



RIDERS DIGEST 2021

UNITED KINGDOM
EDITION

RIDERS DIGEST

2021 EDITION

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

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Cost information in this publication is indicative and for general guidance only. All prices and rates are as at Q2 TPF 202 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). Please note that all costed items are at rates priced prior to any COVID-19 effects on the market.

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INTRODUCTION

FOREWORD

Welcome to the 2021 Riders Digest, our annual guide to industry data and current trends within the built environment.

Since the publication of our last edition, we have continued to work through uncertain times as the COVID-19 pandemic has persisted in impacting communities across the globe. We are living through a period of huge transformation and innovation as we rise to the challenges affecting all areas of daily life and demonstrating, as an industry, how resilient and agile we really are.

These qualities have been very much in evidence as we entered 2021 with the greatly needed, albeit 11th hour, trade deal as the transition period between the UK and the European Union came to an end. We should reflect on what has already been achieved and accommodated in our country's new status since the end of last year. While there are clearly areas that remain to be addressed such as issues around material shortages and questions regarding standards and conformity, we should not underestimate the tremendous work the construction industry has already undertaken in adapting to these changes.

Against this ever-changing backdrop, we have seen some radical steps forward for our industry.

The launch of the government's Construction Playbook at the end of 2020 was a pivotal moment in showing just how far we have come in collaborating to drive better outcomes and seeing the resulting opportunities. This was swiftly followed by the publication and road testing by many companies of the Construction Innovation Hub's Value Toolkit. This supports the key policy objectives of both the Construction Playbook and the Construction Leadership Council's Roadmap to Recovery aiming to drive better outcomes at every stage of the project lifecycle. I am extremely proud of the work that our Global Board Director Ann Bentley has carried out alongside colleagues at RLB in supporting these ground-breaking initiatives which are reshaping the built environment for the future.

Building Back Better is a term that is often used but

I truly believe that we are seeing that ethos being embedded from the projects we are managing for customers to the cross-industry forums we are involved with. Building safety remains at the heart of everything we do and it was good to hear the importance this was given in the Queen's Speech with the draft Building Safety Bill being reintroduced to Parliament with a view to entering legislation. Sustainability practices and a focus on net zero also remain high on the agenda as does creating an inclusive culture and opportunity for all. At RLB we are in a unique position to help our clients at the start of every project by modelling key value drivers within the programme such as social value, wellbeing, economic and sustainability impact. This enables customers to make informed decisions based on a holistic view about the impact a project will have not just at completion but for the entirety of the building's life cycle.

Within RLB we look constantly at how we can best serve our customers. During the last 12 months we have increased our global network with new alliances in India and have strengthened our presence in Europe and, nearer to home, have opened new offices in Cardiff and Belfast. We are a people business, and through our close network of colleagues are able to share our expertise, insights and technical knowledge driving innovation and efficiencies for our customers.

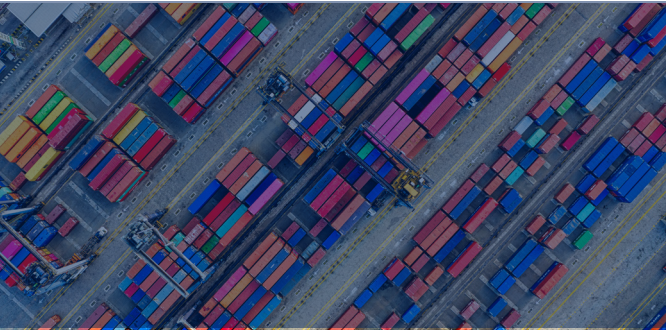
We have shared a selection of our current Insights within this publication but, as ever, please do get in touch with any of our colleagues or visit our relaunched global website for further information. We hope you enjoy this edition.

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MARKET OUTLOOK - A NEW PHASE



Although we all expected 2020 to be most memorable as the year that the United Kingdom left the European Union, that expectation was quickly overtaken by the emergence of the COVID-19 threat, which very rapidly turned into a global pandemic. Since then, and the effects were really only fully felt in March of last year, the UK has been on something of a rollercoaster of progress through lockdowns and re-openings.

Nationwide, lockdowns have applied throughout the countries of the UK, differing only in timing and detail, but being similar in overall effects. For construction however, its deeming as essential work activity resulted in a rapid learning process, as organisations took up the challenge of accommodating new rules and regulations, ensuring safe and continuous operation of sites, while dealing also with the cost and delay effects of these new constraints.

At first, the expectation was that the industry would suffer grievously as a result. RLB's early Global Covid-19 Surveys depicted an industry rushing to

deal with unprecedented problems, and a market that would likely be ground to a halt. However, as the year wore on, it became clear that the industry's response had been so pragmatic that disruption had been far less than anticipated, that steps taken had been commensurate with the risks, rather than a panic-response. Although it is clear that some sectors, particularly retail, leisure and tourism have been very adversely affected, activity volume levels have recovered and once-shelved projects are being fed back into the marketplace. That said, the pandemic is not over and, despite the advent of inoculation, global interrelatedness means that it won't be for quite some time. So, for the foreseeable future, virus suppression measures will remain in place and economies will have to move forward responsibly and with care.

Overlaying Covid of course is the passing into history of the United Kingdom's leaving of the EU. With a deal having been agreed at the last moment, the UK moved into the post-transition world of "3rd country" status in respect of the EU, despite most of the projected tariff and quota problems having been avoided. Very quickly, the focus turned to activity at the UK/EU borders, and concerns remain about import of materials from the EU, not as regards tariffs, but in respect of standards and conformance. The ongoing development of the new UK regime, to be known as UKCA (UK Conformity Assessed) and which will be fully in use by the year-end, will obviously at first map closely the EU's regulations, but over time, divergence is expected, and challenges will result.

Given the above, together with the ending of free movement of EU nationals and the introduction of the new points and skills-based immigration regime, the next year or two will be a unique experience.

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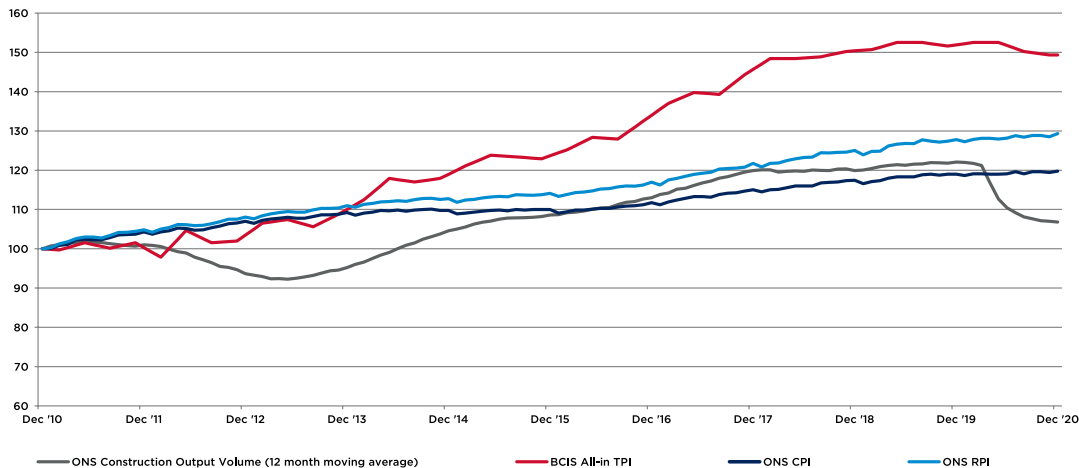




UK CONSTRUCTION TRENDS

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INDICES AND UK CONSTRUCTION OUTPUT COMPARISON

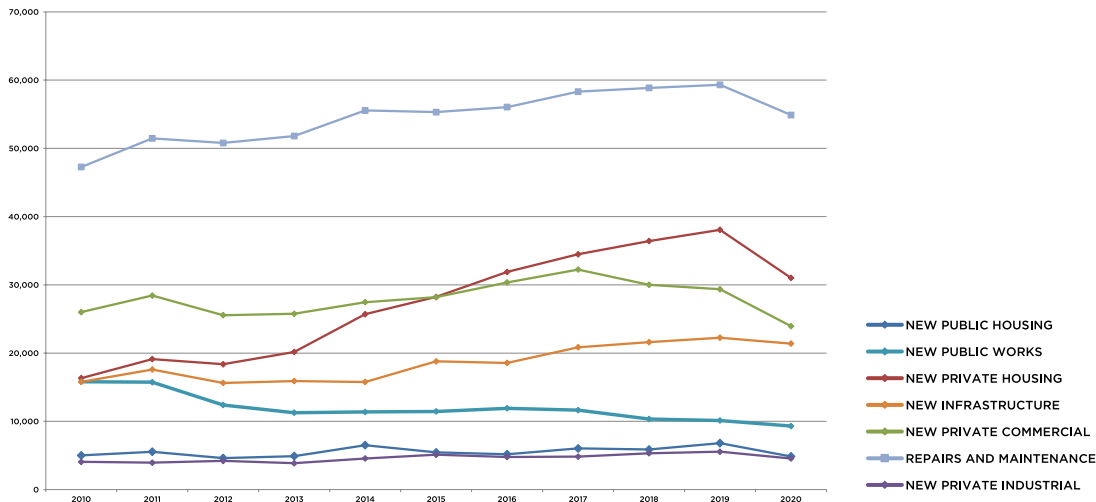


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BCIS "All-in" Tender Price Index	100	103	110	119	124	134	146	150	152	149
Retail Price Index (RPI)	105	108	111	113	114	117	122	125	128	129
Consumer Price Index (CPI)	104	107	109	110	110	112	115	117	119	120
UK Chain Volume Construction Output	101	94	95	105	109	113	120	120	122	107

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

BCIS "All-in" Tender Price Index % Change	+ 0.3%	+ 3.2%	+ 6.3%	+ 8.1%	+ 4.0%	+ 8.3%	+ 8.7%	+ 3.2%	+ 1.0%	- 1.7%
Retail Price Index (RPI) % Change	+ 4.8%	+ 3.1%	+ 2.7%	+ 1.6%	+ 1.2%	+ 2.5%	+ 4.1%	+ 2.7%	+ 2.2%	+ 1.2%
Consumer Price Index (CPI) % Change	+ 4.3%	+ 2.6%	+ 2.0%	+ 0.5%	+ 0.2%	+ 1.6%	+ 2.9%	+ 2.1%	+ 1.3%	+ 0.6%
UK Chain Volume Construction Output % Change	+ 1.0%	- 7.2%	+ 1.6%	+ 9.9%	+ 3.8%	+ 4.1%	+ 6.1%	+ 0.0%	+ 1.8%	- 12.5%

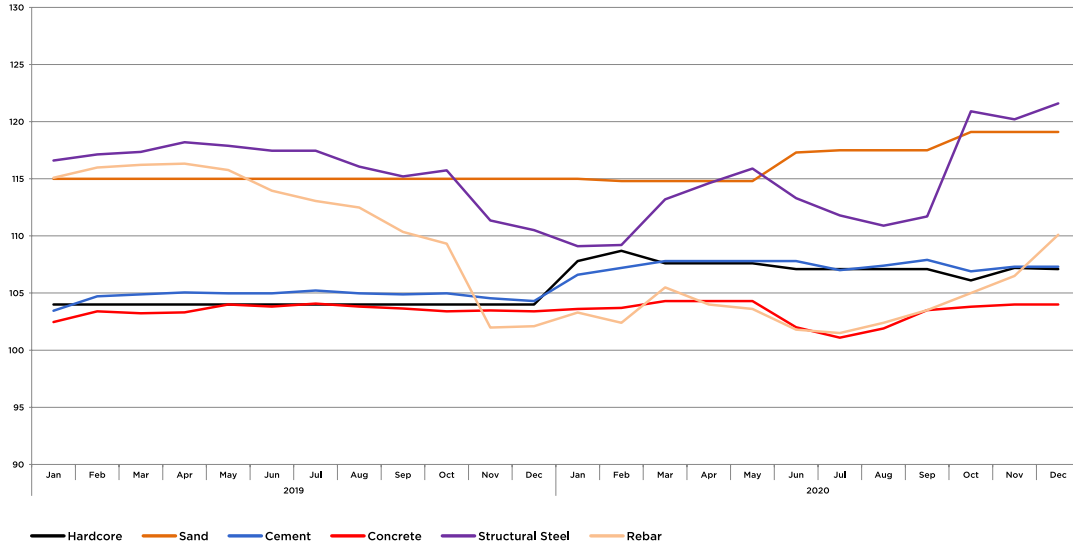
UK CONSTRUCTION OUTPUT BY SECTOR



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
NEW PUBLIC HOUSING	5,013	5,538	4,622	4,904	6,502	5,449	5,177	6,030	5,871	6,812	4,858
NEW PRIVATE HOUSING	16,330	19,124	18,373	20,171	25,706	28,230	31,890	34,480	36,420	38,070	31,024
NEW PRIVATE COMMERCIAL	26,003	28,433	25,554	25,759	27,455	28,188	30,353	32,240	30,011	29,353	23,952
NEW PRIVATE INDUSTRIAL	4,062	3,947	4,206	3,867	4,556	5,110	4,777	4,825	5,319	5,555	4,562
NEW PUBLIC WORKS	15,808	15,733	12,390	11,271	11,374	11,453	11,911	11,641	10,344	10,126	9,313
NEW INFRASTRUCTURE	15,786	17,598	15,632	15,904	15,764	18,794	18,565	20,853	21,601	22,252	21,388
REPAIRS AND MAINTENANCE	47,265	51,464	50,794	51,810	55,558	55,318	56,051	58,309	58,858	59,310	54,890

NOTE: Figures are Construction Output Volume (£ million)

UK CONSTRUCTION MATERIALS MONTHLY AVERAGE PRICE INDEX



	2019												2020											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hardcore	104	104	104	104	104	104	104	104	104	104	104	104	108	109	108	108	108	107	107	107	107	106	107	107
Sand	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	117	118	118	118	119	119	119
Cement	103	105	105	105	105	105	105	105	105	105	105	104	107	107	108	108	108	108	107	107	108	107	107	107
Concrete	102	103	103	103	104	104	104	104	104	103	103	103	104	104	104	104	104	102	101	102	104	104	104	104
Structural Steel	117	117	117	118	118	117	117	116	115	116	111	111	109	109	113	115	116	113	112	111	112	121	120	122
Rebar	115	116	116	116	116	114	113	112	110	109	102	102	103	102	106	104	104	102	102	102	104	105	107	110

NP = Not Published



UK CONSTRUCTION COST DATA

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BUILDING COSTS

⚠ CAUTION: All prices are prior to COVID-19 effects on the market. Please refer to our quarterly Tender Price Forecasts.

Work Type	Description	Unit	Belfast		Birmingham		Bristol		Cardiff		Edinburgh	
			Low	High	Low	High	Low	High	Low	High	Low	High
Offices; prestige CBD	10-25 storeys	GBP/m ²	1,460	2,100	2,100	2,950	2,200	3,100	1,820	2,600	1,920	2,700
Offices; investment CBD	Up to 10 storeys	GBP/m ²	1,280	1,700	1,680	2,450	1,760	2,550	1,580	2,150	1,680	2,250
Offices; investment CBD	10-25 storeys	GBP/m ²	1,380	2,100	2,050	3,100	1,980	3,100	1,720	2,600	1,800	2,700
Offices; non CBD investment	1-3 storeys	GBP/m ²	1,020	1,300	1,580	2,100	1,320	1,980	1,280	1,600	1,340	1,700
Hotels; multi-storey	Five star rating	GBP/m ²	1,720	2,350	2,400	3,350	2,550	3,400	2,200	2,950	2,250	3,100
Hotels; multi-storey	Four star rating	GBP/m ²	1,180	1,900	1,700	2,550	2,150	2,700	1,500	2,400	1,560	2,500
Hotels; multi-storey	Three star rating	GBP/m ²	1,080	1,580	1,440	2,200	1,480	1,980	1,340	1,980	1,420	2,100
Hotels; multi-storey	Five star rating	GBP/bedroom	120,000	240,000	165,000	345,000	165,000	330,000	150,000	297,500	160,000	315,000
Hotels; multi-storey	Four star rating	GBP/bedroom	69,000	105,000	85,000	150,000	99,000	160,000	86,000	130,000	90,000	135,000
Hotels; multi-storey	Three star rating	GBP/bedroom	34,500	72,000	54,000	102,500	55,000	107,500	43,250	90,000	45,250	95,000
Car park	Open deck; multi-storey	GBP/m ²	270	540	400	760	450	880	340	670	370	710
Car park	Basement; CBD	GBP/m ²	680	1,160	900	1,540	1,060	1,660	850	1,460	890	1,520
Car park	Basement; other than CBD	GBP/m ²	520	1,040	730	1,440	940	1,320	650	1,280	680	1,360
Car park	Undercroft; other than CBD	GBP/m ²	360	860	480	1,240	560	1,220	440	1,080	460	1,120
Car park	Open Deck; multi-Storey	GBP/car	6,500	13,000	9,100	19,000	11,250	19,750	8,000	16,000	8,500	17,000
Car park	Basement; CBD	GBP/car	17,250	29,750	23,500	43,500	24,250	35,000	21,500	37,250	22,500	39,000
Car park	Basement; other than CBD	GBP/car	13,000	26,000	20,250	36,500	22,000	33,000	16,000	32,250	17,000	33,750
Car park	Undercroft; other than CBD	GBP/car	8,700	14,500	12,000	20,500	12,750	24,250	11,000	18,250	11,500	19,000

Work Type	Description	Unit	Leeds		London		Manchester & Liverpool		Sheffield		Thames Valley	
			Low	High	Low	High	Low	High	Low	High	Low	High
Offices; prestige CBD	10-25 storeys	GBP/m ²	2,100	3,550	3,050	4,000	2,250	2,900	2,100	3,550	2,750	2,950
Offices; investment CBD	up to 10 storeys	GBP/m ²	1,500	2,200	2,750	3,600	1,920	2,900	1,480	2,150	2,100	2,750
Offices; investment CBD	10-25 storeys	GBP/m ²	1,960	2,600	2,900	3,800	2,200	2,900	1,960	2,550	2,450	2,850
Offices; non CBD investment	1-3 storeys	GBP/m ²	1,020	1,700	1,800	2,500	1,300	1,900	1,020	1,700	1,720	2,350
Hotels; multi-storey	Five star rating	GBP/m ²	2,100	3,300	2,900	3,900	2,400	3,250	2,100	3,300	2,750	3,550
Hotels; multi-storey	Four star rating	GBP/m ²	1,560	2,450	2,200	3,500	1,900	2,800	1,540	2,450	2,100	3,200
Hotels; multi-storey	Three star rating	GBP/m ²	1,300	1,740	1,960	2,500	1,600	2,000	1,300	1,740	1,840	2,400
Hotels; multi-storey	Five star rating	GBP/bedroom	187,500	327,500	217,500	430,000	177,500	352,500	185,000	327,500	210,000	400,000
Hotels; multi-storey	Four star rating	GBP/bedroom	105,000	207,500	125,000	187,500	100,000	152,500	105,000	207,500	92,000	175,000
Hotels; multi-storey	Three star rating	GBP/bedroom	43,500	91,000	65,000	140,000	61,000	107,500	43,500	91,000	64,000	140,000
Car park	Open deck; multi-storey	GBP/m ²	340	1,020	470	940	590	750	340	1,020	460	920
Car park	Basement; CBD	GBP/m ²	640	1,040	1,240	2,050	1,120	1,620	640	1,040	1,120	1,940
Car park	Basement; other than CBD	GBP/m ²	660	1,320	1,220	1,920	1,060	1,520	660	1,320	1,100	1,880
Car park	Undercroft; other than CBD	GBP/m ²	440	1,100	610	1,540	720	1,260	440	1,100	590	1,480
Car park	Open deck; multi-storey	GBP/car	8,200	16,250	11,500	23,000	9,600	18,750	8,200	16,250	10,500	19,250
Car park	Basement; CBD	GBP/car	22,000	44,750	30,500	55,000	25,250	44,000	21,750	44,750	28,250	52,000
Car park	Basement; other than CBD	GBP/car	16,500	32,750	23,000	45,500	19,000	37,750	16,500	32,750	21,750	42,750
Car park	Undercroft; other than CBD	GBP/car	11,000	18,750	15,250	26,750	12,750	21,750	11,000	18,500	12,500	22,500

BUILDING COSTS

⚠️ CAUTION: All prices are prior to COVID-19 effects on the market. Please refer to our quarterly Tender Price Forecasts.

Work Type	Description	Unit	Belfast		Birmingham		Bristol		Cardiff		Edinburgh	
			Low	High	Low	High	Low	High	Low	High	Low	High
Industrial 6.0m to U/S Truss	4,500 m ² floor area; metal cladding	GBP/m ²	295	530	520	700	450	710	370	670	400	710
Industrial; att. a/c offices 200m ²	200m ²	GBP/m ²	690	1,220	1,040	1,580	990	1,720	860	1,500	900	1,560
Industrial; att. a/c offices 400m ²	400m ²	GBP/m ²	610	1,120	980	1,580	880	1,660	750	1,380	780	1,460
Aged care	Single storey facility	GBP/m ²	1,040	1,540	1,420	2,150	1,660	2,450	1,280	1,920	1,360	2,050
Aged care	Multi storey facility	GBP/m ²	1,160	1,720	1,600	2,450	1,560	1,920	1,440	2,200	1,520	2,300
Private hospitals; low rise	45-60m ² floor area per bed	GBP/m ²	1,540	1,900	2,300	2,700	2,250	2,950	1,920	2,500	2,050	2,600
Private hospitals; low rise	55-90m ² floor area per bed; major operating theatre	GBP/m ²	1,720	2,600	2,950	4,050	2,800	3,850	2,200	3,250	2,300	3,400
Retail; regional shopping centres	Department store	GBP/m ²	1,460	2,600	2,000	3,500	2,050	3,750	1,820	3,250	1,920	3,400
Retail; regional shopping centres	Supermarket / variety store	GBP/m ²	1,040	1,540	1,420	2,150	1,480	2,250	1,280	1,920	1,360	2,050
Retail; regional shopping centres	Discount department store	GBP/m ²	1,220	1,800	1,640	2,450	1,740	2,600	1,500	2,300	1,560	2,400
Retail; regional shopping centres	Malls	GBP/m ²	2,300	3,150	3,100	4,350	3,050	4,300	2,800	3,900	2,950	4,150
Retail; regional shopping centres	Speciality shops	GBP/m ²	1,300	1,900	1,780	2,650	1,840	2,700	1,600	2,400	1,700	2,500
Retail; general	Small shops and showrooms	GBP/m ²	710	1,340	980	1,860	960	1,820	890	1,680	940	1,760
Residential; general	Single and double storey	GBP/m ²	650	850	900	1,340	1,060	1,420	800	1,080	850	1,120
Residential; general	1 to 3 storey units; 85 -120m ² per unit	GBP/m ²	770	1,020	1,040	1,440	1,620	1,980	960	1,280	1,020	1,360
Residential; general	Townhouses; 90 -120m ² per unit	GBP/m ²	860	1,100	1,060	1,500	1,620	1,980	1,080	1,400	1,120	1,460

Work Type	Description	Unit	Leeds		London		Manchester & Liverpool		Sheffield		Thames Valley	
			Low	High	Low	High	Low	High	Low	High	Low	High
Industrial 6.0m to U/S truss	4,500 m ² floor area; metal cladding	GBP/m ²	390	700	520	930	520	750	390	700	510	920
Industrial; att. a/c offices 200m ²	200m ²	GBP/m ²	900	1,580	1,240	2,200	1,020	1,800	900	1,580	1,220	2,150
Industrial; att. a/c offices 400m ²	400m ²	GBP/m ²	800	1,480	1,080	2,050	900	1,660	800	1,460	1,080	2,050
Aged care	Single storey facility	GBP/m ²	1,360	2,050	1,800	2,700	1,520	2,300	1,360	2,050	1,780	2,700
Aged care	Multi storey facility	GBP/m ²	1,560	2,300	2,050	2,950	1,740	2,550	1,520	2,300	2,000	2,950
Private hospitals; low rise	45-60m ² floor area per bed	GBP/m ²	2,500	3,600	2,700	3,450	2,300	2,900	2,500	3,600	2,550	3,250
Private hospitals; low rise	55-80m ² floor area per bed; major operating theatre	GBP/m ²	3,500	4,650	2,950	4,500	2,550	3,800	3,500	4,650	2,850	4,400
Retail; regional shopping centres	Department store	GBP/m ²	1,880	3,300	2,550	4,500	2,150	3,800	1,880	3,300	2,350	4,200
Retail; regional shopping centres	Supermarket / variety store	GBP/m ²	1,320	2,850	1,800	2,700	1,520	2,300	1,320	2,850	1,700	2,550
Retail; regional shopping centres	Discount department store	GBP/m ²	1,560	2,350	2,100	3,100	1,800	2,650	1,540	2,350	1,980	2,900
Retail; regional shopping centres	Malls	GBP/m ²	2,750	3,900	3,700	5,200	3,100	4,400	2,750	3,850	3,050	4,850
Retail; regional shopping centres	Speciality shops	GBP/m ²	1,660	2,450	2,250	3,250	1,900	2,800	1,660	2,450	2,100	3,050
Retail; general	Small shops and showrooms	GBP/m ²	890	1,660	1,180	2,200	1,000	1,880	880	1,660	1,120	2,050
Residential; general	Single and double storey	GBP/m ²	830	1,100	1,440	1,720	960	1,280	830	1,100	1,380	1,700
Residential; general	1 to 3 storey units; 85 -120m ² per unit	GBP/m ²	900	1,480	1,420	2,100	1,140	1,520	900	1,460	1,320	2,050

BUILDING COSTS

⚠ CAUTION: All prices are prior to COVID-19 effects on the market. Please refer to our quarterly Tender Price Forecasts.

Work Type	Description	Unit	Belfast		Birmingham		Bristol		Cardiff		Edinburgh	
			Low	High	Low	High	Low	High	Low	High	Low	High
Residential; general	Single and double storey	GBP/house	38,250	56,000	54,000	81,000	140,000	240,000	47,750	70,000	50,000	73,000
Residential; general	1 to 3 storey units; 85 -120m ² per unit	GBP/unit	65,000	120,000	87,000	177,500	140,000	240,000	80,000	150,000	85,000	160,000
Residential; general	Townhouses; 90 -120m ² per unit	GBP/unit	73,000	127,500	95,000	182,500	147,500	240,000	91,000	160,000	96,000	170,000
Residential; multi storey units	Up to 10 storeys with lift: 60 -70m ² per unit	GBP/m ²	1,340	1,460	1,740	2,200	1,280	1,820	1,700	1,820	1,760	1,920
Residential; multi storey units	Up to 10 storeys with lift: 90 -120m ² per unit	GBP/m ²	1,460	1,900	1,780	2,450	1,280	1,820	1,820	2,400	1,920	2,500
Residential; multi storey units	Up to 10 Storeys with lift: 60 -70m ² per unit	GBP/unit	77,000	102,500	122,500	170,000	76,000	127,500	96,000	130,000	102,500	135,000
Residential; multi storey units	Up to 10 storeys with lift: 90 -120m ² per unit	GBP/unit	130,000	212,500	192,500	347,500	117,500	217,500	160,000	267,500	170,000	280,000
Office fit-out	Insurance offices; government departments; open planned	GBP/m ²	295	440	380	700	440	610	370	540	400	570
Office fit-out	Major companies headquarters; open planned	GBP/m ²	470	840	620	1,340	610	990	590	1,060	620	1,120
Office fit-out	Solicitors, financiers; open planned	GBP/m ²	550	1,100	740	1,520	610	880	690	1,380	720	1,440
Office fit-out	Executive and front of house; open planned	GBP/m ²	590	1,260	810	2,250	770	1,220	740	1,580	770	1,680
Workstations	Secretarial	GBP/each	3,050	4,250	4,050	5,900	4,300	6,100	3,750	5,400	3,900	5,600
Workstations	Technical staff	GBP/each	4,750	6,100	6,400	8,200	6,700	8,600	5,900	7,500	6,300	7,800
Workstations	Executive	GBP/each	5,200	10,250	6,800	14,000	6,800	14,500	6,400	13,000	6,800	13,500
Hotel FF&E	Five star rating	GBP/bedroom	17,250	68,000	22,750	95,000	24,750	99,000	21,500	86,000	22,500	90,000
Hotel FF&E	Four star rating	GBP/bedroom	10,500	17,000	13,750	23,250	14,750	24,250	13,000	21,500	13,500	22,500
Hotel FF&E	Three star rating	GBP/bedroom	6,900	10,250	9,100	14,000	9,800	14,750	8,600	13,000	9,000	13,750

Work Type	Description	Unit	Leeds		London		Manchester & Liverpool		Sheffield		Thames Valley	
			Low	High	Low	High	Low	High	Low	High	Low	High
Residential; general	Townhouses; 90 -120m ² per unit	GBP/m ²	1,100	1,500	1,440	1,960	1,260	1,660	1,100	1,480	1,380	1,900
Residential; general	Single and double storey	GBP/house	49,250	125,000	127,500	147,500	57,000	83,000	49,000	125,000	122,500	152,500
Residential; general	1 to 3 storey units; 85 -120m ² per unit	GBP/unit	83,000	155,000	160,000	202,500	107,500	177,500	83,000	155,000	152,500	192,500
Residential; general	Townhouses; 90 -120m ² per unit	GBP/unit	94,000	165,000	155,000	225,000	112,500	187,500	94,000	165,000	152,500	215,000
Residential; multi storey units	Up to 10 Storeys with lift: 60 -70m ² per unit	GBP/m ²	1,660	1,880	2,600	4,550	1,860	2,200	1,660	1,880	1,940	3,050
Residential; multi storey units	Up to 10 Storeys with lift: 90 -120m ² per unit	GBP/m ²	1,920	2,400	2,600	4,350	2,150	2,700	1,920	2,400	1,940	2,950
Residential; multi storey units	Up to 10 Storeys with lift: 60 -70m ² per unit	GBP/unit	99,000	132,500	217,500	377,500	125,000	152,500	99,000	132,500	182,500	320,000
Residential; multi storey units	Up to 10 Storeys with lift: 90 -120m ² per unit	GBP/unit	167,500	277,500	340,000	562,500	190,000	317,500	167,500	277,500	202,500	355,000
Office Fit-out	Insurance offices; government departments; open planned	GBP/m ²	390	560	580	770	550	640	390	560	560	710
Office Fit-out	Major companies headquarters; open planned	GBP/m ²	510	790	710	1,100	680	1,120	510	790	660	1,020
Office Fit-out	Solicitors, financiers; open planned	GBP/m ²	510	790	710	1,160	680	1,000	510	790	660	1,080
Office Fit-out	Executive and front of house; open planned	GBP/m ²	680	1,140	960	1,540	980	1,380	680	1,140	870	1,320
Workstations	Secretarial	GBP/each	3,950	5,600	5,200	7,500	4,400	6,300	3,950	5,600	4,600	6,600
Workstations	Technical staff	GBP/each	6,100	7,900	8,200	10,500	6,900	8,900	6,100	7,700	7,600	9,800
Workstations	Executive	GBP/each	6,700	23,000	8,900	18,000	7,500	15,250	6,700	23,000	8,700	16,750
Hotel FF&E	Five star rating	GBP/bedroom	22,250	89,000	31,750	127,500	25,250	102,500	22,000	88,000	25,500	92,000

BUILDING COSTS

⚠ CAUTION: All prices are prior to COVID-19 effects on the market. Please refer to our quarterly Tender Price Forecasts.

Work Type	Description	Unit	Belfast		Birmingham		Bristol		Cardiff		Edinburgh	
			Low	High	Low	High	Low	High	Low	High	Low	High
Office Refurbishment	CBD offices; typical floor	GBP/m ²	260	860	350	1,320	370	1,220	330	1,080	350	1,120
Recreational facilities	Regional stadium	GBP/seat	1,760	2,850	1,800	3,050	1,760	2,900	1,760	2,900	1,760	2,850
Recreational facilities	Regional feature stadium	GBP/seat	2,550	5,300	2,600	5,600	2,550	5,300	2,550	5,300	2,550	5,300
Recreational facilities	National iconic stadium	GBP/seat	4,700	8,500	4,550	9,100	4,650	8,500	4,650	8,500	4,650	8,500
Recreational facilities	Indoor arena	GBP/seat	7,100	9,000	7,100	9,400	7,000	9,200	7,000	9,200	7,000	9,200
Recreational facilities	Indoor swimming pools - 50m (including dry sports facilities)	GBP/m ²	3,550	4,950	3,550	5,100	3,500	4,950	3,500	4,950	3,500	4,950
Site works	Landscaping; light, large areas, minimal planting	GBP/hectare	25,500	105,000	34,750	152,500	57,000	167,500	32,250	130,000	33,750	135,000
Site works	Landscaping; dense shrubs, topsoil, grass	GBP/m ²	30	45	30	55	40	60	30	50	35	55
Site works	Landscaping; grassing, large areas, topsoil sowing, treating	GBP/m ²	15	20	15	20	20	30	15	20	20	25
Site works	Car parks on ground; light duty paving	GBP/car	770	1,280	1,080	1,940	1,380	2,050	960	1,600	1,020	1,700
Site works	Car Parks on ground; heavy duty paving	GBP/car	1,300	2,150	1,640	3,100	2,300	3,350	1,600	2,700	1,700	2,800
Site works	Car Parks on ground; light duty paving to shopping centre complex	GBP/car	770	1,280	1,080	1,940	1,380	2,050	960	1,600	1,020	1,700
Site works	Roads; asphalt incl. drainage and kerbs, residential estate 6.8m wide	GBP/m	610	1,280	810	1,900	1,140	1,980	750	1,600	780	1,700
Site works	Roads; asphalt incl. drainage and kerbs, industrial estate 10.4m wide	GBP/m	860	1,700	1,200	2,600	1,500	2,700	1,080	2,200	1,120	2,300

Work Type	Description	Unit	Leeds		London		Manchester & Liverpool		Sheffield		Thames Valley	
			Low	High	Low	High	Low	High	Low	High	Low	High
Hotel FF&E	Four star rating	GBP/bedroom	13,000	21,750	19,250	31,750	15,000	25,250	13,000	21,750	16,250	28,500
Hotel FF&E	Three star rating	GBP/bedroom	8,700	13,250	12,750	19,250	10,250	15,500	8,700	13,000	12,250	18,250
Office refurbishment	CBD offices; typical floor	GBP/m ²	350	1,120	480	1,540	390	1,280	350	1,120	460	1,320
Recreational facilities	Regional stadium	GBP/seat	1,660	2,700	1,780	2,900	1,800	2,950	1,660	2,700	1,760	2,850
Recreational facilities	Regional feature stadium	GBP/seat	2,400	4,950	2,550	5,300	2,600	5,400	2,400	4,950	2,550	5,300
Recreational facilities	National iconic stadium	GBP/seat	4,350	8,000	4,650	8,600	4,750	8,700	4,350	8,000	4,400	8,100
Recreational facilities	Indoor arena	GBP/seat	6,600	8,600	7,200	9,200	7,200	9,400	6,600	8,600	6,500	8,600
Recreational facilities	Indoor swimming pools - 50m (including dry sports facilities)	GBP/m ²	3,300	4,650	3,600	5,000	3,600	5,100	3,300	4,650	3,250	4,600
Site works	Landscaping; light, large areas, minimal planting	GBP/hectare	32,750	132,500	44,250	187,500	37,750	150,000	32,750	130,000	40,250	172,500
Site works	Landscaping; dense shrubs, topsoil, grass	GBP/m ²	30	50	45	80	40	65	30	50	40	75
Site works	Landscaping; grassing, large areas, topsoil sowing, treating	GBP/m ²	10	20	20	30	20	30	10	20	15	30
Site works	Car Parks on ground; light duty paving	GBP/car	990	1,760	1,420	2,300	1,140	1,920	980	1,760	1,300	2,200
Site works	Car parks on ground; heavy duty paving	GBP/car	1,640	2,750	2,300	3,850	1,920	3,150	1,640	2,750	2,150	3,550
Site works	Car parks on ground; light duty paving to shopping centre complex	GBP/car	990	1,640	1,420	2,400	1,140	1,920	980	1,640	1,300	2,200
Site works	Roads; asphalt incl. drainage and kerbs, residential estate 6.8m wide	GBP/m	770	1,640	1,100	2,400	890	1,920	760	1,640	1,000	2,250
Site works	Roads; asphalt incl. drainage and kerbs, industrial estate 10.4m wide	GBP/m	1,100	2,200	1,540	3,050	1,260	2,550	1,100	2,200	1,460	2,900

UK CONSTRUCTION COST DATA

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.

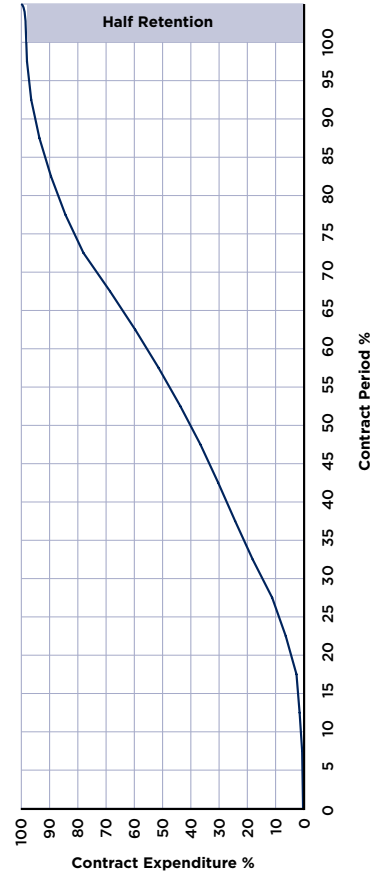
Construction periods exclude various extensions, including wet weather, industrial disputes, etc.

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



UK CONSTRUCTION COST DATA

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.

CAUTION: All prices are prior to COVID-19 effects on the market. Please refer to our quarterly Tender Price Forecasts.

Item	£		Unit
SUBSTRUCTURE			
Reinforced concrete pad footing (Grade 35)	520	-	650 m ²
Reinforced concrete slab on ground (Grade 35)	350	-	500 m ²
COLUMNS			
Reinforced concrete (600 x 600mm Grade 35)	225	-	300 m
Reinforced concrete (900 x 900mm Grade 35)	435	-	550 m
UPPER FLOORS (EXCLUDING BEAMS)			
150mm reinforced concrete suspended floor slab (Grade 35) on Holorib permanent formwork	65	-	90 m ²
150mm precast concrete suspended floor slab or beam and block floor with reinforced in situ concrete screed structural topping	90	-	110 m ²
200mm reinforced concrete suspended slab with high quality formwork for exposed finish	120	-	150 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	3,200	-	4,500 Rise

UK CONSTRUCTION COST DATA

CAUTION: All prices are prior to COVID-19 effects on the market. Please refer to our quarterly Tender Price Forecasts.

Item	£		Unit
1200mm wide reinforced concrete stair with painted steel tube balustrade (average rise 3.70m) including two flights and one half space landing	4,220	-	5,280 Rise
2000mm wide grand public stair with glass and metal balustrade (4.00m rise) including three flights and two quarter space landings	12,740	-	19,120 Rise
ROOF			
RC slab (Grade 35) graded to fall and built-up roofing membrane	150	-	220 m ²
Structural steel, purlins and insulated metal deck roof 40 - 50 kg/m ²	100	-	145 m ²
EXTERNAL WALLS			
Cavity wall construction, 102mm stock facing brick outer skin; insulated cavity; 140mm blockwork inner skin	350	-	500 m ²
Double glazed window unit (casement type)	400	-	650 m ²
Glass curtain wall system, capped stick-built system	600	-	850 m ²
EXTERNAL DOORS (INCLUDING IRONMONGERY)			
Single leaf solid core door	1,000	-	1,285 no.
Double leaf glazed door	1,425	-	1,710 no.
Double leaf automatic operating door	6,000	-	10,000 no.

UK CONSTRUCTION COST DATA

CONSTRUCTION ELEMENTS

⚠ CAUTION: All prices are prior to COVID-19 effects on the market. Please refer to our quarterly Tender Price Forecasts.

Item	£	Unit
INTERIOR WALLS		
250mm reinforced concrete wall (Grade 35)	200 - 250	m ²
100mm block wall	25 - 32	m ²
140mm block wall	30 - 45	m ²
Plasterboard metal stud wall, single layer each side	40 - 60	m ²
INTERNAL DOOR SET (INCLUDING IRONMONGERY)		
Single leaf solid core flush door	500 - 800	no.
Single leaf half hour fire door	550 - 900	no.
Single leaf one hour fire door	650 - 1,300	no.
INTERIOR SCREENS		
Laminated toilet partition	890 - 1,330	Each
Fully glazed office partition full (2.8m) height, frameless joints		
Single glazed	330 - 540	m
Double glazed	970 - 1,190	m
WALL FINISHES		
Plaster and emulsion paint	16 - 24	m ²
Plaster and vinyl fabric wallpaper	30 - 50	m ²
Cement render and ceramic tile	65 - 100	m ²
Granite tiles	105 - 165	m ²

UK CONSTRUCTION COST DATA

⚠ CAUTION: All prices are prior to COVID-19 effects on the market. Please refer to our quarterly Tender Price Forecasts.

Item	£	Unit
CEILING FINISHES		
Metal framed plasterboard ceiling, painted	40 - 50	m ²
Exposed grid suspended ceiling with mineral fibre board acoustic ceiling	26 - 37	m ²
Hygienic suspended ceiling system	30 - 40	m ²
FLOOR FINISHES		
Carpet tile	25 - 50	m ²
Ceramic tile	55 - 95	m ²
Raised access floors, standard duty	33 - 48	m ²
SERVICES - SANITARY AND PLUMBING		
Average cost per plumbing point including fixture, soil waste and vent; excluding DOC M pack	420 - 540	no.
Average cost for storm water drains (site area)	15 - 20	m ²
SERVICES - VERTICAL TRANSPORTATION		
Glass sided escalator (4m rise)	96,750 - 137,500	no.
13 passenger lift serving 4 floors	81,460 - 112,000	no.
Hydraulic lift, 2-stop, car-size 8-13 persons	40,750 - 45,825	no.



ESTIMATING DATA

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- 44 [International Cost Measurement Standards \(ICMS\)](#)

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	✗	✗	✓

ESTIMATING DATA

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/m ³
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

The two tables below are designed

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.

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.

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

for comparative purposes

Note from the 1st January 2016 a RICS Professional Statement (PS) 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.

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.

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 multifunctional 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

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
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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

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)

ESTIMATING DATA

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: RICS²

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

ESTIMATING DATA

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.

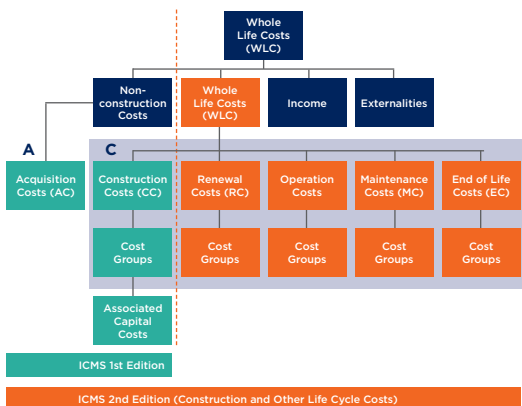
WHAT IS IT AND WHY?

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:

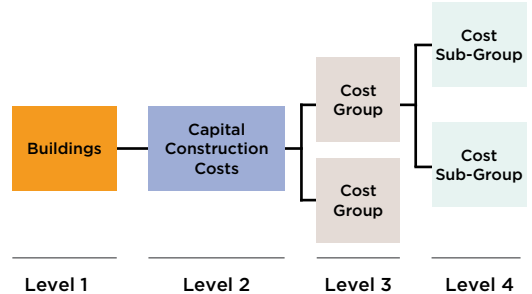
- **A** Acquisition Costs (formerly within Construction Costs)
- **C** Construction Costs
- **R** Renewal Costs
- **O** Operation Costs
- **M** Maintenance Costs
- **E** End of Life Costs

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.

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.

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ABOUT RLB

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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

- Global turnover in excess of £300m
- More than 4,600 people worldwide
- Offices in 123 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



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



Community Be aware of our social responsibilities and make our contribution to the community



Environment Be conscious of the difference we can make in creating a better tomorrow



Customers Challenge the norm, give fresh perspectives and deliver flawlessly



Suppliers Act with integrity, honesty and fairness in all our relationships



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

ABOUT RLB

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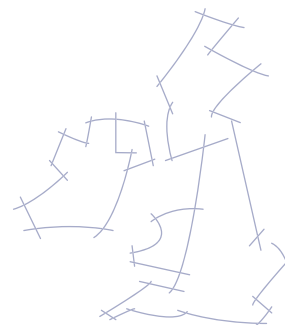
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ABOUT RLB

OUR SECTORS

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

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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:

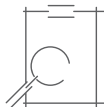
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COMMERCIAL SUCCESS



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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 Costs 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.

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

COMMERCIAL SUCCESS

optimisation of the design and asset management to meet the clients project objectives, needs and whole life value goals.

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 regularity compliance
- Protecting company reputation

PROJECT & PROGRAMME SUCCESS



Partner - Head of Project Management: Guy Robinson

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Partner: Julian King

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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.

ABOUT RLB

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

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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.

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

ABOUT RLB

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.

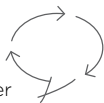
UNIVERSITY OF BRISTOL, NEW HUMANITIES BUILDING BRISTOL, UK

CLIENT: UNIVERSITY OF BRISTOL

Helping to create new world class facilities for research and teaching



SPECIALIST SOLUTIONS



Commercial & Technical Director: Mark Weaver

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THE DIFFERENCE BETWEEN SUCCESS AND FAILURE

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.

Specification Consultancy

Contact: Meena Sankar, Partner

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Understanding the scope, quality, activity and responsibility of what is to be procured in a project is one of the most underplayed services in today's construction industry. Having a well prepared and coordinated specification, that is clear for all parties in a design and build, can save time, resources and budget. This can be the difference between a successful project and one that fails.

We recognise that every project is different, with variables that can affect the outcome. Understanding this is key. With years of practical project experience, our team's expertise includes Common Arrangement (CAWS), CSI Masterformat, NATSPEC and Qatar Construction Specification (QCS) to find the optimum solution.

We focus on improving the standard of design documentation, protecting all aspects of those involved in the design and build of a project. Providing robust specification tailored specifically for projects, we can advise an appropriate procurement route. Clients can then feel confident that risk has been mitigated, and every element of the specification has been analysed and assessed to support the best outcome.

Health & Safety

Contact: Chris Hartley, Partner - Head of Health & Safety

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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.

Design Management

Contact: Meena Sankar, Partner

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Understanding the design process through our experience of working closely with and as part of design teams, our design management service helps designers deliver more with less. Our aim is to co-locate with the Lead Designer to be at the heart of the design team - Design Teams can concentrate on their core service while our Design Managers focus on the programme of deliverables and contractual commitments.

Our specialist team ensures that the strategy of any build is kept in line with the larger business strategy and that the outcomes of the design activities are within the business and financial remit. To ensure the user experience is a priority, our team supports clients to bring practicality, functionality and a real understanding of the construction industry to the design management process without compromising on aesthetics or innovation.

Having long-term relationships with designers,

SPECIALIST SOLUTIONS

architects, sustainability experts and other professionals involved in the design-built environment, we have global experience of working on some of the most iconic buildings in the world as well as local knowledge of geographical attributes and the challenges working in varying locations bring. Our Design Management consultancy marries our knowledge of the construction industry with the corporate and financial objectives and help clients futureproof both their design and build.

Rider Levett Bucknall is a market leader in the field of Design Management. Through years of practical project experience, we have learnt and understood the complexities and intricacies of what is required on projects. Our approach is based on integrating management techniques within design teams, aligned to a clear brief, ensuring that agreed communication and client decision making processes are clearly understood in order to deliver successful projects. Through our global reach expertise and local knowledge we deliver tailor made solutions to suit our clients' project specific requirements. Our Design Managers allow clients to do what they do best - focus on their Design.

Sustainability

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. Our approach covers all aspects of the sustainability agenda - from carbon reduction, energy management, wellbeing 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 an environmental assessor (BREEAM and SKA), and our work promoting sustainable practices in the industry. 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 an additional industry benchmark for sustainability. We continue to upskill those in the construction industry to consider sustainable measures when building, and to design for a longerlife.

Dispute Resolution & Expert Witness

Contact: Aziz Mehtajee, Partner

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Setting up and managing construction contracts can be a challenging and 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.

SPECIALIST CONSULTANCY

Social Value

Contact: Jiten Chauhan, Partner
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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 fast becoming a fundamental part of procuring and delivering a sustainable project.

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 longterm. Our model, developed with the Social Profit Calculator (SPC), identifies the cost and value of each element of a project. It's an approach we advocate for clients, and one we use to measure the impact of our own business.

Working collaboratively with the SPC, 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.

PD / CDM Services

Contact: Chris Hartley, Partner - Head of Building Surveying and H&S
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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 co-ordinated solutions for successful implementation.

Whole Life Carbon

Contact: Mark Weaver, Commercial & Technical Director
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RLB undertake a holistic long team approach to carbon management with a view to reducing carbon and associated Green House gases taking into account the commercial realities of balancing capital expenditure, whole life cost and carbon.

Our carbon calculations take into account the embodied carbon with a building (during construction), the operational carbon and the carbon during life cycle replacement of 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.

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



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:

- **Protégé:** 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](https://www.rlb.com) or email recruitment@uk.rlb.com.



INVESTORS IN PEOPLE®
We invest in people Gold

Sarah Draper

Partner - Head of People & Culture

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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:

- 18 partner organisations
- Over 1450 staff across Europe
- Operating across 23 countries

Please contact:

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Belgium

Bopro

Bulgaria / Croatia / Serbia / Montenegro / Romania

Bates

Czech Republic

HIK Consulting

Denmark

Emcon A/S

Germany

MTM Project Solutions

Greece

LDK Consultants

Hungary

Tomlin Kft

Ireland

Kerrigan Sheanon Newman

Italy

Bear Project Management

Netherlands

Skaal

Norway

AS Bygganalyse

Poland

APP Projekt

Portugal

FICOPE

Russia

DBC Consultants

Spain

APM Management

Sweden

AFRY

Turkey

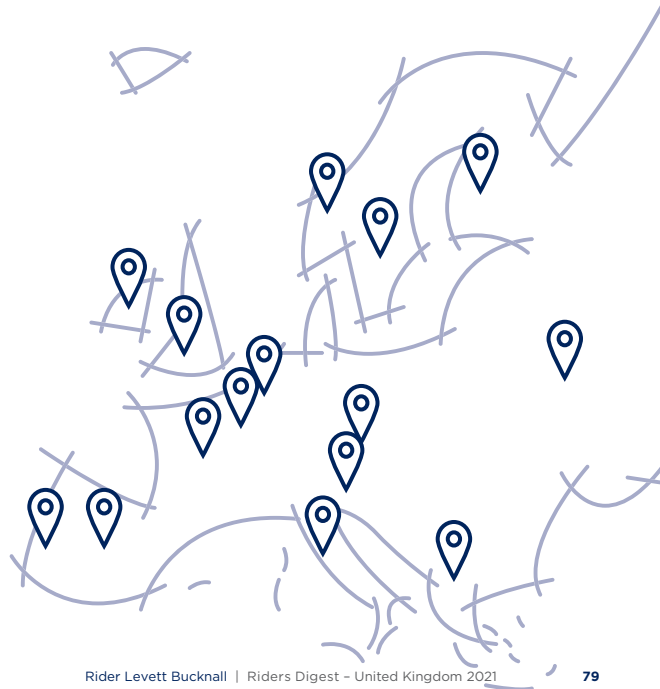
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UK

Rider Levett Bucknall



RLB Euro Alliance
office location





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84	<u>Africa</u>
85	<u>Americas</u>
86	<u>Asia</u>
89	<u>Middle East</u>
90	<u>Oceania</u>

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MISCELLANEOUS

93	Conversion Factors
96	Calculation Formulae

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

MISCELLANEOUS

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	$^{\circ}\text{F} = (^{\circ}\text{C} \times 9/5) + 32$
Degree Fahrenheit to Degree Celsius	$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times 5/9$

MISCELLANEOUS 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

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