RLB Rider Levett Bucknall

RIDERS DIGEST 2022

UNITED KINGDOM EDITION

RIDERS DIGEST

2022 EDITION

Riders Digest is a compendium of cost data and related information on the construction industry.

For further information and feedback contact:
Roger Hogg - Research & Development Manager
Email: roger.hogg@uk.rlb.com

Rider Levett Bucknall UK Ltd
Level 3
110 Bishopsgate
London
EC2N 4AY
Tel: +44 (0)207 398 8300

Website: RLB.com

Follow us: Rider Levett Bucknall @rlb_uk

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Birmingham, B3 2BH

Cost information in this publication is indicative and for general guidance only. All prices and rates are as at July 2022 and expressed in British Pounds unless otherwise stated. References to legislative provisions and regulations are as at Quarter 1 2020. Changes after this period will not be reflected.

Please note that all prices exclude prevailing Value Added Tax (VAT).

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FOREWORD

Welcome to the 2022 edition of the Riders Digest; the essential guide to the UK construction industry.

In my newly appointed position as Global Chairman of RLB, I have been reflecting recently on how many of the conversations I am having nationally about our sector are also being echoed globally.

We know that the immediate challenges for our industry lie with how we navigate the uncertainty of the market in the short term - the increase in costs, rising inflation and materials as well as labour shortages that are putting project viability into question.

Meanwhile, we need to continue our drive towards building a better future, one that is sustainable, that adds value to the communities in which we live, work, and play and that levels up our regional divides and social inequalities. All whilst encouraging new and fresh talent to our industry and showcasing what a difference our industry can make to society.

For many years, the built environment has been influenced by things that were a repeat of yesterday or cyclical patterns of the past – meaning with data and insights, the future was easier to plan and predict. We are now entering a phase of de-railing activity, or unforeseen events that impact the course of the future, such as the recent pandemic - things that we are less prepared for or at least ill-equipped to deal with in the short term.

However, the last two years has seen our industry work together to help us try to deal with some of these challenges, and to make us more proficient in assessing the impact, mitigating the risk and working together for successful outcomes. At RLB we are proud to work with colleagues and collaborators across the industry to facilitate industry-wide change and support our clients for future events including organisations such as Build UK, the Construction Industry Council, the Construction Innovation Hub and RICS.

Collaboration between industry and government has never been stronger. As the recent pandemic has shown, construction can be at the heart of restarting the economy, regenerating regions, and generating jobs, not just at the construction phase, but in the long term with the circular economy of the buildings like schools, hospitals, offices and other working environments. The recent government guidance and governance in the form of the Value Toolkit and the Construction Playbook, critical counsel for our industry that I am delighted that the RLB team has been involved in the creation and trialling of, will also help us achieve these longer-term goals.

Looking at innovative ways of working and to thinking more laterally as an industry will also help us through the shorter-term uncertainty and towards longer term new ways of working. Sharing best practice from design to safety and sustainability with other countries as well as other industries will provide us with fresh ideas and new ways to rethink both our existing estates but our future ones. And of course, it will be the nextgen of the built environment professionals which will drive these new ways of working. At RLB we are delighted to have welcomed 79 Graduates, 38 Apprentices and 9 Placements to our business.

We hope you enjoy this edition of the Digest and find the facts and figures of interest. As always please do get in touch with any feedback or if you have any queries at all.

Andrew Reynolds

Global Chairman and UK &Europe Chief Executive

Global Board Chairman

E: andrew.reynolds@uk.rlb.com

MARKET OUTLOOK - A NEW PHASE

The advent of 2021 brought with it the prospect of inoculation proliferation and consequent shelter from the strictures of COVID-19, the potential for recovery from the economic downturn of the pandemic process, and the beginnings of the effects of having finally left the European Union.

Taken separately, these events would each have been a major shock to the economy, but together they impinged on each other in so many ways that attributing causation to effects was near impossible. All that was possible was to carry on and deal with the strained inter-relationships and seek to make the best of what was a difficult situation.

For business generally, and for construction businesses in particular, the repeated Covid-lockdowns of 2020 and 2021 brought uncertainty and risk on a scale never before seen, but even in the midst of that, workload levels in the construction industry remained high. As 2021 progressed, the paucity of tender price growth dissipated, replaced by growing levels of activity, of output and consequently of tender price uplift. Whereas the year had commenced with concern as to workload levels, it developed with an ever-greater focus on trades labour and materials availability and cost issues.

Now, in 2022, the Ukraine/Russia conflict has imposed yet further stresses onto already stressed systems of supply, production and distribution. Although tensions had been evident even at the turn of the year, still the invasion by Russian forces of Ukraine's territory came as a shock in late February, dramatically altering the dynamics of what had hitherto been a relatively stable Europe. Global energy markets reacted sharply and, together with global food shortages, have triggered worldwide consumer price inflation.

Building this upon the peculiar situation of the UK in respect of the EU certainly did not help, as wider materials availability considerations flowed from the previous year's plant and production slowdowns, resulting in shortfalls in supply and distribution when demand surged back into global markets. For the UK, this has been further exacerbated by labour availability concerns on-site, London in particular continues to suffer from the closing off of the flow of EU labour incoming, and the leaching away to countries of origin, of important trades' coverage.

The agglomeration of all of this has given rise to significant change to previous years' forecasts of how 2021 actually looked, and how the overall of 2022 and onwards will be in respect of tender price movements. With the existence of significant workload availability and government ongoing stated commitment to "levelling-up", materials and labour supply issues have yet to dissipate to give rise to the lesser levels of uplift that had previously been experienced. Moreover, sustained high levels of workload going forward mean increased competition for both materials and labour, in a market in which production, distribution and general logistics are themselves strained.

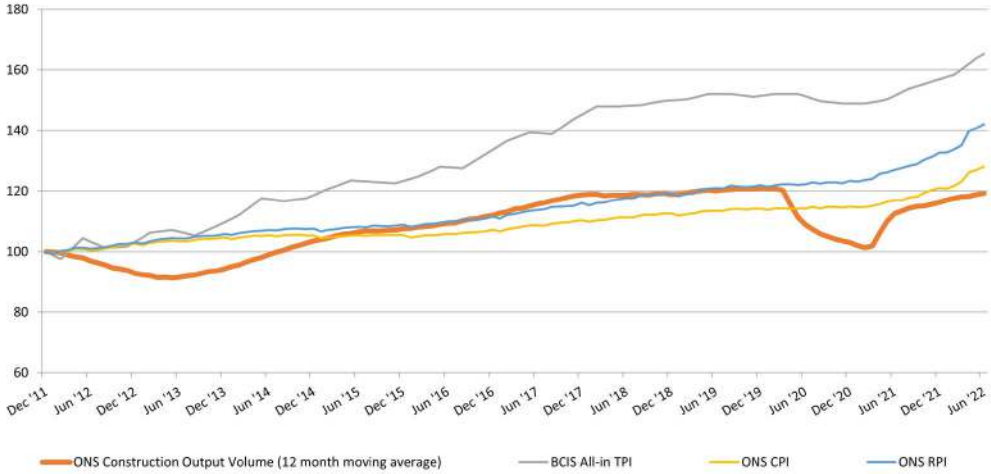
Please get in touch:

Roger Hogg
Research & Development Manager

E: roger.hogg@uk.rlb.com
T: +44 (0)7786 078520

UK CONSTRUCTION TRENDS

INDICES AND UK CONSTRUCTION OUTPUT COMPARISON



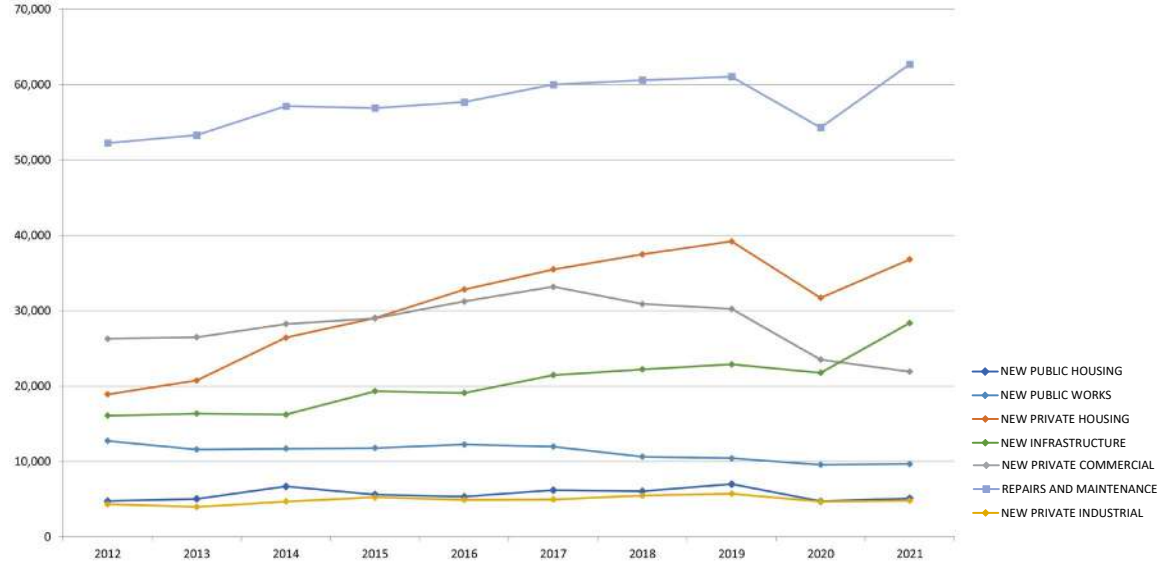
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	H1 2022
BCIS "All-in" Tender Price Index	103	110	119	123	134	145	150	151	149	157	165
Retail Price Index (RPI)	103	106	108	109	112	116	119	122	123	133	142
Consumer Price Index (CPI)	103	105	105	105	107	110	113	114	115	121	128
UK Chain Volume Construction Output	93	94	104	108	112	119	119	121	103	116	119

Note: UK Chain Volume Construction Output is shown as a 12-month moving average index and depicts changing work volume, nett of price change.

BCIS "All-in" Tender Price Index % Change		+ 3.2%	+ 6.3%	+ 8.1%	+ 4.0%	+ 8.3%	+ 8.7%	+ 3.2%	+ 1.0%	- 1.7%	+ 5.4%	+ 5.4%
Retail Price Index (RPI) % Change		+ 3.1%	+ 2.7%	+ 1.6%	+ 1.2%	+ 2.5%	+ 4.1%	+ 2.7%	+ 2.2%	+ 1.2%	+ 7.5%	+ 7.0%
Consumer Price Index (CPI) % Change		+ 2.6%	+ 2.0%	+ 0.5%	+ 0.2%	+ 1.6%	+ 2.9%	+ 2.1%	+ 1.3%	+ 0.6%	+ 5.4%	+ 5.8%
UK Chain Volume Construction Output % Change		- 7.2%	+ 1.6%	+ 9.9%	+ 3.8%	+ 4.1%	+ 6.1%	+ 0.0%	+ 1.8%	- 14.9%	+ 12.9%	+ 2.6%

UK CONSTRUCTION TRENDS

UK CONSTRUCTION OUTPUT BY SECTOR



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
NEW PUBLIC HOUSING	4,754	5,044	6,688	5,605	5,326	6,205	6,041	7,006	4,722	5,105
NEW PRIVATE HOUSING	18,898	20,749	26,442	29,037	32,815	35,477	37,475	39,199	31,707	36,812
NEW PRIVATE COMMERCIAL	26,285	26,497	28,241	28,995	31,237	33,180	30,887	30,234	23,511	21,919
NEW PRIVATE INDUSTRIAL	4,326	3,978	4,686	5,256	4,916	4,965	5,475	5,729	4,668	4,801
NEW PUBLIC WORKS	12,744	11,594	11,700	11,780	12,256	11,978	10,644	10,427	9,569	9.669
NEW INFRASTRUCTURE	16,079	16,359	16,215	19,332	19,101	21,454	22,22	22,888	21,758	28,373
REPAIRS AND MAINTENANCE	52,247	53,292	57,148	56,901	57,685	60,009	60,587	61,052	54,298	62,708

NOTE: Figures are Construction Output Volume (£ million).

UK CONSTRUCTION TRENDS

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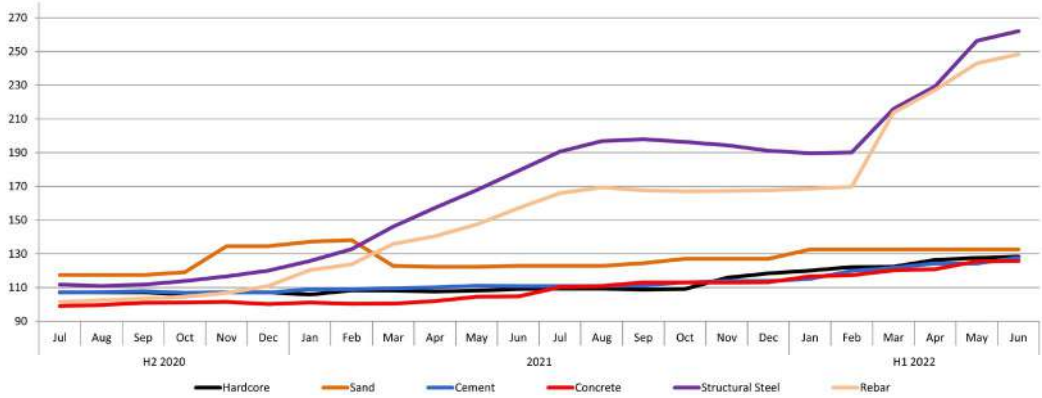
UK CONSTRUCTION MATERIALS MONTHLY AVERAGE PRICE INDEX



	H2 2020											2021											H1 2022	
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Hardcore	107	107	107	106	107	107	106	108	108	108	108	109	109	109	109	109	116	118	120	122	122	126	128	128
Sand	118	118	118	119	135	135	137	138	123	122	122	123	123	123	125	127	127	127	133	133	133	133	133	133
Cement	107	107	108	107	107	107	109	109	110	110	111	111	111	111	111	113	114	114	115	120	122	124	124	128
Concrete	99	100	101	101	101	100	101	100	101	102	105	105	110	111	113	113	113	113	117	117	120	121	126	126
Structural Steel	112	111	112	114	117	120	126	133	146	157	168	179	191	197	198	196	194	191	190	190	216	229	256	262
Rebar	102	102	104	105	107	111	120	124	136	141	147	157	166	169	168	167	167	168	169	170	214	227	243	248

NP = Not Published

UK CONSTRUCTION TRENDS

UK CONSTRUCTION COST DATA

BUILDING COSTS

UK CONSTRUCTION COST DATA

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			Birmingham		Bristol		London		North West		Thames Valley		Yorks and Humber	
Work Type	**Description**	**Unit**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**
Offices Prestige CBD	10-25 Storeys	GBP/m2	2,210	3,190	2,276	3,207	3,158	4,141	2,459	3,192	2,960	3,300	2,167	3,664
Offices Investment CBD	Up to 10 Storeys	GBP/m2	1,760	2,700	1,821	2,638	2,847	3,727	2,093	3,192	2,350	2,900	1,548	2,270
Offices Investment CBD	10-25 Storeys	GBP/m2	2,150	3,100	2,048	3,207	3,002	3,934	2,407	3,192	2,600	3,035	2,023	2,683
Offices Investment Non CBD	1 to 3 Storeys	GBP/m2	1,690	2,420	1,365	2,048	1,864	2,588	1,423	2,072	1,850	2,450	1,053	1,754
Hotels Multi-Storey	Five Star Rating	GBP/m2	2,520	3,620	2,638	3,517	3,002	4,038	2,616	3,558	2,850	3,720	2,167	3,406
Hotels Multi-Storey	Four Star Rating	GBP/m2	1,790	2,750	2,224	2,793	2,278	3,624	2,072	3,035	2,250	3,360	1,610	2,528
Hotels Multi-Storey	Three Star Rating	GBP/m2	1,510	2,380	1,531	2,048	2,029	2,588	1,758	2,197	1,950	2,500	1,342	1,796
Hotels Multi-Storey	Five Star Rating	GBP/bedroom	173,250	372,600	170,677	341,355	225,178	445,179	193,588	381,944	215,000	435,000	193,498	337,976
Hotels Multi-Storey	Four Star Rating	GBP/bedroom	89,250	162,000	102,406	165,505	129,413	194,119	109,874	167,428	98,000	180,000	108,359	214,138
Hotels Multi-Storey	Three Star Rating	GBP/bedroom	56,700	110,700	56,892	111,199	67,295	144,942	66,971	117,723	67,500	145,000	44,891	93,911
Car Park	Open Deck Multi Storey	GBP/m2	420	820	465	910	487	973	649	816	485	950	351	1,053
Car Park	Basement CBD	GBP/m2	950	1,660	1,096	1,717	1,284	2,122	1,235	1,758	1,200	2,100	660	1,073
Car Park	Basement Other than CBD	GBP/m2	770	1,560	972	1,365	1,263	1,988	1,172	1,653	1,150	1,950	681	1,362
Car Park	Undercroft Other than CBD	GBP/m2	500	1,340	579	1,262	632	1,594	785	1,381	620	1,550	454	1,135
Car Park	Open Deck Multi Storey	GBP/car	9,560	20,520	11,637	20,430	11,906	23,812	10,464	20,405	11,000	22,000	8,462	16,770
Car Park	Basement CBD	GBP/car	24,680	47,850	25,084	36,204	31,577	56,942	27,730	47,874	30,000	55,000	22,704	46,181
Car Park	Basement Other than CBD	GBP/car	21,260	39,420	22,757	34,135	23,812	47,106	20,928	41,072	22,850	45,000	17,028	33,798
Car Park	Undercroft Other than CBD	GBP/car	12,600	22,140	13,189	25,084	15,788	27,694	14,127	23,806	13,000	23,625	11,352	19,350
Industrial 6.00m to U/S Truss	4,500m2 fl. Area Metal Cladding	GBP/m2	580	840	465	734	538	963	576	816	520	950	402	722
Industrial att. a/c offices	200m2	GBP/m2	1,140	1,860	1,024	1,779	1,284	2,278	1,130	1,967	1,275	2,250	929	1,631
Industrial att. a/c offices	400m2	GBP/m2	1,080	1,820	910	1,717	1,118	2,122	984	1,800	1,125	2,100	826	1,527
Aged Care	Single Storey Facility	GBP/m2	1,560	2,320	1,717	2,534	1,864	2,795	1,674	2,511	1,850	2,750	1,404	2,116
Aged Care	Multi Storey Facility	GBP/m2	1,680	2,650	1,614	1,986	2,122	3,054	1,904	2,773	2,100	3,050	1,610	2,374
Private Hospitals Low Rise	45-60m2 floor area per bed	GBP/m2	2,420	2,920	2,327	3,052	2,795	3,572	2,511	3,192	2,850	3,550	2,580	3,715
Private Hospitals Low Rise	55-80m2 floor area per bed Major Operating Theatre	GBP/m2	3,100	4,370	2,896	3,982	3,054	4,659	2,825	4,133	3,150	4,750	3,612	4,799
Retail Regional Shopping Centres	Department Store	GBP/m2	2,100	3,780	2,121	3,879	2,640	4,659	2,354	4,133	2,625	4,600	1,940	3,406
Retail Regional Shopping Centres	Supermarket/Variety Store	GBP/m2	1,490	2,320	1,531	2,327	1,864	2,795	1,674	2,511	1,850	2,795	1,362	2,941
Retail Regional Shopping Centres	Discount Department Store	GBP/m2	1,720	2,650	1,800	2,689	2,174	3,209	1,967	2,878	2,100	3,100	1,610	2,425
Retail Regional Shopping Centres	Malls	GBP/m2	3,260	4,700	3,155	4,448	3,831	5,384	3,401	4,814	3,250	5,100	2,838	4,025
Retail Regional Shopping Centres	Speciality Shops	GBP/m2	1,870	2,860	1,903	2,793	2,329	3,365	2,072	3,035	2,250	3,350	1,713	2,528
Retail General	Small Shops and Showrooms	GBP/m2	1,030	2,010	993	1,883	1,222	2,278	1,088	2,051	1,200	2,270	918	1,713
Residential General	Single and Double Storey	GBP/m2	990	1,470	1,221	1,634	1,491	1,781	1,046	1,402	1,485	1,775	857	1,135
Residential General	1 to 3 Storey Units; 85-120m2 per Unit	GBP/m2	1,100	1,800	1,862	2,276	1,470	2,174	1,256	1,653	1,450	2,150	929	1,527
Residential General	Townhouses; 90-120m2 per Unit	GBP/m2	1,100	1,800	1,862	2,276	1,491	2,029	1,381	1,800	1,450	2,100	1,135	1,548
Residential General	Single and Double Storey	GBP/House	64,000	176,400	160,333	274,118	132,001	152,707	62,785	89,992	130,000	150,000	50,825	128,999
Residential General	1 to 3 Storey Units; 85-120m2 per Unit	GBP/Unit	93,500	216,000	160,333	274,118	165,648	209,648	117,723	193,588	157,500	205,000	85,655	159,958
Residential General	Townhouses; 90-120m2 per Unit	GBP/Unit	93,500	216,000	168,091	274,118	160,472	232,943	122,955	204,052	157,500	210,000	97,007	170,278
Residential Multi Storey Units	Up to 10 Storeys with lift; Units 60-70m2	GBP/m2	1,880	2,530	1,469	2,121	2,692	4,711	2,030	2,407	2,350	3,250	1,713	1,940
Residential Multi Storey Units	Up to 10 Storeys with lift; Units 90-120m2	GBP/m2	1,880	2,650	1,469	2,121	2,692	4,504	2,354	2,930	2,350	3,100	1,981	2,477
Residential Multi Storey Units	Up to 10 Storeys with lift; Units 60-70m2	GBP/Unit	112,800	177,100	86,890	147,403	225,178	390,826	136,035	167,428	187,500	330,000	102,167	136,738
Residential Multi Storey Units	Up to 10 Storeys with lift; Units 90-120m2	GBP/Unit	169,200	318,000	134,473	248,258	352,002	582,356	209,284	345,319	235,000	375,000	172,858	286,377

BUILDING COSTS

UK CONSTRUCTION COST DATA

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			Birmingham		Bristol		London		North West		Thames Valley		Yorks and Humber	
Work Type	**Description**	**Unit**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**
Office Fit-Out	Insurance Offices Government Departments; Open Planned	GBP/m2	980	2,640	891	2,227	1,114	2,786	957	2,399	938	2,350	833	2,088
Office Fit-Out	Major Company Headquarters; Open Planned	GBP/m2	1,170	2,900	1,069	2,450	1,338	3,064	1,149	2,636	1,125	2,582	1,000	2,288
Office Fit-Out	Solicitors, Financiers; Open Planned	GBP/m2	1,080	2,640	980	2,227	1,226	2,786	1,059	2,399	1,037	2,350	922	2,088
Office Fit-Out	Executive and Front of House; Open Planned	GBP/m2	1,170	2,900	1,069	2,450	1,338	3,064	1,149	2,636	1,125	2,582	1,000	2,288
Workstations	Secretarial	GBP/Each	4,250	6,370	4,448	6,310	5,384	7,765	4,814	6,906	5,000	7,000	4,076	5,779
Workstations	Technical Staff	GBP/Each	6,720	8,860	6,931	8,896	8,489	10,871	7,534	9,732	8,250	10,500	6,295	8,153
Workstations	Executive	GBP/Each	7,140	15,120	7,034	14,999	9,214	18,635	8,162	16,743	9,000	17,000	6,914	23,736
Hotel FF&E	Five Star Rating	GBP/bedroom	23,890	104,500	25,602	102,406	32,871	132,001	27,730	112,490	28,000	100,000	22,962	91,847
Hotel FF&E	Four Star Rating	GBP/bedroom	14,440	25,580	15,258	25,084	19,930	32,871	16,481	27,469	18,500	32,000	13,416	22,446
Hotel FF&E	Three Star Rating	GBP/bedroom	9,560	15,400	10,137	15,258	13,200	19,930	11,249	17,004	12,750	19,000	8,978	13,674
Office Refurbishment	CBD offices Typical floor	GBP/m2	370	1,520	383	1,262	497	1,594	429	1,402	525	1,500	361	1,156
Recreational Facilities	Regional stadium	GBP/Seat	1,890	3,290	1,821	3,000	1,843	3,002	1,967	3,244	1,845	3,000	1,713	2,786
Recreational Facilities	Regional feature GBP/Seat	GBP/Seat	2,730	6,050	2,638	5,482	2,640	5,487	2,878	5,860	2,640	5,485	2,477	5,108
Recreational Facilities	National Iconic Stadium	GBP/Seat	4,780	9,830	4,810	8,792	4,814	8,904	5,180	9,522	4,820	8,900	4,489	8,256
Recreational Facilities	Indoor Arena	GBP/Seat	7,460	10,150	7,241	9,517	7,454	9,525	7,848	10,255	7,450	9,525	6,811	8,875
Recreational Facilities	Indoor Swimming pools - 50m (including dry sports facilities)	GBP/m2	3,730	5,510	3,620	5,120	3,727	5,177	3,924	5,546	3,700	5,100	3,406	4,799
Site Works	Landscaping; Light, large areas, minimal planting	GBP/Hectare	36,490	164,700	58,961	173,263	45,812	194,119	41,334	164,812	42,500	185,000	33,798	136,738
Site Works	Landscaping; Dense, shrubs, topsoil, grass	GBP/m2	30	60	41	62	47	83	47	73	44	80	31	52
Site Works	Landscaping; Grassing, large areas topsoil sowing, treating	GBP/m2	15	25	21	31	21	31	26	37	21	31	10	21
Site Works	Car Parks on Ground; Light Duty Paving	GBP/car	1,130	2,500	1,427	2,121	1,470	2,381	1,256	2,093	1,450	2,350	1,022	1,816
Site Works	Car Parks on Ground; Heavy Duty Paving	GBP/car	1,720	3,350	2,379	3,465	2,381	3,986	2,093	3,453	2,250	3,750	1,692	2,838
Site Works	Car Parks on Ground; Light Duty Paving to Shopping Centre Complex	GBP/car	1,130	2,500	1,427	2,121	1,470	2,485	1,256	2,093	1,450	2,300	1,022	1,692
Site Works	Roads asphalt incl. drainage and kerbs; Residential Estate, 6.80m wide	GBP/m	850	1,950	1,179	2,048	1,139	2,485	973	2,093	1,175	2,485	795	1,692
Site Works	Roads asphalt incl. drainage and kerbs; Industrial Estate, 10.40m wide	GBP/m	1,260	2,700	1,552	2,793	1,594	3,158	1,381	2,773	1,575	3,150	1,135	2,270

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AVERAGE CONSTRUCTION PAYMENT DRAWDOWN

The tabulation below is derived from the statistical average of a series of case histories, which will give an indication of the anticipated rate of expenditure when used for specific project types for preliminary budgetary purposes.

Construction periods exclude various extensions, including wet weather, industrial disputes, etc.

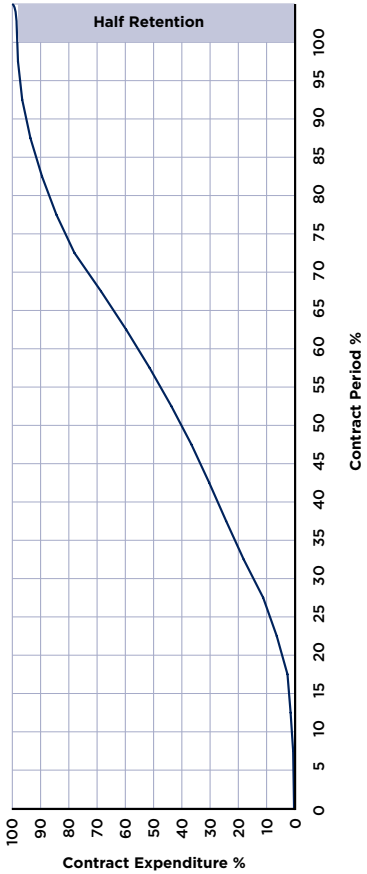
All data is related to the date of submission of contractors' application to the client and not actual payment, which is generally one month later.

Half retention is assumed released at Practical Completion, the other half being released at end of Defects Liability Period.

Contract Period %	Contract Expenditure %
0	0
5	0.6
10	1.5
15	2.6
20	6.4
25	11.2
30	18.1
35	24.3
40	30.3
45	36.6
50	43.7
55	51.4
60	59.7
65	68.6
70	78
75	84.4
80	89.5
85	93.6
90	96.5
95	98
100	98.5
Half retention (1.5%) released at end of defects period	100

UK CONSTRUCTION COST DATA

CONTENTS



CONSTRUCTION ELEMENTS

The following rates are indicative only and include an allowance for profit and overheads but exclude preliminaries. The rates are not valid for tendering or pricing of variations.

Item	£			Unit
SUBSTRUCTURE				
Reinforced concrete pad footing (Grade 35)	578	-	719	m^2
Reinforced concrete slab on ground (Grade 35)	392	-	556	m^2
COLUMNS				
Reinforced concrete (600 x 600mm Grade 35)	251	-	338	m
Reinforced concrete (900 x 900mm Grade 35)	480	-	610	m
UPPER FLOORS (EXCLUDING BEAMS)				
150mm reinforced concrete suspended floor slab (Grade 35) on Holorib permanent formwork	120	-	150	m^2
150mm precast concrete suspended floor slab or beam and block floor with reinforced in situ concrete screed structural topping	98	-	120	m^2
200mm reinforced concrete suspended slab with high quality formwork for exposed finish	131	-	164	m^2
STAIRCASES				
1050mm wide reinforced concrete stair with painted steel tube balustrade (average rise 3.70m) including two flights and one half space landing	3,553	-	5,003	Rise
1200mm wide reinforced concrete stair with painted steel tube balustrade (average rise 3.70m) including two flights and one half space landing	4,687	-	5,875	Rise
2000mm wide grand public stair with glass and metal balustrade (4.00m rise) including three flights and two quarter space landings	14,159	-	21,255	Rise
ROOF				
RC slab (Grade 35) graded to fall and built-up roofing membrane	164	-	240	m^2
Structural steel, purlins and insulated metal deck roof 40 - 50 kg/m^2	109	-	164	m^2
EXTERNAL WALLS				
Cavity wall construction, 102mm stock facing brick outer skin; insulated cavity; 140mm blockwork inner skin	550	-	625	m^2
Double glazed window unit (casement type)	610	-	825	m^2
Glass curtain wall system, capped stick-built system	780	-	1,100	m^2
EXTERNAL DOORS (INCLUDING IRONMONGERY)				
Single leaf solid core door	1,112	-	1,428	no.
Double leaf glazed door	1,581	-	1,897	no.
Double leaf automatic operating door	6,671	-	11,118	no.

UK CONSTRUCTION COST DATA

CONSTRUCTION ELEMENTS

Item	£			Unit
INTERIOR WALLS				
250mm reinforced concrete wall (Grade 35)	218	-	283	m²
100mm block wall	55	-	60	m²
140mm block wall	60	-	65	m²
Plasterboard metal stud wall, single layer each side	44	-	65	m²
INTERNAL DOOR SET (INCLUDING IRONMONGERY)				
Single leaf solid core flush door	750	-	894	no.
Single leaf half hour fire door	850	-	1,003	no.
Single leaf one hour fire door	910	-	1,450	no.
INTERIOR SCREENS				
Laminated toilet partition	992	-	1,482	Each
Fully glazed office partition full (2.8m) height, frameless joints				
Single glazed	371	-	600	m
Double glazed	1,079	-	1,319	m
WALL FINISHES				
Plaster and emulsion paint	15	-	30	m²
Plaster and vinyl fabric wallpaper	33	-	55	m²
Cement render and ceramic tile	100	-	120	m²
Granite tiles	150	-	210	m²

UK CONSTRUCTION COST DATA

Item	£			Unit
CEILING FINISHES				
Metal framed plasterboard ceiling, painted	55	-	70	m²
Exposed grid suspended ceiling with mineral fibre board acoustic ceiling	33	-	35	m²
Hygienic suspended ceiling system	35	-	44	m²
FLOOR FINISHES				
Carpet tile	30	-	40	m²
Ceramic tile	85	-	200	m²
Raised access floors, standard duty	65	-	80	m²
SERVICES - SANITARY AND PLUMBING				
Average cost per plumbing point including fixture, soil waste and vent; excluding DOC M pack	490	-	641	no.
SERVICES - VERTICAL TRANSPORTATION				
Glass sided escalator (4m rise)	100,000	-	145,000	no.
13 passenger lift serving 4 floors	90,000	-	150,000	no.

ESTIMATING DATA

DEFINITION OF OFFICE FIT-OUT CATEGORIES

Building Element	Shell and Core	Cat A Fit-out	Cat B Fit-out
Building envelope	✓	✗	✗
Emergency staircases	✓	✗	✗
Balustrades and handrails to emergency stairs	✓	✗	✗
Accommodation stairs	✓	✗	✗
Balustrades and handrails to accommodation stairs	✓	✗	✗
Feature stairs	✗	✓	✗
Balustrades and handrails to feature stairs	✗	✓	✗
Lifts	✓	✗	✗
Base services, plant and equipment to edge of floor plates	✓	✗	✗
Life safety infrastructure, sprinkler pumps, tanks, risers, main fire alarm panels	✓	✗	✗
Finishes to main entrances	✓	✗	✗
Finishes to common areas	✓	✗	✗
Finishes to staircases fitted as part of shell and core	✓	✗	✗
Finishes to lifts	✓	✗	✗
Finishes to common toilets	✓	✗	✗
Sanitary fit-out of common toilets	✓	✗	✗
Suspended ceilings	✗	✓	✗
Raised access floors	✗	✓	✗
Extension of basic mechanical and electrical services, lighting, heating, cooling and ventilation systems including controls, from the riser across the lettable floor space	✗	✓	✗
Sprinklers, fire alarms and basic safety signage	✗	✓	✗
Office carpets	✗	✓	✗
Distributed power to each floor but not to each terminal point	✗	✓	✗
Installation of cellular offices	✗	✗	✓
Enhanced finishes	✗	✗	✓
Conference / meeting room facilities	✗	✗	✓
IT and AV installations	✗	✗	✓
Tea point and kitchen fit-out	✗	✗	✓
Furniture	✗	✗	✓

REINFORCEMENT RATIOS

The following ratios give an indication of the average weight of high tensile rod reinforcement per cubic metre of concrete (Grade 35) for the listed elements. Differing structural systems, ground conditions, height of buildings, load calculations and sizes of individual elements and grid sizes will result in considerable variation to the stated ratios. For project specific ratios, a civil & structural engineer should be consulted.

Element	kg/m³
Substructure	
Pile caps	115 - 200
Bored piles (compression)	30 - 60
Bored piles (tension)	150 - 250
Raft foundation	100 - 150
RC pad footings	70 - 150
Ground beams	200 - 300
Basement	
Retaining wall	150 - 250
RC wall	75 - 150
Ground bearing slab	80 - 150
Edge beams	220 - 300
Lift pits	100 - 200
Above Ground	
Columns	150 - 450
Beams	180 - 300
Slab	90 - 200
Walls (core)	75 - 200
Lift core	125 - 200
Stairs	130 - 160

METHOD OF MEASUREMENT OF BUILDING AREAS

ESTIMATING DATA

CONTENTS

The two tables below are designed for comparative purposes

The information provided is a summary from the RICS Code of Measurement Practice, effective globally from 18 May 2015.

These rules are intended as a brief guide only and the full RICS Code of Measuring Practice should be consulted if required. Advice regarding net lettable areas used for calculating revenues should be given by the client's commercial property agent.

Note from the 1st January 2016 a RICS Professional Statement (PS)[1] came into effect. The purpose of the statement was to change the rules for measurement for offices only from the standard RICS Code of Measuring Practice (6th edition) to IPMS (International Property Measurement Standards).

NOTE the RICS Code of Measuring Practice (6th edition) still applies to all other building types. The PS affects GEA, GIA and NIA in respect of offices.

Gross External Area (GEA)
The area of a building measured externally (i.e. to the external face of the perimeter walls) at each floor level. The rules of measurement of gross external floor area are defined in the RICS Code of Measuring Practice (6th edition).

RICS Code of Measuring Practice (6th edition) applicable to all buildings except offices.

IPMS 1: Gross External Area (GEA)
The area of a building measured externally (i.e. to the external face of the perimeter walls) at each floor level. The rules of measurement of gross external floor area are defined in the RICS Code of Measuring Practice (6th edition) – adjusted below to reflect the implications of the RICS Professional Statement (PS) as applicable to offices only. Please refer to the RICS Professional Statement for a full definition.

RICS Professional Statement (PS) 2nd Edition effective from 1st May 2018, which affects the measurement of offices.

ALL BUILDINGS EXCLUDING OFFICES	
INCLUDING	**EXCLUDING**
Perimeter wall thickness and external projections	External open-sided balconies, covered ways and fire escapes
Areas occupied by internal walls and partitions	Canopies
Columns, piers, chimney breasts, stairwells, lift-wells, and the like	Open vehicle parking areas, roof terraces, and the like

OFFICES ONLY	
INCLUDING	**EXCLUDING**
Definition provided: the external area of basements is calculated by extending the exterior plane of the perimeter walls at ground floor level downwards, or by estimation of the wall thickness if the extent of the basement differs from the ground floor level	
Perimeter wall thickness and external projections	Fire escapes and open external stairways not being part of the structure
External open-sided balconies, covered ways. Now included but must be stated separately	
Areas occupied by internal walls and partitions	Canopies
Columns, piers, chimney breasts, stairwells, lift-wells, and the like	Open vehicle parking areas, non-accessible roof terraces, and the like

METHOD OF MEASUREMENT OF BUILDING AREAS

GROSS EXTERNAL AREA (GEA)	
ALL BUILDINGS EXCLUDING OFFICES	
INCLUDING	EXCLUDING
Atria and entrance halls, with clear height above, measured at base level only	Voids over or under structural, raked or stepped floors
	Open light wells upper level voids of an atrium - definition added in PS
Internal balconies	Greenhouses, garden stores, fuel stores, and the like in residential property
Structural, raked or stepped floors are to be treated as a level floor measured horizontally	Patios, decks at ground level - definition added in PS
Horizontal floors, whether accessible or not, below structural, raked or stepped floors	External car parking, equipment yards, cooling equipment and refuse areas - definition added in PS
Mezzanine areas intended for use with permanent access	Other ground level areas that are not fully enclosed - definition added in PS
Lift rooms, plant rooms, fuel stores, tank rooms which are housed in a covered structure of a permanent nature, whether or not above the main roof level	
Outbuildings which share at least one wall with the main building	
Loading bays	
Areas with a headroom of less than 1.5m	
Pavement vaults	
Garages	
Conservatories	

IPMS 1: Gross External Area (GEA)	
OFFICES ONLY	
INCLUDING	EXCLUDING
Accessible rooftop terraces – now included but must be stated separately	
Atria and entrance halls, with clear height above, measured at base level only	Voids over or under structural, raked or stepped floors
	Open light wells upper level voids of an atrium - definition added in PS
Internal balconies also called covered galleries are included but must be stated separately as different interpretations may have been applied regarding their inclusion	Greenhouses, garden stores, fuel stores, and the like in residential property
Structural, raked or stepped floors are to be treated as a level floor measured horizontally	Patios, decks at ground level - definition added in PS
Horizontal floors, whether accessible or not, below structural, raked or stepped floors	External car parking, equipment yards, cooling equipment and refuse areas - definition added in PS
Mezzanine areas intended for use with permanent access	Other ground level areas that are not fully enclosed - definition added in PS
Lift rooms, plant rooms, fuel stores, tank rooms which are housed in a covered structure of a permanent nature, whether or not above the main roof level	
Outbuildings which share at least one wall with the main building	
Loading bays	
Areas with a headroom of less than 1.5m	
Pavement vaults	
Garages	
Conservatories	

METHOD OF MEASUREMENT OF BUILDING AREAS

Gross Internal Floor Area (GIFA) (or Gross Internal Area (GIA))
The area of a building measured to the internal face of the perimeter walls at each floor level. The rules of measurement of gross internal floor area are defined in the RICS Code of Measuring Practice (6th edition).

RICS Code of Measuring Practice (6th edition) applicable to all buildings except offices

IPMS 2 - Office: Gross Internal Floor Area (GIFA) (or Gross Internal Area (GIA))
The area of a building measured to the internal face of the perimeter walls at each floor level. The rules of measurement of gross internal floor area are defined in the RICS Code of Measuring Practice (6th edition). – adjusted below to reflect the implications of the RICS Professional Statement (PS) as applicable to offices only. Please refer to the RICS Professional Statement for a full definition.

RICS Professional Statement (PS) 2nd Edition effective from 1st May 2018, which affects the measurement of offices.

Using IPMS 2 offices are separated for measurement into eight component areas:
Component A – Vertical penetration e.g. lift / elevator shaft and ducts
Component B – Structural elements all structural walls to inside of internal dominant face
Component C – Technical services e.g. plant rooms, lift / elevator motor rooms and maintenance rooms
Component D – Hygiene areas e.g. toilet facilities, cleaners, shower room and changing room
Component E – Circulation areas – all horizontal circulation areas
Component F – Amenities e.g. cafeteria, day care facilities, fitness areas and prayer rooms
Component G – Workspace, e.g. the area available for use by personnel, furniture and equipment for office purposes
Component H – Other areas including balconies, covered galleries, internal car parking and storage rooms
If an area is for multi functional use, it is to be stated as its Principal use.
Limited use areas must be identified, measured and stated separately within IPMS reported areas.

OFFICES ONLY

Definition added – the sum of the areas of each floor of an office building measured to the internal dominant face reported on a component-by-component basis for each floor of a building

The internal dominant face is the inside finished surface comprising 50% or more of the surface area for each vertical section forming an internal perimeter. Where the internal dominant face is a window the internal dominant face is taken to the glazing

METHOD OF MEASUREMENT OF BUILDING AREAS

Gross Internal Floor Area (GIFA) (or Gross Internal Area (GIA))	
ALL BUILDINGS EXCLUDING OFFICES	
Areas occupied by internal walls and partitions projections	Perimeter wall thicknesses and external projections
Columns, piers, chimney breasts, stairwells, lift-wells, other internal projections, vertical ducts, and the like	External open-sided balconies, covered ways and fire escapes
Enclosed walkways or passages between separate buildings – definition added in PS	
Atria and entrance halls, with clear height above, measured at base level only	Canopies
Internal open-sided balconies, walkways, and the like	Voids over or under structural, raked or stepped floors
	Accessible rooftop terraces – normally excluded
Structural, raked or stepped floors are to be treated as a level floor measured horizontally	Greenhouses, garden stores, fuel stores, and the like in residential property
Horizontal floors, with permanent access, below structural, raked or stepped floors	Patios, decks at ground level not forming part of the structure – definition added in PS

IPMS 2 - Office: Gross Internal Floor Area (GIFA) (or Gross Internal Area (GIA))	
OFFICES ONLY	
Areas occupied by internal walls and partitions projections	Perimeter wall thicknesses and external projections
Columns, piers, chimney breasts, stairwells, lift-wells, other internal projections, vertical ducts, and the like	Open external stairways not being part of the structure e.g. fire escapes
External balconies often referred to as external open sided balconies – included but stated separately	
Enclosed walkways or passages between separate buildings – definition added in PS	
Atria and entrance halls, with clear height above, measured at base level only	Canopies
Areas occupied by the reveals of windows when measured and assessed as the internal dominant face - definition added in PS	
Internal open-sided balconies, walkways, and the like - included but stated separately	Voids over or under structural, raked or stepped floors
External balconies often referred to as external open sided balconies – included but stated separately	
Accessible rooftop terraces included but stated separately	
Structural, raked or stepped floors are to be treated as a level floor measured horizontally	Greenhouses, garden stores, fuel stores, and the like in residential property
Horizontal floors, with permanent access, below structural, raked or stepped floors	Patios, decks at ground level not forming part of the structure - definition added in PS

METHOD OF MEASUREMENT OF BUILDING AREAS

Gross Internal Floor Area (GIFA) (or Gross Internal Area (GIA))	
ALL BUILDINGS EXCLUDING OFFICES	
Corridors of a permanent essential nature (e.g. fire corridors, smoke lobbies)	External car parking, equipment yards, cooling equipment and refuse areas - definition added in PS
Mezzanine floor areas with permanent access	Other ground level areas that are not fully enclosed - definition added in PS
Lift rooms, plant rooms, fuel stores, tank rooms which are housed in a covered structure of a permanent nature, whether or not above the main roof level	
Service accommodation such as toilets, toilet lobbies, bathrooms, showers, changing rooms, cleaners' rooms, and the like	
Projection rooms	
Voids over stairwells and lift shafts on upper floors	
Loading bays	
Areas with a headroom of less than 1.5m	
Pavement vaults	
Garages	
Conservatories	

IPMS 2 - Office: Gross Internal Floor Area (GIFA) (or Gross Internal Area (GIA))	
OFFICES ONLY	
Corridors of a permanent essential nature (e.g. fire corridors, smoke lobbies)	External car parking, equipment yards, cooling equipment and refuse areas - definition added in PS
Mezzanine floor areas with permanent access	Other ground level areas that are not fully enclosed - definition added in PS
Lift rooms, plant rooms, fuel stores, tank rooms which are housed in a covered structure of a permanent nature, whether or not above the main roof level	
Service accommodation such as toilets, toilet lobbies, bathrooms, showers, changing rooms, cleaners' rooms, and the like	
Projection rooms	
Voids over stairwells and lift shafts on upper floors	
Loading bays	
Areas with headroom of less than 1.5m - refer to PS rules. The internal dominant face is the inside finished surface comprising 50% or more of the surface area for each vertical section forming an internal perimeter	
Pavement vaults	
Garages	
Conservatories	

METHOD OF MEASUREMENT OF BUILDING AREAS

Net Internal Area (NIA)
The usable area within a building measured to the internal face of the perimeter walls at each floor level. The rules of measurement of net internal area are defined in the RICS Code of Measuring Practice (6th edition).

RICS Code of Measuring Practice (6th edition) applicable to all buildings except offices

ALL BUILDINGS EXCLUDING OFFICES	
INCLUDING	**EXCLUDING**
Atria with clear height above, measured at base level only excluding common areas	Those parts of entrance halls, atria, landings and balconies used in common
Entrance halls excluding common areas	Toilets, toilet lobbies, bathrooms, cleaners' rooms, and the like
Notional lift lobbies and notional fire corridors	Lift rooms, plant rooms, tank rooms (other than those of a trade process nature), fuel stores, and the like
Kitchens	Stairwells, lift-wells and permanent lift lobbies
Built-in units, cupboards, and the like occupying usable areas	Corridors and other circulation areas where used in common with other occupiers
Ramps, sloping areas and steps within usable areas	Permanent circulation areas, corridors and thresholds/ recesses associated with access, but not those parts that are usable areas

ESTIMATING DATA

IPMS 3 - Office: Net Internal Area (NIA)
The usable area within a building measured to the internal face of the perimeter walls at each floor level. The rules of measurement of net internal area are defined in the RICS Code of Measuring Practice (6th edition) – adjusted below to reflect the implications of the RICS Professional Statement (PS) as applicable to offices only. Please refer to the RICS Professional Statement for a full definition.

RICS Professional Statement (PS) 2nd Edition effective from 1st May 2018, which affects the measurement of offices.

OFFICES ONLY	
INCLUDING	**EXCLUDING**
Definition added: The floor area available on an exclusive basis to an occupier, but excluding standard facilities and shared circulation areas, and calculated on an occupier-by-occupier floor-by-floor basis for each building. All internal walls and columns with an occupant; exclusive area included within IPMS 3 - office. The floor area is taken to the internal dominant face and, where there is a common wall with an adjacent tenant, to the centre line of the common wall.	
Atria with clear height above, measured at base level only excluding common areas	Those parts of entrance halls, atria, landings and balconies used in common
Entrance halls excluding common areas	Toilets, toilet lobbies, bathrooms, cleaners' rooms, and the like
Notional lift lobbies and notional fire corridors	Lift rooms, plant rooms, tank rooms (other than those of a trade process nature), fuel stores, and the like
Kitchens	Stairwells, lift-wells and permanent lift lobbies
Built-in units, cupboards, and the like occupying usable areas	Corridors and other circulation areas where used in common with other occupiers
Ramps, sloping areas and steps within usable areas	Permanent circulation areas, corridors and thresholds/ recesses associated with access, but not those parts that are usable areas

METHOD OF MEASUREMENT OF BUILDING AREAS

Net Internal Area (NIA)	
ALL BUILDINGS EXCLUDING OFFICES	
INCLUDING	EXCLUDING
Areas occupied by ventilation/heating grilles	Areas under the control of service or other external authorities including meter cupboards and statutory service supply point
Areas occupied by skirting and perimeter trunking	Internal structural walls, walls enclosing excluded areas, columns, piers, chimney breasts, other projections, vertical ducts, walls separating tenancies and the like
Areas occupied by non-structural walls subdividing accommodation in sole occupancy	The space occupied by permanent and continuous air-conditioning, heating or cooling apparatus, and ducting in so far as the space it occupies is rendered substantially unusable
Pavement vaults	The space occupied by permanent, intermittent air-conditioning, heating or cooling apparatus protruding 0.25m or more into the usable area
	Areas with a headroom of less than 1.5m
	Areas rendered substantially unusable by virtue of having a dimension between opposite faces of less than 0.25m
	Vehicle parking areas (the number and type of spaces noted)

IPMS 3 - Office: Net Internal Area (NIA)	
OFFICES ONLY	
INCLUDING	EXCLUDING
Areas occupied by ventilation/heating grilles	Areas under the control of service or other external authorities including meter cupboards and statutory service supply point
Areas occupied by skirting and perimeter trunking	
All internal walls and columns	
Areas occupied by non-structural walls subdividing accommodation in sole occupancy	The space occupied by permanent and continuous air-conditioning, heating or cooling apparatus, and ducting in so far as the space it occupies is rendered substantially unusable
Pavement vaults	The space occupied by permanent, intermittent air-conditioning, heating or cooling apparatus protruding 0.25m or more into the usable area
Areas with a headroom of less than 1.5m – now included but may be stated separately as a limited use area	
Areas rendered substantially unusable by virtue of having a dimension between opposite faces of less than 0.25m	Measured but identified separately
	Vehicle parking areas (the number and type of spaces noted)

METHOD OF MEASUREMENT OF BUILDING AREAS

Net Internal Area (NIA)	
ALL BUILDINGS EXCLUDING OFFICES	
INCLUDING	EXCLUDING
	Enclosed walkways or passages between separate buildings – definition added in PS
	Accessible rooftop terraces – normally excluded
	Open external stairways not being part of the structure e.g. open framework fire escapes
	Patios, decks at ground level not forming part of the structure – definition added in PS
	External car parking, equipment yards, cooling equipment and refuse areas - definition added in PS
	Other ground level areas that are not fully enclosed - definition added in PS
	Open light wells upper level voids of an atrium

Source: RICS[2]

IPMS 3 - Office: Net Internal Area (NIA)	
OFFICES ONLY	
INCLUDING	EXCLUDING
The common wall with adjacent occupier - the floor areas is taken to the centre line of the common wall, so the area includes half the width of the common wall - definition added in PS	
Enclosed walkways or passages between separate buildings – definition added in PS	
Areas occupied by the reveals of windows when measured and assessed as the internal dominant face	
External open sided balconies used exclusively – included but stated separately	
Accessible rooftop terraces included but stated separately	
	Open external stairways not being part of the structure e.g. open framework fire escapes
	Patios, decks at ground level not forming part of the structure – definition added in PS
	External car parking, equipment yards, cooling equipment and refuse areas - definition added in PS
	Other ground level areas that are not fully enclosed - definition added in PS
	Open light wells upper level voids of an atrium

INTERNATIONAL COST MEASUREMENT STANDARDS (ICMS)

INTRODUCTION

The aim of ICMS is to, "... provide a structure and format for classifying, defining, measuring, analysing and presenting construction costs that will provide consistency and transparency across international boundaries." (ICMS Coalition)[3].

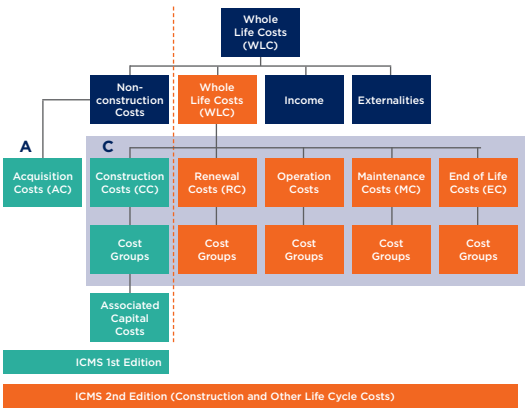
WHAT IS IT AND WHY?

The ICMS project is backed by more than 40 building and surveying national groups and professional bodies globally, working as the ICMS Coalition.

ICMS has been designed to be back-to-back with International Property Measurement Standards (IPMS), but addresses the cost aspects of projects. First issued in July 2017 as ICMS, ICMS2 was issued in September 2019. Whereas the original edition featured only Construction Costs, ICMS2 now addresses Whole Life Costs in the ACROME format:

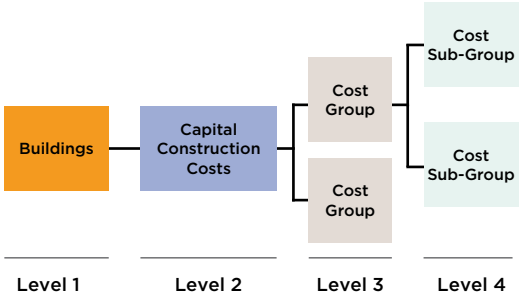
- **A** Acquisition Costs (formerly within Construction Costs)
- **C** Construction Costs
- **R** Renewal Costs
- **O** Operation Costs
- **M** Maintenance Costs
- **E** End of Life Costs

This arrangement is depicted as below:



ESTIMATING DATA

The original ICMS costs structure was arranged in a hierarchy of Levels 1 to 4:



Level 1: Project or Sub-Project – mandatory, classification by essence and principal purpose

Level 2: Cost Category – mandatory, to permit high level comparison between projects

Level 3: Cost Group – mandatory, equivalent of NRM's Group Elemental

Level 4: Cost Sub-Group – non-mandatory, but subject to Level 3 constraints

This first edition orientation can be shown for a set of categories as follows:

Table 1: Example – ICMS Layout

Cost Code	Description
	Cost Category (Level 2)
	Cost Group (Level 3)
	Cost Sub-Group (Level 4)
1	Capital Construction Costs
1.02	Substructure
1.02.020	Foundations up to top of lowest floor slabs: 010 - excavation and disposal 020 - lateral supports 030 - raft footings, pile caps, column bases, wall footings, strap beams, tie beams 040 - substructure walls and columns 050 - lowest floor slabs and beams (excluding basement bottom slabs) 060 - lift pits

In ICMS 2, the above general format is retained. However, with the separation of Acquisition Costs now as Cost Code 1, Construction Costs become Cost Code 2. Other changes to Cost Groups and Sub-Groups are limited, but include the addition of a Cost Group for "Composite or prefabricated work".

In both the original version of ICMS and Edition 2, the user has not been exposed to anything that is fundamentally different from a standard approach to costing projects. However, Level 3 changes that.

Level 3 (shown here in the numbering convention of the original ICMS version) of ICMS introduces the concept of Structure work separated from Architectural works / non-structural works:

Table 2

1.03	Structure
1.04	Architectural works | non-structural works

The user must accord with the Level 3 ICMS headings, and so must break out some parts of NRM's Structural elements and measure these parts as non-structural. For example, what has been formerly understood as the Roof Element under NRM, will under ICMS have a structural component (roof structure) and a non-structural component (roof covering and drainage).

Whilst there is no definition of the suggested ICMS Cost Sub-Groups provided, they are stated within the ICMS document as being broadly compatible with ISO 12006.

Readers of the ICMS document should also note that there exists in the suggested Level 4 structure, an additional level that is effectively Level 5 (refer e.g. 1.02.020.010 in the table above). This is something of a mix between what we currently know as NRM Element and NRM sub-element level.

ESTIMATING DATA

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Another key feature of ICMS is the requirement for cost reporting to be provided using both IPMS 1 and IPMS 2 areas measurement formats. The IPMS 1 method measures to the external face of the external walls of buildings, whereas IPMS 2 measures to the internal face. While IPMS 2 is broadly equivalent to Gross Internal Floor Area (GIFA), ICMS also introduces the concept of Internal Dominant Face (IDF). IDF is defined as the inside finished face of that part of a wall that composes greater than 50% of the wall face. The use of IDF could, in extreme circumstances, result in the measured area exceeding the physical floor area of the space in question.

The use of IPMS 1 and 2 raises other issues in regards to measurement of areas of such as balconies and roof-top terraces. ICMS requires these areas to be measured, included and stated separately, whereas currently GIFA under NRM excludes both balconies and terraces.

As a consequence of the above, care needs to be taken in considering benchmarked costs under NRM as against under ICMS.

These few notes form merely an introduction to ICMS. RLB offices can provide more detailed consideration on request.

Please get in touch:

Roger Hogg
Research & Development Manager

e. roger.hogg@uk.rlb.com
t. +44 (0)7786 078520

ABOUT RLB

INTRODUCTION

CONFIDENCE TODAY INSPIRES TOMORROW

With a network that covers the globe and a heritage spanning over two centuries, RLB is a leading independent organisation in cost management and quantity surveying, project management, programme management, building surveying, health & safety, and advisory services.

Our achievements are renowned: from the early days of pioneering quantity surveying, to landmark projects such as the Sydney Opera House, HSBC Headquarters Building in Hong Kong, the 2012 London Olympic Games and CityCenter in Las Vegas.

We continue this successful legacy with our dedication to the value, quality and sustainability of the built environment. Our innovative thinking, global reach, and flawless execution push the boundaries, taking ambitious projects from an idea to reality.

OUR VISION

Creating a better tomorrow

The Rider Levett Bucknall vision is to be the global leader in the market, through flawless execution, a fresh perspective and independent advice.

Our focus is to create value for our customers, through the skills and passion of our people, and to nurture strong long-term partnerships.

By fostering confidence in our customers, we empower them to bring their imagination to life, to shape the future of the built environment, and to create a better tomorrow.

AT A GLANCE

- More than 4,500 people worldwide
- Offices in 140 locations across the world

These figures include RLB Euro Alliance

Our Values

At the heart of everything we do

At Rider Levett Bucknall doing the right thing matters.

We believe we all have a responsibility to support the communities in which we live and work. Our global values are based on these seven insights:

People Invest in our people and value their contribution

Workplace Provide an inclusive, safe working environment

Industry Lead by example and shape the future of our industry in everything we do

Business Act with integrity, honestry and fairness in all our relationships

Community Support the communities in which we live and work and deliver sustainable social outcomes

Environment Reduce our enviornmental footprint and collaborate to reduce the environmental impact of our industry

Customers Challenge the norm, give fresh perspectives and deliver flawlessly

Shareholders Be a self-owned organisation, be financially robust, and deliver agreed financial plans

OUR PEOPLE

Our people bring their independent thinking and fresh perspective to make a difference to our clients and the communities we serve.

Our people embody RLB's beliefs and value, and are dedicated to shaping the future of our built environment.

OUR EXECUTIVE BOARD

Andrew Reynolds
Global Chairman and UK & Europe Chief Executive
Global Board Chairman
e. andrew.reynolds@uk.rlb.com

Dean Sheehy
Operations Director
e. dean.sheehy@uk.rlb.com

Stuart Stables
Finance Director
e. stuart.stables@uk.rlb.com

Mark Weaver
Global Director/Commercial & Technical Director UK
e. mark.weaver@uk.rlb.com

OUR MANAGING PARTNERS OF UK REGIONS

Jackie Pinder
Managing Partner
West & Wales
e. jackie.pinder@uk.rlb.com

Jo Reynolds
Managing Partner
Midlands
e. jo.reynolds@uk.rlb.com

Matt Summerhill
Managing Partner
Yorkshire & Humber
e. matt.summerhill@uk.rlb.com

Michael Righton
Managing Partner
Thames Valley
e. michael.righton@uk.rlb.com

Nick Eliot
Managing Partner
London
e. nick.eliot@uk.rlb.com

Steve Gillingham
Managing Partner
North West & Northern Ireland
e. steve.gillingham@uk.rlb.com

ABOUT RLB

CONTENTS

OUR SERVICE LEADS

Chris Hartley
Head of Building Surveying
e. chris.hartley@uk.rlb.com

Guy Robinson
Head of Project Management
e. guy.robinson@uk.rlb.com

Ian Sandland
Partner
e. ian.sandland@uk.rlb.com

Russell Lloyd
Head of Service & Cost Management
e. russell.lloyd@uk.rlb.com

OUR BUSINESS SERVICES

Esther Ralston
Partner - Head of Strategic Growth
e. esther.ralston@uk.rlb.com

Lara Giles
Partner - Sales & Marketing
e. lara.giles@uk.rlb.com

Matt Sharp
Chief Digital Officer
e. matt.sharp@uk.rlb.com

Sarah Draper
Partner - Head of People & Culture
e. sarah.draper@uk.rlb.com

Vivianne Todhunter
Partner - Compliance & Business Improvement
e. vivianne.todhunter@uk.rlb.com

Warren Taroni
Partner - Finance
e. warren.taroni@uk.rlb.com

You can find out more about our specialists here.

ABOUT RLB

OUR SECTOR LEADS

A core strength of RLB is our sector expertise. Our experts bring their technical expertise to deliver solutions for customers across a number of sectors, sharing our insight, knowledge and independent and objective advice. We work across all sectors of the built environment with a particular focus on the following:

COMMERCIAL
Sector Lead: Matthew Brooker
e. matthew.brooker@uk.rlb.com

DATA CENTRES
Sector Lead:
Andrew Fettes Brown
e. andrew.f.brown@uk.rlb.com

EDUCATION
Sector Lead: Stephen Scott
e. stephen.scott@uk.rlb.com

PUBLIC & CIVIC
Sector Lead: Julian Henley
e. julian.henley@uk.rlb.com

HEALTHCARE
Sector Lead: Stewart Binns
e. stewart.binns@uk.rlb.com

HOTELS, HOSPITALITY & LEISURE
Sector Lead: Paul Sambrook
e. paul.sambrook@uk.rlb.com

LOGISTICS & MANUFACTURING
Sector Lead: Mark Grayson
e. mark.grayson@uk.rlb.com

INFRASTRUCTURE
Sector Lead:
Andy Stamps
e. andy.stamps@uk.rlb.com

ENERGY
Sector Lead: Mark Clive
e. mark.clive@uk.rlb.com

RESIDENTIAL
Sector Lead: Paul Sambrook
e. paul.sambrook@uk.rlb.com

RETAIL
Sector Lead: Julian King
e. julian.king@uk.rlb.com

SPORT
Sector Lead: Jonathan Edwards
e. jonathan.edwards@uk.rlb.com

OUR SERVICES

RLB's Connected Thinking approach combines collaborative best practice and flawless execution with local knowledge and expertise. We take learnings from our global business and overlay them with an in-depth understanding of our clients' businesses, regardless of their sector or service, to create tailored solutions that deliver successful outcomes. Providing independent advice through the skills and passion of our people, we deliver value and sustainable solutions that are relevant for today and into tomorrow.

BRINGING A FRESH PERSPECTIVE

Our approach is about accelerating the delivery of benefits while providing a sustainable solution for our clients. It involves an absolute focus on sharing knowledge, learning and experience across our global business, and with our clients to achieve real and tangible results.

Through collaborating both internally and externally, we can influence the development of industry quality standards, share knowledge and work together to drive industry-wide improvements. BIM is a key tool for driving collaboration and efficiency within the design and construction of the built environment. We are committed to integrating BIM and are working with some of the world's leading designers, delivering highly complex, high value projects worldwide.

Understanding the value of data within our solutions is a key enabler for successful outcomes. We are adopting new technology and techniques to work faster and smarter to deliver projects with greater data certainty and transparency, providing the insights needed to help our clients make more informed decisions, more quickly.

We are focused on creating and delivering value and marry together expertise in capital and whole-life cost modelling, the creation of human and social value and the assessment environmental impact of projects. This enables our clients to test their business cases and identify and deliver optimum-value solutions.

Please get in touch:

Russell Lloyd
Partner - Head of Service

e. russell.lloyd@uk.rlb.com
t. +44 (0)7976 358556

COMMERCIAL SUCCESS

Head of Cost Management: Russell Lloyd
e. russell.lloyd@uk.rlb.com

A KEY MEASURE OF SUCCESS

Our approach to cost management focuses on the business needs of the client. We deliver a cost management service which supports the project business plan and enables clients to make informed decisions in relation to their property assets.

Supported by our sector expertise and bespoke digital solutions we aim to deliver commercial certainty at all stages of the project life cycle from early feasibility through to financial close. Our independence and commercial approach allow us to deliver the right project outcomes and add value.

Feasibility Studies

A reliable feasibility study enables us to provide a speedy response at the early stages of a project, to assess the viability of the project requirements, and to offer alternative solutions if appropriate. This includes the assessment of environmental and social impact of investment through a monetised mechanism.

Our cost benchmarking data, together with cost modelling, can be used as a dynamic tool to review alternative design options and explore 'what if' scenarios to identify the most cost-effective options within the parameters of the brief.

Benchmarking

We can benchmark a particular project against similar projects to quickly assess if the project requirements can be achieved. We have a global cost benchmarking tool that also includes DQA metrics. This enables us to benchmark building efficiencies as well as cost, help identify alternative solutions and add value.

Cost Planning

Establishing a robust elemental cost plan will form the key cost management control document for any project. This will be prepared in conjunction with the whole project team to ensure ownership of the budget. All future changes will be managed against the signed-off cost plan. The cost plan will enable proactive cost-checking of design development, alternative cost studies, and support value engineering and risk management.

RLB is at the forefront of Building Information Model (BIM) utilisation. Our bespoke cost planning ROSS5D software interfaces with BIM files created by the various software packages used by designers and consultants. Our specialist MEP cost managers add value by providing detailed cost advice in relation to MEP Services, and where appropriate, challenge designs.

Whole Life Asset Management and Life Cycle Costs

Environmental and sustainability drivers and legislation are now key considerations throughout the project lifecycle from business case, through design, build and ultimately disposal of a built asset. RLB's Total Cost Model (TCM) is our response to this need. TCM has been developed to integrate with our capital cost planning system ROSS5D, our wider sustainability services and considers capital, operational, occupancy, energy, carbon, maintenance and replacement costs of a facility over a predetermined period during the design and construction phase.

The model encapsulates capital cost and life cycle characteristics of whole buildings, elements and individual components. TCM is a fully dynamic model where all variables can impact on one another. This allows the facilitation of rapid "what if" analysis on different assets and design options at a building, element or component level to enable informed decision making from a whole life perspective. Outputs utilise business information technology which allows RLB's specialist life cycle team to make iterative adjustments of variables and cashflows to support the optimisation of the design and asset management to meet the client's project objectives, needs and whole life value goals.

Whole Life Asset Management techniques, utilising the outputs from the TCM model, allow RLB to offer strategic estate planning optioneering to clients' and to inform their business planning and capital investment

ABOUT RLB

COMMERCIAL SUCCESS

decision making. RLB will identify opportunities for making financial savings over the medium term and for aligning capital investment programmes with carbon and energy reduction trajectories.

Value Engineering

Delivering value against the project business plan is a key measure of success. We work with the project team, and where required, facilitate workshops in order to undertake a structured review at key project stages, to ascertain that the project is meeting the functional requirements of the brief. To achieve the maximum benefit from value engineering, it is best undertaken during the early planning and design stages.

Risk Management

Quantifying and managing risk is fundamental to delivering a project on time and on budget. We will advise the project team on strategies for identifying and minimising specific risks, together with appropriate levels of cost, and a methodology for managing risks within the identified levels. We apply probabilistic risk assessment techniques to support risk management.

Procurement

Selecting the correct procurement strategy for a project is key to commercial success. Based on the client's principal objectives in relation to cost certainty, quality of design, workmanship and programme, we can undertake a review of these objectives and provide recommendations in relation to the optimum procurement strategy to best achieve these objectives.

Selecting the most appropriate contractor or supplier is equally important. We can evaluate the most suitable contractor/supplier for a project based upon scope, content, complexity, procurement and the need for specialist knowledge and innovative thinking. This includes consideration of Modern Methods of Construction to maximise time, cost and quality benefits. We can introduce Social Value metrics into the tender process to achieve the client's Procure for Value objectives.

We undertake preparation of tender and contract documents, which provide full details of the project requirements and clearly identify responsibility for risks. Undertaking a detailed tender analysis ensures both compliance with the tender requirements and parity between the bids.

Contract Administration

Cost certainty during the construction phase relies on robust methodology and experienced staff. We can fulfil the traditional quantity surveyor role or undertake Contract Administrator or Employer's Agent roles to suit client requirements. The key element of our role is to manage the costs within the signed-off budget through:

- Post contract cost control via a robust change order process
- Proactive cost checking of design development
- Alternative cost studies
- Agree the cost of contract variations in a timely manner
- Regular financial reports of estimated final cost

Soft Landing

Soft Landings aims 'to champion better outcomes for our built assets during the design and construction stages' powered by BIM model to ensure that value is achieved in the operational lifecycle of an asset.

By understanding client needs at the commencement of a project, better outcomes are achieved for the eventual user of the building. This approach saves time and money, delivering higher quality building operations, which ensures that whole life costs have been considered from the onset of the design process.

Commercial Assurance

We can assist our clients with third-party contracts or relationships by providing independent advice including:

- Identifying, understanding and managing risks
- Instigating cost reductions
- Testing contingency plans
- Ensuring regulatory compliance
- Protecting company reputation

PROJECT & PROGRAMME SUCCESS

Partner - Head of Project Management: Guy Robinson
e. guy.robinson@uk.rlb.com

REIMAGINING THE LIMITS

We have reimagined the way in which we deliver projects and programmes as an outcome-based activity built within a framework that delivers benefits at pace, whilst maintaining the predictability and rigour needed to achieve successful outcomes.

Strategic Programme Management

To ensure the success of a programme, it's imperative that delivery is not just controlled but optimised. This starts at the beginning. We design, build and mobilise the programme with the outcome in sight. Using our Assured Start methodology, we assess the readiness of the programme, and only when we have achieved a 'green light' across the board do we recommend launch.

Our 'Pathway to Programme Success' allows us to deliver complex and strategic programmes quickly, ensuring that all proposed outcomes are understood, accepted and successfully delivered. We work in close collaboration with client teams to create manageable, controlled and transparent programmes that manage risk, deliver effective procurement, safeguard outcomes and provide added value.

Our expert team are specialists in assessing and overhauling failing programmes, designing and delivering new end-to-end programmes and conducting programme assurance reviews. Using our ProSure methodology, we can measure the impact, maturity and performance across all programme functions that influence efficiency and long-term sustainability, by detailing actionable recommendations we can ensure success in the long term.

Project Management

Having a robust project management strategy in place is more essential than ever before. We work with both public and private clients across a variety of sectors.

Our project management service guides our clients with expertise and skill through all project phases including feasibility, design, procurement, construction and handover. RLB recognises that different sectors and clients have varying needs and we offer project management services that can be tailored to provide the right service level for our clients, achieving the best project outcomes.

RLB creates collaborative team environments working closely with all stakeholders to establish the key projects drivers and success criteria. We aim to meet our client's requirements to produce a functionally and financially viable project that will be completed on time, within authorised cost and to the required quality standards.

Our project managers use certified and exemplar systems and processes aided by advanced technologies and digital reporting procedures.

Development Management

Development management requires assessing the optimum solution, team leadership and risk management to meet the strategic objectives of the owner and occupier. With a thorough understanding of our client's requirements, we have the means to successfully add value and deliver positive outcomes.

At RLB, we are able to support clients in developing effective and deliverable solutions that meet all the requirements of developers, funding institutions and investors, therefore driving premium value and returns.

Our development management team is made up of experienced professionals from various disciplines, reflecting the diverse and complex nature of many of today's development schemes. Our strength lies in our ability to draw on the best resources from a range of specialist fields.

PROJECT & PROGRAMME SUCCESS

Project & Fund Monitoring

We recognise that development financiers are exposed to increased financial risk and, in specific cases, have incurred financial loss due to an absence of comprehensive technical due diligence and progress reporting throughout a development lifecycle.

We critically appraise each project at the outset to highlight development and funding risks and then continue to monitor development progress, advise on residual risks and provide drawdown recommendations for the duration of the project.

Our proactive, rather than reactive, approach provides an early warning system for our clients; helping to ensure better informed decision making by acting as the client's 'eyes and ears' during the development process.

Pre-Construction Management & Project Planning

Our pre-construction management and project planning services place us at the forefront of the market, with the capability to plan and manage projects professionally, efficiently and safely. With strong capabilities across all building sectors, utilising the latest project planning techniques, our pre-construction and project planning services will manage your project related time risks from feasibility through to completion.

Our team has an in-depth knowledge of a wide range of construction techniques and delivery methodologies, and experience working for owners, developers and contractors.

ASPEN | CONSORT PLACE
LONDON, UK

CLIENT: FAR EAST CONSORTIUM

A development by Far East Consortium, the 65 storey residential tower, Aspen, will help create an elegant, vibrant and cosmopolitan community

ASSET OPTIMISATION

Partner - Head of Building Surveying:
Chris Hartley
e. chris.hartley@uk.rlb.com

CREATING SMART, SUSTAINABLE SPACES

We have extensive experience in asset optimisation which can lead to benefits in the efficient use of space, asset data capture to facilitate knowledge and focus on planned maintenance programmes, statutory compliance, and control and optimisation of expenditure.

Strategic Asset Management

To have certainty of budget expenditure, the future maintenance liabilities of the properties should be considered. This assessment will consider such matters as the condition of the construction elements, age and maintenance, location and the use of the property.

Estate Rationalisation

This is a specialist service offered to owners and occupiers on strategic, macro and micro scales to maximise the use of their accommodation. Our processes ensure optimal space utilisation, and assist in preparing space/workplace strategies that can identify where efficiencies, income generators or capital receipts can be realised across the public and private sector, while improving the maintainability and quality of spaces.

ABOUT RLB

CONTENTS

Building Surveying

We have embraced digitisation and are at the forefront of innovative procedures and technology to provide real value to our clients. Our technology and tools facilitate accurate data collection, and provide a fully addressable database enabling specific and detailed reporting on elements of an asset. This benefits trend analysis, driving economies in innovative approaches to estate asset management.

Our building surveyors naturally bring commercial awareness and ability, ensuring we are adding maximum value to built assets. Our team offers professional/regulatory services, project services and survey services, often in a combined and seamless service delivery offering, including:

- Technical due diligence
- Pre-acquisition surveys
- Clerk of Works / quality monitoring
- Defect analysis and remedy
- Dilapidations
- Party walls and boundary issues
- Accessibility and inclusive environments
- Planning application, listed building and building regulations
- Development/project monitoring
- Move/churn management
- Workplace strategies, space utilisation and planning
- Design services
- Works management
- Six facet surveys
- Condition surveys (including six facet) and asset management
- Measured surveys

ASSET OPTIMISATION

Strategic Facilities Management

The drive to create smart sustainable spaces and structures in the built environment will only increase. As technology in the industry develops at pace, the challenge is not only to maximise and measure the performance of built assets and deliver best value, but also to provide the optimum efficiency of the space for building owners and occupiers in the long term.

Our strategic facilities management (FM) service plays a crucial role in supporting clients throughout the entire life cycle of each project. Providing a holistic view of built asset requirements, we enable clients to develop, improve and track their spaces and help enhance their current estate portfolios.

With an in-depth knowledge and expertise in digital construction and smart asset management, our strategic facilities management team provides advisory services from facilities management and estates strategy review and development, through to BIM and soft landings, and whole life cost advice. Our insight and technical knowledge, gained from working on complex facilities management programmes worldwide, combined with collaborating with industry bodies on FM best practice, ensure we provide the best solutions for our clients in this fast-moving field.

SCHOOL OF ARCHITECTURE AND BUILT ENVIRONMENT, UNIVERSITY OF WOLVERHAMPTON
WOLVERHAMPTON, UNITED KINGDOM

CLIENT: UNIVERSITY OF WOLVERHAMPTON

Helping to create future-proofed space for the UK's next generation of architecture, design and construction leaders.

SPECIALIST SOLUTIONS

UK & Global Director: Mark Weaver

e. mark.weaver@uk.rlb.com

Partner - Head of Specialist Solutions: Ian Sandland
e. ian.sandland@uk.rlb.com

VALUE DRIVEN OUTCOMES

Every project//programme has bespoke requirements that often require more specialist support, especially during project inception when setting project objectives, outcomes and defining value is becoming increasingly more complex than simply defining and balancing the trilogy of time, cost and quality. Clients' needs are constantly evolving to meet the requirements of multiple stakeholders and end-users who, in turn, operate in a complex policy, governance and legislation-driven environment. Along with this, digital solutions, increased collaboration, a greater emphasis on data, automation, artificial intelligence (AI), and machine learning are all evolving at pace.

As a specialist consultant, we are continually evolving to meet these market needs and support our clients in overcoming these challenges.

Our experts provide both high level strategic advice and more practical support to achieve the optimised results for our clients.

Our commitment to clients is based on our core strengths and passion for delivering quality projects and providing services that protect and enhance the outcome.

OUR SERVICES

Strategic Commercial Management

Contact: Eddie Visscher, Partner Major Projects
e. eddie.visscher@uk.rlb.com

Our approach to commercial management focuses on the business needs of the client. We work intrinsically with our clients and design teams to fully understand the value drivers and outcomes required of the project delivering a commercial management service and approach which supports the project business plan and enables clients to make informed decisions in relation to their property assets. From inception, through design, delivery and into operation.

Supported by our large-scale international project expertise and bespoke digital solutions we deliver commercial certainty at all stages of the project life cycle from business case and optioneering through to financial close. Our independence and commercial approach allow us to deliver the right project outcomes and optimise value.

- Master planning
- Cost viability
- Feasibility studies
- Business case support
- Commercial management and cost control
- Complex project delivery
- International project delivery
- Major project and programme commercial management
- Risk management
- Value creation
- Contract administration
- Project assurance and peer review
- Procure for value toolkit
- Procurement and contracting strategy

RLB Specialist Solutions – Consultancy – Driving Value and Outcomes

Contact: Eddie Visscher, Partner Major Projects

e. eddie.visscher@uk.rlb.com

Contact: Ian Sandland, Partner - Head of Specialist Solutions

e. ian.sandland@uk.rlb.com

Contact: Mark Weaver, UK & Global Director

e. mark.weaver@uk.rlb.com

RLB's specialist solutions consultancy is a bespoke solution using RLB's global skills and knowledge

SPECIALIST SOLUTIONS

combined with digital tools, data and cloud-based technology to support our clients to identify needs and outcomes/value from business case to occupation of an asset to deliver a defined outcome designed to meet an identified need, problem or requirement.

We develop an in depth understanding of our client's and work with you to identify and understand the need, the client's values drivers and propose the optimised/ correct "solution". We work with you and the design team to understand all the "components" their inter-relationships and interactions and manage them to a solution to meet the desired outcome.

We have developed a digital solution that combines capital and whole life costs, programme, social value, environmental credentials and carbon models enabling the interactions and impacts of this to be tested, defined and set at the project outset and measured and monitored through the project lifecycle to optimise wider projects outcomes and value beyond the baseline of time, cost and quality.

Whole Life Asset Management and Life Cycle Costs

Contact: Trevor Globe, Head of Life Cycle Management
e. trevor.globe@uk.rlb.com

Environmental and sustainability drivers and legislation are now key considerations throughout the project lifecycle from business case, through design, build and ultimately disposal of a built asset. RLB's Total Cost Model (TCM) is our response to this need. TCM has been developed to integrate with our capital cost planning system ROSS5D, our wider sustainability services and considers capital, operational, occupancy, energy, carbon, maintenance and replacement costs of a facility over a predetermined period during the design and construction phase. The model encapsulates capital cost and life cycle characteristics of whole buildings, elements and individual components. TCM is fully dynamic model where all variables can impact on one another. This allows the facilitation of rapid "what if" analyses on different assets and design options at a building, element or component level to enable informed decision making from a whole life perspective. Outputs utilise business information technology that allows RLB's specialist life cycle team to make iterative adjustments of variables and cashflows to support the optimisation of the design and asset management to meet the client's project objectives, needs and whole life value goals.

- Whole Life Asset Management techniques, utilising the outputs from the TCM model, allow RLB to offer strategic estate planning optioneering to clients', to inform their business planning and capital investment decision making. RLB will identify opportunities for making financial savings over the medium term and for aligning capital investment programmes with carbon and energy reduction trajectories.
- Baseline whole life assessment
  - Based on elemental cost plan
  - Utilised to compare alternative design solutions
  - Provide optioneering guidance for capital investment decisions
  - Deliver on BREEAM point
- Integrated whole, life assessment and analysis
  - Building condition surveys of existing portfolio site
  - Pricing and profiling replacement and repair programmes
  - Creation of annual, 3 and 20-year life cycle programmes
  - Identification of procurement opportunities
  - Life cycle efficiency planning
- Whole life management consultancy
  - Management consultancy advice to develop lifecycle approach
  - Integration of lifecycle management with capital investment planning
  - Integration of lifecycle management with FM services

SPECIALIST CONSULTANCY

- Development of maintenance and replacement approaches to align with business strategy
- Cashflow management to maximise effectiveness of life cycle management
- Business case, carbon trajectory, social value

- Asset condition based –whole life cost modelling
- LC/Carbon model
- Support for BREEAM/LEED and Green Star assessments
- Whole life cost modelling
- Operational carbon modelling
- Life cycle cost modelling
- Optimisation of the cost of asset ownership

Sustainability Services

Contact: Heather Evans, Head of Sustainability Consultancy
e. heather.evans@uk.rlb.com

One of the biggest challenges facing our industry is how we build for the future, integrating wellbeing, economic and environmental impact into the built environment. Wider sustainability considerations, driven by regulation and stakeholder expectations, are transforming what we build, where we build and how we build it. Our sustainability consultancy service is based on fostering a culture of continuous improvement, integrating ESG (Environmental, Social, Governance) alongside traditional drivers of time, cost and quality.

Our approach covers all aspects of the sustainability agenda - from carbon reduction, enhancing wellbeing, energy management and estate rationalisation, through to ethical, legislative and economic pressures.

Our service is tailored around sustainable project delivery, with expert knowledge provided at every stage of the project lifecycle. Our sustainability credentials are supported by our market leading position as environmental assessors and our industry engagement, working towards collaborative sustainability advancement through initiatives such as ConstructZero. We were a founding partner of the Royal Institute of Chartered Surveyors on the development of SKA - an environmental assessment tool for fit-out and refurbishment projects, introduced as a benchmark for sustainability.

We continue to upskill those in the construction industry to consider sustainable measures when building, and to design for a longer life. Our sustainability team offer a range of services encompassing strategic level through to project level sustainability, including bespoke sustainability solutions as well as integrated sustainability within our PM, CM, BS and wider consultancy services.

- Sustainability strategies
- Decarbonisation and net zero strategies
- ESG consultancy
- Carbon consultancy including embodied carbon, carbon footprints
- Climate change strategies
- Accreditations including SKA Rating, BREEAM, LEED, WELL and Fitwel

Whole Life Carbon

Contact: Eddie Visscher, Partner Major Projects

e. eddie.visscher@uk.rlb.com

RLB undertake a holistic long-term approach to carbon management with a view to reducing carbon and associated greenhouse gases considering the commercial realities of balancing capital expenditure, whole life cost and carbon. Our carbon calculations consider the embodied carbon with a building (during construction), the operational carbon and the carbon during life cycle replacement o components/assets.

Our carbon calculator assesses the embodied carbon at element or component level allowing design optioneering to consider the difference aspects of carbon, allowing trade-off to be made with other competing aspects of the projects and can aid our clients to work towards Net Zero Carbon targets.

SPECIALIST CONSULTANCY

Our carbon calculations can be used to support achieving the required credits towards assessments such as BREEAM.

Social Value Consultancy

Contact: Jiten Chauhan, Partner
e. jiten.chauhan@uk.rlb.com

As a global construction consultancy, we never underestimate the responsibility of supporting the economic, social and environmental wellbeing of the areas in which we work. The specific challenges and opportunities vary hugely from region to region, but also from community to community. Implementing and measuring the impact of Social Value is a fundamental part of procuring and delivering a sustainable project. We ensure that social value principles are integrated within the total development, so that the benefits outlive the contract.

Our Social Value service integrates sound principles within project development, from business case to completion. This ensures the economic, social and wellbeing benefits outlive the contract and can be felt in communities and measured over the long-term. We produce forecasts and evaluations of the Social, Economic and Environmental Impact at a Corporate, Framework and Project level. It's an approach we advocate for clients, and one we use to measure the impact of our own business. We provide robust analysis and meticulous planning that supports all levels, from corporate to framework, to single projects. This helps our clients understand the social, economic and environmental impact of each project, and illustrates to stakeholders the value for people, communities, businesses and economies.

- Strategic SV consultancy
- SV definition
- SV baseline measurement/design comparisons
- SV procurement
- SV measuring/monitoring
- ESG consultancy

Contract Advisory and Strategic Procurement

Contact: Aziz Methajee, Partner Head of Dispute Resolution
e. aziz.methajee@uk.rlb.com

Setting up and managing construction contracts can be a complex process, subject to numerous and changing regulatory requirements. It's important to understand the obligations a contract imposes and the associated risks. We support clients in the successful delivery of their projects during every stage, from drafting and developing bespoke contracts, to providing expert advice during the delivery phase and assisting if problems arise. Our dedicated procurement and contractual advisory team guides clients throughout the project process, providing technical support in specialist areas such as expert witness and dispute avoidance and resolution.

Our team includes claims preparation and defence experts who, working alongside each represented parties' lawyers, can provide strategic advice, management, negotiation and resolution of claims through adjudication or alternative dispute resolution. With our global expertise across public and private sectors, and our knowledge of varying forms of contracts, we can provide considered advice, from individual projects to large-scale programmes of work.

- Claims avoidance – live programme/project advice
- Contract assurance
- Contract management
- Dispute resolution - prepare/analysis/response to claims
- Expert commissions – quantum and time
- Procurement and contract strategies
- Strategic procurement and contractual advice
- Contract negotiations
- Framework procurement
- Public procurement
- Project assurance

SPECIALIST CONSULTANCY

Programme Management / Strategic Programme Integrator

Contact: Julian King, Head of Programme Management
e. julian.king@uk.rlb.com

We create an environment for our clients and their supply chains to deliver successful programme outcomes.

The traditional view of programme management is an extension of project management where multiple projects are managed in a coordinated way to deliver a set outcome. However, where project management is typically focused on performance, in terms of quality, cost and time, programme management operates more on a strategic level to create synergies and deliver a package of benefits through the coordinated management of multiple workstreams.

A collaborative approach between programme and project management enables effective stakeholder management, the coordination and adaptation of the programme to business changes as well as adjusting to risks and issues as they arise. These aspects, where managed effectively, will positively contribute to the performance of the programme and the delivery of the business case benefits. Programme management requires an approach that takes a broader strategic perspective and full advantage of modern digital tools to deliver the synergies that come from end-to-end programme visibility.

Our expert team specialises in designing and delivering end-to-end programmes within the built environment. We can assess and overhaul distressed programmes, conducting programme assurance reviews to ensure that benefits are delivered, risks are managed effectively and that lessons are learned for the future.

- Programme cost management
- Programme management resource
- Programme Office (PMO)
- Digital
- Programme audit
- Programme management consultancy
- Project controls
- Portfolio programme management
- Programme integrator

Specification Consultancy

Contact: Meena Sankar, Partner
e. meena.sankar@uk.rlb.com

RLB is a market leader in the field of architectural specifications. Through years of practical project experience, we have learnt and understood the complexities and intricacies of what is required on projects, ensuring that our specifications reflect the complex world of procurement and adhere to local specification formats and standards. Our aim is to provide clients with a range of specification solutions to meet individual requirements.

Our expertise extends across all sectors, and our global reach means that we can offer the below range of specification related solutions to suit global requirements.

Specification Production

Our expert consultants will prepare architectural specifications on behalf of architects and developers such that it conveys exactly what is required to procure and build a development including information related to process, quality, performance, standards and materials.

We provide our clients with flexible solutions across a range of globally recognised formats to suit BIM workflow and environments.

Specification Peer/Technical Reviews

Our specification review service looks at the content produced in-house by practices. We provide commentary and advice based on our experience and core ethos covering areas of risk, design responsibility, procurement and scope.

SPECIALIST CONSULTANCY

Specification Business Consultancy

Our business consultancy service focuses on offering clients high level strategic advice by assessing existing tools and methods to provide solutions that will enhance business requirements. Our experts will work with business leaders to ascertain how specifications are currently prepared, how content is managed and the QAQC process adopted. We provide feedback and implement new procedures and principles to help improve the specification process within practices.

Health & Safety

Contact: Samantha Mepham, National Head of Health & Safety
e. samantha.mepham@uk.rlb.com

We provide a comprehensive range of H&S consultancy services. Our team of H&S professionals give clients advice and assistance to help achieve compliance with their statutory duties under existing H&S legislation for construction projects, maintenance and repair works, occupation and operations. Our service is designed to ensure 100% legislative compliance and provides added value through our specialist expertise in design development, construction safety and occupational and operational safety. Our service is quality assured, with corporate recognition from the Association of Project Safety, CHAS, Safety Systems in Procurement (SSIP) and Safe Contractor approved.

PD / CDM Services

Contact: Samantha Mepham, National Head of Health & Safety
e. samantha.mepham@uk.rlb.com

The areas of Principal Design (PD) and Construction Design and Management (CDM) Services are included in our work. We were heavily involved in the drafting of the 2007 and 2015 CDM Regulations, so whether the role is principal designer, principal design advisor or independent client advisor, we provide professional advice, detailed recommendations and encourage coordinated solutions for successful implementation.

CONTENTS

OPPORTUNITIES AT RLB

By attracting, developing, retaining and investing in exceptional people, we've become a global leader in construction cost management and quantity surveying, project management, building surveying and advisory services. If you share our capability, ambition and potential, and want to be part of a diverse workforce embracing new ideas, RLB could well be the place for you.

RLB's Experienced Professionals Programme:

- Qualified professionals
- Experienced professionals
- Associates
- Partners

RLB's Future Professionals Programme:

- **Graduate:** RLB's graduate recruitment and training programme, offering first-class structured professional training programmes to support achievement of your professional qualification
- **Year Out:** Opportunities to work with our teams throughout the UK across a range of sectors
- **Apprenticeships:** While learning on-the-job, you'll also gain an academic and professional qualification
- **Internships and work placements:** We offer flexible placements for undergraduates and graduates across all disciplines.

RLB's Business Services Professionals:

- Our business services teams work at the heart of our business, playing a key role in delivering for our clients
- Opportunities in business services include: Facilities Management, Finance, Front-of-house, Human Resources, IT, Legal, Marketing and Client Development, Secretarial and Administration.

If you are interested in joining our team, please visit RLB.com or email recruitment@uk.rlb.com.

Sarah Draper
Partner - Head of People & Culture

e. sarah.draper@uk.rlb.com
t. +44 (0)7780 794979

RLB EURO ALLIANCE

The RLB Euro Alliance is a formally established network of partner organisations across Europe each committed to delivering high quality services at a local level, utilising extensive knowledge and experience regionally as part of the RLB global network.

AT A GLANCE:

- 17 partner organisations
- 1500 staff across UK & Europe
- Operating across 23 countries

Please contact:

Andrew Reynolds
Global Chairman and UK & Europe Chief Executive
Global Board Chairman
e. andrew.reynolds@uk.rlb.com
t. +44 (0)7764 285899

RLB EURO ALLIANCE OFFICE LOCATIONS COVER:

Austria
bau-control ZT GmbH

Belgium
Bopro

Bulgaria, Romania, Serbia, Croatia, Montenegro (The Balkans), Bosnia and Herzegovina
Bates

Czech Republic, Slovakia
H1K Consulting

Denmark
Emcon A/S

Germany
MTM Project Solutions

Greece
LDK Consultants

Hungary
Tomlin Kft

Ireland
Kerrigan Sheanon Newman

ABOUT RLB

Italy
Bear Project Management

Luxembourg
Sterling Quest Associates

Netherlands/Holland
SkaaL

Norway
AS Bygganalyse

Poland
APP Projekt

Portugal
FICOPE

Spain
APM Management

Turkey
Pro^GE

RLB Euro Alliance office location

INTERNATIONAL OFFICES

EUROPE

UNITED KINGDOM

LONDON (HEAD OFFICE)
Level 3, 110 Bishopsgate
London, EC2 4YN
Telephone: +44 207 398 8300
Email: nick.eliot@uk.rlb.com
Contact: Nick Eliot

BELFAST
Urban HQ, Eagle Star House, 5-7
Upper Queen Street, Belfast,
BT1 6QD
Telephone: +44 289 521 5001
Email: jason.brownlee@uk.rlb.com
Contact: Jason Brownlee

BIRMINGHAM
Fifteen Colmore Row,
Birmingham, B3 2BH
Telephone: +44 121 503 1500
Email: jo.reynolds@uk.rlb.com
Contact: Jo Reynolds

BRISTOL
Broad Quay House, Broad Quay,
Bristol, BS1 4DJ
Telephone: +44 117 974 1122
Email: jackie.pinder@uk.rlb.com
Contact: Jackie Pinder

CARDIFF
Unit 115, Creative Quarter, Morgan
Arcade, The Hayes, Cardiff, CF10 1AF
Telephone: +44 292 240 5030
Email: jackie.pinder@uk.rlb.com
Contact: Jackie Pinder

CUMBRIA
44 Springfield Road, Egremont,
Cumbria, CA22 2TQ
Telephone: +44 1925 851787
Email: mark.clive@uk.rlb.com
Contact: Mark Clive

LEEDS
4D Platform, New Station Street
Leeds, LS1 4JB
Telephone: +44 114 273 3300
Email: matt.summerhill@uk.rlb.com
Contact: Matt Summerhill

LIVERPOOL
8 Princes Parade, Liverpool, L3 1DL
Telephone +44 161 868 7700
Email: steve.gillingham@uk.rlb.com
Contact: Steve Gillingham

MANCHESTER
1 King St, Manchester, M2 6AW
Telephone: +44 161 868 7700
Email: stephen.gillingham@uk.rlb.com
Contact: Steve Gillingham

SHEFFIELD
6th Floor Orchard Lane Wing,
Fountain Precinct, Balm Green,
Sheffield, S1 2JA
Telephone: +44 114 273 3300
Email: matt.summerhill@uk.rlb.com
Contact: Matt Summerhill

THAMES VALLEY
1000 Eskdale Road,
Winnersh Triangle, Wokingham,
Berkshire, RG41 5TS
Telephone: +44 118 974 3600
Email: michael.righton@uk.rlb.com
Contact: Michael Righton

WARRINGTON
Ground South Wing,
401 Faraday Street, Birchwood Park,
Warrington, Cheshire, WA3 6GA
Telephone: +44 192 585 1787
Email: mark.clive@uk.rlb.com
Contact: Mark Clive

FRANCE

PARIS (RLB|SQA)
7 Bis Rue de Monceau, 75008 Paris,
France
Telephone: +33 1 53 40 94 80
Email: m.lamy@sqa.fr
Contact: Matthieu Lamy

LUXEMBOURG

LUXEMBOURG (RLB|SQA)
62 Avenue Guillaume,
L1650 Luxembourg
Telephone: 0033607067710
Email: c.pena@sqa.fr
Contact: Christine Pena

NETHERLANDS

AMSTERDAM (RLB EUROPE)
Weesperstraat 61-105, Amsterdam,
1018VN
Telephone: +44 207 398 8300
Email: william.carr-miles@eu.rlb.com
Contact: William Carr-Miles

RLB EURO ALLIANCE

AUSTRIA (BAU-CONTROL ZT GMBH)
Canovagasse, 7/17, 1010, Vienna
Telephone: +43 664 514 9152
Email: a.tautschnig@atbaucontrol.at
Contact: Arnold Tautschnig

BELGIUM (BOPRO)
Bopro, Oude Houtlei 140, 9000 Ghent
Telephone: +32 15 74 74 74
Email: stefaan.martel@bopro.be
Contact: Stefaan Martel

BULGARIA (BATES)
12A Tsvetan Radoslavov, Str, Sofia, 1113
Telephone: +359 2 9803249
Email: pawel.sudziarski@bates.eu.com
Contact: Pawel Sudziarski

BOSNIA & HERZEGOVINA (BATES)
Telephone: +359 2 9803249
Email: pawel.sudziarski@bates.eu.com
Contact: Pawel Sudziarski

CROATIA (BATES)
Bogišiceva Str 9, 10000 Zagreb
Telephone: +359 2 9803249
Email: pawel.sudziarski@bates.eu.com
Contact: Pawel Sudziarski

CZECH REPUBLIC (H1K CONSULTING)
Rytirska 410/6, 110 00 Prague 1
Telephone: +42 07248 784992
Email: phanys@h1k.eu
Contact: Petr Hanys

DENMARK (EMCON A/S)
Gammel Lundtoftevej 1C,
DK-2800 Kgs. Lyngby
Telephone: +45 39 97 00 00
Email: jbl@emcon.dk
Contact: Jeppe Blak-Lunddahl

GERMANY
(MTM PROJECT SOLUTIONS)
Lützow Centre,Wichmannstrabe 5,
D-10787 Berlin
Telephone: +49 30 720 22 720
Email: markus.ketnath@mtm-ps.com
Contact: Markus Ketnath

GREECE (LDK CONSULTANTS)
Off 21, Thivaidos St
GR-145 64, Athens
Telephone: +30 21081 96742
Email: stavros@ldk.gr
Contact: Stavros Damianidis

HUNGARY (TOMLIN KFT)
Tomlin Kft, H-1037 Budapest,
Montevideo utca 16/B, 3rd floor,
Hungary
Telephone: +36 1 336 3380
Email: omajtenyi@tomlin.hu
Contact: Andras Omajtenyi

IRELAND (KERRIGAN
SHEANON NEWMAN)
Beech House,
Beech Hill Office Campus,
Dublin 4, D04 V5N2
Telephone: +353 1 277 6900
Email: jtravers@ksn.ie
Contact: Justin Travers

ITALY (BEAR PROJECT
MANAGEMENT)
Via Giovanni Prati 9, 20145, Milan
Telephone: +39 02 4549 6656
Email: steven.scamihorn@bearpm.com
Contact: Steven Scamihorn

LUXEMBOURG (STERLING QUEST
ASSOCIATES)
62 Avenue Guillaume,
L1650 Luxembourg
Telephone: 0033607067710.
Email: c.pena@sqa.fr
Contact: Christine Pena

MONTENEGRO (BATES)
62 Svetog Petra Cetinjskog blvd.,
Podgorica
Telephone: +359 2 9803249
Email: pawel.sudziarski@bates.eu.com
Contact: Pawel Sudziarski

NETHERLANDS (SKAAL)
Weesperstraat 61-105, Amsterdam,
1018VN
Telephone: +31 (0) 20 800 66 08
Email: jeroen.dewilde@skaal.nl
Contact: Jeroen De Wilde

NORWAY (BYGGANALYSE AS)
AS Bygganalyse, Drammensveien 133,
0277 Oslo, Norway
Telephone: +47 22 12 92 30
Email: Jon.Bech@bygganalyse.no
Contact: Jon Bech

POLAND (APP-PROJEKT S.A.)
ul. Kłobucka 23C/112
02-699, Warsaw
Telephone: +48 22 331 9652
Email: m.malaszynski@app-projekt.pl
Contact: Michal Malaszynski

PORTUGAL (FICOPE)
Ficope, Rua Armando Cortez nº1 4º
Andar -2770-233 PaÃo D ¥Arcos
Telephone: +35 1217 995 790
Email: pconsciencia@ficope.pt
Contact: Paulo ConsciÍncia

ROMANIA (BATES)
Intrarea Difuzorului Nr. 3,
Sector 1, Bucharest
Telephone: +359 2 9803249
Email: pawel.sudziarski@bates.eu.com
Contact: Pawel Sudziarski

SERBIA (BATES)
38 Takovska str.,
Belgrade
Telephone: +359 2 9803249
Email: pawel.sudziarski@bates.eu.com
Contact: Pawel Sudziarski

SLOVAKIA (H1K CONSULTING)
Rytirska 410/6, 110 00 Prague 1
Telephone: +42 07248 784992
Email: phanys@h1k.eu

Contact: Petr Hanys

SPAIN (APM MANAGEMENT)
Calle de la Comunidad Canaria Nº4
28660, Majadahonda, Madrid
Telephone: +34 650 64 81 68
Email: ignacio@menendezpidal.es
Contact: Ignacio Menendez Pidal

TURKEY (PRO^GE)
B Blok Kat:3-4 Ê, Istanbul
Telephone: +90 212 352 20 21
Email: salten@pro-ge.com
Contact: Selçuk Alten

AFRICA

BOTSWANA

GABARONE
5 Matante Mews, 3rd Floor, Plot 54373, Central Business District, Gaborone, Botswana
Telephone: +27 72 622 9852
Email: fred.selolwane@bw.rlb.com
Contact: Fred Selolwane

MAURITIUS

QUATRE BORNES
90 St Jean Road, Quatre Bornes, 72218 Mauritius
Telephone: +230 5251 5507
Email: navin.hooloomann@mu.rlb.com
Contact: Navindranath Hooloomann

MOZAMBIQUE

MAPUTO
Avenida Francisco Orlando Magumbwe nº 32, Maputo, Mozambique
Telephone: +27 83 226 0303
Email: nicolas.sheard@za.rlb.com
Contact: Nicolas Sheard

SEYCHELLES

MAHÉ
Suite 3, 11B, 4th Floor, Capital City Building, Independence Avenue, Victoria, Mahé, Seychelles
Telephone: +248 434 4890
Email: admin@mu.rlb.com
Contact: Alvin Rampersand

SOUTH AFRICA

PENTAD QS (PTY) LTD.

CAPE TOWN
9th Floor, 22 Bree Street, Cape Town, South Africa
Telephone: +27 83 267 6771
Email: martin.meinesz@za.rlb.com
Contact: Martin Meinesz

DURBAN
77 Richefond Circle Ridgeside Office Park, Suite 201, Umhlanga Ridge, Durban, 4319, South Africa
Telephone: +27 72 630 5317
Email: evan.sim@za.rlb.com
Contact: Evan Sim

PRETORIA
1st Floor, Banking Court, Menlyn Maine Central Square, Cnr Aramist and Corobay Avenue Waterkloof, Glen, Pretoria, South Africa
Telephone: +27 83 226 0303
Email: nicolas.sheard@za.rlb.com
Contact: Nicolas Sheard

STELLENBOSCH
Office 11, Rouxcor House
37 Mark Street, Stellenbosch
7599 South Africa
Telephone: +27 82 312 0285
Email: info@za.rlb.com
Contact: Lichelle Neethling

AMERICAS

CANADA

CALGARY
304-609 14th Street NQ
Calgary, Alberta T2N 2A1
Telephone: (905) 827-8218
Email: mel.yungblut@ca.rlb.com
Contact: Mel Yungblut

TORONTO
435 North Service Road West
Oakville, Ontario L6M 4X8, Canada
Phone: (905) 827-8218
Email: mel.yungblut@ca.rlb.com
Contact: Mel Yungblut

CARIBBEAN

ST. LUCIA
Mercury Court,
Choc Estate P.O. Box CP 5475
Castries, St. Lucia
Telephone: +1 758 452 2125
Email: david.piper@lc.rlb.com
Contact: David Piper

NORTH AMERICA

BOSTON
Two Financial Center, Suite 810, 60 South Street, Boston, MA 02111, USA
Telephone: +1 617 737 9339
Email: BOS@us.rlb.com
Contact: Michael O'Reilly

CHICAGO
141 W. Jackson Blvd Suite 3810
Chicago, IL 60604, USA
Telephone: +1 312 819 4250
Email: chris.harris@us.rlb.com
Contact: Chris Harris

DENVER
999 18th Street, STE 1125N
Denver, CO 80202
Telephone: +1 720 904 1480
Email: peter.knowles@us.rlb.com
Contact: Peter Knowles

HAWAII / HILO
820 Piilani Street, STE 202
Hilo, HI 96720
Telephone: +1 808 883 3379
Email: guia.lasquete@us.rlb.com
Contact: Guia Lasquete

HAWAII / HONOLULU
1001 Bishop Street, Suite 2690, Honolulu, Hawaii 96813, USA
Telephone: +1 808 521 2641
Email: erin.kirihara@us.rlb.com
Contact: Erin Kirihara

HAWAII / MAUI
300 Ohukai Road, Building B, Suite COM1, Kihei, Hawaii 96753, USA
Telephone: +1 808 875 1945
Email: paul.belshoff@us.rlb.com
Contact: Paul Belshoff

HAWAII / WAIKOLOA
Queens' MarketPlace
69-201 Waikoloa Beach Drive
Suite 2F12
Waikoloa, Hawaii 96738, USA
Telephone: +1 808 883 3379
Email: guia.lasquete@us.rlb.com
Contact: Guia Lasquete

KANSAS CITY
435 Nichols Rd, Ste 20
Kansas City, MO 64112, USA
Telephone: +1 816 977 2740
Email: julian.anderson@us.rlb.com
Contact: Julian Anderson

LAS VEGAS
1050 E. Flamingo Road
Suite S-110
Las Vegas, NV 89119
Telephone: +1 808 383 5244
Email: paul.brussow@us.rlb.com
Contact: Paul Brussow

LOS ANGELES
The Bloc, 700 South Flower Street, Suite 630, Los Angeles, California 90017, USA
Telephone: +1 213 689 1103
Email: aled.jenkins@us.rlb.com
Contact: Aled Jenkins

NEW YORK
27 East 28th Street,
Suite 218, New York 10016
Telephone: +1 347 246 4823
Email: paraic.morrissey@us.rlb.com
Contact: Michael Moynihan

PHOENIX (CORPORATE OFFICE)
4343 East Camelback Road,
Suite 350, Phoenix,
AZ 85018, USA
Telephone: +1 602 443 4848
Email: scott.macpherson@us.rlb.com
Contact: Scott Macpherson

ASIA

PORTLAND
Brewery Block 2
1120 NW Couch Street, Suite 730
Portland, OR 97209, USA
Telephone: +1 503 226 2730
Email: daniel.junge@us.rlb.com
Contact: Daniel Junge

SAN FRANCISCO
930 Montgomery Street, Suite 500
San Francisco, CA 94133
Telephone: +1 415 362 2613
Email: brian.schroth@us.rlb.com
Contact: Brian Schroth

SAN JOSE
2570 N First Street, Suite 213
San Jose, California 95131
Telephone: +1 408 404 4904
Email: joel.brown@us.rlb.com
Contact: Joel Brown

SEATTLE
101 Stewart, Suite 301, Seattle,
Washington 98101
Telephone: +1 206 441 8872
Email: craig.colligan@us.rlb.com
Contact: Craig Colligan

TUCSON
33 West Congress Street
Suite 215, Tucson,
Arizona 85701, USA
Telephone: +1 520 777 7581
Email: josh.marks@us.rlb.com
Contact: Josh Marks

CAMBODIA

PHNOM PENH
The Fortune Tower (C7), Unit #2211,
Oknha Tephorn Street (182)
and Street 161, Phum 7,
Sangkat Veal Vong, Khan 7 Makara,
120307 Phnom Penh, Cambodia.
Telephone: +855 239 02298
Email: rlb@sg.rlb.com

CHINA

BEIJING
Room 1803-1809, 18th Floor,
East Ocean Centre,
24A Jian Guo Men Wai Avenue,
Chaoyang District,
Beijing 100004, China
Telephone: +86 10 6515 5818
Email: sm.tuen@cn.rlb.com
Contact: Simon Tuen

CHENGDU
Room 2901-2904, 29/F, Square One,
18 Dongyu Street Jinjiang District,
Chengdu 610016, China
Telephone: +86 28 8670 3382
Email: eric.lau@cn.rlb.com
Contact: Eric Lau

CHONGQING
Room 1-3 & 17-18,
39/F, IFS Tower T1,
No. 1 Qingyun Road, Jiangbei District,
Chongqing 400024, China
Telephone: +86 23 6380 6628
Email: eric.lau@cn.rlb.com
Contact: Eric Lau

GUANGZHOU
Room 1302-1308, Central Tower,
No. 5, Xiancun Road, Guangzhou
510623, Guangdong Province, China
Telephone: +86 20 8732 1801
Email: danny.chow@cn.rlb.com
Contact: Danny Chow

GUIYANG
Room E, 12th Floor, Fuzhong
International Plaza,
126 Xin Hua Road, Guiyang 550002,
Guizhou Province, China
Telephone: +86 851 8553 3818
Email: eric.lau@cn.rlb.com
Contact: Eric Lau

HAIKOU
Room 1705, 17th Floor,
Fortune Center, 38 Da Tong Road,
Haikou 570102,
Hainan Province, China
Telephone: +86 898 6672 6638
Email: tim.ngai@hk.rlb.com
Contact: Tim Ngai

HANGZHOU
Room 1603, 16th Floor, North Tower,
Modern City Center, No. 161 Shao
Xing Road, Xia Cheng District,
Hangzhou 310004, Zhejiang
Province, China
Telephone: +86 571 8539 3028
Email: iris.lee@cn.rlb.com
Contact: Iris Lee

HONG KONG
15th Floor, Goldin Financial Global
Centre, 17 Kai Cheung Road,
Kowloon Bay, Kowloon, Hong Kong
Telephone: +852 2823 1823
Email: kenneth.kwan@hk.rlb.com
Contact: Kenneth Kwan

MACAU
Alameda Dr. Carlos D' Assumpcao,
398 Edificio CNAC 9 Andar I-J,
Macau SAR
Telephone: +853 2875 3088
Email: kenneth.kwan@hk.rlb.com
Contact: Kenneth Kwan

NANJING
Room 1201, South Tower, Jinmao
Plaza, 201 Zhong Yang Road, Nanjing
210009, Jiang Su Province, China
Telephone: +86 25 8678 0300
Email: eric.fong@cn.rlb.com
Contact: Eric Fong

NANNING
Room 2203, Block B, Resources
Building, No. 136 Minzu Road,
Nanning 530000, Guangxi, China
Tel: +86 771 5896 101
E-mail: danny.chow@hk.rlb.com
Contact: Danny Chow

SHANGHAI
22nd Floor, Greentech Tower,
436 Hengfeng Road, Jingan District,
Shanghai 200070, China
Telephone: +86 21 6330 1999
Email: iris.lee@cn.rlb.com
Contact: Iris Lee

SHENYANG
25th Floor, Tower A,
President Building,
No. 69 Heping North Avenue, Heping
District, Shenyang 110003, Liaoning
Province, China
Telephone: + 86 24 2396 5516
Email: sm.tuen@cn.rlb.com
Contact: Simon Tuen

SHENZHEN
Room 4510-4513, 45th Floor,
Shun Hing Square Diwang
Commercial Centre,
5002 Shennan Road East,
Shenzhen 518001,
Guangdong Province, China
Telephone: +86 755 8246 0959
Email: kenneth.kwan@hk.rlb.com
Contact: Kenneth Kwan

WUHAN
Room 3301, 33rd Floor, Heartland
66 Office Tower, No.688 Jinghan
Avenue, Qiaokou District, Wuhan
430030, Hubei Province, China
Telephone: +86 27 6885 0986
Email: kt.woo@hk.rlb.com
Contact: Woo Kam Tong

WUXI
Room 1410-1412, 14th Floor, Juna
Plaza, 6 Yonghe Road, Nanchang
District, Wuxi 214000,
Jiangsu Province, China
Tel: +86 510 8274 0266
E-mail: iris.lee@cn.rlb.com
Contact: Iris Lee

XIAN
Room 1506, 15th Floor,
Chang'an Metropolis Center,
No.88 Nanguan Zheng Street,
Beilin District, Xian 710068,
Shaanxi Province, China
Telephone: +86 29 8833 7433
Email: eric.lau@cn.rlb.com
Contact: Eric Lau

ZHUHAI
Room 1401-1402, 14th Floor,
Taifook International Finance
Building, No. 1199 Jiu Zhuo Road
East, Jida, Zhuhai 519015, Guangdong
Province, China
Telephone: +86 756 388 9010
Email: danny.chow@hk.rlb.com
Contact: Danny Chow

INDONESIA

JAKARTA
Jl. Jend. Surdirman Kav. 45-46,
Sampoerna Strategic Square,
South Tower, Level 19,
Jakarta 12930, Indonesia
Telephone: +62 21 5795 2308
Email: clara.andjarwati@id.rlb.com
Contact: Clara Andjarwati

INDIA

BANGALORE
491,"Viswakarma", East End Main,
9th Block Jayanagar,
560069, India
Telephone: +44 7976 361868
Email: ann.bentley@uk.rlb.com
Contact: Ann Bentley

MALAYSIA

KUALA LUMPUR
B2-6-3 Solaris Dutamas,
No. 1 Jalan Dutamas 1, 50480
Kuala Lumpur, Malaysia
Telephone: +60 3 6207 9991
Email: kf.lai@my.rlb.com
Contact: Dato' Lai Kar Fook

MYANMAR (BURMA)

YANGON
Union Business Center, Nat Mauk St,
Yangon, Myanmar (Burma)
Telephone: +95 1 860 3448 (Ext 4004)
Email: serene.wong@vn.rlb.com
Contact: Serene Wong

PHILIPPINES

BACOLOD CITY
2nd Floor, Paseo Verde, Lacson Street
Mandalagan, Bacolod, Negros Occidental
Telephone: +63929 336 4180
Email: rlb@ph.rlb.com / noel.clemena@ph.rlb.com
Contact: Noel G. Clemeña

BACOLOD
Sitio Cascajo, Looc
Panglao Bohol, 6340 Philippines
Telephone: +63 917 5481313
Email: rlb@ph.rlb.com / coraballard@ph.rlb.com
Contact: Corazon C. Ballard

CAGAYAN DE ORO
Unit 4, RMT Building
C.M. Recto Avenue, Lapasan Highway
Bgy. Lapasan, Cagayan De Oro City
Misamis Oriental, 9000 Philippines
Mobile: +63929 3364180
Email: rlb.cdo@ph.rlb.com / noel.clemena@ph.rlb.com
Contact: Noel G. Clemeña

CEBU
9th Floor, Unit 2-901
OITC2, Oakridge Business Park
880 A.S. Fortuna Street, Bgy. Banilad
Mandaue City, Cebu 6014
Telephone: +63 32 268 0072 / 231 0811
Email: rlbcebu@ph.rlb.com
Contact: Armando D. Baria

CLARK
Unit 211, Baronesa Place, Mc. Arthur Hi-way, City of Mabalacat, Pampanga
Telephone: +63 917 5695258
Email: rlb@ph.rlb.com / jenifer.rondina@ph.rlb.com
Contact: Jenifer D. Rondina

DAVAO
9th Floor, Unit 2-901
OITC2, Oakridge Business Park
880 A.S. Fortuna Street, Bgy. Banilad
Mandaue City, Cebu 6014
Telephone: +63 32 268 0072 / 231 0811
Email: rlbcebu@ph.rlb.com
Contact: Armando D. Baria

ILOILO CITY
Unit 2F-17, The Galleria
Jalandoni Street
Jaro, Iloilo City
Telephone: +63 917 5285616
Email: rlb@ph.rlb.com / joy.marasigan@ph.rlb.com
Contact: Jolly Joy M. Cantero

METRO MANILA
Corazon Clemeña Compound,
Bldg. 3 No. 54 Danny Floro Street,
Bagong Ilog, Pasig City 1600,
Philippines
Telephone: +63 2 8365 1060 / 8365 1583
Email: rlb@ph.rlb.com / bizdev@ph.rlb.com
Contact: Corazon Clemeña Ballard

STA. ROSA CITY, LAGUNA
Unit 303, Brain Train Center
Lott 11, Blk. 3, Sta. Rosa Business Park Greenfield, Bgy. Don Jose
Sta. Rosa, Laguna, 4026 Philippines
Telephone: +63 917 8869332
Email: rlb@ph.rlb.com / sonny.samonte@ph.rlb.com
Contact: Isagani D. Samonte

MIDDLE EAST

SINGAPORE

SINGAPORE
911 Bukit Timah Road Level 3,
Singapore 589622
Telephone: +65 6339 1500
Email: silas.loh@sg.rlb.com
Contact: Silas Loh

SOUTH KOREA

SEOUL
(Yeoksam-Dong, Daon Building)
8th Floor, 8, Teheran-ro 27-gil,
Gangnam-Gu, Seoul, 06141 Korea
Telephone: + 82 2 582 2834
Email: ling.lam@hk.rlb.com
Contact: Ling Lam

VIETNAM

HO CHI MINH CITY
Centec Tower, 16th Floor,
Unit 1603, 72-74 Nguyen Thi Minh Khai Street, Ward 6, District 3
Ho Chi Minh City, Vietnam
Telephone: +95 1 860 3448 (Ext 4004)
Email: serene.wong@vn.rlb.com
Contact: Serene Wong

MIDDLE EAST

ABU DHABI
Mezzanine Level,
Al Mazrouei Building,
Muroor Road, PO Box 105766
Abu Dhabi, United Arab Emirates
Telephone: +971 4 339 7444
Email: natalie.stockman@ae.rlb.com
Contact: Natalie Stockman

DOHA
Al Mirqab Complex,
Office 32 - Second Floor,
Al Mirqab Al Jadeed Street,
Al Naser Area, PO Box 26550,
Doha, Qatar
Telephone: +974 4016 2777
Email: dean.mann@ae.rlb.com
Contact: Dean Mann

DUBAI
Office 2302 Marina Plaza,
Dubai Marina, PO Box 115882,
Dubai, United Arab Emirates
Telephone: +971 4 339 7444
Email: natalie.stockman@ae.rlb.com
Contact: Natalie Stockman

RIYADH
Unit 80 Gate 14,
Abdullah Al Sahmi Street
Al Kindi Plaza,
Diplomatic Quarter,
PO Box 8546,
Riyadh 11492,
Kingdom of Saudi Arabia
Telephone: +966 11 217 5551
Email: william.barber@sa.rlb.com
Contact: William Barber

OCEANIA

AUSTRALIA

ADELAIDE
Level 1, 8 Leigh Street,
Adelaide, SA 5000
Telephone: +61 8 8100 1200
Email: john.drillis@au.rlb.com
Contact: John Drillis

BRISBANE
Level 13, 10 Eagle Street,
Brisbane, QLD 4000
Telephone: +61 7 3009 6933
Email: matt.long@au.rlb.com
Contact: Matt Long

CAIRNS
Suite 7, 1st Floor, Cairns Professional Centre, 92 - 96 Pease Street,
PO Box 5224, Cairns, QLD 4870
Telephone: +61 7 4032 1533
Email: brad.bell@au.rlb.com
Contact: Brad Bell

CANBERRA
16 Bentham Street, PO Box 7035,
Yarralumla, ACT 2600
Telephone: +61 2 6281 5446
Email: fiona.doherty@au.rlb.com
Contact: Fiona Doherty

COFFS HARBOUR
Level 1, 9 Park Avenue, PO Box 197,
Coffs Harbour, NSW 2450
Telephone: +61 2 4940 0000
Email: mark.hocking@au.rlb.com
Contact: Mark Hocking

DARWIN
Level 1, 66 Smith Street, Darwin,
NT 0800
Telephone: +61 8 8100 1200
Email: daniel.jones@au.rlb.com
Contact: Daniel Jones

GOLD COAST
45 Nerang Street, Southport,
QLD 4215
Telephone: +61 7 5595 6900
Email: jim.krebs@au.rlb.com
Contact: Jim Krebs

MELBOURNE
Level 13, 380 St Kilda Road,
Melbourne, VIC 3004
Telephone: +61 3 9690 6111
Email: tony.moleta@au.rlb.com
Contact: Tony Moleta

NEWCASTLE
Suite 4 Level 1,
101 Hannell Street,
Wickham, NSW 2293
Telephone: +61 2 4940 0000
Email: mark.hocking@au.rlb.com
Contact: Mark Hocking

PERTH
Level 9, 160 St Georges Terrace,
Perth, WA 6000
Telephone: +61 8 9421 1230
Email: mark.bendotti@au.rlb.com
Contact: Mark Bendotti

SUNSHINE COAST
Suite 307,
La Balsa, 45 Brisbane Road,
Mooloolaba Qld 4557
Telephone: +61 7 5443 3622
Email: nicholas.duncan@au.rlb.com
Contact: Nick Duncan

SYDNEY
Level 19, 141 Walker Street,
North Sydney, NSW 2060
Telephone: +61 2 9922 2277
Email: stephen.mee@au.rlb.com
Contact: Stephen Mee

TOWNSVILLE
PO Box 20,
Belgian Gardens, QLD
4810
Telephone: +61 7 4771 5718
Email: chris.marais@au.rlb.com
Contact: Chris Marais

NEW ZEALAND

AUCKLAND
Level 16, Vero Centre, 48 Shortland Street, Auckland, 1141
Telephone: +64 9 309 1074
Email: stephen.gracey@nz.rlb.com
Contact: Stephen Gracey

CHRISTCHURCH
Level 1, 254 Montreal Street,
Christchurch, 8013
Telephone: +64 3 354 6873
Email: neil.odonnell@nz.rlb.com
Contact: Neil O'Donnell

HAMILTON
Ground Floor,
Parkhaven 220 Tristram Street,
Hamilton 3204
Telephone: +64 7 839 1306
Email: richard.anderson@nz.rlb.com
Contact: Richard Anderson

PALMERSTON NORTH
Suite 1, Level 1, 219 Broadway Avenue, PO Box 1117,
Palmerston North, 4440
Telephone: +64 6 357 0326
Email: michael.craine@nz.rlb.com
Contact: Michael Craine

QUEENSTOWN
36 Shotover Street,
PO Box 691
Queenstown 9348
Telephone: +64 9 309 1074
Email: rob.meyer@nz.rlb.com
Contact: Rob Meyer

TAURANGA
Office 3, 602 Cameron Road,
Tauranga
Telephone: +64 9 309 1074
Email: richard.anderson@nz.rlb.com
Contact: Richard Anderson

WELLINGTON
279 Willis Street, PO Box 27-013,
Wellington, 6011
Telephone: +64 4 384 9198
Email: tony.sutherland@nz.rlb.com
Contact: Tony Sutherland

INTERNATIONAL OFFICES

MISCELLANEOUS

CONVERSION FACTORS

To convert	Multiply by
Area	
Square inches into square millimetres	645.16
Square inches into square centimetres	6.4516
Square feet into square centimetre	929.0304
Square feet into square metres	0.092903
Square yards into square feet	9.00
Square yards into square metres	0.836127
Square metres into square feet	10.7639
Square metres into square yards	1.19599
Square yards into acres	0.000206612
Acres into square metres	4046.8564
Acres into square yards	4840
Acres into hectares	0.4046856
Hectares into acres	2.47105
Hectares into square metres	10000
Square kilometres into hectares	100
Square miles into square kilometres	2.589988
Square miles into acres	640
Square kilometres into square miles	0.386102
Volume and Capacity	
Cubic inches into cubic centimetres	16.387064
Cubic inches into litres	0.0163871
Cubic feet into cubic metres	0.0283168
Cubic feet into litres	28.316847

CONVERSION FACTORS

To convert	Multiply by
UK pints into litres	0.5682613
US pints into litres	0.473176
UK litres into pints	1.75975
UK litres into gallons	0.219969
US litres into gallons	0.26417
US litres into pints	2.1134
Cubic yards into cubic metres	0.7645549
UK gallons into litres	4.54609
US gallons into litres	3.78541
UK gallons into cubic metres	0.00454609
UK fluid ounces into cubic centimetres	28.413063
Mass	
Grains into metric carats	0.323995
Grams into ounces	0.035274
Ounces into grams	28.349523
Ounces into kilograms	0.0283495
Pounds into kilograms	0.4535924
Kilograms into pounds	2.20462
UK Tonnes into kilograms	1016.0469
UK Tonnes into metric tonnes	1.01605
Tonnes into pounds	2,240
UK Tonnes into US tons	1.01605
US Tons into UK tonnes	0.907185

To convert	Multiply by
Length	
Milli-inches into micrometres	25.4
Inches into millimetres	25.4
Inches into centimetres	2.54
Inches into metres	0.0254
Centimetres into inches	0.393401
Feet into millimetres	304.8
Feet into centimetres	30.48
Feet into metres	0.3048
Yards into metres	0.9144
Fathoms into metres	1.8288
Chains into metres	20.1168
Furlongs into metres	201.168
Miles, statute into kilometres	1.609344
Miles, nautical into kilometres	1.852
Temperature	
Degree Celsius to Degree Fahrenheit	°F = (°C x 9/5) + 32
Degree Fahrenheit to Degree Celsius	°C = (°F-32) x 5/9

CALCULATION FORMULAE

To convert	Multiply
Area of Triangle	Base by 1/2 height
Area of circle	(radius)^2 by 3.1416
Area of sector of circle	Length of arc by 1/2 radius
Area of square, rhombus	Base x height
Area of equilateral triangle	(Side)^2 x 0.433
Area of trapezium	Height x 1/2 x (sum of parallel sides)
Area of ellipse	Major axis by minor axis x 0.7854
Area of parabola	2/3 x base x height
Circumference of circle	Diameter x 3.1416
Surface area of sphere	4 x (radius)^2 x 3.1416
Surface area of cone	(radius by slant side by 3.1416) + area of base
Volume of cylinder	Area of base by height
Volume of cube or prism	Length by breadth by depth
Volume of cone	Height by 1/3 area of base
Volume of hexagonal prism	(side)^2 by height by 2.598
Volume of Sphere	4/3 x (radius)^3 x 3.1416

REFERENCES

Ref. no.	Page no.	Reference
1	25	See RICS (www.rics.org)
2	38	See RICS (www.rics.org)
3	40	ICMS Coalition (https://icms-coalition.org)
4	58	RIBA (www.architecture.com/RIBA/)
5	61	Public Contracts Regulations 2015 (http://www.legislation.gov.uk/uksi/2015/102/pdfs/uksi_20150102_en.pdf)
6	61	Tracker Intelligence (https://www.trackerintelligence.com/resources/procurement-news/new-eu-public-procurement-thresholds-available/)
7	78	NEC4 User Guide
8	85	bimtaskgroup.org (https://www.cdbb.cam.ac.uk/Resources/ResoucePublications/BISBIMstrategyReport.pdf)
9	85	bimforum.org (http://bimforum.org/lod/)
10	87	BIM task group (www.cdbb.cam.ac.uk/)
11	91	https://www.gov.uk/government/publications/modern-methods-of-construction-working-group-developing-a-definition-framework

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