RLB Rider Levett Bucknall

RIDERS DIGEST 2020

NORTH AMERICA
EDITION

This document serves as a summary of cost information and related data on the construction industry.

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RIDERS DIGEST

While the information in this publication is believed to be correct, no responsibility is accepted for its accuracy. Persons desiring to utilize any information appearing in this publication should verify its applicability to their specific circumstances.

Cost information in this publication is indicative and for general guidance only and is based on rates ruling at January 2020.

ACKNOWLEDGEMENTS

WHERE INFORMATION IS REQUIRED ON A SPECIFIC PROJECT, IT IS ESSENTIAL THAT PROFESSIONAL ADVICE IS OBTAINED.

NAME: _____

ADDRESS: _____

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☎ BUSINESS: _____

MOBILE: _____

ADDRESSES AND TELEPHONE NUMBERS

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FOREWORD

Welcome to the 2020 edition of the Riders Digest

A compendium of North America cost data and related information as well as international cost data.

Rider Levett Bucknall is an international property and construction consultancy firm with over 120 offices worldwide. By integrating local knowledge and expertise with global understanding, we provide our clients with professional advice that is second to none.

Our corporate culture and vision are focused on integrity, innovation, teamwork and client satisfaction. Our combined experience enables us to provide intelligent and responsible business and project solutions that optimize resources, maximize performance and enhance value throughout a project's life. Our goal is to make sure our clients and their projects succeed.

Rider Levett Bucknall is well known for its cost research through a variety of publications, such as our Quarterly Cost Reports, International Cost Reports, White Papers and area-specific market studies. This commitment to research and innovation has given us an edge on the most up-to-date construction industry market knowledge.

I hope that you find our cost data and related information both informative and useful in your business.

JULIAN ANDERSON
PRESIDENT, NORTH AMERICA

SLS BEVERLY HILLS

LOS ANGELES, CALIFORNIA

SLS Hotel at Beverly Hills is a luxury hotel featuring exclusive world-class designs and custom furnishings, a renowned culinary program, and custom-curated retail. The $22 million renovation encompassed nearly 300 guestrooms and suites, living areas, modern bathrooms, secluded terraces, and an oversized luxury 1,900 SF presidential suite. Two other site enhancement projects include the development of a private dining restaurant, SOMNI, which has been hailed as one of Los Angeles' most unique culinary experiences, and a large indoor/outdoor luxury event space, the Garden Terrace.

RLB provided a full suite of project management and cost consultancy services. This visionary collaboration is a part of The Luxury Collection Hotels & Resorts, a pronounced ensemble of the world's finest hotels and resorts in more than 26 countries.

INTERNATIONAL CONSTRUCTION

CONSTRUCTION COSTS

The costs stated in this section represent hard construction costs and reflect the standards and specifications normal to that country or region. Variation in costs may be experienced for factors such as site conditions, climatic conditions, standards of specification, market conditions, etc. Costs for associated site development work such as site formation, utilities, paving, parking and landscaping are excluded.

Figures also exclude furniture, fittings and equipment (FF&E) with the exception of figures for Hong Kong, China and Singapore, which do include FF&E in hotel costs.

All project soft costs such as land acquisition, design and engineering fees, entitlements, permitting and financing are excluded. No allowance has been included to cover possible changes in construction costs between the date of this publication and any future date.

Figures on the following pages are stated in construction costs per gross square foot in local currency. For your convenience, local currency exchange rates to USD($) at 1 December 2019 are provided in the table below.

CURRENCY	EXCHANGE RATE TO USD	
Australian Dollar	AUD	0.6886
British Pound	GBP	1.3321
Chinese Yuan	CNY	0.1422
Hong Kong Dollar	HKD	0.1288
Indonesian Rupiah	IDR	0.0001
South-Korean Won	KRW	0.0009
Malaysian Ringgit	MYR	0.2410
New Zealand Dollar	NZD	0.6595
Philippine Peso	PHP	0.0198
Qatari Rial	QAR	0.2731
Saudi Riyal	SAR	0.2704
Singapore Dollar	SGD	0.7388
United Arab Emirates Dirham	AED	0.2715
Vietnamese Dong	VND	0.0000

CONSTRUCTION COSTS

LOCATION /CITY	LOCAL CURRENCY	COST PER SF			
		OFFICE BUILDING			
		PREMIUM		GRADE A	
		LOW	HIGH	LOW	HIGH
NORTH AMERICA @ Q4 2019					
BOSTON	USD	350	550	225	325
CALGARY	CAD	235	295	190	285
CHICAGO	USD	300	600	280	450
DENVER	USD	200	260	165	200
HONOLULU	USD	295	540	250	405
LAS VEGAS	USD	180	310	120	200
LOS ANGELES	USD	240	360	175	260
NEW YORK	USD	400	600	300	400
PHOENIX	USD	200	300	140	195
PORTLAND	USD	220	300	165	220
SAN FRANCISCO	USD	330	525	280	400
SEATTLE	USD	210	255	145	205
TORONTO	CAD	220	300	190	280
WASHINGTON DC	USD	325	550	225	325
ASIA @ Q4 2019					
BEIJING	RMB	935	1,535	860	1,320
GUANGZHOU	RMB	830	1,320	765	1,155
HO CHI MINH CITY	VND ('000)	2,745	3,855	2,295	2,850
HONG KONG	$HKD	2,420	3,605	2,070	2,770
JAKARTA	RP ('000)	1,095	1,710	805	1,245
KUALA LUMPUR	RINGGIT	280	485	150	345
MANILLA	PHP	4,045	5,965	NP	NP
SEOUL	KRW ('000)	275	360	210	260
SHANGHAI	RMB	895	1,425	795	1,240
SINGAPORE	SGD	310	535	220	425
EUROPE @ Q4 2019					
AMSTERDAM	EUR	150	215	125	170
BIRMINGHAM	GBP	220	310	180	330
BRISTOL	GBP	230	330	185	330
EDINBURGH	GBP	200	285	175	285
London	GBP	330	425	295	405
MANCHESTER	GBP	235	305	200	305
MOSCOW	EUR	145	200	130	155
OSLO	EUR	265	325	195	230
MIDDLE EAST @ Q4 2019					
ABU DHABI	AED	615	730	495	690
DUBAI	AED	645	775	520	730
RIYADH	SAR	560	870	570	785
OCEANIA @ Q4 2019					
ADELAIDE	AUD	290	410	240	340
AUCKLAND	NZD	400	525	335	500
BRISBANE	AUD	325	475	270	410
CANBERRA	AUD	375	590	300	465
CHRISTCHURCH	NZD	400	505	310	470
DARWIN	AUD	335	445	260	410
GOLD COAST	AUD	300	475	220	345
MELBOURNE	AUD	370	495	285	395
PERTH	AUD	325	505	260	405
SYDNEY	AUD	420	625	320	455
WELLINGTON	NZD	450	540	330	465

COST PER SF					
RETAIL				RESIDENTIAL MULTI STORY	
MALL		STRIP SHOPPING			
LOW	HIGH	LOW	HIGH	LOW	HIGH
250	400	200	350	200	350
220	310	110	160	140	215
185	290	135	220	165	400
95	150	80	175	90	200
215	500	185	440	205	455
125	480	90	160	95	405
155	345	130	190	225	370
275	425	175	300	200	375
120	200	80	150	90	210
170	270	155	225	160	250
275	400	240	350	375	550
140	310	115	165	165	275
230	280	120	160	190	230
175	300	140	25	200	350
1,025	1,560	895	1,400	485	1,000
945	1,345	820	1,240	435	870
2,235	2,975	NP	NP	1,710	2,620
2,420	3,070	2,070	2,690	2,260	4,520
700	970	NP	NP	740	1,720
225	375	NP	NP	205	485
4,185	6,470	5,445	7,210	3,335	7,805
190	270	155	240	180	305
935	1,480	830	1,345	435	895
205	355	NP	NP	205	335
165	235	110	165	125	200
330	455	105	195	185	260
325	450	100	195	135	195
310	435	100	185	185	265
395	560	125	235	280	485
330	465	105	200	195	285
120	195	115	140	70	130
225	290	195	230	200	190
430	680	NP	NP	475	700
455	720	NP	NP	500	745
355	645	390	550	340	1,480
170	325	140	200	250	380
305	345	180	220	430	525
235	390	150	215	260	475
260	435	135	275	320	560
275	310	155	200	365	440
190	285	135	230	220	285
270	375	130	195	190	485
255	365	140	190	285	500
205	310	110	270	205	440
235	495	180	235	305	665
320	340	NP	NP	420	515

CONSTRUCTION COSTS

LOCATION /CITY	LOCAL CURRENCY	COST PER SF			
		HOTELS			
		3 STAR		5 STAR	
		LOW	HIGH	LOW	HIGH
NORTH AMERICA @ Q4 2019					
BOSTON	USD	300	400	400	600
CALGARY	CAD	190	245	300	450
CHICAGO	USD	290	410	400	660
DENVER	USD	200	275	285	370
HONOLULU	USD	330	555	525	760
LAS VEGAS	USD	165	300	350	600
LOS ANGELES	USD	280	365	380	545
NEW YORK	USD	300	400	400	600
PHOENIX	USD	175	250	350	520
PORTLAND	USD	220	320	300	400
SAN FRANCISCO	USD	390	530	460	660
SEATTLE	USD	230	260	275	390
TORONTO	USD	205	265	400	500
WASHINGTON DC	USD	265	390	400	600
ASIA @ Q4 2019					
BEIJING	RMB	1,185	1,505	1,590	2,100
GUANGZHOU	RMB	1,130	1,345	1,505	1,940
HO CHI MINH CITY	VND ('000)	2,710	3,505	3,860	4,630
HONG KONG	$HKD	3,040	3,525	3,660	4,495
JAKARTA	RP ('000)	1,455	2,045	1,940	2,585
KUALA LUMPUR	RINGGIT	270	375	540	755
MANILLA	PHP	5,995	7,555	9,255	10,895
SEOUL	KRW ('000)	205	285	375	560
SHANGHAI	RMB	1,130	1,455	1,535	2,045
SINGAPORE	SGD	345	395	450	520
EUROPE @ Q4 2019					
AMSTERDAM	EUR	145	185	205	305
BIRMINGHAM	GBP	155	235	255	355
BRISTOL	GBP	155	210	270	360
EDINBURGH	GBP	150	220	235	330
London	GBP	210	270	310	415
MANCHESTER	GBP	170	210	255	345
MOSCOW	EUR	170	215	250	320
OSLO	EUR	305	335	340	410
MIDDLE EAST @ Q4 2019					
ABU DHABI	AED	635	895	945	1,265
DUBAI	AED	665	1,000	1,000	1,560
RIYADH	SAR	690	860	1,830	2,155
OCEANIA @ Q4 2019					
ADELAIDE	AUD	295	380	400	490
AUCKLAND	NZD	450	510	700	775
BRISBANE	AUD	325	450	450	615
CANBERRA	AUD	335	570	455	690
CHRISTCHURCH	NZD	440	495	550	665
DARWIN	AUD	305	380	390	480
GOLD COAST	AUD	300	430	430	605
MELBOURNE	AUD	335	430	475	635
PERTH	AUD	280	390	390	515
SYDNEY	AUD	375	475	515	710
WELLINGTON	NZD	440	495	550	720

COST PER SF					
CAR PARKING				INDUSTRIAL WAREHOUSE	
MULTI STORY		BASEMENT			
LOW	HIGH	LOW	HIGH	LOW	HIGH
85	140	100	160	110	190
75	95	75	120	85	145
80	125	125	170	110	185
75	100	100	135	90	150
105	150	145	270	150	235
50	85	65	150	65	100
105	125	130	190	120	185
95	175	125	200	115	200
45	70	70	110	60	100
115	150	130	215	100	160
140	160	260	300	150	200
100	120	140	200	100	130
75	110	115	150	115	150
90	130	110	140	120	190
270	370	450	785	520	665
240	345	425	745	480	590
995	1,480	2,035	2,780	670	1,010
945	1,155	1,990	2,720	1,615	2,020
375	485	645	860	515	655
85	130	150	365	110	195
NP	NP	NP	NP	5,735	7,330
80	100	100	130	140	175
255	360	470	785	475	615
80	140	155	225	115	140
45	70	85	135	50	90
45	80	95	165	50	70
45	95	110	175	45	75
40	75	95	160	40	75
50	100	135	215	55	100
60	80	120	170	55	80
45	60	85	110	55	75
50	60	105	115	135	165
190	375	300	475	155	285
260	400	345	500	205	325
265	330	355	415	380	465
75	105	145	210	70	120
115	145	250	300	85	115
110	160	185	235	80	130
85	140	115	200	80	150
105	150	220	240	80	125
80	135	125	165	85	155
90	150	170	235	80	130
95	145	145	200	75	140
70	110	195	335	60	115
90	140	130	215	85	140
155	175	305	330	110	150

RLB CONSTRUCTION BID PRICE INDEX

(Annual % Change)

LOCATION	2017	2018	2019 (F)	2020 (F)	2021 (F)	2022 (F)
AFRICA @ Q2 2019						
CAPE TOWN	6.2	6.3	5.0	5.6	5.8	5.9
JOHANNESBURG	7.9	4.1	5.1	5.5	5.7	NP
MAPUTO	0.3	0.5	1.0	1.1	NP	NP
NORTH AMERICA @ Q4 2019						
BOSTON	3.2	4.4	4.5	4.0	4.0	3.0
CALGARY	0.3	7.3	5.0	4.0	3.0	3.0
CHICAGO	5.3	7.6	5.3	4.0	3.0	3.0
DENVER	3.8	4.0	4.3	3.8	3.5	3.0
HONOLULU	-1.7	4.9	4.0	3.0	3.0	3.0
LAS VEGAS	3.5	5.4	5.0	4.0	3.0	3.0
LOS ANGELES	7.6	4.4	4.0	3.5	3.0	3.0
NEW YORK	3.3	4.5	5.0	4.0	4.0	4.0
PHOENIX	4.3	6.7	5.0	4.0	3.0	3.0
PORTLAND	5.6	6.5	5.7	5.0	4.0	3.0
SAN FRANCISCO	6.2	6.1	7.5	5.0	4.5	4.5
SEATTLE	5.1	6.5	5.0	4.0	3.0	3.0
TORONTO	1.1	9.5	6.0	2.3	2.3	2.3
WASHINGTON DC	3.2	6.5	5.0	4.0	3.0	3.0
ASIA @ Q4 2019						
BEIJING	7.7	3.0	2.0	3.0	3.0	2.0
CHENGDU	2.0	6.1	3.0	3.0	3.0	3.0
GUANGZHOU	2.5	5.0	0.0	1.0	2.0	2.0
HONG KONG	0.0	-4.7	-3.9	-2.0	2.0	2.0
MACAU	2.0	-4.1	-3.9	-2.0	2.0	2.0
SEOUL	2.5	4.4	1.7	1.7	1.5	0.3
SHANGHAI	7.0	3.5	0.0	2.0	2.0	3.0
SHENZHEN	2.0	5.0	3.0	3.0	3.0	3.0
SINGAPORE	-1.5	1.8	0.2	3.5	6.5	3.0
EUROPE @ Q4 2019						
AMSTERDAM	NP	5.8	3.1	0.0	-3.5	NP
BIRMINGHAM	2.8	2.5	2.3	3.3	4.0	4.0
BRISTOL	2.5	3.0	2.4	2.6	3.2	3.8
BUDAPEST	9.5	10.0	10.0	8.0	6.0	NP
LONDON	2.0	1.3	1.0	1.5	2.0	2.8
SHEFFIELD	2.0	1.2	2.0	2.6	3.0	3.6
MANCHESTER	2.0	1.0	2.0	2.5	3.5	3.5
MOSCOW	1.0	1.5	5.0	2.0	NP	NP
OSLO	NP	3.5	3.5	3.5	3.5	3.5
MIDDLE EAST @ Q4 2019						
ABU DHABI	-3.0	3.2	2.2	3.0	3.5	3.0
DOHA	6.0	7.0	7.2	NP	NP	NP
DUBAI	3.5	3.0	2.2	3.0	3.5	3.0
RIYADH	5.0	5.0	3.1	2.4	3.0	3.5

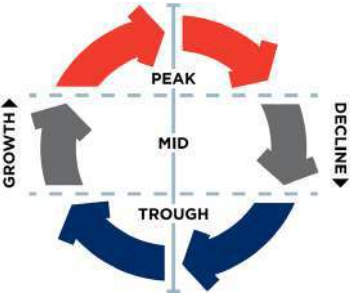
(F) Forecast
(NP) Not Published

LOCATION	2017	2018	2019 (F)	2020 (F)	2021 (F)	2022 (F)
OCEANIA @ Q4 2019						
ADELAIDE	**3.1**	3.5	**3.9**	**4.0**	**4.5**	**4.5**
AUCKLAND	8.0	6.0	3.5	3.0	3.0	2.5
BRISBANE	3.0	1.0	2.0	3.0	4.1	4.1
CANBERRA	2.8	3.5	3.5	3.0	3.0	3.0
CHRISTCHURCH	3.0	3.0	2.0	2.0	2.0	2.0
DARWIN	0.8	0.5	0.8	1.2	1.8	2.5
GOLD COAST	2.5	2.0	1.5	2.5	3.0	3.0
MELBOURNE	3.0	4.0	3.8	3.5	3.4	3.4
PERTH	0.0	1.0	1.5	2.7	3.0	3.0
SYDNEY	4.3	4.9	4.1	4.0	3.8	3.5
TOWNSVILLE	4.0	3.0	3.0	3.0	3.0	3.0
WELLINGTON	5.3	6.0	3.0	3.0	3.0	3.0

CONSTRUCTION MARKET ACTIVITY

The construction market activity model, located to the right, illustrates the different growth and decline zones in a theoretical construction industry business cycle. The tabulation in the preceding and following pages provides an overview of the relative growth/decline of each development sector in various cities. Each city has its own business cycle in the context of its own economy and as such the performance of each development sector is not strictly comparable between cities. Information is current as of December 2019.

UNITED STATES	HOUSES	APARTMENTS	OFFICES
Boston	▼	▼	▲
Chicago	▼	▲	▲
Denver	▼	▼	▲
Honolulu	▲	▲	▼
Las Vegas	▲	▲	▲
Los Angeles	▼	▼	▼
New York	▼	▼	▲
Phoenix	▲	▲	▲
Portland	▲	▲	▲
San Francisco	▲	▲	▼
Seattle	▼	▲	▲
Washington, D.C.	▲	▼	▲
CANADA			
Calgary	▼	▼	▲
Toronto	▼	▲	▲



INDUSTRIAL	RETAIL	HOTEL	CIVIL
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CONSTRUCTION MARKET ACTIVITY

AFRICA	HOUSES	APARTMENTS	OFFICES
Cape Town	▼	▲	▼
Durban	▼	▲	▲
Gaborone (Botswana)	▲	▲	▼
Johannesburg	▲	▲	▼
Maputo (Mozambique)	▲	▲	▼
Port Louis (Mauritius)	▲	▼	▲
NORTH ASIA			
Beijing	▼	▲	▼
Chengdu	▲	▲	▲
Guangzhou	▼	▲	▼
Hong Kong	▼	▼	▼
Macau	▼	▼	▼
Seoul	▼	▼	▼
Shanghai	▼	▲	▲
Shenzhen	▼	▲	▲
SOUTHEAST ASIA			
Cebu	▼	▲	▼
Clark	▲	▲	▲
Ho Chi Minh City	▲	▲	▲
Jakarta	▲	▲	▼
Kuala Lumpur	▲	▼	▼
Manila	▼	▲	▲
Singapore	▼	▼	▼
Subic	▲	▼	▼

INDUSTRIAL	RETAIL	HOTEL	CIVIL
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CONSTRUCTION MARKET ACTIVITY

UNITED KINGDOM	HOUSES	APARTMENTS	OFFICES
Birmingham	▲	▲	▲
Bristol	▲	▲	▲
Leeds	▲	▲	▲
London	▲	▲	▲
Manchester	▲	▲	▲
Sheffield	▲	▲	▲
EUROPE			
Amsterdam	▲	▲	▼
Athens	▼	▼	▲
Berlin	▲	▲	▼
Budapest	▲	▲	▲
Copenhagen	▼	▼	▲
Dublin	▲	▲	▲
Madrid	▼	▼	▼
Milan	▼	▼	▼
Moscow	▲	▲	▼
Oslo	▲	▲	▲
Paris	▲	▲	▲
Podgorica	▲	▲	▼
MIDDLE EAST			
Abu Dhabi	▲	▼	▼
Doha	▲	▲	▼
Dubai	▼	▼	▼
Riyadh	▲	▲	▲

INDUSTRIAL	RETAIL	HOTEL	CIVIL
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CONSTRUCTION MARKET ACTIVITY

AUSTRALIA	HOUSES	APARTMENTS	OFFICES
Adelaide	▲	▲	▲
Brisbane	▼	▼	▲
Canberra	▼	▲	▲
Darwin	▲	▼	▲
Gold Coast	▲	▼	▼
Melbourne	▲	▼	▲
Perth	▲	▼	▼
Sydney	▲	▼	▲
Townsville	▼	▼	▼
NEW ZEALAND			
Auckland	▼	▼	▼
Christchurch	▼	▼	▼
Wellington	▲	▲	▲

INDUSTRIAL	RETAIL	HOTEL	CIVIL
▲	▼	▲	▼
▲	▼	▼	▲
▲	▼	▲	▼
▲	▼	▲	▲
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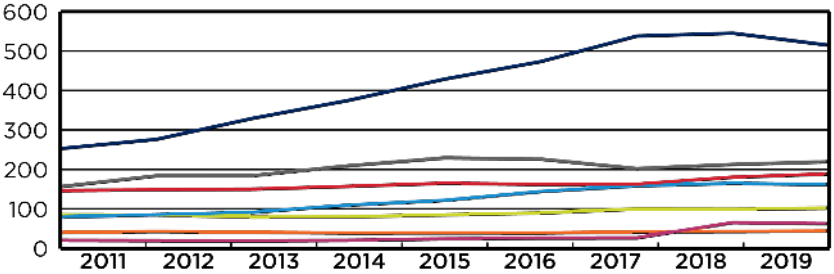
TORONTO TRANSIT COMMISSION SPADINA SUBWAY EXTENSION

TORONTO, ONTARIO

The Toronto Transit Commission (TTC) Spadina Subway Extension is a major, multi-faceted transportation project that provides a Rapid Transit Link (subway) across the municipal boundary between the City of Toronto and the Regional Municipality of York. The project expands the Line 1 subway line by 8.6 km and adds six new TTC stations. The project also includes the redevelopment of infrastructure displaced by the subway line extension including City of Toronto Fire Station 141.

RLB was retained to participate with the project controls team, Stantec, to provide full pre-construction cost consulting for the project to validate the business plan, including risk assessments. RLB worked for TTC and undertook a validation of scope and cost for the project. This included Planning, Design, Tender Stage Cost Estimates, Contract Administration, Value Engineering, Studies and Assessments. Financial Modelling was required for each project, and for the overall program.

NORTH AMERICA CONSTRUCTION



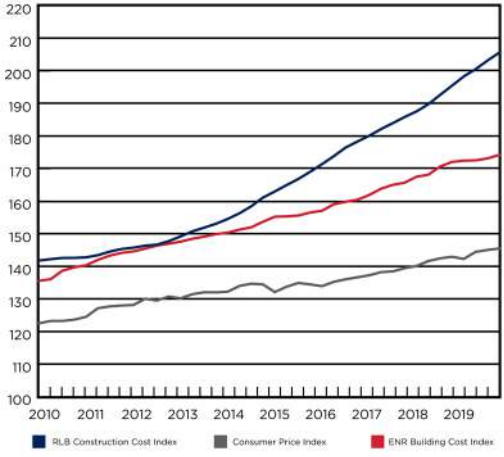
	2011	2012	2013	2014	2015	2016	2017	2018	2019
Residential	252.65	276.06	329.22	374.86	428.76	473.16	537.77	545.07	514.54
Public Works	146.7	148.29	149.89	156.9	164.83	167.82	162.32	180.07	188.53
Commercial	78.83	85.14	91.14	109.42	127.47	143.84	158.08	164.7	161.05
Industrial	156.14	183.60	184.07	209.21	228.98	225.89	201.86	212.54	219.37
Educational	84.99	84.67	79.06	79.68	84.77	89.39	99.58	98.69	101.66
Hospitality/Leisure	20.23	19.33	18.80	20.16	23.84	25.96	28.23	65.17	62.52
Healthcare	40.70	42.54	40.69	38.65	39.15	38.70	41.93	42.40	43.60
	788.33	**850.46**	**906.35**	**1,005.63**	**1,113.65**	**1,185.68**	**1,256.99**	**1,308.85**	**1,291.07**

Sources: U.S. Census Bureau

*Forecast based on seasonally adjusted annual figures as of December 2019

INFLATION INDEX COMPARISON

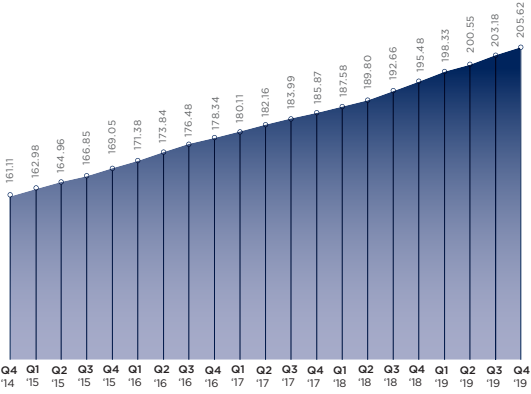
The chart below shows the relative differences in inflation between the cost of general goods and services (represented by the U.S. Bureau of Labor Statistics' Consumer Price Index), the cost of construction materials and labor (represented by Engineering News-Record's Building Cost Index) and the bid cost of construction (represented by Rider Levett Bucknall's National Construction Cost Index).



Sources: U.S. Bureau of Labor Statistics, Engineering News-Record.

NATIONAL CONSTRUCTION COST INDEX

The National Construction Cost Index shows how construction costs have changed each quarter since October 2015.

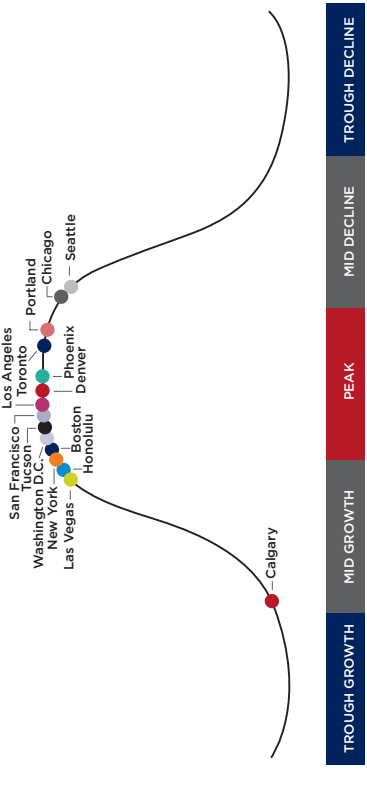


QUARTER	COST INDEX
October 2015	169.05
January 2016	171.38
April 2016	173.84
July 2016	176.48
October 2016	178.34
January 2017	180.11
April 2017	182.16
July 2017	183.99
October 2017	185.87
January 2018	187.58
April 2018	189.80
July 2018	192.66
October 2018	195.48
January 2019	198.33
April 2019	200.55
July 2019	203.18
October 2019	205.62

CONSTRUCTION ACTIVITY CYCLE

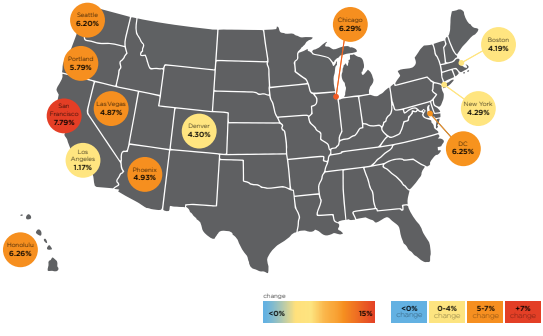
The chart below depicts the position of each city in a theoretical construction industry business cycle. The aim of the chart is to provide an overview of the relative performance of each city in the context of its own economy.

Each city has its own industry business cycle, and as such, the city cycles are not directly comparable with each other. As the amplitude and frequency of the cycle(s) are not expressed in this chart, there is no direct parameter of extent of the cycle or of its time period.



COMPARATIVE COST INDEX

The Comparative Cost Index tracks the bid cost of construction in each city, which includes, in addition to costs of labor and materials, general contractor and subcontractor overhead costs and fees (profit). The index also includes sales and use taxes that standard construction contracts attract.



City	October 2018	October 2019	Annual % Change
Boston	22,086	23,012	4.19%
Chicago	22,416	23,826	6.29%
Denver	14,937	15,578	4.30%
Honolulu	24,520	26,055	6.26%
Las Vegas	14,503	15,209	4.87%
Los Angeles	21,567	21,819	1.17%
New York	26,000	27,116	4.29%
Phoenix	15,013	15,754	4.93%
Portland	16,315	17,259	5.79%
San Francisco	26,294	28,341	7.79%
Seattle	17,810	18,915	6.20%
Washington, DC	20,987	22,299	6.25%

INPUTS TO CONSTRUCTION COSTS

LABOR

Labor used in direct construction activities.

MATERIALS

Materials which are incorporated into the completed project as well as temporary materials (such as plywood used in formwork).

EQUIPMENT

Equipment used in the construction process such as pumps, generators, material hoists, cranes and the like.

SUBCONTRACTORS

Construction work undertaken for the general contractor by sub-contractors (including tiered subcontractors).

BONDS

Guarantees extended by a third party to the owner of a building under construction that the building will be satisfactorily completed (performance bonds) and/or that payment to subcontractors and suppliers will be made (payment bonds).

INSURANCE

Insurances including builder's risk insurance, general liability insurance, automobile liability insurance, professional liability insurance (for any work performed on a design/build basis), subcontractor default insurance (sub-guard) and the like.

TAXES

Taxes levied on the whole of construction or on construction labor and/or materials.

GENERAL CONTRACTOR OVERHEAD & PROFIT

There are two types of overhead costs; on-site (often referred to as General Conditions or General Requirements) and off-site (often referred to as Home Office Overhead). Profit is the fee charged by the general contractor for undertaking the project and is sometimes referred to as 'profit and risk'.

SUPPLY & DEMAND
(WHAT THE MARKET WILL BEAR)

The sum of the above costs are not always what the project will cost the owner (or the entity for whom the project is being constructed). In a weak market the contact sum may be significantly less than the figured costs (such as zero figuring for home office overhead and profit) but in a booming market may be well above the figured costs (when prices are increased to take advantage of the buoyant market).

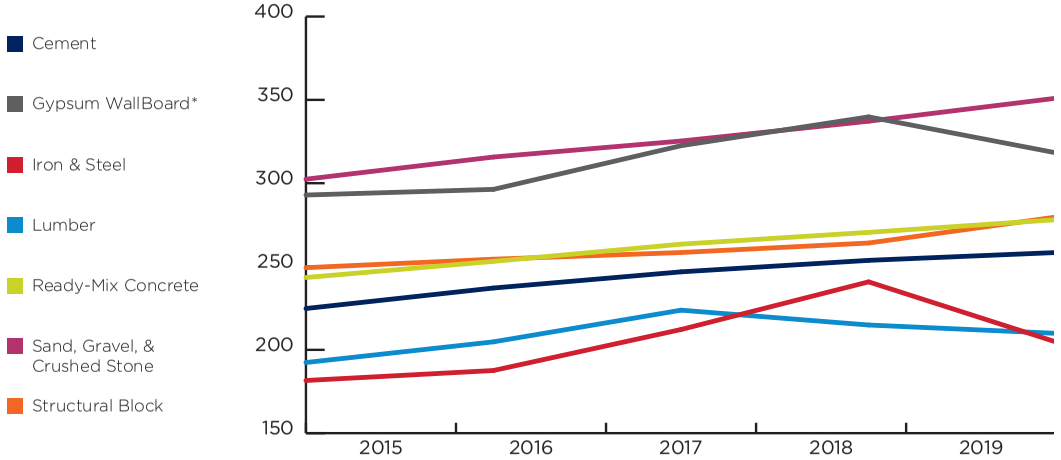
MECHANICAL COMPARATIVE LABOR INDEX

The Comparative Labor Index shows the relative cost of construction labor among the markets listed as of December 2019, using labor wage costs in Phoenix, Arizona as a baseline.

COMPARATIVE LABOR INDEX	
Boston	150
Chicago	146
Denver	97
Honolulu	131
Las Vegas	126
Los Angeles	131
New York	185
Phoenix	100
Portland	119
San Francisco	192
Seattle	154
Washington, D.C.	113

Source: Davis-Bacon Wage Determinations at December 2019

MATERIALS PRICE INDEX



*For Gypsum Wall Board only, Base = 100 at 1994

Average year-to-date as of December 2019

Source: Bureau of Labor Statistics

DESIGN & CONSTRUCTION REGULATIONS

This section contains information of use and interest to those practicing in the architecture, engineering, and construction disciplines in the United States.

INTERNATIONAL BUILDING CODE®

Adopted by most of the United States, the International Building Code® (IBC) is a model building code to address the design and installation of building systems through minimum requirements that safeguard public health and safety and emphasize building performance. When originally released in 2000, the IBC consolidated regional codes for energy conservation, fuel gas, mechanical, plumbing, private sewage disposal, property maintenance, zoning, and fire protection.

INTERNATIONAL RESIDENTIAL CODE®

The International Residential Code® (IRC) is a comprehensive, stand-alone residential code that creates minimum regulations for one- and two-family dwellings of three stories or less. It brings together all building, plumbing, mechanical, fuel gas, energy and electrical provisions for one- and two-family residences. The IRC also provides a prescriptive approach (i.e. a set of measures) and a performance approach (i.e. energy modeling) for determining compliance.

NATIONAL ELECTRIC CODE®

The National Electrical Code® (NEC), or NFPA 70, is a United States standard for the safe installation of electrical wiring and equipment. It is part of the National Fire Codes series published by the National Fire Protection Association, Inc. (NFPA). While the

NEC is not itself a U.S. law, NEC use is commonly mandated by state or local law.

DAVIS–BACON ACT OF 1931

Requires all contractors and subcontractors performing work on federal or District of Columbia construction contracts or federally assisted contracts in excess of $2,000 to pay their laborers and mechanics not less than the prevailing wage rates and fringe benefits for corresponding classes of laborers and mechanics employed on similar projects in the area.

COPELAND ACT (COPELAND ANTI-KICKBACK ACT)

Prohibits contractors from coercing or otherwise requiring their employees to return any part of the compensation they earned under Federal contracts.

FAIR LABOR STANDARDS ACT OF 1938 (FLSA)

Establishes minimum wage, overtime pay, record-keeping, and child labor standards affecting full-time and part-time workers in the private sector and in Federal, State, and local governments.

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

Protects workers from safety and health hazards in the workplace. Also prohibits employers from retaliating against employees for exercising their rights under the Act. Enforcement and administration of the Act in states under federal jurisdiction is handled primarily by U.S. Occupational Safety and Health Administration.

CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Requires all contractors and subcontractors on federal service contracts and federal and federally assisted construction contracts over $100,000 to pay laborers and mechanics employed in the performance of the contracts 1.5 times their basic rate of pay for all hours worked over 40 in a work week. This Act also prohibits unsanitary, hazardous, or dangerous working conditions on Federal construction projects.

MILLER ACT

Requires all contractors and subcontractors on federal service contracts and federally assisted construction contracts over $100,000 to furnish a payment bond as security for the protection of those supplying labor and/or materials. Failure by a contractor to pay suppliers and subcontractors gives such suppliers and subcontractors the right to sue the contractor in U.S. District Court in the name of the United States. Other payment protections may be provided for contracts between $30,000 and $100,000.

AMERICANS WITH DISABILITIES ACT OF 1990 (ADA)

A wide-ranging civil rights law that prohibits, under certain circumstances, discrimination based on disability with provisions for employment, public entities and public transportation, public accommodations and commercial facilities, and telecommunications. Under Titles II and III of the Act, all construction, modification or alterations must be fully compliant with the Americans With Disabilities Act Accessibility Guidelines (ADAAG), a document

detailing scoping and technical requirements for accessibility to buildings and facilities by individuals with disabilities.

IMMIGRATION REFORM AND CONTROL ACT OF 1986
Amends and repeals sections of the Immigration and Nationality Act (INA) requires legalization of undocumented aliens who had been continuously unlawfully present since 1982, legalization of certain agricultural workers, penalizes employers who knowingly hire undocumented workers, and increased enforcement at U.S. borders in order to control and deter illegal immigration to the United States.

BROOKS ACT OF 1972
Requires the Federal government to select architecture and engineering firms based upon their competency, qualifications and experience rather than by price.

EXECUTIVE ORDER 13502
In 2009, President Obama issued an Executive Order entitled "Use of Project Labor Agreements for Federal Construction Projects" to encourage agencies to use Project Labor Agreements (PLAs) on federal construction projects with a total cost to the government of $25 million or more.

As defined by the Order, PLAs are pre-hire collective bargaining agreements that govern wages, benefits, work rules, and other terms and conditions of employment for specific projects.

The Executive Order allows federal agencies to consider the use of PLAs where the agreements will "advance the federal government's interest in achieving economy and efficiency in federal procurement" and "be consistent with law."

The Order encourages the use of PLAs in large scale projects, but does not mandate them. Under the Order, the federal government cannot currently compel a contractor to enter into an agreement with any particular labor organization or owner. The Order does not explicitly exclude non-union contractors from competition.

Sources: International Code Council®, National Fire Protection Association, Inc., Ed.gov/open/plan/recovery-gov, U.S. General Services Administration, U.S. Government Printing Office, U.S. Department of Homeland Security, U.S. Department of Justice and U.S. Department of Labor.

LIST OF U.S. GOVERNMENT ENTITIES

ORGANIZATION	WEBSITE ADDRESS
Bureau of Economic Analysis	www.bea.gov
Bureau of Labor Statistics	www.bls.gov
Bureau of Land Management	www.blm.gov
Bureau of Overseas Building Operations	www.state.gov/obo
Congressional Budget Office	www.cbo.gov
Environmental Protection Agency	www.epa.gov
FedBizOpps	https://beta.sam.gov/
FedConnect	www.fedconnect.net
Federal Acquisition Regulation (FAR)	www.acquisition.gov
Federal Highway Administration	www.fhwa.dot.gov
Federal Trade Commission	www.ftc.gov
FedWorld	www.thecre.com/fedlaw/legal30/supcourt.htm
Indian Health Service	www.ihs.gov
National Park Service	www.nps.gov
National Resources Conservation Service	www.nrcs.usda.gov
Naval Facilities Engineering Command	www.navy.mil/local/navfachq
Occupational Safety & Health Administration	www.osha.gov
Recovery.gov	www.ed.gov/open/plan/recovery-gov
System for Award Management	www.sam.gov

ORGANIZATION	WEBSITE ADDRESS
The White House	www.whitehouse.gov
USA.gov	www.usa.gov
U.S. Army Corps of Engineers	www.usace.army.mil
U.S. Bureau of Reclamation	www.usbr.gov/
U.S. Census Bureau	www.census.gov
U.S. Department of Commerce	www.commerce.gov
U.S. Department of Defense	www.defense.gov
U.S. Department of Energy	www.energy.gov
U.S. Department of Housing & Urban Development	www.hud.gov
U.S. Department of Labor	www.dol.gov
U.S. Department of the Interior	www.doi.gov
U.S. Department of the Treasury	www.treasury.gov
U.S. Department of Transportation	www.dot.gov
U.S. Department of Veterans Affairs	www.va.gov
U.S. Fish & Wildlife Service	www.fws.gov
U.S. General Services Administration	www.gsa.gov
U.S. Geological Survey	www.usgs.gov
U.S. Securities & Exchange Commission	www.sec.gov
U.S. Small Business Administration	www.sba.gov

LIST OF INDUSTRY ASSOCIATIONS

ORGANIZATION	WEBSITE ADDRESS
Airport Consultants Council	www.acconline.org
American Bar Association Forum on the Construction Industry	www.americanbar.org
American Institute of Architects	www.aia.org
American Road & Transportation Builders Association	www.artba.org
American Society for Healthcare Engineering	www.ashe.org
American Society of Landscape Architects	www.asla.org
American Society of Professional Estimators	www.aspenational.org
American Subcontractors Association	www.asaonline.com
Associated Builders & Contractors	www.abc.org
Associated General Contractors of America	www.agc.org
Association for the Advancement of Cost Engineering International	www.aacei.org
Building Owners & Managers Association	www.boma.org
Construction Management Association of America	www.cmaanet.org
Construction Owners Association of America	www.coaa.org
Construction Specifications Institute	www.csinet.org
Design-Build Institute of America	www.dbia.org

ORGANIZATION	WEBSITE ADDRESS
International Association of Venue Managers	www.iavm.org
International Code Council	www.iccsafe.org
International Construction Information Society	www.icis.org
International Council of Shopping Centers	www.icsc.org
International Facility Management Association	www.ifma.org
NAIOP Commercial Real Estate Development Association	www.naiop.org
National Association of Home Builders	www.nahb.org
National Association of Women in Construction	www.nawic.org
National Indian Gaming Association	www.indiangaming.org
National Mining Association	www.nma.org
Royal Institution of Chartered Surveyors	www.rics.org
SAVE International	www.value-eng.org
Society for College & University Planning	www.scup.org
Society for Marketing Professional Services	www.smps.org
Society for Mining, Metallurgy & Exploration	www.smenet.org
Society of American Military Engineers	www.same.org
U.S. Green Building Council	www.usgbc.org
Urban Land Institute	www.uli.org

LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN

Leadership in Energy and Environmental Design (LEED) is a voluntary green building certification system which recognizes that a building or community was designed and built using strategies aimed at improving performance across the following sustainability metrics: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Developed by the U.S. Green Building Council (USGBC), LEED provides building owners and operators with a concise framework for identifying and implementing practical and measurable green building design, construction, operations, and maintenance solutions.

HOW LEED WORKS

LEED can be applied to any building type and any building life cycle phase. It promotes a whole-building approach to sustainability by recognizing performance in six key areas:

- Location and Transportation
- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality

LEED points are awarded on a 110-point scale, and credits are weighted to reflect their potential environmental impacts. Within the 110 possible points, 10 bonus credits are available; six of which are awarded for innovation in design and four of which address regionally specific environmental issues.

LEED Certification is achievable in one of five current rating systems: Building Design and Construction; Interior Design and Construction; Operations and Maintenance; Residential; and Cities and Communities, each with a distinct weighting system.

	New Const.	Core & Shell	Schools	Retail	Data Centers	Warehouse & Dist. Centers	Hospitality	Healthcare
Location & Transportation	16	20	15	16	16	16	16	9
Sustainable Sites	17	18	26	17	17	17	17	18
Water Efficiency	13	13	14	14	13	13	14	13
Energy & Atmosphere	38	38	36	39	38	38	38	40
Materials & Resources	18	20	18	18	18	18	18	24
Indoor Environmental Quality	21	13	21	20	21	21	21	20
Innovation in Design	7	7	7	7	7	7	7	7
Regional Priority	8	8	8	8	8	8	8	8
Total Possible	110	110	110	110	110	110	110	110

LEED credits are per v4.1, January 2020.

A project must satisfy all prerequisites and earn a minimum number of points to be certified at one of four levels.

LEED CERTIFICATION SCORING (out of a possible 100 points + 10 bonus points)	
Certified	40+ points
Silver	50+ points
Gold	60+ points
Platinum	80+ points

LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN

ELIGIBILITY

Building types that are eligible for certification include, but are not limited to, offices, retail and service establishments, institutional buildings (e.g., libraries, schools, museums and religious institutions), hotels and residential buildings of four or more habitable stories.

WHO USES LEED?

Architects, real estate professionals, facility managers, engineers, interior designers, landscape architects, construction managers, lenders, and government officials all use LEED to help transform the built environment to sustainability.

Many U.S. state and local governments are adopting LEED for public-owned and public-funded buildings; there are LEED initiatives in federal agencies, including the Departments of Defense, Agriculture, Energy, and State; and LEED projects are in countries worldwide, including Canada, Brazil, Mexico, and India.

BENEFITS

There are both environmental and financial benefits to earning LEED certification.

LEED-certified buildings are designed to:

- Lower operating costs and increase asset value
- Reduce waste sent to landfills
- Conserve energy and water
- Be healthier and safer for occupants
- Reduce harmful greenhouse gas emissions
- Qualify for tax rebates, zoning allowances and other incentives in hundreds of cities
- Demonstrate an owner's commitment to environmental stewardship and social responsibility

PROCUREMENT OPTIONS

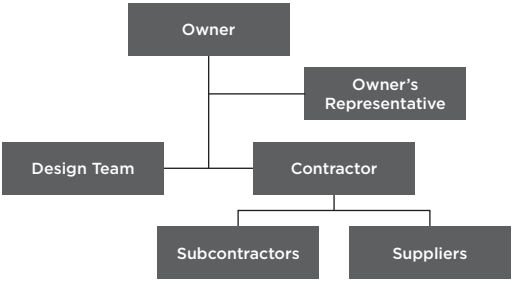
Selecting the best procurement method for a project is fundamental to its success, and will affect its cost, schedule, quality and team relationships throughout the project's development. Procurement strategies should be considered at the earliest opportunity and should be weighed with regards to owner and project requirements. Rider Levett Bucknall can advise on an appropriate route to best meet these requirements.

Descriptions of some of the more common procurement routes – along with advantages and concerns to consider before utilizing – are on the following pages.

Rider Levett Bucknall is also well versed in implementing projects using Integrated Project Delivery and other collaborative practices. Through these proactive strategies, owners can align the interests of the project team to operate in a more efficient and effective manner, delivering a superior project and ultimately increasing value for the owner.

PROCUREMENT OPTIONS

DESIGN-BID-BUILD



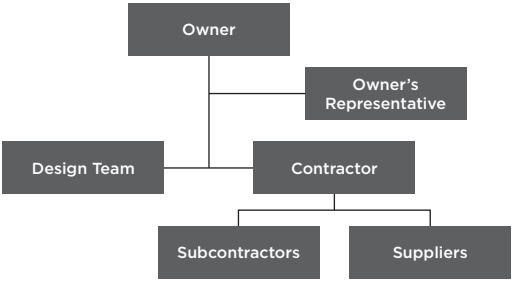
KEY FEATURES

- Owner contracts with design team first, then with construction team after design is complete
- Design fully complete prior to contractor bidding
- Construction starts after design and bidding processes are complete

ADVANTAGES	CONCERNS / RISKS
• Best potential for competitive construction bidding (lowest price) • Contractor familiarity with process • Accommodates owner input throughout design process • Facilitates check and balance process between design and construction	• Construction starts only after design and bidding is complete • Design and construction related decisions must be made early • No contractor input to design process • Competitive bidding creates higher risk for change orders and litigation • No team-oriented approach

SEQUENCE

CONSTRUCTION MANAGER AT-RISK

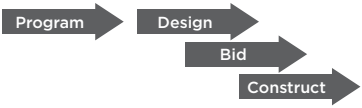


KEY FEATURES

- Owner contracts with design team and construction team concurrently at beginning of design process
- Contractor provides cost and constructability input throughout design process
- Contractor provides guaranteed maximum price (GMP) based on partial design
- Construction can start prior to design completion

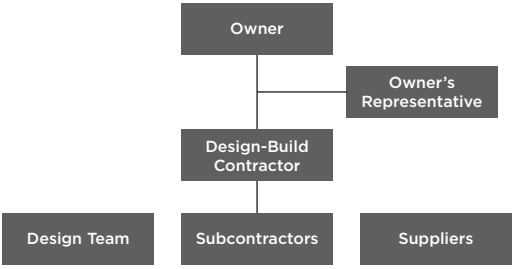
ADVANTAGES	CONCERNS / RISKS
• Early construction start facilitates expedited schedule (fast track) • Contractor advice informs design, typically generates more efficient design • Accommodates owner input through design • Facilitates check and balance process between design and construction • Pricing and cost control performed during preconstruction	• Limited competitive bidding • Added cost of contractor participation in design process • Timing and assumptions of GMP contract must be closely managed • Contingencies must be closely monitored and managed

SEQUENCE



PROCUREMENT OPTIONS

DESIGN-BUILD

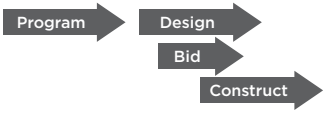


KEY FEATURES

- Owner executes one contract with integrated design/construction team based on program requirements
- Design/construction team executes full design, bidding and construction process based on requirements
- Construction typically starts before design completion

ADVANTAGES	CONCERNS / RISKS
▪ Single point of responsibility and risk for design and construction ▪ Early construction start facilitates expedited schedule ▪ Contractor can integrate design with construction for more efficient schedule ▪ Cost certainty at outset (for work included in requirements document)	▪ Owner input in design process is limited; owner requirements must be clearly outlined and communicated before start of process ▪ Limited competitive bidding ▪ Integrated contract eliminates check and balances between design and construction ▪ Quality of end product must be closely monitored

SEQUENCE



HARRY & JEANETTE WEINBERG HO`OKUPU CENTER ▲

HONOLULU, HAWAII

Kupu, an environmental education nonprofit based in Hawaii, transformed its existing open air "Net Shed" at Kewalo Basin into a green jobs training and community center located in Honolulu, Oahu, Hawaii. Envisioned as an innovative educational gathering place for youth and the community, the project provides advanced facilities for the organization's participants and expands the capacity of its programs.

The facility embodies Kupu's mission of a more sustainable Hawaii, designed as a net-zero energy building that uses photovoltaic energy panels and is consistent with the master plan for development of the area to ensure shoreline and waterfront preservation.

RLB was engaged during the early stages of the project and provided project management and cost consultancy services to support the client through the design, entitlement and construction phases of renovation. In addition to bringing imagination to life for the collaborative community space, the RLB team successfully completed its first Photovoltaic (PV) rooftop panel and Electric Vehicle (EV) charging station installation project, a Design-Build effort that utilizes a Power Purchasing Agreement with the local utility company.

ESTIMATING DATA

MECHANICAL & ELECTRICAL COSTS

The costs stated in this section reflect the standards and specifications normal to that region. Variation in costs may be experienced for factors such as site conditions, climatic conditions, standards of specification, market conditions, etc.

All costs are stated in USD($) per square foot, based on rates at December 2019.

LOCATION	M/E INDEX	SCHOOLS						HOSPITAL	
		ELEMENTARY		HIGH SCHOOL		UNIVERSITY		GENERAL	
		LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
NORTH AMERICA									
Boston	1.46	60	85	85	125	95	150	175	260
Calgary	1.43	60	85	80	125	95	150	170	255
Chicago	1.51	65	90	85	130	100	155	180	270
Denver	0.99	40	60	55	85	65	105	115	175
Honolulu	1.65	70	95	95	140	110	170	195	295
Las Vegas	0.97	40	55	55	85	65	100	115	170
Los Angeles	1.38	60	80	80	120	90	145	165	245
New York	1.72	75	100	100	150	115	180	205	305
Phoenix	1.00	45	60	55	85	65	105	120	180
Portland	1.10	45	65	65	95	70	115	130	195
San Francisco	1.80	75	105	105	155	120	185	215	320
Seattle	1.20	50	70	70	105	80	125	140	215
Toronto	1.71	75	100	95	145	115	180	205	305
Washington, D.C.	1.42	60	80	80	120	95	145	170	250

LOCATION	M/E INDEX	OFFICES - CLASS A				SHOPPING				HOTELS			
		PRIME		SECONDARY		CENTER		STRIP		5 STAR		3 STAR	
		LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
NORTH AMERICA													
Boston	1.46	85	140	75	100	50	75	40	60	105	145	70	105
Calgary	1.43	85	140	70	100	50	70	40	60	105	145	70	100
Chicago	1.51	90	145	75	105	50	75	40	60	110	150	75	105
Denver	0.99	60	95	50	65	35	50	25	40	70	100	50	70
Honolulu	1.65	95	160	85	115	55	85	45	65	120	165	80	115
Las Vegas	0.97	55	95	50	65	35	50	25	40	70	95	50	70
Los Angeles	1.38	80	135	70	95	50	70	35	55	100	140	70	100
New York	1.72	100	165	85	115	60	85	45	70	125	175	85	120
Phoenix	1.00	60	95	50	70	35	50	25	40	70	100	50	70
Portland	1.10	65	105	55	75	40	55	30	45	80	110	55	75
San Francisco	1.80	105	175	90	125	60	90	50	70	130	180	90	125
Seattle	1.20	70	115	60	80	40	60	30	50	85	120	60	85
Toronto	1.71	100	165	85	115	60	85	45	70	120	170	85	120
Washington, D.C.	1.42	80	135	70	95	50	70	40	55	100	145	70	100

LOCATION	M/E INDEX	PARKING				INDUSTRIAL				RESIDENTIAL MULTISTORY			
		MULTI-STORY		BASEMENT		WAREHOUSE		ATTACHED OFFICE		INVESTMENT		OCCUPIED	
		LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
NORTH AMERICA													
Boston	1.46	15	20	15	25	15	30	40	75	45	70	60	95
Calgary	1.43	15	20	15	25	15	30	40	70	45	70	60	95
Chicago	1.51	15	20	15	25	15	30	40	75	50	75	65	100
Denver	0.99	10	10	10	20	10	20	25	50	30	50	40	65
Honolulu	1.65	15	20	20	30	15	35	45	85	55	80	70	110
Las Vegas	0.97	10	10	10	15	10	20	25	50	30	50	40	65
Los Angeles	1.38	10	15	15	25	15	30	35	70	45	70	55	90
New York	1.72	15	20	20	30	15	35	45	85	55	85	70	115
Phoenix	1.00	10	10	10	20	10	20	25	50	30	50	40	65
Portland	1.10	10	15	10	20	10	25	30	55	35	55	45	70
San Francisco	1.80	15	20	20	30	20	40	50	90	60	90	75	120
Seattle	1.20	10	15	15	20	10	25	30	60	40	60	50	80
Toronto	1.71	15	20	20	30	15	35	45	85	55	85	70	115
Washington, D.C.	1.42	15	15	15	25	15	30	40	70	45	70	60	95

OFFICE BUILDING EFFICIENCIES

The efficiency of an office building is expressed as a percentage of the Net Rentable Area to the Gross Floor Area. The table below indicates that relationship to the Gross Floor Area of the whole building both with parking garages and basements included and excluded, that could be expected for an average project in the nominated category. Also shown is the efficiency of a typical floor in each category.

TYPE OF OFFICE BUILDING	EFFICIENCY (PER CENT)		
	BASEMENTS & PARKING		TYPICAL FLOOR
	INCLUDED	EXCLUDED	
PRESTIGE CENTRAL BUSINESS DISTRICT (CBD)			
10 to 25 Stories	63 - 68	75 - 80	85 - 90
25 to 40 Stories	58 - 63	70 - 75	80 - 85
40 to 55 Stories	53 - 58	68 - 73	75 - 80
INVESTMENT CBD			
Up to 10 Stories	69 - 74	81 - 85	86 - 91
10 to 25 Stories	64 - 69	76 - 81	81 - 86
25 to 40 Stories	59 - 64	71 - 76	76 - 81
INVESTMENT, Other than CBD			
Up to 10 Stories	70 - 75	82 - 86	87 - 92
10 to 25 Stories	65 - 70	77 - 82	82 - 87

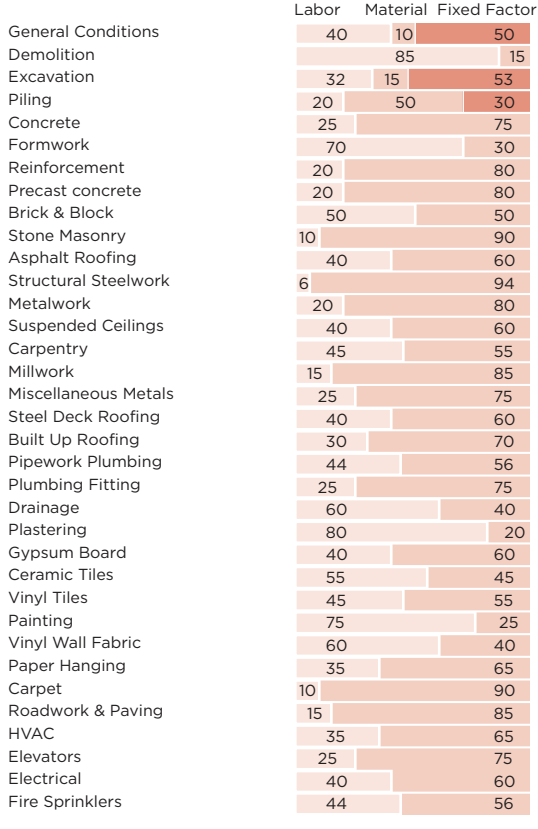
MECHANICAL & ELECTRICAL SERVICES

Generally mechanical and electrical space represents 5 – 7% of the Gross Floor Area of a multi-story office building.

LABOR & MATERIAL TRADE RATIOS

The following represents the ratio of on-site labor to material for various trades and sub-trades based upon our own survey.

The figures are relevant to all works constructed by traditional practices; variations to these practices will change the ratios, i.e., on-site fabrication of items traditionally factory fabricated such as casework, metalwork items, etc.



ESTIMATING REINFORCEMENT RATIOS

The following ratios give an indication of the average weight of bar reinforcement in typical concrete applications. Differing structural systems, ground conditions, height of buildings, load calculations and sizes of individual elements and grid sizes may cause considerable variation to the stated ratios. For project specific ratios a structural engineer should be consulted.

ELEMENT	WEIGHT RATIO	
Caissons (belled or straight shaft)		
12" diameter	40	lbs/Lft
36" diameter	350	lbs/Lft
72" diameter	1500	lbs/Lft
Paving	3	lbs/sq ft
Cantilevered retaining walls (1 face of rebar, 1 layer)		
8" thick, 10' - 12' high	96	lbs/yd
12" thick, 10' - 12' high	62	lbs/yd
Continuous, stepped and sloped footings	5 - 25 25 - 110	lbs/Lft lbs/yd
Grade beams	7.5 - 35 40 - 132	lbs/Lft lbs/yd
Slab on-grade	1.5 - 4.75 90 - 165	lbs/sq ft lbs/yd
Beams		
10' - 16'	210 - 240	lbs/yd
20' - 26'	200 - 230	lbs/yd
Columns	210 - 530	lbs/yd
Supported slabs	2.25 - 6.75 85 - 155	lbs/sq ft lbs/yd
Slab over metal deck	2.08 - 4.15 98 - 140	lbs/sq ft lbs/yd
Pits and trenches	50 - 70	lbs/yd
Tiltup panels	1.5	lbs/sq ft

PROGRESS PAYMENTS

The tabulations on the following pages are derived from the statistical average of a series of case histories which, when used for a specific project, will give an indication of the anticipated rate of expenditure. Construction times incorporate various extensions including wet weather, industrial disputes, etc.

All data is related to the date of submission of contractor's application for payment to the owner and not actual payment which is generally one month later.

No adjustment has been made for the retained money on the assumption that most projects will substitute bonds for retainage.

Construction projects under $5,000,000 and/or less than one year construction period to substantial completion.

CONTRACT DURATION	BUILDER'S WORK	MECHANICAL SERVICES	ELEVATORS, ETC.	ELECTRICAL SERVICES	OVERALL PROJECT
%	%	%	%	%	%
5	3.9	—		—	3.3
10	8.6	—		—	7.2
15	13.6	1.2		—	11.5
20	18.7	3.5		0.2	16.0
25	25.0	7.6		2.0	21.7
30	31.4	13.9		4.6	27.8
35	37.9	21.0		9.9	34.2
40	44.4	29.6	N	16.0	40.8
45	51.0	38.4		22.1	47.5
50	57.7	47.7	I	29.6	54.5
55	64.2	56.5		37.9	61.3
60	70.5	65.2	L	48.5	68.1
65	76.4	73.3		63.2	74.7
70	81.6	80.0		71.7	80.2
75	86.1	85.7		78.0	85.1
80	90.2	90.3		83.2	89.4
85	93.5	94.0		88.0	92.9
90	95.7	95.7		92.6	95.2
95	97.2	97.0		95.8	96.8
100	98.4	98.2		97.4	98.0

PROGRESS PAYMENTS

Construction projects from $5,000,000 to $40,000,000 and/or greater than one year but less than two years construction period to substantial completion.

CONTRACT DURATION	BUILDER'S WORK	MECHANICAL SERVICES	ELEVATORS, ETC.	ELECTRICAL SERVICES	OVERALL PROJECT
%	%	%	%	%	%
5	2.8	—	—	—	1.9
10	6.1	—	—	—	4.2
15	9.9	—	—	0.5	6.9
20	14.2	1.5	—	1.4	10.2
25	19.1	4.8	—	3.3	14.1
30	24.3	10.5	0.9	6.4	18.8
35	31.1	16.9	6.0	9.8	24.6
40	37.8	25.9	11.2	14.1	31.2
45	44.7	36.7	17.7	19.4	38.2
50	50.5	49.9	25.4	25.1	46.6
55	57.3	61.3	34.9	33.1	55.3
60	63.7	70.1	46.2	43.0	62.7
65	69.7	76.9	61.2	54.9	69.6
70	75.3	82.8	73.5	68.6	76.4
75	81.0	88.4	80.8	78.1	82.1
80	86.2	92.4	85.7	85.0	86.9
85	91.1	94.9	89.9	90.8	91.1
90	94.5	96.8	93.1	94.3	93.9
95	97.1	97.9	94.5	96.7	96.3
100	98.5	98.3	95.1	97.5	97.5

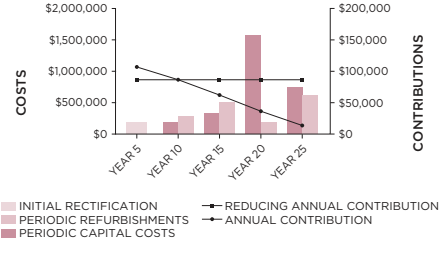
Construction projects from $40,000,000 and/or greater than two years construction period to substantial completion.

CONTRACT DURATION	BUILDER'S WORK	MECHANICAL SERVICES	ELEVATORS, ETC.	ELECTRICAL SERVICES	OVERALL PROJECT
%	%	%	%	%	%
5	1.4	—	—	—	0.9
10	3.3	—	—	—	2.1
15	5.6	—	—	—	3.6
20	8.7	0.3	—	0.5	5.7
25	12.2	1.2	—	2.0	8.3
30	16.6	3.6	0.3	4.3	11.8
35	21.3	7.8	4.9	7.4	16.2
40	27.9	13.3	10.1	11.4	22.3
45	35.3	19.9	16.1	17.3	29.3
50	43.1	26.6	22.2	23.5	36.6
55	50.5	33.9	34.8	30.1	44.4
60	57.3	42.1	49.0	37.6	52.1
65	63.6	50.6	67.0	45.9	59.8
70	69.8	59.1	76.8	55.0	67.0
75	76.0	67.3	82.6	65.4	73.9
80	82.2	75.4	87.2	76.4	80.7
85	87.5	83.4	90.6	85.2	86.7
90	92.7	90.3	94.0	92.2	92.2
95	96.8	96.1	96.4	96.8	96.6
100	98.8	98.9	97.6	98.6	98.8

SINKING FUNDS

A sinking fund provides a responsible and equitable method of managing future capital expenditure. Sinking funds for property address capital expenditure for repainting, recarpeting, replacement of machinery and equipment, refurbishment of common property and similar items which inevitably wear out.

BASED ON A $15 MILLION OFFICE BUILDING



Drawdowns can be equal annual contributions or reducing annual contributions for the specified period, as commitments are met, as graphically illustrated.

Property owners have a degree of control over when capital expenditure is committed, i.e. certain items can be deferred or brought forward.

The following sinking fund table with total capital expenditure over 25 years of $4,350,000 reflects the benefit and sensitivity of expenditure deferral.

	YR 5	YR 10	YR 15	YR 20	YR 25
SCHEDULED					
x	78,779	78,779	78,779	78,779	78,779
ø	101,942	82,416	62,565	39,822	12,561
TWO YEAR EXPENDITURE					
x	63,978	63,978	63,978	63,978	63,978
ø	77,251	64,868	49,891	32,068	10,201

x - Annual Contribution ø - Reducing Annual Contribution

METHOD OF MEASUREMENT OF BUILDING AREAS

The following rules for measurement of building areas are extracted from the BOMA Method of Measurement (1996 Revision) which is published by the Building Owners and Managers Association International.

GROSS BUILDING AREA

The GROSS BUILDING AREA shall mean the total constructed area of a building. The area is computed by measuring to the outside finished surface of permanent outer building walls, without any deductions. All enclosed floors of the building, including basements, garages, mechanical equipment floors, penthouses, and the like are calculated.

FLOOR RENTABLE AREA

FLOOR RENTABLE AREA shall mean the result of subtracting from the GROSS BUILDING AREA of a floor the area of MAJOR VERTICAL PENETRATIONS on that same floor. No deductions shall be made for columns and projections necessary to the building. Spaces outside the exterior walls, such as balconies, terraces, or corridors are excluded.

FLOOR USABLE AREA

FLOOR USABLE AREA shall be computed by measuring the area enclosed between the finished surface of the office area side of corridors and the dominant portion and/or the major vertical penetrations. No deductions shall be made for columns and projections necessary to the building. Where alcoves, recessed entrances or similar deviations from the corridor line are present, floor usable area shall be computed as if the deviation were not present.

DEFINITIONS

BUILDING WORKS
Building works include substructure, structure, finishes, fittings, general conditions, supervision of sub-trades and general contractor's work in connection with services.

BUILDING SERVICES
Building services include special equipment, plumbing, fire protection, mechanical, vertical transportation, building management and electrical services.

OFFICE BUILDINGS
Prestige offices are based on very high quality buildings for the upper range of the rental market and leading owner-occupiers including headquarters buildings for banks, insurance, mining and other major companies.

Investment offices are based on good quality buildings which are built for the middle range of the rental market.

HOTEL

RATING	GFA/ROOM TOTAL	GFA/ROOM ACCOM.	GFA/ROOM PUBLIC
5 STAR	915-1200 SF	485-600 SF	430-600 SF
4 STAR	700-915 SF	430-485 SF	275-430 SF
3 STAR	430-700 SF	325-430 SF	115-270 SF
	GFA/UNIT TOTAL	GFA/UNIT ACCOM.	GFA/UNIT PUBLIC SPACE
ALL SUITES	700-860 SF	645-750 SF	50-110 SF

Exclusions: Furniture, Fixtures and Equipment.
Note: Public space includes back-of-house areas.

CAR PARKS
Multi-story – Minimal external walls.

Basement – Central business district locations incur higher penalties for restricted sites and perimeter conditions.

INDUSTRIAL BUILDINGS

Quality reflects a simplified type of construction suitable for light industry. Exclusions: special equipment.

REGIONAL SHOPPING CENTERS

Department Store: partially finished suspended ceilings and painted walls. Exclusions: Floor finishes, store fixtures, etc.

Supermarket: fully finished space with utilities. Exclusions: cool rooms, store fixtures, etc.

Malls: fully finished space with utilities.

Specialty shops: partially finished with ceilings, unpainted walls, power to perimeter point. Exclusions: floor finishes, store fixtures, etc.

SMALL SHOPS AND SHOWROOMS

Exclusions: floor finishes, plumbing (other than stub outs for cold water and drainage in each store), store fittings, etc.

RESIDENTIAL

Multi-story condominiums reflect medium to luxury quality, air-conditioned, accommodation up to 20 stories in height.

Single-story or walk-up units reflect medium quality non air conditioned accommodation.

Note: the ratio of kitchen, laundry and bathroom areas to living areas and finishes required considerably affects the cost range.

Range given is significantly affected by the height and configuration of the building.

Exclusions: furnishings, carpet, special fixtures, washing machines, dryers, refrigerators and tenant's special requirement.

THE TOWN OF GILBERT PARKING STRUCTURE II

TUCSON, ARIZONA

The Town of Gilbert Parking Structure II is a 5-story cast-in-place, post-tensioned concrete structure that also includes a partial basement. The decorative masonry clock tower, canopies, and other architectural features make this project a stand-out centerpiece in Gilbert's growing Heritage District

RLB provided project management and cost consultancy services to the Town of Gilbert for this parking structure.

This growing urban site posed a number of design and construction challenges, which included dry utility lines in conflict with the structure's drilled shafts, and RLB led the project team to coordinate relocation of these lines proactively and with no impact to the critical path of the project's schedule. With our project management / construction management role that included full-time oversight and inspection, RLB was the focal point for making sure that all issues were resolved in accordance with project requirements. RLB ensured completion in accordance with the Town's schedule requirements for opening the adjacent restaurant development.

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PORTLAND STATE UNIVERSITY PETER STOTT CENTER RENOVATION & VIKING PAVILION ▲

PORTLAND, OREGON

The Peter Stott Center (PSC) is home to Portland State University's athletic, health and physical education programs. The facility recently underwent a renovation and expansion, transforming Portland State University (PSU) and the Portland community, enabling them to host events, including sporting events, concerts, conferences, and commencement ceremonies.

The goal of this project was to address all of PSC's deferred maintenance, modernize spaces throughout the building and to add a multipurpose arena facing the South Park Blocks. The project included approximately 30,000 SF for student advising, tutoring, studying and classrooms. Building improvements included the renovation of the first-floor locker and training rooms, mechanical system upgrades, sprinkler system upgrades, ADA upgrades, seismic upgrades and consolidation of space to improve functionality and efficiency.

RLB provided cost consultancy services for this project.

PROFESSIONAL SERVICES

PROFESSIONAL SERVICES

Rider Levett Bucknall offers the following professional services on building and civil engineering projects including the specialist components of plumbing, mechanical, electrical, vertical transportation, fire and security systems.

COST CONSULTANCY SERVICES

The service encompasses cost estimating, cost management, the production of bid and contract documents, the financial administration of building contracts, and dispute resolution.

PLANNING STAGE COST CONTROL

- Budget report
- Elemental analysis
- Estimates
- Cost benefit studies
- Cost planning
- Cost negotiation

CONTRACTUAL ADVICE

- Project delivery systems
- Forms of contract
- Special contract clauses
- Bidding procedures
- Contractor suitability reports
- Design/Build & package deal contractual assessments

COST CONTROL DOCUMENTATION

- Bills of quantities
- Trade bills of quantities
- Provisional bills of quantities
- Simplified bills of quantities

BID ADVICE

- Assessment of bids
- Negotiation

CONSTRUCTION STAGE COST CONTROL

- Valuation of monthly progress claims
- Progressive budgetary reporting
- Change order review and negotiation
- Cost escalation calculations

PROJECT MANAGEMENT SERVICES

FEASIBILITY

- Definition of client's requirements
- Review of concept design
- Budget development
- Evaluation of environmental studies
- Preliminary project scheduling
- Cash flow and market analysis
- Risk analysis and identification
- Value engineering studies
- Feasibility studies and recommendations

DESIGN & DEVELOPMENT

- Consultant selection advice and contract negotiation
- Contract execution
- Prepare project scope
- Value engineering
- Confirm preliminary cost estimate and prepare cost plan
- Submit regular design status reports
- Advise on project delivery systems
- Prepare and monitor design documentation
- Manage and coordinate consultant team
- Chair regular project management meetings
- Maintain compliance with client objectives
- Negotiate with authorities as required
- Constructability review
- Provide design and feasibility reports
- Obtain client approval and sign off
- Prepare and monitor project schedule

PROJECT MANAGEMENT SERVICES

DOCUMENTATION & PRE-CONTRACT

- Formulate contract strategies
- Prepare conditions of contract
- Secure authority and client approvals
- Manage documentation
- Cost control of design against budget
- Check design against client's requirements
- Set up management reporting system
- Set up cost control procedures
- Prepare contract administration procedures
- Prepare project manual
- Chair project management meetings
- Prepare monthly project progress reports
- Coordinate the bid documents
- Prepare bid report with recommendations
- Formalize and execute contract
- Prepare and monitor project website

CONSTRUCTION

- Monitor and report schedule performance
- Coordinate documentation for fast-tracking
- Monitor contract compliance
- Manage documentation
- Identify potential delays and take action
- Process progress payments
- Monitor, analyze and forecast cash flows
- Enforce cost control procedures
- Chair cost management meetings
- Evaluate claims and manage disputes
- Prepare monthly project progress reports
- Identify potential cost overruns
- Evaluate extension of time claims
- Monitor contractor's performance
- Coordinate FF&E and fit-out procedures
- Maintain management reporting system
- Streamline and manage time and cost
- Monitor quality control

ADVISORY SERVICES

ALTERNATE DISPUTE RESOLUTION
- Arbitration of construction disputes
  - Private and AAA
  - Sole and panel
- Mediator of construction disputes
- Neutral third party evaluation
- Dispute review board members

CONDITION ASSESSMENTS
- Due diligence pre-acquisition surveys
- Dilapidation/condition surveys

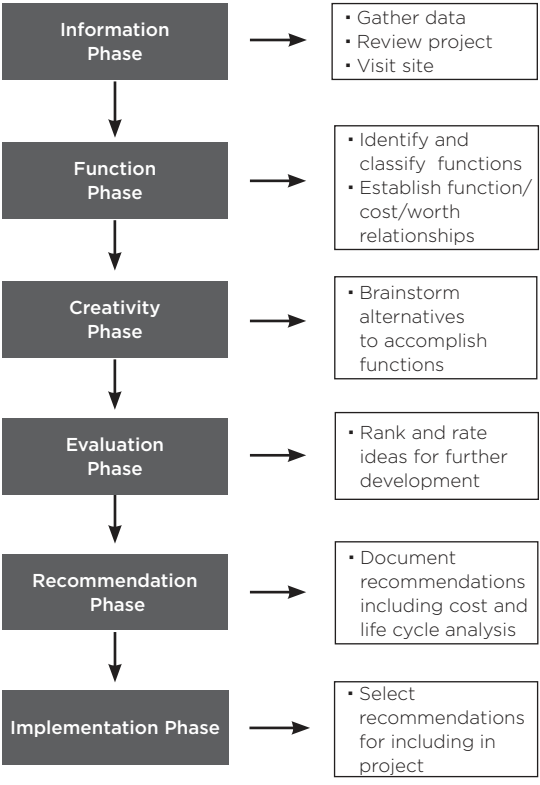
CONSTRUCTION CLAIMS
- Performance and payment bond investigations
- Analysis of outstanding change order claims
- Cost auditing
- Loss of efficiency/lost productivity analysis
- Disruption impact analysis
- Critical path analysis
- Changed conditions analysis
- Estimating reasonable value of work installed
- Construction management oversight and contract close out
- Expert Witness testimony
- Preparation or defense of
  - Requests for equitable adjustments
  - Delay claims
  - Excusable and compensable time extensions

CONSTRUCTION DEFECTS
- Analysis of residential and commercial construction defects
- Standard of workmanship
- Scope and cost of repair
- Registrar of Contractors testimony
- Expert witness testimony
- Defense of plaintiff

CONSTRUCTION ECONOMIC ADVICE
- Market analysis
- Cost research

VALUE MANAGEMENT

STEPS TO FOLLOW IN THE VALUE MANAGEMENT PROCESS



RIDER LEVETT BUCKNALL | LIFE

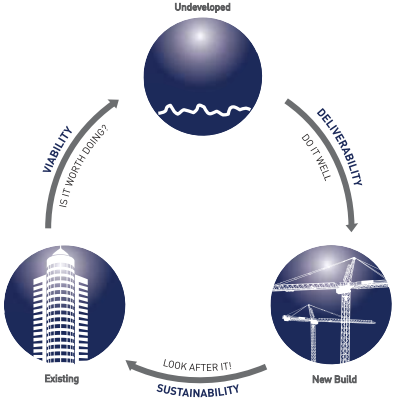
life

INNOVATIVE TOOLS TO HELP YOU ACHIEVE MORE EFFICIENT, COST CONSCIOUS AND ENVIRONMENTALLY SUSTAINABLE RESULTS–NOW AND INTO THE FUTURE.

Forward-thinking organizations are taking proactive measures to use their resources wisely. Along with technological advances to improve efficiency, there has been a significant and lasting shift toward preventing waste by making better use of existing assets.

More and more organizations have a heightened interest in project solutions which maximize performance, enhance value, and minimize environmental impact. Facing limited capital resources, building owners and managers must find the right balance between initial capital cost and long-term operation and maintenance costs.

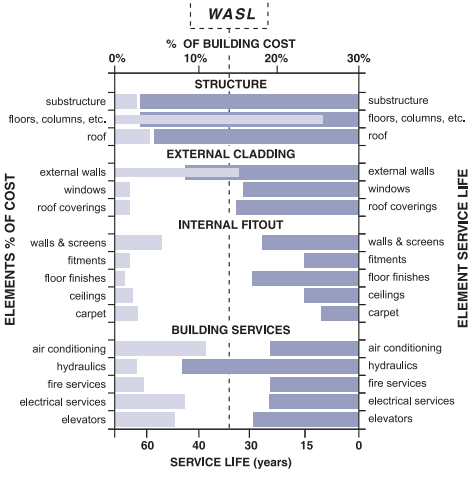
Rider Levett Bucknall|Life addresses this need by providing building owners and managers with new tools, methods, and information, allowing them to make well-informed decisions that represent their best long-term financial and sustainable interests.



RELIFING®

Rider Levett Bucknall's proprietary RElifing® service is a mathematically-based methodology to help building owners capture the remaining value and extend the life of their buildings after years of service.

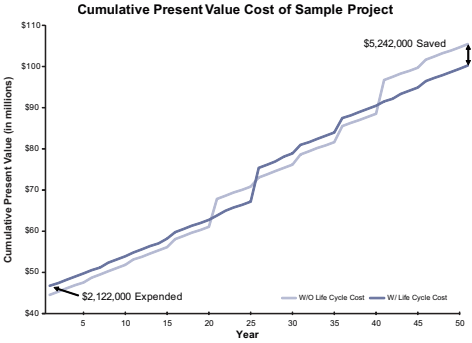
RElifing® determines the 'useful life' of a building by analyzing the cost and service life of its various components–structure, external claddings, internal fit-out, and building systems—and then calculating the total life expectancy or Weighted Average Service Life (WASL) RElifing® then analyzes and prices the recommendations for maintenance, upgrades, renovation, and replacement of various building components necessary to extend the building's life expectancy to certain milestones. When this analysis is compared with the cost to build new, owners are presented with a quantitative tool to determine which investment option will make the best use of functional and financial resources.



LIFE CYCLE COST + CARBON MODELING

This service is our response to the challenges property owners face in reconciling commercial viability with efficiency, sustainability, and environmental sensitivity throughout a structure's life cycle. Using our model, owners can develop facilities which are not only cost effective to build but operationally efficient over their life span.

Sophisticated owners recognize that the capital cost of a facility may be less significant when compared with the total cost of ownership over time. An integrated Life Cycle Cost model enables capital and life cycle characteristics of individual components, elements, and whole buildings to be modeled and forecasted over the life of a proposed facility.



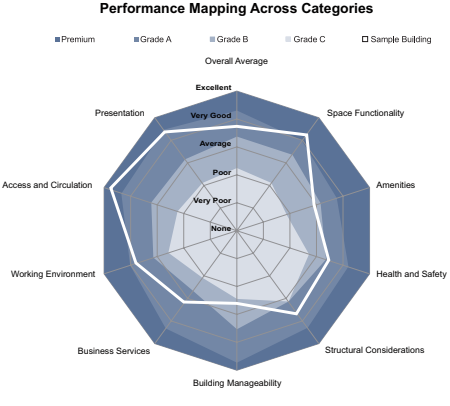
Interdependencies between variables are established and comparison of multiple options provides a frame of reference for making important long-term investment decisions. The model can also be used to calculate carbon footprint, LEED™, energy and CO_2 consumption, water consumption, and capital allowances.

The Rider Levett Bucknall model can be used at all stages of the asset life cycle from inception, through design development and into operation.

BUILDING QUALITY ASSESSMENT

There is a critical link between the quality of an office building and its ultimate performance as an asset. Yet, there is no prevailing rating system in place to measure a facility's relative strengths and weaknesses in relation to industry standards and tenant expectations.

Our Building Quality Assessment service addresses this need with a standardized method for quantifying and evaluating building quality based on standard criteria across a number of general categories (space functionality, amenities, building operations, etc.). The service provides a quality grade for a specific facility based on its physical characteristics and an 'apples to apples' comparative analysis against other similar structures.



The analysis highlights categories where the facility did not perform to the expected standards of quality and identifies areas where upgraded capacity or utility could be considered to enhance the grading performance of the building. This evaluation enables the optimization of the right mix of quality factors to match investor, owner, and user objectives.

16 CHESTNUT

DENVER, COLORADO

The Class AA office building, 16 Chestnut, is located at the base of Millennium Bridge near Union Station in Denver, Colorado. At 19-stories, the building offers 432,881 rentable square-feet and is equipped with a fitness center and bike storage facility. The project achieved LEED Platinum certification.

During the design of the project, RLB provided cost consulting services for design milestones including conceptual design, schematic design, and design development.

MISCELLANEOUS ITEMS

CALCULATION FORMULAE

TO FIND	CALCULATE
Area of triangle	Base × ½ × height
Area of circle	(radius)² × 3.1416
Area of sector of circle	Lengths of arc × ½ × radius
Area of square, rhombus	Base × height
Area of equilateral triangle	(Side)² × 0.433
Area of trapezium	Height × ½ × (sum of parallel sides)
Area of ellipse	Major axis × minor axis × 0.7854
Area of parabola	⅔ × base × height
Circumference of a circle	Diameter × 3.1416
Surface area of sphere	4 × (radius)² × 3.1416
Surface area of cone	(radius x slant side × 3.1416) + area of base
Volume of cylinder	Area of base × height
Volume of cube or prism	Length × breadth × depth
Volume of cone	Height × ⅓ × area of base
Volume of hexagonal prism	(Side)² × height × 2.598
Volume of sphere	⅘ × (radius)³ × 3.1416

CONVERSION FACTORS

TO CONVERT	MULTIPLY BY
LENGTH	
Inches into centimeters	2.54
Centimeters into inches	0.394
Feet into meters	0.305
Yards into meters	0.914
Meters into feet	3.281
Feet into meters	0.305
Yards into meters	0.914
Meters into yards	1.094
Kilometers into miles	0.621
Miles into kilometers	1.609
AREA	
Square meters into square feet	10.764
Square feet into square meters	0.093
Square yards into square feet	9.0
Square yards into square meters	0.836
Square kilometers into square miles	0.386
Square kilometers into hectares	100.0
Square miles into square kilometers	2.59
Square miles into acres	640.0
Acres into square feet	43,560
Acres into square meters	4,046.86
Acres into hectares	0.405
Hectares into acres	2.471
TEMPERATURE	
Degree Celsius to Degree Fahrenheit	(°C x 9/5) + 32
Degree Fahrenheit to Degree Celsius	(°F – 32) x 5/9

CONVERSION FACTORS

TO CONVERT	MULTIPLY BY
VOLUME AND CAPACITY	
Cubic feet into cubic meters	0.028
Cubic meters into cubic feet	35.315
Cubic yards into cubic meters	0.765
Cubic feet into liters	28.3168
U.S. pints into liters	0.473
U.S. quarts into liters	0.946
U.S. gallons into liters	3.785
Liters into U.S. gallons	0.264
Liters into U.S. pints	2.113
POWER	
Foot pounds-force/second into watts	1.356
Horsepower into watts	745.7
Kilowatts into horsepower	1.341
MASS	
Grams into ounces	0.035
Ounces into grams	28.350
Ounces into pounds	0.063
Ounces into kilograms	0.028
Pounds into kilograms	0.454
Kilograms into pounds	2.205
U.S. tons into metric tons	0.907
U.S. tons into pounds	2,000
Metric tons into pounds	2,204.623
Metric tons into U.S. tons	1.102
FORCE	
Newtons into pounds force	0.225

CALENDAR

JANUARY 2020

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY 2020

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

MARCH 2020

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL 2020

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY 2020

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE 2020

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY 2020

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST 2020

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

CALENDAR

SEPTEMBER 2020

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER 2020

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER 2020

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER 2020

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JANUARY 2021

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FEBRUARY 2021

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

MARCH 2021

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

APRIL 2021

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

IMPORTANT DATES

EVENT	DATE
New Year's Day	Wednesday, January 1
Martin Luther King Day	Monday, January 20
Chinese New Year	Saturday, January 25
Valentine's Day	Friday, February 14
Presidents' Day	Monday, February 17
Ash Wednesday	Wednesday, February 26
Daylight Savings Starts	Sunday, March 8
Saint Patrick's Day	Tuesday, March 17
Passover Begins	Thursday, April 9
Good Friday	Friday, April 10
Easter	Sunday, April 12
Passover Ends	Thursday, April 16
Mother's Day	Sunday, May 10
Memorial Day	Monday, May 25
Flag Day	Sunday, June 14
Father's Day	Sunday, June 21
Canada Day	Wednesday, July 1
Independence Day	Saturday, July 4
Labor Day	Monday, September 7
Rosh Hashanah	Saturday, September 19
Yom Kippur	Monday, September 28
Columbus Day	Monday, October 12
Thanksgiving Day - CAN	Monday, October 12
Daylight Savings Ends	Sunday, November 1
Veteran's Day	Wednesday, November 11
Thanksgiving Day – USA	Thursday, November 26
Hanukkah Begins	Friday, December 11
Hanukkah Ends	Friday, December 18
Christmas	Friday, December 25
Boxing Day - CAN	Saturday, December 26

IDD COUNTRY CODES & TIME DIFFERENCES

DESTINATION	IDD COUNTRY CODE	TIME DIFFERENCE FROM U.S. EST
Australia (Adelaide)	+61 (8)	+15:30
Australia (Brisbane)	+61 (7)	+15
Australia (Canberra)	+61 (2)	+16
Australia (Darwin)	+61 (8)	+14:30
Australia (Melbourne)	+61 (3)	+16
Australia (Perth)	+61 (8)	+13
Australia (Sydney)	+61 (2)	+16
Barbados	+1 (246)	+1
Cayman Islands	+1 (345)	+0
China (Coastal Cities)	+86	+13
France	+33	+6
Germany	+49	+6
Guam	+1 (671)	+15
Hong Kong	+852	+13
India	+91	+10:30
Indonesia (Jakarta)	+62	+12
Italy	+39	+6
Japan	+81	+14
Macau	+853	+13
Malaysia	+60	+13
Mexico (Mexico City)	+52	-1
Netherlands	+31	+6
New Zealand	+64	+18
Oman	+968	+9
Pakistan	+92	+10
Philippines	+63	+13
Qatar	+974	+8
Russia (Moscow)	+7 (495)	+8
Russia (Saint Petersburg)	+7 (812)	+8
Saudi Arabia	+966	+8
Singapore	+65	+13
South Korea	+82	+14
Spain	+34	+6
Sweden	+46	+6
Switzerland	+41	+6
Taiwan	+886	+13
Thailand	+66	+12
United Arab Emirates	+971	+9
United Kingdom	+44	+5
United States - Central	+1	-1
United States - Mountain	+1	-2
United States - Pacific	+1	-3
United States - Alaska	+1	-4
United States - Hawaii	+1	-5
Vietnam	+84	+12

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