



# KNX - Building Automation Solutions for Residential, Commercial and Industrial Applications

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## Agenda

- Building Automation
- What is KNX?
- Worldwide Building standards
- A brief history
- Functionality
- Performance
- Scalability
- Usability
- Reliability
- Efficiency
- KNX is Green
- Longevity
- KNX future
- Applications
- KNX Projects
- Questions?

## Building Automation

Building Automation is integral to building design:

- **Efficient building operation**
- **Occupant comfort**
- **Improving energy efficiency**
- **Reduced maintenance costs**
- **Security**
- **Improved life cycle**

Using KNX you can deliver:

- **Functionality & Performance**
- **Scalability**
- **Usability**
- **Reliability**
- **Efficiency**
- **Longevity**

## Is a smart building simply building automation?

- Discuss...
- What are the differences?
- Reacting to multiple inputs – occupancy, time, weather, energy constraints(?)
  - A mix of these inputs
  - The building is always looking for the most efficient outcome
- Multiple protocols, but working together
- Multiple agencies. Break the silos
- Integrated – this is smart or “smart”

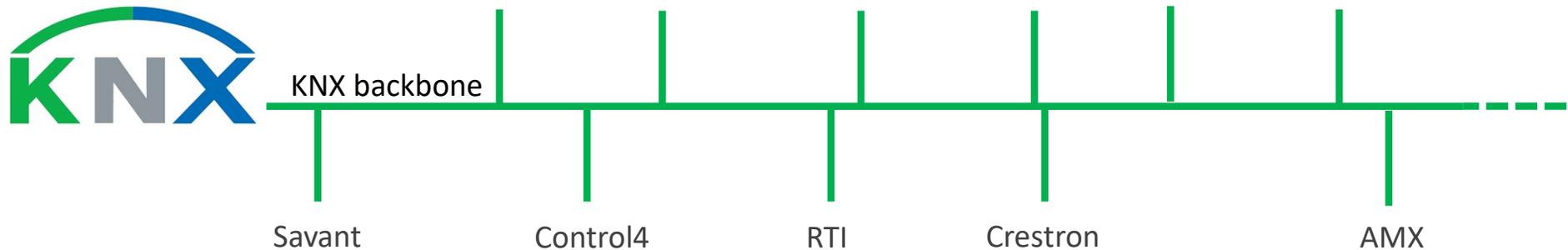


# True integration needs a true Building Automation STANDARD



KNX brings together many international standards

## Integration requires flexibility - Looking in detail at sub systems and flexible function and control integration



- **System control flexibility.**
- **Direct or via gateways.**
- **Backbone integration**

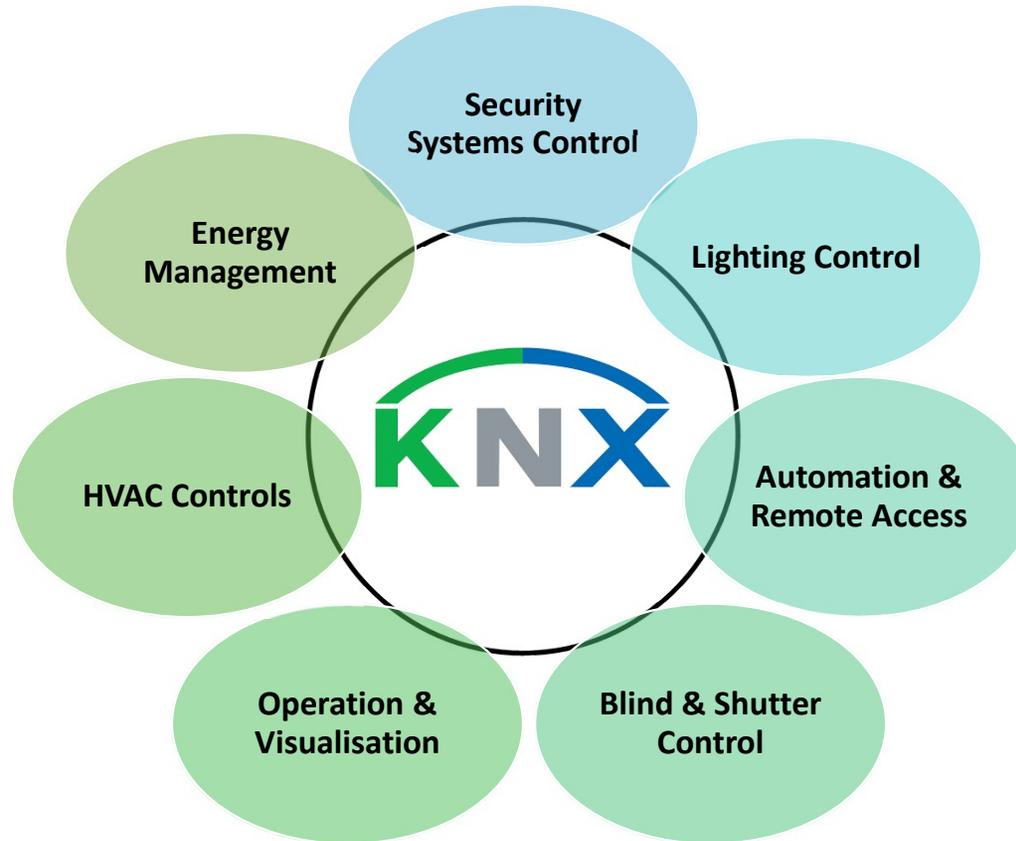


## A brief history

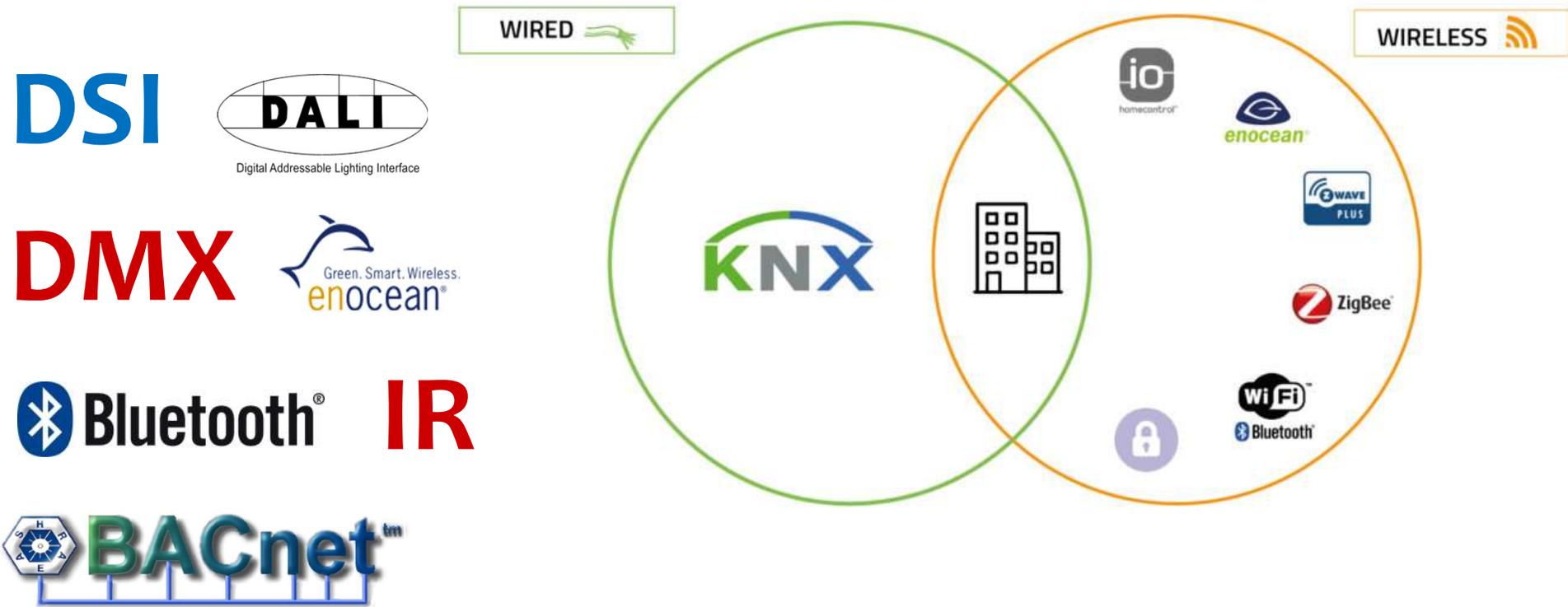
- In May 1999 the these Associations founded KNX:
- **EIBA** ( European Installation Bus Association)
- **EHSA** (European Home Systems Association)
- **BCI** (BatiBUS Club International)

Members are manufacturers developing devices for several applications for home and building control based on KNX like lighting control, shutter control, heating, ventilation, air conditioning, energy management, metering, monitoring, alarm/intrusion systems, household appliances, audio/video and lots more.

# Functionality



KNX can be coupled to many systems via gateways :



Many other gateways available...

# What is KNX?

- 1 software
- 1 cable
- 1 language
- 1 integrator
- 1 designer

- **Field level**
- **Automation level**
- **Supervisory level**



## Performance

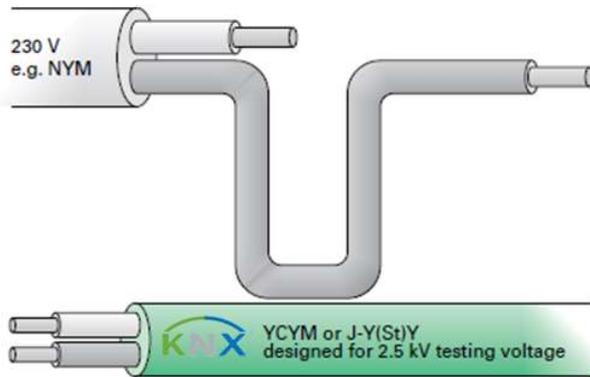


- With over 500 manufacturers you can always specify the right product
- Distributed intelligence means devices are designed for their specific application
- Enabling offsite build and modern construction methods

- Meet the brief – no overspecification
- Cost constraints met with ease
- Speed and simplicity of deployment
- Inherent security



Welcome to KNX  
making technology work together



KNX bus cable can be run with mains cabling

Approved KNX bus cable is 2.5kV test voltage rated

2 x 0.8mm sq. solid copper conductors, red & black cores twisted pair.

Standard push-on connector for almost all KNX products



# Scalability

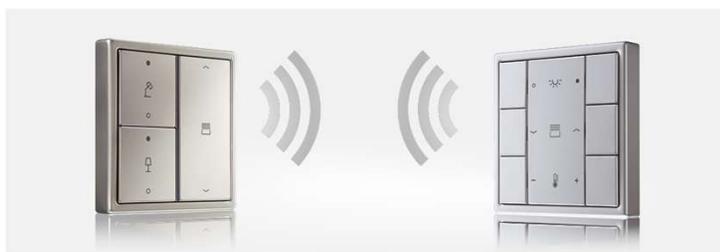
Wired



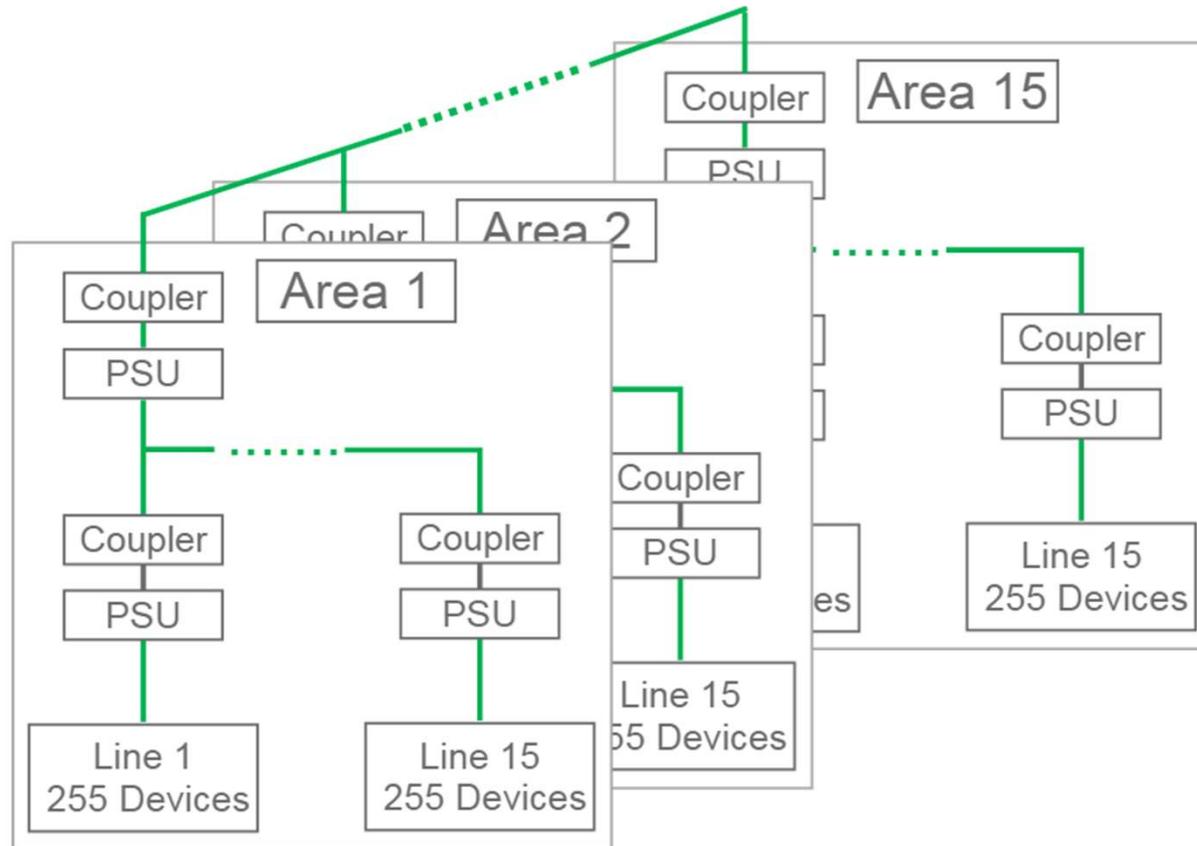
IP



RF



## Scalability



- 255 Devices per Line
- 15 Lines per Area
- 15 Areas per System
- Max 61,696 Devices

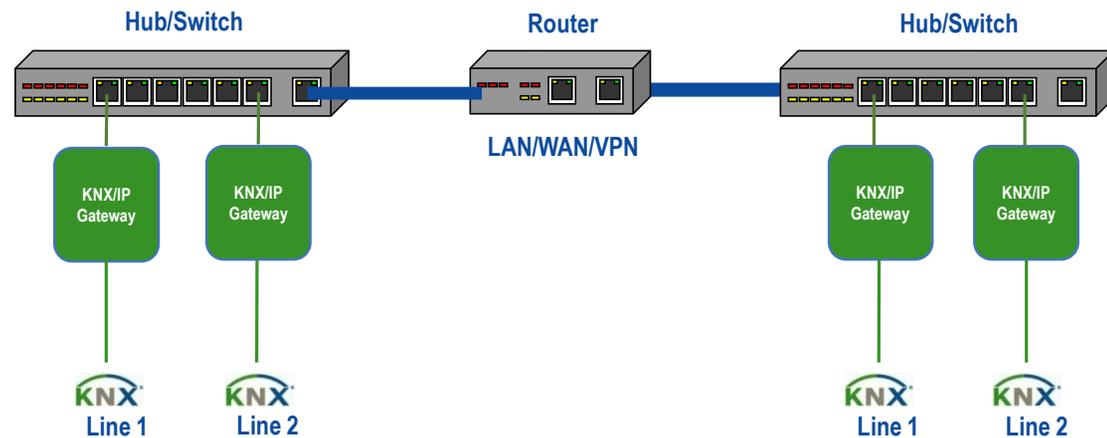
### The choice of backbone

- Native KNX
- IP



## KNX over IP - KNXIoT

- No capacity limit
- No bus traffic limitations
- Reduced cost installation
- Use existing networks
- KNX fibre optic option available





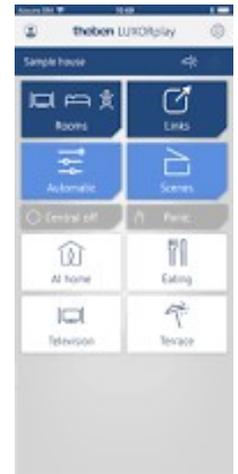
## Scalability and performance – the friend of the systems designer

- Scalability - Topology for any project, any size
- Wiring Simplicity
- Flexibility - Use different mediums
- Decentralised - Add additional products as requirements change



# Usability

- System interfaces – Keypads / APPs / Voice Control / Automation
- Integration to facilities management
- Adaptability

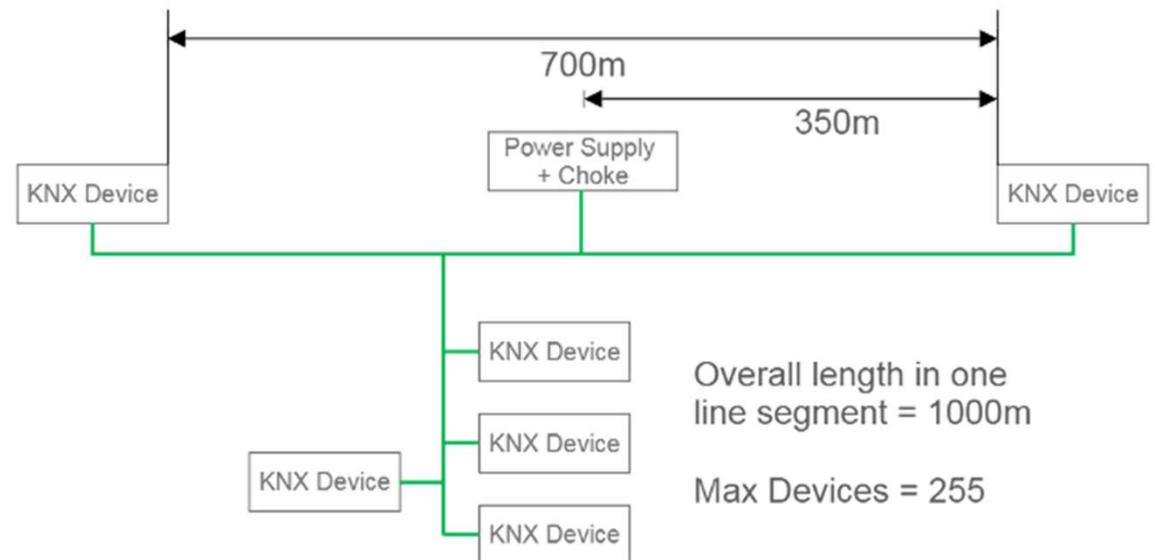


- Accessibility to all users
- Controllability and management
- Choice



## Reliability

- Decentralisation – individual devices can fail but the system doesn't
- Design within the product and system limits and it will work
- Standardised, Open Protocol with Product Testing





## **KNX energy savings**

### **Energy Savings with KNX:**

Up to 32% with KNX shading control

Up to 25% with KNX individual room control

Up to 58% with KNX lighting control

Up to 45% with KNX ventilation control

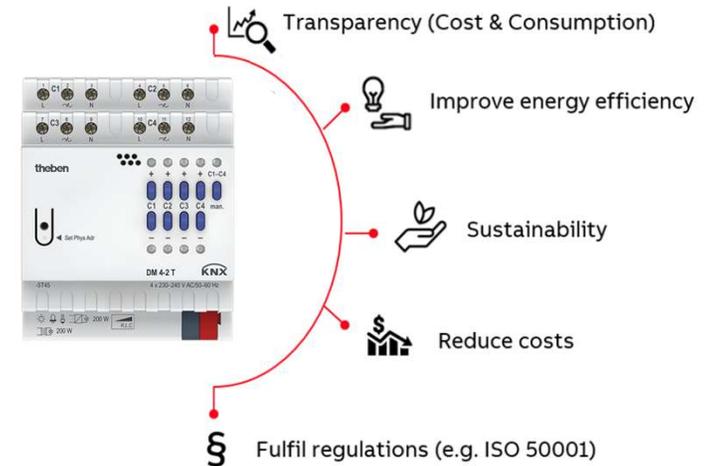
Up to 17% with KNX Heating control

Data taken from ABB PDF case study document on student accommodation 2017.

Comparing KNX control to conventional control

## Efficiency

- Design the efficiency into the building
- Energy Savings for M and E services
- One infrastructure means less material
- Life cycle cost management
- Sustainability is how long it lasts **not** only how it is made



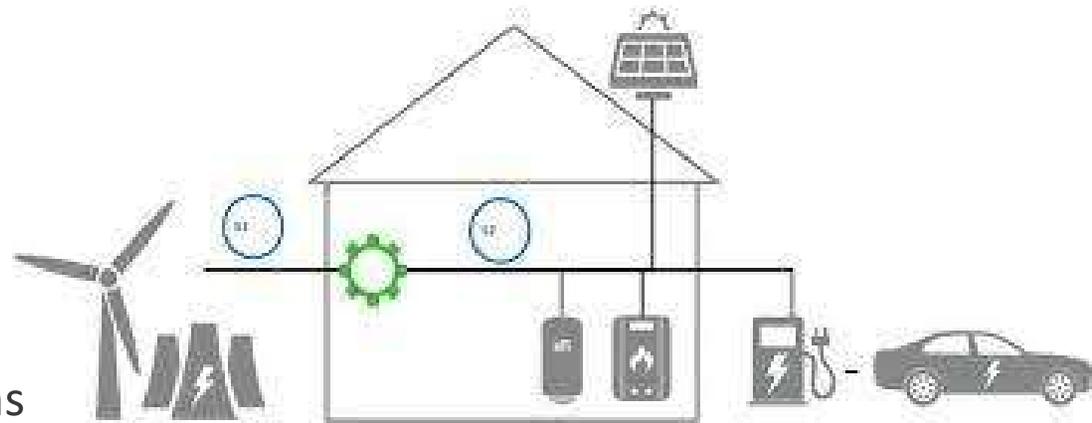
- **Guaranteed interoperability**
- **Simplicity leads to savings**
- **Improve building functionality over time**



## Longevity



- Almost 100000 Partners worldwide
- 500+ manufacturers
- 30 years strong
- Looking back with compatibility
- Looking forward with cutting edge solutions



## KNX leading the changes to building automation

KNX is more than a cabled Building Automation solution. KNX offers:

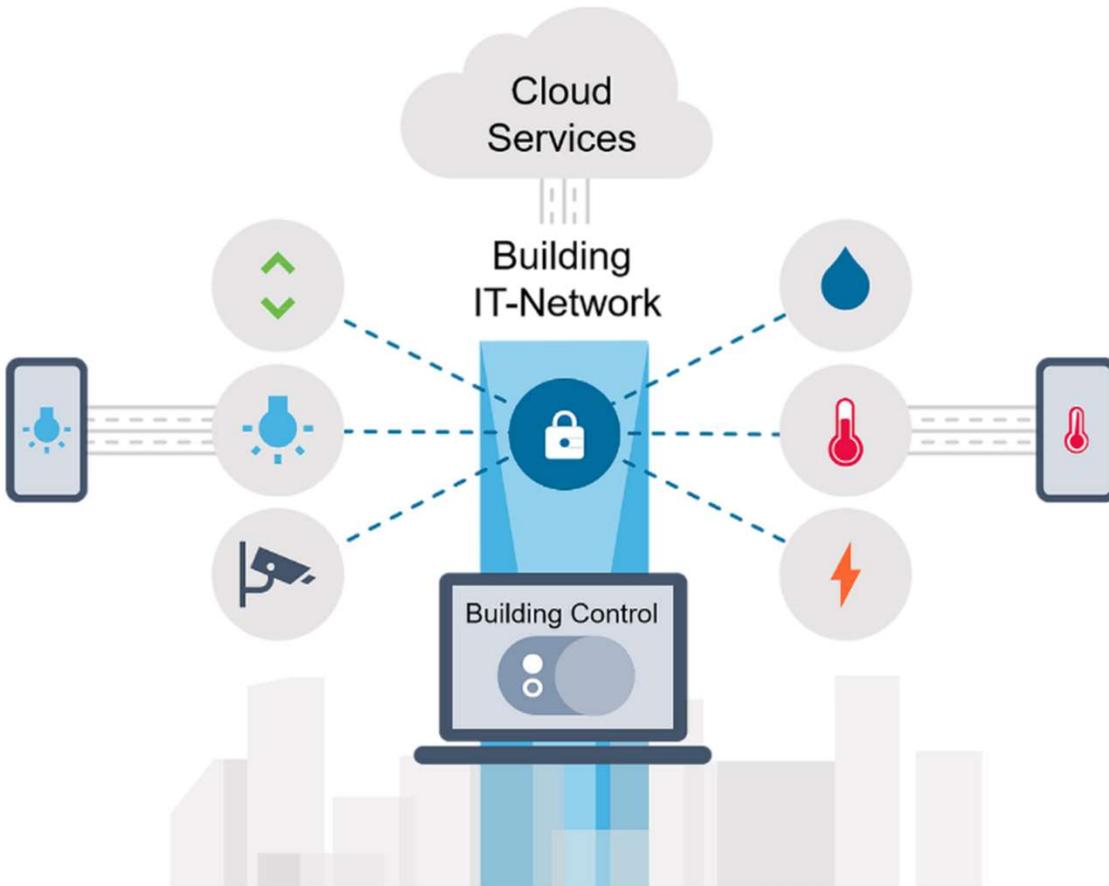
- **IoT solutions**
- **Secure data communication**

And KNX is already active and working with the energy transition:

- **EV charging integration**
- **Energy storage**
- **Smart grids and demand side response (DSR)**



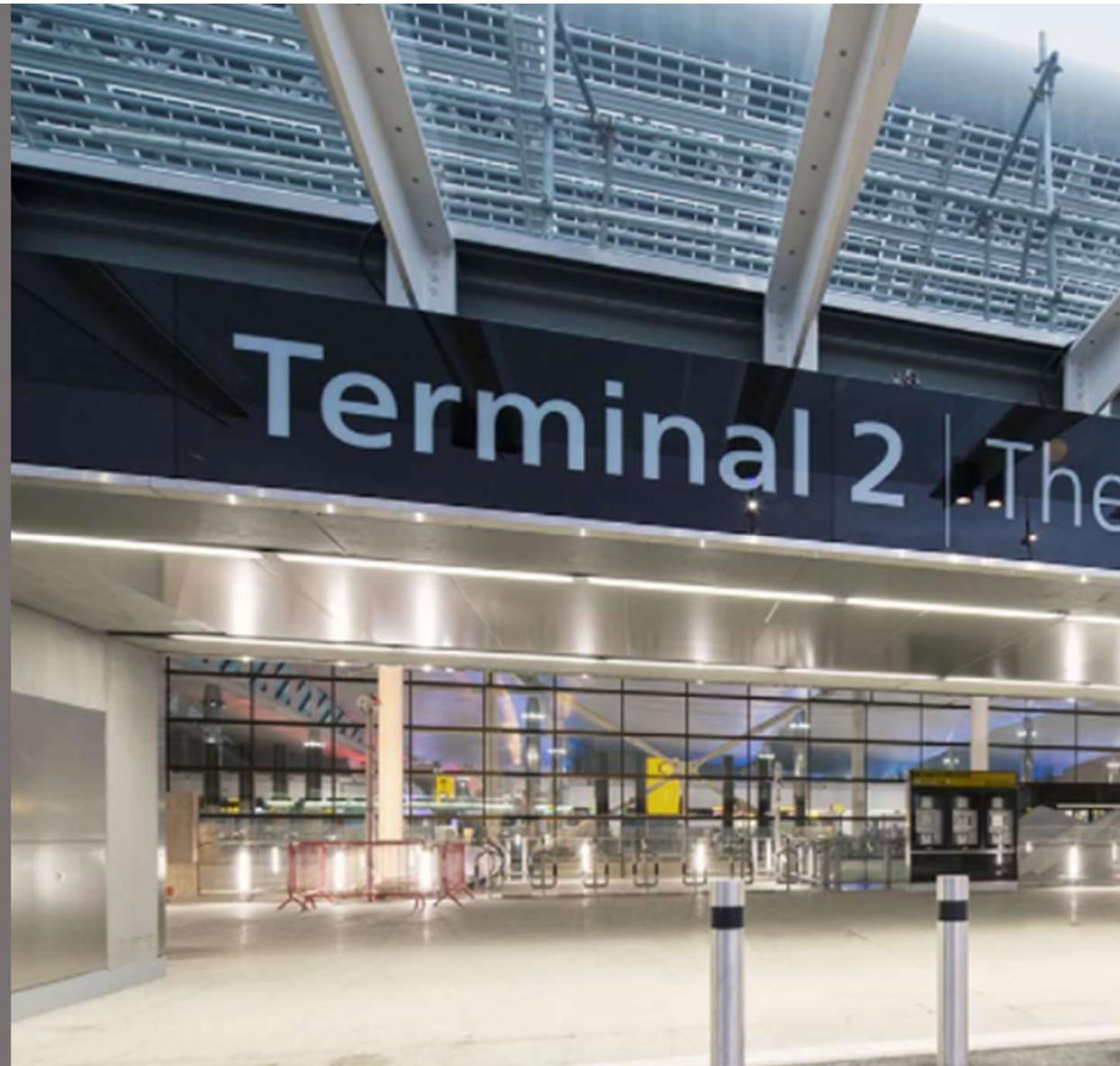
# IP-BLiS



Participating  
Standards



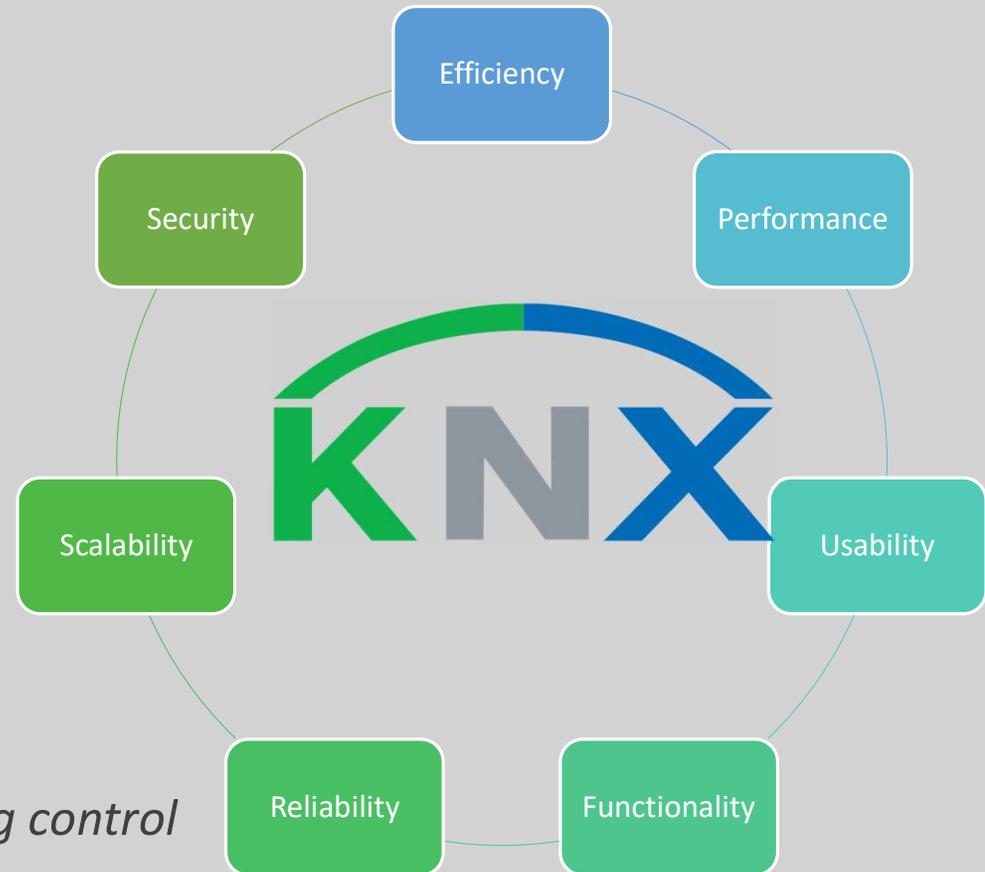
- KNX provides an holistic approach to efficient energy usage and is not limited to individual control of systems.
- KNX installations are future proofed – clients are not tied to one company unlike proprietary systems
- KNX covers a diversity of applications using one standard
- Cabling and networking is much simpler



## A summary of what KNX can deliver

A KNX installation can deliver:

- Efficiency
- Performance
- Usability
- Functionality
- Reliability
- Scalability
- Security



*That is why KNX is the solution for building control*

# CONTROL YOUR WORLD WITH KNX

[www.knxuk.org](http://www.knxuk.org)





**KNX Projects in more than  
80 Countries**



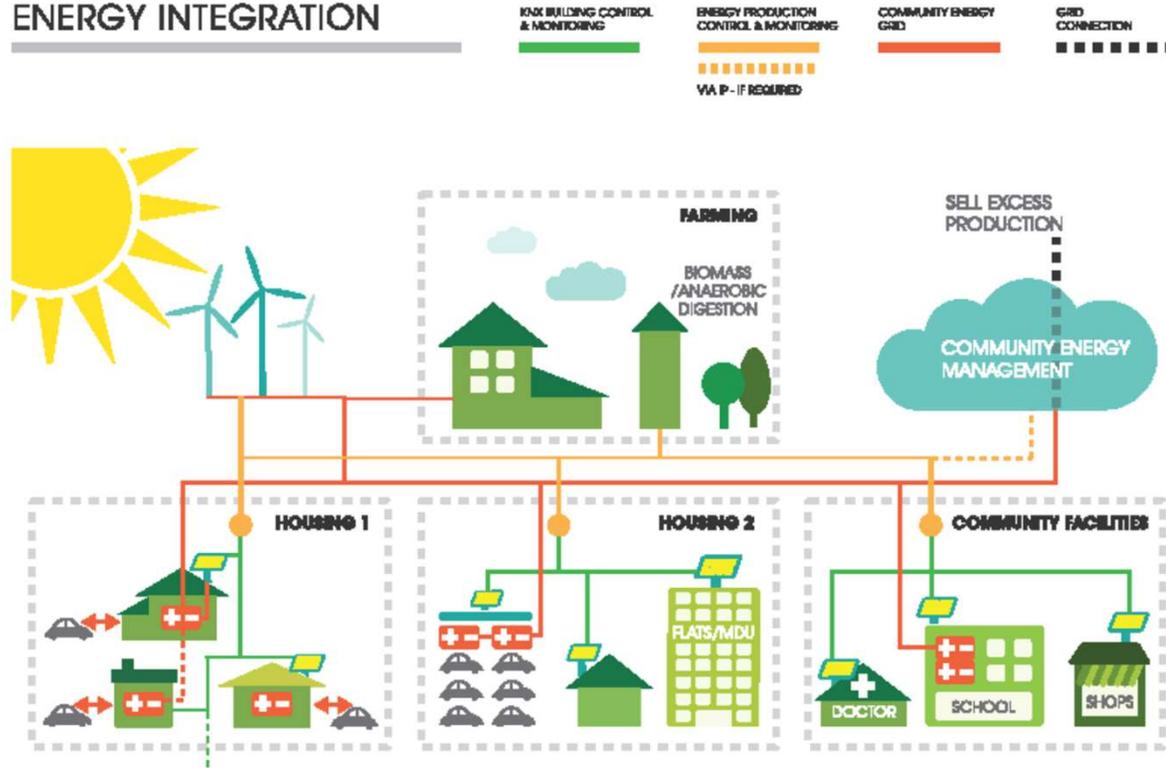


## ...and KNX projects in UK?

- [Chelsea Island \(Multi Dwelling Units\)](#)
  - Villa Neo (Private Residence)
  - Barts Square (Multi Dwelling Units)
  - Richmond Park (Private Residence)
  - St John's, Cambridge (Accommodation)
  - John Keats Free School (Education)
  - Amels Superyacht (Marine)
  - University of Leicester Medical Building (Healthcare)
  - Shadon House - Dementia Nursing home (Healthcare)
  - Newcastle University (Education)
  - Microgaming headquarters (Commercial)
  - And Many more on [KNXUK.org](http://KNXUK.org)
- **500 Manufacturers**
  - **99000+ Partners Worldwide**
  - **930 Integrators in UK**
  - **8000 Products**

# The future? With KNX at the core

## COMMUNITY ENERGY INTEGRATION



## What KNX means for you

- Design efficacy – saving you time
- One infrastructure – less complication
- Use only the products you need (decentralisation)
- Medium types – always a solution
- Risk mitigation – market proven
- Cost efficient – less material
- Design for the future - sustainable
  
- *Questions?*
  
- **More Info – [www.KNXUK.org](http://www.KNXUK.org)**

