

# ROOIWAL PLC PROJECT

## City of Tshwane Metropolitan Municipality



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# Introduction

- ▶ What is PLC?
- ▶ Rooiwal
- ▶ The Project
- ▶ Findings
- ▶ The Way Forward

# What is PLC?

- ▶ Power Line Communication
- ▶ Telecommunication over the Electricity Network:
  - ▶ Data
  - ▶ Voice
- ▶ No need for new telecom cables
- ▶ LV PLC – 220V
- ▶ MV PLC – 11kV

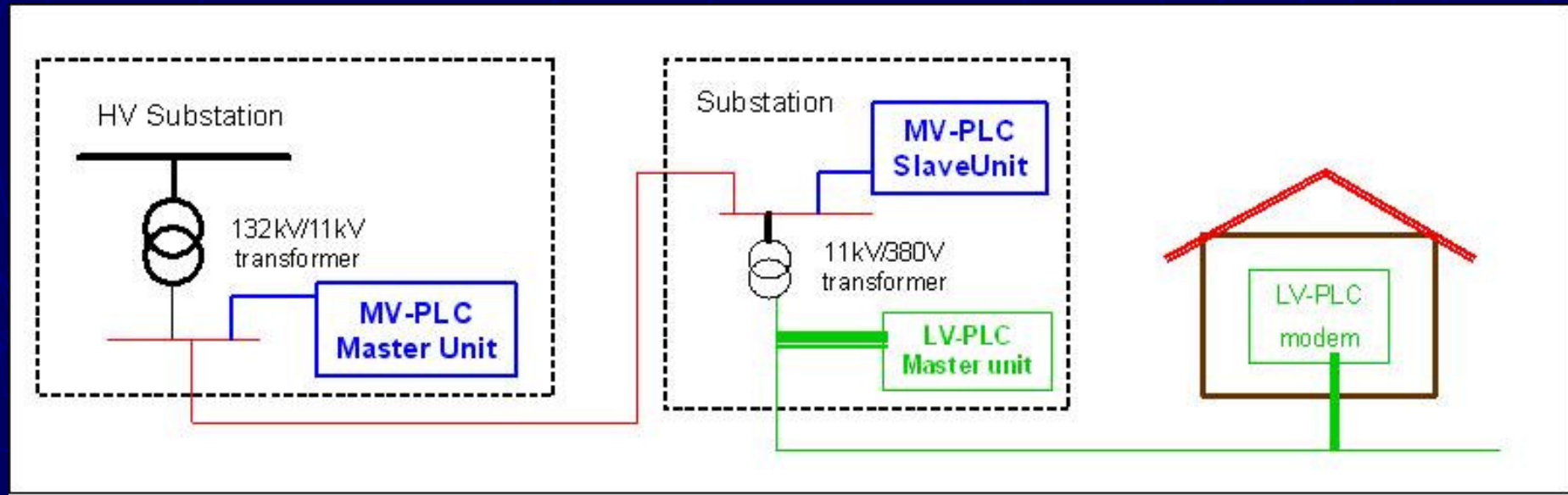
# What is PLC? (cont.)



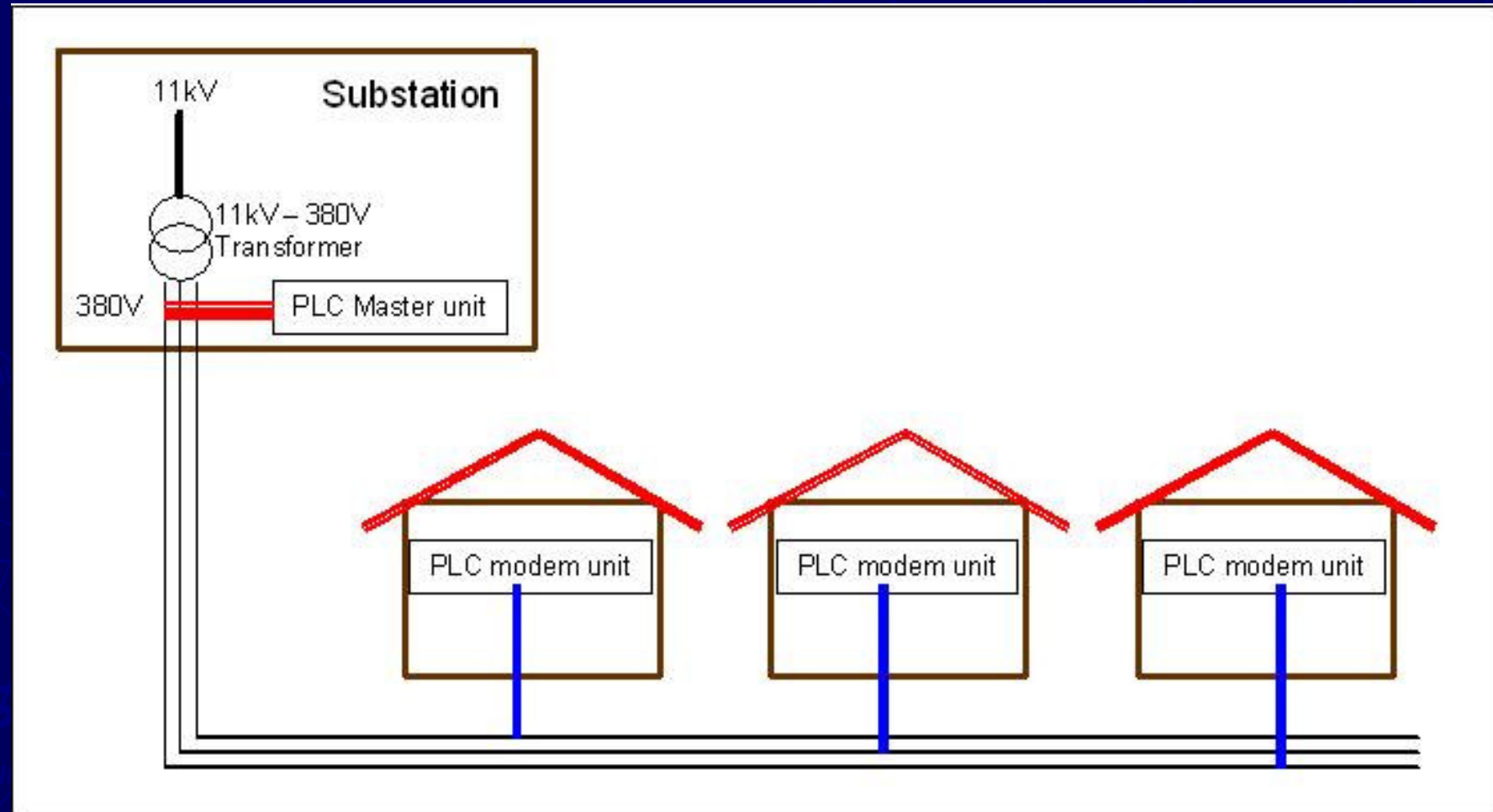
# What is PLC? (cont.)

- ▶ Injector (HE) – Repeater – Extractor (CPE)
- ▶ Data Rates:
  - ▶ 1<sup>st</sup> generation – 1.5Mbps to 4.5Mbps
  - ▶ 2<sup>nd</sup> generation – 45Mbps
  - ▶ 3<sup>rd</sup> generation – 200Mbps

# What is PLC? (cont.)



# What is PLC? (cont.)





# What is PLC? (cont.)





# What is PLC? (cont.)



# Rooiwal

- ▶ 25 km North of Pretoria
- ▶ Township/Village – 130 houses
- ▶ Community Hall
- ▶ Provincial Library
- ▶ Tshwane Property
- ▶ Rooiwal Power Station workers







# The Project

- ▶ Why Rooiwal?
  - ▶ Legislation – Tshwane Property
  - ▶ Controlled Environment
- ▶ 10 Houses/Users – Later all 130 (Tender)
- ▶ Library
- ▶ Data, Voice and Video
- ▶ Optical Fiber Backbone
- ▶ Prove PLC as Last Mile technology

# Findings – Small pilot

- ▶ Uptake – Residents eager to partake
- ▶ Skeptical of technology – info session & demo
- ▶ Difficulties/Stumbling blocks
  - ▶ Equipment unstable
  - ▶ Very old infrastructure
  - ▶ Meters
  - ▶ Old Switchgear in DB
  - ▶ Knowledge of equipment

# Findings – Complete roll out

- ▶ New info session and demonstration
- ▶ More residents taking part
- ▶ Used for: Gaming, Internet, Voice
- ▶ Free services at first – 10 selected for free trial uncapped
- ▶ Residents want more services – security cameras
- ▶ “Commercial” (Special deal with ISP) – 30 users
- ▶ Some residents unhappy with commercial service

# Findings – Complete roll out

- ▶ Difficulties/Stumbling blocks
  - ▶ Very old infrastructure
  - ▶ Meters
  - ▶ Old Switchgear in DB
  - ▶ Access to houses for installation



# The Way Forward

- ▶ **Alternative technologies:**
  - ▶ Wireless (Wi-Fi, WiMax etc.)
  - ▶ DSL
  - ▶ Fibre
- ▶ All depending on demographics and densities
- ▶ Research to be continued on different access technologies
- ▶ **Tshwane wide roll-out – Smart City Concept**
  - ▶ Alternative Service Delivery
  - ▶ Access for all Tshwane Citizens
  - ▶ Different Access Technologies
  - ▶ Open Access Model

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