Swansea Council
Building Better Homes & Decarbonising Existing Homes

More Homes Project

- 7,400 affordable homes needed (2010 – 2025)
- Initial plan set out delivery of a 4 year Plan to deliver 140 Homes
- Cabinet now agreed a plan to develop 1000 homes over 10 years
- Delivery of small to medium sites by in-house contractor
- Also seeking joint venture or delivery partners for larger mixed tenure sites
- Regeneration schemes in some areas will also include new build
- Acquisitions programme to buy back homes in areas of need or certain property types where there is a shortfall

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The More Homes Journey

- Swansea Council has been awarded Innovative Housing Programme Funding in all 4 rounds
- IHP1 - Passivhaus pilot scheme of 18 homes completed in 2018
- IHP2 – 2 schemes 16 and 18 homes developed as Homes as Power Stations as part of pathfinders for the City Deal
- IHP 3 - scheme of 25 x 3 bedroom homes to HAPS specification
- IHP4 – 2 schemes linked to Phase 2 Planning 16 homes
- All schemes are being designed and built by the Council's in house Building Services Team
- Will have delivered over 90 homes through IHP - 18 passivhaus and 75 HAPS

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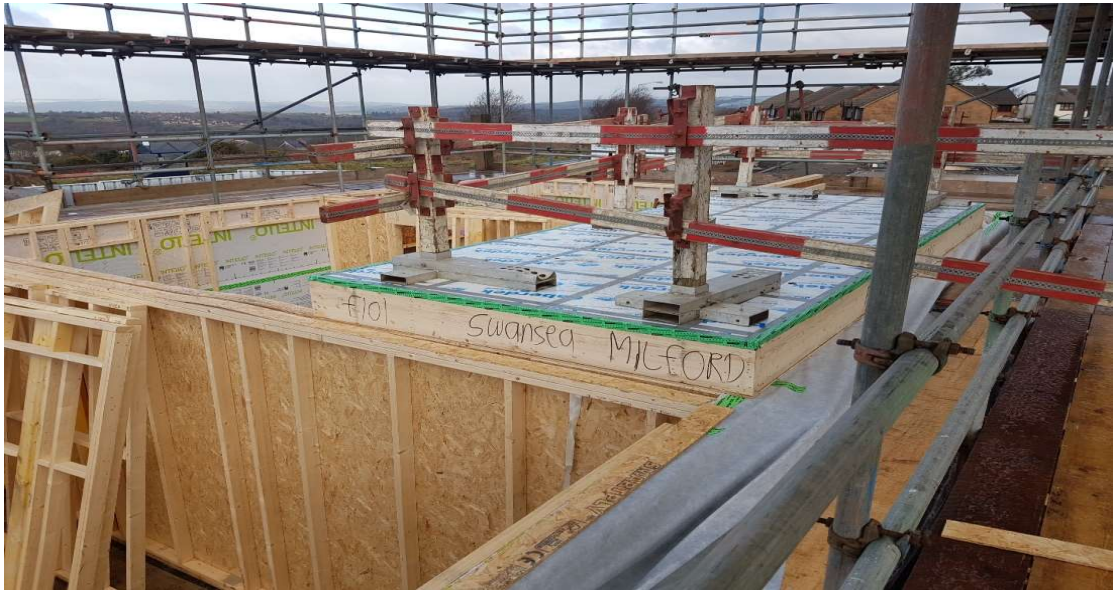
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Expected Benefits of Passivhaus

- Lower fuel bills – claim to be 70% more efficient than current regs
- 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
- Managing user expectation and working with residents to gather feedback
- Post occupancy monitoring is being carried out by the Welsh School of Architecture

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The Journey towards HAPS

- Following on from it's first new build pilot of 18 pasivhaus homes, the Council has now developed its own Swansea Standard for new build housing.
- The Swansea Standard is a Fabric First approach, 25% improvement on Building Regulations u-values and can be combined with innovative and renewable technologies.
- 2 Schemes were awarded funding in IHP2, funding used to include renewables on top of the Swansea Standard, to Homes as Power Stations specification.
- These homes have Ground Source Heat Pumps (GSHPs), PV solar roofs, battery storage and Mechanical Ventilation Heat Recovery (MVHR) Systems, and will be able store and use their own energy.

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The HAPS Concept

- Pathfinder for the City Deal - Homes as Power Stations project which aims to support the building of 3500 new Homes as Power Stations in 5 years across the City Deal region
- Develop a skilled regional supply chain
- Job creation – 19 construction jobs per £1m invested
- Skills / training opportunities created
- Regional supply chain in the renewables sector
- Future-proof tenants against inevitable rising fuel costs
- Carbon reduction targets

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Swansea Standard Developments

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HAPS Technologies

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Outcomes

- The projects have been designed to reduce the amount of energy used, for energy to be generated from the sun and for excess energy from the sun to be stored.
- The homes will be totally powered by electricity
- PV panels generate energy during most of the day, which is stored in the battery which provides energy at night, enabling the occupants to be energy self-sufficient for most of the year
- Tenants can monitor use via the Tesla app.
- The post occupancy monitoring will help develop wider understanding of the impact that can be made on comfort, health and fuel poverty, together with energy and carbon savings

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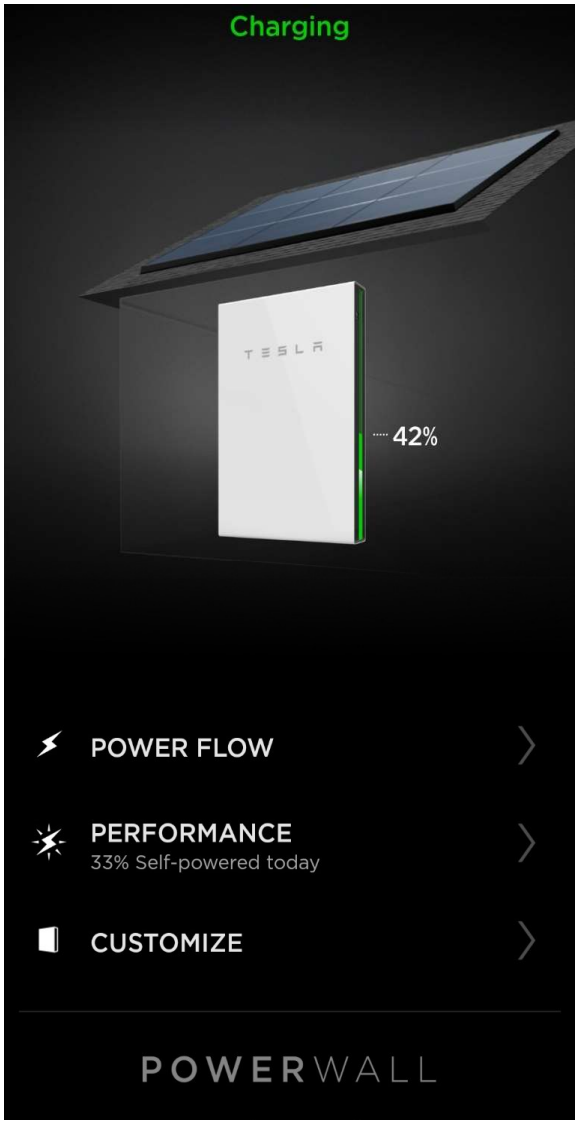

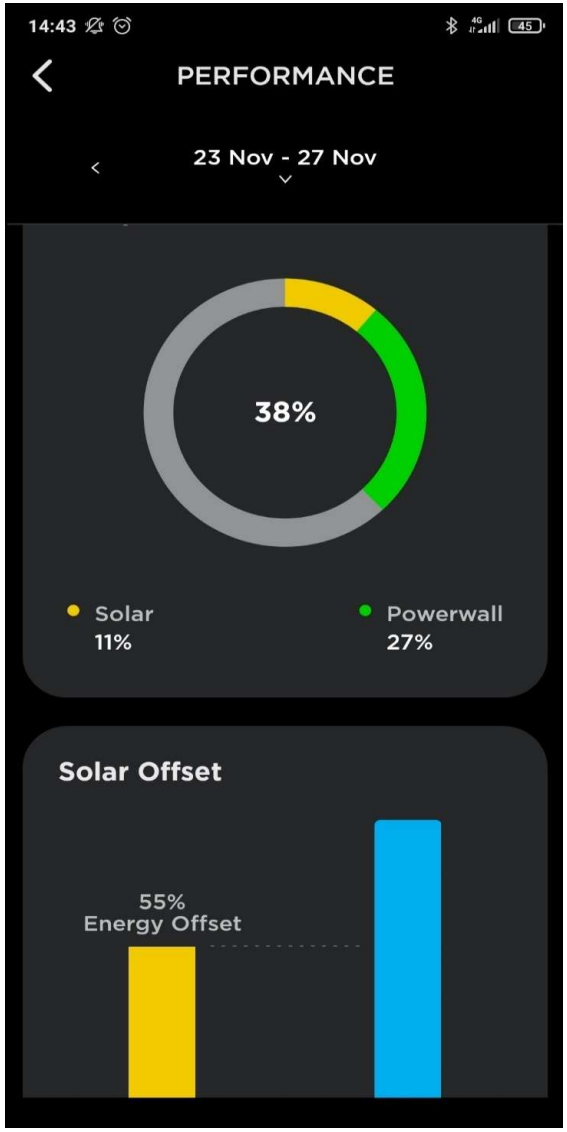

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Current and Planned Activity

- 16 Homes at Parc Yr Helyg (Ffordd Y Bryn) handed over in Sept 2020
- 2 new homes at Acacia Rd, West Cross handed over Dec 20
- 18 Homes at Colliers Way 2 due for handover April 21
- Conversion of Bryn House to 4 flats and 4 passivhaus MMC pods on site
- 25 new 3 bedroom homes at Hillview on site
- 6 bungalows at West Cross starting in April 21
- 10 new homes at Clase on Creswell and Rheildol

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Current and Planned Activity

- 20 acquisitions of 1 bedroom flats
- 3 acquisitions of adapted homes
- Developing a masterplan for the regeneration of Heol Emrys & Tudno Place
- Developing a framework to appoint development partners to build out larger mixed tenure sites
- Looking to acquire land from the General Fund
- Developing a 10 year programme for direct build and partnership delivery

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Decarbonising Existing Housing

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WHQS Energy Efficiency Work

Energy efficiency work undertaken as part of WHQS programme:

- Combi boiler installation
- Insulation to retained heating systems
- Upgrading insulation in attic spaces
- Double glazed windows and security doors
- Insulated render to external walls

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WHQS Energy Efficiency Investment

Work Element	Properties (nr.)	Approx. Average Cost (£)	Approx. Investment (£m)
Combi Boilers	13,040	2,200	28.688
Attic Insulation	7,000	400	2.800
Double Glazed Windows	7,500	3,200	24.000
Security Doors	11,937	600	7.162
Insulated Render	5,959	8,000	47.672
Total(£m)			£110.322

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Energy Efficiency Improvements

“Standard Assessment Procedures (SAP) measures the energy efficiency of a property and the energy it consumes to meet a level of thermal comfort”.

- 2002 - average SAP Rating 47, EPC Band E
- 2020 - average SAP Rating 67, EPC Band D

Council compliant with WHQS SAP target

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Benefits of Energy Efficiency Programme

- Reduced heat loss and energy bills
- Greater thermal comfort for resident
- Health and wellbeing gains
- Job & training opportunities
- Community benefits from Beyond Bricks & Mortar
- Extra employment boost local economy
- Successful rollout of largescale improvement programmes

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Insulated Render External Fabric Upgrade

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Energy Efficiency External Fabric Upgrade

Before

After

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Future Decarbonisation Policy Development

- UK Committee on Climate Change set out its national policy agenda in May 2019 to reduce greenhouse gases (GHG) emissions to net zero by 2050
- Better Homes, Better Wales, Better World Report, by the Independent Housing Decarbonisation Advisory Group for Wales was published on 18th July 2019
- Welsh School of Architecture (WSA) commissioned to carry out a three stage study. Report published August 2020
- Welsh Govt. Decarbonisation Working Group draft decarbonisation strategy September 2020

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Draft Decarbonisation Policy Proposals

- Decarbonisation programme part of revised Welsh Housing Quality Standard (WHQS), implementation 1st January 2022.
- Draft guidance will be circulated July/August 2021
- Decarbonisation of social housing **a statutory duty**
- The deadline to meet statutory duty 31/12/2030

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Decarbonisation Targets

- SAP 65, EPC Band D revised to SAP 92, EPC Band A
- Environmental Impact Rating (EIR) target 96
- SAP/EIR targets only achieved with combination of complete structure fabric upgrades to improve thermal insulation and use of renewable technologies
- Intelligent Energy Systems
- Property Passport system
- Quality Assurance PAS2035 Accreditation system

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Decarbonisation Pilot Schemes

- Pilot schemes based on the principles the City Deal ‘Houses as Power Stations’ (HAPS)

- Collaborative approach to research, design and delivery with Welsh School of Architecture & Atkins Consultancy

- ‘Whole house’ approach retrofit programmes in Lon y Felin, Garnswllt and Ffordd Ellen in Craig Cefn Parc

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Pilot Scheme Decarbonisation Specification

- Insulated external render
- Increased insulation in attic
- High performance double glazed windows & doors
- PV solar roof panels
- Batteries to store energy generated by PV panels
- Ground or air source heat pumps
- New boiler, hot water storage and radiators
- Heat recovery ventilation system

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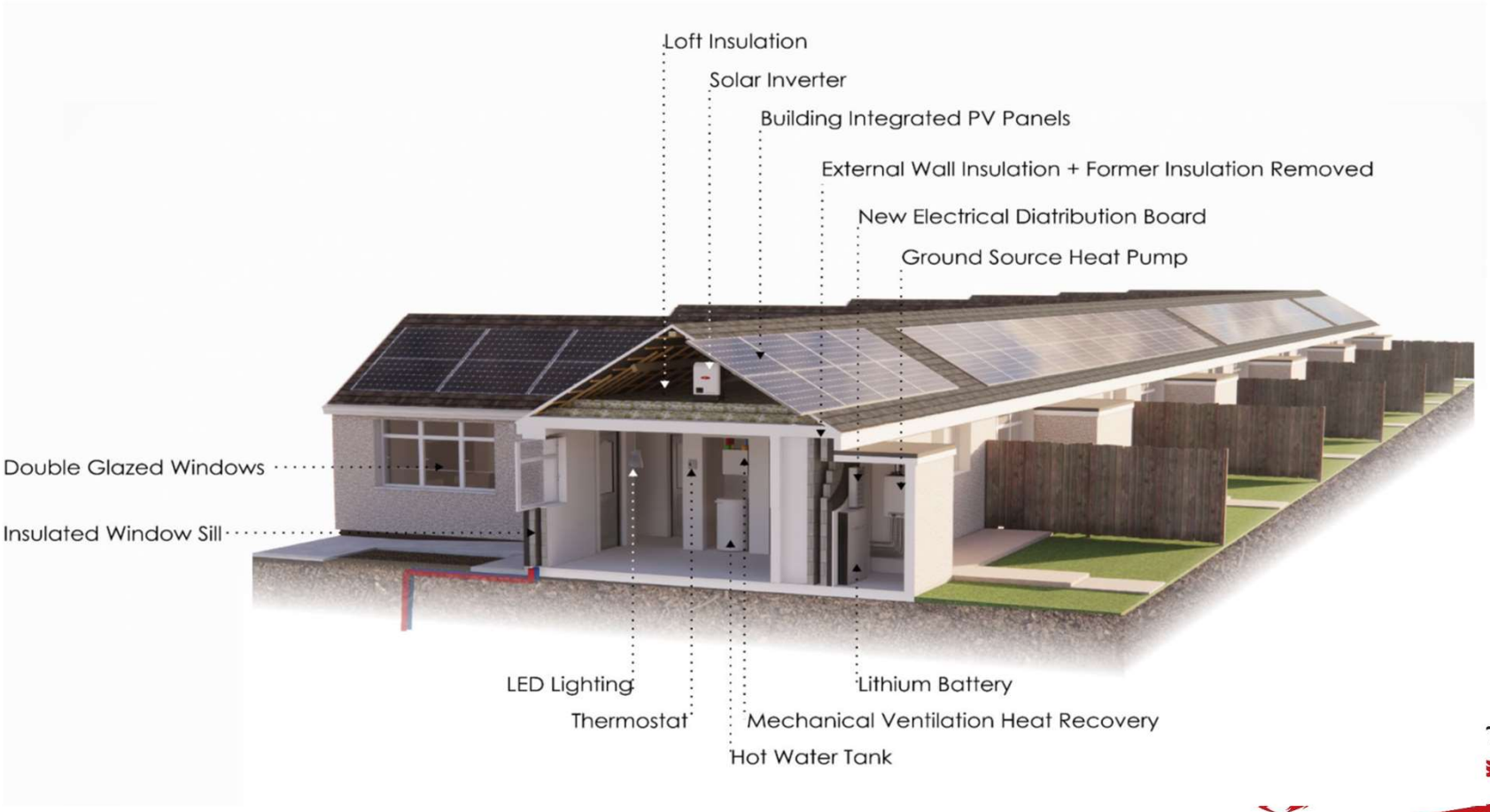
HaPS Whole House Retrofit at Ffordd Ellen



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Retrofit Pilot at Ffordd Ellen – Before & After

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Renewable Supply & Storage

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Whole House Retrofit at Lon y Felin

Before

After

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Renewables at Lon y Felin

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Adopted Retrofit Decarbonisation Strategy

- Concentrate resources on the upgrading of building fabric between 2021 – 2025
- PV panels and battery storage for low carbon electricity generation, as part of the fabric improvement programme
- Delay the main rollout of main low carbon heating systems until post 2025
- Review the emerging technological solutions, use best on low scale pilot schemes to assess and monitor systems in use.

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Opportunities

- Reduce residents fuel bills and fuel poverty
- Make homes more attractive and more comfortable
- Improve residents wellbeing and health
- Develop the in-house skills, training and resources
- Adopt the principles of PAS 2035 quality assurance
- Increase social benefits delivered under Beyond Bricks and Mortar to provide local training opportunities
- Whole house approach to decarbonisation to achieve maximum cost savings and least disruption to tenants.

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Challenges

- Competing demands and priorities for HRA capital finance
- Limited borrowing capacity
- Scale of programme more than £350m in a 10 year period
- Additional staff resources and in-house training costs
- Renewable technology still emerging and developing
- Biggest social housing stockholder in Wales so largest design, procurement and delivery programmes
- Developing design, procurement and delivery processes to drive down costs to make programme affordable

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Risks

- Insufficient budget to deliver a statutory duty by deadline
- MRA finance from Welsh Govt. likely to linked to programme delivery rather than size of stock
- Cost to deliver decarbonisation programme greater than anticipated by Welsh Governement
- Overheated market increases costs due to a surge in demand for expertise, materials and technologies

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