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I Q System Block 9 2 x 3 Bedroom General Needs Houses



CCG has embraced the concept of modern methods of construction & has developed a unique and indigenous Offsite manufacturing capability, the *iQ System*, ensuring the Group can deliver on Scottish Governments sustainability agenda through changes to future building standards.

The Group established an in-house R&D department in 2007, to assist in the development & delivery of a state-of-the-art, £10m, Offsite Manufacturing Facility in Glasgow.

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This investment in Offsite Manufacturing ensures consistent quality through our innovative closed panel, timber frame building system: the iQ System, recognised recently with a Homes for Scotland "Environment & Sustainability" Award.

The iQ System consists of wall, floor & roof cassette panels, pre-fitted in the factory with windows, doors, services, insulation, internal linings and external claddings. These pre-finished panels are delivered to site for rapid erection & completion, slashing construction times & improving quality, eliminating inefficiencies & reducing waste.

To The Housing Innovation Showcase, CCG bring a commitment to R&D & a track record of delivering innovative building solutions. For the past 4 years, CCG have regularly undertaken testing & monitoring of live projects, collecting & collating data on fabric performance to various design solutions. This places CCG firmly at the forefront of innovative research into the most appropriate fabric envelope solutions, delivering buildings with exceptional levels of energy performance, in the most cost effective manner available. Consistent Quality of construction is helped by our Offsite approach, taking many of the inefficient, wasteful processes away from site & completing them in the factory environment instead.

CCG iQ System: Unique Project Features

- The project will showcase CCG's iQ System – our Offsite manufactured, closed panel, timber frame building system
- Supplied to site fully finished with pre-fitted windows/doors/insulation/external cladding/internal lining boards/services
- Innovative lightweight external render system allows progress to be made in our Offsite Facility, no matter what the weather
- The iQ Benchmark House (plot 25) exceeds Scottish Governments 30% Low Carbon Energy Targets by delivering Carbon reductions of 41% without the need for renewable technologies
- The iQ Renewables House (plot 24) exceeds Scottish Governments 30% Low Carbon Energy Targets by delivering Carbon reductions of 93% (almost NET Zero Carbon) with the inclusion of PV-T renewable technologies

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DESIGN OUTPUTS	PLOT 24 3 Bedroom House	PLOT 25 3 Bedroom House
CONSTRUCTION	IQ System (Offsite Closed Panel Timber Frame)	
GROSS INDICATIVE FLOOR AREA M ²	95.80	95.80
AVERAGE SUPERSTRUCTURE COSTS PER UNIT (INCLUDING RENEWABLES / EXCLUDING PRELIMS)	£87,045	£75,022
AVERAGE M ² SUPERSTRUCTURE COSTS PER UNIT (SEE NOTE 1)	£909	£783
<u>CONSTRUCTION PERIOD</u> (SUPERSTRUCTURE)	NUMBER OF WORKING DAYS OFF / PRE SITE : 2	
	NUMBER OF WORKING DAYS ON SITE : 47	



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DESIGN OUTPUTS	PLOT 24 3 Bedroom House	PLOT 25 3 Bedroom House
SAP RATING (BASED ON 2009 SAP)	93A	85B
CO2 RATING (BASED ON 2009 SAP)	96A	88B
<u>U VALUES</u>		
WINDOWS	0.8	0.8
DOORS	1.40	1.40
EXTERNAL WALLS	0.18	0.18
FLOORS	0.15	0.15
ROOF	0.11	0.11
RENEWABLES	PVY Combined Unit	N/A
ELECTRICITY GENERATED	£159.04	N/A
AIR PERMEABILITY (at Design Stage)	3.0	3.0
AIR PERMEABILITY (Actual)	2.95	2.95
VENTILATION SYSTEM	Mechanical Ventilation Heat Recovery (91%)	
BOILER EFFICIENCY	89.2%	89.2%
<u>ENERGY USE</u>		
SPACE HEATING (KWH/YEAR)	2156.89	1886.23
WATER HEATING (KWH/YEAR)	1376.08	2498.13
LIGHTING (KWH/YEAR)	437.14	437.14
ANCILLARY (KWH/YEAR)	343.54	343.54
TOTAL (KWH/YEAR)	4313.65	5165.04
<u>ENERGY COST</u>		
SPACE HEATING (£/YEAR)	£66.86	£58.47
WATER HEATING (£/YEAR)	£42.66	£77.44
LIGHTING (£/YEAR)	£50.10	£50.10
ANCILLARY (£/YEAR)	£145.37	£145.37
TOTAL ENERGY COST (£/YEAR) EXCLUDING SAVING FROM ENERGY GENERATED	£304.99	£331.38

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