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# Get It Right Initiative

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Lean  
CONSTRUCTION IRELAND

Get It Right Initiative



SECANT PILE PROBING  
CO-ORDINATES  
BLOCK 7

CO-ORD NO.	X (m)	Y (m)
31	174.66	33.79
32	183.42	31.32
33	181.55	32.26
34	201.89	32.94
35	204.22	32.98
36	207.14	38.79
37	213.92	38.79
38	208.18	42.60
39	248.93	52.78
310	250.43	36.23
311	248.82	26.08
312	345.83	33.79
313	262.26	33.79
314	262.26	32.05
315	189.72	32.07
316	199.72	33.79

THE CONTRACTOR SHALL UNDERTAKE THE  
EXCAVATION SEGMENTS USING TRENCH SUPPORT  
WHERE NECESSARY. THE SEGMENTS SHALL BE  
BACKFILLED PRIOR TO COMMENCING NEXT SEGMENT.

ANY EXCESS MATERIAL SHALL BE CRUSHED TO FORM #2 MATERIAL FOR THE MIXED USE BASEMENT  
FINISH MAT IN ACCORDANCE WITH TABLE A-1 SPECIFICATION FOR HIGHWAY WORK VOL. 1

PILE PROBING CO-ORDINATE BLOCK 7			
CO-ORD NO	X (m)	Y	
1	3000.00	0	
2	3000.00	1	
3	2750.00	0	
4	3000.00	0	
5	3000.00	1	
6	2750.00	0	
7	3150.00	0	
8	2750.00	0	
9	2750.00	1	
10	2750.00	0	
11	3150.00	0	
12	3150.00	1	
13	3150.00	0	
14	2750.00	0	
15	3150.00	0	
16	3150.00	1	
17	3150.00	0	
18	3150.00	1	
19	3150.00	0	
20	3150.00	1	
21	3150.00	0	
22	3150.00	1	
23	3150.00	0	
24	3150.00	1	
25	3150.00	0	
26	3150.00	1	
27	3150.00	0	
28	3150.00	1	
29	3150.00	0	
30	3150.00	1	
31	3150.00	0	
32	3150.00	1	
33	3150.00	0	
34	3150.00	1	
35	3150.00	0	
36	3150.00	1	
37	3150.00	0	
38	3150.00	1	
39	3150.00	0	
40	3150.00	1	
41	3150.00	0	
42	3150.00	1	
43	2750.00	0	
44	2750.00	1	
45	2750.00	0	
46	2750.00	1	
47	2750.00	0	
48	2750.00	1	
49	2750.00	0	
50	2750.00	1	
51	2750.00	0	
52	2750.00	1	
53	2750.00	0	
54	2750.00	1	
55	2750.00	0	
56	2750.00	1	
57	2750.00	0	
58	2750.00	1	
59	2750.00	0	
60	2750.00	1	
61	2750.00	0	
62	2750.00	1	
63	2750.00	0	
64	2750.00	1	
65	2750.00	0	
66	2750.00	1	
67	2750.00	0	
68	2750.00	1	
69	2750.00	0	
70	2750.00	1	
71	2750.00	0	
72	2750.00	1	
73	2750.00	0	
74	2750.00	1	
75	2750.00	0	
76	2750.00	1	
77	2750.00	0	
78	2750.00	1	
79	2750.00	0	
80	2750.00	1	
81	2750.00	0	
82	2750.00	1	
83	2750.00	0	
84	2750.00	1	
85	2750.00	0	
86	2750.00	1	
87	2750.00	0	
88	2750.00	1	
89	2750.00	0	
90	2750.00	1	
91	2750.00	0	
92	2750.00	1	
93	2750.00	0	
94	2750.00	1	
95	2750.00	0	
96	2750.00	1	
97	2750.00	0	
98	2750.00	1	
99	2750.00	0	
100	2750.00	1	


CO-GRID NO.	X (m)	Y (m)
82	182.03	5.15
83	182.03	5.15
84	183.57	5.7
85	183.57	5.7
86	185.11	6.25
87	185.11	6.25
88	186.65	6.8
89	186.65	6.8
90	188.19	7.35
91	188.19	7.35
92	189.73	7.9
93	189.73	7.9
94	191.27	8.45
95	191.27	8.45
96	192.81	9.0
97	192.81	9.0
98	194.35	9.55
99	194.35	9.55
100	195.89	10.1
101	195.89	10.1
102	197.43	10.65
103	197.43	10.65
104	198.97	11.2
105	198.97	11.2
106	200.51	11.75
107	200.51	11.75
108	202.05	12.3
109	202.05	12.3
110	203.59	12.85
111	203.59	12.85
112	205.13	13.4
113	205.13	13.4
114	206.67	13.95
115	206.67	13.95
116	208.21	14.5
117	208.21	14.5
118	209.75	15.05
119	209.75	15.05
120	211.29	15.6
121	211.29	15.6
122	212.83	16.15
123	212.83	16.15
124	214.37	16.7
125	214.37	16.7
126	215.91	17.25
127	215.91	17.25
128	217.45	17.8
129	217.45	17.8
130	218.99	18.35
131	218.99	18.35
132	220.53	18.9
133	220.53	18.9
134	222.07	19.45
135	222.07	19.45
136	223.61	20.0
137	223.61	20.0
138	225.15	20.55
139	225.15	20.55
140	226.69	21.1
141	226.69	21.1
142	228.23	21.65
143	228.23	21.65
144	229.77	22.2
145	229.77	22.2
146	231.31	22.75
147	231.31	22.75
148	232.85	23.3
149	232.85	23.3
150	234.39	23.85
151	234.39	23.85
152	235.93	24.4
153	235.93	24.4
154	237.47	24.95
155	237.47	24.95
156	239.01	25.5
157	239.01	25.5
158	240.55	26.05
159	240.55	26.05
160	242.09	26.6
161	242.09	26.6
162	243.63	27.15
163	243.63	27.15
164	245.17	27.7
165	245.17	27.7
166	246.71	28.25
167	246.71	28.25
168	248.25	28.8
169	248.25	28.8
170	249.79	29.35
171	249.79	29.35
172	251.33	29.9
173	251.33	29.9
174	252.87	30.45
175	252.87	30.45
176	254.41	31.0
177	254.41	31.0
178	255.95	31.55
179	255.95	31.55
180	257.49	32.1
181	257.49	32.1
182	259.03	32.65
183	259.03	32.65
184	260.57	33.2
185	260.57	33.2
186	262.11	33.75
187	262.11	33.75
188	263.65	34.3
189	263.65	34.3
190	265.19	34.85
191	265.19	34.85
192	266.73	35.4
193	266.73	35.4
194	268.27	35.95
195	268.27	35.95
196	269.81	36.5
197	269.81	36.5
198	271.35	37.05
199	271.35	37.05
200	272.89	37.6
201	272.89	37.6
202	274.43	38.15
203	274.43	38.15

PILE PROBING CO-ORDINATE BLOCK 7		
COORD NO	X (m)	Y (m)
104	201.45	6.0
105	201.45	6.0
106	201.45	6.0
107	201.45	6.0
108	201.45	6.0
109	201.45	6.0
110	201.45	6.0
111	201.45	6.0
112	201.45	6.0
113	201.78	6.0
114	201.78	6.0
115	201.78	6.0
116	201.78	6.0
117	201.78	6.0
118	201.78	6.0
119	201.78	6.0
120	201.78	6.0
121	201.78	6.0
122	201.78	6.0
123	201.78	6.0
124	201.78	6.0
125	201.78	6.0
126	201.78	6.0
127	201.78	6.0
128	201.78	6.0
129	201.78	6.0
130	201.78	6.0
131	201.78	6.0
132	201.78	6.0
133	201.78	6.0
134	201.78	6.0
135	201.78	6.0
136	201.78	6.0
137	201.78	6.0
138	201.78	6.0
139	201.78	6.0
140	201.78	6.0
141	201.78	6.0
142	201.78	6.0
143	201.78	6.0
144	201.78	6.0
145	201.78	6.0
146	201.78	6.0
147	201.78	6.0
148	201.78	6.0
149	201.78	6.0
150	201.78	6.0
151	201.78	6.0
152	201.78	6.0
153	201.78	6.0
154	201.78	6.0
155	201.78	6.0
156	201.78	6.0
157	201.78	6.0
158	201.78	6.0
159	201.78	6.0
160	201.78	6.0
161	201.78	6.0
162	201.78	6.0
163	201.78	6.0
164	201.78	6.0
165	201.78	6.0
166	201.78	6.0
167	201.78	6.0
168	201.78	6.0
169	201.78	6.0
170	201.78	6.0
171	201.78	6.0
172	201.78	6.0
173	201.78	6.0
174	201.78	6.0
175	201.78	6.0
176	201.78	6.0
177	201.78	6.0
178	201.78	6.0
179	201.78	6.0
180	201.78	6.0
181	201.78	6.0
182	201.78	6.0
183	201.78	6.0
184	201.78	6.0
185	201.78	6.0
186	201.78	6.0
187	201.78	6.0
188	201.78	6.0
189	201.78	6.0
190	201.78	6.0
191	201.78	6.0
192	201.78	6.0
193	201.78	6.0
194	201.78	6.0
195	201.78	6.0
196	201.78	6.0
197	201.78	6.0
198	201.78	6.0
199	201.78	6.0
200	201.78	6.0
201	201.78	6.0
202	201.78	6.0
203	201.78	6.0
204	201.78	6.0
205	201.78	6.0
206	201.78	6.0
207	201.78	6.0
208	201.78	6.0
209	201.78	6.0
210	201.78	6.0
211	201.78	6.0
212	201.78	6.0
213	201.78	6.0
214	201.78	6.0
215	201.78	6.0
216	201.78	6.0
217	201.78	6.0
218	201.78	6.0
219	201.78	6.0
220	201.78	6.0
221	201.78	6.0
222	201.78	6.0
223	201.78	6.0
224	201.78	6.0
225	201.78	6.0
226	201.78	6.0
227	201.78	6.0
228	201.78	6.0
229	201.78	6.0
230	201.78	6.0

PILE PROBING COORDINATE BLOCK 7			
CG-000	NO	X (m)	Y (m)
	240	154.973	48.1
	241	155.000	48.1
	242	155.027	48.1
	243	155.054	48.1
	244	155.081	48.1
	245	155.108	48.1
	246	155.135	48.1
	247	155.162	48.1
	248	155.189	48.1
	249	155.216	48.1
	250	155.243	48.1
	251	155.270	48.1
	252	155.297	48.1
	253	155.324	48.1
	254	155.351	48.1
	255	155.378	48.1
	256	155.405	48.1
	257	155.432	48.1
	258	155.459	48.1
	259	155.486	48.1
	260	155.513	48.1
	261	155.540	48.1
	262	155.567	48.1
	263	155.594	48.1
	264	155.621	48.1
	265	155.648	48.1
	266	155.675	48.1
	267	155.702	48.1
	268	155.729	48.1
	269	155.756	48.1
	270	155.783	48.1
	271	155.810	48.1
	272	155.837	48.1
	273	155.864	48.1
	274	155.891	48.1
	275	155.918	48.1
	276	155.945	48.1
	277	155.972	48.1
	278	156.000	48.1
	279	156.027	48.1
	280	156.054	48.1
	281	156.081	48.1
	282	156.108	48.1
	283	156.135	48.1
	284	156.162	48.1
	285	156.189	48.1
	286	156.216	48.1
	287	156.243	48.1
	288	156.270	48.1
	289	156.297	48.1
	290	156.324	48.1
	291	156.351	48.1
	292	156.378	48.1
	293	156.405	48.1
	294	156.432	48.1
	295	156.459	48.1
	296	156.486	48.1
	297	156.513	48.1
	298	156.540	48.1
	299	156.567	48.1
	300	156.594	48.1
	301	156.621	48.1
	302	156.648	48.1
	303	156.675	48.1
	304	156.702	48.1
	305	156.729	48.1
	306	156.756	48.1
	307	156.783	48.1
	308	156.810	48.1
	309	156.837	48.1
	310	156.864	48.1
	311	156.891	48.1
	312	156.918	48.1
	313	156.945	48.1
	314	156.972	48.1
	315	157.000	48.1

PILE PROBING CO-ORDINATE BLOCK 7			
CO-ORD	X (m)	Y (m)	DEPTH (m)
320	229.68	33.0	1.0
326	229.68	33.0	1.0
336	229.68	33.0	1.0
346	229.68	33.0	1.0
356	229.68	33.0	1.0
366	229.68	33.0	1.0
376	229.68	33.0	1.0
386	229.68	33.0	1.0
396	229.68	33.0	1.0
406	229.68	33.0	1.0
416	229.68	33.0	1.0
426	229.68	33.0	1.0
436	229.68	33.0	1.0
446	229.68	33.0	1.0
456	229.68	33.0	1.0
466	229.68	33.0	1.0
476	229.68	33.0	1.0
486	229.68	33.0	1.0
496	229.68	33.0	1.0
506	229.68	33.0	1.0
516	229.68	33.0	1.0
526	229.68	33.0	1.0
536	229.68	33.0	1.0
546	229.68	33.0	1.0
556	229.68	33.0	1.0
566	229.68	33.0	1.0
576	229.68	33.0	1.0
586	229.68	33.0	1.0
596	229.68	33.0	1.0
606	229.68	33.0	1.0
616	229.68	33.0	1.0
626	229.68	33.0	1.0
636	229.68	33.0	1.0
646	229.68	33.0	1.0
656	229.68	33.0	1.0
666	229.68	33.0	1.0
676	229.68	33.0	1.0
686	229.68	33.0	1.0
696	229.68	33.0	1.0
706	229.68	33.0	1.0
716	229.68	33.0	1.0
726	229.68	33.0	1.0
736	229.68	33.0	1.0
746	229.68	33.0	1.0
756	229.68	33.0	1.0
766	229.68	33.0	1.0
776	229.68	33.0	1.0
786	229.68	33.0	1.0
796	229.68	33.0	1.0
806	229.68	33.0	1.0
816	229.68	33.0	1.0
826	229.68	33.0	1.0
836	229.68	33.0	1.0
846	229.68	33.0	1.0
856	229.68	33.0	1.0
866	229.68	33.0	1.0
876	229.68	33.0	1.0
886	229.68	33.0	1.0
896	229.68	33.0	1.0
906	229.68	33.0	1.0
916	229.68	33.0	1.0
926	229.68	33.0	1.0
936	229.68	33.0	1.0
946	229.68	33.0	1.0
956	229.68	33.0	1.0
966	229.68	33.0	1.0
976	229.68	33.0	1.0
986	229.68	33.0	1.0
996	229.68	33.0	1.0
1006	229.68	33.0	1.0
1016	229.68	33.0	1.0
1026	229.68	33.0	1.0
1036	229.68	33.0	1.0
1046	229.68	33.0	1.0
1056	229.68	33.0	1.0
1066	229.68	33.0	1.0
1076	229.68	33.0	1.0
1086	229.68	33.0	1.0
1096	229.68	33.0	1.0
1106	229.68	33.0	1.0
1116	229.68	33.0	1.0
1126	229.68	33.0	1.0
1136	229.68	33.0	1.0
1146	229.68	33.0	1.0
1156	229.68	33.0	1.0
1166	229.68	33.0	1.0
1176	229.68	33.0	1.0
1186	229.68	33.0	1.0
1196	229.68	33.0	1.0
1206	229.68	33.0	1.0
1216	229.68	33.0	1.0
1226	229.68	33.0	1.0
1236	229.68	33.0	1.0
1246	229.68	33.0	1.0
1256	229.68	33.0	1.0
1266	229.68	33.0	1.0
1276	229.68	33.0	1.0
1286	229.68	33.0	1.0
1296	229.68	33.0	1.0
1306	229.68	33.0	1.0
1316	229.68	33.0	1.0
1326	229.68	33.0	1.0
1336	229.68	33.0	1.0
1346	229.68	33.0	1.0
1356	229.68	33.0	1.0
1366	229.68	33.0	1.0
1376	229.68	33.0	1.0
1386	229.68	33.0	1.0
1396	229.68	33.0	1.0
1406	229.68	33.0	1.0
1416	229.68	33.0	1.0
1426	229.68	33.0	1.0
1436	229.68	33.0	1.0
1446	229.68	33.0	1.0
1456	229.68	33.0	1.0
1466	229.68	33.0	1.0
1476	229.68	33.0	1.0
1486	229.68	33.0	1.0
1496	229.68	33.0	1.0
1506	229.68	33.0	1.0
1516	229.68	33.0	1.0
1526	229.68	33.0	1.0
1536	229.68	33.0	1.0
1546	229.68	33.0	1.0
1556	229.68	33.0	1.0
1566	229.68	33.0	1.0
1576	229.68	33.0	1.0
1586	229.68	33.0	1.0
1596	229.68	33.0	1.0
1606	229.68	33.0	1.0
1616	229.68	33.0	1.0
1626	229.68	33.0	1.0
1636	229.68	33.0	1.0
1646	229.68	33.0	1.0
1656	229.68	33.0	1.0
1666	229.68	33.0	1.0
1676	229.68	33.0	1.0
1686	229.68	33.0	1.0
1696	229.68	33.0	1.0
1706	229.68	33.0	1.0
1716	229.68	33.0	1.0
1726	229.68	33.0	1.0
1736	229.68	33.0	1.0
1746	229.68	33.0	1.0
1756	229.68	33.0	1.0
1766	229.68	33.0	1.0
1776	229.68	33.0	1.0
1786	229.68	33.0	1.0
1796	229.68	33.0	1.0
1806	229.68	33.0	1.0
1816	229.68	33.0	1.0
1826	229.68	33.0	1.0
1836	229.68	33.0	1.0
1846	229.68	33.0	1.0
1856	229.68	33.0	1.0
1866	229.68	33.0	1.0
1876	229.68	33.0	1.0
1886	229.68	33.0	1.0
1896	229.68	33.0	1.0
1906	229.68	33.0	1.0
1916	229.68	33.0	1.0
1926	229.68	33.0	1.0
1936	229.68	33.0	1.0
1946	229.68	33.0	1.0
1956	229.68	33.0	1.0
1966	229.68	33.0	1.0
1976	229.68	33.0	1.0
1986	229.68	33.0	1.0
1996	229.68	33.0	1.0
2006	229.68	33.0	1.0
2016	229.68	33.0	1.0
2026	229.68	33.0	1.0
2036	229.68	33.0	1.0
2046	229.68	33.0	1.0
2056	229.68	33.0	1.0
2066	229.68	33.0	1.0
2076	229.68	33.0	1.0
2086	229.68	33.0	1.0
2096	229.68	33.0	1.0
2106	229.68	33.0	1.0
2116	229.68	33.0	1.0
2126	229.68	33.0	1.0
2136	229.68	33.0	1.0
2146	229.68	33.0	1.0
2156	229.68	33.0	1.0
2166	229.68	33.0	1.0
2176	229.68	33.0	1.0
2186	229.68	33.0	1.0
2196	229.68	33.0	1.0
2206	229.68	33.0	1.0
2216	229.68	33.0	1.0
2226	229.68	33.0	1.0
2236	229.68	33.0	1.0
2246	229.68	33.0	1.0
2256	229.68	33.0	1.0
2266	229.68	33.0	1.0
2276	229.68	33.0	1.0
2286	229.68	33.0	1.0
2296	229.68	33.0	1.0
2306	229.68	33.0	1.0
2316	229.68	33.0	1.0
2326	229.68	33.0	1.0
2336	229.68	33.0	1.0
2346	229.68	33.0	1.0
2356	229.68	33.0	1.0
2366	229.68	33.0	1.0
2376	229.68	33.0	1.0
2386	229.68	33.0	1.0
2396	229.68	33.0	1.0
2406	229.68	33.0	1.0
2416	229.68	33.0	1.0
2426	229.68	33.0	1.0
2436	229.68	33.0	1.0
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2456	229.68	33.0	1.0
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2506	229.68	33.0	1.0
2516	229.68	33.0	1.0
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2646	229.68	33.0	1.0
2656	229.68	33.0	1.0
2666	229.68	33.0	1.0
2676	229.68	33.0	1.0
2686	229.68	33.0	1.0
2696	229.68	33.0	1.0
2706	229.68	33.0	1.0
2716	229.68	33.0	1.0
2726	229.68	33.0	1.0
2736	229.68	33.0	1.0
2746	229.68	33.0	1.0
2756	229.68	33.0	1.0
2766	229.68	33.0	1.0
2776	229.68	33.0	1.0
2786	229.68	33.0	1.0
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2806	229.68	33.0	1.0
2816	229.68	33.0	1.0
2826	229.68	33.0	1.0
2836	229.68	33.0	1.0
2846	229.68	33.0	1.0
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2966	229.68	33.0	1.0
2976	229.68	33.0	1.0
2986	229.68	33.0	1.0
2996	229.68	33.0	1.0
3006	229.68	33.0	1.0
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3026	229.68	33.0	1.0
3036	229.68	33.0	1.0
3046	229.68	33.0	1.0
3056	229.68	33.0	1.0
3066	229.68	33.0	1.0
3076	229.68	33.0	1.0
3086	229.68	33.0	1.0
3096	229.68	33.0	1.0
3106	229.68	33.0	1.0
3116	229.68	33.0	1.0
3126	229.68	33.0	1.0
3136	229.68	33.0	1.0
3146	229.68	33.0	1.0
3156	229.68	33.0	1.0
3166	229.68	33.0	1.0
3176	229.68	33.0	1.0
3186	229.68	33.0	1.0
3196	229.68	33.0	1.0
3206	229.68	33.0	1.0
3216	229.68	33.0	1.0
3226	229.68	33.0	1.0
3236	229.68	33.0	1.0
3246	229.68	33.0	1.0
3256	229.68	33.0	1.0
3266	229.68	33.0	1.0
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3316	229.68	33.0	1.0
3326	229.68	33.0	1.0
3336			

**LEGEND:**



HATCHED ZONE REPRESENTS A 1m WIDE EXCAVATED TRENCH TO 300mm DEPTH TO LOCATE AND DISMOUNT ANY EXISTING OBSTRUCTIONS. THE SET OUT POINT FOR TRENCH IS THE CENTRE LINE OR CENTRE OF TRENCH.

2. DATED FOR CONSTRUCTION \_\_\_\_\_, THIRTY- \_\_\_\_\_  
Noted for accuracy and stated \_\_\_\_\_ date, 2011



**Chert**  
**L&R**  
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[info@edwardellis.com](mailto:info@edwardellis.com)

Project GREENWICH WHARF

### INVESTIGATION AND REMOVAL OF OBSTRUCTION

Scale: 1:200000 Date: 03/07/00

Drawn	WT	Ch/M	WT
Job No.	194-1Ab	Rev	0



## Get It Right Initiative



## **Personal**

Frustration and stress

Overwork

Damaged reputations & relationships

Career failure

Poor health, injury and death

## **Clients & Society**

Poor value for money

Missed opportunities

Environmental damage

Wasted resources

Poor health and loss of life

# **Getting it WRONG**

## **Business**

Damaged relationships

Reputational damage

Financial loss

Business failure

Criminal prosecution

## **Personal**

Satisfaction and fulfilment

Balanced workload

Strong reputations & relationships

Career success

Good health and long life

## **Clients & Society**

Great value for money

Opportunities taken

Environmental benefit

Resources conserved

Good health

# **Getting it RIGHT**

## **Business**

Good relationships

Reputational benefit

Financial gain

Business success

No criminal prosecution!

# Get It Right Initiative

Improving value by eliminating error

A Strategy For Change



Supported by

**ice**  
Institution of Civil Engineers

We would like to thank all of those involved in the project providing both in providing funding, information and above all insight.

If you would like to get involved or to know more about the Get It Right Initiative, please send an email to:

[info@getitright.uk.com](mailto:info@getitright.uk.com)

Or call us on: 020 7307 1000

[www.getitrightuk.com](http://www.getitrightuk.com)

**alinea**

love every drop  
anglianwater

**bam**  
nuttall

**BYRNE BROS**

**carillion**  
Making tomorrow a better place

**citb**

**COSTAIN**

**GRAHAM**

**keltbray**

**Imtech**

**PRATER**  
Infrastructure Services  
A Lend Lease Group Company

**Berkeley**  
Designed for life

**Sir Robert McALPINE**

**Southern Water**

**STANHOPE**

**TAYLOR WOODROW**

**Wates**

**expedition**

This is an Expedition R+D project.

**Lean**  
CONSTRUCTION IRELAND

Get It Right Initiative

# The Research Project

- To identify the costs of error, the parts of the process where they happened and the root causes.
- Grounded Theory analysis and strict confidentiality rules
- Literature reviews and desk research to find out what has already been done in the area
- Review of data provided by companies
- Interviews with senior construction professionals
- Online questionnaire (143 responses)
- Delphi style workshops with industry experts to rank the results of the and to assess the relative financial impact



# Wasted Spend on error

## Direct costs of error (5%)

resources used in correcting an error

## Indirect costs of error (7%)

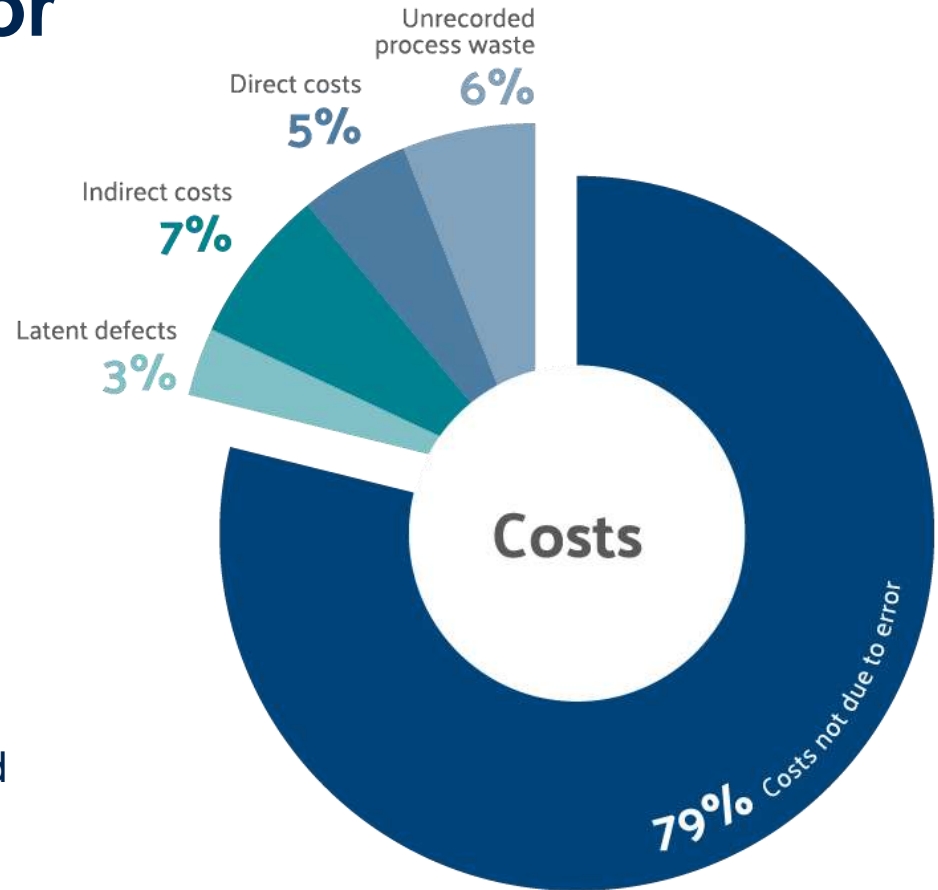
Resources used in follow on work and costs to other parties

## Unrecorded process waste (6%)

Errors occur, are identified and corrected without being recorded

## Latent defects (3%)

remain in place after client acceptance and any 'defects liability period' has passed





An iceberg floating in a blue ocean under a blue sky. The visible tip of the iceberg is small, while the submerged part is much larger, illustrating the concept of hidden costs or inefficiencies. The text is overlaid on the submerged part of the iceberg.

**UK Spends  
£22bn a year.**



# Areas in which cost of error is greatest

- Concrete Works
- Mechanical Systems
- Facades / Cladding
- Electrical Systems
- Finishes
- Roofing
- Basement Waterproofing
- Setting Out
- Drainage
- Drainage to Completed Works
- Steelwork Coatings
- Piling
- Roads & Pavements

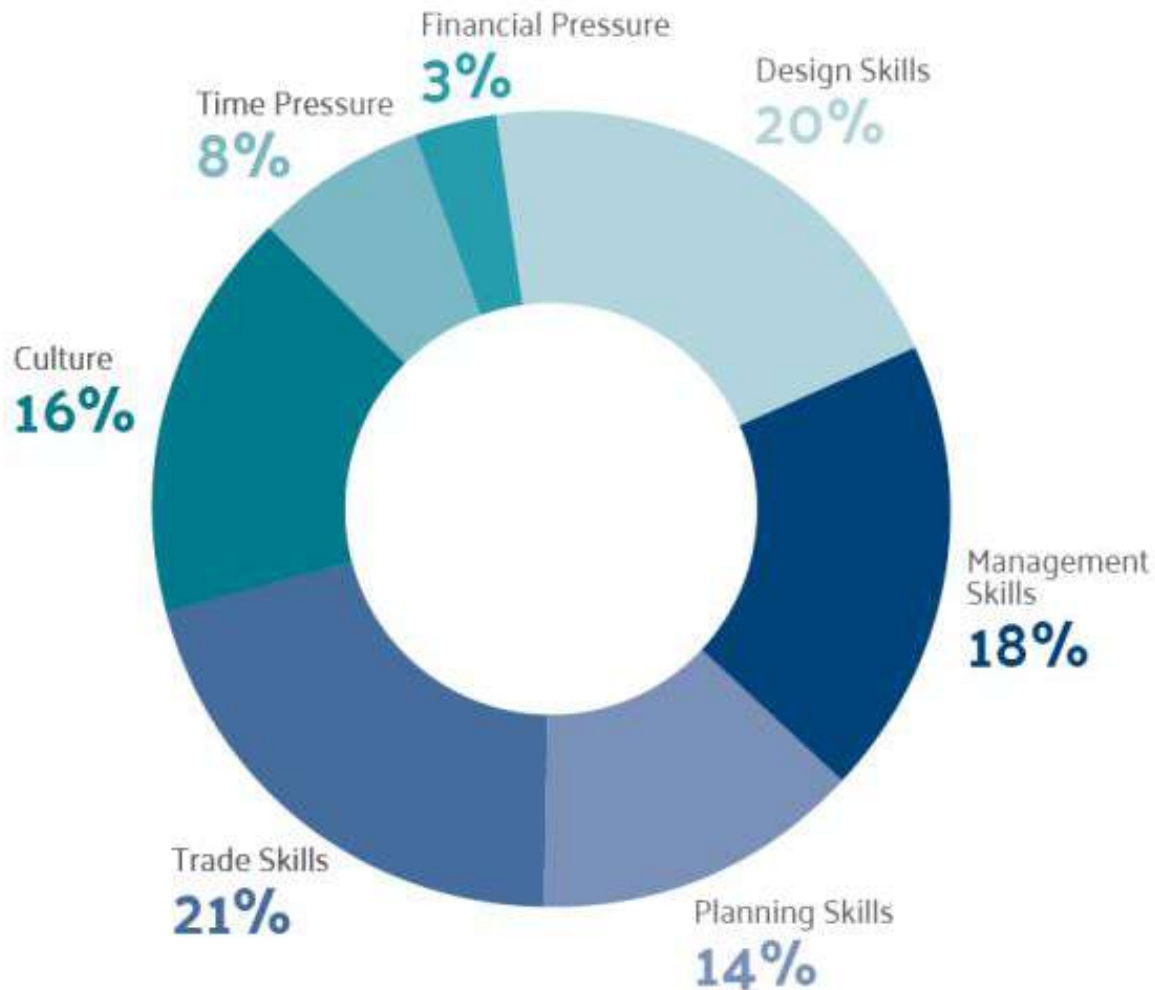


# Root causes of error

- Inadequate planning (from task through to project level)
- Late design changes
- Poorly communicated design information
- Poor culture in relation to quality
- Poorly coordinated and incorrect design information
- Inadequate attention paid in the design to construction
- Excessive commercial (financial and time) pressures
- Poor interface management and design
- Ineffective communication between team members
- Inadequate supervisory skills



# Investing to reduce error



Get It Right Initiative

# GIRI Recommendations

1. A Skills Development Programme
2. A campaign to change and align attitudes
3. Improve management processes and systems
4. Improve construction technology and techniques





# What Now?



---

## Members

**alinea**

**Balfour Beatty**

**bam**  
nuttall

BENNETTS  
ASSOCIATES

**Berkeley**  
Designed for life

**BB** BYRNE  
BROS

**CAREYS**  
WE CARE

**COSTAIN**

  
**expedition**

  
**GallifordTry**

**GRAHAM**

**HOARE  
LEA**

 **HOCHTIEF**

**// howden**

**ice**  
Institution of Civil Engineers

**Imtech**

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Get It Right Initiative

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## Members



# Working Groups to deliver the Strategic Goals

1. Errors in Design
2. Measurement of the Cost and Impact of Errors
3. Training Courses on Culture, Design Management and Interface Management
4. The Use of Technology to Eliminate Error



# Get It Right Diagnostic Tool

## Attitude

1. Do individuals care about avoiding error in their own work?
2. Do individuals care about helping others to avoid error in their work?
3. Do individuals care about the reputation of the company?
4. Do individuals care about the success of the project?
5. Do individuals have appropriate attitudes towards managing change? (and specifically do they have unhelpful 'just crack on' attitudes?)
6. Describe the attitude of the Project Team when an error is found.
7. Describe the attitude of the Operatives when an error is found.

## Culture

1. Is there a clear culture at group level in relation to error?
2. Is there a clear culture at regional level in relation to error?
3. Is there a clear culture at project team in relation to error level?
4. How does this culture manifest itself?

## Operating Environment

1. Is the environment stable?
2. Is the environment protected, sheltered and safe?
3. Is the environment familiar?

## WORKING TO ACHIEVE AN OPTIMAL ERROR RATE

## Systems & processes

1. Does the organisation's QMS adequately support the organisational goals in relation to error?
2. Does the financial management system adequately identify the impact of error on project and organisational financial performance?
3. Does the project planning system properly recognise error rates associated with different technologies and project environments?
4. Do the Project Programmes allow enough time to properly organise activities on site?
5. Does the Safety Management System recognise error and is it integrated with the QMS and other systems?
6. Do contractual arrangements with your Client have an impact on eliminating error?
7. Do contractual arrangements with your Supply Chain have an impact on eliminating error?
8. In what way does procurement address the elimination of error?
9. How do you measure Client satisfaction?

## Information

1. Do operatives and supervisors have enough information about what they are aiming for in terms of quality and process to enable them to achieve project and organisational goals?
2. Do managers have enough information about error types and rates to develop and implement initiatives to deal with systemic problems?
3. Do business leaders have enough information about error types, rates and costs to allow them to intervene if necessary?
4. How is Construction Information provided at Site Level and is it appropriate?
5. Is the wider context of the work being carried out understood by the site team(s)?

## Skill & understanding

1. Do operatives have adequate knowledge in relation to their job tasks (in effect do they know how to do the job properly)?
2. Do supervisors have adequate skills? (in particular in relation to task planning, decision making, briefing, team organisation, motivation and dealing with problems).
3. Do managers have adequate skills? (in particular in relation to leadership, project planning, design management, quality management, sub-contract management and co-ordination and so on).
4. Do all involved know enough about the overall project and construction process to make reliably good decisions when confronted with change?

## Equipment

1. Is the equipment used by operatives adequate?





# WORKING TO ACHIEVE AN OPTIMAL ERROR RATE

## Systems & processes

1. Does the organisation's systems and processes support the achievement of its organisational goals in a way that minimises the risk of error?
2. Does the financial management system adequately identify the impact of errors on the organisation's financial performance?
3. Does the project planning system properly recognise error rates associated with different types of project environments?
4. Do the Project Programmes allow enough flexibility to organise activities on site?
5. Does the Safety Management System recognise errors and is it integrated with the QMS and other systems?
6. Do contractual arrangements with your Client have an impact on eliminating error?
7. Do contractual arrangements with your Supply Chain have an impact on eliminating error?
8. Does the procurement process address the elimination of errors?
9. Does the Client ensure that the project is managed in a way that minimises the risk of error?

## Equipment

1. Is the equipment used by operatives adequate?

## Skill & understanding

1. Do managers have adequate knowledge and understanding of the effect of errors on the project?
2. Do managers have adequate skills? (In relation to leadership, project planning, design management, quality management, sub-contractor management and co-ordination and so on, in the context of the project)
3. Do managers have adequate skills? (In relation to leadership, project planning, design management, quality management, sub-contractor management and co-ordination and so on, in the context of the project)
4. Do all involved know enough about the overall project and construction process to make reliable decisions when confronted with change?

## Information

1. Do managers have enough information to make decisions about the project?
2. Do managers have enough information to make decisions about the project?
3. Do business leaders have enough information to make decisions about the project?
4. Do managers have enough information to make decisions about the project?
5. Is the information provided at site level adequate for the work being carried out under the project?

# Press & Publications



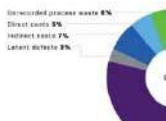
Get It Right Initiative



The Get It Right Initiative emerged from discussions at the Institution of Civil Engineers (ICE) Best Practice Panel, which wondered how much money is being spent as a result of avoidable errors and how these could be prevented. This discussion prompted a significant piece of research, collaboratively funded and informed by a number of major contractors, clients and the Construction Industry Training Board, to explore the costs and causes of avoidable error in the UK construction industry. The results of the research are set out in detail in the Get It Right Initiative research report, published in November 2016 (<http://getitright.uk.com>), the findings of which are discussed below.

**Costs of error**  
Key international studies suggest that the measured direct costs of avoidable errors

**Figure 1**  
Error as a proportion of overall project costs. Source: Get It Right Initiative research report



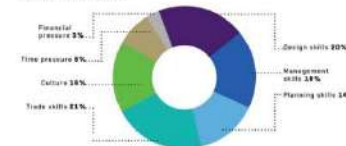
are in the order of 5% of project value or £10m per annum across UK construction, and higher than average profit levels across much of the industry. When day-to-day errors and inefficiencies and indirect costs such as delays caused by these errors are included, the situation worsens, with estimates of the total between 10% and 25% of project cost or between £10m and £25m per annum across the sector. Figure 1 shows the cost of error as a proportion of total project cost. When we present those figures, people tend to express surprise either that the total is not more, or that it is as much as it is. Quite often, this latter view changes once the indirect and unmeasured costs are explained. Given the scale of the losses, it is interesting to note that very little research is being carried out into the subject of error in construction in the UK, and as authors we have had to rely on evidence from Australia, the USA and Scandinavia in compiling the report.

The industry tends to focus on defects and non-conformities that are the outcome of uncorrected errors. But most errors do not result in defects and just mean that the job is done twice or materials are wasted. The costs of correcting these errors results in low productivity and a reduction in project profitability. Many errors may only come to light in the form of delays long after the project is finished, with people unrelated to the original project dealing with and paying for them. The approach to resolving these is highly variable, with many recording only the number and type of defects. Some record their own direct costs for dealing with defects, but usually only as a precursor to a claim from those responsible – who in turn tend not to record the cost specifically, preferring to effect to write it off instead. Overall, the factors described above mean that, as an industry, we grossly underestimate both the number and cost of errors.

**Causes of error**  
Through workshops, interviews and questionnaires, the root causes of error were explored. We found that the top ten reasons for error are reported as:

- inadequate planning
- late design changes
- design information that is poorly communicated
- poor culture of ensuring quality
- poorly coordinated design information
- inadequate attention paid to construction process in the design
- excessive commercial pressure on finance or time
- poor interface between management and design
- ineffective communication between team members
- inadequate supervisory skills.

**Figure 2**  
Proposed distribution of spend to eliminate error. Source: Get It Right Initiative research report



In effect, the causes are a combination of inadequate culture, processes and skills. **Investing in errors**  
We asked a study group of contractors to consider how to invest a finite sum of money in eliminating error and prioritising that investment. The results are shown in Figure 2. The results show a keen interest in improving skills as well as creating an appropriate culture of ensuring quality and reducing errors.

**Skills and knowledge**  
Discussions with the study group suggested that the skills that are of most interest relate to planning, communicating and supervision. This was true whether we were talking about trade skills or design skills. It is also clear that the following set of competences are required:

- to have clear and to evaluate them against appropriate criteria, both subjective and objective
- to exercise judgement and to make good decisions
- to be able to deal with change in an appropriate fashion
- to communicate effectively using means appropriate to the circumstances
- to establish and maintain effective working relationships.

A common observation was that poor decisions were often made because of a lack of understanding of their implications, for example:

- decisions made by designers who do not know about the construction or commissioning process
- decisions by buyers who do not understand the implications of specifying one drainage pipe system for another

● decisions by contractors who do not understand the significance of overloading a key structural element during installation. **Getting the culture right**  
As well as better knowledge of the overall process, it is important that all concerned develop and exercise respect for other parties involved. A lack of awareness of what others do is often associated with a lack of respect for them or their role, and this greatly impedes effective relations and communication.

It is also critical for people to want to do the job well. This applies equally to the person making sure that the site is a fit place to do the work as it does to the designer ensuring that their design is clear and unambiguous. Creating a culture in which this can happen requires those at the top of construction companies to set a positive example. We know that many people in our industry take pride in their work and are frustrated when things go wrong. A key objective will be to engage that pride to reduce the number and extent of errors that are made.

**Next steps**  
Following the research, the funders and participants were very keen that we should address the problems found. The Get It Right Group considered carefully the merits of setting up an independent initiative or attempting to get one of the existing industry groups to assume responsibility for such an endeavour. After reviewing the options, we decided in the interests of maintaining momentum to set up the Get It Right Initiative to make significant reductions in error in the UK construction industry. The initiative's goals are:

- to change the attitudes of those involved in the industry so they care about and concentrate on reducing the number of errors in their field of work
- to advance knowledge across the sector so all parties properly understand the ways in which design and construction processes can be improved and how this can and often does lead to error and waste
- to improve decision making and planning skills across the sector so that all involved are able to react and adapt to unavoidable process disturbances.

Modelled on the Temporary Works Forum, the initiative has been established as a membership organisation that uses subscriptions to raise funds and work towards its goals. Its activities include:

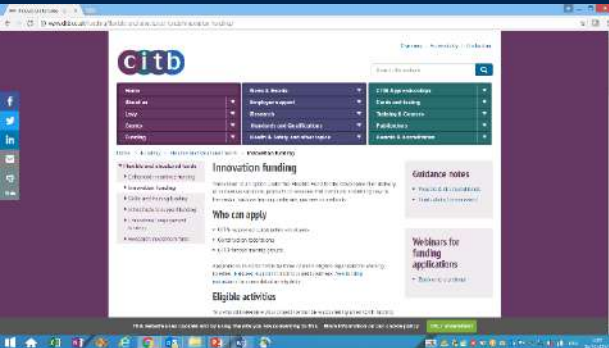
- a skills development programme
- a campaign to change and align attitudes across the sector
- improving management processes and systems
- improving construction technology and techniques.

**Drawing conclusions**  
Error is the elephant in the room. The industry is beset by error and, as our research shows, it potentially costs the country more than £20bn a year. It is a major, chronic factor in UK construction's productivity problem. Moreover, errors do not just cost money; they result in scarce materials and energy being wasted, to say nothing of the impact on the reputation and morale in our industry. There are opportunities to do something about this now. By establishing the Get It Right Initiative, a positive first step is being taken towards making a substantial change.



Related competences include:  
Programming and planning  
Project coordination, teaming

# CITB defects and errors funding



more value per employee.

## Restrictions

[Read the guidance notes for restrictions on this funding.](#)

[Learn more about Innovation funding with our case studies](#)

## Current commissions

Application window	5 September 2017 - 20th November 2017 (5pm)
Theme	Productivity
Duration	The project theme should not exceed 18 months
Funding	A total £500k is available for this commission, to invest in a number of projects
Aim	Reduce defects and errors in construction
Outcomes	CITB is seeking skills development pilots which



# Avoidable Errors Workshop



Lean  
CONSTRUCTION IRELAND

Get It Right Initiative

# Launch event at ICE



Lean  
CONSTRUCTION IRELAND

Get It Right Initiative



# Website & Social Media

## Get it Right Initiative

Improving value by eliminating error

[Home](#) | [About](#) | [Membership](#) | [Research](#) | [Reports](#) | [Courses](#) | [Events](#)

### Construction Errors Cost Billions

The *Get it Right Initiative* is a new organisation tackling avoidable error in the construction industry.

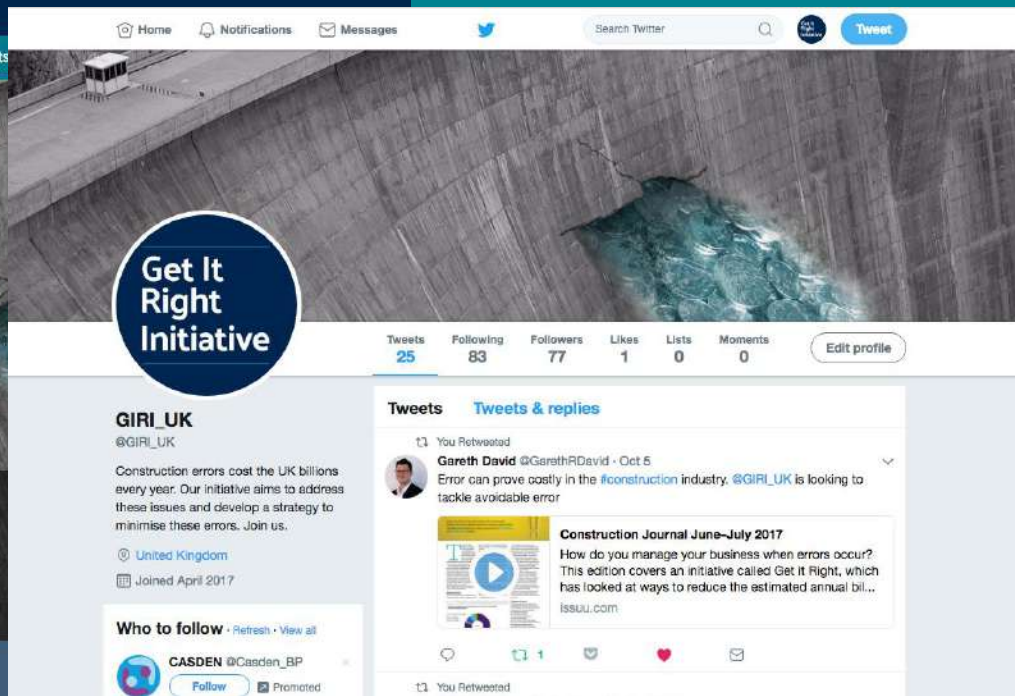
Our single aim is to significantly reduce error and its associated consequences, and our members are united to build a better UK Construction industry.

Email Us

### Get it Right

Our aim is to reduce errors in the construction industry.

[Find out more »](#)



The image shows a Twitter profile for the account @GIRI\_UK. The header features a banner image of a large concrete dam with a small vehicle on top. A circular profile picture contains the text "Get It Right Initiative". The navigation bar includes links for Home, Notifications, Messages, and a search bar. The profile statistics are: 25 Tweets, 83 Following, 77 Followers, 1 Likes, 0 Lists, and 0 Moments. The bio states: "Construction errors cost the UK billions every year. Our initiative aims to address these issues and develop a strategy to minimise these errors. Join us." It also lists the location as "United Kingdom" and the join date as "April 2017". A tweet from Gareth David (@GarethRDavid) is visible, mentioning the initiative and its goal to tackle avoidable error. Below the tweet is a link to a "Construction Journal June-July 2017" with a thumbnail image.

Home Notifications Messages Search Twitter Tweet

Get It Right Initiative

Tweets 25 Following 83 Followers 77 Likes 1 Lists 0 Moments 0 Edit profile

**GIRI\_UK**  
@GIRI\_UK  
Construction errors cost the UK billions every year. Our initiative aims to address these issues and develop a strategy to minimise these errors. Join us.  
United Kingdom  
Joined April 2017

**Gareth David** @GarethRDavid · Oct 5  
Error can prove costly in the #construction industry. @GIRI\_UK is looking to tackle avoidable error

**Construction Journal June-July 2017**  
How do you manage your business when errors occur? This edition covers an initiative called Get it Right, which has looked at ways to reduce the estimated annual bil...  
issuu.com

**And on we go....**

**If you would like to get involved  
please fire us an email through  
the website or make contact  
with Tom or I directly**

---

# Thank you

Tom Barton  
tom.barton@getitright.uk.com



getitright.uk.com @GIRI\_UK

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# Lean Construction Ireland

*deliver projects better, faster, together*



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