

# Smart Home Category

Landed House @ Toh Tuck Terrace (Singapore)

# About this House

- Completed in Nov 2023
- Land size : 3300 sqft
- Built Up Area: 6500sqft (Approx)



# Smart Home Infrastructure

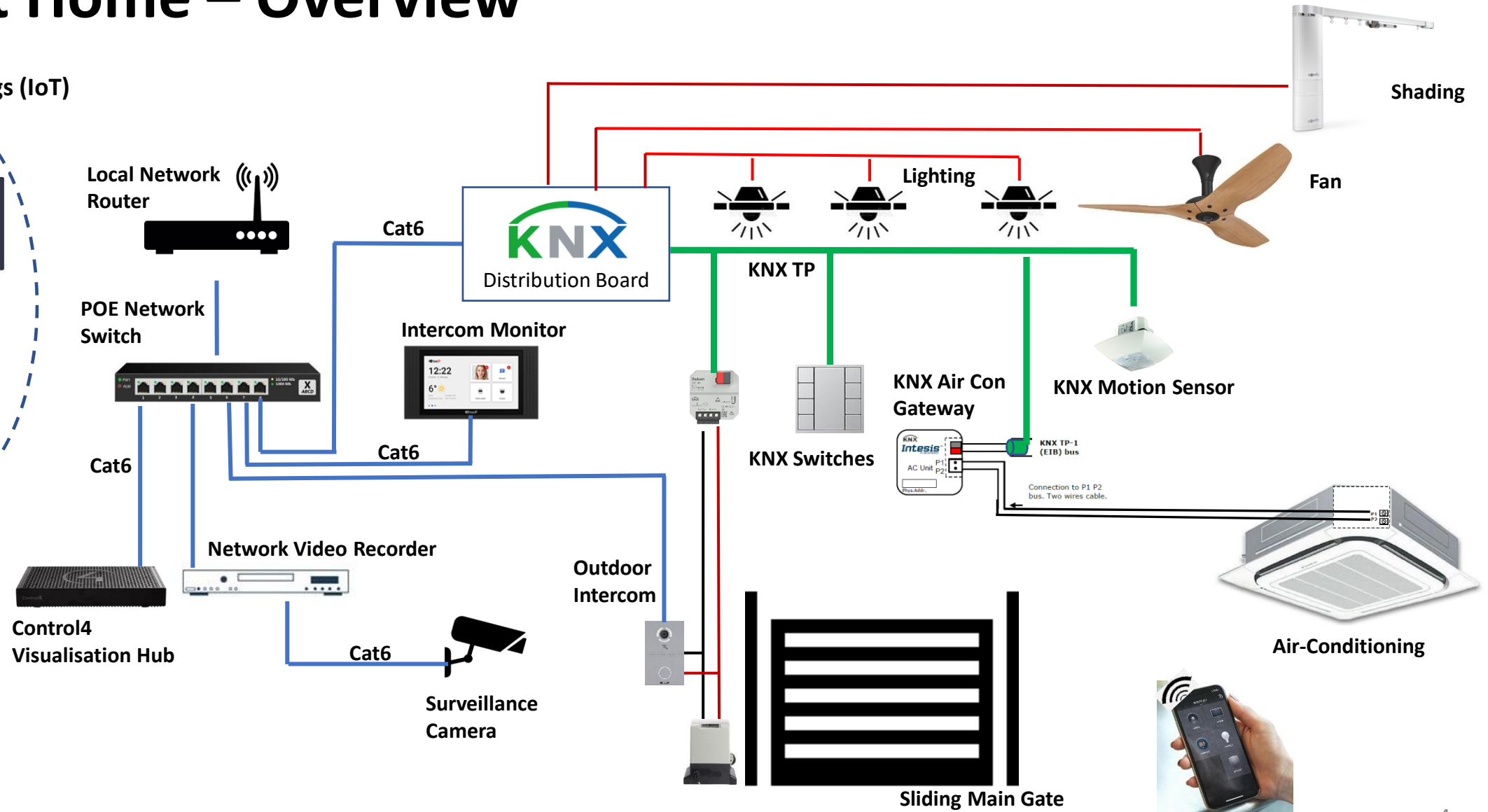
- We have come out a 2-layer smart home infrastructure for this project:
  - ✓ 1<sup>st</sup> Layer: KNX system, the worldwide standard for smart home protocol, forms the backbone of the smart home infrastructure to perform back end control of home devices (i.e. lighting, shading, air-conditioning etc)
  - ✓ 2<sup>nd</sup> Layer: Professional smart hub, Control4, provides intuitive visualisation for end-users to control KNX devices and Internet of Things (IoT) appliances, as well as to process and execute complicated scenes



Control4<sup>®</sup>

# Smart Home – Overview

Internet of Things (IoT)



# KNX – Scope of Control

- The KNX system forms the backbone of the smart home to control the following:
  - ✓ Lighting
  - ✓ Fan
  - ✓ Air Conditioning
  - ✓ Blinds/ Curtain
  - ✓ Main Gate



KNX Panel @ Ground Floor



KNX Panel @ Upper Floor

# KNX – Lighting

- Besides the On/Off switching, the KNX system uses the following dimming control for indoor lightings:
  - ✓ 0-10V
  - ✓ Phase-cut (Trailing edge)



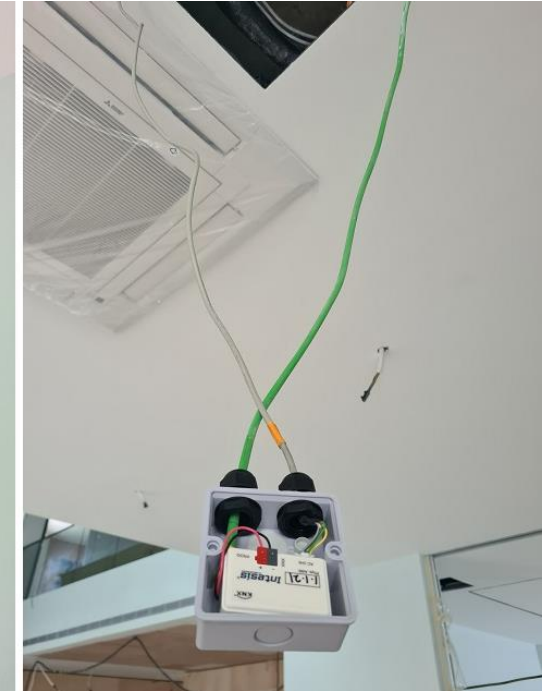
Lighting @ Dining Area



Exterior Outdoor Lighting

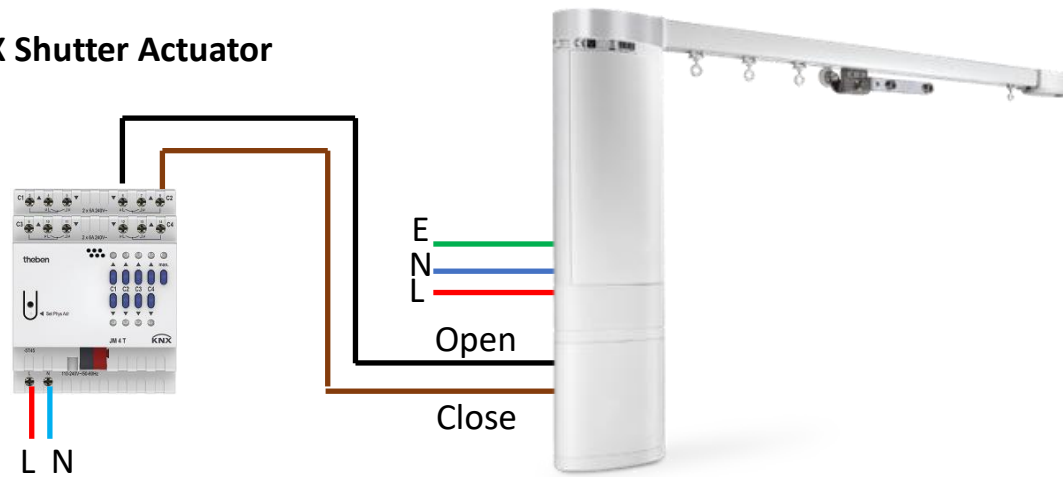
# KNX – Air Conditioning

- KNX AC gateways are installed to interface with the individual air con units (ducted, cassette and wall-mounted)



# KNX Shading

KNX Shutter Actuator



Blinds @ Level 3 Hall

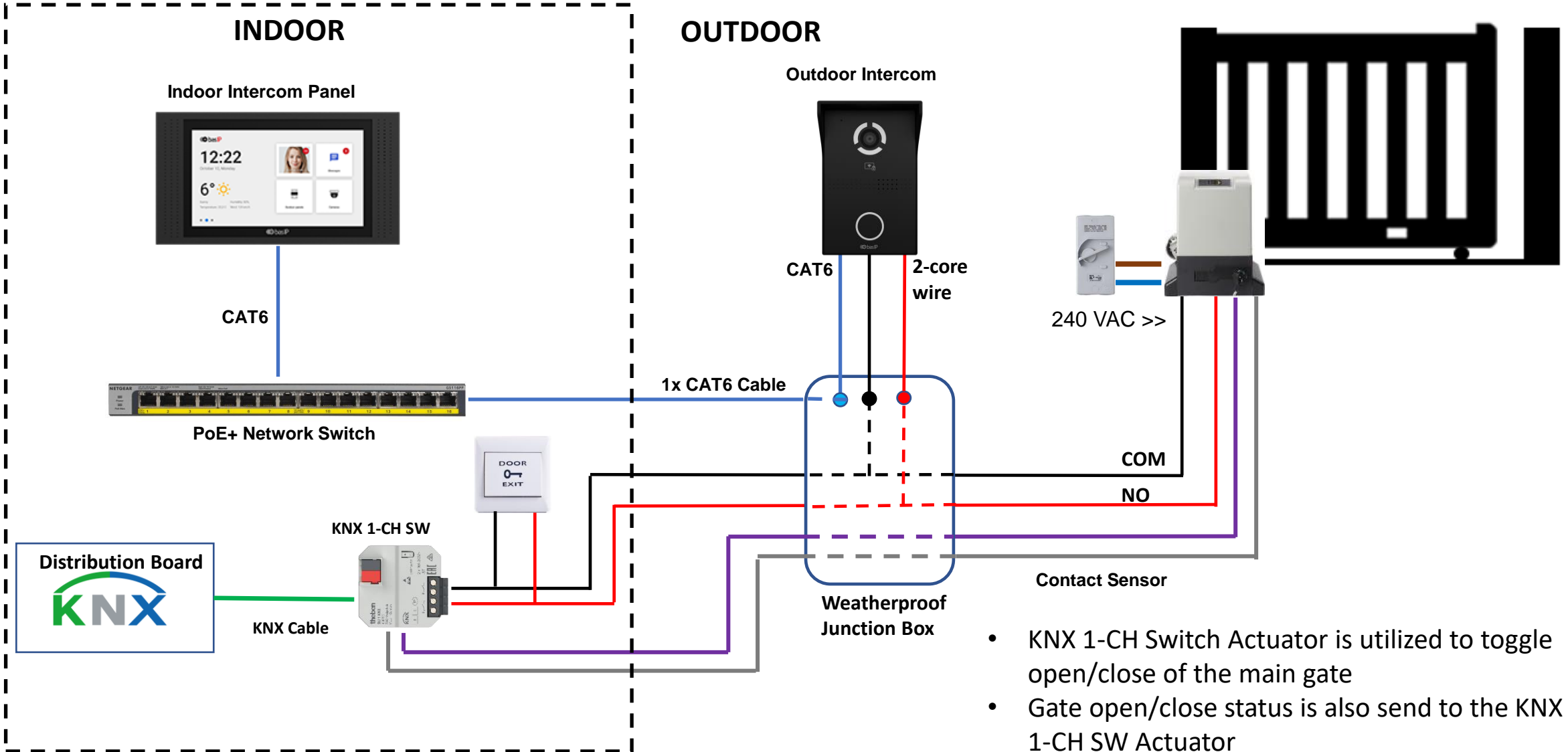
Blinds and curtain motors are hardwired to the KNX shutter actuators



Curtains @ Function Room



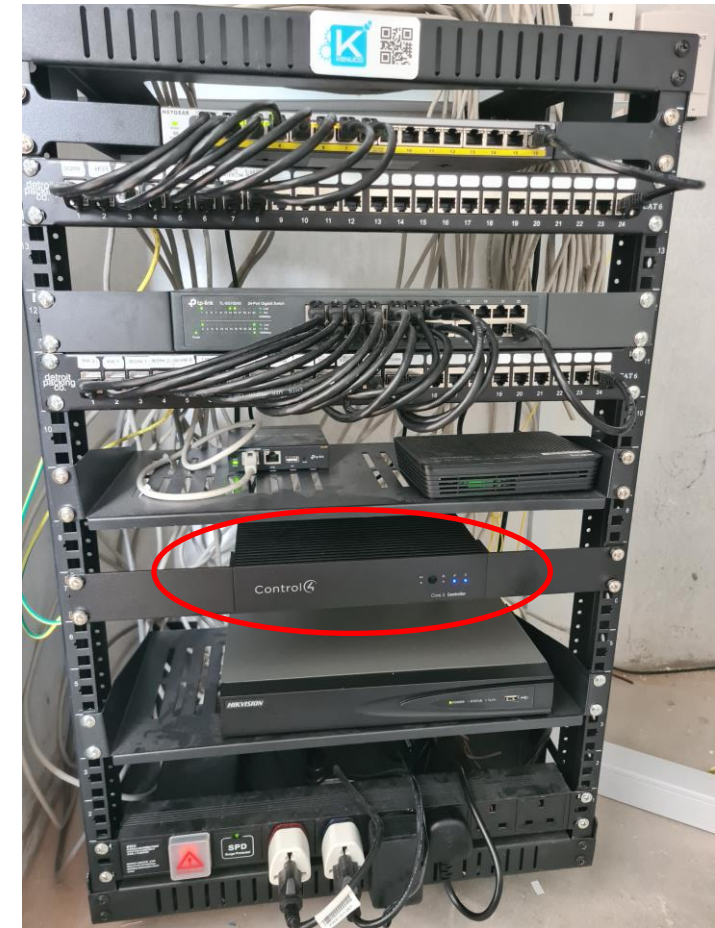
# Intercom & Main Gate



- KNX 1-CH Switch Actuator is utilized to toggle open/close of the main gate
- Gate open/close status is also send to the KNX 1-CH SW Actuator

# Intercom & Main Gate

- KNX devices work in tandem with Control4 to provide central management of the main gate and car porch lighting
- KNX devices comprises the following:
  - KNX motion sensor monitors the movement of people/ vehicle
  - KNX 1-CH Switch Actuator activates the gate motor
  - KNX Switch Actuators turn on/off the car porch lighting
- Control4 hub process the functional logic:
  - Activate car porch lighting only when gate opens and time is after sunset, or when there is movement of people and poor lighting conditions at the car porch



Control4 Core 3 @ IT Rack