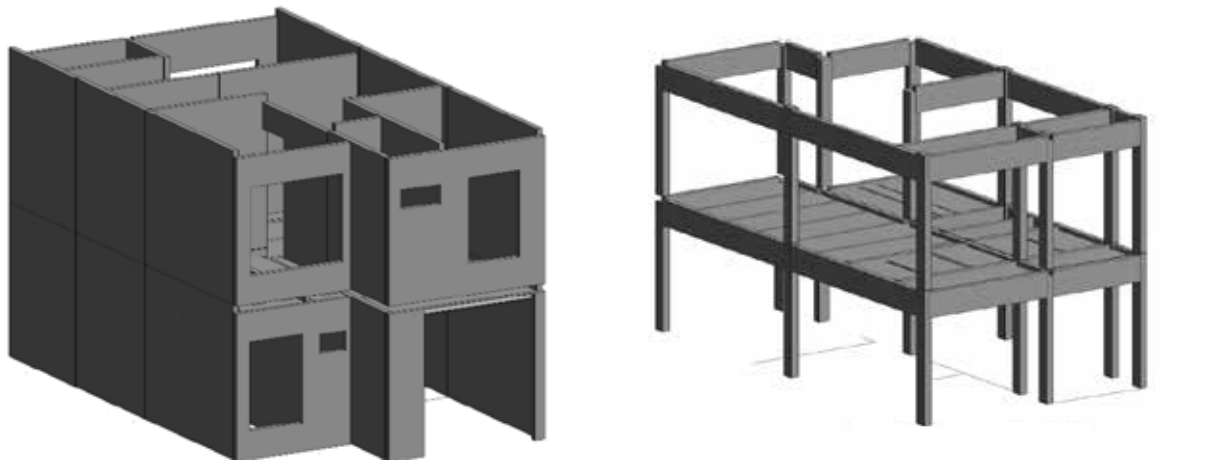
04 ADOPTION OF TECHNOLOGY

The Government has launched initiatives to produce more affordable and quality homes for Malaysians at a higher rate. IBS is one of the solutions. IBS is intended to help developers build better quality homes at a faster rate resulting in a higher volume of units to cater to the increasing demand for affordable homes.

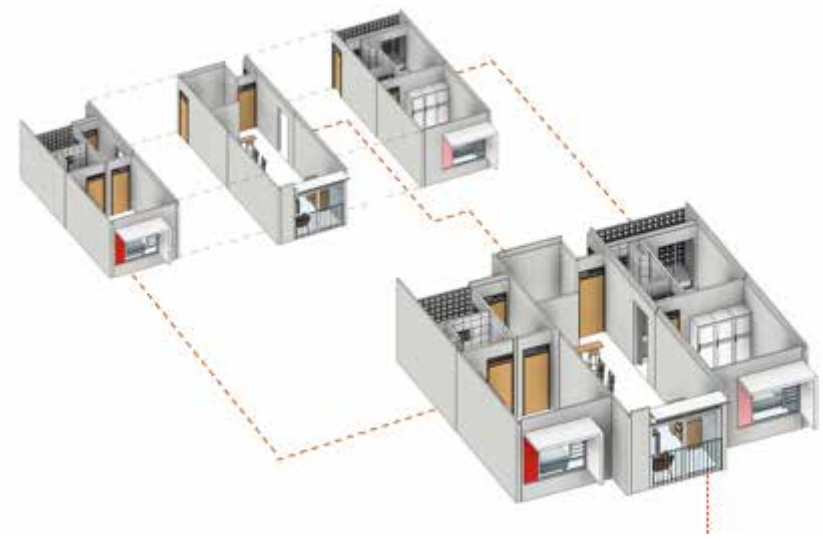
The IBS term has been described as the technology adoption of construction industrialisation, mechanisation, and the use of prefabricated components in building construction. IBS technology has the ability to complete homes at a faster rate–about half the time that conventional construction would take–with no compromise on quality.

The adoption of this technology on a large scale will encourage even lower construction costs, resulting in the ability to build cheaper, quality homes at a faster rate. The method will contribute towards the improvement of design, components, and building quality. More importantly, it will improve the net profit margin of companies.





Example of standardisation of IBS component using precast wall and slab (left) and precast concrete framing (right)



Example of modularised design concept for volumetric module

Example of open plan design concept where internal wall between bedrooms can be removed or adjusted and components such as bathroom can be plugged-in

SECTION 1

D3:
Divergent Dwelling Design

01 D3 Apartment

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FOR MALAYSIA

Design collaboration by:

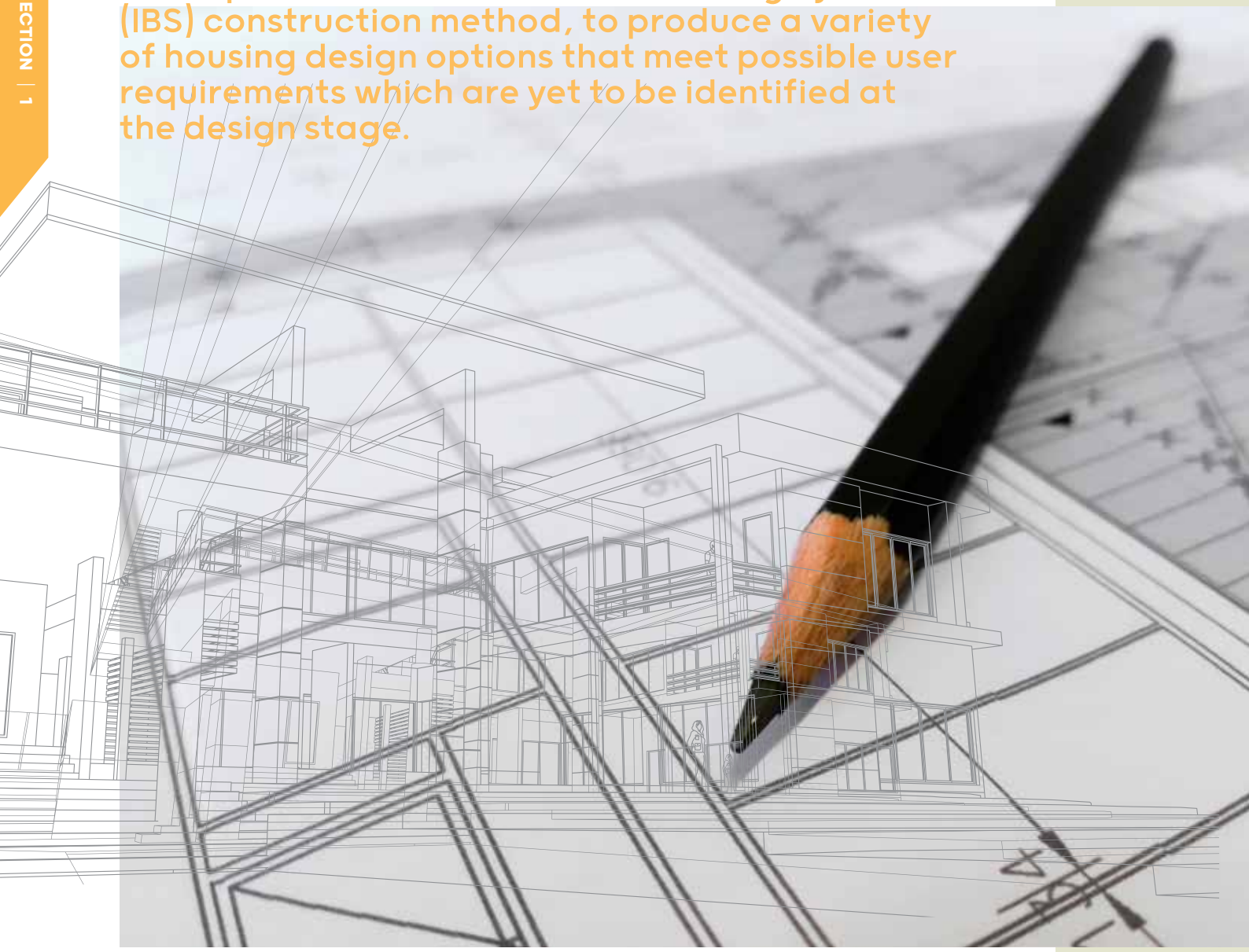
G&A ARCHITECT

CREAM CONSTRUCTION RESEARCH INSTITUTE OF MALAYSIA

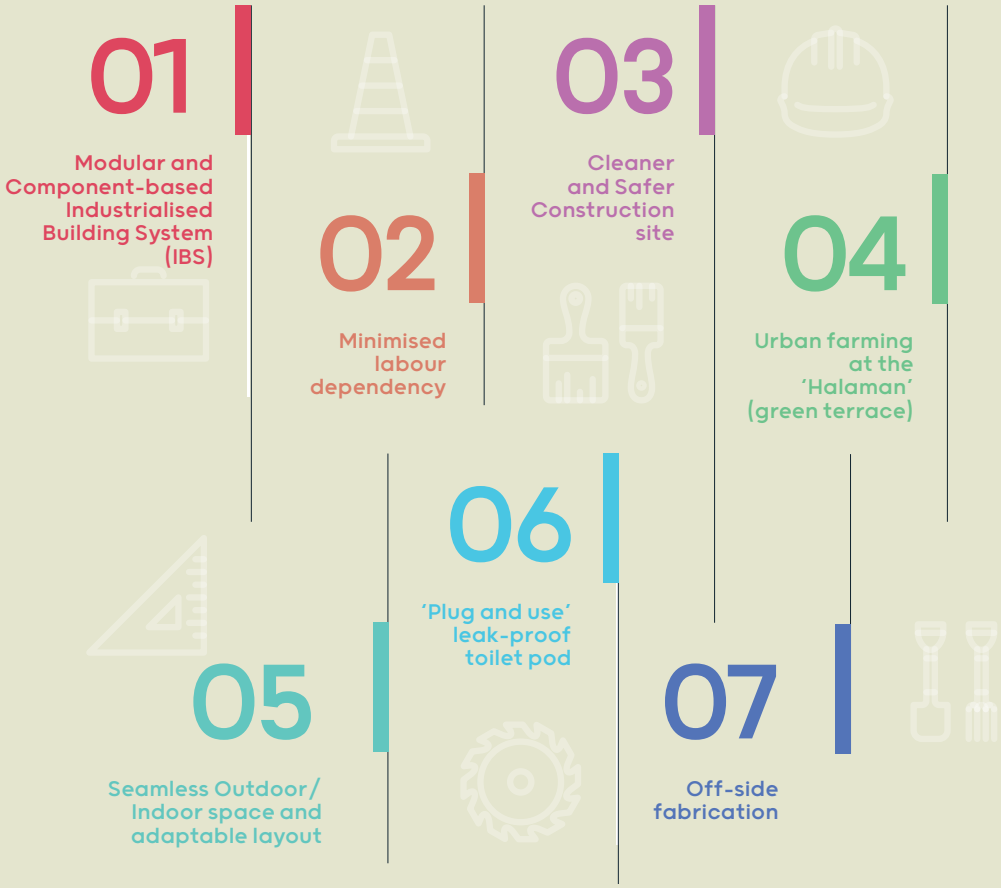
Sime Darby Property

Overview of D3 Design

Divergent Dwelling Design (D3) is a combined design and construction system which directly responds to the fundamental demographic and economic pressures that has heightened the need for an appropriate solution for urban mass housing. It makes use of the open plan design concept and the Industrialised Building System (IBS) construction method, to produce a variety of housing design options that meet possible user requirements which are yet to be identified at the design stage.



Special features of D3 Homes are as follows:



The D3 design contributes in providing innovative and sustainable solutions to the problems of the tropics and how the application of the innovative solutions could further improve quality of life and contribute towards the prosperity of the region. D3 is an inherent design strategy of sustainable development that fully utilises the idea of flexibility. This flexibility was inspired by the traditional Malay 'kampung' house design approach.

Generally, a 'kampung' house is a combination of units (rumah ibu, dapur, anjung, serambi, etc) that diverges to reduce the immense intricacy of architecture to simple units and bring about an effective formation of a flexible dwelling system. The concept makes the Malay 'Kampung' house special as it results in flexibility using the addition (expansion) and subtraction (reduction) system.

D3 adapts the concept layout from the kampung house which has 'rumah ibu' and 'halaman'. In short, D3 is a 'Kampung' House Design built vertically.

'Kampung' house

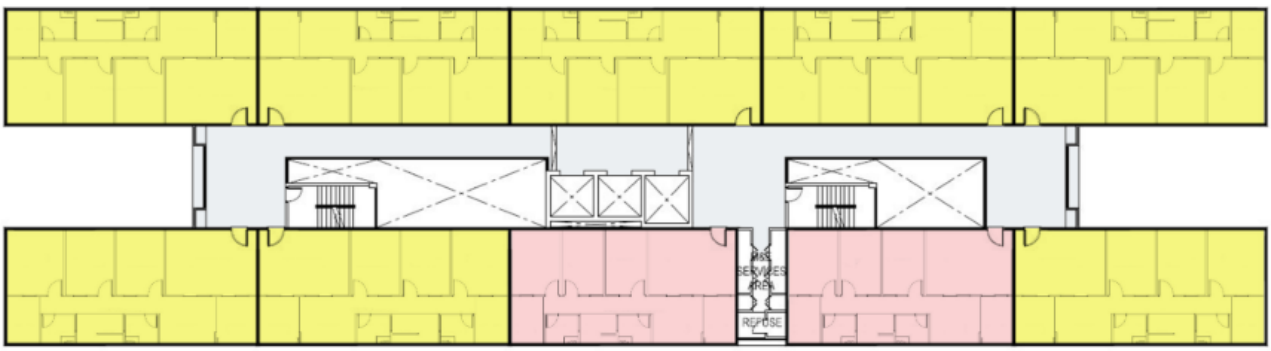
D3 concept house

D3 Housing Category

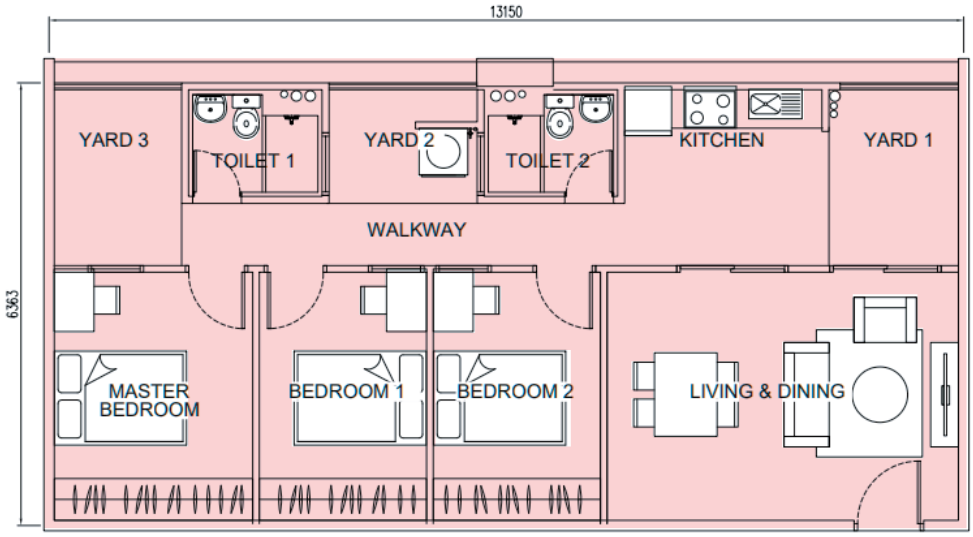
01 D3 APARTMENT

D3 Apartment – Typical Floor

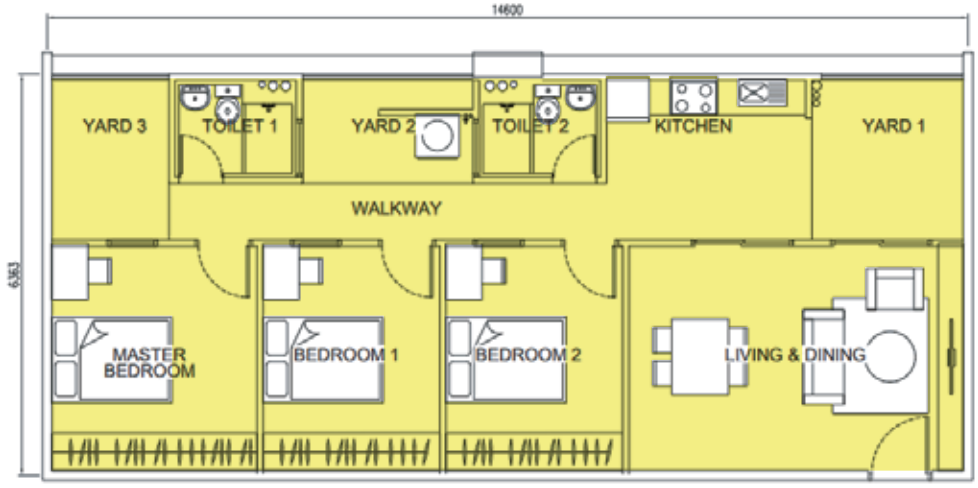
D3 Apartment 3D View (Artist's Impression)



D3 Apartment Typical Floor Plan Layout



D3 Apartment Type-C Unit Floor Plan Layout



D3 Apartment Type-D Unit Floor Plan Layout

General Information of D3 Apartment		
Type	▸ Apartment – Typical Floor	
Gross Floor Area (GFA) per Typical Floor	▸ 1,182 sq m/12,722 sq ft ▸▸ Type-C unit – 83.6 sq m/900 sq ft ▸▸ Type-D unit – 93.0 sq m/1000 sq ft	
Unit Type and Number per Typical Floor	▸ Type-C Unit – 2 units ▸ Type-D Unit – 8 units	
Space	▸ Type-C Unit ▸▸ Living & Dining Area ▸▸ Kitchen ▸▸ Bedroom – 3 units ▸▸ Bathroom – 2 units ▸▸ Yard – 3 units including Laundry Area	▸ Type-D Unit ▸▸ Living & Dining Area ▸▸ Kitchen ▸▸ Bedroom – 3 units ▸▸ Bathroom – 2 units ▸▸ Yard – 3 units including Laundry Area

Element	Specification
Foundation	• Piling – Reinforced concrete square pile
Structure	• Precast concrete slab : 75 mm/100 mm thick • Precast concrete beam • Precast concrete wall : 100 mm/125 mm/150 mm/250 mm thick • Reusable aluminium formwork slab, beam, wall
Roof	• Roof framing - Lightweight steel, reinforced concrete flat roof • Roof covering - Metal deck
Finishes	• Door - Timber plywood flush door, powder coated aluminium sliding door • Window – Powder coated aluminium adjustable louvre window • Wall – Skim coat, plaster & paint • Floor – Ceramic tiles, cement render • Ceiling – Skim coat, plaster board, paint • Sanitary fitting – Water closet, basin, shower hose, hand bidet, toilet roll holder, floor trap, sink, tap

Description	Structural System		
	Precast Concrete Wall & Slab	Cast in-situ Wall & Slab using Reusable Steel Formwork	Cast in-situ Wall using Reusable Steel Formwork + Precast Slab
IBS Score	100.00	51.50	70.50
Estimated Building Construction Cost			
Total Cost Estimate : 1 floor	RM 1,379,945.10	RM 1,371,337.70	RM 1,306,659.70
Total Cost Estimate : 1 unit	RM 137,994.51	RM 137,133.77	RM 130,665.97
Total Cost Estimate : 1 sq m	RM 1,167.47	RM 1,160.18	RM 1,105.47
Total Cost Estimate : 1 sq ft	RM 108.46	RM 107.78	RM 102.70

- Cost estimate is based on a 200 unit apartment building.
- Cost estimate for D3 Apartment includes architectural, structural, mechanical and electrical works.
- Cost estimate excludes preliminaries and contingencies.
- Rate for precast items all inclusive of moulding, supply, transportation, and installation.
- Assumption for mechanical, electrical, and plumbing works: RM 25.00 per sq ft.
- Actual cost of a building depends upon the design and many other factors and may vary from the figures shown.
- This is based on current rates obtained by competitive tendering. No allowance has been made for future increases in costs of labour, materials, and plant. This cost is subject to passage of time, changing business condition in the building industry, availability of information, etc. Whilst we endeavour to assign a reasonable cost to each element in the estimate at the time of preparation, we are not responsible for future changes in market condition or the contractor's pricing strategy.

SECTION 2

DeLIGHT Homes: Design for Low-Income Group Housing Through Technology

CIDB AFFORDABLE HOUSING
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Design collaboration by:

ELEENA JAMIL
architect

CREAM
CONSTRUCTION RESEARCH
INSTITUTE OF MALAYSIA

Overview of DeLIGHT Homes Design

The DeLIGHT Home concept is an applied research project aimed at humanising low-income housing using technology and innovation.

The concept is motivated by the desire to improve the way low-income housing is designed and built. Low-income housing is often associated with problems such as low-quality design and construction; maintenance; insufficient ventilation; overcrowding; cramped living spaces; and safety.

The liveability aspects of affordable housing are important to improve the quality of life of low- and middle-income households. The government believes that the provision of quality affordable housing will improve Malaysians' social wellbeing. Liveable communities are defined as places that are safe, attractive, socially cohesive and inclusive, and environmentally sustainable.

The special features of DeLIGHT Homes are as follows:

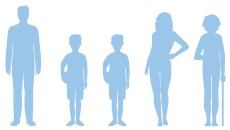
A. DeLIGHT Homes considers designing flexible homes to meet the needs of different demographic groups, family units, and living challenges. Design strategies that include modularity, adaptability, and universality add to the comfort and convenience of the homes and support the changing needs of individuals and families at different stages of life.

Single Person/Young Couple/ Elderly Couple
- Live/Workspace
- Generous Storage for one
- Living Area separated from the Kitchen

Nuclear Family
- Accommodates wheelchair users
- Living Area separated from the Kitchen
- 3 Bedrooms

Living with the Disabled
- Accommodates wheelchair users
- 2 Master Bedrooms with 1 Normal Bedroom
- Kitchen separated from the Living Area

Nuclear Family
- Separate Bedrooms
- Bunk beds
- Study & Homework Area
- Generous Storage Area



Extended Family
- Accommodates wheelchair users
- Generous Storage Area
- Kitchen separated from the Living Area
- Large Drying Yard Area
- Study & Homework Area

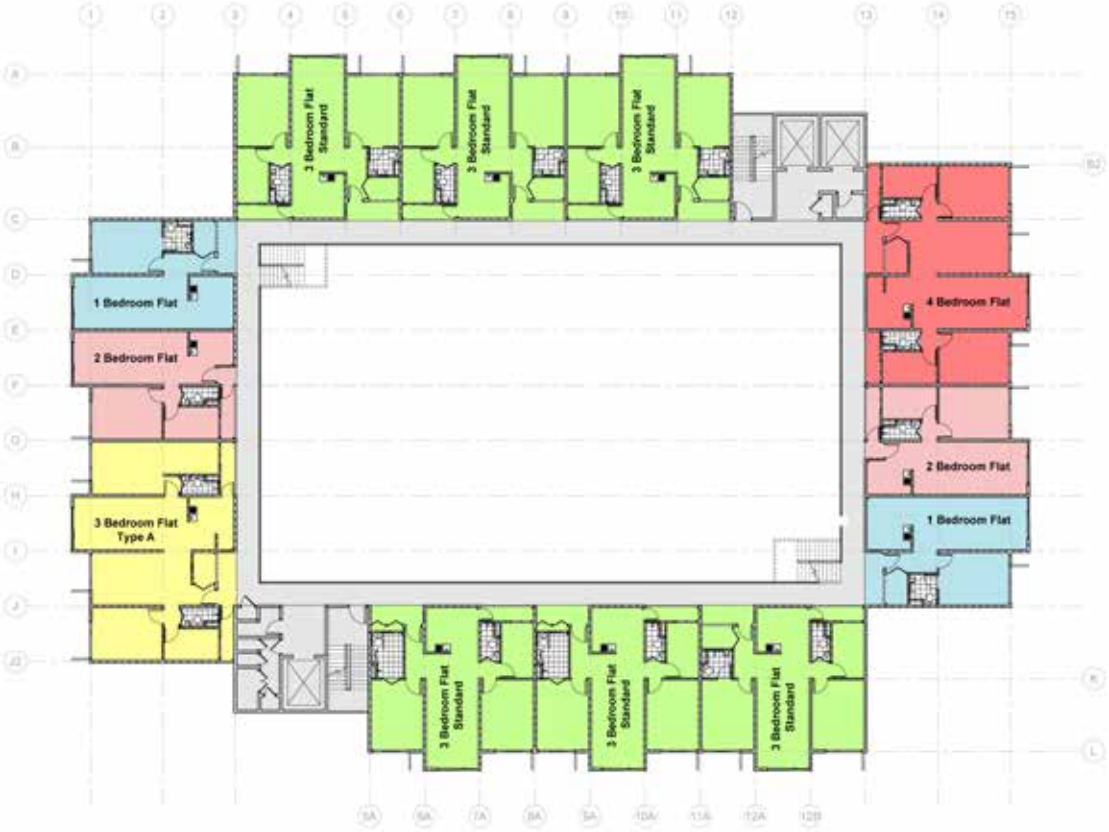
B. The home units are designed in a way that allows them to be modularised. Modularity allows standard sections to be fabricated off-site while the main structure is being erected at the site, thus speeding up the whole construction process. The size of each module has been considered for the logistic and installation requirements. Standard modules are mixed and matched to form living units of different sizes and layouts.

DeLIGHT Homes Housing Categories

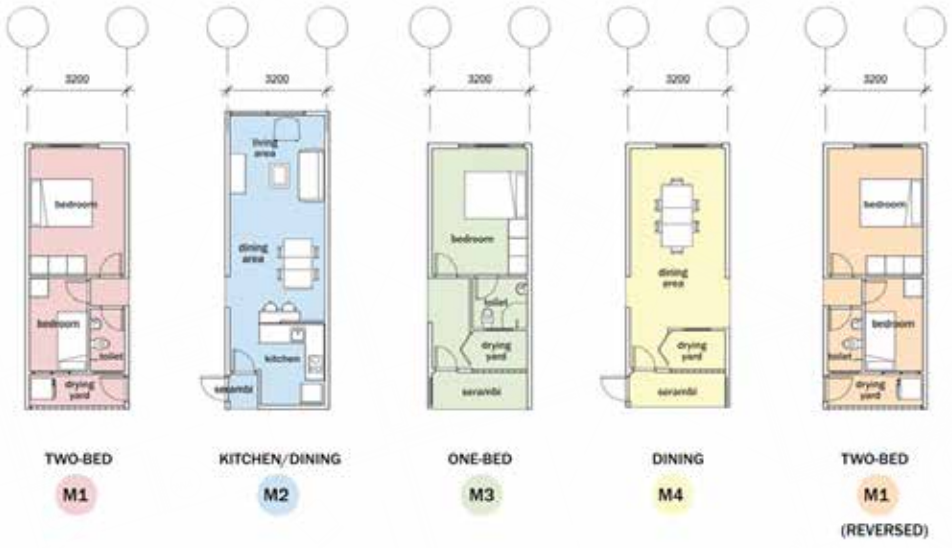
01 DeLIGHT HOMES APARTMENT

DeLIGHT Homes Apartment – Typical Floor

DeLIGHT Homes Apartment 3D View (Artist's Impression)

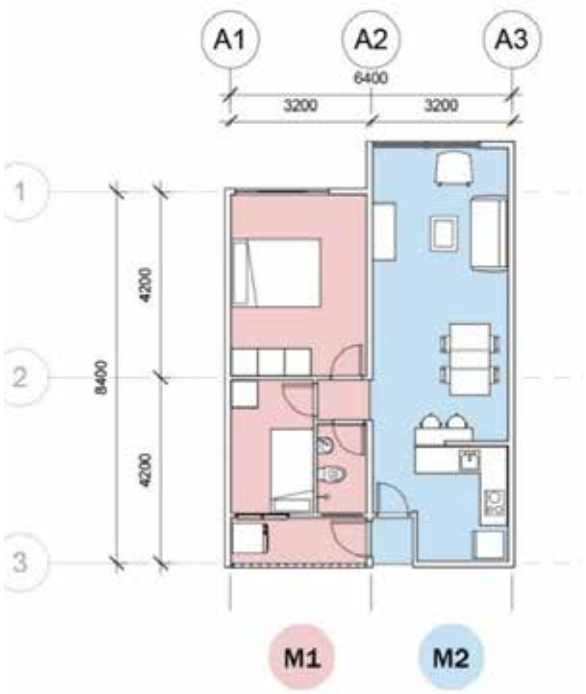


DeLIGHT Homes Apartment Typical Floor Plan Layout

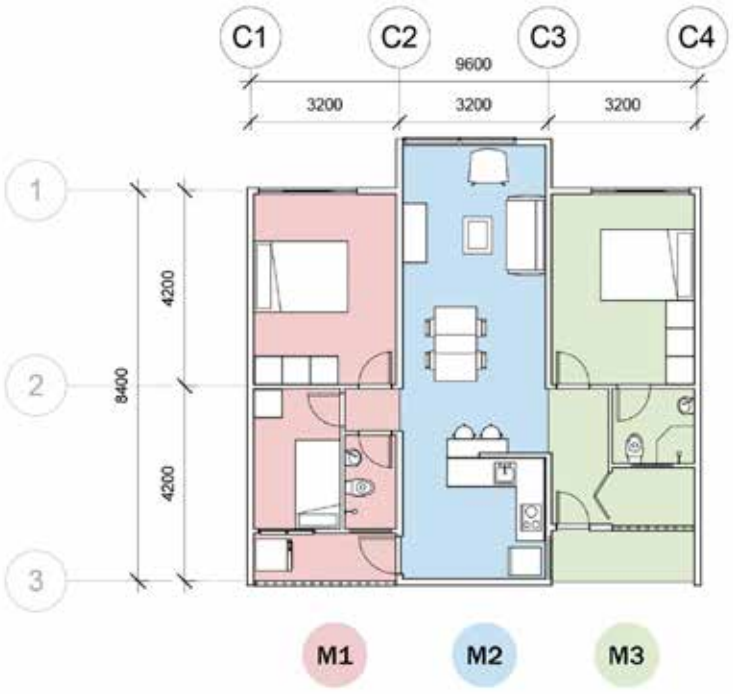


DeLIGHT Homes Apartment Standard Module Unit

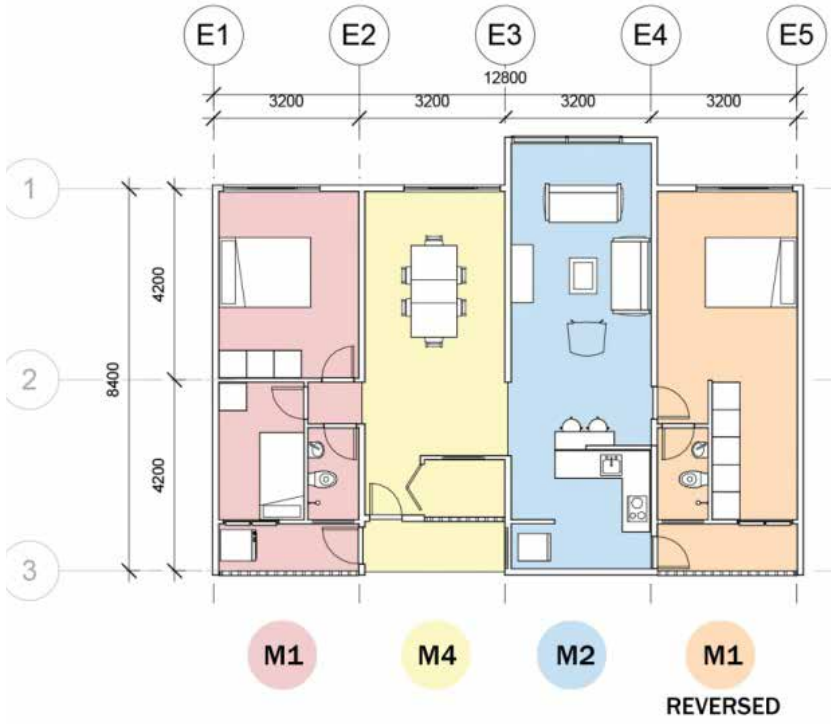
DeLIGHT Homes Apartment 1-Bedroom
Flat Floor Plan Layout



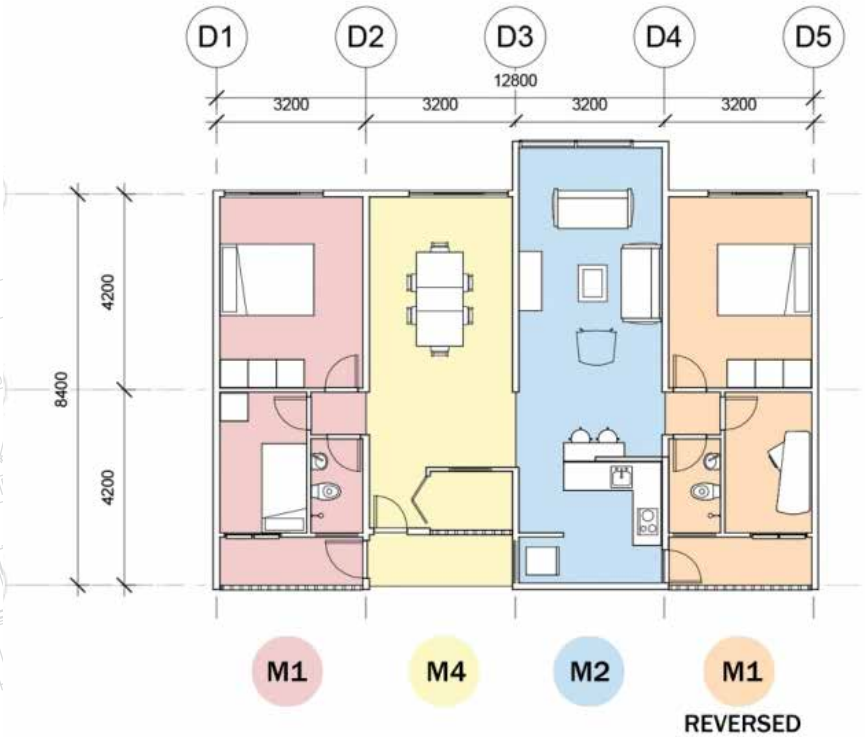
DeLIGHT Homes Apartment 2-Bedroom
Flat Floor Plan Layout



DeLIGHT Homes Apartment 3-Bedroom
Flat Standard Floor Plan Layout

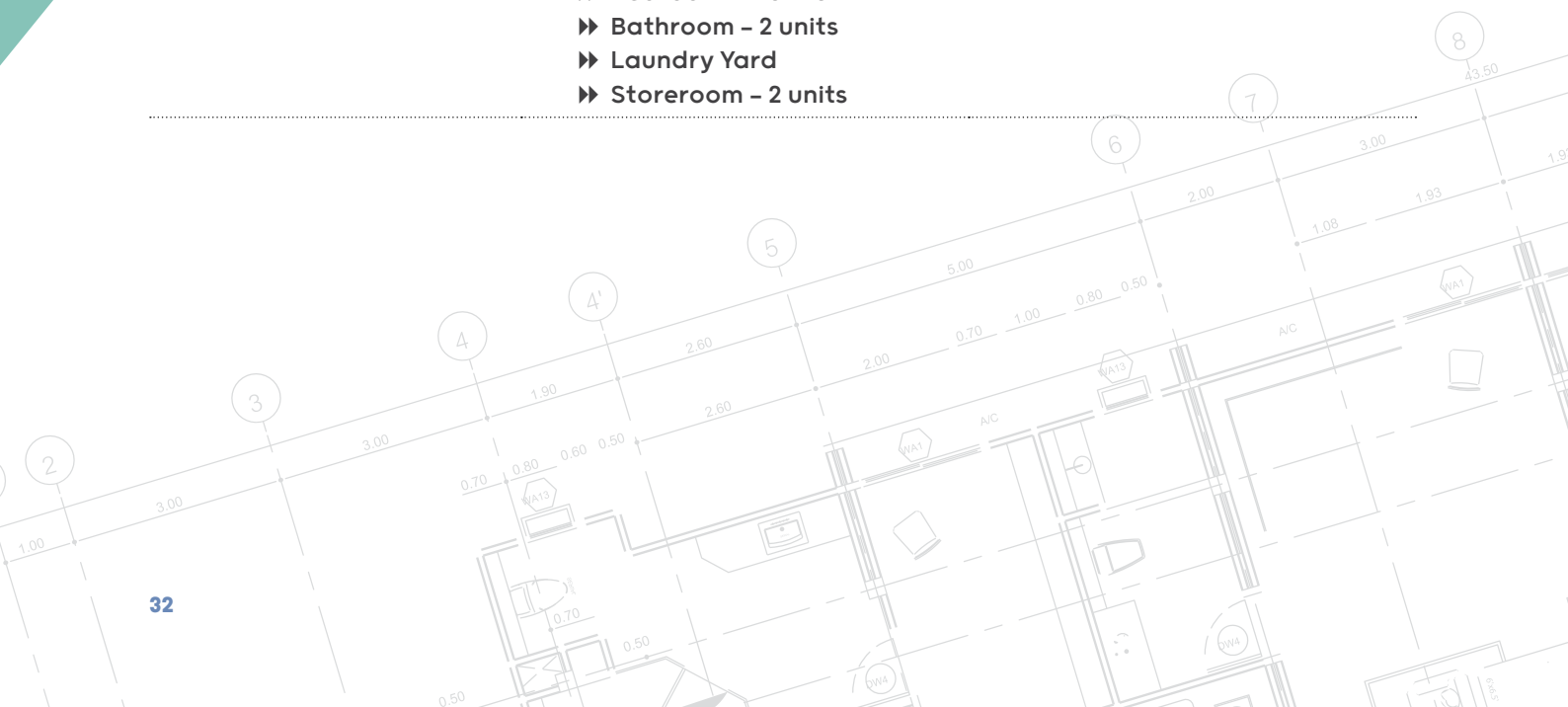


DeLIGHT Homes Apartment 3-Bedroom
Type-A Flat Floor Plan Layout



DeLIGHT Homes Apartment 4-Bedroom
Unit Floor Plan Layout

General Information of DeLIGHT Homes Apartment	
Type	▸ Apartment – Typical Floor
Gross Floor Area (GFA) per Typical Floor	▸ 1,545 sq m/16,630 sq ft ▸▸ 2-Bedroom Flat – 57 sq m/614 sq ft ▸▸ 1-Bedroom Flat – 57 sq m/614 sq ft ▸▸ 3-Bedroom Flat Standard – 84 sq m/904 sq ft ▸▸ 3-Bedroom Type-A Flat – 111 sq m/1195 sq ft ▸▸ 4-Bedroom Flat – 111 sq m/1195 sq ft
Unit Type and Number per Typical Floor	▸ 2-Bedroom Flat – 2 units ▸ 1-Bedroom Flat – 2 units ▸ 3-Bedroom Flat Standard – 6 units ▸ 3-Bedroom Type-A Flat – 1 unit ▸ 4-Bedroom Flat - 1 unit
Space	▸ **1-Bedroom Flat** ▸▸ Living & Dining Area ▸▸ Kitchen ▸▸ Bedroom –1 unit ▸▸ Bathroom – 1 unit ▸▸ Laundry Yard/Storeroom ▸ **2-Bedroom Flat** ▸▸ Living & Dining Area ▸▸ Kitchen ▸▸ Bedroom – 2 units ▸▸ Bathroom – 1 unit ▸▸ Laundry Yard ▸ **3-Bedroom Flat Standard** ▸▸ Living & Dining Area ▸▸ Kitchen ▸▸ Bedroom – 3 units ▸▸ Bathroom – 2 units ▸▸ Laundry Yard ▸▸ Storeroom ▸ **3-Bedroom Type-A Flat** ▸▸ Living Area ▸▸ Dining Area ▸▸ Kitchen ▸▸ Bedroom – 3 units ▸▸ Bathroom – 2 units ▸▸ Laundry Yard ▸▸ Storeroom – 2 units ▸ **4-Bedroom Flat** ▸▸ Living Area ▸▸ Dining Area ▸▸ Kitchen ▸▸ Bedroom – 4 units ▸▸ Bathroom – 2 units ▸▸ Laundry Yard ▸▸ Storeroom – 2 units



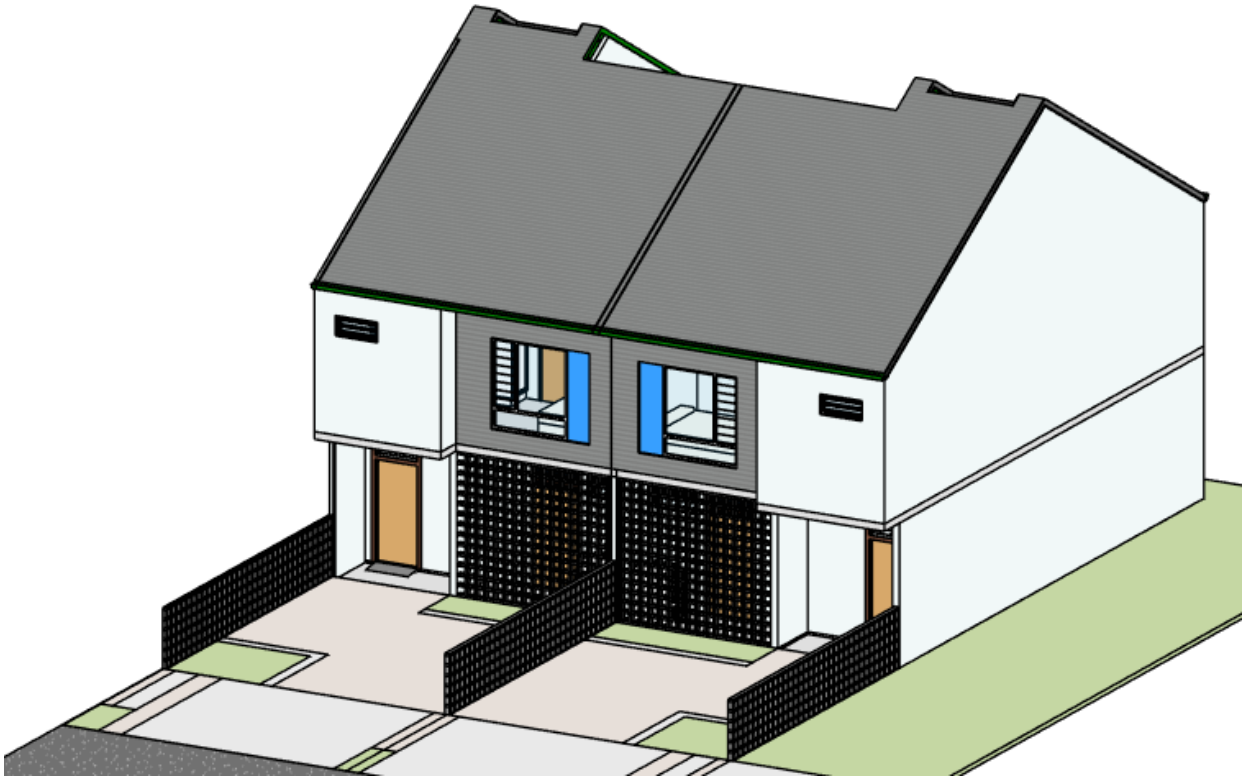
Element	Specification
Foundation	• Piling – Reinforced concrete square pile
Structure	• Precast concrete slab : 75 mm/100 mm thick • Precast concrete beam • Precast concrete wall : 100 mm/125 mm/150 mm/250 mm thick • Reusable aluminium formwork slab, beam, wall
Roof	• Roof framing – Lightweight steel, reinforced concrete flat roof • Roof covering – Metal deck
Finishes	• Door – Timber plywood flush door • Window – Powder coated aluminium fixed panel with louvre window, top hung window, adjustable louvre window • Wall – Skim coat, plaster & paint • Floor – Ceramic tiles, cement render • Ceiling – Skim coat, plaster board, paint • Sanitary fitting – Water closet, basin, shower hose, hand bidet, toilet roll holder, floor trap, sink, tap

Description	Structural System		
	Precast Concrete Wall & Slab	Cast in-situ Wall & Slab using Reusable Steel Formwork	Cast in-situ Wall using Reusable Steel Formwork + Precast Slab
IBS Score	100.00	51.89	70.63
Estimated Building Construction Cost			
Total Cost Estimate : 1 floor	RM 1,619,361.10	RM 1,723,425.70	RM 1,556,127.70
Total Cost Estimate : 1 unit	RM 134,946.76	RM 143,618.81	RM 129,677.31
Total Cost Estimate : 1 sq m	RM 1,048.13	RM 1,115.49	RM 1,007.20
Total Cost Estimate : 1 sq ft	RM 97.37	RM 103.63	RM 93.57

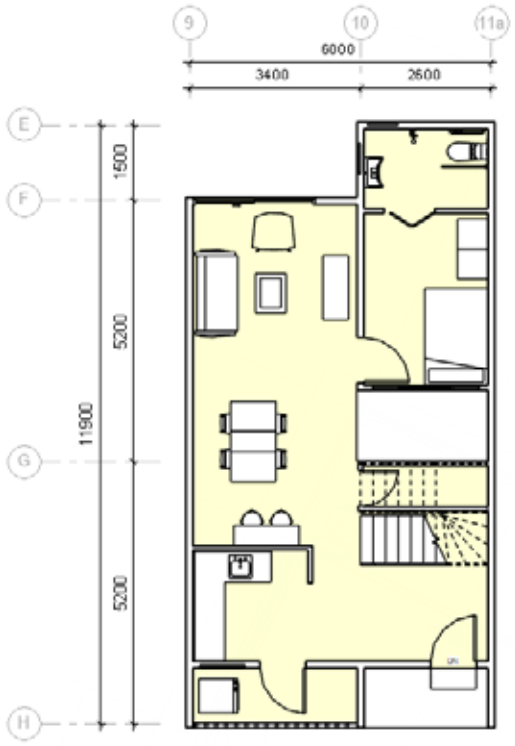
- Cost estimate is based on a 200 unit apartment building.
- Cost estimate for DeLIGHT Homes Apartment includes architectural, structural, mechanical, and electrical works.
- Cost estimate excludes preliminaries and contingencies.
- Rate for precast items all inclusive of moulding, supply, transportation, and installation.
- Assumption for mechanical, electrical, and plumbing works: RM 25.00 per sq ft.
- Actual cost of a building depends upon the design and many other factors and may vary from the figures shown.
- This is based on current rates obtained by competitive tendering. No allowance has been made for future increases in costs of labour, materials, and plant. This cost is subject to passage of time, changing business condition in the building industry, availability of information, etc. Whilst we endeavour to assign a reasonable cost to each element in the estimate at the time of preparation, we are not responsible for future changes in market condition or the contractor's pricing strategy.

02 DeLIGHT HOMES TERRACE HOUSE

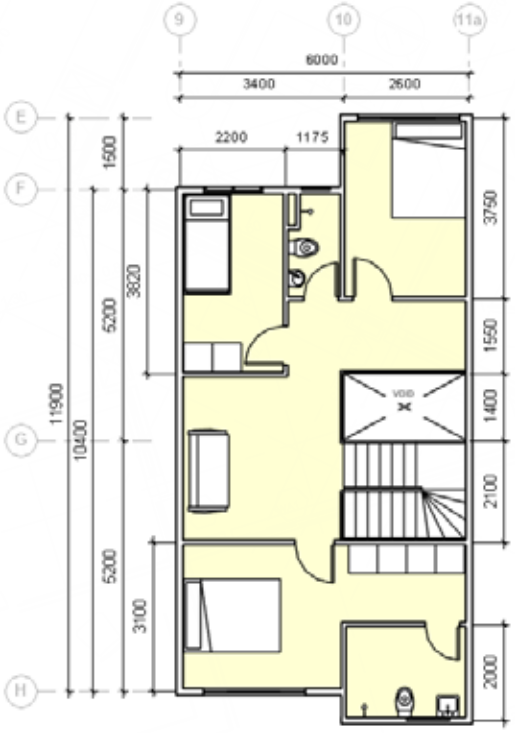
DeLIGHT Homes Terrace House 2-storey



DeLIGHT Homes Terrace House 2-storey 3D View (Artist's Impression)



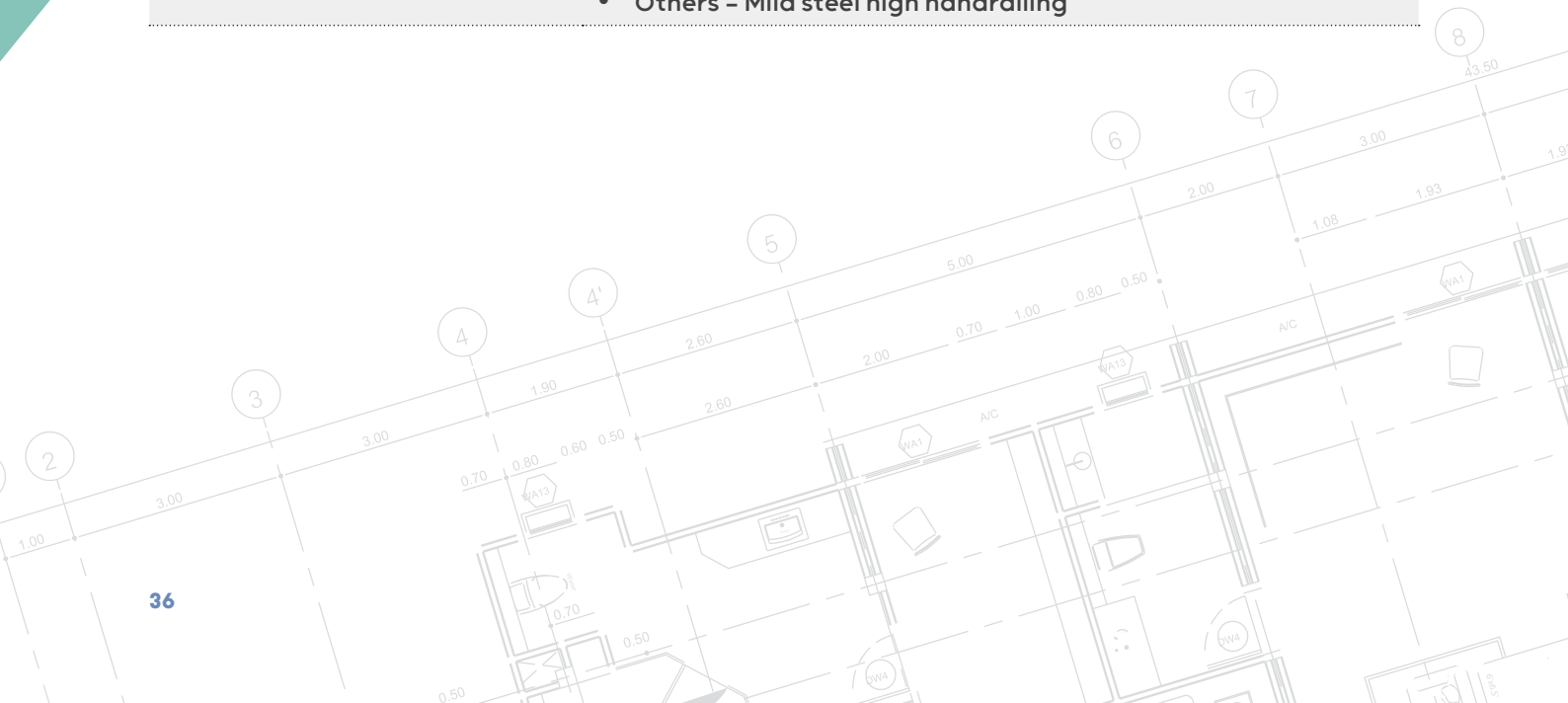
DeLIGHT Homes Terrace House 2-storey Ground Floor Plan Layout



DeLIGHT Homes Terrace House 2-storey First Floor Plan Layout

General Information of DeLIGHT Homes Terrace House	
Type	Terrace House 2-storey
Gross Floor Area (GFA)	126 sq m/1356 sq ft
Space	Living & Dining Area Kitchen Bedroom – 4 units Bathroom – 3 units Family Space (1st Floor) Laundry Area Courtyard (ground floor – inside the house) Car Porch

Element	Specification
Foundation	• Pad footing
Structure	• Reinforced concrete slab : 150 mm thick • Precast concrete slab : 75 mm thick • Precast concrete beam • Precast concrete column • Reusable aluminium formwork slab, wall
Wall	• Lightweight block wall
Roof	• Roof framing – Lightweight steel • Roof covering – Metal deck
Finishes	• Door – Timber plywood flush door • Window – Powder coated aluminium adjustable louvre window, casement window, sliding window • Wall – Skim coat, plaster & paint • Floor – Ceramic tiles, cement render • Ceiling – Skim coat, plaster board, paint • Sanitary fitting – Water closet, basin, shower hose, hand bidet, toilet roll holder, floor trap, sink, tap • Others – Mild steel high handrailing

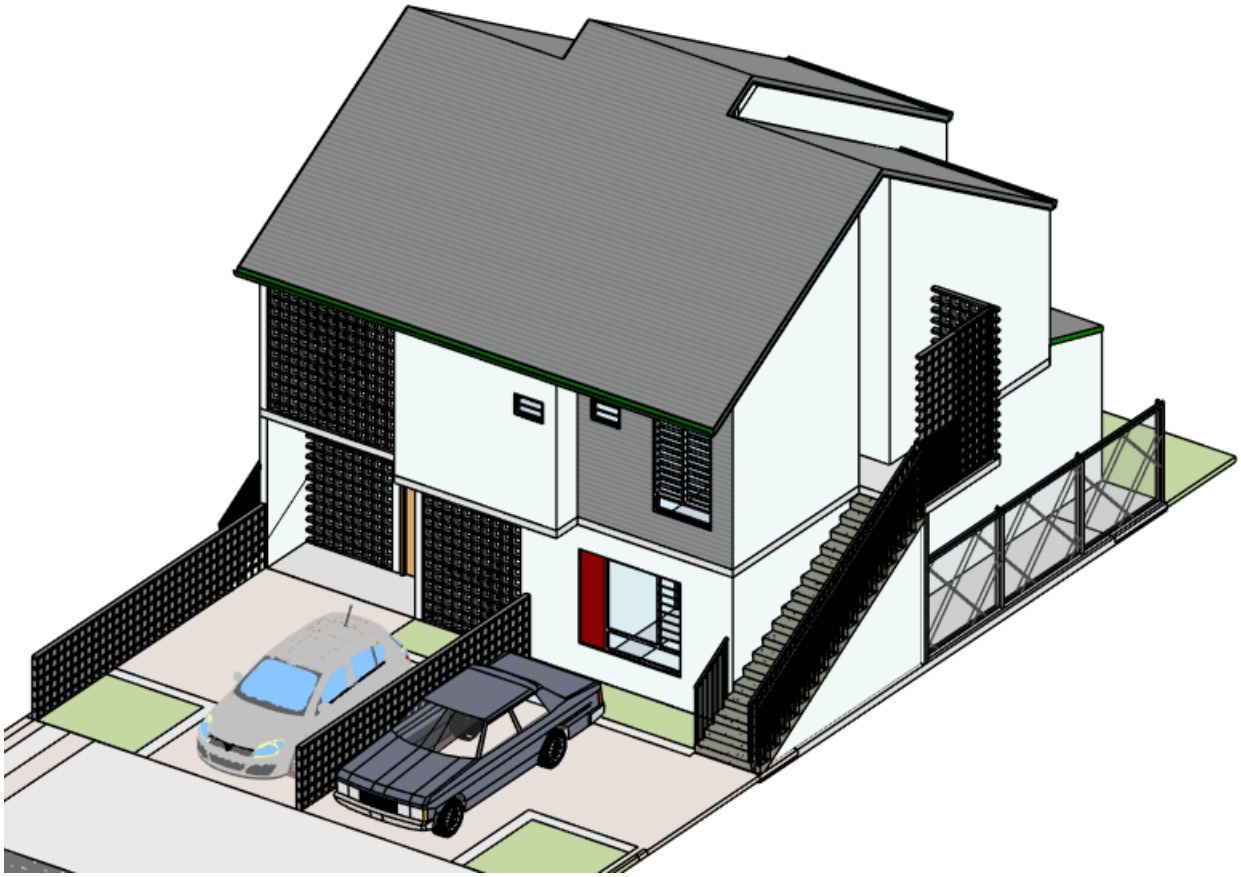


Description	Structural System			
	Precast Concrete Wall & Slab	Precast Concrete Frame (Beam & column) + Blockwork	Cast in-situ Wall & Slab using Reusable Steel Formwork	Cast in-situ Wall using Reusable Steel Formwork + Precast Slab
IBS Score	100.00	72.00	60.00	73.33
Estimated Building Construction Cost				
Total Cost Estimate : 1 unit	RM 137,880.00	RM 140,450.00	RM 163,514.00	RM 162,624.00
Total Cost Estimate : 1 sq m	RM 1,220.18	RM 1,242.92	RM 1,447.03	RM 1,439.15
Total Cost Estimate : 1 sq ft	RM 113.36	RM 115.47	RM 134.43	RM 133.70

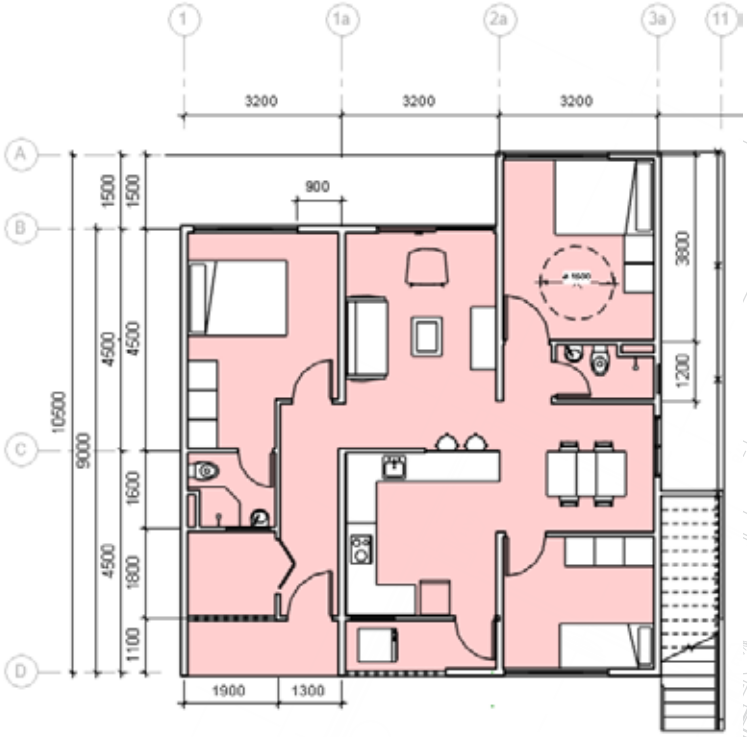
- Cost estimate is based on 200 units of terrace houses.
- Cost estimate for terrace includes architectural, structural, mechanical, and electrical works.
- Cost estimate excludes preliminaries and contingencies.
- Rate for precast items all inclusive of moulding, supply, transportation, and installation.
- Assumption for mechanical, electrical, and plumbing works: RM 10.00 per sq ft.
- Actual cost of a building depends upon the design and many other factors and may vary from the figures shown.
- This is based on current rates obtained by competitive tendering. No allowance has been made for future increases in costs of labour, materials, and plant. This cost is subject to passage of time, changing business condition in the building industry, availability of information, etc. Whilst we endeavour to assign a reasonable cost to each element in the estimate at the time of preparation, we are not responsible for future changes in market condition or the contractor's pricing strategy.

03 DeLIGHT HOMES TOWNHOUSE

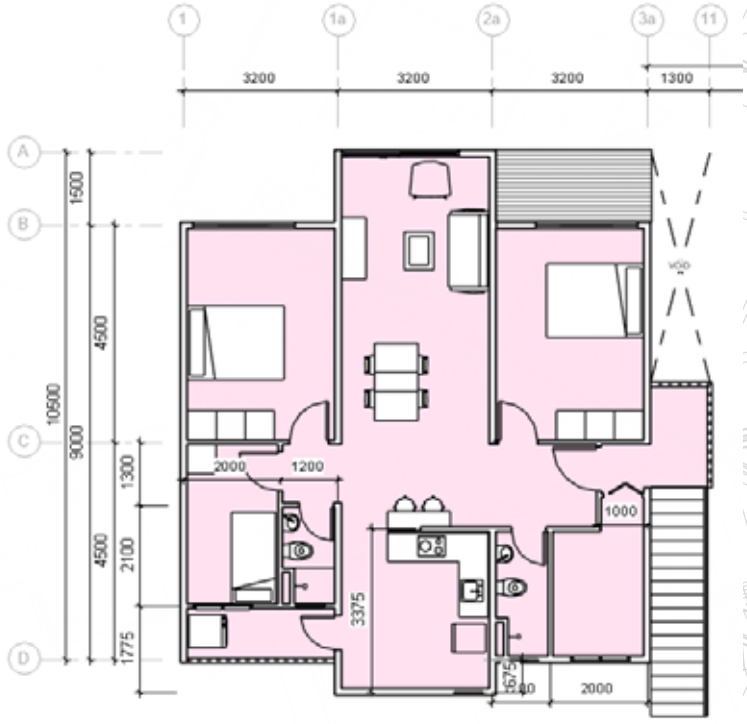
DeLIGHT Homes Townhouse 2-storey



DeLIGHT Homes Townhouse 2-storey 3D View (Artist's Impression)



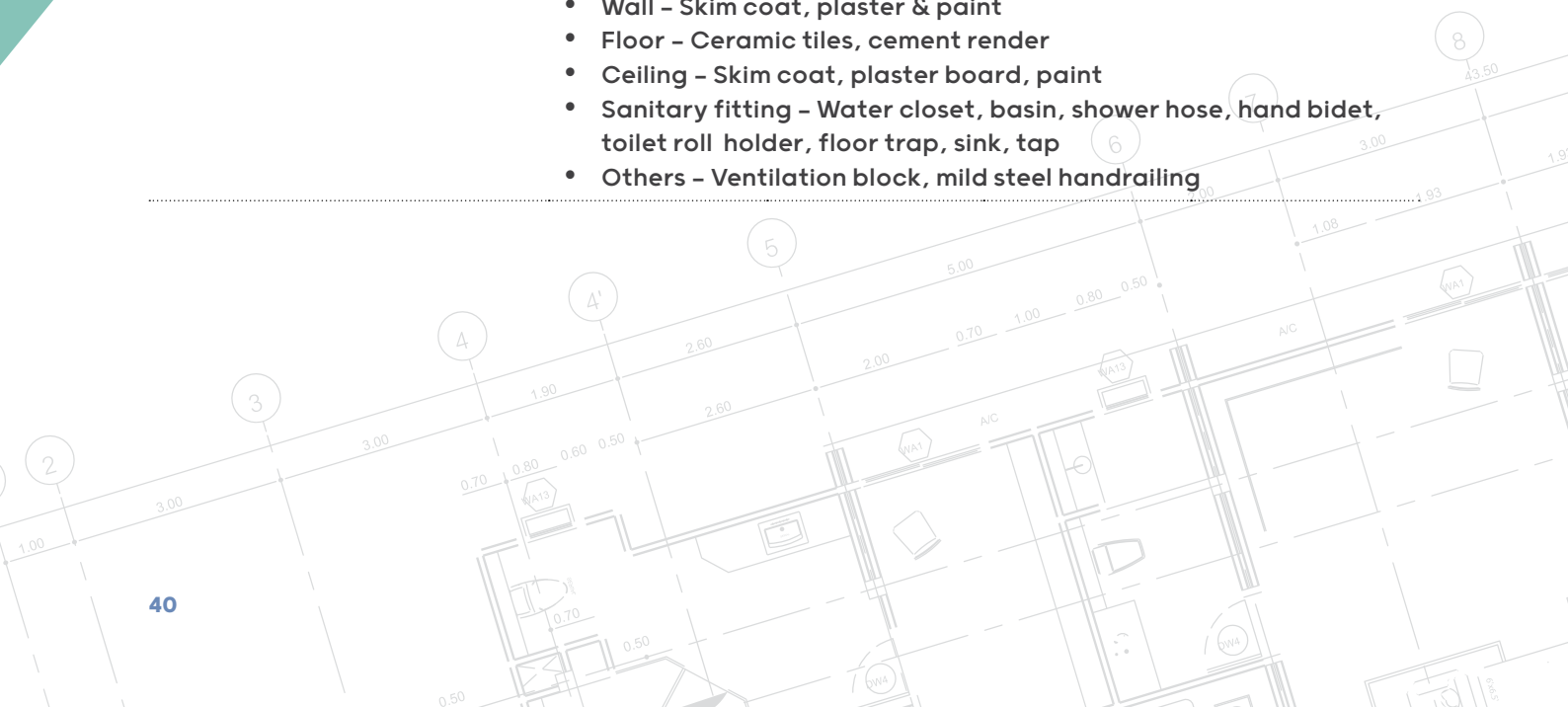
DeLIGHT Homes Townhouse 2-storey Ground Floor Unit Plan Layout



DeLIGHT Homes Townhouse 2-storey First Floor Unit Plan Layout

General Information of Townhouse	
Type	▸ Townhouse 2-storey
Gross Floor Area (GFA)	▸ 184 sq m/1981 sq ft ▸▸ Ground Floor Unit – 91.0 sq m/980 sq ft ▸▸ First Floor Unit – 93.0 sq m/1000 sq ft
Space	▸ **Ground Floor Unit** ▸▸ Living Area ▸▸ Dining Area ▸▸ Kitchen ▸▸ Bedroom – 3 units ▸▸ Bathroom – 2 units ▸▸ Drying Yard ▸▸ Storeroom ▸▸ Car Porch ▸ **First Floor Unit** ▸▸ Living & Dining Area ▸▸ Kitchen ▸▸ Bedroom – 3 units ▸▸ Bathroom – 2 units ▸▸ Drying Yard ▸▸ Storeroom ▸▸ Car Porch

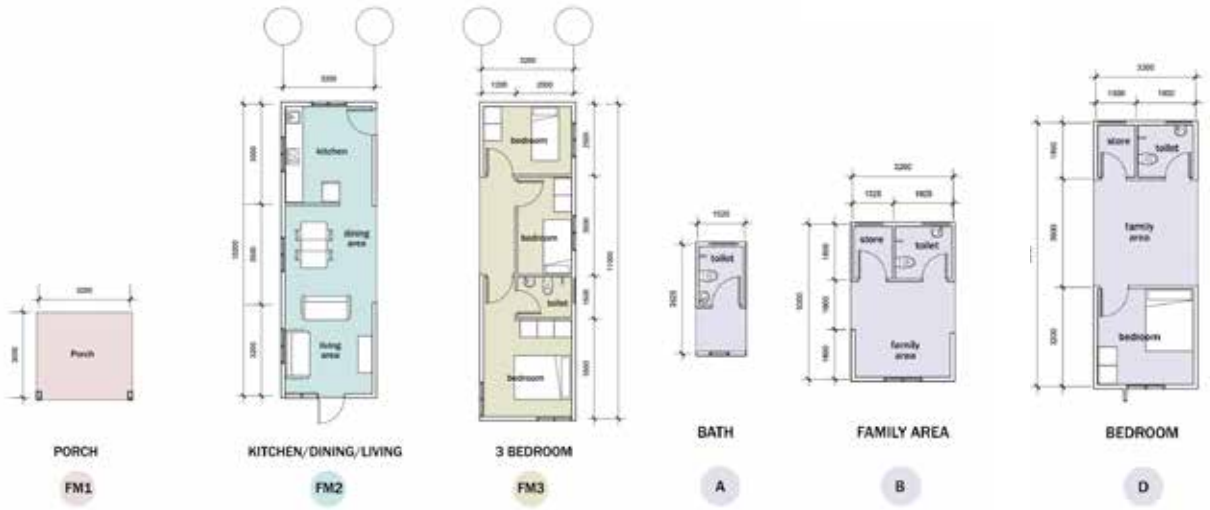
Element	Specification
Foundation	• Pad footing
Structure	• Reinforced concrete slab : 150 mm thick • Precast concrete slab : 75 mm/100 mm thick • Precast concrete wall : 125 mm thick • Precast concrete beam • Precast concrete column • Reusable aluminium formwork slab, wall
Wall	• Lightweight block wall
Roof	• Roof framing – Lightweight steel • Roof covering – Metal deck
Finishes	• Door – Timber panel door, timber plywood flush door, double leaf folding door • Window – Powder coated aluminium top hung window, casement window • Wall – Skim coat, plaster & paint • Floor – Ceramic tiles, cement render • Ceiling – Skim coat, plaster board, paint • Sanitary fitting – Water closet, basin, shower hose, hand bidet, toilet roll holder, floor trap, sink, tap • Others – Ventilation block, mild steel handrailing



Description	Structural System			
	Precast Concrete Wall & Slab	Precast Concrete Frame (Beam & column) + Blockwork	Cast in-situ Wall & Slab using Reusable Steel Formwork	Cast in-situ Wall using Reusable Steel Formwork + Precast Slab
IBS Score	100.00	70.82	57.64	73.33
Estimated Building Construction Cost				
Total Cost Estimate : 2 units	RM 192,095.00	RM 177,679.00	RM 219,615.00	RM 218,131.00
Total Cost Estimate : 1 unit	RM 96,047.50	RM 88,839.50	RM 109,807.50	RM 109,065.50
Total Cost Estimate : 1 sq m	RM 1,055.47	RM 976.26	RM 1,206.68	RM 1,198.52
Total Cost Estimate : 1 sq ft	RM 98.06	RM 90.70	RM 112.10	RM 111.35

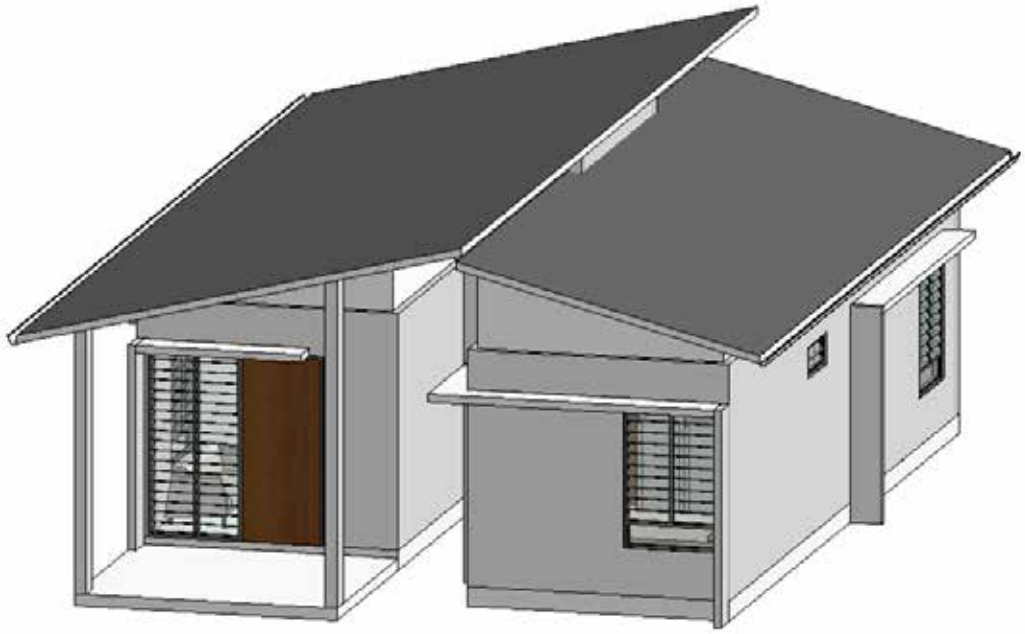
- Cost estimate is based on 200 units of townhouses.
- Cost estimate for townhouse includes architectural, structural, mechanical, and electrical works.
- Cost estimate excludes preliminaries and contingencies.
- Rate for precast items all inclusive of moulding, supply, transportation, and installation.
- Assumption for mechanical, electrical and plumbing works: RM 10.00 per sq ft.
- Actual cost of a building depends upon the design and many other factors and may vary from the figures shown.
- This is based on current rates obtained by competitive tendering. No allowance has been made for future increases in costs of labour, materials and plant. This cost is subject to passage of time, changing business condition in the building industry, availability of information, etc. Whilst we endeavour to assign a reasonable cost to each element in the estimate at the time of preparation, we are not responsible for future changes in market condition or the contractor's pricing strategy.

04 DeLIGHT HOMES SINGLE HOUSE

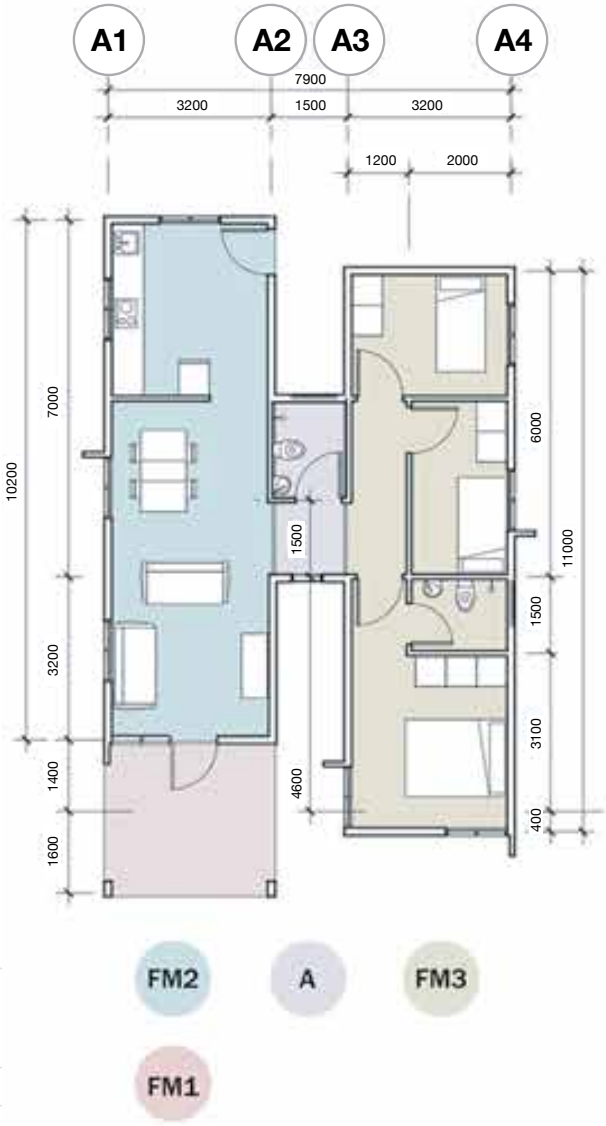


DeLIGHT Homes Single House Standard Module Unit

DeLIGHT Homes Single House Type A 1-storey



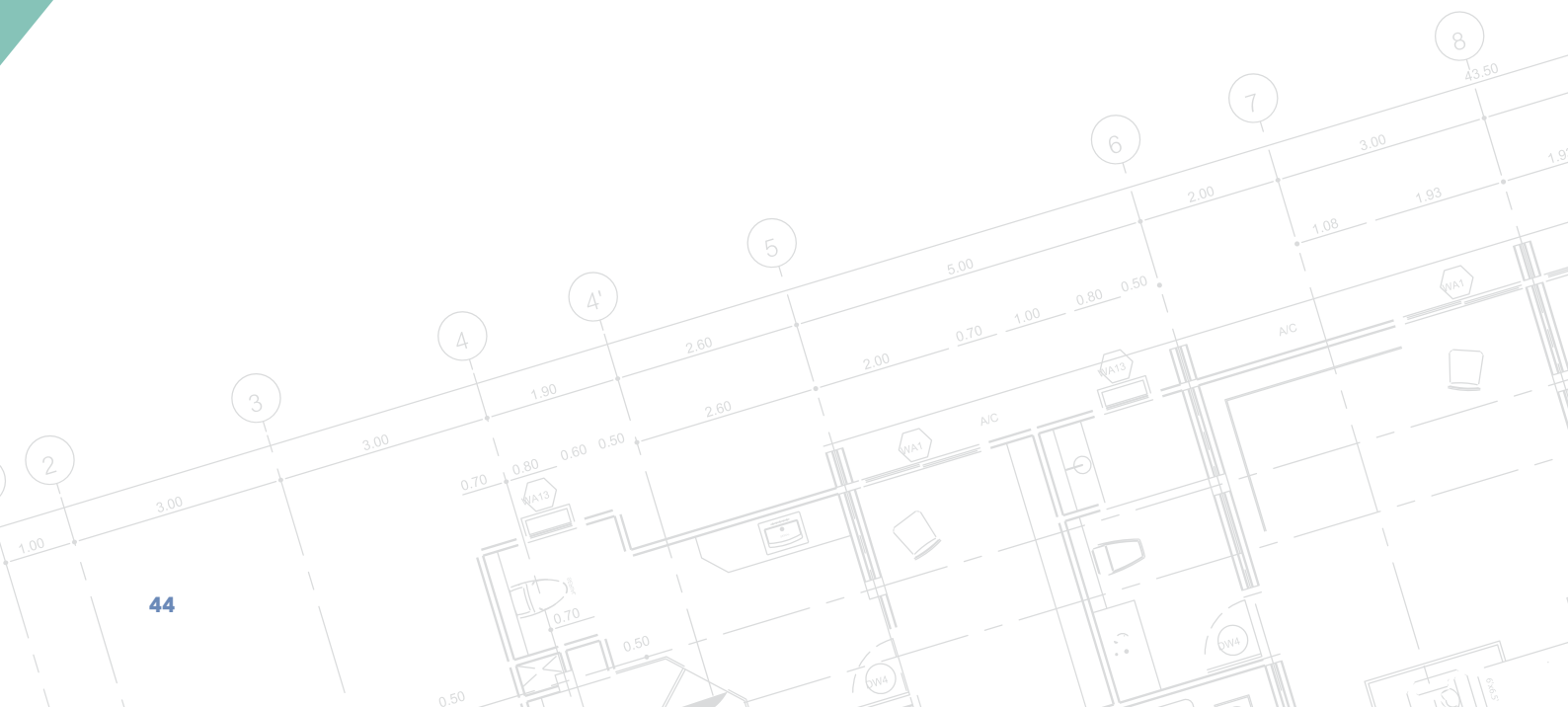
DeLIGHT Homes Single House Type A 1-storey 3D View (Artist's Impression)



DeLIGHT Homes Single House Type A 1-storey Floor Plan Layout

General Information of DeLIGHT Homes Single House Type A	
Type	▸ Single House 1-storey
Gross Floor Area (GFA)	▸ 73.0 sq m/785 sq ft
Space	▸ Living & Dining Area ▸ Kitchen ▸ Bedroom – 3 units ▸ Bathroom – 2 units ▸ Car Porch

Element	Specification
Foundation	• Pad footing
Structure	• Reinforced concrete slab : 100 mm-250 mm thick/150 mm thick • Precast concrete slab : 75 mm/100 mm thick • Precast concrete wall : 125 mm thick • Precast concrete beam • Precast concrete column • Reusable aluminium formwork slab, wall
Wall	• Lightweight block wall
Roof	• Roof framing – Lightweight steel • Roof covering – Metal deck
Finishes	• Door – Timber plywood flush door • Window – Powder coated aluminium adjustable louvre window, fixed louvre window • Wall – Skim coat, plaster & paint • Floor – Ceramic tiles, cement render • Ceiling – Skim coat, plaster board, paint • Sanitary fitting – Water closet, basin, shower hose, hand bidet, toilet roll holder, floor trap, sink, tap

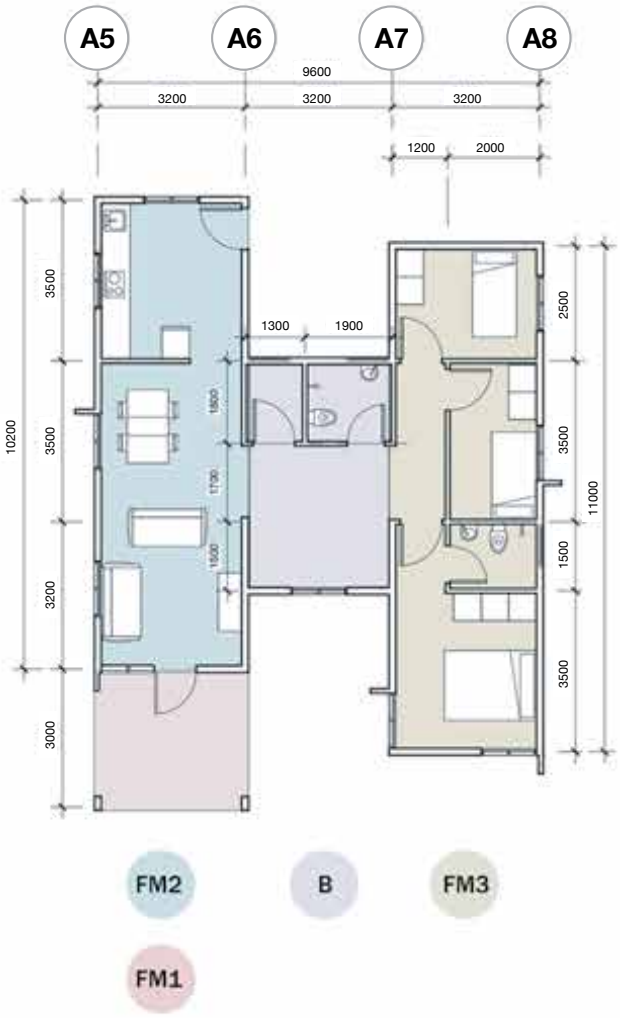


Description	Structural System			
	Precast Concrete Wall & Slab	Precast Concrete Frame (Beam & column) + Blockwork	Cast in-situ Wall & Slab using Reusable Steel Formwork	Cast in-situ Wall using Reusable Steel Formwork + Precast Slab
IBS Score	100.00	74.50	65.00	75.00
Estimated Building Construction Cost				
Total Cost Estimate : 1 unit	RM 132,845.00	RM 137,384.00	RM 113,727.00	RM 113,650.00
Total Cost Estimate : 1 sq m	RM 1,681.58	RM 1,739.04	RM 1,439.58	RM 1,438.61
Total Cost Estimate : 1 sq ft	RM 156.22	RM 161.56	RM 133.74	RM 133.65

- Cost estimate is based on 100 units of bungalows.
- Cost estimate for a single house includes architectural, structural, mechanical, and electrical works.
- Cost estimate excludes preliminaries and contingencies.
- Rate for precast items all inclusive of moulding, supply, transportation, and installation.
- Assumption for mechanical, electrical and plumbing works: RM 10.00 per sq ft.
- Actual cost of a building depends upon the design and many other factors and may vary from the figures shown.
- This is based on current rates obtained by competitive tendering. No allowance has been made for future increases in costs of labour, materials, and plant. This cost is subject to passage of time, changing business condition in the building industry, availability of information, etc. Whilst we endeavour to assign a reasonable cost to each element in the estimate at the time of preparation, we are not responsible for future changes in market condition or the contractor's pricing strategy.

DeLIGHT Homes Single House Type B 1-storey

DeLIGHT Homes Single House Type B 1-storey 3D View (Artist's Impression)



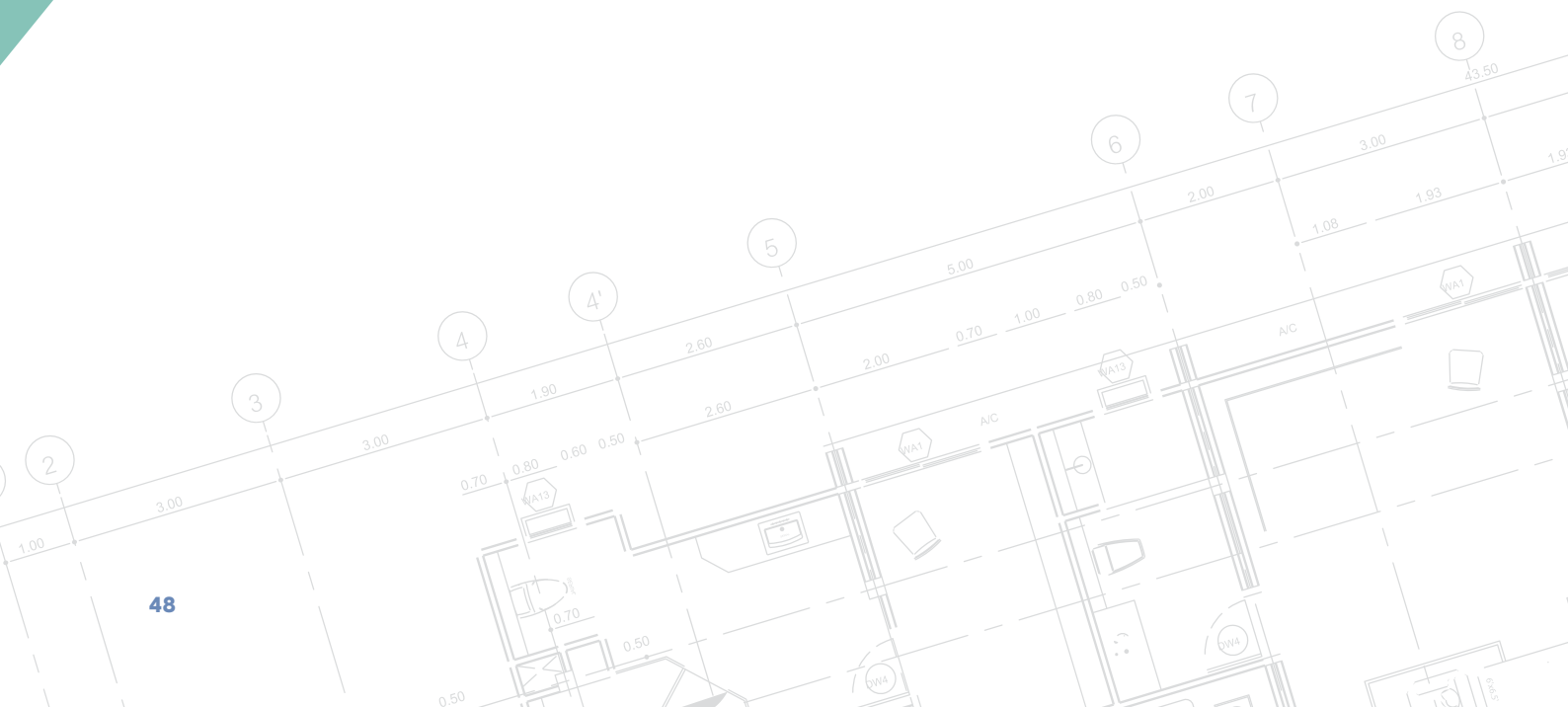
DeLIGHT Homes Single House Type B 1-storey Floor Plan Layout

General Information of DeLIGHT Homes Single House Type B	
Type	▸ Single House 1-storey
Gross Floor Area (GFA)	▸ 83.6 sq m/900 sq ft
Space	▸ Living & Dining Area ▸ Kitchen ▸ Bedroom – 3 units ▸ Bathroom – 2 units ▸ Storeroom ▸ Car Porch

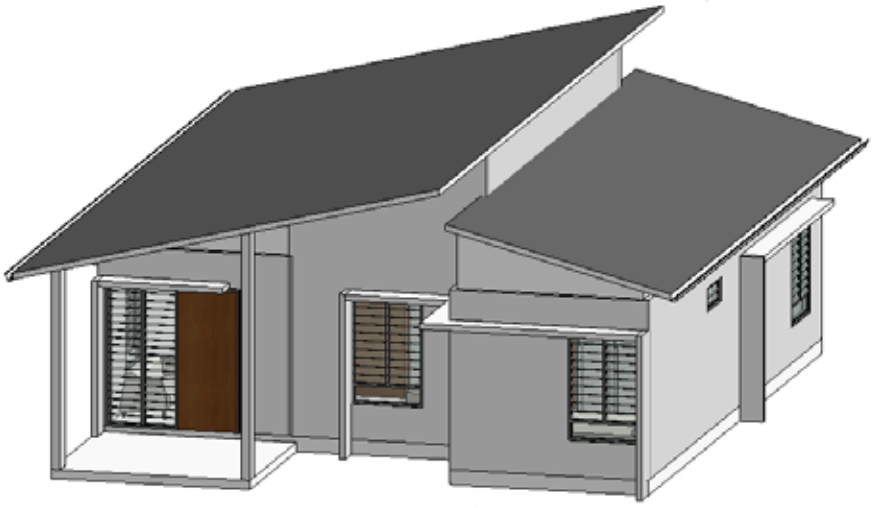
Element	Specification
Foundation	• Pad footing
Structure	• Reinforced concrete slab : 100 mm-250 mm thick/150 mm thick • Precast concrete slab : 75 mm/100 mm thick • Precast concrete wall : 125 mm thick • Precast concrete beam • Precast concrete column • Reusable aluminium formwork slab, wall
Wall	• Lightweight block wall
Roof	• Roof framing – Lightweight steel • Roof covering – Metal deck
Finishes	• Door – Timber plywood flush door • Window – Powder coated aluminium adjustable louvre window, fixed louvre window • Wall – Skim coat, plaster & paint • Floor – Ceramic tiles, cement render • Ceiling – Skim coat, plaster board, paint • Sanitary fitting – Water closet, basin, shower hose, hand bidet, toilet roll holder, floor trap, sink, tap

Description	Structural System			
	Precast Concrete Wall & Slab	Precast Concrete Frame (Beam & column) + Blockwork	Cast in-situ Wall & Slab using Reusable Steel Formwork	Cast in-situ Wall using Reusable Steel Formwork + Precast Slab
IBS Score	100.00	74.50	65.00	75.00
Estimated Building Construction Cost				
Total Cost Estimate : 1 unit	RM 144,579.00	RM 155,673.00	RM 125,011.00	RM 125,102.00
Total Cost Estimate : 1 sq m	RM 1,475.30	RM 1,588.50	RM 1,275.62	RM 1,276.55
Total Cost Estimate : 1 sq ft	RM 137.06	RM 147.58	RM 118.51	RM 118.60

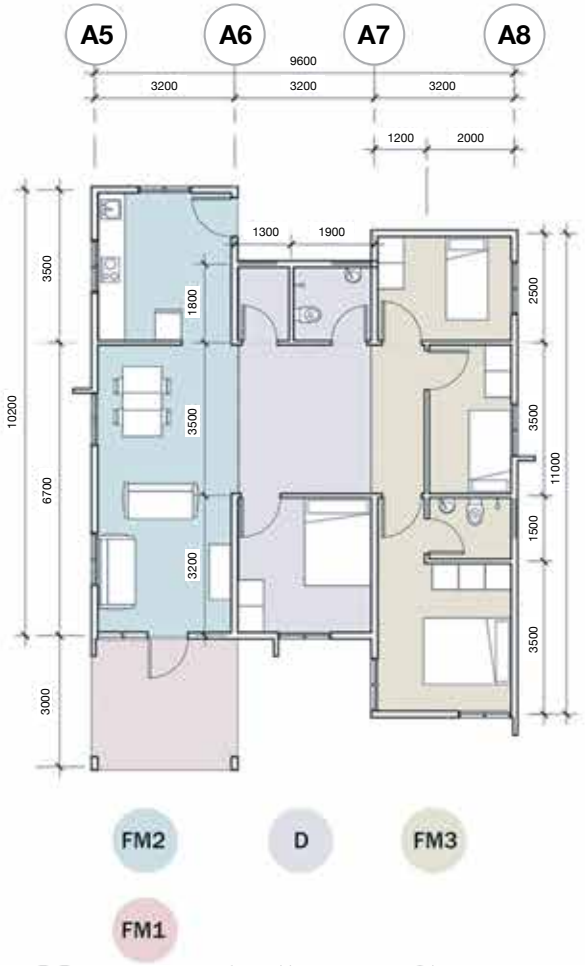
- Cost estimate is based on 100 units of bungalows.
- Cost estimate for a single house includes architectural, structural, mechanical, and electrical works.
- Cost estimate excludes preliminaries and contingencies.
- Rate for precast items all inclusive of moulding, supply, transportation, and installation.
- Assumption for mechanical, electrical, and plumbing works: RM 10.00 per sq ft.
- Actual cost of a building depends upon the design and many other factors and may vary from the figures shown.
- This is based on current rates obtained by competitive tendering. No allowance has been made for future increases in costs of labour, materials and plant. This cost is subject to passage of time, changing business condition in the building industry, availability of information, etc. Whilst we endeavour to assign a reasonable cost to each element in the estimate at the time of preparation, we are not responsible for future changes in market condition or the contractor's pricing strategy.



DeLIGHT Homes Single House Type C 1-storey



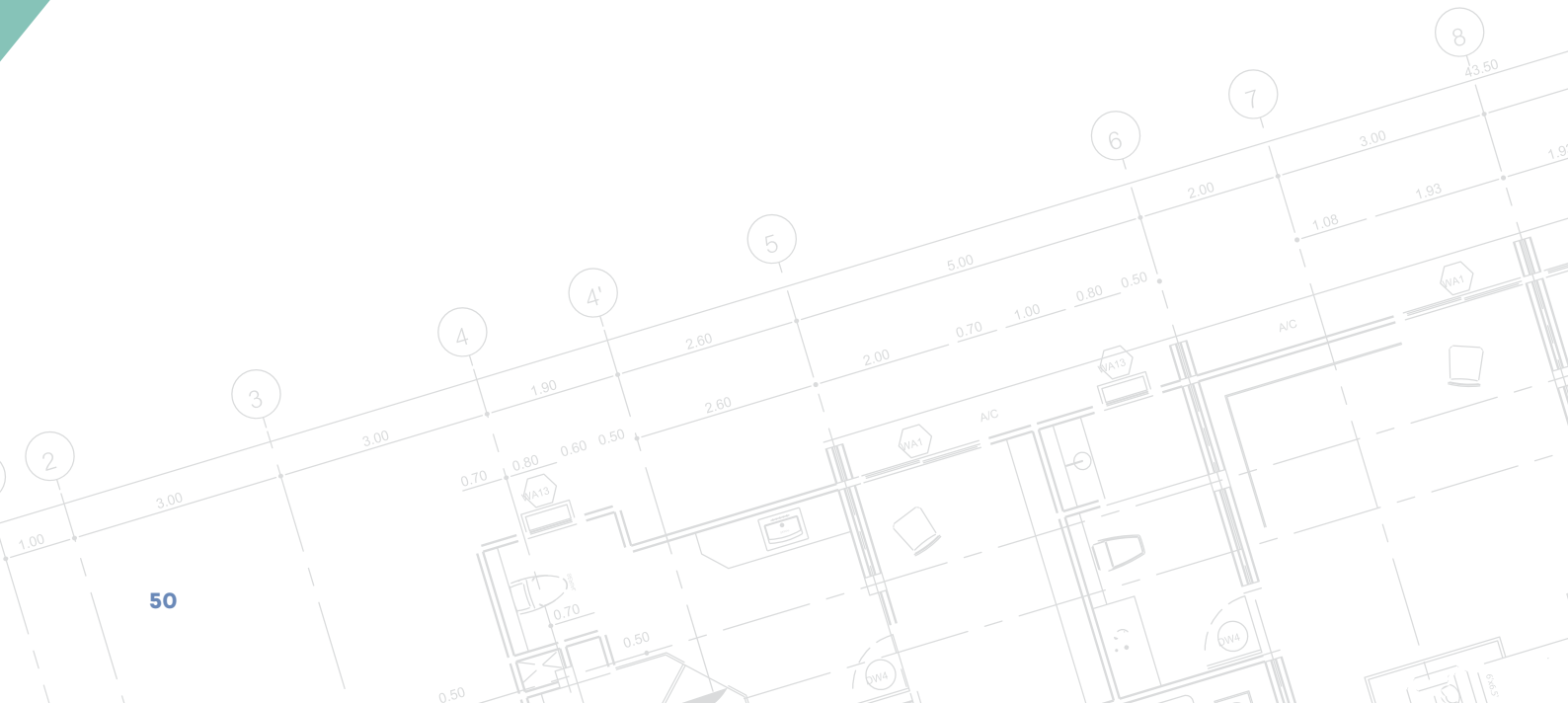
DeLIGHT Homes Single House Type C 1-storey 3D View (Artist's Impression)



DeLIGHT Homes Single House Type C 1-storey Floor Plan Layout

General Information of DeLIGHT Homes Single House Type C	
Type	Single House 1-storey
Gross Floor Area (GFA)	95 sq m/1023 sq ft
Space	Living & Dining Area Kitchen Bedroom – 4 units Bathroom – 2 units Storeroom Car Porch

Element	Specification
Foundation	• Pad footing
Structure	• Reinforced concrete slab : 100 mm-250 mm thick/150 mm thick • Precast concrete slab : 75 mm/100 mm thick • Precast concrete wall : 125 mm thick • Precast concrete beam • Precast concrete column • Reusable aluminium formwork slab, wall
Wall	• Lightweight block wall
Roof	• Roof framing – Lightweight steel • Roof covering – Metal deck
Finishes	• Door – Timber plywood flush door • Window – Powder coated aluminium adjustable louvre window, fixed louvre window • Wall – Skim coat, plaster & paint • Floor – Ceramic tiles, cement render • Ceiling – Skim coat, plaster board, paint • Sanitary fitting – Water closet, basin, shower hose, hand bidet, toilet roll holder, floor trap, sink, tap



Description	Structural System			
	Precast Concrete Wall & Slab	Precast Concrete Frame (Beam & column) + Blockwork	Cast in-situ Wall & Slab using Reusable Steel Formwork	Cast in-situ Wall using Reusable Steel Formwork + Precast Slab
IBS Score	100.00	74.50	65.00	75.00
Estimated Building Construction Cost				
Total Cost Estimate : 1 unit	RM 152,461.00	RM 178,010.20	RM 129,991.00	RM 129,886.00
Total Cost Estimate : 1 sq m	RM 1,411.68	RM 1,648.24	RM 1,203.62	RM 1,202.65
Total Cost Estimate : 1 sq ft	RM 131.15	RM 153.13	RM 111.82	RM 111.73

- Cost estimate is based on 100 units of bungalows.
- Cost estimate for a single house includes architectural, structural, mechanical, and electrical works.
- Cost estimate excludes preliminaries and contingencies.
- Rate for precast items all inclusive of moulding, supply, transportation, and installation.
- Assumption for mechanical, electrical and plumbing works: RM 10.00 per sq ft.
- Actual cost of a building depends upon the design and many other factors and may vary from the figures shown.
- This is based on current rates obtained by competitive tendering. No allowance has been made for future increases in costs of labour, materials, and plant. This cost is subject to passage of time, changing business condition in the building industry, availability of information, etc. Whilst we endeavour to assign a reasonable cost to each element in the estimate at the time of preparation, we are not responsible for future changes in market condition or the contractor's pricing strategy.

SECTION 3

MyIOS: Malaysian IBS Open System

CIDB AFFORDABLE HOUSING DESIGN STANDARD FOR MALAYSIA

Design by:

Overview of MyIOS Design

Malaysian IBS Open System (MyIOS) is a development from IBS standard designs for affordable housing. The IBS Open System is a system that allows greater flexibility of design where a potential user would be able to choose the best IBS product according to their budget and preferences.

There are 16 MyIOS standards in total. These standards have been designed and equipped with architectural input, structure, IBS score, cost estimation, and BIM integration that meet the technical and legal requirements of Malaysia's Street, Drainage and Building Act 1974 (Act 133) and target the M40 and B40 income groups.

The MyIOS design was developed based on modular dimensions and complies with MS1064: 2001, meets the minimum IBS score of 70, and implements sustainable design as well as promoting IBS open systems. Open source IBS is a system that enables home design to be more flexible whereby the industry has the option to use component structures from various IBS manufacturers.

The MyIOS design also supports the agenda of the Construction Industry Transformation Program (CITP) 2016-2020 which, under the Productivity core (P3: Accumulation of IBS Acceleration, Mechanisation & Modern Practice (P3a & P3b)) has initiatives to accelerate the implementation of IBS through modernisation and mechanisation.

There are four main objectives that can be achieved by the use of MyIOS for project construction:

- **A** Shortens project planning, design & completion time
- **B** Encourages construction methods using IBS
- **C** Provides alternative IBS construction
- **D** Develops IBS supply chain through the use of standard components

MyIOS Housing Categories

01 MyIOS APARTMENT

MyIOS Walk-up Apartment P01

MyIOS Walk-up Apartment P01
3D View (Artist's Impression)

MyIOS Walk-up Apartment P01
Floor Plan Layout

General Information of MyIOS P01	
Type	▸ Walk-up Apartment 5-storey
Gross Floor Area (GFA)	▸ 1000 sq ft per unit
Space	▸ Living & Dining Area ▸ Kitchen ▸ Bedroom – 3 units ▸ Bathroom – 2 units ▸ Balcony ▸ Dry Yard ▸ Lanai
Structural System	▸ Precast Concrete – Wall ▸ Steel Frame – Roof Trusses
IBS Score	▸ 76.30
Estimated Building Construction Cost (per Unit)**	▸ RM 89,500.00

***Justification for cost per unit, depending on project size and finishes type.*

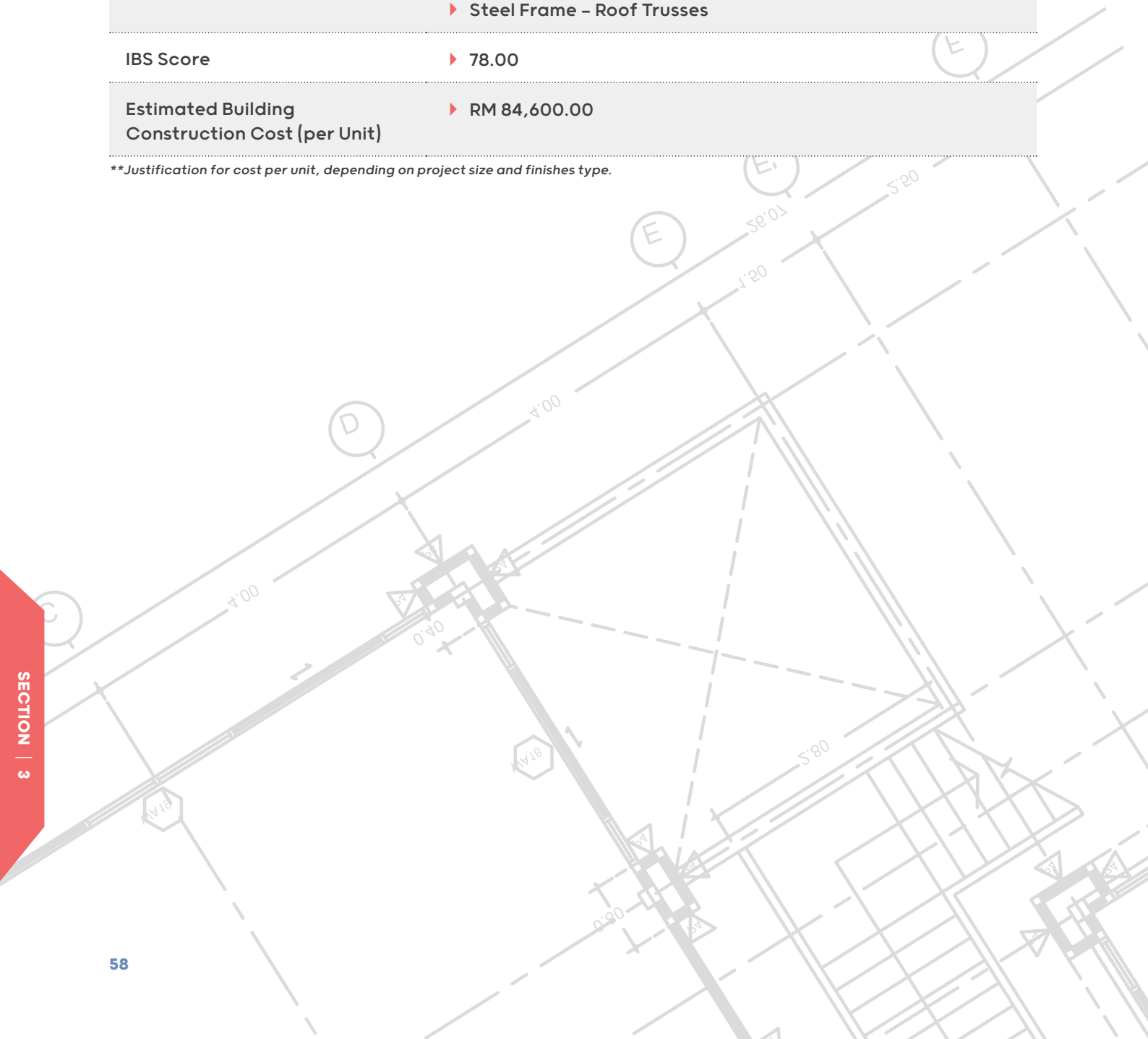
MyIOS Walk-up Apartment P02

MyIOS Walk-up Apartment P02
3D View (Artist's Impression)

MyIOS Walk-up Apartment P02
Floor Plan Layout

General Information of MyIOS P02	
Type	▸ Walk-up Apartment 3-storey
Gross Floor Area (GFA)	▸ 950 sq ft per unit
Space	▸ Living & Dining Area ▸ Kitchen ▸ Bedroom – 3 units ▸ Bathroom – 2 units ▸ Balcony ▸ Dry Yard
Structural System	▸ Precast Concrete – Wall ▸ Steel Frame – Roof Trusses
IBS Score	▸ 78.00
Estimated Building Construction Cost (per Unit)	▸ RM 84,600.00

***Justification for cost per unit, depending on project size and finishes type.*



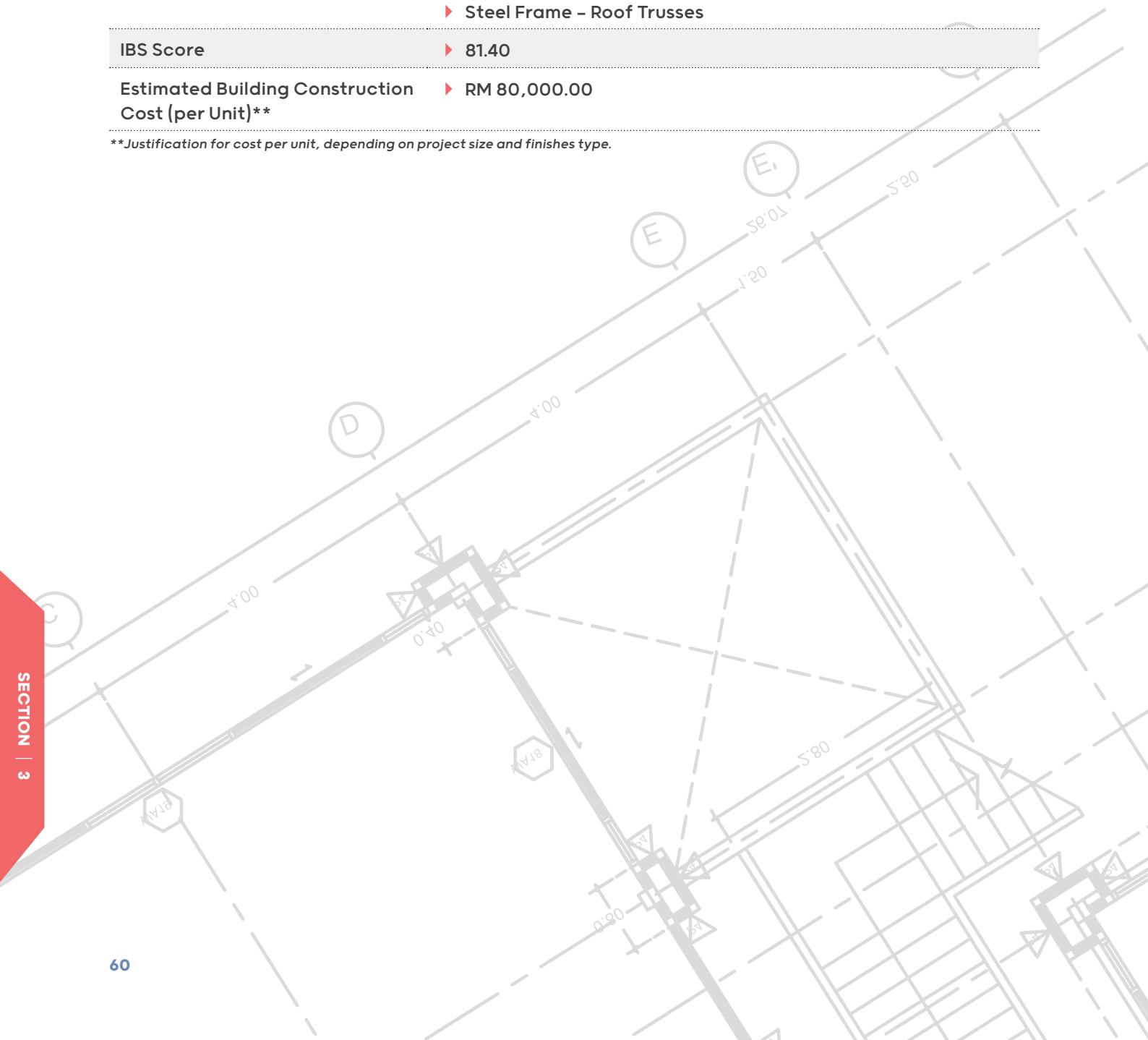
MyIOS Apartment P03

MyIOS Apartment P03 3D View (Artist's Impression)

MyIOS Apartment P03 Floor Plan Layout

General Information of MyIOS P03	
Type	▸ Apartment 8-storey
Gross Floor Area (GFA)	▸ 850 sq ft per unit
Space	▸ Living & Dining Area ▸ Kitchen ▸ Bedroom – 3 units ▸ Bathroom – 2 units ▸ Balcony ▸ Dry Yard ▸ Utility Room
Structural System	▸ Precast Concrete – Column & Beam ▸ Blockwork – Wall ▸ Steel Frame – Roof Trusses
IBS Score	▸ 81.40
Estimated Building Construction Cost (per Unit)**	▸ RM 80,000.00

***Justification for cost per unit, depending on project size and finishes type.*



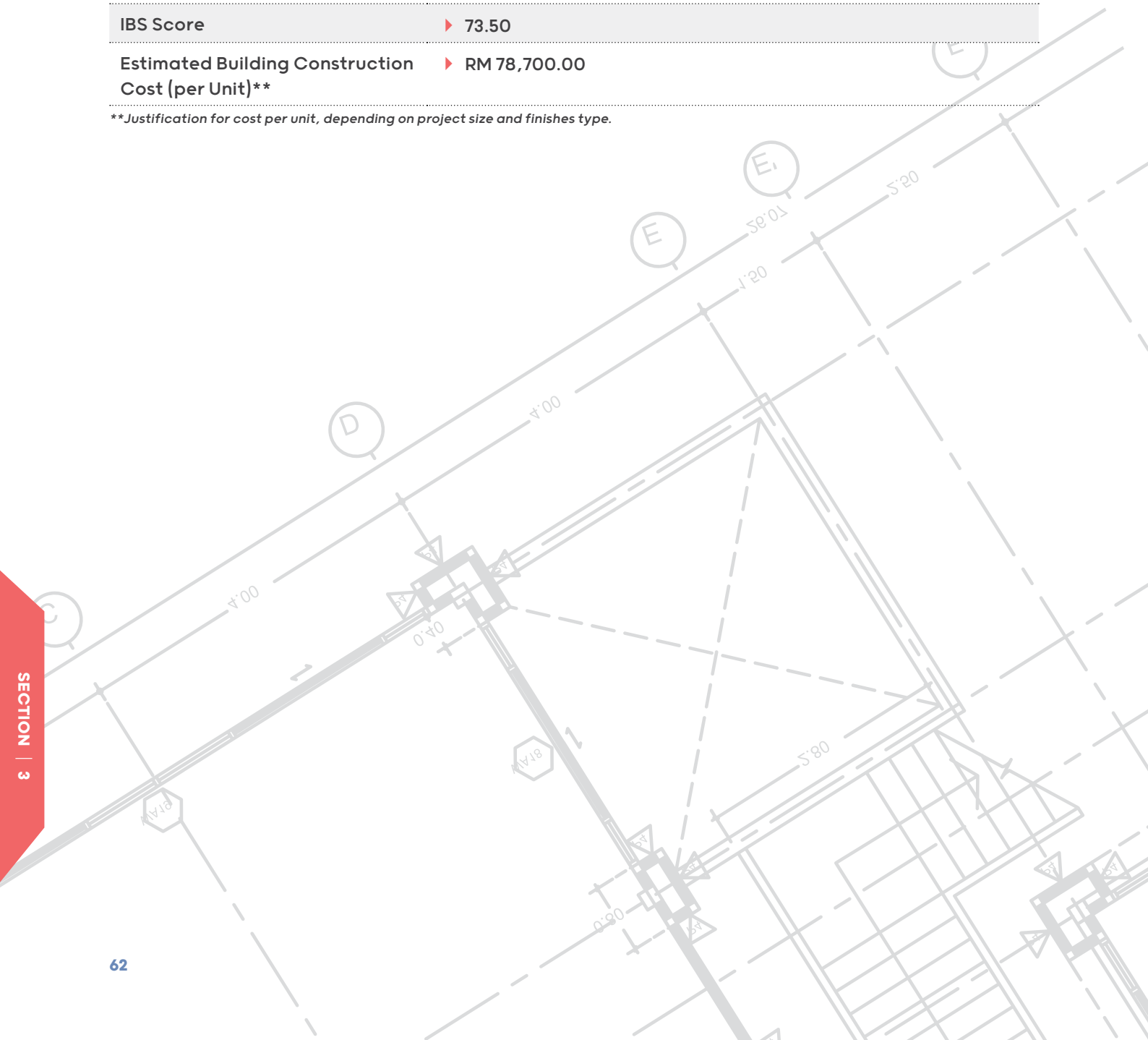
MyIOS Apartment P04

MyIOS Apartment P04 3D View (Artist's Impression)

MyIOS Apartment P04 Floor Plan Layout

General Information of MyIOS P04	
Type	▸ Apartment 20-storey
Gross Floor Area (GFA)	▸ 850 sq ft per unit
Space	▸ Living & Dining Area ▸ Kitchen ▸ Bedroom – 3 units ▸ Bathroom – 2 units ▸ Balcony ▸ Dry Yard
Structural System	▸ Precast Concrete – Wall ▸ Innovative – Wall ▸ Steel Frame – Roof Trusses
IBS Score	▸ 73.50
Estimated Building Construction Cost (per Unit)**	▸ RM 78,700.00

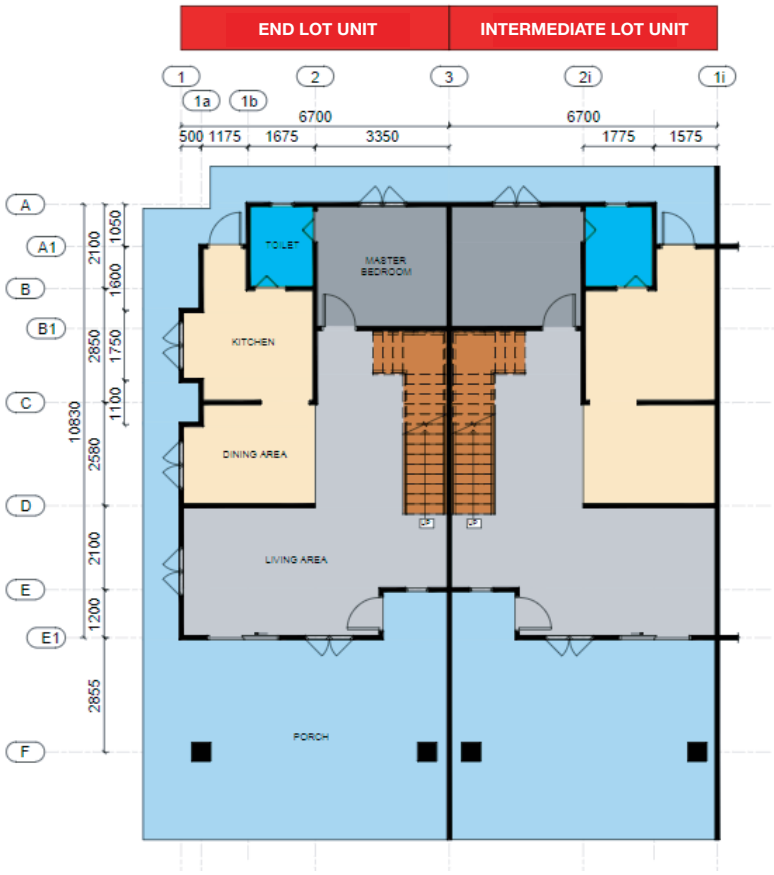
***Justification for cost per unit, depending on project size and finishes type.*



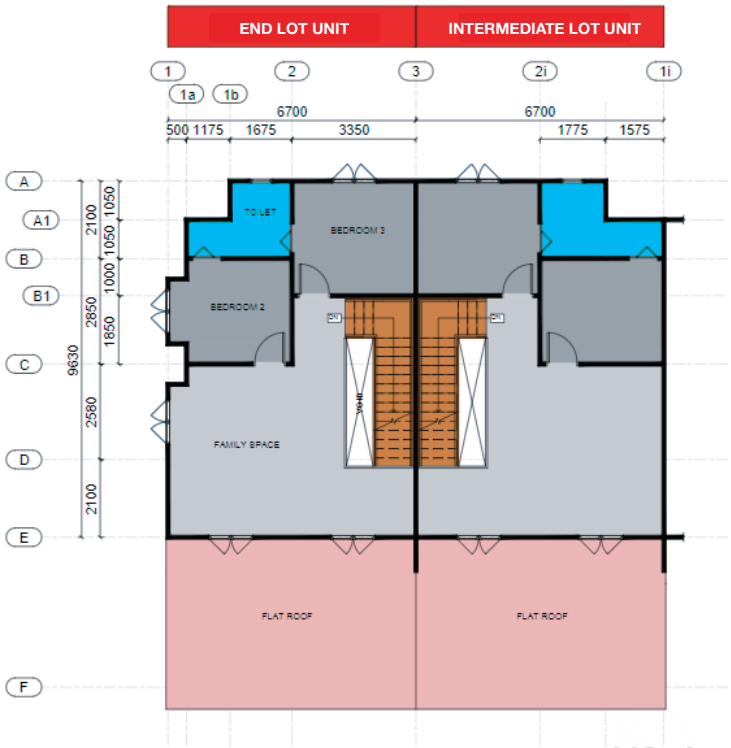
02 MyIOS TERRACE HOUSE

MyIOS Terrace House 2-storey P05

MyIOS Terrace House 2-storey
P05 3D View (Artist's Impression)



MyIOS Terrace House 2-storey
P05 Ground Floor Plan Layout



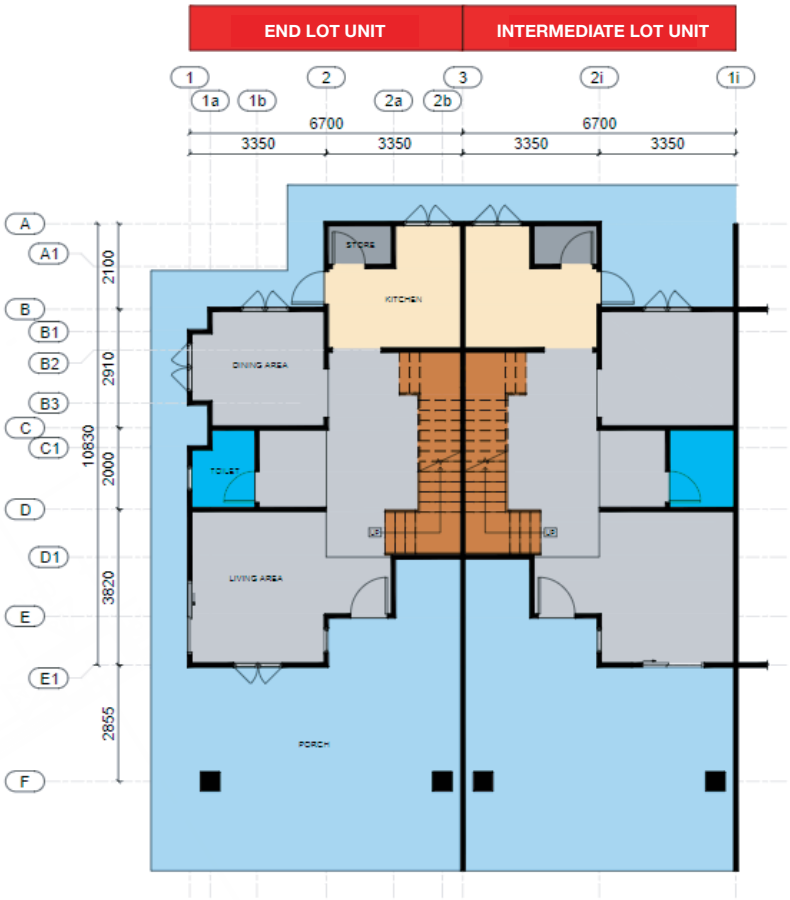
MyIOS Terrace House 2-storey P05 First Floor Plan Layout

General Information of MyIOS P05	
Type	Terrace House 2-storey
Gross Floor Area (GFA)	1,600 sq ft per unit
Space	Living Area Dining Area Kitchen Bedroom – 3 units Bathroom – 2 units Family Space (1st Floor) Car Porch
Structural System	Precast Concrete – Wall Steel Frame – Roof Trusses
IBS Score	81.90
Estimated Building Construction Cost (per Unit)**	RM 110,600.00

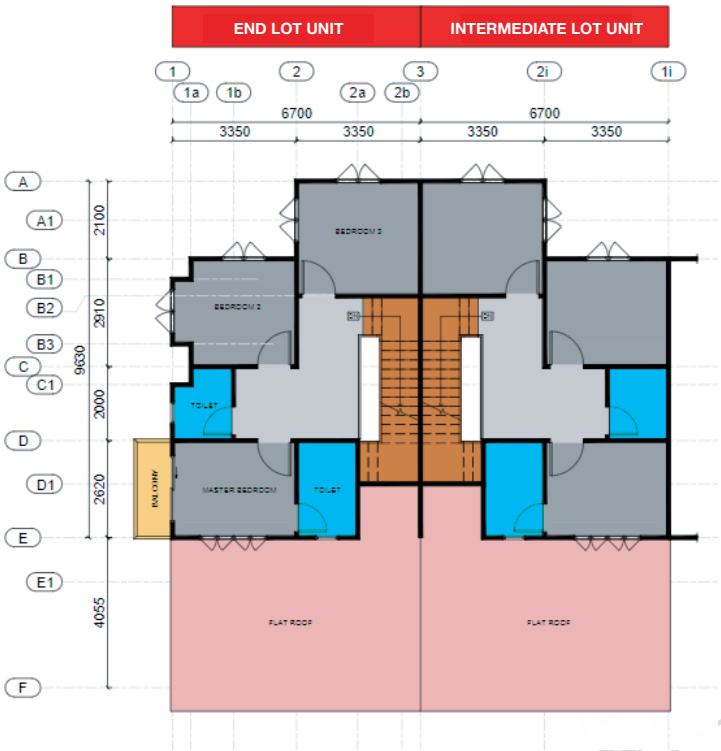
***Justification for cost per unit, depending on project size and finishes type.*

MyIOS Terrace House 2-storey P06

MyIOS Terrace House 2-storey P06 3D View (Artist's Impression)



MyIOS Terrace House 2-storey P06 Ground Floor Plan Layout



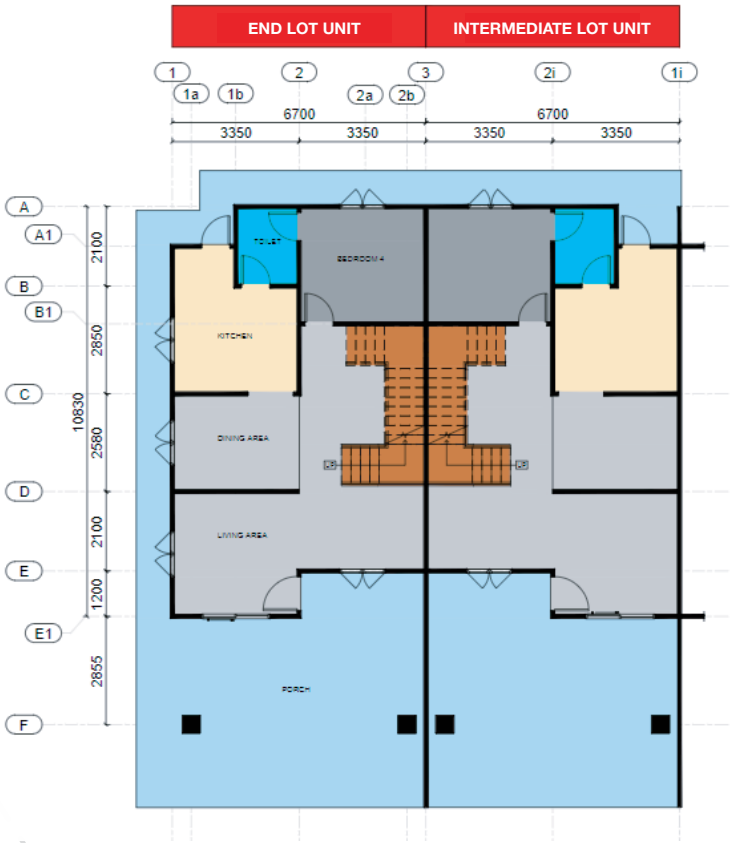
MyIOS Terrace House 2-storey P06 First Floor Plan Layout

General Information of MyIOS P06	
Type	Terrace House 2-storey
Gross Floor Area (GFA)	1,400 sq ft per unit
Space	Living Area Dining Area Kitchen Bedroom – 3 units Bathroom – 3 units Balcony (Corner unit) Storeroom Car Porch
Structural System	Precast Concrete – Column & Beam Blockwork – Wall Steel Frame – Roof Trusses
IBS Score	78.50
Estimated Building Construction Cost (per Unit)**	RM 109,400.00

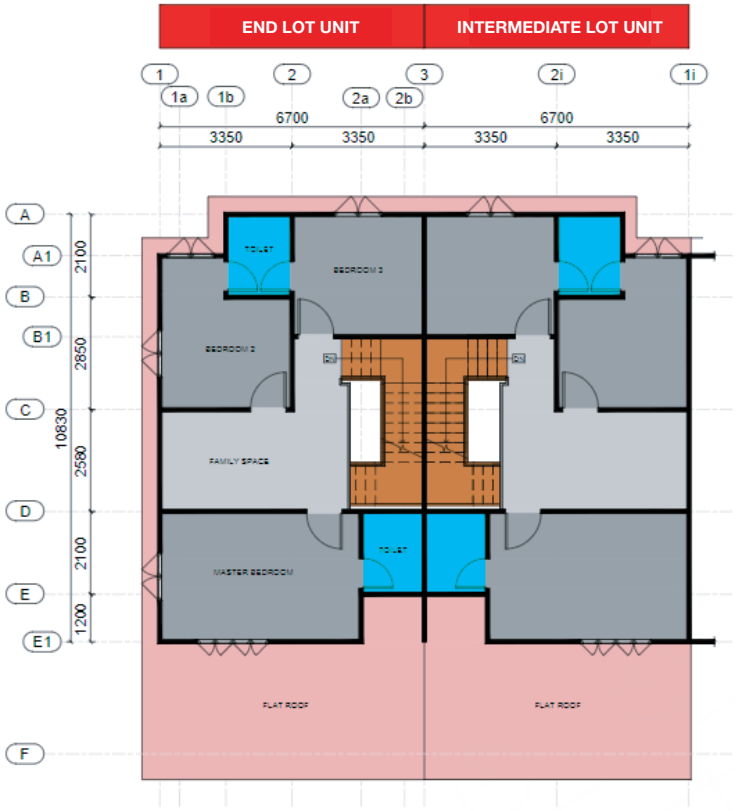
***Justification for cost per unit, depending on project size and finishes type.*

MyIOS Terrace House 2-storey P07

MyIOS Terrace House 2-storey P07 3D View (Artist's Impression)



MyIOS Terrace House 2-storey P07 Ground Floor Plan Layout

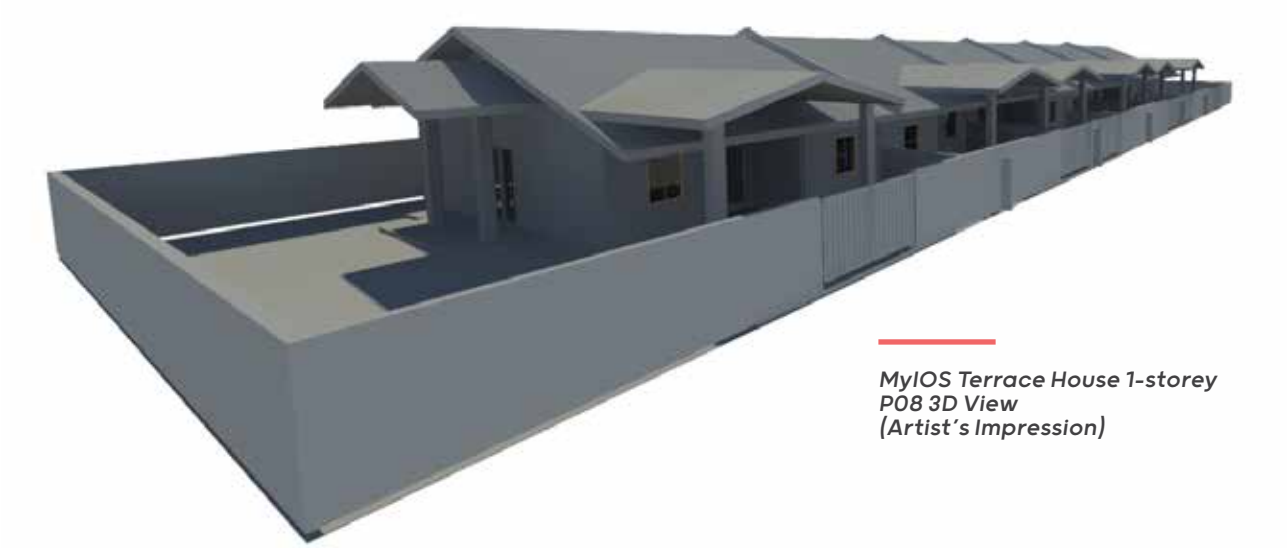


MyIOS Terrace House 2-storey P07
First Floor Plan Layout

General Information of MyIOS P07	
Type	Terrace House 2-storey
Gross Floor Area (GFA)	1,300 sq ft per unit
Space	Living Area Dining Area Kitchen Bedroom – 4 units Bathroom – 3 units Family Space Car Porch
Structural System	Precast Concrete – Column & Beam Innovative – Wall Steel Frame – Roof Trusses
IBS Score	76.30
Estimated Building Construction Cost (per Unit)**	RM 108,400.00

***Justification for cost per unit, depending on project size and finishes type.*

MyIOS Terrace House 1-storey P08

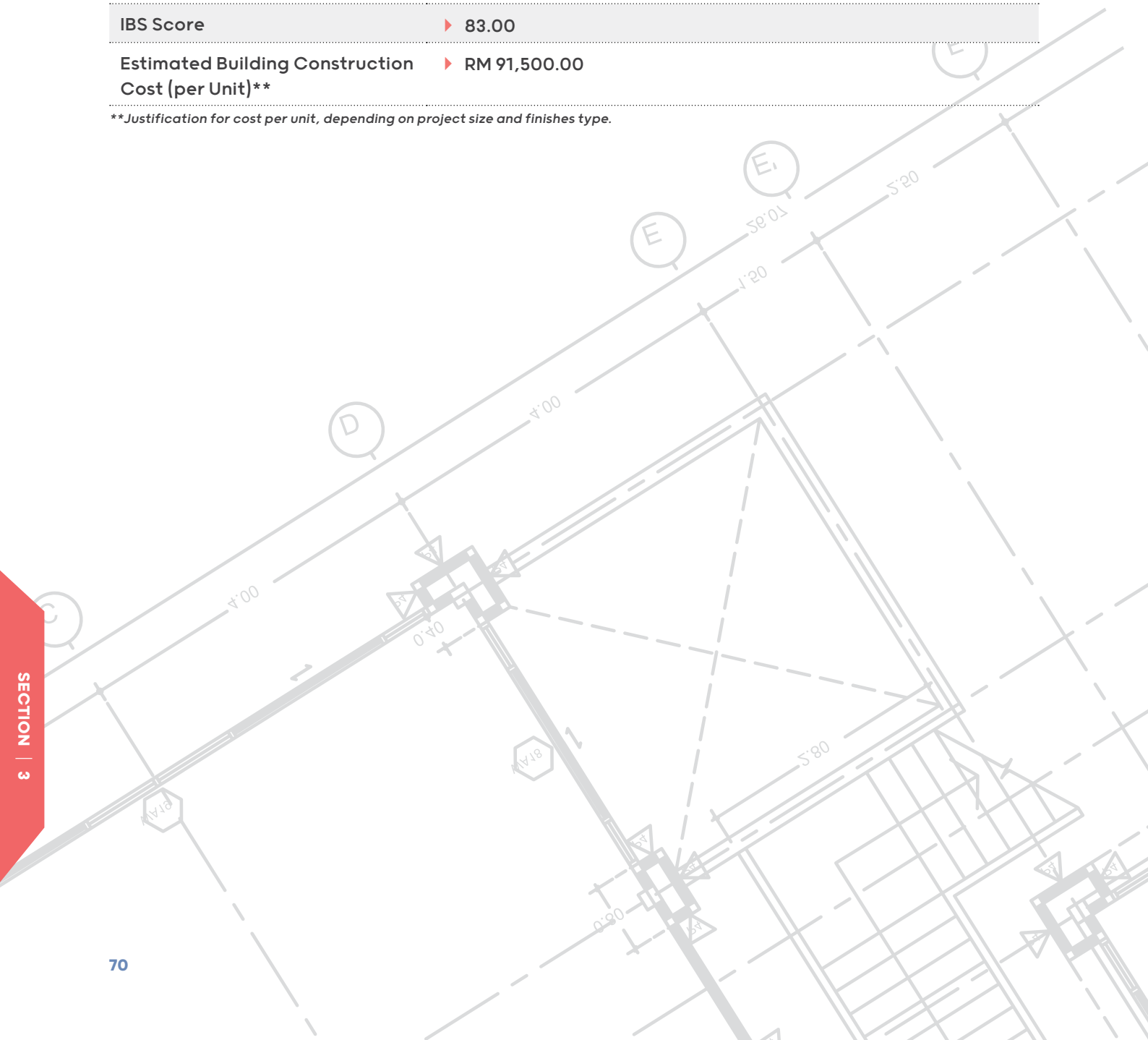


MyIOS Terrace House 1-storey P08 3D View (Artist's Impression)

MyIOS Terrace House 1-storey P08 Floor Plan Layout

General Information of MyIOS P08	
Type	Terrace House 1-storey
Gross Floor Area (GFA)	1,200 sq ft per unit
Space	Living & Dining Area Kitchen Bedroom – 3 units Bathroom – 2 units Car Porch
Structural System	Precast Concrete – Column & Beam Blockwork – Wall Innovative – Wall Steel Frame – Roof Trusses
IBS Score	83.00
Estimated Building Construction Cost (per Unit)**	RM 91,500.00

***Justification for cost per unit, depending on project size and finishes type.*



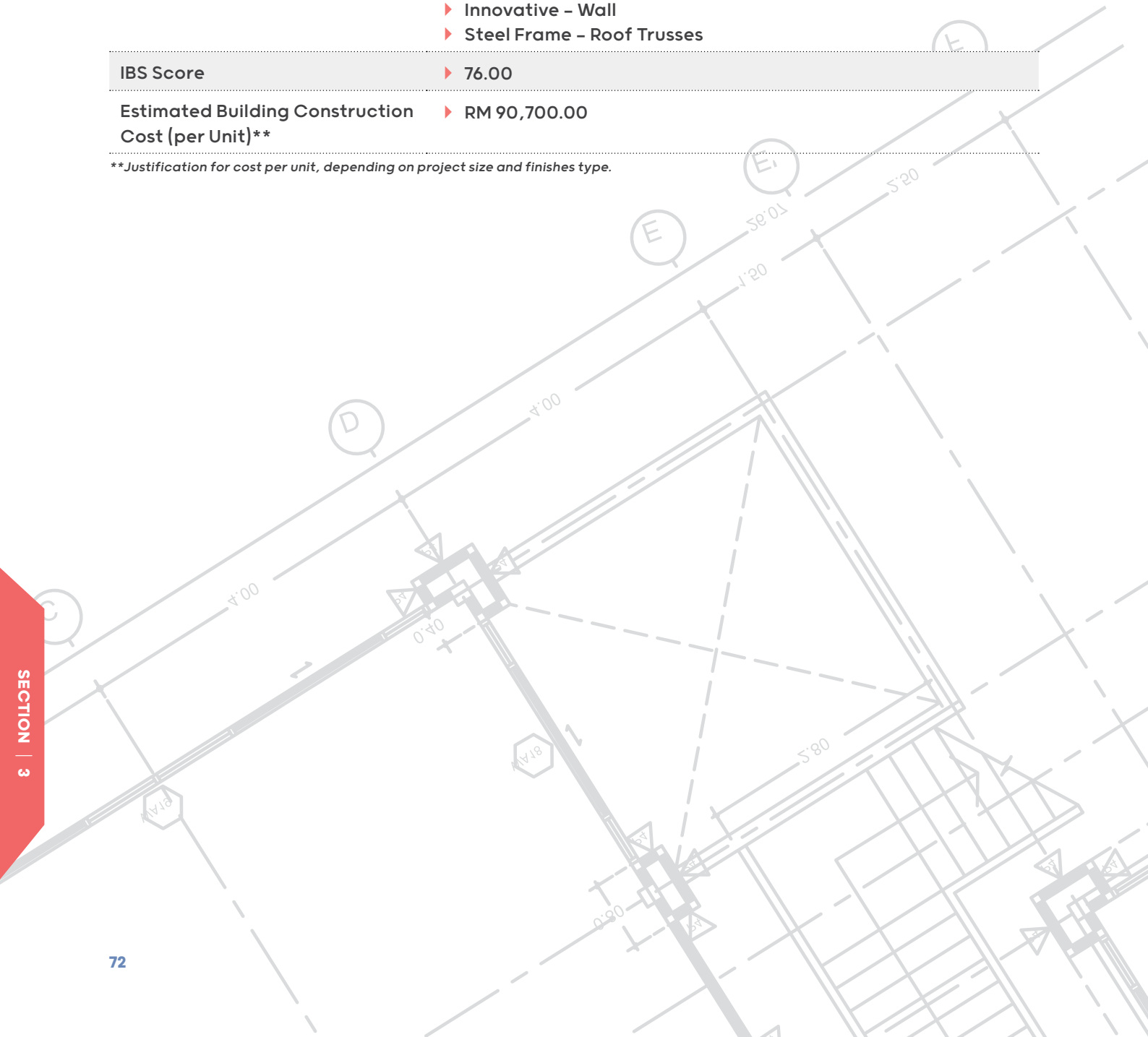
MyIOS Terrace House 1-storey P09

MyIOS Terrace House 1-storey P09
3D View (Artist's Impression)

MyIOS Terrace House 1-storey P09
Floor Plan Layout

General Information of MyIOS P09	
Type	▸ Terrace House 1-storey
Gross Floor Area (GFA)	▸ 1,000 sq ft per unit
Space	▸ Living Area ▸ Dining Area ▸ Kitchen ▸ Bedroom – 3 units ▸ Bathroom – 2 units ▸ Family Area ▸ Dry Yard ▸ Car Porch
Structural System	▸ Precast Concrete – Column & Beam ▸ Innovative – Wall ▸ Steel Frame – Roof Trusses
IBS Score	▸ 76.00
Estimated Building Construction Cost (per Unit)**	▸ RM 90,700.00

***Justification for cost per unit, depending on project size and finishes type.*



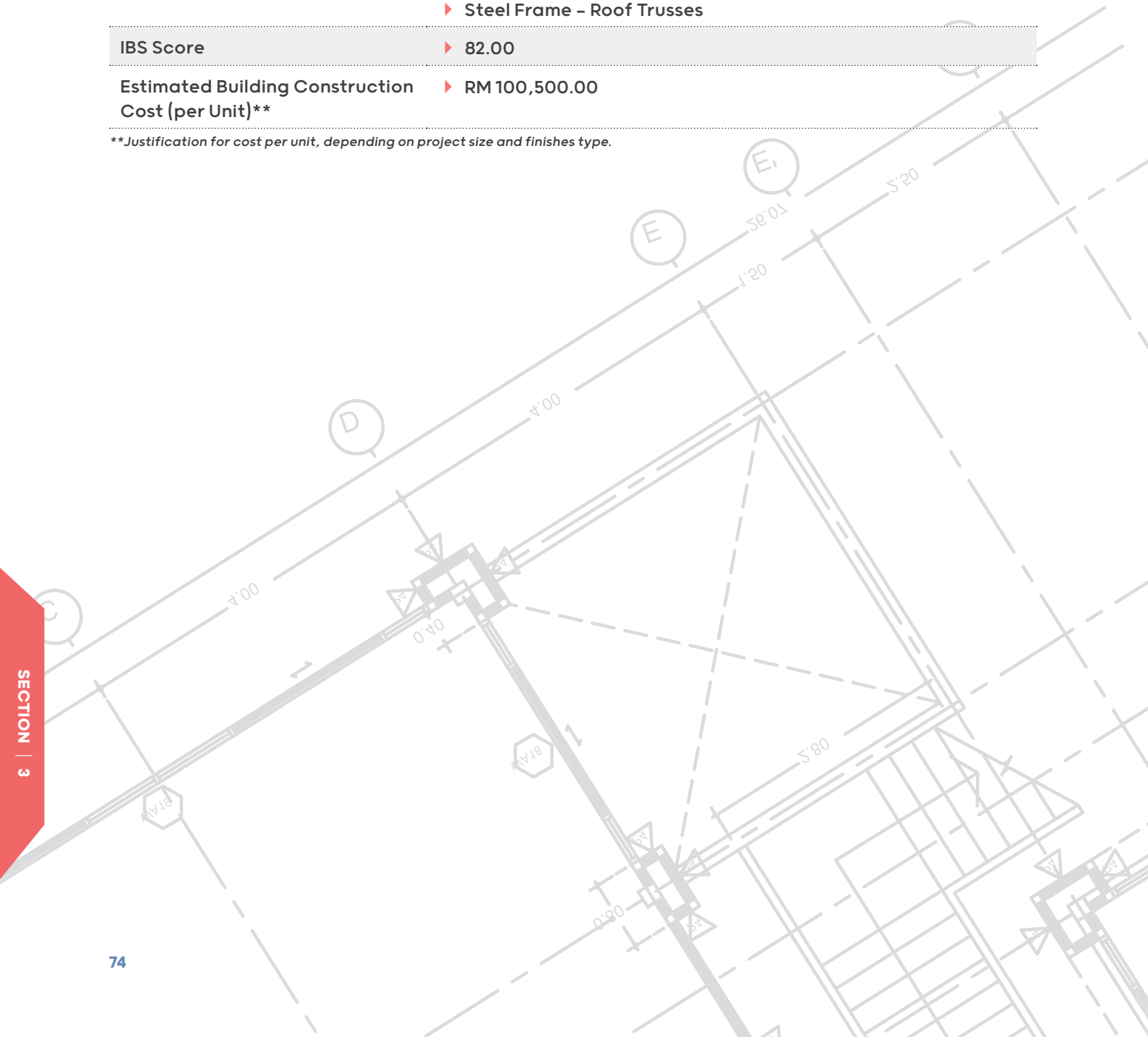
MyIOS Terrace House 1-storey P10

MyIOS Terrace House 1-storey P10
3D View (Artist's Impression)

MyIOS Terrace House
1-storey P10 Floor Plan Layout

General Information of MyIOS P10	
Type	Terrace House 1-storey
Gross Floor Area (GFA)	1,300 sq ft per unit
Space	Living Area Dining Area Kitchen Bedroom – 3 units Bathroom – 2 units Dry Yard Car Porch
Structural System	Precast Concrete – Column & Beam Blockwork – Wall Steel Frame – Roof Trusses
IBS Score	82.00
Estimated Building Construction Cost (per Unit)**	RM 100,500.00

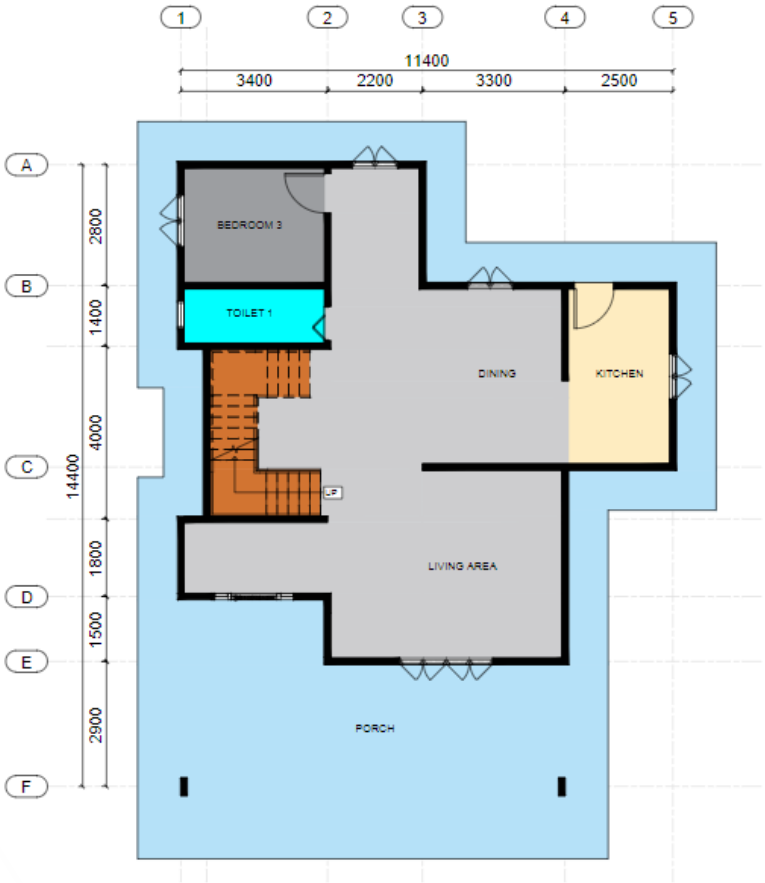
***Justification for cost per unit, depending on project size and finishes type.*



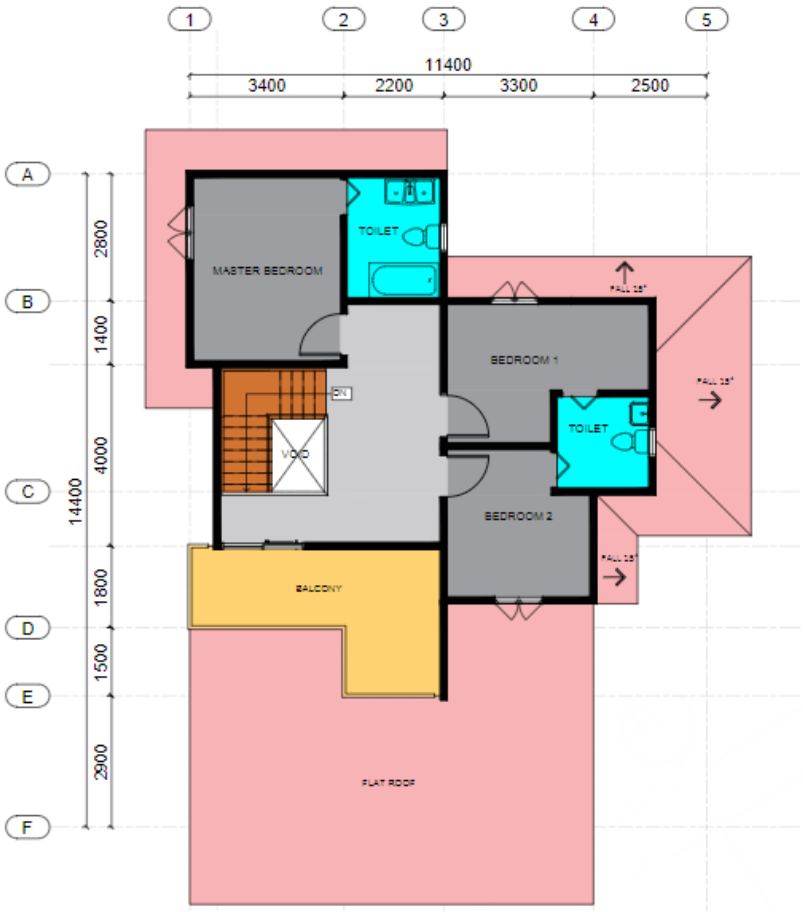
03 MyIOS SINGLE HOUSE

MyIOS Single House 2-storey P11

MyIOS Single House 2-storey P11 Ground Floor Plan Layout



MyIOS Single House 2-storey P11 First Floor Plan Layout



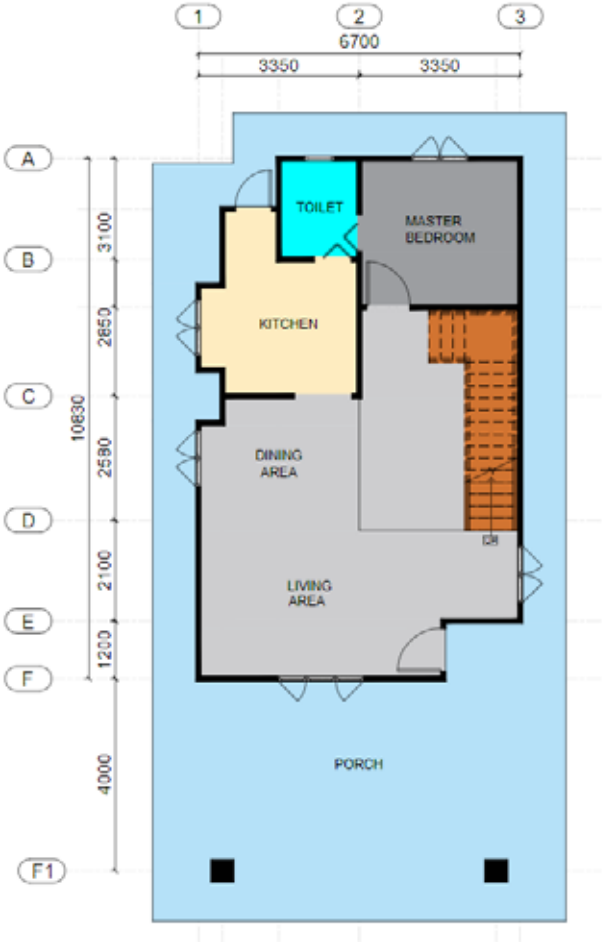
MyIOS Single House 2-storey P11 First Floor Plan Layout

General Information of MyIOS P11	
Type	Single House 2-storey
Gross Floor Area (GFA)	1,900 sq ft per unit
Space	Living Area Dining Area Kitchen Bedroom – 4 units Bathroom – 3 units Balcony Car Porch
Structural System	Precast Concrete – Column & Beam Blockwork – Wall Steel Frame – Roof Trusses
IBS Score	75.70
Estimated Building Construction Cost (per Unit)**	RM 144,700.00

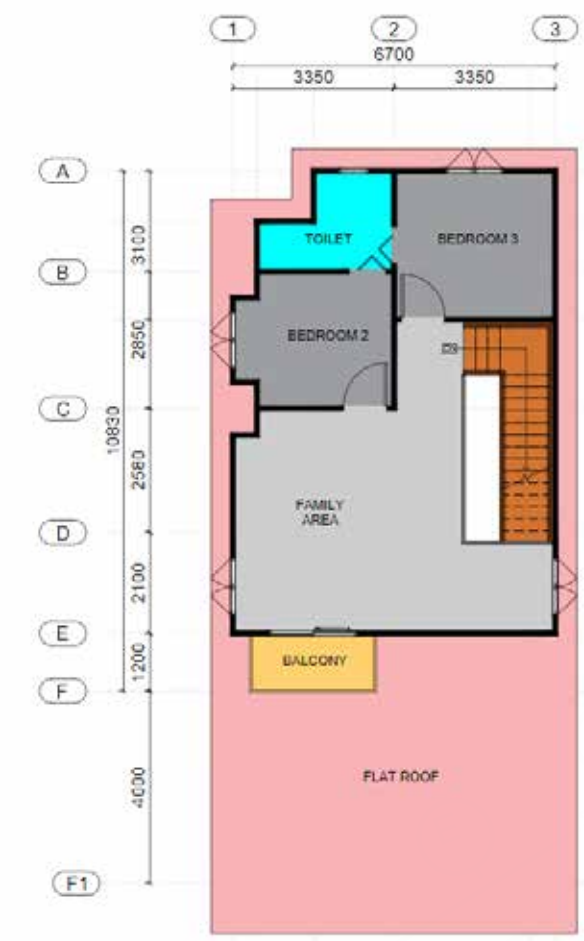
***Justification for cost per unit, depending on project size and finishes type.*

MyIOS Single House 2-storey P12

MyIOS Single House 2-storey P12 3D View (Artist's Impression)



MyIOS Single House 2-storey P12 Ground Floor Plan Layout



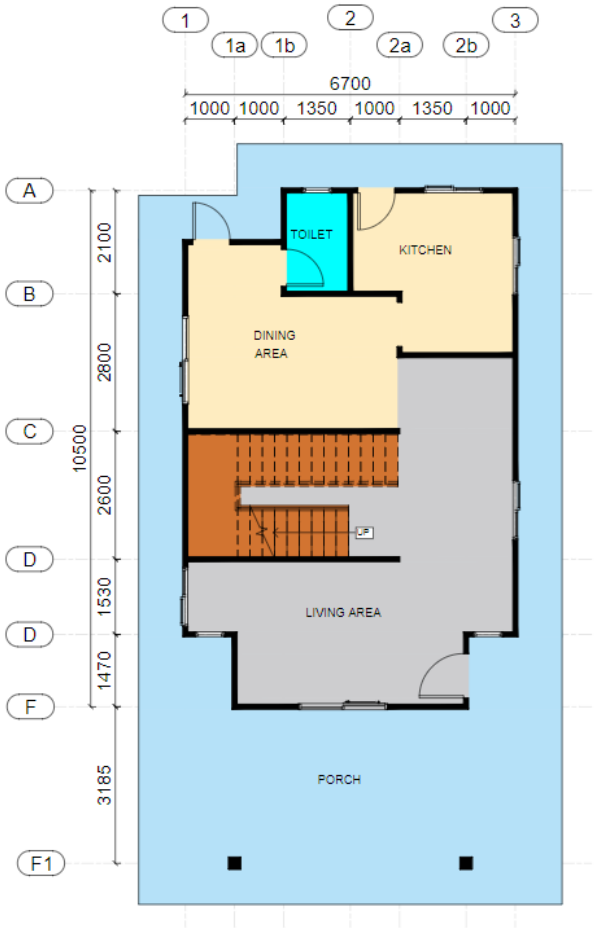
MyIOS Single House 2-storey P12 First Floor Plan Layout

General Information of MyIOS P12	
Type	Single House 2-storey
Gross Floor Area (GFA)	1,800 sq ft per unit
Space	Living & Dining Area Kitchen Bedroom – 3 units Bathroom – 2 units Family Area Balcony Car Porch
Structural System	Precast Concrete – Column & Beam Blockwork – Wall Steel Frame – Roof Trusses
IBS Score	75.00
Estimated Building Construction Cost (per Unit)**	RM 135,000.00

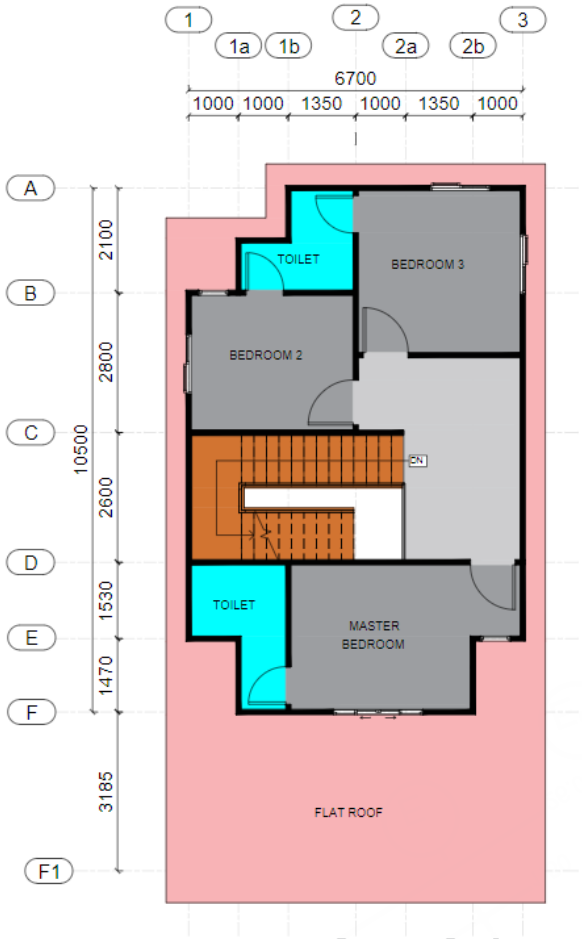
***Justification for cost per unit, depending on project size and finishes type.*

MyIOS Single House 2-storey P13

MyIOS Single House 2-storey P13 3D View (Artist's Impression)



MyIOS Single House 2-storey P13 Ground Floor Plan Layout



MyIOS Single House 2-storey P13 First Floor Plan Layout

General Information of MyIOS P13	
Type	Single House 2-storey
Gross Floor Area (GFA)	1,100 sq ft per unit
Space	Living Area Dining Area Kitchen Bedroom – 3 units Bathroom – 3 units Car Porch
Structural System	Precast Concrete – Column & Beam Blockwork – Wall Steel Frame – Roof Trusses
IBS Score	76.70
Estimated Building Construction Cost (per Unit)**	RM 110,000.00

***Justification for cost per unit, depending on project size and finishes type.*

MyIOS Single House 1-storey P14

MyIOS Single House 1-storey P14 3D View (Artist's Impression)

MyIOS Single House 1-storey P14 Floor Plan Layout

General Information of MyIOS P14	
Type	Single House 1-storey
Gross Floor Area (GFA)	1,600 sq ft per unit
Space	Living Area Dining Area Dry Kitchen Wet Kitchen Bedroom – 3 units Bathroom – 3 units Laundry Area Storeroom Prayer Room
Structural System	Precast Concrete – Column & Beam Innovative – Wall Steel Frame – Roof Trusses
IBS Score	79.00
Estimated Building Construction Cost (per Unit)**	RM 120,000.00

**Justification for cost per unit, depending on project size and finishes type.

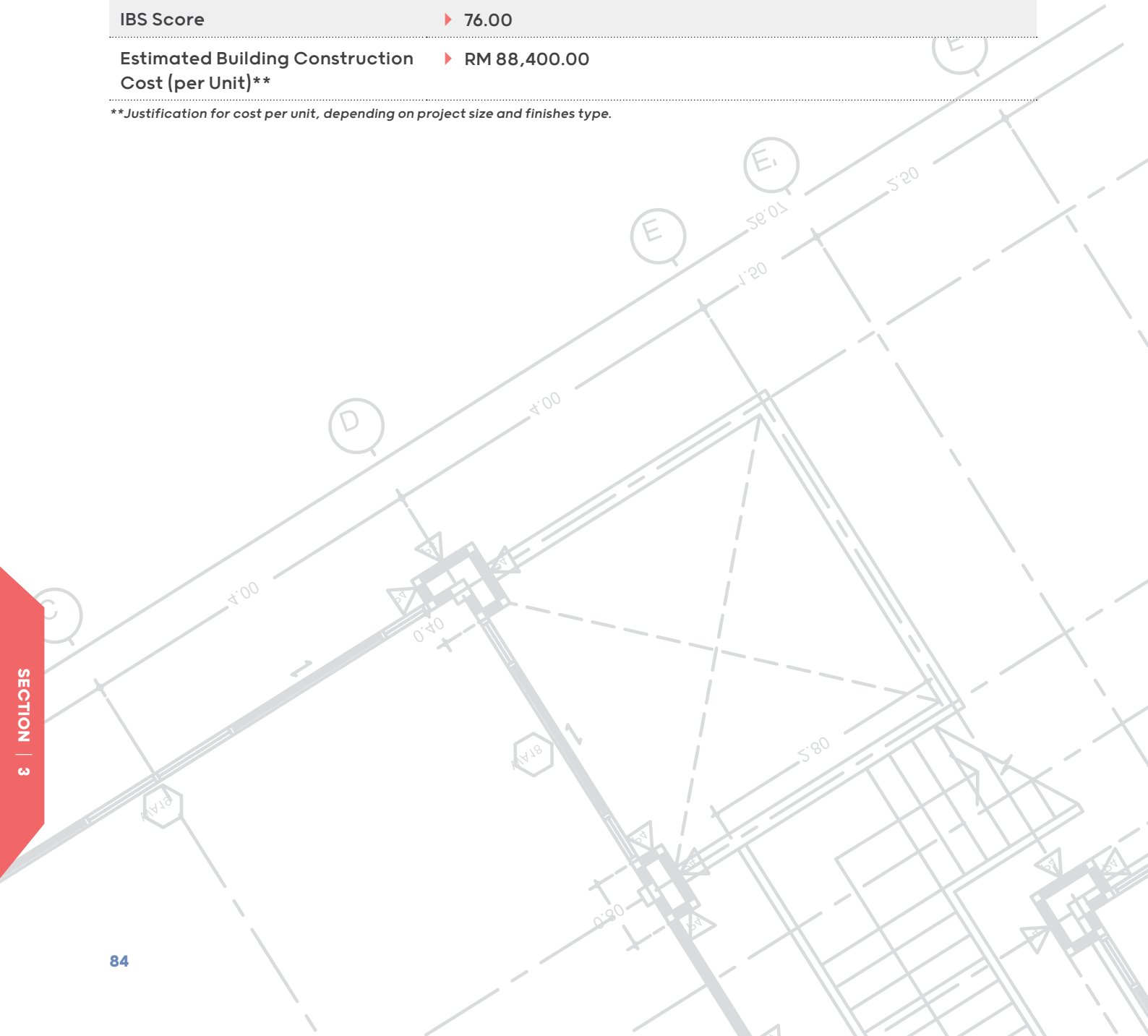
MyIOS Single House 1-storey P15

MyIOS Single House 1-storey P15 3D View (Artist's Impression)

MyIOS Single House 1-storey P15 Floor Plan Layout

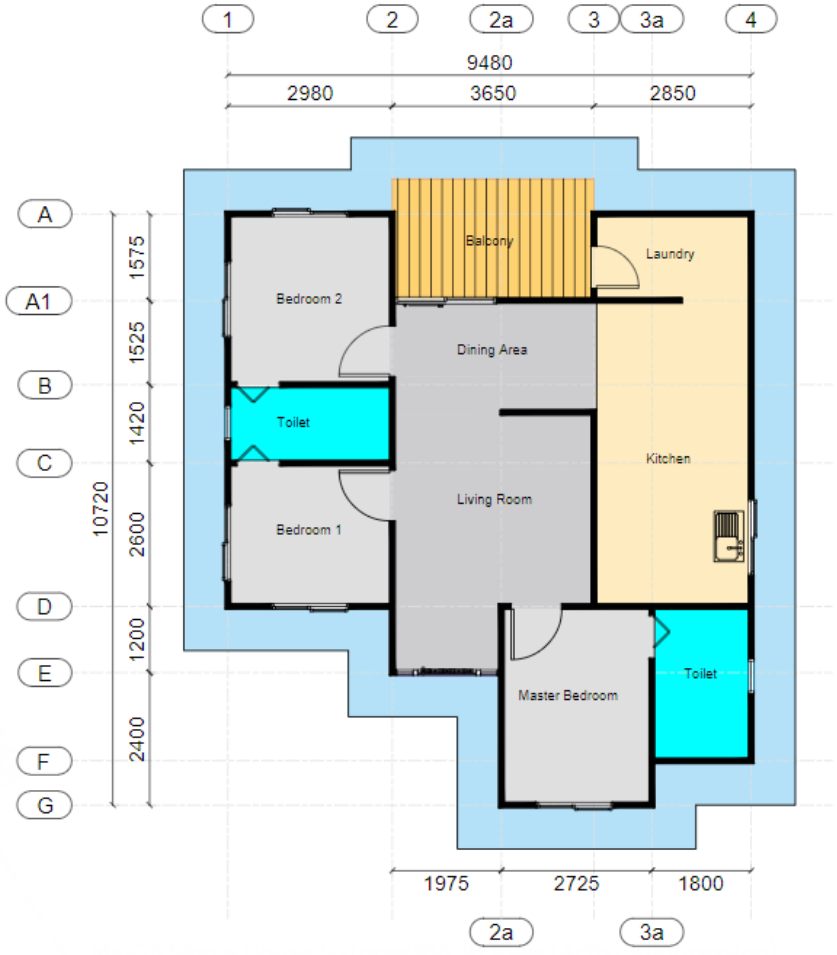
General Information of MyIOS P15	
Type	Single House 1-storey
Gross Floor Area (GFA)	1,100 sq ft per unit
Space	Living Area Dining Area Kitchen Bedroom – 3 units Bathroom – 2 units Car Porch
Structural System	Precast Concrete – Column & Beam Innovative – Wall Steel Frame – Roof Trusses
IBS Score	76.00
Estimated Building Construction Cost (per Unit)**	RM 88,400.00

***Justification for cost per unit, depending on project size and finishes type.*



MyIOS Single House 1-storey P16

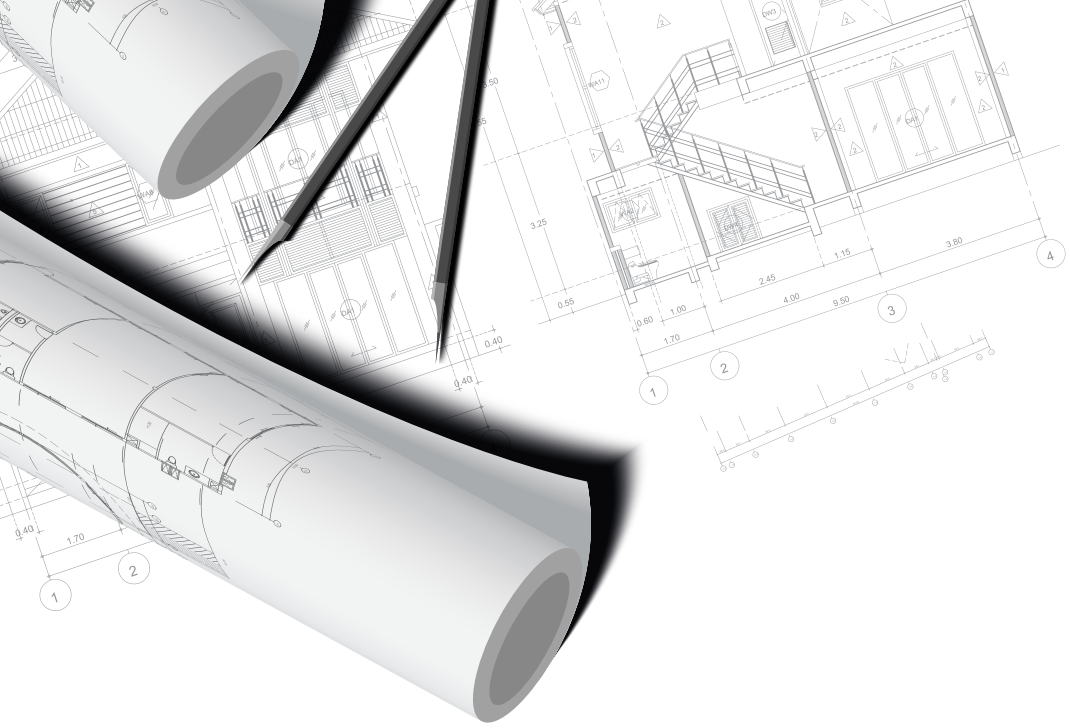
MyIOS Single House 1-storey P16 3D View (Artist's Impression)



MyIOS Single House 1-storey P16 Floor Plan Layout

General Information of MyIOS P16	
Type	▸ Single House 1-storey
Gross Floor Area (GFA)	▸ 900 sq ft per unit
Space	▸ Living Area ▸ Dining Area ▸ Kitchen ▸ Bedroom – 3 units ▸ Bathroom – 2 units ▸ Laundry Area ▸ Balcony
Structural System	▸ Precast Concrete – Column & Beam ▸ Blockwork – Wall ▸ Steel Frame – Roof Trusses
IBS Score	▸ 81.40
Estimated Building Construction Cost (per Unit)**	▸ RM 81,700.00

***Justification for cost per unit, depending on project size and finishes type.*



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Ir Kamal Pasha Mokhtar

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Ar. Dr. Eleena Jamil

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	Norlizawati Binti Ali
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