

## FUTURE AFFORDABLE

### **K2 Closed Panel Timber Frame e. CORE Bathroom Pods Block 7 3 x 2 Bedroom General Needs Houses**



Future Affordable is a collaborative project to deliver a sustainable & affordable housing system for the social rented & private market.

The Future Affordable system concept is a combination of massive timber bathroom e.Core units designed by David Blaikie Architect and the KII timber frame system designed by Kraft. Together these systems have been optimised to deliver a terrace of three homes designed for tenancy will demonstrate how to achieve 2013 Low Carbon & 2016 Zero Carbon.

The first demonstration of the house system in the UK will be available to view at the Fife Housing Innovation Showcase May 2012.

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The development of the system has involved Developers, Manufacturers, Architects, Academia & Material Suppliers working collaboratively to produce a housing system that supports these aims through the use of homegrown C16 timber, thermal mass, recycled materials, high thermal performance, offsite built quality and low to zero carbon emissions using appropriate innovative construction techniques that are readily adoptable by the house building sector.

Tom Leggeat, Springfield's partnership director, said: "This is a community project, using locally sourced materials and manpower. Working closely with Adam Smith College, we intend to use talented young electrical, joinery and plumbing apprentices to fit out the e.Core units. We are also creating jobs in Fife by using local unskilled labour to help fabricate the sub components."



### Supply Chain Partners



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DESIGN OUTPUTS	PLOT 19	PLOT 20	PLOT 21
	2016 REGS	2013 REGS	2010 REGS
<b>CONSTRUCTION</b>	K2 (Closed Panel Timber Frame) e.CORE (Bathroom Pods)		
<b>GROSS INDICATIVE FLOOR AREA M<sup>2</sup></b>	83.20	83.20	83.20
<b>AVERAGE SUPERSTRUCTURE COSTS PER UNIT (INCLUDING RENEWABLES / EXCLUDING PRELIMS)</b>	£95,038	£80,248	£73,471
<b>AVERAGE M<sup>2</sup> SUPERSTRUCTURE COSTS PER UNIT</b>	£1,142	£965	£883
<b>CONSTRUCTION PERIOD (SUPERSTRUCTURE)</b>	<b>NUMBER OF WORKING DAYS OFF / PRE SITE :</b>		20
	<b>NUMBER OF WORKING DAYS ON SITE :</b>		71



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	2016 REGS	2013 REGS	2010 REGS
SAP RATING (BASED ON 09 SAP)	101A	92A	83B
C02 RATING (BASED ON 09 SAP)	102A	96A	87B
<b>U VALUES</b>			
WINDOWS	0.8	0.8	0.8
DOORS	1.4	1.4	1.4
EXTERNAL WALLS	0.15	0.15	0.15
FLOORS	0.15	0.15	0.15
ROOF	0.09	0.09	0.15
<b>RENEWABLES</b>			
ELECTRICITY GENERATED	£296.92	£114.47	N/A
AIR PERMEABILITY (Design Stage)	3.0	3.0	5.0
AIR PERMEABILITY (Actual)	3.87	4.80	4.71
VENTILATION SYSTEM	Mechanical Ventilation Heat Recovery (91%)		
BOILER EFFICIENCY	N/A	(Combi) 91%	
<b>ENERGY USE</b>			
SPACE HEATING (KWH/YEAR)	320.52	580.72	1860.00
WATER HEATING (KWH/YEAR)	1534.82	1874.11	2084.22
LIGHTING (KWH/YEAR)	401.64	401.64	401.64
ANCILLARY (KWH/YEAR)	129.42	358.95	304.42
TOTAL (KWH/YEAR)	2386.40	3215.42	4650.28
<b>ENERGY COST</b>			
SPACE HEATING (£/YEAR)	£35.94	£23.13	£73.75
WATER HEATING (£/YEAR)	£137.74	£58.10	£64.61
LIGHTING (£/YEAR)	£48.26	£48.26	£48.26
ANCILLARY (£/YEAR)	£40.57	£146.92	£140.60
TOTAL ENERGY COST (£/YEAR) EXCLUDING SAVING FROM ENERGY GENERATED	£262.51	£276.41	£327.22

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