



Social Housing

Easy Reference Architecture Guide

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Objective

The purpose of this document is to provide architectural guidance for the design and implementation of electrical distribution system for social housing with focus on fit-for-purpose solution using Schneider Electric's cost-optimized range of products.

Target Audience

This reference architecture guide is intended for Contractors and Panel Builders who are responsible for Social Housing projects.

Typical Characteristics of Social Housing

Building configuration

- Less than 12 floors
- Less than 15,000 m²
- Less than 200 apartments

Network configuration

- RMU
- MV/LV transformer of 1250 kVA
- Main LV switchboard
- Emergency LV switchboard

Alternative power supplies

- A genset shall be installed to improve power continuity
- UPS to maintain critical loads supply

Optimized Performance by Fit-for-Purpose Design

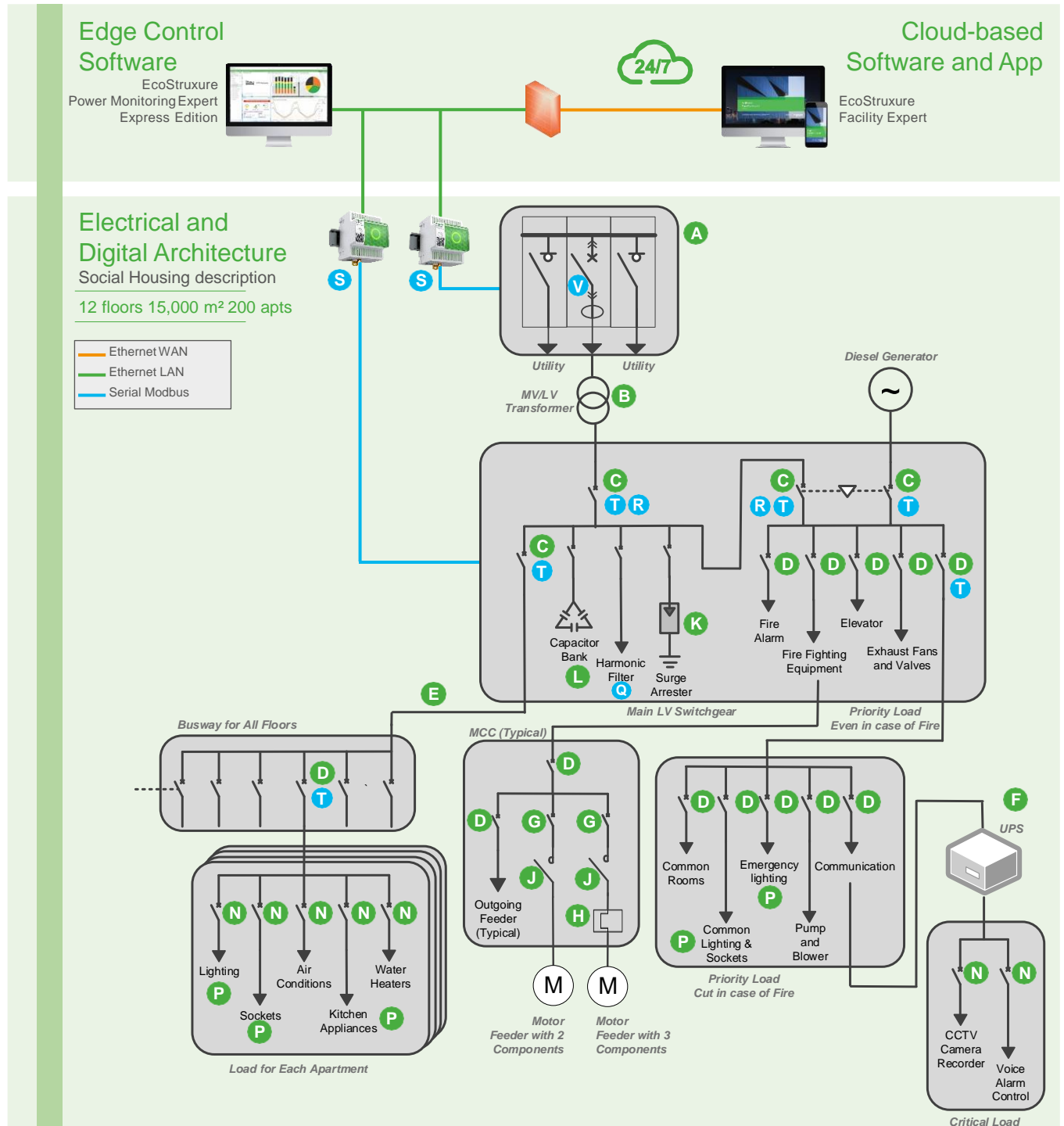
Electrical Network

With the 'fit-for-purpose' design intentions in mind, this cost-effective power system also complies with international standards. The electrical demands for social housing are supplied through public utility and received through an RMU and transformer. In this proposed architecture, during loss of utility power, the continuity of priority services are maintained through a genset with Auto Mains Function which enables the system to switch to preferred supply once the utility power is restored. The power distribution is realized in three levels; the main switchboard feeds several downstream normal & emergency switchboards. For services where no power interruption is permitted, such as CCTV and voice alarm control systems, usage of UPS is recommended.

Digitalization

With the Agile approach of 'just enough design', the selection of cost-conscious digital metering (EasyLogic PM2000 series for incomers and PM1000H series for major loads) together with simple, bundled power monitoring system (EcoStruxure Power Monitoring Expert – Express Edition) to form the foundation of an energy management infrastructure that is scalable, expandable and future-ready. Additionally, with the concept of easy to deploy, easy to use and easy to maintain, this basic but powerful energy and power monitoring system: drives energy usage awareness by turning metering data into actionable information; presents energy usage and consumption through easy-to-interpret graphical dashboards and reports that help kick off the sustainability journey; and identify areas of abnormal power consumption and highlight possible areas of improvement in order to reach energy efficiency and conservation goals. Optionally, it is cloud-ready for EcoStruxure Facility Expert SaaS.

Electrical Distribution and Digital Architectures and System

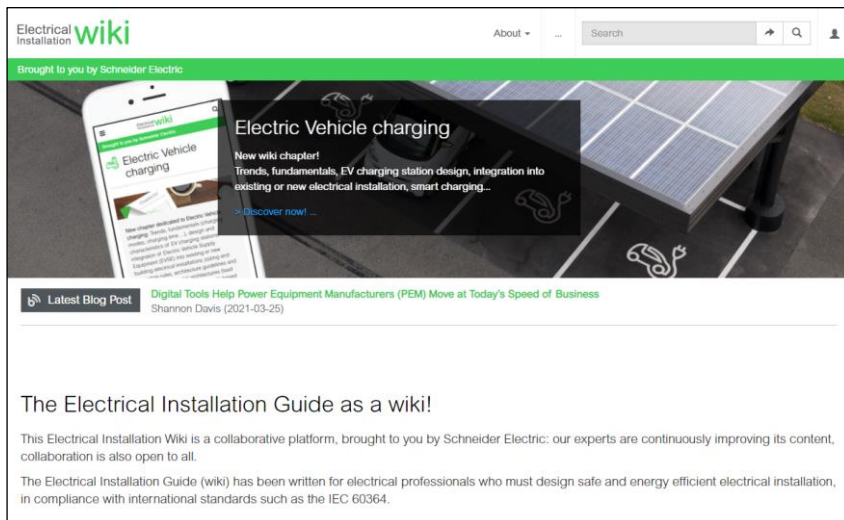


Schneider Electric Offers

Products		
Panel Type	Description	More Information
MV Switchgear	Medium Voltage Switchgear	Link
MV/LV Transformer	Description	More Information
Minera	Oil-Immersed transformer, ground mounted, up to 3.15 MVA – 36 kV	Link
Circuit Breakers	Description	More Information
EasyPact MVS	Air Circuit Breaker 630 A to 4000 A	Link
EasyPact CVS	Molded Case Circuit Breaker 16 A to 630 A	Link
EasyPact EXE	Vacuum Circuit Breaker up to 17.5 kV	Link
Easy TeSys Power	Thermal-magnetic motor circuit breaker up to 15 kW	Link
Busduct	Description	More Information
Busway I Line II BFC	Aluminum with copper contact 800 A to 5000 A	Link
UPS	Description	More Information
Easy UPS Single Phase	Uninterruptible Power Supply 1 Ph	Link
Easy UPS Three Phase (3S)	Uninterruptible Power Supply 3 Ph, 10-40 kVA	Link
Easy UPS Three Phase Modular	Uninterruptible Power Supply 3 Ph - Modular, 50-250 kW	Link
Overload Relay	Description	More Information
Easy TeSys Protect	Thermal overload relays from 0.1 to 630 A	Link
Contactors	Description	More Information
Easy TeSys Control	Contactors up to 630 A for AC3 and 1000 A for AC1 applications	Link
PFC / Capacitors	Description	More Information
EasyLogic PFC Capacitor Banks	Smart low voltage capacitor banks	Link
EasyLogic PFC Capacitor	LV Capacitors for power factor correction	Link
Final Distribution	Description	More Information
Easy9	MCB, RCD, Switches and Surge Protection Devices	Link
Wiring Devices	Light Switches and Electrical Sockets	Link
Surge Arrester	Description	More Information
Acti9 iPRD	Modular Surge Arrester Type 2 or 3, from 8 kA to 65 kA	Link
Harmonic Filter	Description	More Information
EasyLogic APF	Active Harmonic Filtering for commercial buildings, light industry etc.	Link
Communication Module	Description	More Information
EasyCom	Communication module for EasyPact MVS	Link
Power Meters & Gateways	Description	More Information
EasyLogic PM1000H	Digital Panel Meter, both LCD and LED displays available	Link
EasyLogic PM2000	Digital Panel Meter, both LCD and LED displays available	Link
EcoStruxure Panel Server	Serial to Ethernet, Cloud Connectivity, Data logger, Energy Server	Link
Protection Relay	Description	More Information
PowerLogic P1	Overcurrent, Earth Faults and Voltage Protection Relays	Link
Edge-Control and Cloud-based Software		
Software Systems	Description	More Information
EcoStruxure Power Monitoring Expert Express Edition	PME Express Edition is an on-premise solution for basic power monitoring and energy management that can be commissioned in hours. It is built to introduce an entry level of EcoStruxure Power to transactional channels and allows future expansion opportunities to take advantage of the full range of EcoStruxure Power applications and benefits.	Link
EcoStruxure Facility Expert	Facility Expert Energy is a web-application to monitor and analyze energy. The main energy features include energy consumption and costs monitoring (main, usage, zone, meter), alerts on energy consumption over target, multi-site comparison capability, energy site performance versus standards, power demand and power factor monitoring and monthly score cards.	Link

Useful Tools and Documentation

As part of the full engineering package, accompanying this reference architecture guide are single line diagram (SLD) in both CAD and PDF formats and EcoStruxure Power Design project file in EAC format.



Electrical Installation

Electric Vehicle charging

New wiki chapter!
Trends, fundamentals, EV charging station design, integration into existing or new electrical installation, smart charging...

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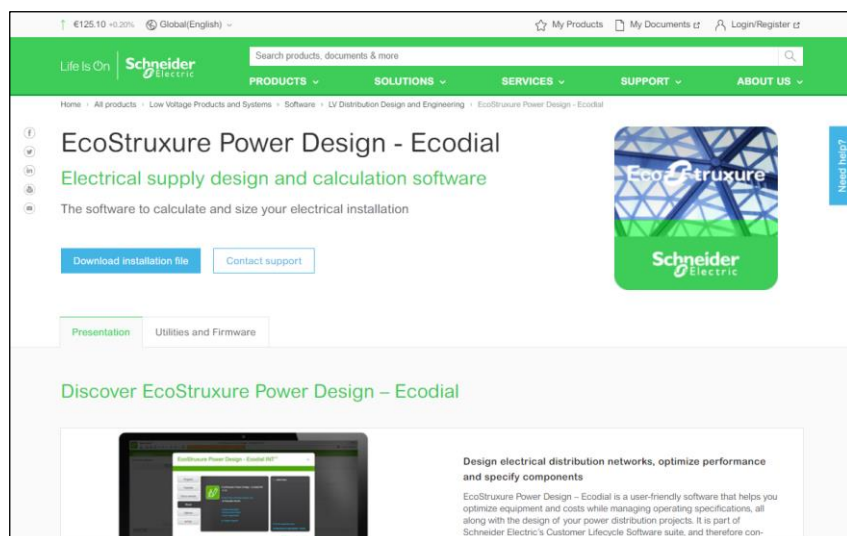
Latest Blog Post **Digital Tools Help Power Equipment Manufacturers (PEM) Move at Today's Speed of Business**
Shannon Davis (2021-03-25)

The Electrical Installation Guide as a wiki!

This Electrical Installation Wiki is a collaborative platform, brought to you by Schneider Electric: our experts are continuously improving its content, collaboration is also open to all.

The Electrical Installation Guide (wiki) has been written for electrical professionals who must design safe and energy efficient electrical installation, in compliance with international standards such as the IEC 60364.

[Electrical Installation Guide](#)



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Electrical supply design and calculation software

The software to calculate and size your electrical installation

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Presentation Utilities and Firmware

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EcoStruxure Power Design – Ecodial is a user-friendly software that helps you optimize equipment and costs while managing operating specifications, all along with the design of your power distribution projects. It is part of Schneider Electric's Customer Lifecycle Software suite, and therefore con-

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Schneider Electric Industries SAS

35, rue Joseph Monier - CS 30323
92506 Rueil Malmaison Cedex

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