

# OPTIONS FOR DECARBONISING COMMUNITY LED BUILDINGS

NAME OF CLIENT – NYCC/COMMUNITY FIRST YORKSHIRE

DATE: July 2022

D3A-1671-T24-P1



# INTRODUCTION (1)

## Aims of Project:

- Prepare a Phase 1 Decarbonisation Plan for each venue; to include
  - Summarise existing building fabric, heating, usage & energy use
  - Identify potential energy saving measures
  - Consider options for low carbon heating
  - Electricity generation and battery storage

# INTRODUCTION (2)

## Aims of Project:

- Following a visit, prepare a Phase 2 Business Plan for each venue; to include
  - Recommended costed energy saving measures
  - A recommend low carbon heating solution
  - Modelling scenarios for a solar PV installation, with & without battery storage
  - Financial modelling to establish NPV, IRR, Payback
  - Calculate anticipated future energy cost and savings in carbon emissions

# OUTCOMES (1)

## ENERGY SAVING MEASURES

- Eliminate draughts
- Add roof insulation
- Windows & doors – replace with double glazing units or add secondary glazing
- Wall & floor insulation, normally only as part of a major refurbishment
- Install LED lighting

# OUTCOMES (2)

## LOW CARBON HEATING OPTIONS

- Air Source Heat Pumps (ASHP)
  - Air-to-air
  - Air-to-LPHW
- Ground Source Heat Pumps (GSHP)
  - Vertical boreholes
  - Horizontal slinkies
- Hybrid solutions
- Alternative Biofuels
  - BioLPG
  - Hydrotreated Vegetable Oil (HVO)

# OUTCOMES (3)

## SOLAR PV & BATTERY STORAGE

- Size, location, type
- Modelling using PV\*SOL
  - Inputs
  - Outputs
- Benefits of battery storage
- Operation during power failures



# OUTCOMES (4)

## FINANCIAL MODELLING

- Assumptions
  - Budget capital costs
  - Other costs
  - Project on-costs
  - Fuel costs
- Outputs
  - Savings; net annual benefit
  - NPV, IRR, Payback
  - Reduction in carbon emissions
  - Anticipated future energy costs

# NEXT STEPS (1)

## PERMISSIONS

- Planning permission for new windows, solar PV & heat pumps
  - National Park
  - Conservation Area
  - Permitted development – check requirements at <https://www.planningportal.co.uk/>
  - Listed buildings
  - Potential requirement for an acoustic survey
  - North York Moors National Park Planning Team have agreed to provide free verbal advice
- Northern Powergrid
  - G99 application required for solar PV >3.68kWp per phase, best done by installer
  - Applications required for all heat pumps



# NEXT STEPS (2)

QUOTES

FUNDING

DETAILED DESIGN

- Heat pump - concept design to detailed technical design
- Specifications included in Phase 2 Report

PROCUREMENT

DELIVERY

- Project Management
- Contract Administration
- Cost control
- H&S

ANY  
QUESTIONS?





THANK YOU



**CALL**

01434 610434

07549 110145

**BROWSE**

[www.d3-associates.co.uk](http://www.d3-associates.co.uk)

**EMAIL**

[info@d3-associates.co.uk](mailto:info@d3-associates.co.uk)

**VISIT**

Mallan House, Bridge End, Hexham  
Northumberland NE46 4DQ

