Community Buildings: Operation and Maintenance



CARES Conference 2026

Graham Boulton - Local Energy Scotland

LOCAL ENERGY SCOTLAND

Net Zero Scotland
Scottish Government

LET'S DO NET ZERO

A Building is a Machine for Living In

"A house is a machine for living in.“ - Le Corbusier (1923)

Good buildings don't just exist, they perform by providing:

- Warmth
- Light
- Comfort
- Safety
- Accessibility
- Other community benefits



LOCAL ENERGY SCOTLAND

Net Zero Scotland
Scottish Government

LET'S DO NET ZERO

Community Buildings: Operations and Maintenance

Installation is only the start of the journey - The real challenge is ensuring systems continue to perform efficiently, safely and reliably over their lifetime.

Long-term success depends on:

- Safe operation
- Effective maintenance
- Legal compliance
- Good governance
- Community capacity

Operating a modern community building can involve:

- Installation and operation of renewable and low-carbon technologies
- Installation of energy efficiency measures
- Building adaptation and repair projects
- Warm space or resilience hub provision

LOCAL ENERGY SCOTLAND

Net Zero Scotland
Scottish Government

LET'S DO NET ZERO

Session speakers

Andrew Aldous - Community Ownership Support Service (DTAS)

Support available, facilities management services and legal responsibilities.

Josh King - Gensource

Practical operations and maintenance guidance for solar PV, batteries and heat pumps.

Dick Jenkins - Fetteresso Church

A community perspective on owning and operating renewable energy systems.

LOCAL ENERGY SCOTLAND

Net Zero Scotland Scottish Government

LET'S DO NET ZERO

Agenda

Item	Timings
Welcome and introduction	15:00
FM services, support and legal responsibilities	15:05
Practical O&M good practice	15:15
Community ownership experience	15:25
Panel Q&A	15:35
Closing remarks	15:55

LOCAL ENERGY SCOTLAND

Net Zero Scotland Scottish Government

LET'S DO NET ZERO

Panel Q&A

Please make a note of any questions you have during the presentations for discussion after the presentations.

Think about

- What support will your organisation need after installation or taking over a building?
- Who will be responsible for operating and monitoring systems?
- What maintenance arrangements are required?
- What lessons can be learned from communities already doing this?

LOCAL ENERGY SCOTLAND

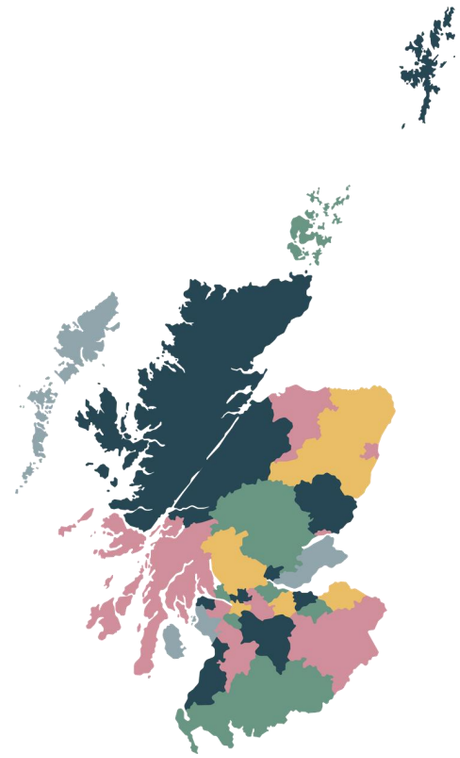
Net Zero Scotland
Scottish Government

LET'S DO NET ZERO

Facilities Management Service

Community Ownership Support Service

Development Trusts Association Scotland



Community Ownership Support Service

Development Trusts Association Scotland

Development Trusts Association Scotland

A Thriving Community-led Network



Development Trusts Association Scotland

A Thriving Community-led Network

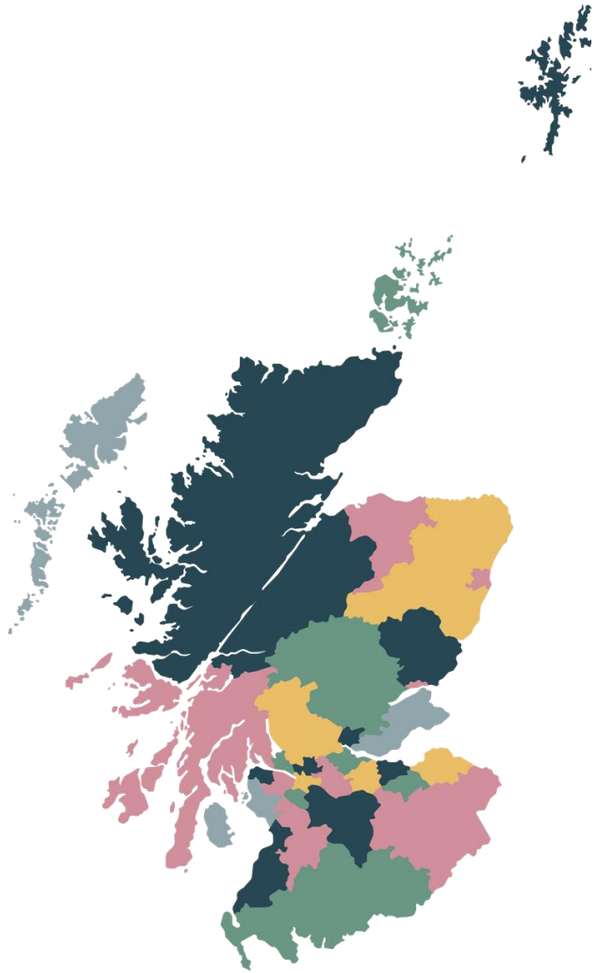
DTAS services

- DTAS Membership Support
- Democratic Finance
- Community Ownership Support Service (COSS)

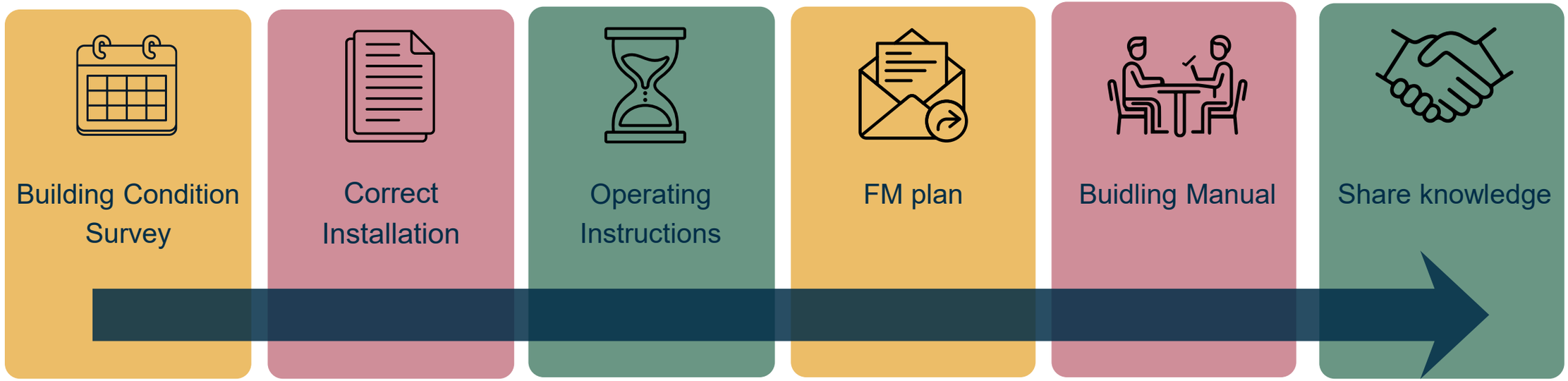
Facilities Management Service

What is available?

- FM Advice and Guidance
- Health and Safety Guidance
- Website and resources
- FM Health Check
- Budget planning
- Business Development
- Monthly Webinars
- 2 day training course

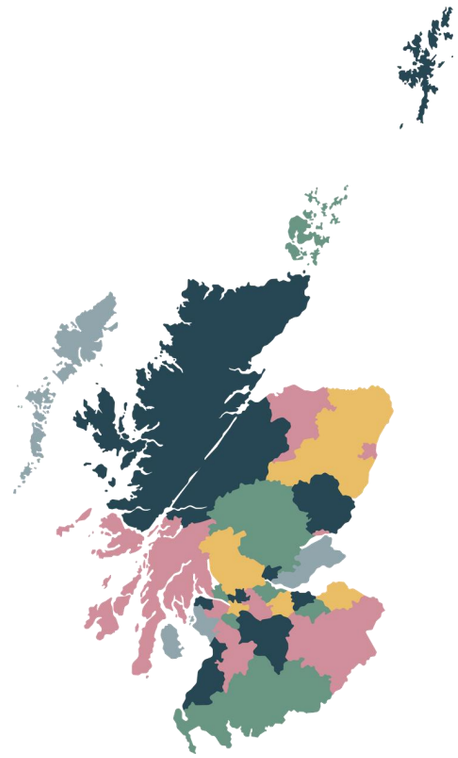


Building Management



Thank you.

Andrew Aldous, Facilities Management Advisor
Andrew@dtascot.org.uk



Community Ownership Support Service
Development Trusts Association Scotland

Development Trusts Association Scotland
A Thriving Community-led Network

Public

Gensource

Maintaining community energy systems

CARES Conference 2026

Josh King

Managing Director, Gensource

Gensource

Design with maintenance in mind

30

years of asset life

- Panels: 30+ years
- Mounting: 25+ years
- Inverters: 10–15 years
- Batteries: 10–15 years



Gensource

Compliance is the minimum

Make sure you are engaging with all parties at the design stage.



Gensource

What a typical O&M package includes

Designed for maintenance: safe access, isolation, labelling, monitoring

Item	Typically
Remote monitoring	Ongoing, with alerts reviewed and acted on
Visual inspection	At least yearly, and after storms
Electrical testing (IEC 62446)	At least yearly (RC62), or as the insurer requires
Mounting system checks	Fixings, clamps, rails and roof penetrations, yearly
Thermal or drone survey	Yearly, or as the insurer requires
Cleaning	Based on site conditions and monitoring data
Inverter and battery checks	To the manufacturer's instructions
Reports and records	After each visit, kept for the insurer
Response to faults	Agreed response times



Gensource

Inspections: who says what

Source	How often
MCS	Advisory, by building type
IEC 62446	At least as often as the EICR
SEUK	Yearly (non-dom.); home 5–10 yrs
RC62	Yearly, and after storms
Aviva	Monthly self-check; formal by risk
Zurich	Annual recorded visual
QBE	Annual MCS; 3-yearly with drones
Allianz / FM	Visual 6–12 months; IR 1–3 yrs



Gensource

Cleaning: who says what

Source	Position
MCS	Advisory only, no fixed interval
SEUK	Risk-based, site by site; soft water, no chemicals
RC62	Insurers expect a regular programme (commercial)
Aviva	No pressure jets; follow the manufacturer
Zurich	Pressure washing by trained contractors only
QBE	Annual clean by an MCS contractor
FM Global	Silent on cleaning
Manufacturers	Wrong method can void the warranty

Performance monitoring can inform your cleaning regime



Gensource

Drone and IR surveys

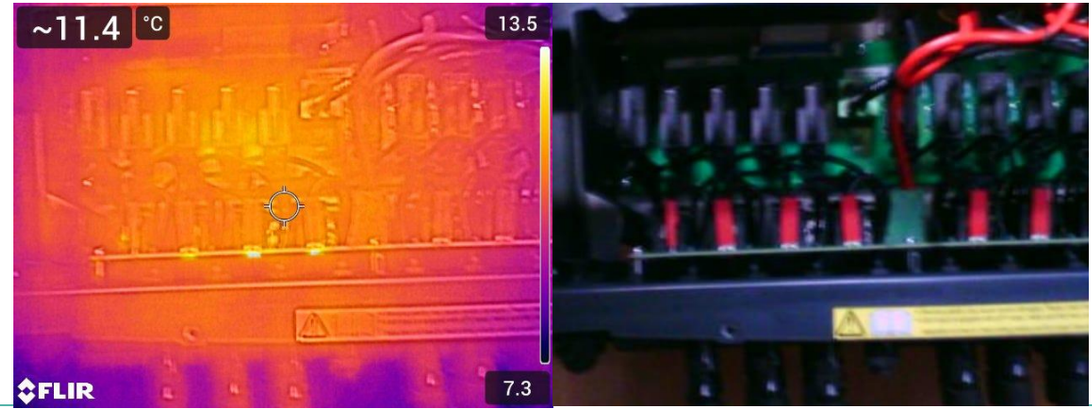
Drone survey

Can do	Can't do
Cover large or hard-to-reach roofs quickly	See under panels or at connectors
Spot cracked or soiled panels, debris, nesting	Test electrical safety
Check fixings and roof condition from above	Replace hands-on checks of isolators and cabling
No scaffolding or roof access needed	Fly without a qualified pilot and permissions
Record a baseline for later comparison	Fly in rain or high wind



Infrared (thermal) survey

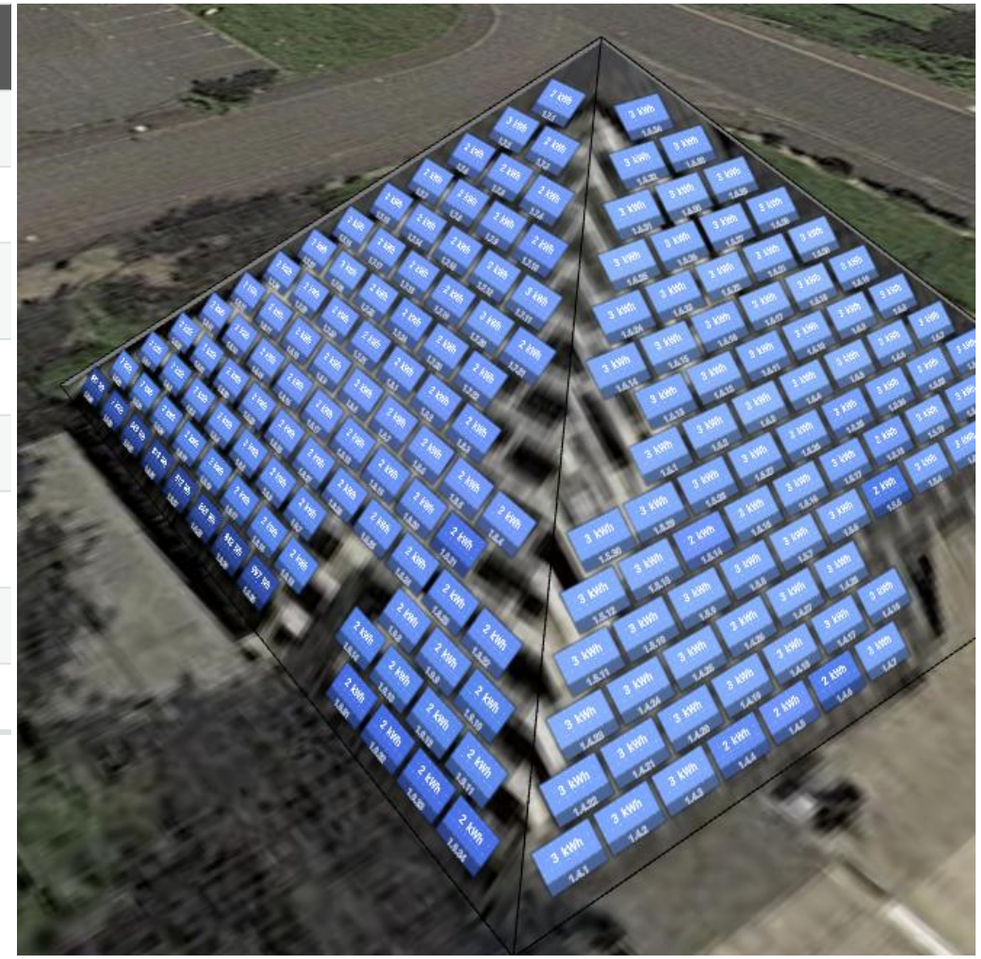
Can do	Can't do
Find hot spots, failed bypass diodes, cell faults	See connectors hidden under modules
Show hot connections where visible	Work without steady, strong sun (about 600 W/m²)
Compare strings and panels quickly	Read accurately at a poor viewing angle
Cover a whole array in one visit	Replace insulation resistance or electrical tests
Help prioritise repairs	Diagnose the cause without follow-up



Gensource

Monitoring

Will show	Won't show
Generation vs expected	Loose or hot connections
Faults and offline inverters	Cable or fixing damage
Panel underperformance (with optimisers)	Damage to panels or frames
Degradation over time	Roof, water ingress, bird nesting
Early warranty issues	Early signs of fire
IV curves and resistance checks (on supported inverters)	Damaged labels or isolators
When a clean is due	Physical security or access issues



Benefits

- Fewer wasted visits: faults diagnosed remotely, right parts first time
- Issues found earlier
- Cleans when the data shows a loss, not by default

Public

Thank you



Gensource

CARES Conference 2026

Josh King

Managing Director, Gensource Ltd

josh.king@gensource.co.uk

gensource.co.uk

Public

Community Perspective



Public

Community Perspective



Public

Community Perspective



Public

Community Perspective



Public

Community Perspective



Public

Community Perspective



Public

Community Perspective Ownership

- ASHP technology
  - Large volume building are Air to Air heat pumps
  - Homes are Air to Water heat pumps
- Building improvements
  - Insulation
  - LED Lighting
  - Secondary glazing
- Permissions
  - Listed Building / Conservation Area
  - Heat Pumps: Building Warrant for noise
  - Solar: Registered Power Station and Power export restrictions

Public

Community Perspective Operation

- Church Heating
  - 4500M^3 Church Sanctuary
  - 4 x 16KW heating unit
- Hall
  - 750M^3 Hall
  - 4 x 5KW heating units
- Internal heaters operate with fan circulated convection. This provides faster heat up times compared to static radiators.
- Don’t allow the building to cool down during winter nights (14^{0}C) by using lower cost off peak electricity.
- Install time switch controlled electric wall heater in smaller rooms.
- App remote control of heating is available.

Public

Community Perspective Operation

- Solar System
  - 23KW of solar panels
  - 20KW inverter
  - 30KHh of battery capacity

  - Operate the building from the solar when you can
  - Use surplus solar to charge the batteries
  - Sell excess solar into the grid

  - Charge the batteries using off peak electricity to be used to power the building when required
  - Monitored through a Smart Meter

Public

Community Perspective Operation

- Benefits
  - Faster heat up times
  - Better air quality due to air conditioning feature
  - Increased overall comfort
- Running cost
  - Replaced 2 x 80KW boilers
  - 50% reduction in energy costs overall

Panel Q&A

Possible question topics

- Governance & Responsibility
- Monitoring & Performance
- Maintenance & Risk
- Costs & Long-Term Planning
- Lessons Learned



LOCAL ENERGY SCOTLAND

Net Zero Scotland
Scottish Government

LET'S DO NET ZERO

Thank you



Graham Boulton - Local Energy Scotland

graham.boulton@est.org.uk

LOCAL ENERGY SCOTLAND

Net Zero Scotland
Scottish Government

LET'S DO NET ZERO