

# ENGINEUITY TUTORIAL



## Making Procurement Decisions



## Making Procurement Decisions

The company are able to bid for jobs that were identified by the Marketing Department in the previous period.

There are two types of jobs that the company can bid for.

### **BUILD ONLY JOBS**

The contractor is only responsible for the build.

If the job entailed any design work, this would already have been commissioned by the client, who would have engaged their own consultant designer.

### **DESIGN & BID JOBS**

The contractor has responsibility for both the design and the build. This involves more effort during the procurement stage because a consultant designer needs to be allocated, but the profit from the design element can make the jobs more attractive to secure.

There are a number of elements that make up the bid for each type of job, as shown in the following table.



## Making Procurement Decisions

Element	Description	Build Only	Design & Build
<b>Design Cost</b>	Cost of producing the design.	✗	✓
<b>Design Consultant</b>	Design consultant allocated to create the design.	✗	✓
<b>Build Cost</b>	Costs directly involved in the build (labour, plant, materials etc)	✓	✓
<b>Site Cost</b>	Support staff and services required to administer a site whilst the build is in progress.	✓	✓
<b>Oncost</b> Project manager	An allowance for the costs of recruiting and paying a project manager to oversee the job for its planned duration.	✓	✓
Risk contingency	Contingency to cover the potential risks that could occur on the job causing monetary losses to the company.	✓	✓
<b>Markup (%)</b>	The profit (margin) to be made on the job.	✓	✓



## Making Procurement Decisions

It is assumed that the **estimators have produced an accurate assessment** of the costs to be incurred in completing each job, along with planned labour levels for each period of the planned duration of the job.

At the procurement stage some of the estimated costs are **automatically included** in the bid, and cannot be altered. These are the :-

- Design cost
- Build cost
- Site cost

The remaining elements :-

- Design consultant
- Oncost
- Mark-up

can be **adjusted at the procurement stage** depending upon the strategy to be adopted in bidding for each particular job.

Since a design & build job includes all the bid elements, we will look at an example of how to form a bid for such a job.



# Making Procurement Decisions

MAKING Procurement decisions for period 5 in the Early Years

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PROCUREMENT RESTRICTIONS

Company Based Limitations

NUMBER OF JOBS IN PROGRESS

At the start of the period, the number of jobs in progress is: 5 (job progression screen)

The number of jobs in progress after bidding cannot exceed: 10 jobs

Hence, the maximum number of jobs that can be won is: 5 jobs during bidding

AMOUNT OF WORK THAT CAN BE WON

The initial forward workload is: 20,822,000 (job progression screen)

The current value of the capital base is: 4,424,439 (financial decision screen)

The current capital base can support forward workload of: 44,244,390 (10 x capital base)

Hence, the value of work that can be won cannot exceed: 23,422,390 during bidding

Job	Country	Type	BIM	Size	App Value	Duration	Description	Sector	Client	Job	Bid	Bid value
75	United Kingdom	DB	Yes	Small	3,000,000	3	Construct state of art composting unit	Water & Sewage	Fenlands County Council	75	No	0
78	Qatar	DB	Yes	Large	19,000,000	5	Entertainment complex development phase 1	Building & Commercial	Doha Development Group	78	No	0
81	United Kingdom	BO	Yes	Medium	11,000,000	3	Construction of prototype solar chimney	Energy	Fenlands County Council	81	No	0
83	United States	BO	No	Medium	11,000,000	3	Charging infrastructure for electric vehicles	Transport	Los Angeles Olympic Organising Committee	83	No	0
85	New Zealand	BO	Yes	Small	2,000,000	2	New abattoirs	Industrial	NAMCO Meat Products	85	No	0

A decision is made to bid for job 78, a Design & Build job.

We will now look at how the bid formed ?

Display details for job 78

Display client details

Yes



# Making Procurement Decisions

## MAKING Procurement decisions for period 5 in the Early Years

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### NUMBER OF JOBS IN PROGRESS

At the start of the period, the number of jobs in progress is: 5 (job)  
The number of jobs in progress after bidding cannot exceed: 10 jobs  
Hence, the maximum number of jobs that can be won is: 5 jobs

Job	Country	Type	BIM	Size	App Value	Duration
75	United Kingdom	DB	Yes	Small	3,000,000	3
78	Qatar	DB	Yes	Large	19,000,000	5
81	United Kingdom	BO	Yes	Medium	11,000,000	3
83	United States	BO	No	Medium	11,000,000	3
85	New Zealand	BO	Yes	Small	2,000,000	2

## Job 78 (At the procurement stage)



Period identified: 4  
Country: Qatar  
Location: The Pearl Island  
Type: Design & Build  
BIM model used: Yes  
Size: Large  
Approx value: 19,000,000  
Duration: 5 periods  
Description: Entertainment complex development phase B  
Sector: Building & Commercial  
Client: Doha Development Group [Create](#)

### ESTIMATED COSTS / PLANNED LABOUR SCHEDULE

Job period	Estimated build cost	Estimated site cost	Planned labour	Cumul % complete
1	2,989,042	597,808	116	20
2	2,989,042	597,808	116	40
3	4,483,563	896,713	173	70
4	2,989,042	597,808	116	90
5	1,494,521	298,904	58	100

14,945,210 2,989,041 579

Estimated design cost: 10 % of build cost

### RISK REGISTER

Risk description	Likelihood occurs	Impact cost	Reduction in cost if BIM used	Expected labour reduction
Structural defects	Medium	197,000	Yes	2.0 %
Industrial action by site staff	Low	292,000	No	7.0 %
Personnel issues	High	84,000	No	2.4 %
Lack of resources	Medium	212,000	Yes	6.0 %

The **Display Job Details** option can be used to display detailed information about the job.

[Display details for job 78](#)



# Making Procurement Decisions

**MAKING Procurement decisions for period 5 in the Early Years**

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**PROCUREMENT RESTRICTIONS**

**Company Based Limitations**

**NUMBER OF JOBS IN PROGRESS**

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Display details for job 78

Display client details

Yes

Select 'Yes' to indicate that a bid is to be submitted.



# Making Procurement Decisions

Setting the Bid for Job 78

Help

ESTIMATED COSTS

Design cost (% of build cost): 10 %

Build cost: 14,945,210

Site cost: 2,989,041

Total estimated costs: 19,428,770

KNOWN RIVAL BIDDERS

Chota Nagpur Group

Doha Developments

East State Enterprises

The Bommell Group

Based in India

The estimated costs that cannot be changed are the design, build and site costs.

## DESIGN COST (D&B JOBS ONLY)

The design cost to be paid to the consultant designer is expressed as a % of the build cost.

Design cost is paid back in relation to the progression of the job e.g., if 30% of the job is completed in a period, then 30% of the design cost has to be paid back in the period.

## BUILD COST

The build cost covers the labour, plant, materials and specialist subcontract trades needed to complete the job.

## SITE COST

Site costs pay for the support staff and services required to administer a site.

## KEY POINTS

Design and build costs paid in a period relate directly to the % of the job completed in the period, whereas the site costs to be paid are related to the actual labour on site.

E.g., if there is a lot of ineffective labour on site that does not contribute to progressing the job, site costs still have to be paid for the total labour on site.

- The job is based in Qatar
- The planned duration of the job is 5 periods
- The annual salary for project managers ranges from 27,000 to 64,000





# Making Procurement Decisions

Setting the Bid for Job 78

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ESTIMATED COSTS

Design cost (% of build cost): 10 %

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Total estimated costs: 19,428,770

DESIGN CONSULTANT

BIM experience required

Design consultant allocated:

Select

KNOWN RIVAL BIDDERS

Chota Nagpur Group Based in India

Doha Developments

East State Enterprises

The Bommell Group

BIDDING HISTORY

Job	Period	Country	Sector	Markup
		United States	Building & Commercial	5.0 %
			Commercial	5.0 %

A consultant needs to be allocated to produce the design who has **appropriate expertise** for the job.

In addition, if the job is using BIM, or Building Information Modelling, the client may impose a bidding restriction that requires the consultant to have some BIM experience, in addition to expertise in the job sector. This is indicated by the **“BIM experience required”** note.

In this case, for job 78, a BIM model is being used, and the CLIENT RESTRICTIONS indicate that a consultant with BIM experience needs to be chosen for the design.

The **Select** button can be used to choose from a list of all available consultants.

MARKUP

Markup:  %

BID SUBMITTED

Bid submitted: 19,428,770

## USEFUL INFORMATION

- The job is in the Building & Commercial sector
- The job is based in Qatar
- The planned duration of the job is 5 periods
- The annual salary for project managers ranges from 27,000 to 64,000

Based in New Delhi, the Chota Nagpur Group have grown very quickly in the last 6 years, and are now operating worldwide in the commercial and real estate sector.

The strength of the Chota Nagpur Group is reflected in their recent flotation on the Indian Stock Exchange, and their turnover and profit have grown considerably in the last fiscal year.

Chota Nagpur Group have a de-risked business model that enables them to bid competitively on price for the work they tender for, helped enormously by their continuing investment in new technologies.



# Making Procurement Decisions

**Available Consultants**

Display consultants where the profile contains the phrase:

[ALL] Available

Name	Base country	BIM experience	Status
Ardvark Architects	United Kingdom	significant	Available
Beta Creative Designs	United Kingdom	slight	Available
Cutting Edge Architects	United Kingdom	significant	Available
Gyro Design International	United Kingdom	slight	Available
Light Bulb Associates	United Kingdom	noticeable	Available
Peak Designs	New Zealand	noticeable	Available
Smisby Structures Ltd	United Kingdom	slight	Available
Uppingham Associates	United Kingdom	significant	A
WDC Design Consultants	United States	significant	A
Wyvern Design Services	United Kingdom	slight	A

Select

## KEY POINTS

The list of available consultants changes each period due to some consultants being unavailable, as shown in the **status** column e.g., too much workload.

## ARDVARK ARCHITECTS

After meeting at a BIM conference 3 years ago a small group of design consultants established Ardvark Architects to take advantage of the emergence of Building Information Modelling in the construction process.



Since being established Ardvark Architects has undertaken a number of prestigious project designs within the building and commercial field, and their skills are becoming increasingly in demand as their reputation spreads.

The company have invested heavily in training, particularly in BIM training for their staff, to enable them to compete for new work against even their most established competitors.

An appropriate consultant for the job can be found by reviewing the profiles of each consultant, and matching the consultant's **expertise to the job sector**.

The choice of consultant **can have a significant impact on the build costs**. Consultants with appropriate expertise and BIM experience (if a BIM model is being used), produce designs that reduce the expected build cost.

For job 78, a building and commercial contract, **Ardvark Architects** have been chosen due to their expertise in the building and commercial sector, and their significant BIM experience.

The **Select** option is used to select **Ardvark Architects**.



# Making Procurement Decisions

## Setting the Bid for Job 78

**Oncosts** are additional costs added to a bid to cover the contract costs over and above the design, build and site costs, and consist of :-

- Project manager allowance
- Contingency for risk

Unlike the estimated costs that cannot be changed, oncosts **can be altered** depending upon the company's strategy when bidding for a particular job.

### ONCOSTS

Project manager allowance:  (for salary)

Risk register	Likelihood occurs	Impact cost	Risk Contingency
Structural defects	Medium (40 to 50 % chance)	197,000	0
Industrial action by site staff	Low (20 to 30 % chance)	292,000	0
Personnel issues	High (70 to 80 % chance)	84,000	0
Lack of resources	Medium (40 to 50 % chance)	212,000	0

Total oncost:

### MARKUP

Markup:  %

### BID SUBMITTED

Bid submitted:

### USEFUL INFORMATION

- The job is in the Building & Commercial sector
- The job is based in Qatar
- The planned duration of the job is 5 periods
- The annual salary for project managers ranges from 27,000 to 64,000

### ORDERS

ed in India

				Markup
10	2	United States	Building & Commercial	5.0 %
11	2	United Kingdom	Building & Commercial	5.0 %
12	2	China	Building & Commercial	4.9 %
17	2	United States	Building & Commercial	4.8 %
18	2	United Kingdom	Building & Commercial	4.9 %
25	3	United States	Building & Commercial	4.8 %
26	3	United States	Building & Commercial	4.9 %
29	3	United Kingdom	Building & Commercial	5.0 %
38	3	Australia	Building & Commercial	4.8 %
45	3	Australia	Building & Commercial	4.7 %
47	3	United Kingdom	Building & Commercial	4.9 %
49	4	United States	Building & Commercial	5.0 %
52	4	United States	Building & Commercial	4.7 %
54	4	United States	Building & Commercial	4.9 %
63	4	United States	Building & Commercial	4.6 %
73	4	United Kingdom	Building & Commercial	5.0 %

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# Making Procurement Decisions

Setting the Bid for Job 78

Help

ESTIMATED COSTS

Design cost (% of build cost): 10 %

Build cost: 14,945,210

Site cost: 2,989,041

Total estimated costs: 19,428,770

DESIGN CONSULTANT

Design consultant allocated: Ardvard Architects

Select

ONCOSTS

Project manager allowance: 0

Risk register	Likelihood occurs	Impact cost	Risk Contingency
Structural defects	Medium (40 to 50 % chance)	197,000	0
Industrial action by site staff	Low (20 to 30 % chance)	292,000	0
Personnel issues	High (70 to 80 % chance)	84,000	0
Lack of resources	Medium (40 to 50 % chance)	212,000	0
			0
			0

Total oncost: 0

MARKUP

Markup: 0 %

BID SUBMITTED

Bid submitted: 19,428,770

USEFUL INFORMATION

The job is in the Building & Commercial sector

The job is based in Qatar

The planned duration of the job is 5 periods

The annual salary for project managers ranges from 27,000 to 64,000

PROJECT MANAGER ALLOWANCE

Although project managers are not normally recruited until a job has been secured, and is in progress, an allowance is made in the bid for the costs of **paying the salary** of a suitable project manager to oversee the job for its planned duration.

Project managers vary in experience and salary, and the choice of an appropriate project manager for a job can have serious implications for the progress of the job.

The **Useful information** section gives an indication of the range of annual salaries for project managers.

If we win the job we would be looking to employ a really good project manager for the job. To keep our bid competitive we would not be looking to use the maximum annual salary of 64,000, but instead we would base our salary allowance a bit lower, at around 56,000 per annum.

Bearing in mind that job 78 has a planned duration of 5 periods the allowance for salary is set as follows.

1. Using an annual salary of 56,000 as the base

2. Salary per period is 14,000 (56,000 / 4)

3. Salary for the planned duration of 5 periods is 70,000 (14,000 x 5)



# Making Procurement Decisions

Setting the Bid for Job 78

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ESTIMATED COSTS

Design cost (% of build cost): 10 %  
Build cost: 14,945,210  
Site cost: 2,989,041  
**Total estimated costs: 19,428,770**

DESIGN CONSULTANT

Design consultant allocated: Ardvard Architects

ONCOSTS

Project manager allowance:  (for salary)

Risk register	Likelihood occurs	Impact cost	Risk Contingency
Structural defects	Medium (40 to 50 % chance)	197,000	0
Industrial action by site staff	Low (20 to 30 % chance)	292,000	0
Personnel issues	High (70 to 80 % chance)	84,000	0
Lack of resources	Medium (40 to 50 % chance)	212,000	0
			0

KNOWN RIVAL BIDDERS

Chota Nagpur Group

Doha Developments

East State Enterprises

The Bommell Group

Based in India

BIDDING HISTORY

Job	Period	Country	Sector	Markup
10	2	United States	Building & Commercial	5.0 %
11	2	United Kingdom	Building & Commercial	5.0 %
12	2	China	Building & Commercial	4.9 %
17	2	United States	Building & Commercial	4.8 %
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45	3	Australia	Building & Commercial	4.7 %
47	3	United Kingdom	Building & Commercial	4.9 %
49	4	United States	Building & Commercial	5.0 %
52	4	United States	Building & Commercial	4.7 %
54	4	United States	Building & Commercial	4.9 %
63	4	United States	Building & Commercial	4.6 %

## RISK CONTINGENCY

The estimators made an assessment of the potential risks that could occur on the job causing monetary losses to the company, and job delays, and a **risk register** was formed for the job.

Each potential risk in the risk register has **2 key elements** that need to be considered at the bidding stage :-

- The **likelihood** of the risk occurring (risk level), classified as High, Medium or Low.
- The **impact cost** if the risk hits.

A contingency needs to be added for each risk to cover the company for the impact cost if the risk occurs.

## KEY POINTS

Although the risk contingency only covers the cost of the risk striking, if a risk strikes there may also be delays to the job, which have to be considered in the labour allocation when a job is progressed.



# Making Procurement Decisions

**Setting the Bid for Job 78**

**ESTIMATED COSTS**

Design cost (% of build cost): 10 %  
Build cost: 14,945,210  
Site cost: 2,989,041  
**Total estimated costs:** 19,428,770

**DESIGN CONSULTANT**

Design consultant allocated: Ardvard Architects

**ONCOSTS**

Project manager allowance:  (for salary)

Risk register	Likelihood occurs	Impact cost	Risk Contingency
Structural defects	Medium (40 to 50 % chance)	197,000	0
Industrial action	Low (20 to 30 % chance)	292,000	0
Personnel issues	High (70 to 80 % chance)	84,000	0
Lack of resources	Medium (40 to 50 % chance)	212,000	0

**KNOWN RIVAL BIDDERS**

Chota Nagpur Group  
Doha Developments  
East State Enterprises  
The Bommell Group

Based in India

**BIDDING HISTORY**

Job	Period	Country	Sector	Markup
10	2	United States	Building & Commercial	5.0 %
11	2	United Kingdom	Building & Commercial	5.0 %
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38	3	Australia	Building & Commercial	4.8 %
45	3	Australia	Building & Commercial	4.7 %
47	3	United Kingdom	Building & Commercial	4.9 %

## RISK CONTINGENCY

For the potential risk 'Structural defects' :-

- The likelihood of the risk occurring is Medium, which is defined as a 40-50% chance of happening
- If the risk hits there will be an impact cost of 197,000

We could cover ourselves for the full impact cost, but this could make our bid uncompetitive (too high). Based upon the probability of the risk hitting, a sensible approach would be to cover ourselves for 45% of the risk cost, or 88,650. This makes our bid far more competitive, and also provides some insurance if the risk occurs.

Using a similar logic the other risk contingencies are set.

## KEY POINTS

Assuming we win the job, if the risk :-

- Does not occur then the extra risk becomes profit, or margin, made on the job
- Hits it will eat into job profits, although this will be offset by the risk contingency we're building into the bid, and any mitigating actions taken to reduce the risk costs



# Making Procurement Decisions

Setting the Bid for Job 78

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ESTIMATED COSTS

Design cost (% of build cost): 10 %  
Build cost: 14,945,210  
Site cost: 2,989,041  
**Total estimated costs: 19,428,770**

DESIGN CONSULTANT

Design consultant allocated: Ardvard Architects

ONCOSTS

Project manager allowance:  (for salary)

Risk register	Likelihood occurs	Impact cost	Risk Contingency
Structural defects	Medium (40 to 50 % chance)	197,000	88650
Industrial action by site staff	Low (20 to 30 % chance)	292,000	73000
Personnel issues	High (70 to 80 % chance)	84,000	63000
Lack of resources	Medium (40 to 50 % chance)	212,000	95400
			320,050
<b>Total oncost:</b>			<b>390,050</b>

MARKUP

Markup:  %

KNOWN RIVAL BIDDERS

Chota Nagpur Group

Doha Developments

East State Enterprises

The Bommell Group

Based in India

BIDDING HISTORY

Job	Period	Country	Sector	Markup
10	2	United States	Building & Commercial	5.0 %
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## MARKUP

The **markup** applied to a bid is one of the company's most **critical decisions**, and is the margin, or profit, to be made by the job over and above the costs.

Markup is entered as a %, and is added to the costs already set.

To determine the markup to be applied, a number of factors need to be taken into account.

We will look at each one in turn.



# Making Procurement Decisions

## Setting the Bid for Job 78

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### ESTIMATED COSTS

Design cost (% of build cost): 10 %  
 Build cost: 14,945,210  
 Site cost: 2,989,041  
**Total estimated costs: 19,428,770**

### DESIGN CONSULTANT

Design consultant allocated: Ardvard Architects

Select

### ONCOSTS

Project manager allowance: 70000 (for salary)

Risk register	Likelihood occurs	Impact cost	Risk Contingency
Structural defects	Medium (40 to 50 % chance)	197,000	88650
Industrial action by site staff	Low (20 to 30 % chance)	292,000	73000
Personnel issues	High (70 to 80 % chance)	84,000	63000
Lack of resources	Medium (40 to 50 % chance)	212,000	95400

320,050

**Total oncost: 390,050**

### MARKUP

Markup: 0 %

### KNOWN RIVAL BIDDERS

Chota Nagpur Group Based in India  
 Doha Developments  
 East State Enterprises  
 The Bommell Group

### BIDDING HISTORY

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The strength of the Chota Nagpur Group is reflected in their recent flotation on the

## MARKUP (COVERING OTHER COMPANY COSTS)

The profit made across all jobs should at least cover the company related costs not covered in the individual jobs, such as :-

- Company overheads
- Paying dividend to shareholders

If the profit over all jobs progressed does not cover these additional company costs, then the company could suffer serious cash flow problems.





# Making Procurement Decisions

**Setting the Bid for Job 78**

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**ESTIMATED COSTS**

Design cost (% of build cost): 10 %

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Site cost: 2,989,041

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**DESIGN CONSULTANT**

Design consultant allocated: Ardvard Architects

**ONCOSTS**

Project manager allowance:  (for salary)

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**KNOWN RIVAL BIDDERS**

Chota Nagpur Group Based in India

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**BIDDING HISTORY**

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17	India	Building & Commercial	4.8 %
18	India	Building & Commercial	4.9 %
25	India	Building & Commercial	4.8 %
27	India	Building & Commercial	4.9 %
2	India	Building & Commercial	5.0 %

## MARKUP (RIVAL BIDDERS)

When determining the mark-up, the level **that may be set by rival bidders** needs to be considered very carefully.

Assuming a similar cost base, including a 'sensible' level of oncost, setting too high a markup could make the bid uncompetitive, and not give the company a chance of winning the job.

The nature of the rival bidders depends upon the timeframe :-

- In the **early years**, the competition comes from **fictional rival companies**, Each one has their own unique profile and bidding history, and a careful assessment of them is required to determine the appropriate level of margin.
- In the **later years** the competition comes from the **other 'human' teams in the competition**, with less certainty about possible bidding strategies, and hence setting the markup becomes far harder.

## KEY POINTS

Only the **KNOWN** rival bidders are shown. Other **UNKNOWN** rival bidders may bid for the job, and this may affect the decision about the level of markup to apply.



# Making Procurement Decisions

Setting the Bid for Job 78

Help

ESTIMATED COSTS

Design cost (% of build cost): 10 %

Build cost: 14,945,210

Site cost: 2,989,041

Total estimated costs: 19,428,770

DESIGN CONSULTANT

BIM experience required

KNOWN RIVAL BIDDERS

Chota Nagpur Group

Doha Developments

East State Enterprises

The Bommell Group

Based in Holland

BIDDING HISTORY

Job	Period	Country	Sector	Markup
17	2	United States	Building & Commercial	4.7 %
18	2	United Kingdom	Building & Commercial	4.9 %
23	2	United Kingdom	Building & Commercial	4.8 %
25	3	United States	Building & Commercial	4.8 %
26	3	United States	Building & Commercial	4.9 %
32	3	United Kingdom	Building & Commercial	4.9 %
34	3	United States	Building & Commercial	4.9 %
38	3	Australia	Building & Commercial	4.7 %
45	3	Australia	Building & Commercial	4.9 %
47	3	United Kingdom	Building & Commercial	4.9 %
49	4	United States	Building & Commercial	4.8 %
50	4	United States	Building & Commercial	4.9 %
52	4	United States	Building & Commercial	5.0 %
54	4	United States	Building & Commercial	4.7 %
62	4	United Kingdom	Building & Commercial	4.6 %
63	4	United States	Building & Commercial	4.6 %
73	4	United Kingdom	Building & Commercial	4.6 %

MARKUPS FROM KNOWN RIVAL BIDDERS

The level of markup set by rival bidders is not influenced by the job sector or size, and the previous markups of the known rival bidders can be analysed to determine who is likely to submit the lowest, and most competitive one, for job 78

The lowest markup previously set was by the **The Bommell Group** at 4.6%. Bearing in mind that rival bidders can adjust their strategies and bid lower than their perceived lowest margin to date, we will set a markup of 4.3% to hopefully be the most competitive on price.

If we were concerned about potential unknown rival bidders undercutting us, we may reduce the margin each further.

KEY POINTS

- Some companies may have **just joined the market**, and not have a bidding history. In this situation their profile is the only guide to their likely markup settings.
- Rival bidders will adjust their markups as time passes depending upon the prevailing economic climate.

...specialist in all aspects of building and ... particularly in North America.

... and 200,000 worldwide, and is recognised globally for sound ... professional staff and the quality and reliability of its work.

... to its core construction activities, the company has recently established an ... House Engineering Department which handles a significant portion of engineering work required for its projects.



# Making Procurement Decisions

## Setting the Bid for Job 78

Help

### ESTIMATED COSTS

Design cost (% of build cost): 10 %  
Build cost: 14,945,210  
Site cost: 2,989,041  
**Total estimated costs: 19,428,770**

### DESIGN CONSULTANT

Design consultant allocated: Ardvard Architects

Select

### ONCOSTS

Project manager allowance: 70000 (for salary)

Risk register	Likelihood occurs	Impact cost	Risk Contingency
Structural defects	Medium (40 to 50 % chance)	197,000	88650
Industrial action by site staff	Low (20 to 30 % chance)	292,000	73000
Personnel issues	High (70 to 80 % chance)	84,000	63000
Lack of resources	Medium (40 to 50 % chance)	212,000	95400

320,050

**Total oncost: 390,050**

### MARKUP

Markup: 4.3 %

### BID SUBMITTED

**Bid submitted: 20,671,030**

### USEFUL INFORMATION

- The job is in the Building & Commercial sector
- The job is based in Qatar
- The planned duration of the job is 5 periods
- The annual salary for project managers ranges from 27,000 to 64,000

The bid has now been set for job 78

### KNOWN RIVAL BIDDERS

Chota Nagpur Group  
Doha Developments  
East State Enterprises  
The Bommell Group

Based in India

### BIDDING HISTORY

Job	Period	Country	Sector	Markup
10	2	United States	Building & Commercial	5.0 %
11	2	United Kingdom	Building & Commercial	5.0 %
12	2	China	Building & Commercial	4.9 %
17	2	United States	Building & Commercial	4.8 %
18	2	United Kingdom	Building & Commercial	4.9 %
25	3	United States	Building & Commercial	4.8 %
26	3	United States	Building & Commercial	4.9 %
29	3	United Kingdom	Building & Commercial	5.0 %
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54	4	United States	Building & Commercial	4.9 %
63	4	United States	Building & Commercial	4.6 %
73	4	United Kingdom	Building & Commercial	5.0 %

Based in New Delhi, the Chota Nagpur Group have grown very quickly in the last 6 years, and are now operating worldwide in the commercial and real estate sector.

The strength of the Chota Nagpur Group is reflected in their recent flotation on the Indian Stock Exchange, and their turnover and profit have grown considerably in the last fiscal year.

Chota Nagpur Group have a de-risked business model that enables them to bid competitively on price for the work they tender for, helped enormously by their continuing investment in new technologies.



# Making Procurement Decisions

**MAKING Procurement decisions for period 5 in the Early Years**

Change period Key information Help

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**PROCUREMENT RESTRICTIONS**  
Company Based Limitations

**NUMBER OF JOBS IN PROGRESS**

At the start of the period, the number of jobs in progress is: 5 (job progression screen)

The number of jobs in progress after bidding cannot exceed: 10 jobs

Hence, the maximum number of jobs that can be won is: 5 jobs during bidding

**AMOUNT OF WORK THAT CAN BE WON**

The initial forward workload is: 20,822,000 (job progression screen)

The current value of the capital base is: 4,424,439 (financial decision screen)

The current capital base can support forward workload of: 44,244,390 (10 x capital base)

Hence, the value of work that can be won cannot exceed: 23,422,390 during bidding

Job	Country	Type	BIM	Size	App Value	Duration	Description	Sector	Client	Job	Bid	Bid value
75	United Kingdom	DB	Yes	Small	3,000,000	3	Construct state of art composting unit	Water & Sewage	Fenlands County Council	75	No	0
78	Qatar	DB	Yes	Large	19,000,000	5	Entertainment complex development phase	Building & Commercial	Doha Development Group	78	Yes	20,671,030
81	United Kingdom	BO	Yes	Medium	11,000,000	3	Construction of prototype solar chimney	Energy	Fenlands County Council	81	No	0
83	United States	BO	No	Medium	11,000,000	3	Charging infrastructure for electric vehicle	Transport	Los Angeles Olympic Group	83	No	0
85	New Zealand	BO	Yes	Small	2,000,000	2	New abattoirs	Industrial	NAMCO Meat Products	85	No	0

We will know **next period** whether or not we have won the job.

The company incur a cost for each bid submitted, depending upon the approximate value of the job, defined in the **Industry parameters**. These form part of the overhead costs for the period.

## KEY POINTS

The company can bid for all jobs available, but this can lead to substantial bidding costs, and it is more cost effective to bid in a more strategic manner based on the number and value of jobs that can be secured.

**Industry parameters**

FINANCE
OVERHEADS
PROCUREMENT
JOB PROGRESSION

**BIDDING COSTS** The cost of bidding for a job is: 0.2 % of the approximate job value

Display details for job 78



# Making Procurement Decisions

**MAKING Procurement decisions for period 5 in the Early Years**

Change period Key information Help

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**PROCUREMENT RESTRICTIONS**  
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83	United States	BO	No	Medium	11,000,000	3	Charging infrastructure for electric vehicle	Transport	Los Angeles Olympic Group	83	Yes	11,990,810
85	New Zealand	BO	Yes	Small	2,000,000	2	New abattoirs	Industrial	NAMCO Meat Products	85	No	0

**Bids are processed in STRICT JOB NUMBER ORDER**, to simulate what happen in the real world as bids would be submitted throughout the quarter.

As well as job 78 bids have also been submitted for jobs 81 and 83, and the order of processing the bids is :-

1. Job 78
2. Job 81
3. Job 83

## KEY POINTS

Since bids are processed in strict job number order it can influence the decision as to which jobs to try and win, since it is not always possible to win all the jobs bid for, and a favoured job may be near the end of the tender list.



# Making Procurement Decisions

As discussed earlier **all bids entered are processed in strict job number order.**

Bids are awarded through competitive tendering, and at the time a bid is submitted to the client **success in being awarded the contract depends** upon a number of factors :-

## PROCUREMENT RESTRICTIONS

Company based

- Can the company's capital base support the additional workload ?
- Have the company reached the limit on the number of jobs in progress that the company can support at any one time ?

Job specific

- For a design & build job, does the consultant designer chosen have appropriate experience to undertake the design work
- If BIM is being used for a design & build job, has a consultant with BIM experience been allocated to produce the design ?
- Is the relationship with the client strong enough for the client to accept the bid ?

## PRICE

- Is the company able to compete on price against rival bidders ?

**Once the bids have been submitted, whether or not the company is successful won't be known until the next period.**