Programme Area: Buildings

Project: Building Supply Chain for Mass Refurbishment of Houses

Title: Appendix 4 - FMEA Workshop Summary Results Installation 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Please note this report was produced in 2011/2012 and its contents may be out of date.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.

Installation Process FMEA Study

Extensions

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
1	Solution to cold bridges		9	2	9	162		
2	Break into wall to solve cold bridge		9	5	9	405		

Roofs

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
1	Rafter level insulation fitted externally		3	2	4	24		
2	Rafter level insulation fitted internally		3	4	4	48		
3	Ventilation		9	2	8	144		
4	Moisture membrane		9	2	8	144		
5	Joist level insulation process		5	9	2	90		
6	Dormers		2	9	2	36		

Windows and doors

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
1	Pre prep activit logistics / storage		7	4	1	28		
2	Check all windows and doors and correct pı		8	4	2	64		
3	Remove existing doors and wondows		7	2	1	14		
4	Dispose of old windows and doors		9	7	2	126		
5	Assess make good apertures		5	3	2	30		
6	Install doors / windows		9	2	1	18		

Internal walls

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
1	Prep for fitting		7	4	1	28		
2	Removal, wall sockets, radiators, flooring, s		9	7	2	126		
3	Insstall pre-cut boards		8	6	3	144		
4	Testing, thermal imaging, air tightness							
5	Remove internall wall insulation waste		8	2	1	16		
6	Make good, trim carpet, reinstall		7	6	6	252		

Site and access

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
1	Parking plan		6	7	2	84	M	
2	Size of vehicle		8	2	1	16	L	
3	Site and access		9	3	2	36	M	
4	Impact on neighbourhood		10	4	2	80		
5	Scaffolding working at height		10	1	2	20	M	
6	Utilities, continuity		2	3	2	12		
7	Meter movement		10	3	1	30	M	
8	Storage of products		7	1	2	14	M	
9	Number of operatives		9	2	2	36	M	
10	Planning policy /conditions		10	3	5	150	H	
11	Party wall boundary		10	3	5	150	L	
12	Neighbours		9	5	1	45	L	
13	Site safety		10	2	3	60		
14	Possession storage		10	2	1	20	L/M	
15	Security		10	1	1	10	L	
16	Welfare faculities		5	1	1	5	L	

Householder

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
1	CRB Check		5	2	8	80	M	
2	Maintain services		9	2	2	36	L	
3	Damage to propery / possessions					L		
4	Single point of contact		6	2	7	84	M	
5	Future proofing		3	7	8	168	H	
6	Control of pet		9	2	2	36	M	
7	Occupation during works		9	3	8	216		
8	Handover training		8	8	2	108	H	
9	Consequential works		9	2	8	144		
10	Trust		10	2	5	100	H	
11	On site variatons		4	2	2	16	L	
12	Installation of controls		8	1	7	56		
13	Manage expectations		7	3	1	21	L	
14	Mess		8	1	1	8	L	
15	Clear quality plan system		8	1	2	16	L	

Extwall

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
1	Prepare site, scaffolding etc.		9	2	2	36		
1a	Prepare site, scaffolding etc.		2	3	2	24		
1b	Prepare wal to receive insulation		8	3	7	168		
2	Attach insulation		6	5	4	120		
3	Install mesh		7	2	9	126		
4	Finish and remove scaffolding		3	2	1	6		

Floors

Ticket No	Process Output	s	f	d	RPN	Difficulty	Impact	Ext.
1	Prepare floor for process		8	4	1	32		
2	Put membrane in		3	3	2	18		
3	Lay insulation flat seal perimeter		8	7	4	224		
4	Lay surface finish							
5	Reinstate skirting		9	4	1	36		