



Programme Area: Buildings

Project: Building Supply Chain for Mass Refurbishment of Houses

Title: Appendix 4 - FMEA Workshop Summary Results Survey Process

Abstract:

Please note this report was produced in 2011/2012 and its contents may be out of date. This document is an appendix of Deliverable 4.2 – Draft Supply Chain Scenarios.

Context:

This project looked at designing a supply chain solution to improve the energy efficiency of the vast majority of the 26 million UK homes which will still be in use by 2050. It looked to identify ways in which the refurbishment and retrofitting of existing residential properties can be accelerated by industrialising the processes of design, supply and implementation, while stimulating demand from householders by exploiting additional opportunities that come with extensive building refurbishment. The project developed a top-to-bottom process, using a method of analysing the most cost-effective package of measures suitable for a particular property, through to how these will be installed with the minimum disruption to the householder. This includes identifying the skills required of the people on the ground as well as the optimum material distribution networks to supply them with exactly what is required and when.

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Survey Process FMEA Study

Doors / Windows

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
6	Design style / condition	9	5	8	360	l	h	Y
2	Dimensional accuracy	9	5	7	315	l	h	R
11	Door furniture	7	5	5	175	l	h	Y
4	Trickle vent	5	4	5	160	l	l	R
13	Door type / access needs	8	3	3	72			R
8	Int/ext acces reqd	6	4	2	48			Y
3	Window type	10	2	2	40			Y/R
7	Front door locn. Lobby	5	3	2	30			Y
1	Window / door count	8	1	1	8	l	h	Y
10	French / patio doors	4	2	1	8			Y
5	Wall finish / décor							Y
9	Wall moisture							R
12	Aspect	6	6	8		l	l	Y
14	No lintel above window							R
15	Frameless windows							

Internal Walls

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
5.1	Accessible IWI room by room Estimate	5	8	8	320	L	H	R
2	Asbestos	10	4	8	320	l	h	R
13	Penetrations / pipes / electrical	8	4	8	256	L	H	R
5	Accessible IWI room by room	3	8	8	192	L	H	R
7	Wall construction U value	8	3	2	144	H	H	R
9	Electrical wiring condition	9	2	5	90			R
14	Double / secondary glazing	6	2	2	24			Y
12	Door interference					L	H	
11	Stud wall / floor cold bridge					H	H	R
10	Future risk caused by peoposals							
8	Radiator pipework							R
6	bay window structural stability					L	H	R
4	Floor areas							R
3	Wall construction							R/Y
1	Floor plan							R

Roofs

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
11	Ventilation	8	7	8	448	h	h	r
7	Access / CDM	10	6	7	420	h	h	r
10	Services, electrics, walter tank, ariel	10	4	8	320	h	l	r
16	Verge, eaves, overhang	6	6	8	288	l	l	r
6	Dimensions	8	3	7	168	h	h	y
8	Growth / dry rot	9	2	9	162	h	h	r
12	Chimney condition and use	7	2	7	98	h	h	r
1	Strength /structural integrity , bracing	10	1	8	80	h	h	Y
13	Dormers, velux, room in roof	5	2	6	60	l	l	y
14	Existing insulation	3	3	8	48	l	l	r
4	Possessions	5	1	8	40			r
9	Infestations, bats etc	2	2	9	36	h	l	r
17	Gutters, drainage	3	2	7	35	l	l	G
3	Type of roof covering	2	2	8	32	h	l	r
15	Roof type, flat / gable, warm, cold	9	2	1	18	h	h	G
2	Condition / age of roof	4	4	3	16	h	l	r
5	Orientation / pitch	8	1	1	8	h	h	G

Extensions

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
6	Connection to orig. building / thermal bridge	8	10	8	640	h	h	r
7	DPC	8	10	8	640	h	l	r
8	Doors to conservatory	5	8	40	480	h	l	r
9	Current cavity fill	6	8	10	480	h	l	r
1	Structure, wall type; solid, cavity.	8	6	8	384	h	l	r
2	Cladding, wall material	8	6	8	384	h	l	r
5	Services current	10	4	8	320	h	l	r
3	all material condition	8	4	7	224	h	h	r
4	Dimensions int and ext	8	3	7	168	h	l	y
10	External drainage	7	3	7	147	l	l	r

External walls

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
4	Damp testing	10	5	10	500	l	h	
6	Current insulation	3	3	27	243	h	l	
3	Condition suitable for fixing EWI	10	3	8	240	h	h	
9	Flood risk	12	2	10	200			G
5	Wall tie integrity	10	8	2	160	h	h	
14	Thermal bridging to glazing	6	2	7	84	h	h	
11	Supervisor skills	10	2	3	60	l	l	G
2	Wall dimensions	2	3	2	12	h	l	
1	Construction method	1	8	1	8	l	l	G
7	External services, electric, satellite TV	2	2	2	8	l	l	
8	Air tightness	2	2	2	8	h	l	
10	Scale and exception survey	3	2	1	6	l	l	
12	Ext wall imaging	2	2	1	4	h	l	
15	Asbestos / hazardous materials	1	1	1	1			G
13	Cavity inspection							

Floors

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
1	Construction type	8	3	8	244	h	l	
2	Damp test	10	5	3	150	h	l	
4	Structural test	10	3	1	30			
3	Measure floor area	2	2	3	12			

Site and access

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
4	Surroundings	3	5	7	105	h	l	y
3	Supply of energy (gas) oil? Solid fuel	9	2	2	36	h	l	G
1	Orientation	8	2	2	32	h	l	G
2	Extensions and offshoots	2	2	2	8	h	h	G
6	Construction type and age	2	2	2	8	h	l	y
5	Access					h	l	y

Householder

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
6	Customer expectations	10	5	8	400			y/r
7	Advice requirements	7	4	9	252	h	h	r
5	Education and comms requirements	6	4	8	192	h	h	
1	Triggers and future plans	3	8	7	168	h	h	y
4	Existing heating system	8	2	7	112	h	l	r
2	Contents	7	3	2	42	h	h	
9	Occupancy patterns	6	2	3	36	h	h	
3	Vulnerable customers	7	2	2	28			
8	No of people in household	5	2	2	20	h	h	g