

Collaboration and innovation through MMC



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**Chartered
Institute of
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Session 5 Collaboration and Innovation Through MMC

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Mid Devon as a place

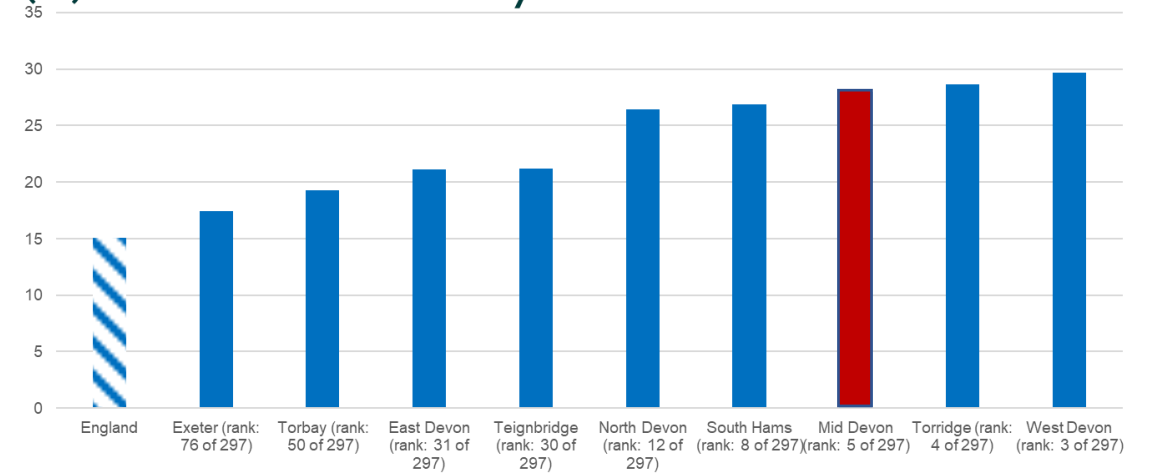
- Rural district within Devon
- Low wage economy
- 3 principal market towns, but mainly dispersed rural settlements
- M5 corridor, 'greater Exeter' area but infrastructure deficit away from main centres
- Shared challenge with other Devon authorities:
 - Older population – increasing
 - Falling affordability and wider housing crisis - Devon Housing Commission



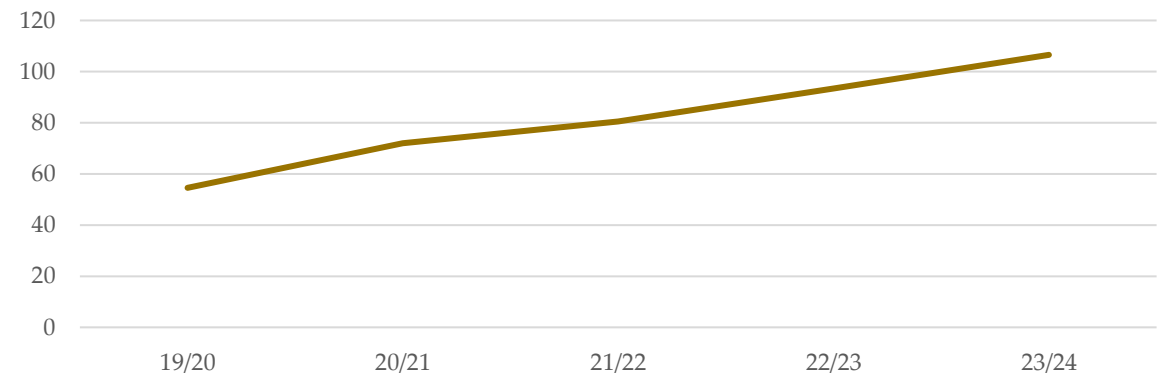
Housing challenges - general

- Rising population due to internal migration – but older people.
- High % of non-decent housing
- Under-occupancy of existing homes
- Reducing rural housing provision, losing stock through RTB
- Declining affordable delivery as % of new delivery – viability!
- Rising demand
- Keen to ‘do better’/become an example

Proportion of non-decent dwellings (%) and Local Authority Rank



Average number of bids per listing on Devon Home Choice



Housing strategy – direction and impetus

- **MDDC Housing Strategy 2021-25** – clear objectives; grow HRA, pipeline, meeting housing needs, MMC and high standards
- **Devon Housing Commission 2024** chaired by Lord Best – Devon LAs/Exeter University. report findings align and supports direction of travel. Key evidence base / reference point
- Opportunities around **Devon(lution) deal** and broader Devon Housing Strategy/ strategic pipeline



Scope and criteria



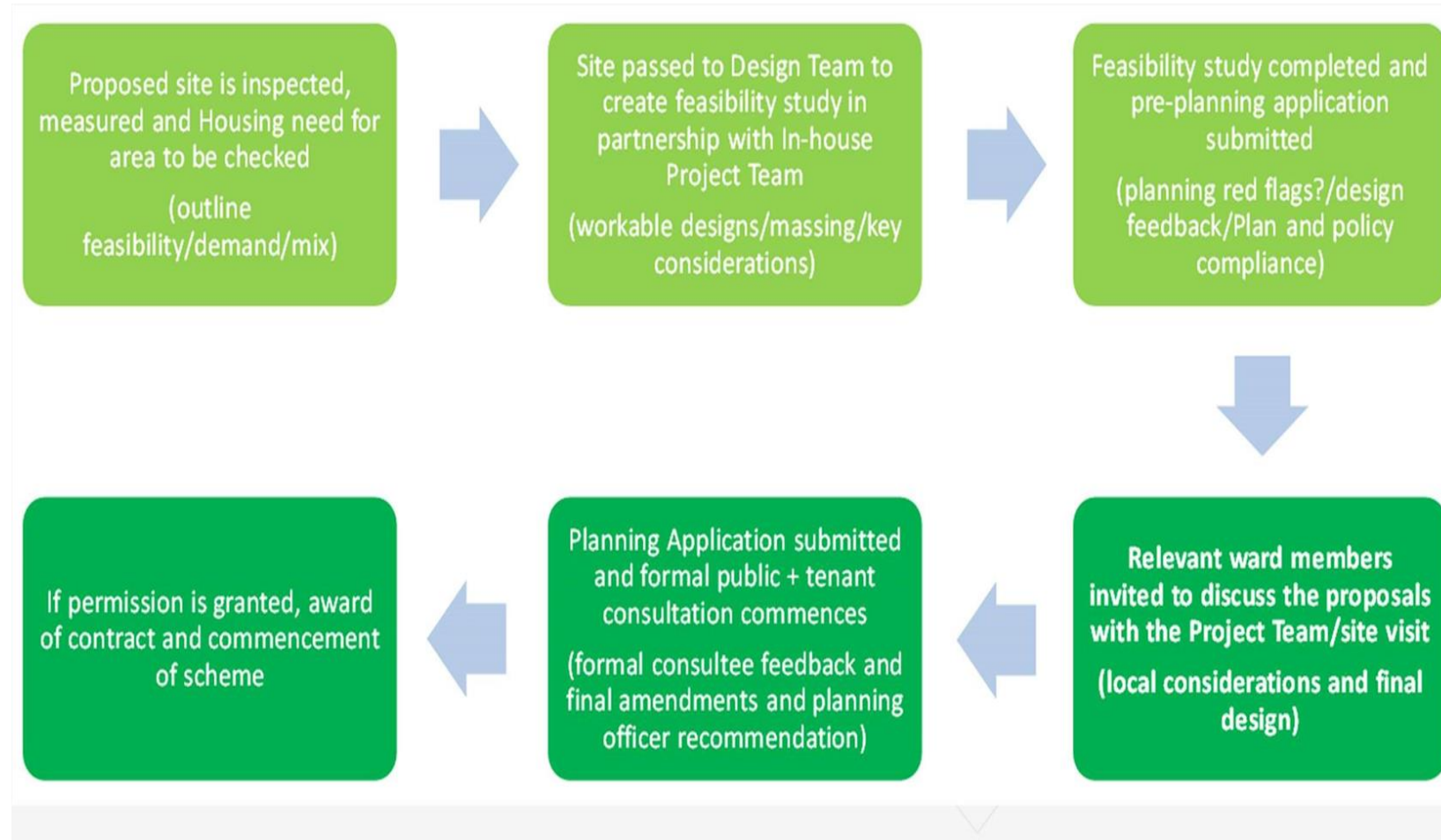
- Focus on expanding stock using existing HRA land - former garages/under-utilised and vacant land parcels given costs of acquisition and deliver
- Delivery of small-medium schemes where there is existing need @ social rent (not affordable rent)
- Market town and rural settlements / dispersed programme
- Integration with existing communities, both HRA and wider
- Achieve wider community benefits / local regeneration where possible

Why MMC and Modular?

- **Strong MMC focus as:**
 - More development certainty – i.e. shorter lead time, achieve high and consistent standards in an efficient manner, reducing time on site, cost, waste and risk
 - Attract higher % grant support (AHP, OPE BRLF) with lower maintenance and management costs - financial modelling, strengthened business case
 - Supports low-carbon objectives/supports reduction in fuel poverty
 - Reduced tenant costs – significant energy/utility cost reduction
 - Attractive product for tenants (supports right-sizing/neurodiversity benefits)
 - Suits tight infill sites, wider regeneration benefits
 - Fewer neighbour issues during construction phases
 - Less reliant upon local labour/suppliers – but use these skills where possible
- Some trad-build schemes where appropriate but not focus

How?

- Procured through framework arrangement – direct award
- Build partnerships and collaboration with key supplier
- Design/feasibility process
- ‘Turnkey’ project with full transfer of all information from every design/construction stage
- Whole project costs understood, delivery de-risked



Political and local buy-in

- Political support – especially with current administration
- Pushing for further delivery – 500 units, 5 years
- Early/significant public engagement piece pre progression
- Regular engagement with elected members – early and at key stages



Out of **438** visitors, **314** completed the feedback questionnaire

Would you like to see ZED PODS Schemes developed where you live?

YES: 312

No: 2

Comments from local people:

- *“Love the unit! An innovative solution to the diverse housing we need.”*
- *“I have looked round the ZED PODS in Cullompton and think that the project is a brilliant idea to provide more social housing quickly and on sites that are easily available.”*
- *“It is really exciting and has to be the way forward for housing!”*

Success to date

- St Andrews (Cullompton) and Shapland Place (Tiverton) – **14** homes completed during 2024
- Multi award-winning schemes
- On site with schemes in Sandford and Tiverton – 13 homes
- 9 further MMC projects in current pipeline 25/26
- Matching funding sources – OPE funding, BLRF
- Devon funding – care leaver housing

St Andrews House, Cullompton

6 zero-operational-carbon social housing scheme



Shapland Place, Tiverton

8 zero-operational-carbon homes on Flood Zone 3A



Ellie, the resident, said: *“We are extremely grateful and feel very lucky to have got a property at St Andrews House. It is a huge relief that we will not be in temporary housing anymore and we will welcome our baby in our lovely permanent home. We love the flat, it’s so bright and airy and we never want to leave.”*

What next?

- Build on successes and learning – continue to lead
- Continue to deliver new homes – MMC focusing more in to slightly larger sites (10 units+) – more units planned for 2025/26
- Refresh of MDDC Housing Strategy during 2025 – focus on greater alignment between council functions
- Build on recommendations of Devon Housing Commission
- Devolution and LGR – strategic pipeline, regional working with HE
- Ensure own delivery supports us in achieving right housing and point of need for local residents, but also supports the Council in achieving challenging revised housing targets

About ZED PODS

ZED PODS is an SME with a big mission to **address social inequality in housing and contribute towards reducing the impacts of climate change** in the sector. We offer integrated design, planning and build services to deliver zero-operational-carbon, good-quality, flexible modular housing solutions on constrained or traditional sites.



Design & Build **net-zero operational carbon** affordable homes



Flexible design approach with high levels of standardisation



Full Turnkey Package (PC role)



Unlock Brownfield sites including Car parks, Flood Zones



Design Control using **Digitisation (BIM Level 2 19650)**



Sustainable Development



Proven **Performance** standards



Experienced Team in delivering social housing projects

Fortis House, Ashford

23 zero-operational carbon housing scheme in flood zone 3



Hope Rise Bristol

11 zero-operational-carbon new homes above car park



Kevin Fenton Mews, Bromley

25 zero-operational-carbon new homes above car park



Hill Street House, Newport

12 zero-operational-carbon new homes



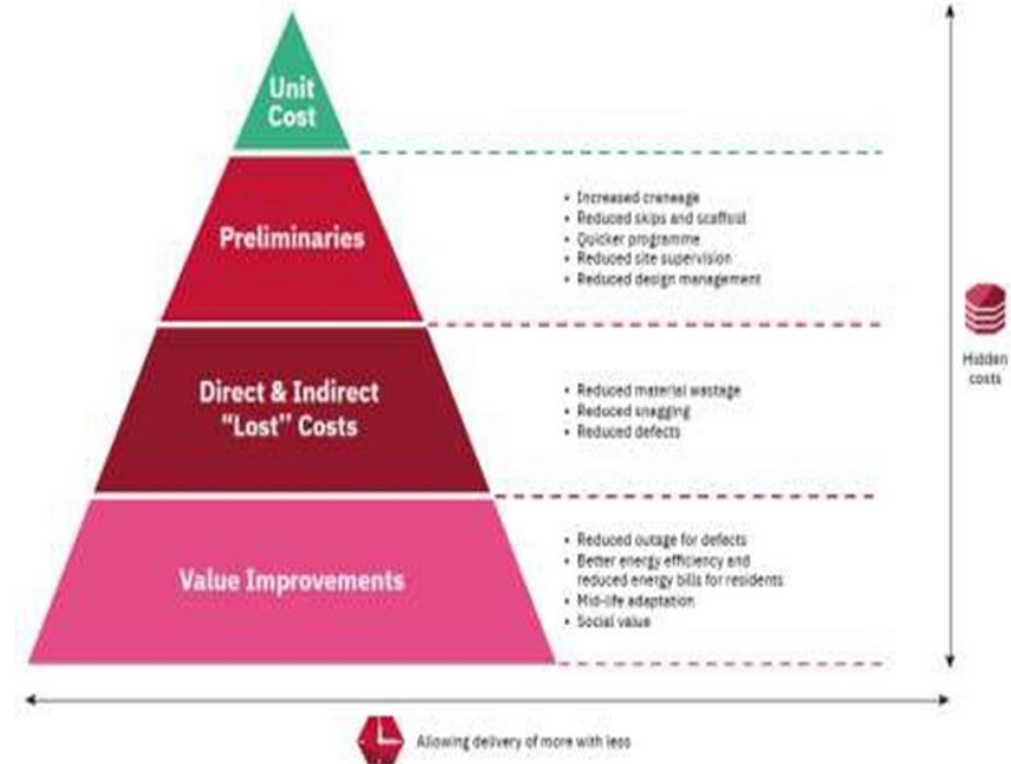
CO2nstruct Zero Business Champions Partnership with **Construction Leadership Council**



Key Considerations

- **Brownfield First:** “Heat-map” exercise to identify sites for local needs
 - **Flood Zone: Shapland Place** - a backfill site in Flood Zone 3A next to an industrial estate on the fringe of housing estate.
 - **Constrained land: St Andrews** - council-owned 8 garage site.
- **Wellbeing & Community First:** Sites in residential area, hence noise, disruption needs to be minimised. Transport strategy utilises existing road & footpath connections, thereby minimal changes.
- **Sustainability First:** Superior environmental & thermal performances for low utility bills (running cost) for residents. Help MDDC to achieve “sustainable tenancy” and “carbon neutrality”. Technology needs to be easily understood & operated.
- **“Value For Money” Always:** Cost savings + Collaboration + Calculated risks + Streamline process + Compliance savings (e.g. public procurement using SWPA MMC framework)

Hidden Cost Savings using MMC



Innovation: Right Home at Right Place

Shapland Place Tiverton

- Backfill site
- Flood Zone 3A
- High level of Contamination



CARBON SAVINGS
14
Tonnes/yr

WATER SAVINGS
107,690
Litres/yr



St Andrews House Cullompton

- Garage site
- Restricted access
- Downward slope
- High wind



CARBON SAVINGS
10.2
Tonnes/yr

WATER SAVINGS
107,690
Litres/yr



St Andrews House, Cullompton



- 6 dual aspect NDSS compliant apartments (3x1b, 3x2b)
- Enhanced quality & building performance
- 128 roof-mounted solar panels
- Airtightness level: **1.12** at 50 pascals
- U-value: exceed future home standards
- Offsite + onsite training – plugging "green skills" gap
- Built by local inmates under "Prisoners Building Homes" Program
- Significant reduction in waste (offsite + onsite)
- Use of Local supply chain partners (onsite + offsite)
- 9 modules were installed in 2 days
- Reduced community impact, disruption & noise



Score	Energy rating	Current	Potential
92+	A	109 A	112 A
81-91	B		
69-80	C		
55-68	D		
39-54	E		
21-38	F		
1-20	G		

Shapland Place, Tiverton



- 8 dual aspect NDSS compliant apartments (4x1b, 3x2b, 1x3b)
- Unlocked Backfill site (41 garages) located in Flood Zone
- Low carbon design + SUDs, Flood risk strategy
- Superior energy efficiency (72 PV, Heat Pumps, Tripple-glazed)
- Well-being: Private Balconies, neutral air, sensors + green space
- Creating “low-carbon, low-energy” community



Score	Energy rating	Current	Potential
92+	A	102 A	102 A
81-91	B		
69-80	C		
55-68	D		
39-54	E		
21-38	F		
1-20	G		

Zero Operational Carbon Strategy

All units are designed to achieve the highest standard of building energy efficiency.



1 Reduced Heat Losses

- Thick Insulation Build-Ups
- Reduced Thermal Bridging
- Airtightness Membranes & Taping
- Mechanical Ventilation



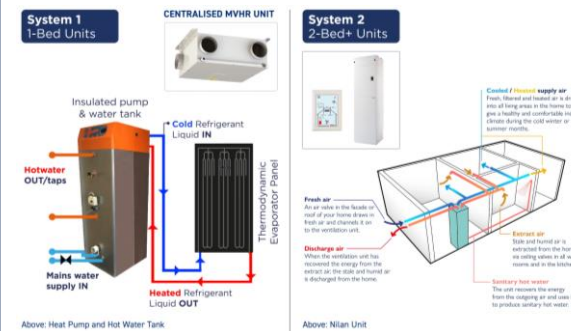
2 Reduced Energy Consumption

- Natural Daylighting
- Water Efficacy Measures
- Energy Efficient Appliances



3 Renewable Production

- Roof Mounted Photovoltaic Panels
- Solar Assisted Heat Pump
- Mechanical Ventilation & Heat Recovery



4 Closing the Performance Gap

- Factory Built Quality Control
- Designed vs Built Performance
- Performance Built In



Energy Performance Certificate

Calculation Type: New Build (As Built)

Score	Energy rating	Current	Potential
92+	A	109 A	112 A
81-91	B		
69-80	C		
55-68	D		
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21-38	F		
1-20	G		

Innovative Collaboration

To minimise project risks and improve trust between stakeholders.

Shapland place Programme:

Offsite works: 5 months in 2023
 Onsite works: 11 months in 2023-24

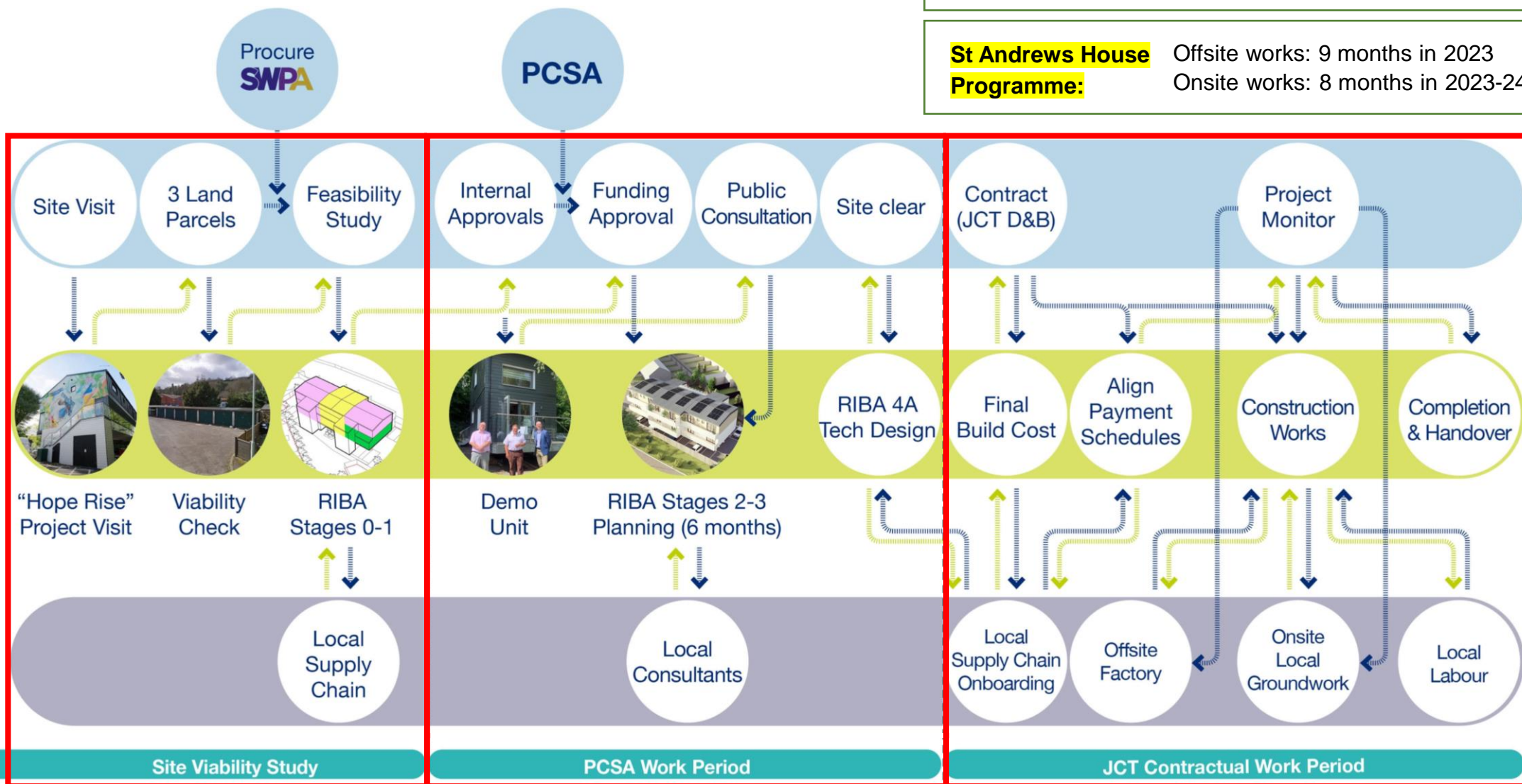
St Andrews House Programme:

Offsite works: 9 months in 2023
 Onsite works: 8 months in 2023-24



Full Turnkey Contract

Sub Contractors



Contractual

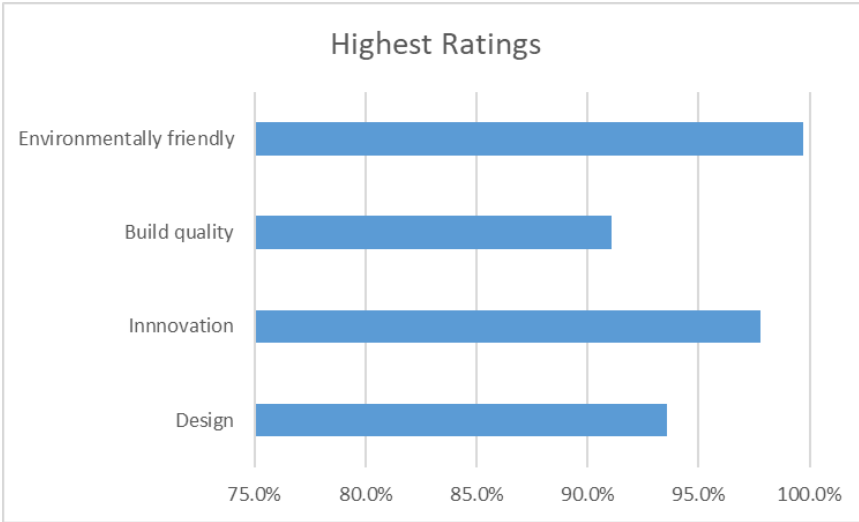
Site Viability Study

PCSA Work Period

JCT Contractual Work Period

Winning “hearts & minds”

Before construction



Out of **438** visitors, **314** completed the feedback questionnaire

Would you like to see ZED PODS Schemes developed where you live?
YES: 312 **No: 2**

Comments from local people:

- “Love the unit! An innovative solution to the diverse housing we need.”
- “I have looked round the ZED PODS in Cullompton and think that the project is a brilliant idea to provide more social housing quickly and on sites that are easily available.”
- “It is really exciting and has to be the way forward for housing!”

Post construction: St Andrews House - Visitors Feedback

How would you rate the building in terms of its aesthetics?

Answered: 4 Skipped: 0

8.3

average rating



How would you rate the building in terms of its design and lay...

Answered: 4 Skipped: 0

8.5

average rating



How would you rate the interior of the apartments?

Answered: 4 Skipped: 0

9.8

average rating



How would you rate the homes in terms of overall quality?

Answered: 4 Skipped: 0

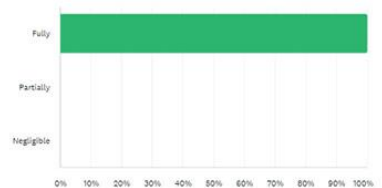
9.3

average rating



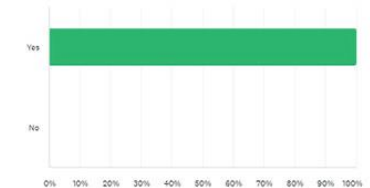
Has the project met your expectations for sustainable develo...

Answered: 4 Skipped: 0



Do you agree that the project has significantly transformed th...

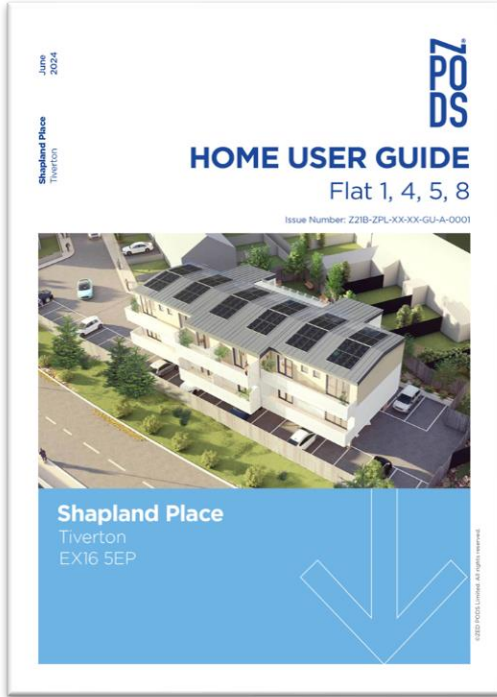
Answered: 4 Skipped: 0



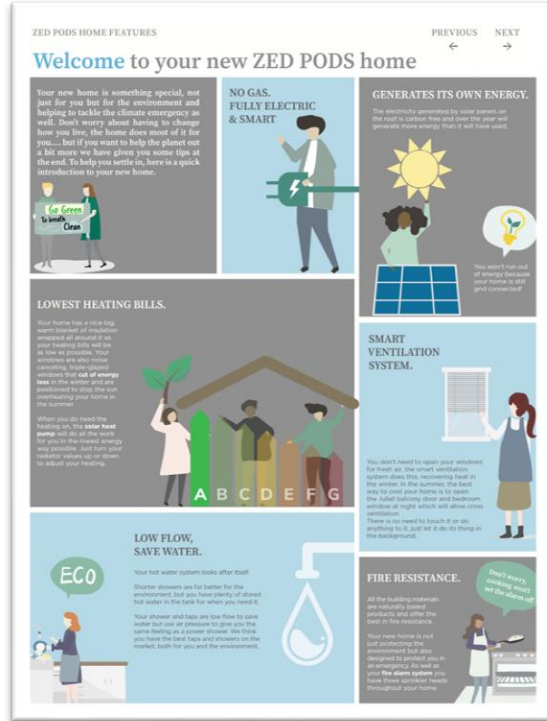
Handover Phase: “low-carbon living”

Remote Sensors with IoT Technology

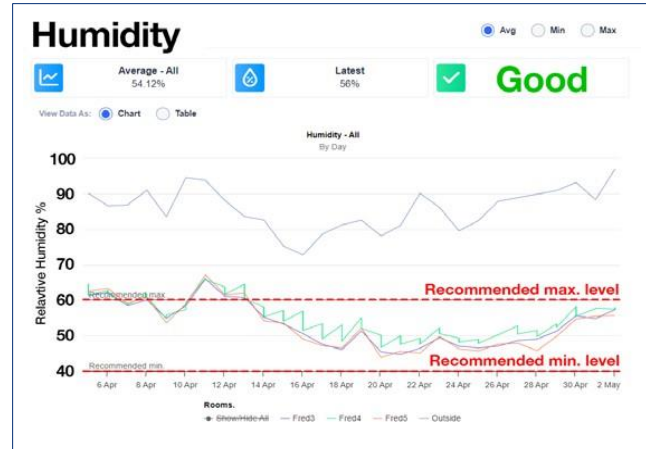
Home User Guide



Home Welcome Leaflet



Maintenance Schedule: Training on renewable technologies upkeep



Post-Occupancy Data Analysis	2 Bed Flat St Andrews Annual Energy Consumption vs. Traditioanl Build					
	Gas	Electricity (Kwh/ Annum)	PV produced Energy (kWh / Annum)	Total Energy Consumption (kWh)	% Energy Reduction over traditional	Grid Energy Offset (KWh)
Traditional Flat Energy Consumption*	9500	2700	0	12200	0	0
2 Bed St Andrews(**)(***)	0	3200	3254	3200	74%	102%
	*OFGEM Data January 2025	**Monitored data via environmental sensors of 8 months extrapolated for full 12 months		***PVGIS data		

Offsite Manufacture

- 50,000 sq ft manufacture facility in Peterborough
- Production capacity : **500** new homes / year
- Currently Employees **48** - Potential Employment: **90** people
- **73** Bedrooms Delivered for **139** people)
- Proprietary Building System (ISO, BOPAS & ICW endorsed)
- Largest Employee of the PBH Program
- B-Corp Certified Corporation



Prisoners Building Homes Program

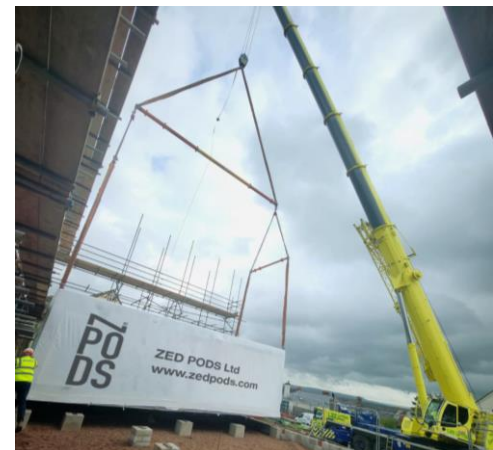
- **31** day-release inmates have worked so far in the factory
- A third of our factory work force are from PBH Program
- National living wage paid, 40% goes to Victim Support
- Upskilling: NVQ's, Forklift/ Scissor Lift skillset
- Wraparound support including mental health
- For every £ spent = £3 return

The opportunity I have been given has been really good for my mental health and way of life in prison. It has boosted my self-esteem. The work placement has shown me living in a normal way and has provided me with a second chance, and I can see myself as the owner of a successful construction business building houses in five years."



Luke

One of the employees under the PBH scheme



Legacy



Crofts Estate
 5 units (4 x 1bed, 1 x 2bed)
 Nearing Completion



Beech Road
 8 Units (4 x 1bed, 4 x 2-bed)



Eastland
 5 zero operational carbon 2-storey homes



Sycamore Road
 13 units (10 x 1B2P, 3 x 2B3P)

“It’s great to see such a positive collaboration between Mid Devon District Council and ZED PODS in unlocking a difficult brownfield site and delivering affordable homes. These have been built to a high standard and their energy performance credentials enable the new residents to have lower running costs, which is incredibly important in Council-owned rented properties. Speed of delivery is testament to the many benefits in utilising MMC to help meet housing needs within the area.”

Regional Programme Manager (SW)
 One Public Estate, Local Government Association

“Land aggregation creates an opportunity to streamline the commissioning and delivery process, and can enable single procurement exercises, single contracts (negotiation and award), linked community engagement initiatives and tandem planning and development processes”

SOCIAL RENT HOUSING AT PACE: THE MMC PLAYBOOK
 (A Playbook for local authorities published by Housing Festival in May 2024)



Lessons learnt?

- **Strategic synergy** – drive, buy-in and impetus (members, Homes England, OPE)
- **Rolling pipeline** – agile to bids and opportunities, underpinned by long-term HRA business plan, aligned to quick feasibility work and turnkey support
- **Importance of technology demonstration** – modular and MMC for the lay person
- **Bespoke tenancy agreement and guides** – do, don'ts and support
- **High specification is right** – delivery, net-zero and sustainability, tenant experience and costs, long-term HRA certainty, Engagement with existing communities – design elements, added value (e.g. access to allotments, additional parking, community orchards, eco-credentials)
- **Utilities challenges and delay** – infill, regen sites (everything from poorly mapped services/erroneous mains, connection delay, infrastructure capacity for net-zero and local power generation/EV etc). Expect delays and capacity issues
- **Trad build lobby** – overcoming local doubts, challenges and scepticism, benchmark VFM as mitigation