

# APSE – BIG ENERGY SUMMIT

14 March 2019

Delivering Energy Projects and Programmes in  
Nottingham



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Head of Energy Services



@ClimateBex



# Energy Services

- Energy Performance Certificates (domestic and non-domestic)
- Display Energy Certificates
- Air Conditioning Surveys
- EE Monitor (for heat metering and billing)
- Renewable Energy project management
- Energy Efficiency project management
- Environment Management System consultancy
- Energy Saving Opportunity Scheme consultancy
- Full turnkey solutions

<http://nottmcommercialservices.co.uk/energy-projects-service/>



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**Services**

Carbon/Environmental  
Benefit

?

Commercially  
Driven

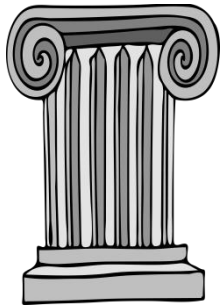


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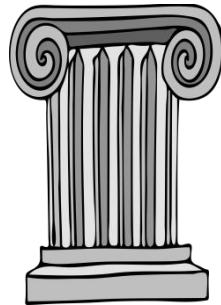
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# The “Four Pillars” NCC Commercialism

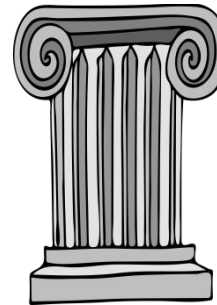
**Product  
&  
Service**



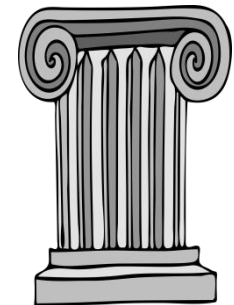
**People  
&  
Team**



**The  
NCC  
Bridge**



**True  
Partners**



*Unity is Strength*

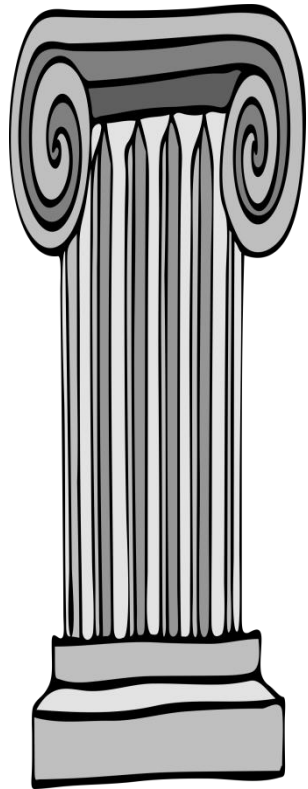


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# Products & Service

Pillar  
1



*Strength & Depth*



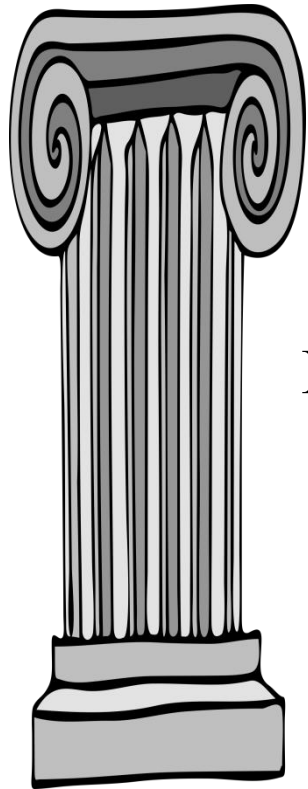
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# People & Team

**Pillar**

**2**



Strategic

Public

Innovation

Policy



Private

Delivery

International

Commercial

*A Perfect Balance...*



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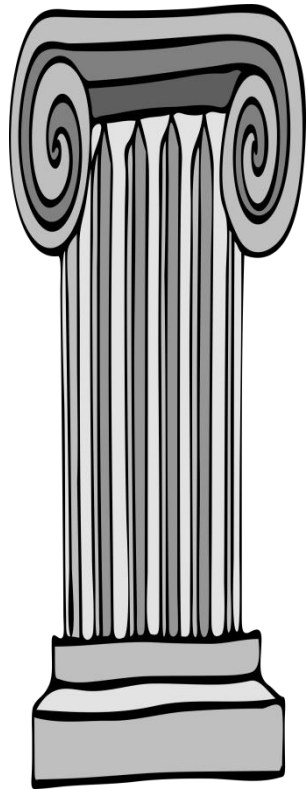
# The NCC Bridge

**Pillar**

**3**

**Public**

**Private**



Grants

Matched Funds

Pioneer

Incubator

Test Facilities

ROI



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# True Partners

**Pillar**

**4**

*A Theme Develops...*

Public



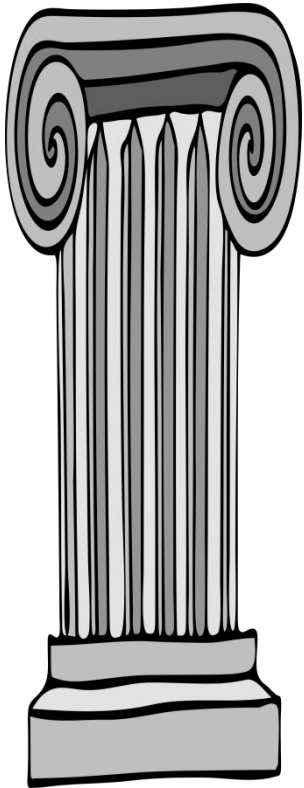
Private

Scale

Tech

Society  
Focus

Large Scale “Robust” Returns



*...Spark The Energy Revolution*



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# Solar Carports

Utilise Car  
Parking

Steel  
Structure

Price Per  
kWp  
(£900)

## Harvey Hadden

- ❑ Total kWp: 67
- ❑ Number of panels: 448
- ❑ Area: 400 m<sup>2</sup>
- ❑ Estimated generation: 51,000 kWh
- ❑ Carbon savings (tonnes): 29
- ❑ Percentage reduction in imported electricity: up to 30%



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# Rooftop Solar PV

## Solar PV

- Total kWp: 151
- Number of panels: 600
- Area: 888 m<sup>2</sup>
- Estimated generation: 118,832
- Carbon savings (tonnes): 62
- Percentage reduction in imported electricity: up to 100%



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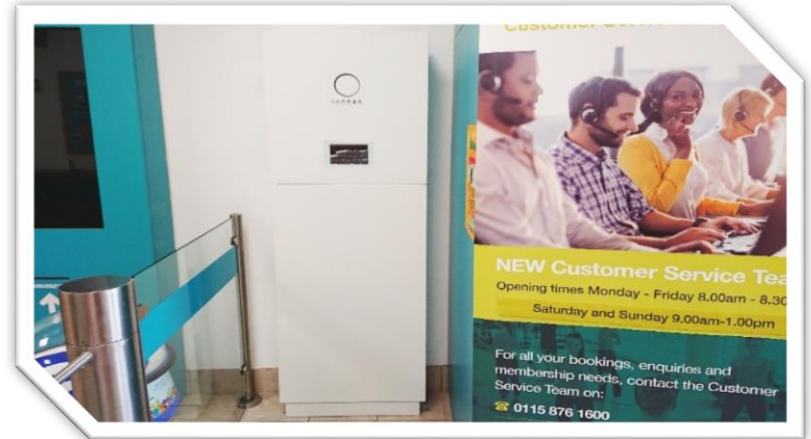
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# Battery Storage

- Sonnen Battery Storage Trial
- Software
- Grid trading
- V2G Pilot – Clean Mobil Energy

## Ken Martin Leisure Centre

- Total kWp: 88.5
- Number of panels: 354
- Area: 400 m<sup>2</sup> coverage: 520
- Estimated generation: 710,000 kWh
- Carbon savings (tonnes): 376
- Percentage reduction in imported electricity: up to 35%



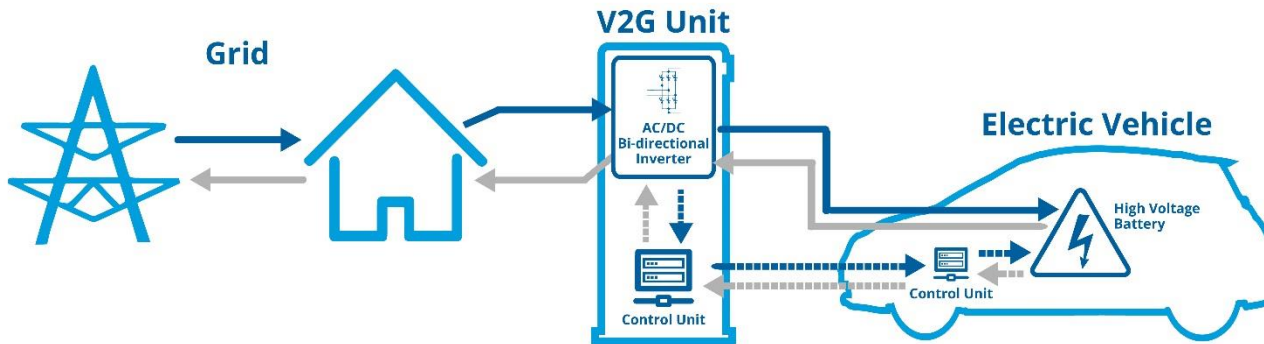
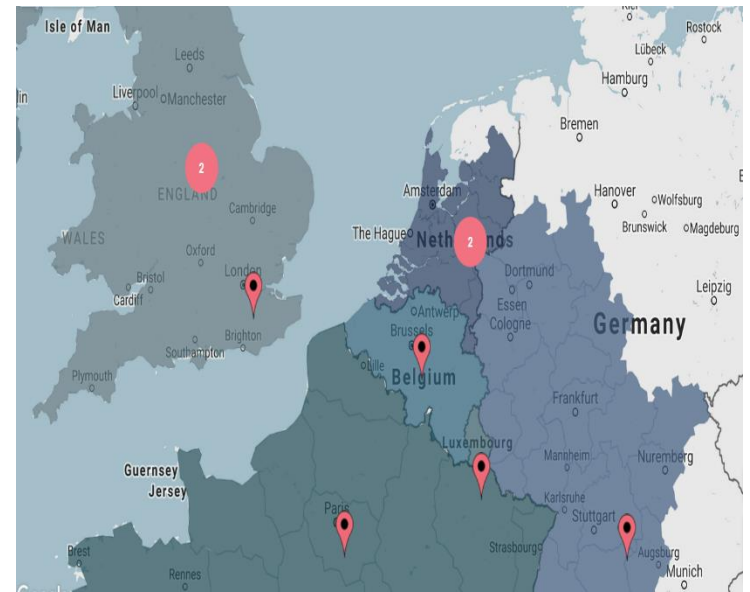
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# Vehicle 2 Grid

## Clean Mobil Energy

- ❑ 9 Partners in 6 Countries
- ❑ Led by Arnhem, Netherlands
- ❑ Transport/Energy Relationship
- ❑ 678kWh Lithium Ion Battery
- ❑ Solar PV
- ❑ 40 V2G Chargers





# Energy Efficiency Projects

- ❑ Largest number of Salix projects per annum.
- ❑ Energy savings across our estate.

## Theatre Royal

- ❑ 724 LED's installed, illuminating the atrium with low cost lighting and cooler colours meaning the light is less harsh
- ❑ Annual savings: £6,800
- ❑ Lifetime savings: £88,000



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# Loxley House Server Virtualisation

- ❑ Annual savings: £80,470.28
- ❑ Annual carbon savings (tonnes): 145.98
- ❑ Loxley House has had a change to the server room where the servers have been virtualised. In result of the virtualisation no demand for cooling is required by the servers meaning the cooling system can now be used for general cooling of the building, lowering the consumption of energy for air conditioning



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# Fuel Cell Programme

- Replacing gas boiler systems
- Improved air quality
- Lower energy consumption
- Annual generation (heat and power): 20,000kWh
- Annual carbon savings (tonnes): 5.7
- Decreases carbon emissions
- New innovative technology
- Funded by DEFRA (Department for Environment, Food and Rural Affairs)



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# Considerations & Questions?

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