## Contents

Preface		ix	
1	The C	onstruction Industry and the Quantity Surveyor	1
1.1	The co	onstruction industry	1
1.2	The cli	ient's team	2
	1.2.1	The professional quantity surveyor (PQS)	4
	1.2.2		5
	1.2.3	Structural engineer Civil engineer	6
	1.2.4	Civil engineer	7
	1.2.5	Service engineers	8
	1.2.6		9
1.3	Legisla	ation and control of the building process	10
	1.3.1	Planning approval	11
	1.3.2	Building Regulations and control	12
	1.3.3	Health and safety	13
1.4	Indust	ry networking	14
	1.4.1	RICS	15
	1.4.2	CIOB	16
1.5	Fundir	ng and market drivers	19
1.6	Econor	mic and construction cycles	21
1.7	Global	construction	22
1.8	Development of the quantity surveyor		23
	1.8.1	Background	23
	1.8.2	Personal traits and skills	25
	1.8 3	Time and self-management	26
	1.8.4	Education and training	27
1.9	Constr	ruction innovation and the quantity surveyor	28
	1.9.1	Information technology (IT)	28
C	1.9.2	Environmental issues	33
1.10	Prospe	ects and augmentation of the quantity surveyor	38
	1.10.1	Employed roles	38
	1.10.2	Independent roles	40
		Women in the industry	41
		Global and multicultural diversity	41
		Prospects	42
2	Measu	rrement and Quantities	43
2.1	Measu	rement guides and coverage rules	43

2.2	Arrangement of documents and project information		
2.3	Measurement terminology	50	
	2.3.1 Take off and measuring techniques	50	
	2.3.2 Centre line calculation	56	
	2.3.3 Spot and composite items	60	
2.4	Control of the system and delegation of tasks	60	
	2.4.1 Requests for Information (RFI)	68	
2.5	Measurement example	69	
	Builder's bills of quantities	70	
	2.6.1 Components	78	
	2.6.2 Draft and final bills	84	
	2.6.3 Using computers	86	
2.7	Alternative bills of quantities	89	
3	Working with the Main Contractor	91	
3.1	Contracting organisations	91	
	3.1.1 Premises and assets	93	
3.2	Management systems	97	
	3.2.1 Health and safety management	99	
	Contracting organisations 3.1.1 Premises and assets Management systems 3.2.1 Health and safety management 3.2.2 Environmental management	100	
	3.2.3 Quality management	101	
3.3	Marketing for contracts	103	
3.4	Estimating and the contractor's quantity surveyor	104	
	3.4.1 Activity on receipt of tender documents	105	
	3.4.2 Subcontractor pricing	107	
	3.4.3 Builder's schedules	113	
	3.4.4 Resources costing	114	
	3.4.5 Unit rate calculations	122	
	3.4.6 Preliminaries pricing	128	
	3.4.7 Estimating and quantity surveying software	133	
	3.4.8 Cost planned tenders	143	
	3.4. Value management	147	
4	Project Commencement	149	
4.1	The project team	149	
4.2	Pre-construction handover	152	
4.3	Office- and site-based roles	153	
4.4	The construction programme	155	
	4.4.1 Programme float	160	
	4.4.2 Programme acceleration	160	
4.5	Project administration	161	
	4.5.1 Cash flow	164	
	4.5.2 Cost targets	169	
	4.5.3 Procurement scheduling	172	
	4.5.4 Material supply and plant hire registers	177	
	4.5.5 Document distribution and registers	178	

	4.5.6	Progress claim scheduling	179
	4.5.7	Cost management systems (CMS)	185
4	.6 Site es		
4	.7 Review	w of the main contract	188
	4.7.1	Articles of the Agreement	192
	4.7.2		194
	4.7.3	Employer's financial security	198
	4.7.4	Carrying out the works	200
	4.7.5	Delays in carrying out the works	208
	4.7.6	Control of the works	213
	4.7.7	Cost variations	217
	4.7.8	Payments	219
	4.7.9	Termination	220
	4.7.10	Warranties	222
	4.7.11	Contract schedules and special provisions	223
4	.8 Edited	l and bespoke forms of contract	224
5	Suppl	and bespoke forms of contract y Chain Procurement upply chain ur-only subcontractors	228
		upply chain	228
		ir-only subcontractors	220
0	5.2.1		230
	5.2.2		230
5		ir and material subcontractors	232
		Domestic subcontractors	233
	5.3.2		236
	5.3.3		237
	5.3.4		240
	5.3.5		241
	5.3.6		248
	5.3.7	Bespoke forms of subcontract agreement	249
	5.3.8		253
	5.3.9	Back-to-back forms of subcontract agreement	253
5	.4 Mater	ial supply scheduling and purchase ordering	254
	5.4.1	Bulk ordering	257
5	.5 Labou	ir hire agreements	260
5.	.6 Plant	hire agreements	262
5.	.7 Consu	ultant appointments	264
6	Runn	ing the Project	266
6			
	6.1.1	Changes in design and documentation	266
	6.1.2	Contractor-generated documents	269
6	.2 Chang	ges to the works	271
	6.2.1	Changes in quantity	272
	6.2.2	Changes in quality	273

	6.2.3 Changes in sequence of works	275
	6.2.4 Variation submissions	277
6.3	Reimbursement	280
	6.3.1 Client interim payments	281
	6.3.2 Subcontractors' payments	285
	6.3.3 Material suppliers and hire company payments	291
	6.3.4 Consultants' payments	294
6.4	Cost centres and financial reporting	295
6.5	Tracking expenditure	295
6.6	Extension of time claims	301
6.7	Financial claims	304
	6.7.1 Claims under the main contract	305
	6.7.2 Claims from the supply chain to the contractor	310
	6.7.3 Claims from the contractor to the supply chain	313
6.8	Settlement of disputes	314
	6.8.1 Alternative dispute resolution (ADR)	316
	6.8.2 Negotiation	318
	6.8.3 Mediation	318
	6.8.4 Conciliation	319
	6.8.5 Early neutral evaluation	320
	<ul> <li>6.8.1 Alternative dispute resolution (ADR)</li> <li>6.8.2 Negotiation</li> <li>6.8.3 Mediation</li> <li>6.8.4 Conciliation</li> <li>6.8.5 Early neutral evaluation</li> <li>6.8.6 Expert determination</li> <li>6.8.7 Adjudication</li> </ul>	320
	6.8.7 Adjudication	321
	6.8.8 Arbitration	323
6.9	Voluntary and involuntary contract terminations	324
	6.9.1 Main contract termination	326
	6.9.2 Supply chain terminations	327
6.10	Project reporting	332
7	Project Completion	335
7.1	Sectional and practical completion	335
	7.1.1 Definition and effects of practical completion	336
	7.1.2 Final certification	337
7.2	Operating manuals and As Built information	338
7.3	Defects	340
	7.3.1 Patent defects	341
	7.3.2 Latent defects	342
7.4	Final accounts	343
	7.4.1 Main contract final account	343
	7.4.2 Issue and effect of the final payment certificate	346
	7.4.3 Supply chain final accounts	348
	7.4.4 Final project costs	349
7.5	Project closure	351
	7.5.1 Feedback	351
	7.5.2 Archiving and retrieval	352
Furt	her Reading	355
Inde	•	357