



The Retrofit for the future - Ideas Competition



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The Retrofit for the future - Ideas Competition

... It is expected the ideas and concepts raised would assist these stakeholders make informed decisions about how best to tackle the challenging targets the Isle of Man faces in reducing carbon emissions very significantly over the coming decades.

Recently Tynwald approved in June 2019 that the Isle of Man would be "Net Zero Emissions". DEFA would like to invite an ideas competition to encourage local architects and others interested in "up-grading" buildings to create cost effective solutions for retrofitting properties on the Isle of Man to achieve near zero emissions. Retrofitting has been selected as a preferred option given that the current building stock will represent approximately 80% of buildings in use in 2050. It is noted there are over 40,000 domestic properties on the Isle of Man, so the challenge of significantly improving the energy efficiency of such a large number of buildings is not to be underestimated. The long term goal is to have desirable, warm, affordable homes for life.

Entrants would be asked to select an example of a widespread existing Manx property type e.g... Manx stone cottage, performance to make it a more liveable, future-ready house.

<http://www.gov.im/media/1365975/the-retrofit-for-the-future-ideas-competition.pdf>

A holistic approach is needed when designing the home of the future.

'Hiom' not only tries to tackle the "Net Zero Emissions" target but also takes a broader look at 'the future homes' needs, taking an approach that anticipates change, flexibility and adaptability to create destinations that enrich people's lives, strengthen communities, enhance nature, and deliver lasting economic value.





... wrapping a warm blanket around your home



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Creating design that is tailored to the needs of the people who live in, work in, and use the destinations



Victoria Crescent,

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1 Net-zero homes aren't just for the rich

Douglas Borough Council is the biggest provider of public sector housing on the Isle of Man.

Olympia is situated near Noble's Park and is an estate of three roads, Marathon Drive, Victoria Crescent and Falcon Cliff Terrace, comprising 3-bedroom houses.

Case study: Victoria Crescent, Douglas

DB Autos

Marathon Court

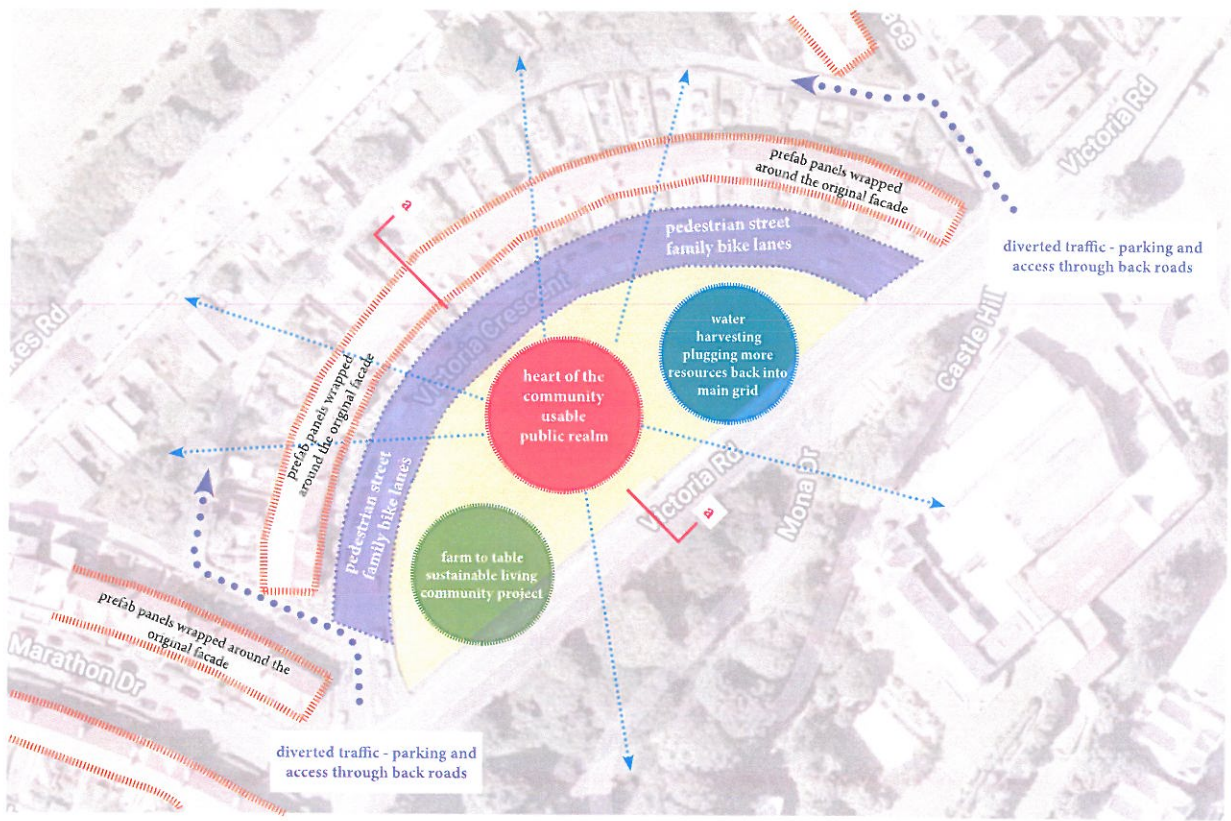
Ascot

Utopia



Olympia is situated near Noble's Park and is an estate of three roads, Marathon Drive, **Victoria Crescent** and Falcon Cliff Terrace, comprising 3-bedroom houses.





Taking an approach that anticipates change, flexibility and adaptability to create destinations that enrich people's lives, strengthen communities, enhance nature, and deliver lasting economic value.



... Creating Places for People



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Cutting edge construction

Digital Fabrication of homes through cutting edge construction techniques will deliver speed and quality, making sustainable living more accessible to all. Pre-selected forms and sustainable materials; Low cost quality; standardised panels that can slot into an infrastructure grid or onto original structures. Adaptable space that can change within a more permanent shell, allowing personalisation of space even for the more transient rental generation.

Self Powering Homes

Eco sensitive lifestyles are no more, sustainable living is for the masses. Homes that provide more energy than they consume, can provide surplus energy to power vehicles and social infrastructure. Contributing to the wider environmental evolution of communities and the infrastructure they plug into. A future where homes are much more connected to the city grid ...



Eco Villages

Showcase in environmental living, connected to nature and wellbeing at the heart of lifestyles. Elevated amenity and the urban green.

Healthy, socially connected communities of the future...

Space as a service. Customer centric user experiences, where residential owners and landlords act as community managers. A future where living space, content and experiential led amenities share equal billing and embrace the way people live constantly connected to the digital world.

Curating experience, taking homes of the future beyond the principles of spatial consideration towards the curation of lifestyles and experience.





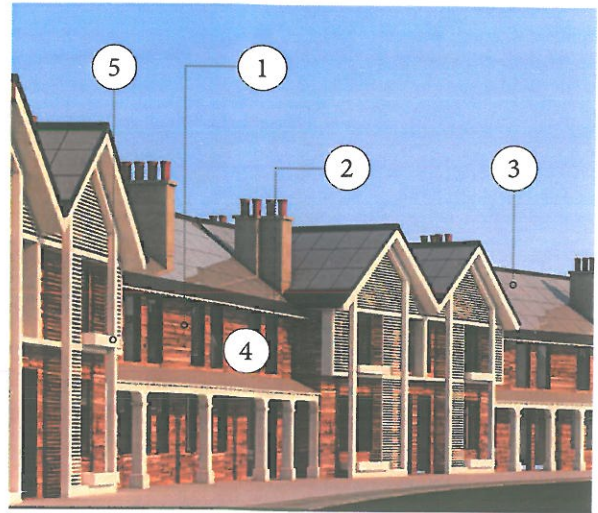
Smart Well-being The Connected Home

Innovations in energy monitoring will create more intuitive architecture, responsive to inhabitant needs. Automated systems that can analyse occupant preferences, assess what they think and respond intuitively.

The use of public space, mixed use, amenities and curating the ground plane - connectivity within the city.

Technology such as smart LED walls that can adapt to the occupants mood, and improve the health & living experience, prolonging life expectancy.

Nanotechnology will revolutionise the way we clean & maintain our homes, for smarter, healthier living including self cleaning & self repairing homes that can intelligently adapt.



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The no hassle retrofit

- 1 PREFABRICATED STANDARDISED CLADDING SYSTEM**
 Prefabrication wall panels which are produced off site. These have sufficient properties to reach zero-carbon emission requirements. **Simply clip onto original facade.**
- 2 NEW WINDOWS**
 Old windows to be removed and replaced with new into the original apertures.

- 3 INSULATED / SOLAR ROOF PANELS**
 These have sufficient properties to reach zero-carbon emission requirements. **Simply clip onto original roof.**
- 4 ENERGY AND WATER RECYCLING**
 An energy module holds everything needed for sustainable heat, hot water, power, and ventilation.
 A water module collects harvested water to circulate back through the home for multiple uses.
- 5 AESTHETIC EMBELLISHMENTS**
 Additional layer for decorative purposes. Its important to keep the character of the original development and minimize a loss of identity.



* See additional overall view pdf



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Cost ? How would this work

Precedence for this business model -

Energiesprong <https://energiesprong.org/about/>

Energiesprong is a revolutionary, multiple award winning, whole house refurbishment and new build standard and funding approach.

Participants of the initiative can pay the 'energy efficient fund' the same monthly/ yearly rate as their previous energy bills, for a required amount of years.

The actual costs would be minimal due to their new sustainable home.

Digital Fabrication of homes through cutting edge prefabricated construction techniques will deliver speed and quality, making sustainable living more accessible to all.

The repetitiveness of the housing stock in the Isle of Man has a great advantage, it allows for innovative standardised panel sizes and parts to be created from sustainable, low cost quality materials.

Local companies can join together to create 'Hjom' and design its manufacturing and fitting models. The 'upscale' factor would bring down the costs as the demand increases and production of the parts is on a more industrial level. This would be beneficial for shareholders and investors to drive innovation and new solutions.

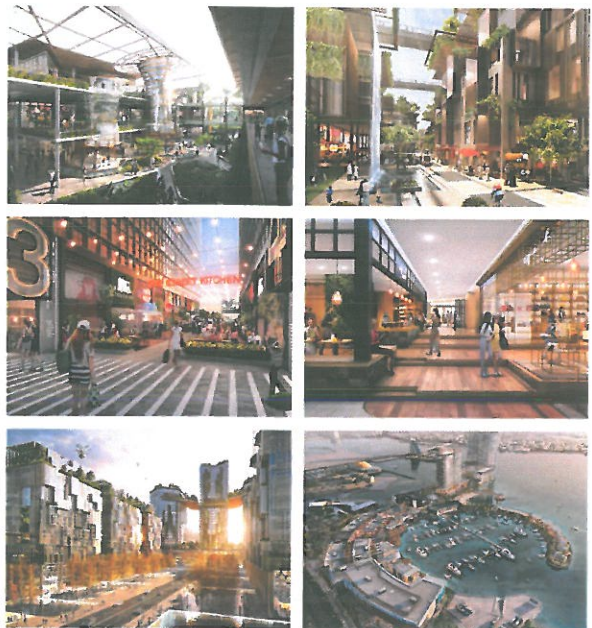
Similar business plans in Europe are aspiring to reduce their costs to approx -£40,000 when upscale manufacturing takes hold. (see appendix)

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PROFILE Based in the Isle of Man. I am an ARB registered architect with over 18 years' UK and international experience. My portfolio of work is diverse, spanning aviation, institutional, commercial, residential, leisure and hospitality sectors.

DESIGN ETHOS Creating innovative and visionary projects which connect between people and natural systems, to implement sustainable and socially responsive design.

Taking an approach that anticipates change, flexibility and adaptability to create destinations that enrich people's lives, strengthen communities, enhance nature, and deliver lasting economic value.



...Creating Places for People

New initiatives for Smart Cities and Sustainable Environments

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Appendix

Research Sites-

https://www.researchgate.net/publication/30872660THE_INSTANT_HOUSE_Design_and_digital_fabrication_of_housing_for_developing_environments

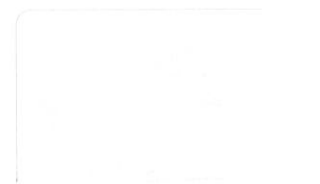
<https://theconversation.com/design-for-flooding-how-cities-can-make-room-for-water-105844>

<https://www.theguardian.com/cities/2018/oct/03/as-bangkok-sinks-could-this-anti-flood-park-be-the-answer>

<https://www.renewableenergyworld.com/2014/10/16/elements-of-a-netzero-home/#gref>

<https://www.fastcompany.com/3046525/in-just-a-week-this-kit-turns-old-houses-into-zero-energy-homes-for-free>

<https://energiesprong.org/about/>



Presentation Credits



RENDER PRODUCTION

DIGITAL FRONTIER

Digital Frontier is a Production House and Marketing Agency with core strengths in 3 areas 3D Visualization & Animation Virtual & Augmented Reality Product & Service Marketing.



PHOTOGRAPHY

EMAIOM PHOTOGRAPHY

Isle of Man based photographer, passionate about photographing the island's natural beauty.



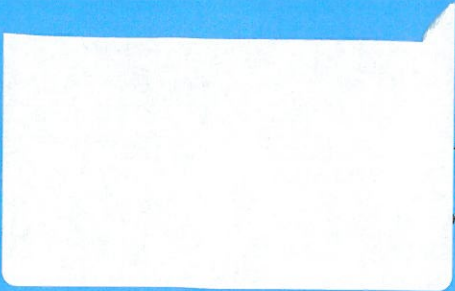
... wrapping a warm blanket around your home





Energy
Efficiency
Scheme

Thank You



JK

yahoo.co.uk

Victorian Crescent, Douglas



Proposed Victorian Crescent, Douglas



original facade and roof structure

Prefabricated standardised cladding system
 Prefabrication wall panels which are produced off site. These have sufficient properties to reach zero carbon emission requirements. Simply clip onto original facade.

New Windows
 Old windows to be removed and replaced with new into the original apertures.

Insulated / solar roof panels
 These have sufficient properties to reach zero carbon emission requirements. Simply clip onto original roof after removal of old tiles.

Aesthetic embellishments
 Additional layer for decorative purposes. Its important to keep the character of the original development and minimize a loss of identity.

Self Powering Homes
 Energy and water recycling
 An energy module holds everything needed for sustainable heat, hot water, power and ventilation.
 A water module collects harvested water to circulate back through the home for multiple uses.

community square, paving when dry for events, water feature when raining. Easing the threat of flooding

solar greenhouses - buffering the main road children's educational growing garden

water harvested feeding back to homes

pedestrianised street family bike lanes

porous paving & landscape water harvesting aquifer below

community growing plots farm to table

sunken community square - 'designed to flood' water harvested and collected back for use in the home

Proposed Victorian Crescent, Douglas

