

# Swansea Council

- Energy Strategy and Action Plan
- Passivhaus Construction
- EV Infrastructure

# Why have an Energy Strategy?

- To mitigate risks associated with the supply, affordability and carbon impact of energy consumption.
- Engaged with various departments to understand what we were already doing
- Engaged with Communities Council Advisory Committee to get political involvement and steer at a policy level and to understand how ambitious our aspirations were.
- The Strategy and Action Plan were written in the latter part of 2016
- Adopted by Cabinet in December 2016.

# Drivers

- Corporate Priorities in particular creating a vibrant city, tackling poverty and building sustainable communities
- Aspirations to become carbon neutral and to mitigate Environmental impacts
- Financial Benefits – Typical Energy costs in 16/17 approx. 6M
- Legislative Compliance –Climate change Act, Paris Agreement, CRC
- Rising Energy costs
- Community Engagement

# Energy Strategy Objectives:

Energy Strategy is written inline with the Energy Hierarchy and resulted in 5 objectives. We are exploring a number of initiatives under these objectives

- **Objective 1:** To reduce energy consumption and improve the energy efficiency of City & County of Swansea's assets inc. public building and housing stock portfolio. (WQHS, CRC, QED/21<sup>st</sup> Century Schools)
- **Objective 2:** To invest in renewable technologies that will benefit the council and the wider community. (Refit Cymru, Land Appraisal)
- **Objective 3:** To secure or facilitate community access to affordable low carbon/renewable energy. (More Homes, District Heating, Swansea Marina Scheme)
- **Objective 4:** Explore and maximise commercial opportunities to benefit community wellbeing and/or financial gain. (EV Infrastructure)
- **Objective 5:** Ensure Energy Strategy and action plan are delivered in line with current legislation. (APSE review)

# Swansea Council Houses Passivhaus Construction



# Why Passivhaus?

- Range of Building standards were considered including Building Regs, Fabric First, Passivhaus, Solcer
- Cabinet confirmed that first pilot scheme in Milford Way would be built to Passivhaus and the outcome of this would inform future decisions
- Two Schemes –
- Phase 1 in Milford Way in Penlan (10 x 2 bedroom houses and 8 x 1 bedroom flats)
- Phase 2 in Parc-y-Helyg Birchgrove (8 x 2 bedroom houses and 8 x 1 bedroom flats)

# The Drivers

- Acute housing shortage with 1,400 more homes required per year up to the end of 2025 over the life of the LDP
- Council set this out in their 'More Homes Strategy'
- Support Welsh Government target of 20,000 affordable homes. 1,000 of which should come through the Innovative Housing Program
- Change in legislation April 2015 allowing councils to build houses through the self-financing rent system and rent policy
- Key political priority – tackling fuel poverty
- Direct links with achieving Welsh Housing Quality Standard (WHQS) 2020
- Local job creation, long term un-employed and apprentices



# Passivhaus

- **The Passivhaus – definition**
- “A Passivhaus is a building, for which thermal comfort can be achieved solely by post heating or post-cooling of the fresh air mass, which is required to achieve sufficient indoor air quality conditions – without the need for additional recirculation of air.”
- Very high levels of insulation
- Extremely high performance windows with insulated frames
- Airtight building fabric
- ‘Thermal bridge free’ construction
- A mechanical ventilation system with highly efficient heat recovery
- Orientation and maximised window apertures



# The Challenges

- First council houses to be built in a generation
- Lack of experience in fast track innovative building methodology
- Lack of industry knowledge on passive requirements when developing a works program of construction periods
- The pilot project - inform a wider strategy / house building program
- Steep learning curves when upgrading associated skill sets
- Lack of assurances within the supply chain
- Legalities of local authority procuring on an International level
- Passivhaus is a life style choice, how to adapt for social housing

# Delivering the Project







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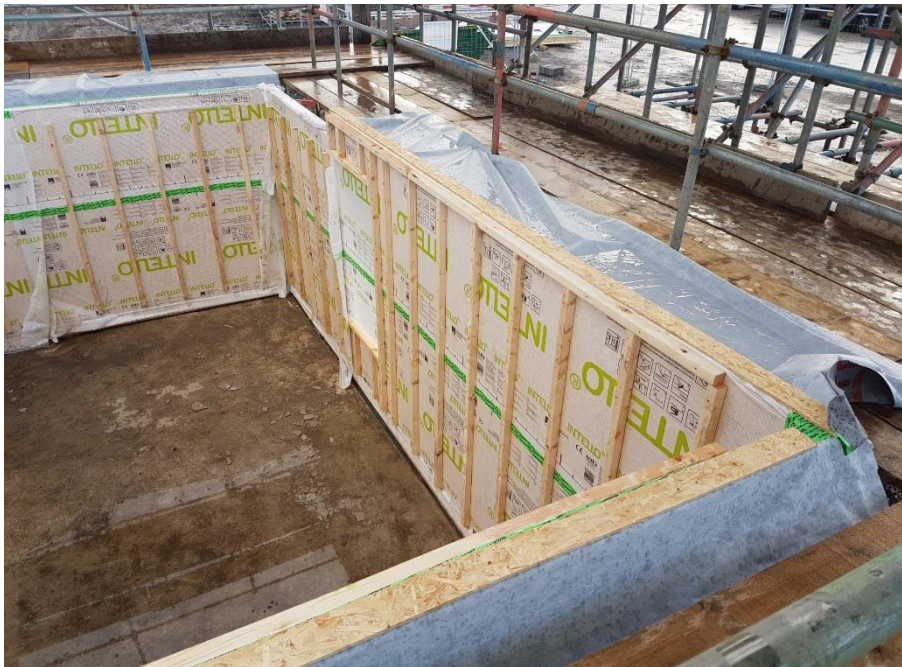
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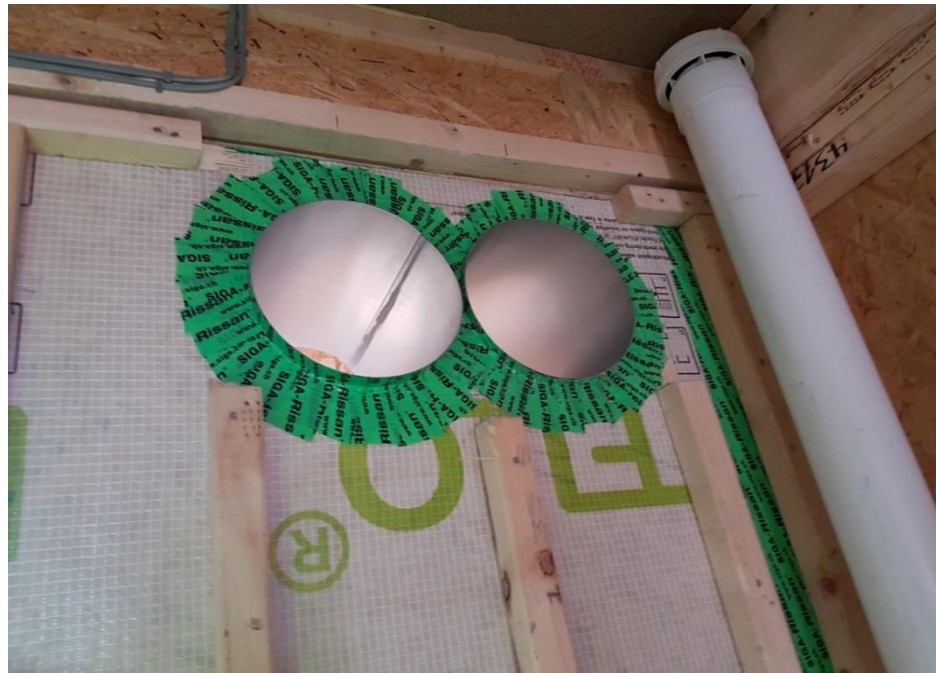
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## **Expected Benefits**

- Lower fuel bills – claim to be 63% more efficient compared to typical construction values
- Help to reduce fuel poverty for the occupants
- Prevention of mould, condensation, cold spots
- Positive health impacts on conditions such as eczema, asthmas and allergies or chest conditions

## **Will it deliver what is expected?**

- Post occupancy monitoring is being carried out by the Welsh School of Architecture
- Monitor temperature throughout the year/seasons and take account of tenant lifestyle
- Weather station in Bryntawe School
- Produced video's, TLO's, provided user guides for tenants

# Community Inclusion and Engagement



# Tenant Feedback

One of the first tenants to move into the scheme said how happy she was in her new home. *"It's really quiet here, there is plenty of space and storage, even external sockets which are really handy, the council seem to have thought of everything.*

*My baby is really enjoying the big garden. So far everything has been really good."*



First Minister for Wales, Carwyn Jones said: "I was pleased to meet with the new residents of Colliers Way and Cwrt Trefor and hear how they are settling in to their new top quality, energy efficient homes.

Safe, warm, affordable homes are the bedrock of community. "I'd like to pay my thanks to Swansea Council for their ambition and forward thinking and look forward to seeing them build more homes in future."

# Future Aspirations

- Continue to work with Welsh Government to meet aspirations of affordable housing
- Test innovation and address cost, value, supply and delivery issues
- Future proof tenants against rising fuel costs
- Support wider regeneration, create opportunity for local employment, skills and training.
- Explore Homes as Power Stations Initiative being developed under the £1.3b City Deal
- Share lesson's learnt



# Vehicle charging points; progress to date and moving forward

## Progress to date – Fleet

- Transport sector constitutes over 10% of total energy consumption in the SBCR and is therefore an important component of our energy portfolio that needs addressing.
- Swansea Council installed 11 charging points in a number of our depots in 2010 when we had grant funding to purchase 8 Peugeot Ion electric vehicles.
- In 17-18 we utilised £40K of the Energy Capital budget to install additional charging points at a number of our council owned sites
- All are used to re-charge fleet vehicles only.
- We also purchased 40 Peugeot Electric Small Panel Van's and one electric car to replace diesel equivalent in CCS fleet and the Peugeot Ion electric cars which only had a very short range on full charge of approx.40 miles.
- The new electric vehicles have a minimum range capacity of approximately 100 miles per full charge in normal urban use

- Vehicles are supplied with cables capable of rapid, fast and standard charge capability
- Chargers that we have installed are a mix of Wall pod and EV pedestal Chargers which have fast charge capability
- Cost per unit is approx. £450 each and £830 respectively (not including installation)

## **NEXT STEPS**

- Allocated 60K in the 18/19 Energy Capital Budget to roll out further charging points
- Set out future vision for our fleet

# Progress to date – Public Charging

## Progress to date – Public Charging

- Received a grant from the Local Transport Fund for the South West Wales Metro work. Part of the funding will be used for studies to inform EV policy:
  - Preferred business models
  - Proposed placement strategy
  - National Grid Capacity Analysis
- We are also in the process of advertising for a Transport Officer who will be responsible for procuring the EV service
- Following regional discussions with Carmarthenshire a model that has worked well for them is to put the liability on the installer whereby they have the responsibility for the Capital and maintenance costs
- In this model contactless payment was also mandated to encourage ease of use
- With this model the authority would also receive a small revenue share and the risk to the authority is low



- There is also a £2 million WG fund for EV charging Infrastructure available. The fund is intended to provide a healthy kick start to support transition from petrol and diesel by relieving range anxiety for longer journeys ( which evidence suggests is a key inhibitor to take-up)
- WG are keen to meet with Energy and Transport Manager's in Welsh Local Authorities to ensure a joined up standardised approach and are keen to create an EV charging network in proximity to trunk roads.
- They are therefore targeting funding at Local Authorities, recognising the additional economic and eco-tourism benefits of bringing people into towns close to trunk roads
- They are looking to create a standard 'Wales branded' EV charging specification which they intend to use as part of a Wales EV charging procurement framework
- They are keen for charge points to be open source and with multiple payment gateways to provide the best and most consistent consumer experience (i.e. not tied to one particular RFID card or similar).

- WG are ideally looking for 2 to 3 rapid charge posts in each LA area
- Discussions have been postponed with LA's until WG have held discussions with DNO's due to potential network constraints particularly in regard to rapid charging

## **NEXT STEPS**

- Agree our “strategy” as part of the overall approach following outcome of the study and discussions with WG and regional partners to ensure a joined up approach
- Agree the extent of infrastructure, seek grant application and arrange appropriate regional procurement arrangements
- Investigate the emerging technology for infrastructure as part of our roll out