Management Training for Construction Professionals

Tutorial

Introduction

The tutorial describes in detail the various features of the **Merit** simulation.

All the examples are 'fictional', and not related to any data used elsewhere.

You can navigate through the tutorial by using :-

- ◀ buttons for movement through the presentation
- buttons to load specific topics
- **Demo** buttons for self-paced demonstrations of topic
- **Hotspot** hotspots to display further information.

The mouse,  and not the keyboard, should be used at all times.

▶ **Quit**

Main Menu

Choose from one of the following options

- Forming a Company Strategy
- Entering Decisions
- Measuring Performance
- Obtaining Information

Forming a Company Strategy - 1

Keep Clicking Anywhere on the screen to advance the demo

Forming a Company Strategy - 1

It is very easy to take a short-term view to running the company by making decisions for the current period only, without looking at the wider picture. Whilst this hit and miss approach may prove successful, it is unlikely to be as effective as formulating a long-term strategy for the company, based upon the company's objectives.

Decisions made in the current period often have an impact in future periods, and in different areas of the company's activities, and to make the most effective use of the company's resources long-term planning is essential.

For example, the efforts of the Marketing Department may enable the company to prequalify for a large job in period 5. The company decide to tender for the job, which is costed in period 6, and a bid is submitted in period 7. If the bid is successful, the job will not start until period 8. If it then runs for five periods, it should complete in period 12. In other words, a decision on where to target marketing effort in period 5 has had an affect up until period 12, and beyond if retentions are repaid once the job completes.

In order to decide upon the company's objectives, and what can be realistically achieved over a period of time, there needs to be a detailed analysis of :-

- The environment in which the company is operating
- The strengths and weaknesses of the business as it stands
- The likely competition in the future

Forming a Company Strategy - 1

In setting the objectives there are many questions that need to be answered, including :-

- What level of growth would we like to achieve ?
- How are we going to improve the value of the company ?
- What levels of company overhead are we likely to need to achieve our objectives ?
- How are we going to look after the interests of the shareholders ?
- How are we going to improve relationships with our clients ?

There are many other areas that also need to be considered, and creating a long-term strategy is a complex task. Indeed, strategy will have to be periodically reviewed, since the objectives to date may have been unattainable for any number of reasons, such as :-

- The Company's future market forecasts were not very accurate, and the anticipated growth areas have not materialised
- Increased competition has forced margins to be reduced to secure work
- Jobs have been lost to competitors with better client relations

Forming a Company Strategy - 1

We'll now look at an example of setting and reviewing company strategy.

We have been given the task of running a company that has been operating for a year (the History), and is considered to be in a sound position by both the industry and its board of directors.

The status of the company/market when we take control is :-

- The company is valued at around 4.5m, and has a share price of 0.9.
- Since the company started from scratch, turnover was only generated in the last period of the first year, and this was valued at around 11m.
- A small gross profit of 0.8% was made on the work progressed. Unfortunately there was an operating loss of 1%, due mainly to overhead costs as the company was being established in the first year without any revenue being earned.
- The company order book looks very healthy, with a forward workload of around 19m, and an anticipated profit of 1m.
- The overall value of new work in the market seems stable between 90m and 120m.
- A number of satisfactory relationships were established with clients.

Based on the information information given above, and a detailed review of your company reports and the market, we must decide upon the company's strategy for the next year.

Forming a Company Strategy - 1

After a thorough review, the following key objectives are set for the next year :-

- To aim for steady, profitable growth, increasing turnover from 11m (last period of the History year) to 44m in the next year through increasing prequalification for new work, and competitive tendering.
- To improve the value of the company from 4.5m to 5m (by 11%) through improved company profits and making better use of the company's assets.
- To ensure that company overheads, especially the Head Office, QHSE and Measurement departments, are staffed sufficiently to manage with the increasing turnover.
- To improve the company's share price.
- To build on and improve existing client relationships.

A year later, how did we perform against the objectives that were set ?

Forming a Company Strategy - 1

Forming a Company Strategy - 2

Objective

To aim for steady, profitable growth, increasing turnover from 11mm (last period of the History) to 44m in the next year through increasing prequalification for new work, and competitive tendering.

Forming a Company Strategy - 2

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To aim for steady, profitable growth, increasing turnover from 11mm (last period of the History) to 44m in the next year through increasing prequalification for new work, and competitive tendering.

Operational Performance of the Company

Job Performance

Measured Value:	14,845,750	*(Turnover)*
Early Completion Bonus:	0	
Retention Repaid:	18,629	
(less) Retention Held:	222,687	
Monies Received:	**14,641,692**	
(less) Costs:	14,063,218	
Gross Profit:	**578,474**	*(4.1 % of costs)*

By examining the **Financial Report**, we can see that the **turnover** (measured value) in periods 5-8 was as follows :-

Period	Turnover (m)
5	14.8
6	6.3
7	6.4
8	12.2
	39.7

We aimed for 44m, so we **nearly reached** our target.

The level of turnover is related to :-
- The current work in progress
- The success of the prequalifcation and procurement (estimating and bidding) areas of the business, which we'll now examine in more detail.

Forming a Company Strategy - 2

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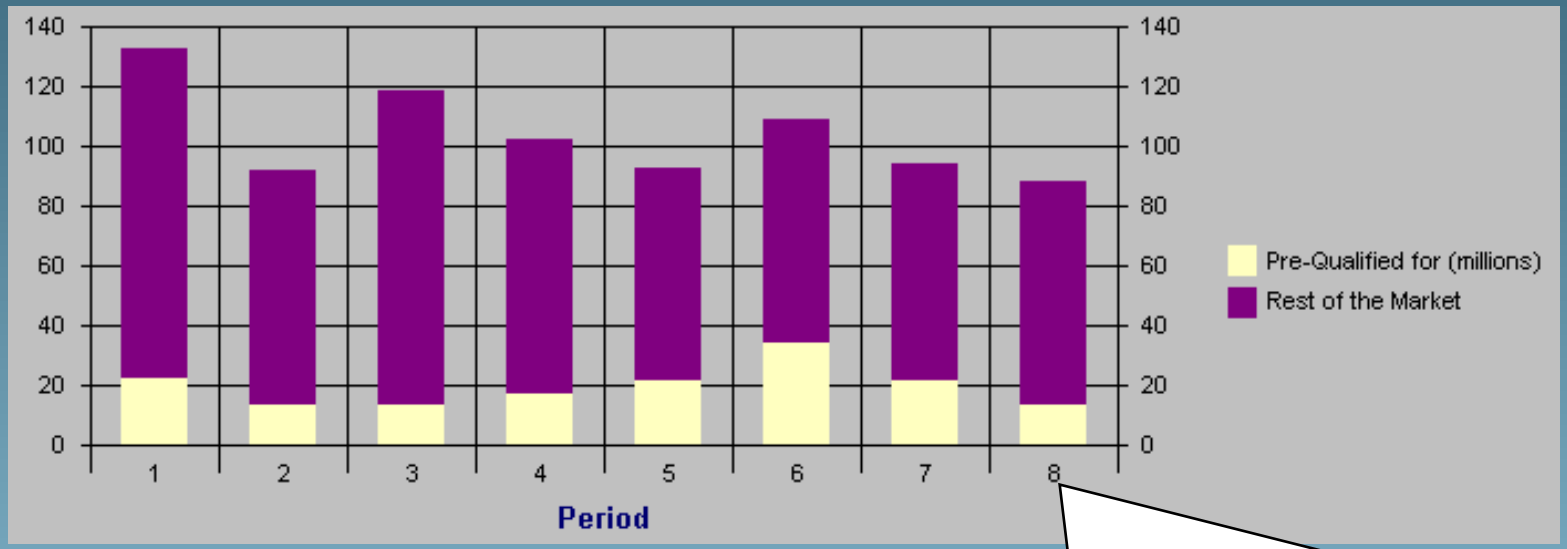

Prequalification

By employing more marketing staff,and directing resources into the market sectors that appeared to be growing, the company's **share of the total market** increased on average over periods 5-8, although there was a disappointing result in period 8.

Forming a Company Strategy - 2

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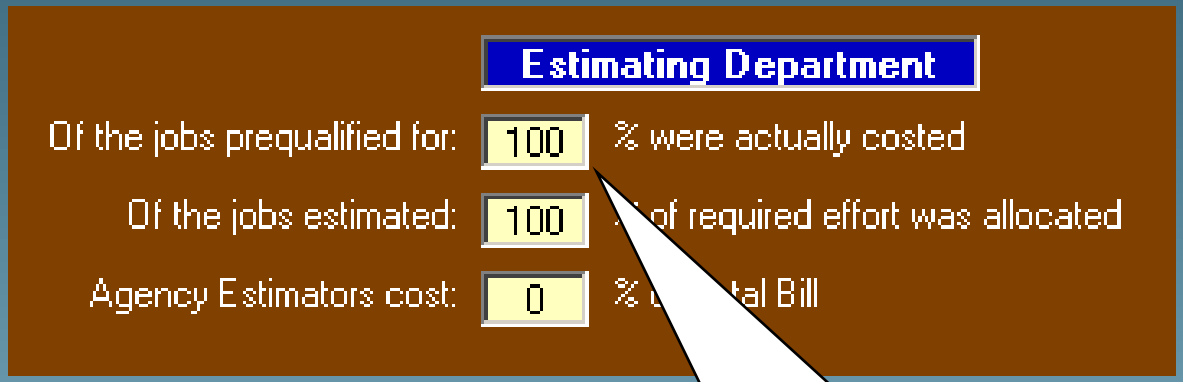

Estimating
In periods 5-8, 100% of the jobs prequalified for were costed, giving the company the opportunity to bid for as many contracts as possible.

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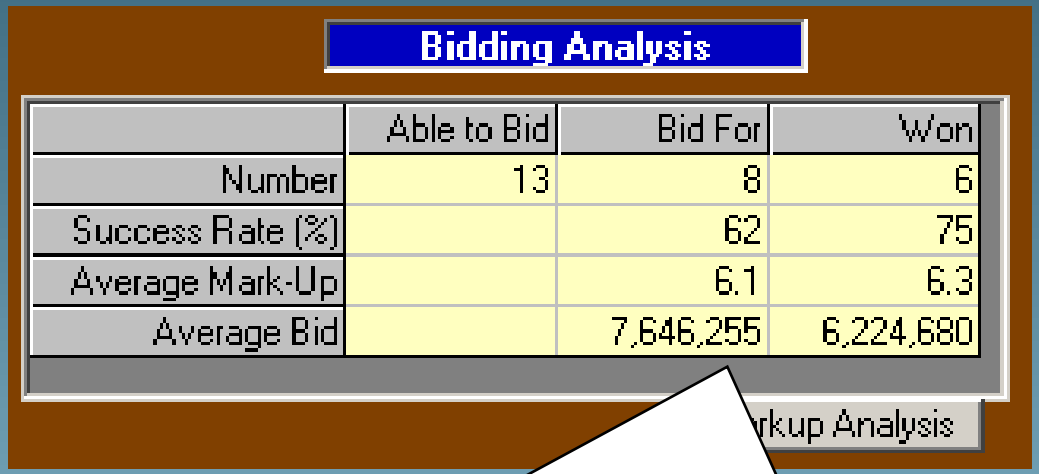

Bidding

Having prequalified for and costed jobs, to increase turnover it is essential that some of the jobs are successfully tendered for at the bidding stage.

As we can see from the **Performance Statistics**, during periods 5-8 the company bid for 8 of the 13 jobs that it was able to, and won 6, which was the key factor in the large increase in company turnover during the second year.

Forming a Company Strategy - 2

Objective

To aim for steady, profitable growth, increasing turnover from 11mm (last period of the History) to 44m in the next year through increasing prequalification for new work, and competitive tendering.

Forming a Company Strategy - 3

Objective

To improve the value of the company from 4.5m to 5m (by 11%) through improved company profits, and making better use of the company's assets.

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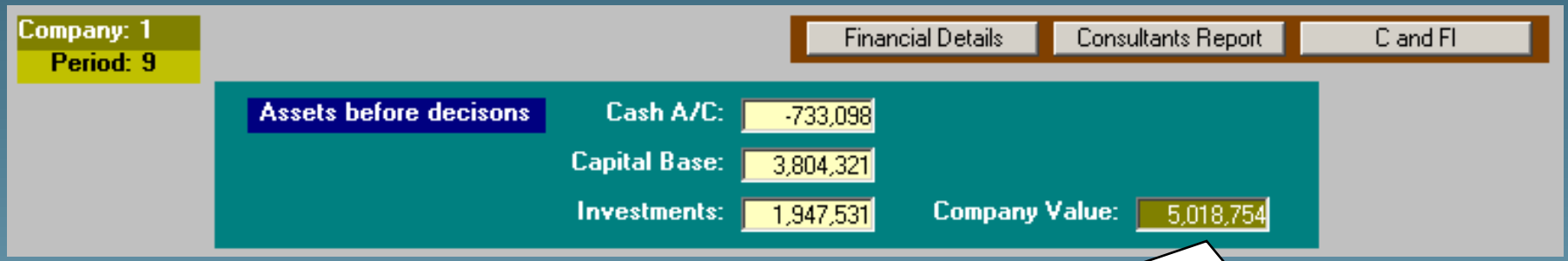

By the end period 8, and the start of period 9, the overall **value of the company** had increased from 4.5m (at the end of period 4) to 5m, representing an annual increase of **11%**, inline with the original objective.

An increase in company value is achieved through a number of means :-

- Good job and overhead management to generate a operating profit (profitable growth), and increase cashflow.
- Utilising the company's capital base to secure and progress more work.
- Making effective use of the company's assets, such as identifying good investment opportunities that yield a better return than the bank offers, or investments that can secure reduced job costs.

We'll now examine these areas to see which ones contributed to the increase in company value in the last year.

Forming a Company Strategy - 3

Objective

To improve the value of the company from 4.5m to 5m (by 11%) through improved company profits, and making better use of the company's assets.

Operating Profit

In the History the company made an operating loss of 1% (before tax & interest).

However, in periods 5-8 the loss was **turned into a profit of 2.6%**, through a combination of good job and overhead management.

The profit would have fed directly into the cash account, improving the company's value.

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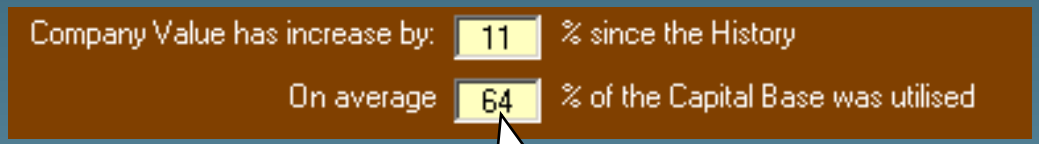

Capital Employed

If the company's capital base (plant, equipment, buildings etc) is being utilised (**capital employed**), through contract progression, then there is more chance of the company making a profit.

In the History, only 32% of the capital base was utilised, but this substantially increased to **64%** during periods 5-8 as more work was secured.

Forming a Company Strategy - 3

Objective

To improve the value of the company from 4.5m to 5m (by 11%) through improved company profits, and making better use of the company's assets.

Average amount invested:	1,147,378	per period
Average % return on investments:	6.2	%
Job costs were reduced by:	0.35	% due to build cost savings from investments

Investments

Investments in other concerns had two positive results :-

• An excellent average return of **6.2% per period** on investments was made, which was far more than the equivalent return from the bank of around 1.3% per period.

• Overall build costs were reduced by 0.35% by investing in appropriate companies e.g., investments in Robinson Pipelines Plc reduced material costs on Water & Sewage contracts.

Forming a Company Strategy - 3

Objective

To improve the value of the company from 4.5m to 5m (by 11%) through improved company profits, and making better use of the company's assets.

Forming a Company Strategy - 4

Objective

To ensure that company overheads, especially the Head Office, QHSE and Measurement departments, are staffed sufficiently to manage with the increasing turnover.

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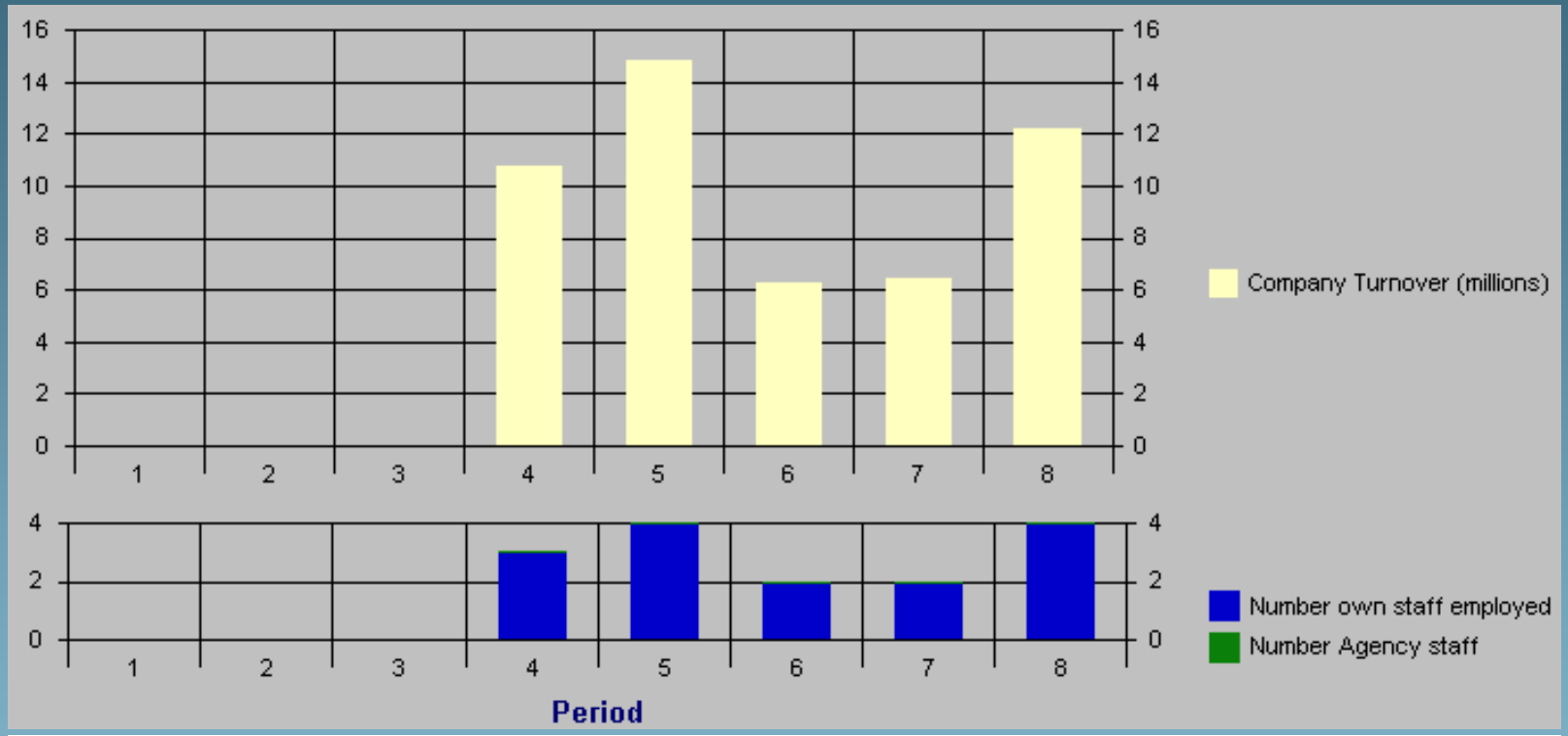


Looking at the **Head Office Department** as an example. The **benchmark (last period of the History, period 4)** staffing was 3 staff could cope with around 11m of turnover per period, or 3.7m per person.

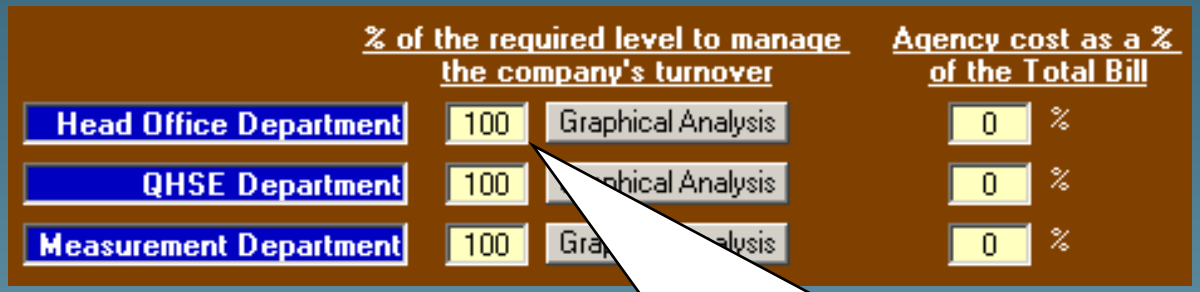
Turnover per period fluctuated a lot during periods 5-8, and the staffing levels were adjusted accordingly.

It would appear at first glance that Head Office staffing levels were sufficient, but this can be verified by referring to the **Performance Statistics**.

Forming a Company Strategy - 4

Objective

To ensure that company overheads, especially the Head Office, QHSE and Measurement departments, are staffed sufficiently to manage with the increasing turnover.



Clearly the Head Office Department was **adequately staffed**, at 100% of the required level to manage the company's turnover.

Similarly, the QHSE and Measurement Departments, whose staffing is dependent upon the company's turnover, were equally adequately staffed.

We have **succeeded** in our objective of maintaining sufficient staffing levels in the Head Office, QHSE and Measurement Departments.

Forming a Company Strategy - 4

Objective

To ensure that company overheads, especially the Head Office, QHSE and Measurement departments, are staffed sufficiently to manage with the increasing turnover.

Forming a Company Strategy - 5

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To improve the company's share price.

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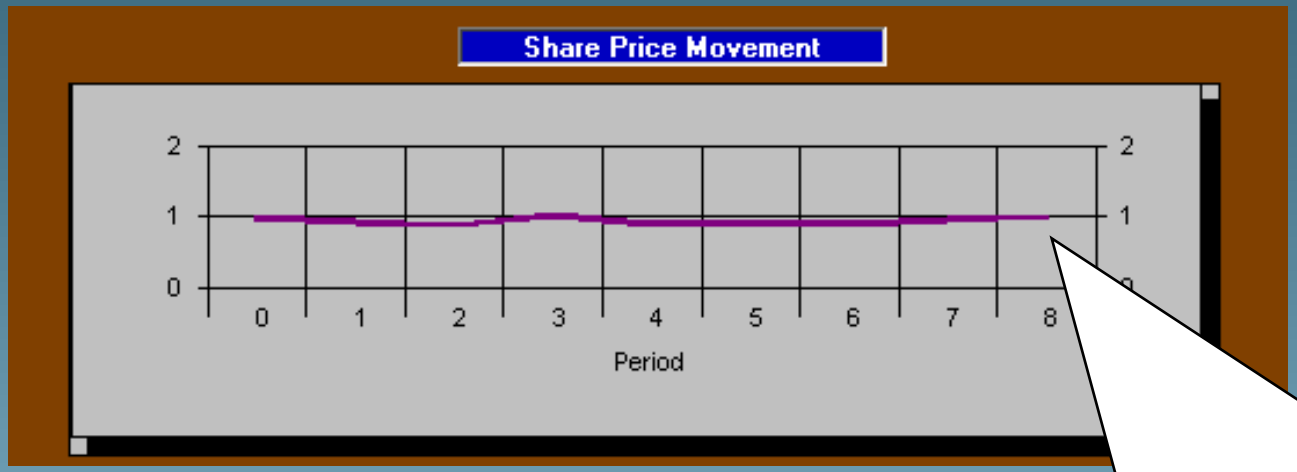

The company share price at the end of period 4 was 0.9.

By the end of period 8, the share price had risen to 1.01, **meeting the original objective**, although it was not a significant rise.

We'll now look in more depth at the key areas that influenced the share price :-

- Dividend payments to shareholders
- Changes in company value
- Changes in company future profitability
- Changes in company debt burden (gearing ratio)

Forming a Company Strategy - 5

Objective

To improve the company's share price.

Factors Affecting Share Price

Period	Dividend Payments: Initial Equity	Dividend	% of Equity	Company Value	Forward Margin	Gearing Ratio	Share Information at end of period: Num Shares	Share Price	Equity
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1	5,000,000
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	0.94	4,700,000
2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000	0.88	4,400,000
3	4,400,000	66,000	1.5	4,624,096	1,410,421	0.000	5,000,000	1.02	5,100,000
4	5,100,000	76,500	1.5	4,512,598	1,011,325	0.000	5,000,000	0.9	4,500,000
5	4,500,000	67,500	1.5	4,743,687	747,174	0.000	5,000,000	0.94	4,700,000
6	4,700,000	70,500	1.5	4,626,825	983,771	0.036	5,000,000	0.9	4,500,000
7	4,500,000	67,500	1.5	4,749,450	1,472,309	0.114	5,000,000	0.97	4,850,000
8	4,850,000	72,750	1.5	5,018,754	1,102,650	0.127	5,000,000	1.01	5,050,00

4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the company
5	The declining future profitability has not helped industry confidence in the company
5	Shareholders are content with the level of dividend paid
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6	The increasing future profitability has improved industry confidence in the company
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There are 2 sources of interactive information that enable a detailed breakdown of the factors affecting the share price to be undertaken :-

- The **Financial Details**, accessed from the Financial Decisions Screen.
- The **External Performance Review**, compiled each period by a consultant hired by the company.

Forming a Company Strategy - 5

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Dividend Payments

In the History (periods 1 to 4) a dividend of 1.5% was was paid each period (6% per annum), which kept the shareholders content.

In periods 5-8 the **level of dividend was maintained**, which continued to keep the shareholders content.

However, although the dividend was sufficient to keep the shareholders content, it would not have had any noticeable affect on the share price, so what did ?

Forming a Company Strategy - 5

Objective

To improve the company's share price.

Factors Affecting Share Price

Period	Dividend Payments: Initial Equity	Dividend	% of Equity	Company Value	Forward Margin	Gearing Ratio	Share Information at end of pe: Num Shares	Share Price	
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Company Value

Although there was a slight fall in period 6, in general there was a **steady increase in company value** in periods 5-8, which had a positive affect on industry confidence in the company, and this would have helped to increase the company share price.

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Future Profitability

The company's **Future profitability** (forward margin) fluctuated significantly in periods 5-8, having both a positive and negative affect on industry confidence and the company's share price, as can be seen by the comments in the **External Performance Review**.

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4	5,100,000	76,500	1.5	4,512,598	1,011,325	0.000	5,000,000	0.9	4,5
5	4,500,000	67,500	1.5	4,743,687	747,174	0.000	5,000,000	0.94	4,7
6	4,700,000	70,500	1.5	4,626,825	983,771	0.036	5,000,000	0.9	4,5
7	4,500,000	67,500	1.5	4,749,450	1,472,309	0.114	5,000,000	0.97	4,8
8	4,850,000	72,750	1.5	5,018,754	1,102,650	0.127	5,000,000	1.01	5,0

4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the compa
5	The declining future profitability has not helped industry confidence in th
5	Shareholders are content with the level of dividend paid
5	The increasing company value has noticeably improved i
6	The increasing future profitability has improved i
6	The Gearing Ratio increase has margin
6	Shareholders are content with th
6	The declining company
7	Investing in Mockridge & Sons Joinery Ltd is producing a poor return
7	The increasing future profitability has noticeably improved industry confidence in the company
7	The Gearing Ratio increase has noticeably reduced industry confidence in the Company
7	Shareholders are content with the level of dividend paid
7	The increasing company value has improved industry confidence in the company
8	Investing in Mockridge & Sons Joinery Ltd is producing a poor return
8	The declining future profitability has not helped industry confidence in the company
8	Shareholders are content with the level of dividend paid
8	The increasing company value has noticeably improved industry confidence in the company

Gearing Ratio

The gearing ratio of the company is a measure of its **debt liability**, and is 0 unless the cash account is overdrawn.

During the History the cash account was always in credit, and the gearing ratio was 0 throughout. Since there was never any change in the ratio, there was no impact on the company share price.

However, in periods 6 to 8 the cash account went into **overdraft**, financing other activities (capital base expansion and investments), and the gearing ratio increased. During these periods industry confidence (as a result of gearing) declined, and this would have had a negative affect on the share price.

Forming a Company Strategy - 5

Objective

To improve the company's share price.

Factors Affecting Share Price

Period	Dividend Payments: Initial Equity	Dividend	% of Equity	Company Value	Forward Margin	Gearing Ratio	Share Information at end of period: Num Shares	Share Price	Equity
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1	5,000,000
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	0.94	4,700,000
2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000	0.88	4,400,000
3	4,400,000	66,000	1.5	4,624,096	1,410,421	0.000	5,000,000	1.02	5,100,000
4	5,100,000	76,500	1.5	4,512,598	1,011,325	0.000	5,000,000	0.9	4,500,000
5	4,500,000	67,500	1.5	4,743,687	747,174	0.000	5,000,000	0.94	4,700,000
6	4,700,000	70,500	1.5	4,626,825	983,771	0.036	5,000,000	0.9	4,500,000
7	4,500,000	67,500	1.5	4,749,450	1,472,309	0.114	5,000,000	0.97	4,850,000
8	4,850,000	72,750	1.5	5,018,754	1,102,650	0.127	5,000,000	1.01	5,050,000

4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence i
5	The declining future profitability has not helped industry c
5	Shareholders are content with the level of divid
5	The increasing comp
6	The increasing future
6	The Gearing Ratio in
6	Shareholders are cor
6	The declining compa
7	Investing in Mockridg
7	The increasing future
7	The Gearing Ratio in
7	Shareholders are cor
7	The increasing comp
8	Investing in Mockridg
8	The declining future
8	Shareholders are cor
8	The increasing comp

Summary

The company's share price did **rise slightly** during periods 5-8, in line with company strategy, but there were factors that both contributed to and hindered this rise.

- **Dividend** had no affect, since the level paid was just enough to keep the shareholders happy.
- Changes in **Company Value**, on the whole, had a positive affect, and was the main reason for the overall rise in share price.
- Changes in **Forward Profitability** had mixed affects.
- Changes in **Gearing** had a negative affect.

Although there were mixed affects, the positive affects had a slightly **greater impact** than the negative affects, and this accounted for the small rise in the share price.

Forming a Company Strategy - 5

Objective

To improve the company's share price.

Factors Affecting Share Price

	Dividend Payments			Company	Forward	Gearing	Share Information at end of period		
Period	Initial Equity	Dividend	% of Equity	Value	Margin	Ratio	Num Shares	Share Price	Equity
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1	5,000,000
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	0.94	4,700,000
2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000	0.88	4,400,000
3	4,400,000	66,000	1.5	4,624,096	1,410,421	0.000	5,000,000	1.02	5,100,000
4	5,100,000	76,500	1.5	4,512,598	1,011,325	0.000	5,000,000	0.9	4,500,000
5	4,500,000	67,500	1.5	4,743,687	747,174	0.000	5,000,000	0.94	4,700,000
6	4,700,000	70,500	1.5	4,626,825	983,771	0.036	5,000,000	0.9	4,500,000
7	4,500,000	67,500	1.5	4,749,450	1,472,309	0.114	5,000,000	0.97	4,850,000
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Forming a Company Strategy - 6

Objective

To build on and improve existing client relationships.

Forming a Company Strategy - 6

Objective

To build on and improve existing client relationships.

Client	Description of Relationship
Electragen	No relationship
English Waterways	No relationship
Fenlands County Council	satisfactory
Kegworth Airport	No relationship
London City Council	satisfactory
London Water Services Ltd	No relationship
Lowry Homes	No relationship

At the end of period 4, when we took control of the company the following relationships were already in place.

Client	Description of Relationship
Electragen	satisfactory
English Waterways	No relationship
Fenlands County Council	fairly good
Kegworth Airport	satisfactory
London City Council	fairly good
London Water Services Ltd	satisfactory
Lowry Homes	No relationship

Relationships have improved in two ways :-

• Where there was no relationship, such as with **Kegworth Airport**, with whom there is now a satisfactory relationship..

• Where a relationship existed already, such as such as turning a satisfactory relationship with the **Fenlands County Council** into a fairly good one.

Forming a Company Strategy - 6

Objective

To build on and improve existing client relationships.

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1280	114	186	106	158	217	160	41	74	104	120
6	1338	118	162	92	154	230	200	50	97	100	135
7	1506	121	194	103	158	253	200	74	146	108	149
8	1583	140	228	116	167	269	220	52	109	112	170

Overall, the company's client satisfaction rating has **risen steadily** each period, further proof that the company's **objectives have been met** with regard to client relationships.

We'll now look at how we have managed to improve the relationships ?

Forming a Company Strategy - 6

Objective

To build on and improve existing client relationships.

Client: **Fenlands County Council**

Current Relationship: **fairly good**

	Job	Per Preq	Description	Estimating Confidence	Bidding details	Job Progress Details: Contract Completion Time	Job Progress Details: Consultant Designer used	Job Progress Details: Project Manager used	Job Progress Details: Level of Site Admin cost allocated
▶	40	4	New sports hall at primary sch	Extremely High	competitive bid, and the job was won	on time	good	very good	

Looking in particular at the relationship with Fenlands County Council, its not hard to see why a fairly good relationship has been formed :-

• 1 job was procured with a competitive bid, and was then managed very well, resulting in it being completed on time.

Forming a Company Strategy - 6

Objective

To build on and improve existing client relationships.

Forming a Company Strategy - 7

Overall, in reviewing our performance against the original strategy, we have done well, and in many areas have achieved the objectives for the year.

We nearly reached our turnover target, improved our company value as required, our overhead departments were adequately staffed, and share price and client relationships improved.

In summary it is possible to manage a company without any clear strategy in place.

However, this would require a very reactive approach to running the business, which could create untold problems as unforeseen and unconsidered circumstances cause havoc across the organisation.

A clear, well-considered strategy will not guarantee success, but it does give the company the best opportunity to grow profitably within the confines of the market in which it is operating.

However, a strategy is not set in stone, and needs to be regularly reviewed and updated to take advantage of a continuously changing environment.

Decision Entry

The decisions to be entered each period are split by business function.

Choose from the list below for a detailed description of each function.

- Financial
- Overheads
- Estimating
- Bidding
- Personnel
- Construction

The order in which decisions are processed

Keep Clicking Anywhere on the screen to advance the demo

The order in which decisions are processed

The decisions are processed in the order in which they appear on screen :-

The order in which decisions are processed

The decisions are processed in the order in which they appear on screen :-

Current Period

The order in which decisions are processed

The decisions are processed in the order in which they appear on screen :-

Current Period

Financial — Management of company assets and looking after shareholder interests.

The order in which decisions are processed

The decisions are processed in the order in which they appear on screen :-

Current Period

Financial — Management of company assets and looking after shareholder interests.

↓

Overheads — Departmental staffing levels adjusted, and prequalification for new jobs that have become available.

The order in which decisions are processed

The decisions are processed in the order in which they appear on screen :-

Current Period

Financial	Management of company assets and looking after shareholder interests.
↓	
Overheads	Departmental staffing levels adjusted, and prequalification for new jobs that have become available.
↓	
Estimating	Jobs for which estimating time has been allocated are costed.

The order in which decisions are processed

The decisions are processed in the order in which they appear on screen :-

Current Period

Financial	Management of company assets and looking after shareholder interests.
↓	
Overheads	Departmental staffing levels adjusted, and prequalification for new jobs that have become available.
↓	
Estimating	Jobs for which estimating time has been allocated are costed.
↓	
Bidding	Bids are submitted, and contracts awarded.

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Personnel	Project managers allocated to on-going jobs.

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↓	
Construction	On-going jobs progressed in line with labour and site cost decisions.

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↓	
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Personnel	Project managers allocated to on-going jobs.
↓	
Construction	On-going jobs progressed in line with labour and site cost decisions.

The Demo is now complete

The order in which decisions are processed

The decisions are processed in the order in which they appear on screen :-

Current Period

Financial	Management of company assets and looking after shareholder interests.
↓	
Overheads	Departmental staffing levels adjusted, and prequalification for new jobs that have become available.
↓	
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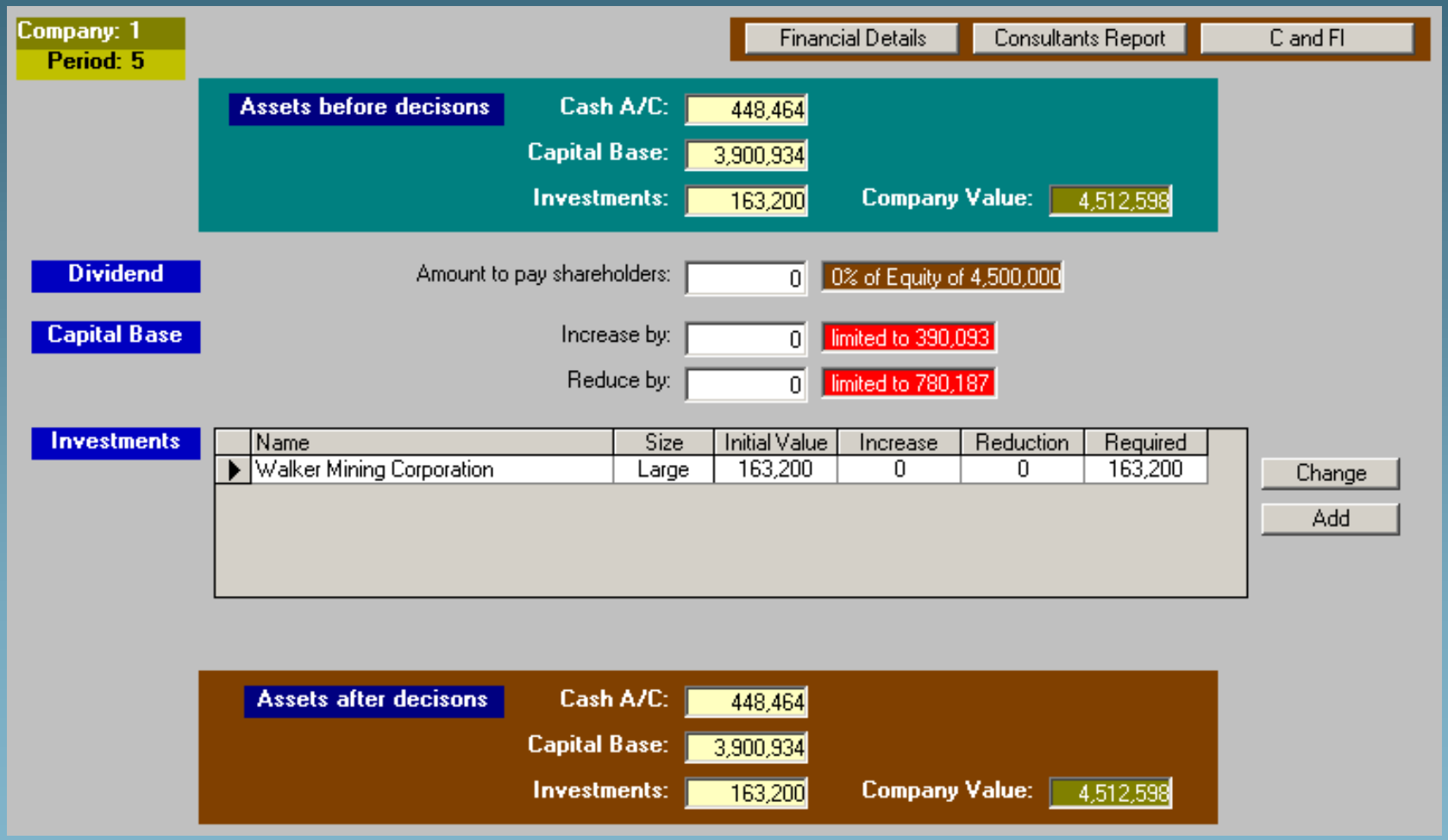
↓	
Bidding	Bids are submitted, and contracts awarded.
↓	
Personnel	Project managers allocated to on-going jobs.
↓	
Construction	On-going jobs progressed in line with labour and site cost decisions.

Financial Decisions

The role of the Financial Manager is to :-

- Look after the shareholders' interests
- Make the best use of the Company's assets to try and increase the Company's value

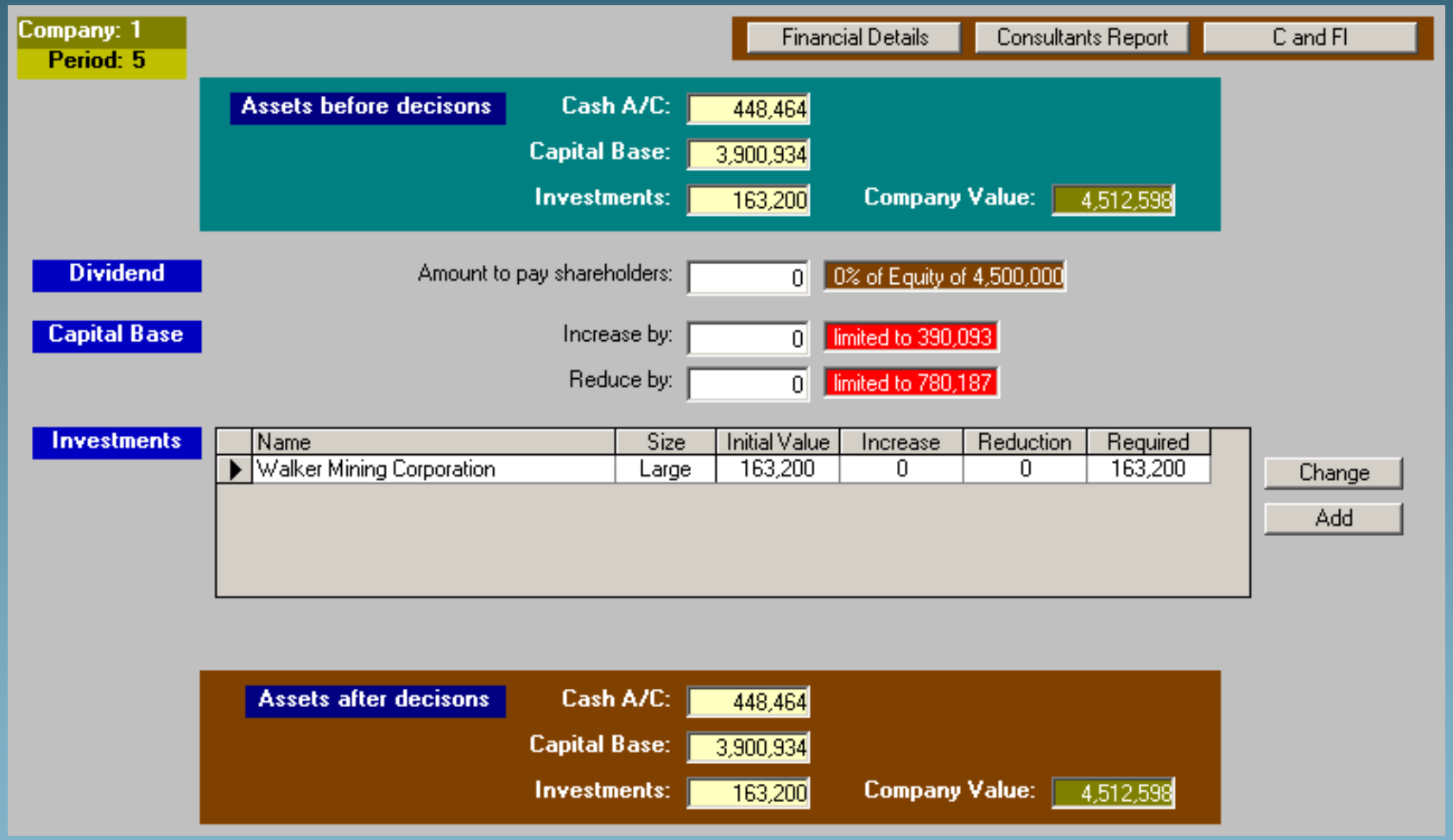


Entering Financial Decisions - 1

Keep Clicking Anywhere on the screen to advance the demo

Entering Financial Decisions - 1

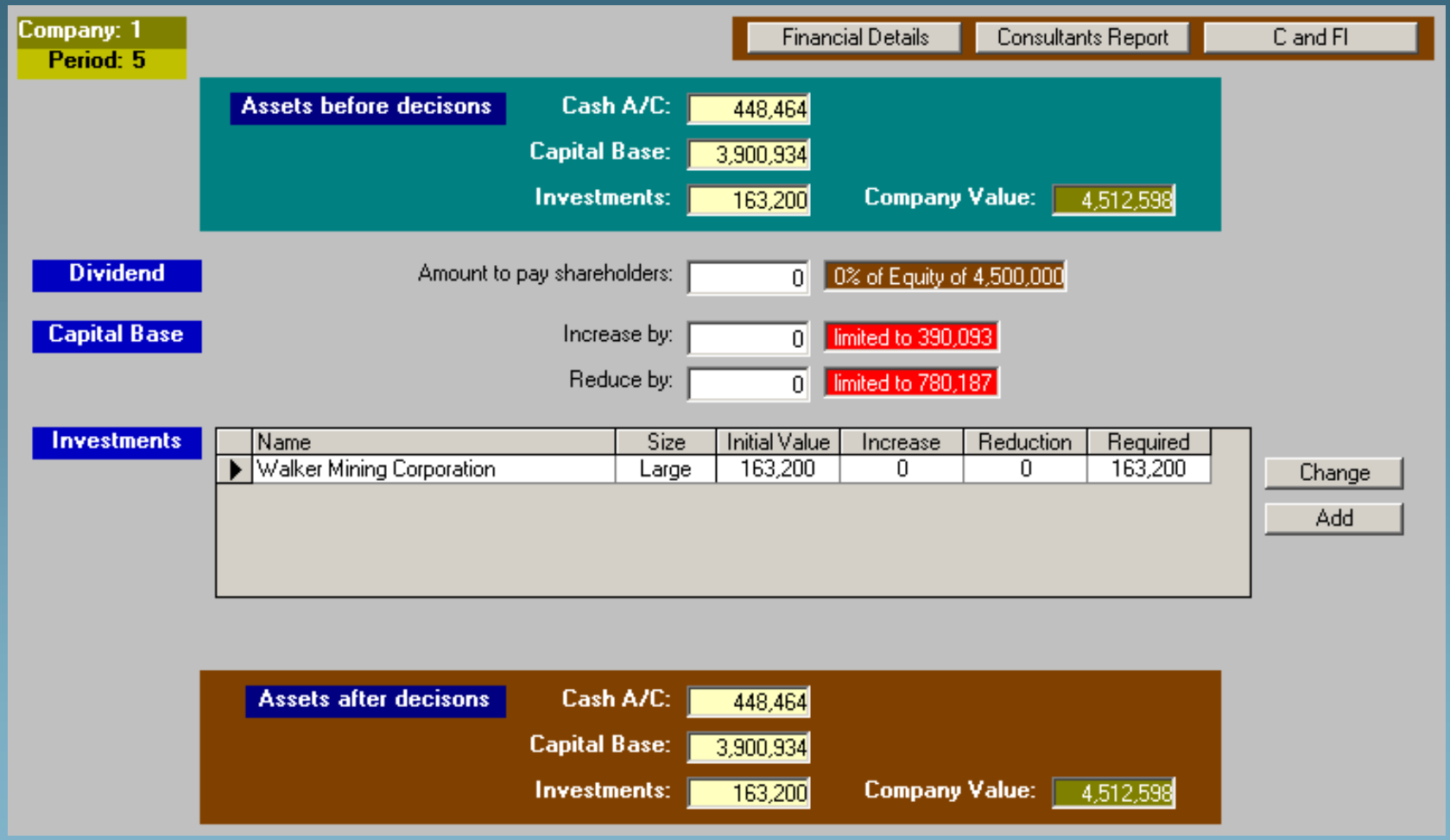
Its period 5, and the Financial Manager needs to make review the financial structure of the company, and decide upon any changes that need to be made.



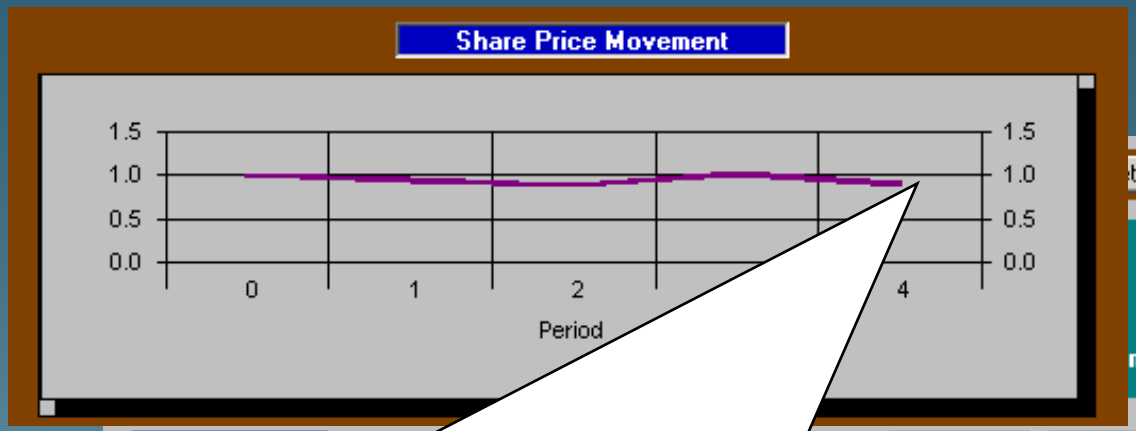
Main Quit

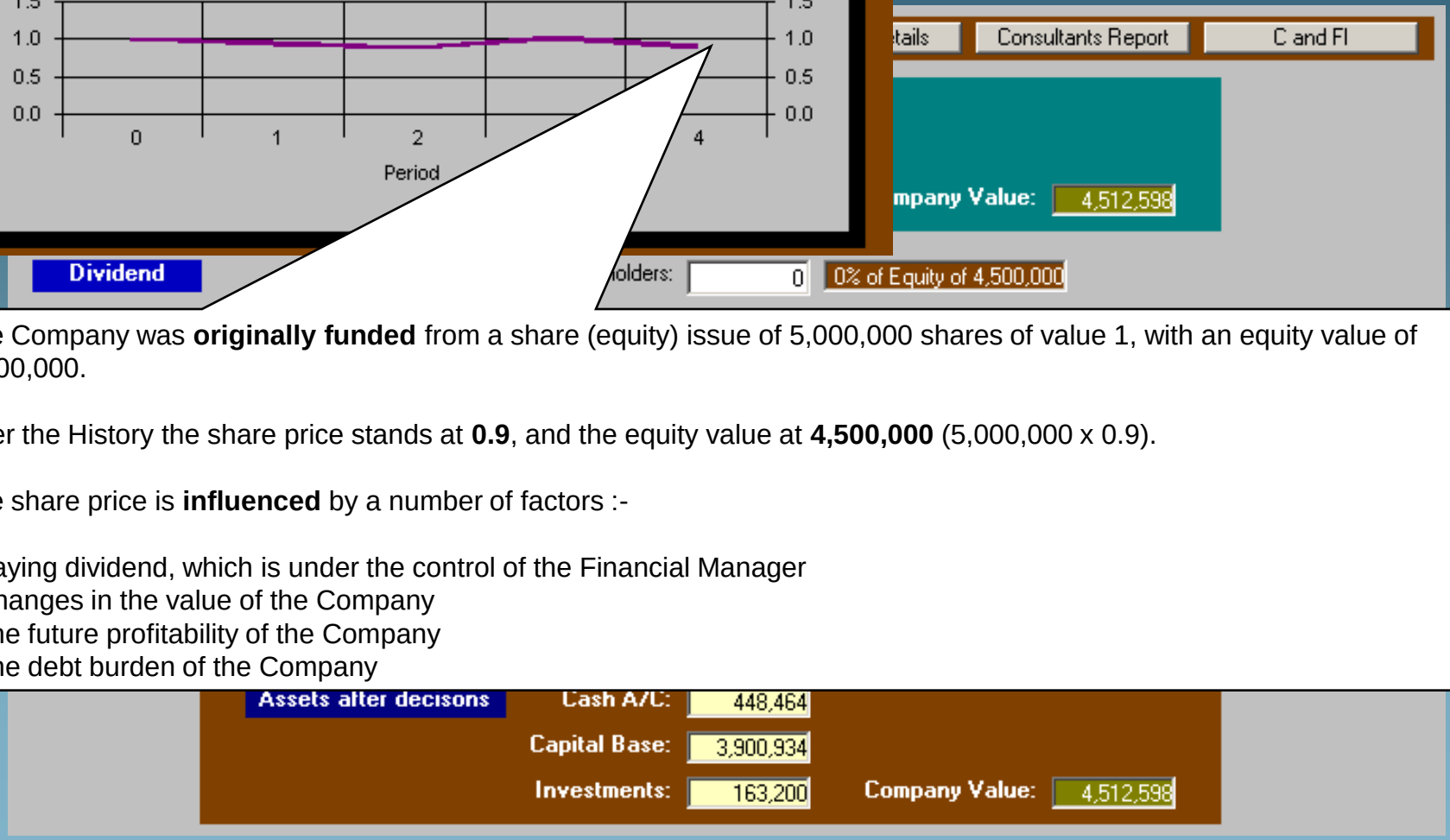
Entering Financial Decisions - 1

One of the key responsibilities of the Financial Manager is to look after the interests of the company's shareholders.



Entering Financial Decisions - 1





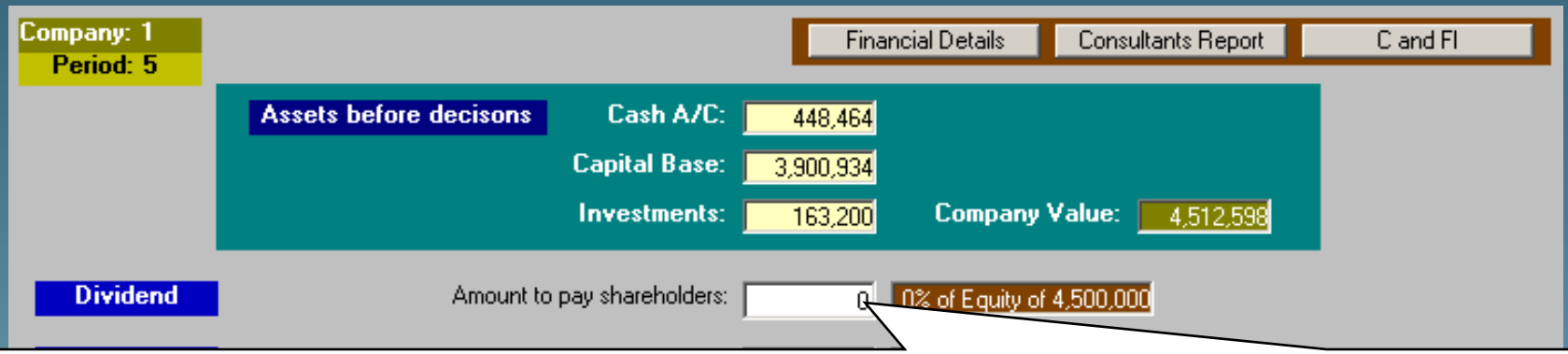
The Company was **originally funded** from a share (equity) issue of 5,000,000 shares of value 1, with an equity value of 5,000,000.

After the History the share price stands at **0.9**, and the equity value at **4,500,000** (5,000,000 x 0.9).

The share price is **influenced** by a number of factors :-

- Paying dividend, which is under the control of the Financial Manager
- Changes in the value of the Company
- The future profitability of the Company
- The debt burden of the Company

Entering Financial Decisions - 1



Dividend

Dividends are taxable payments declared by a company's board of directors and given to its shareholders, normally quarterly. They provide an incentive to own stock in stable companies even if they are not experiencing much growth.

The dividend paid to shareholders is one of the key factors that affects the company **share price** :-

- **Insufficient dividend** will disappoint the shareholders and reduce the share price.
- **Sufficient dividend** will keep the shareholders content, with no change in the share price.
- **Ample dividend** will make the shareholders very happy, and increase the share price.

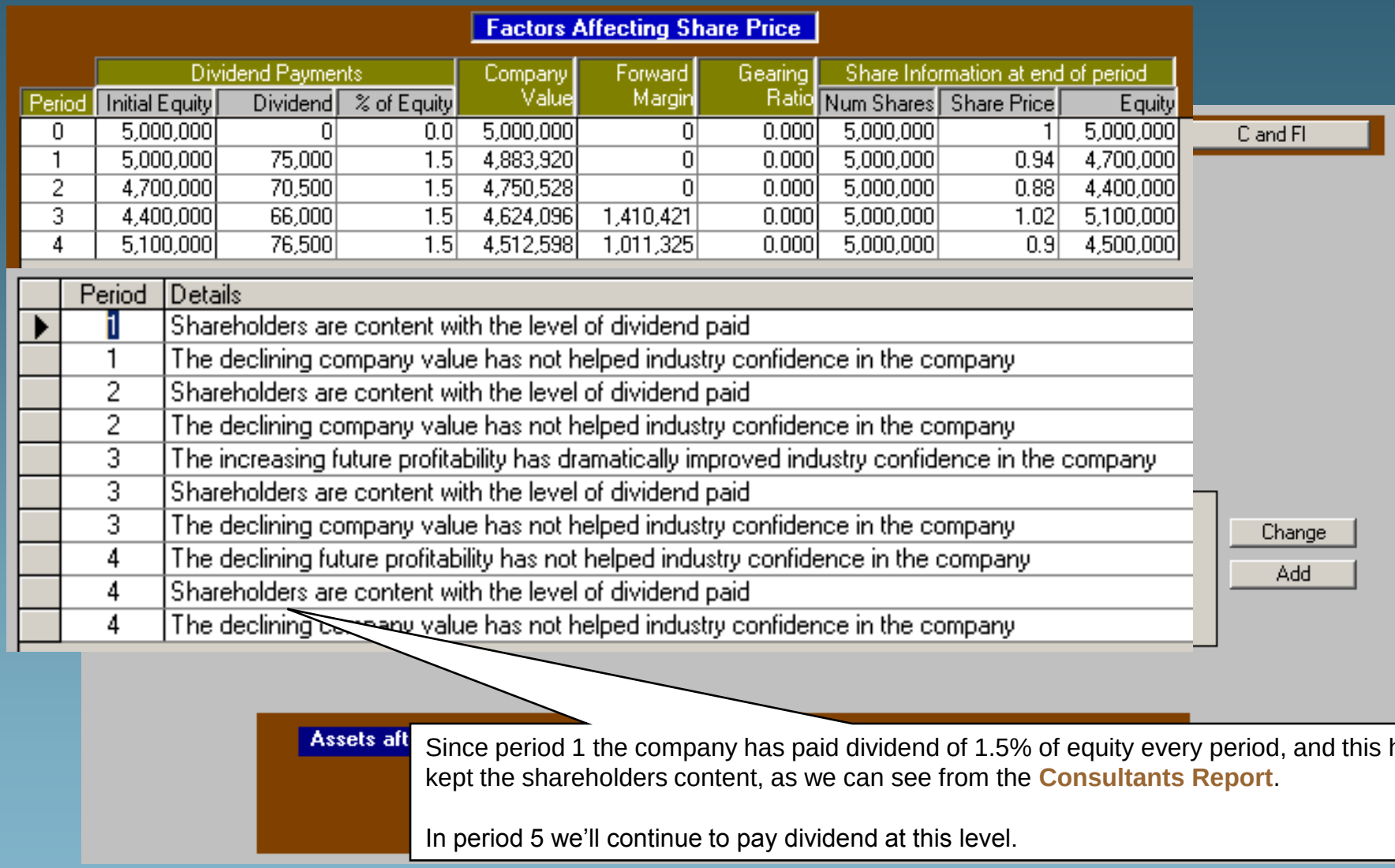
The affect on share price is determined by the **% of the company's equity** that is paid as a dividend.

Clues as to the affects of different levels of dividend are available by examining what happened in the History, using the **Financial Details** and **Consultants Report**.

Key Point

As the share price changes, so does the equity value of the company, and paying the same level of dividend in consecutive periods will have a different affect on share price as the % of equity changes.

Entering Financial Decisions - 1



Factors Affecting Share Price

Period	Dividend Payments: Initial Equity	Dividend	% of Equity	Company Value	Forward Margin	Gearing Ratio	Share Information at end of period: Num Shares	Share Price	Equity
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1	5,000,000
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	0.94	4,700,000
2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000	0.88	4,400,000
3	4,400,000	66,000	1.5	4,624,096	1,410,421	0.000	5,000,000	1.02	5,100,000
4	5,100,000	76,500	1.5	4,512,598	1,011,325	0.000	5,000,000	0.9	4,500,000

C and Fl

Period	Details
1	Shareholders are content with the level of dividend paid
1	The declining company value has not helped industry confidence in the company
2	Shareholders are content with the level of dividend paid
2	The declining company value has not helped industry confidence in the company
3	The increasing future profitability has dramatically improved industry confidence in the company
3	Shareholders are content with the level of dividend paid
3	The declining company value has not helped industry confidence in the company
4	The declining future profitability has not helped industry confidence in the company
4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the company

Change

Add

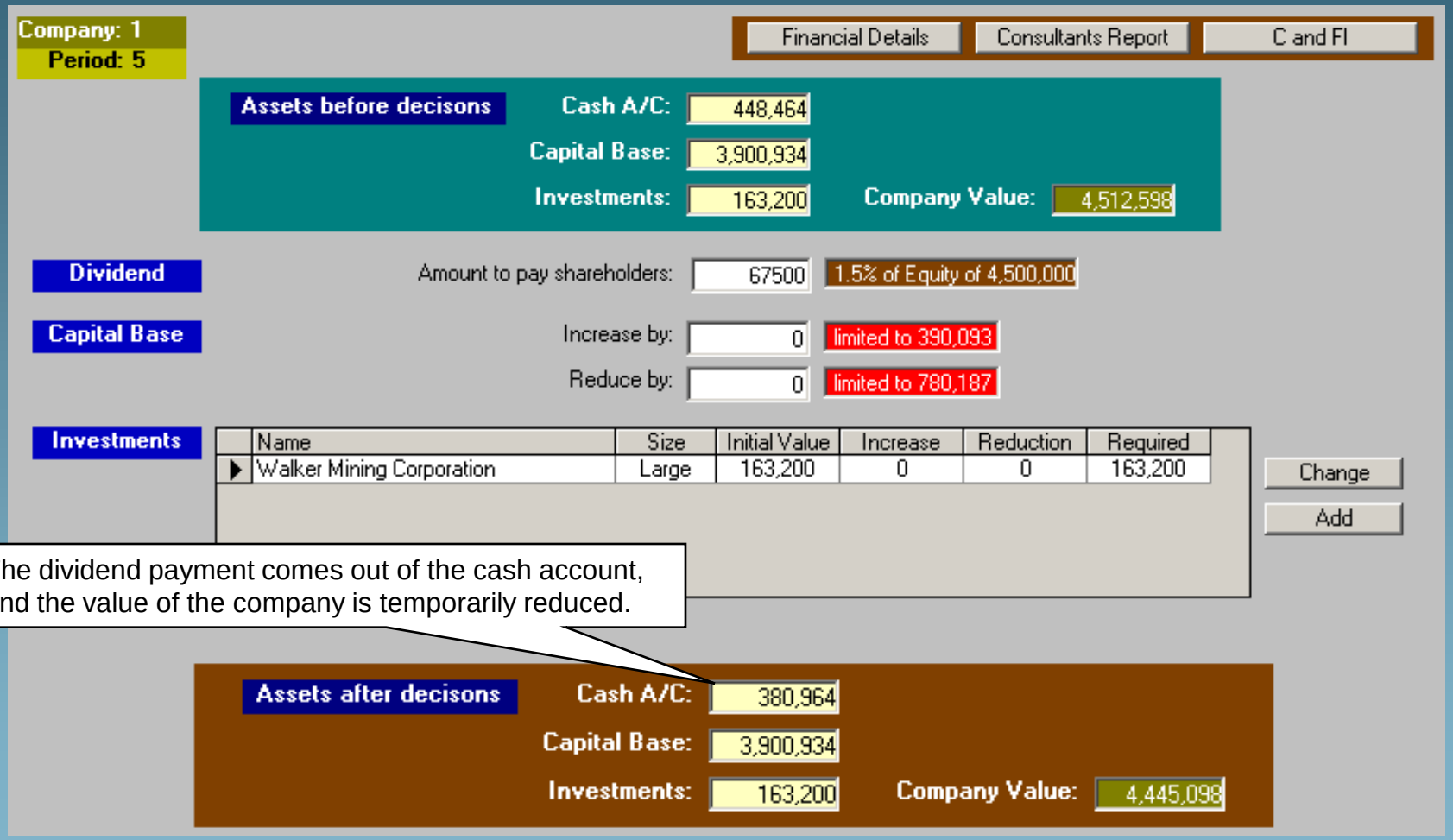
Assets aft

Since period 1 the company has paid dividend of 1.5% of equity every period, and this has kept the shareholders content, as we can see from the **Consultants Report**.

In period 5 we'll continue to pay dividend at this level.

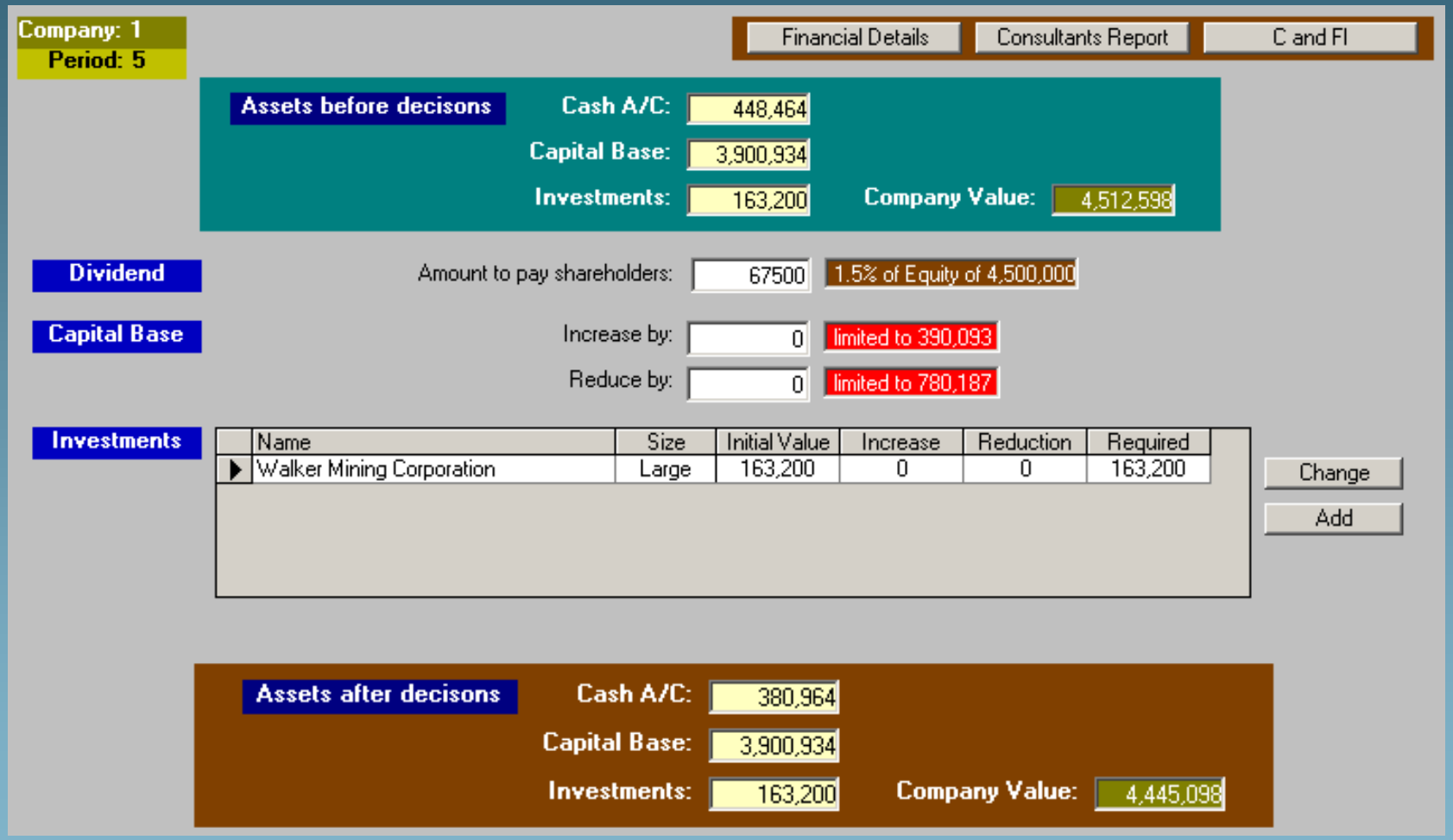
Main Quit

Entering Financial Decisions - 1



Main Quit

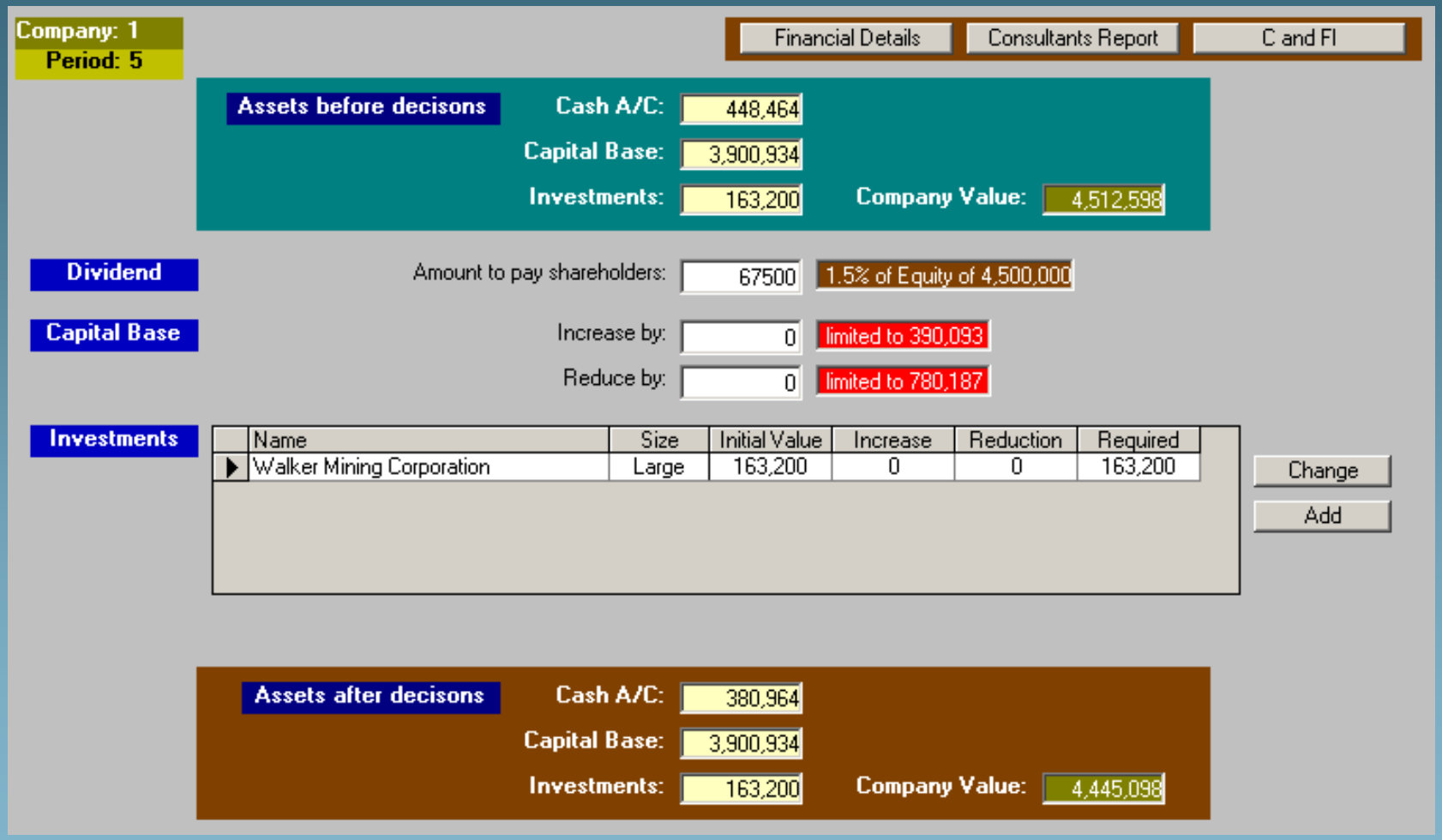
Entering Financial Decisions - 1



Main Quit

Entering Financial Decisions - 2

The other main responsibility of the Financial Manager is to make the best use of the Company's assets to try and increase the Company's value.



Main Quit

Entering Financial Decisions - 2

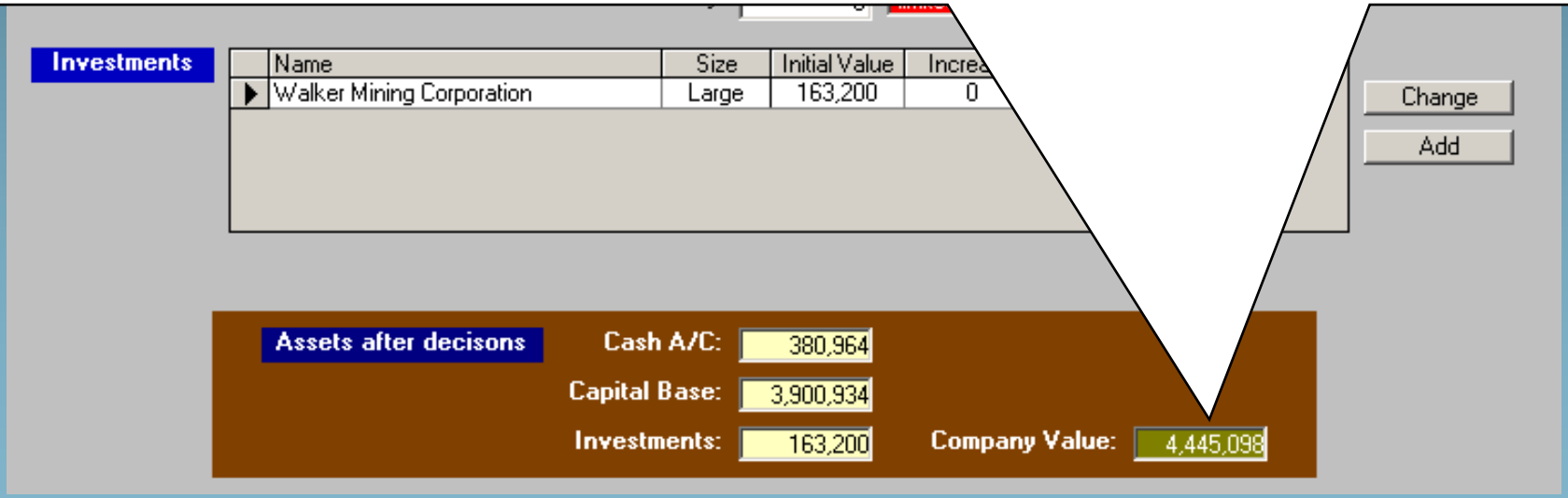
The **value** of the Company at any time is measured by its assets. After paying dividend they consist of :-

Cash in the bank (380,964)
This can either be in credit, or in overdraft, when it is considered a liability. There is an **overdraft limit** defined in the **Company and Financial Information**.

Capital Base (3,900,934)
This is the company's investment in plant, equipment, facilities, buildings etc, which determines the level of work that the company can undertake.

Investments (163,200)
The company's cash investment in other concerns, which may not be construction-related.

The company is currently valued at **4,445,098**.



Entering Financial Decisions - 2

An **increase in company value** can be achieved through :-

Operating Profit

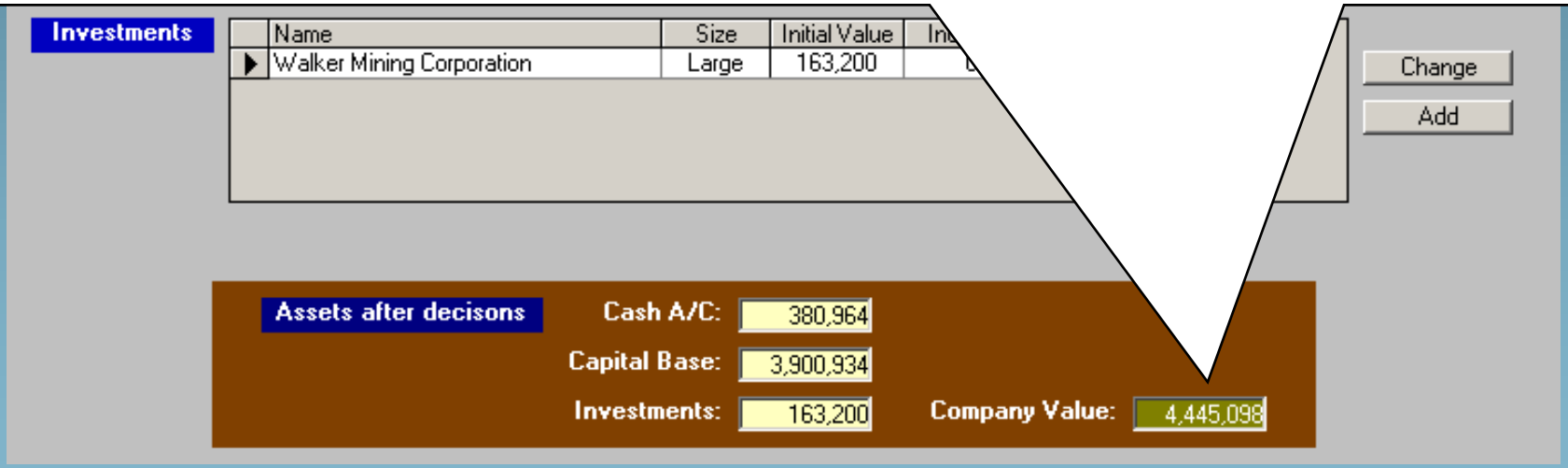
Generating an operating profit which increases the cash account. This can be achieved through good job and overhead management, which is responsibility of other people, and the Financial Manager has **no direct impact** upon this.

Making effective use of the company's assets

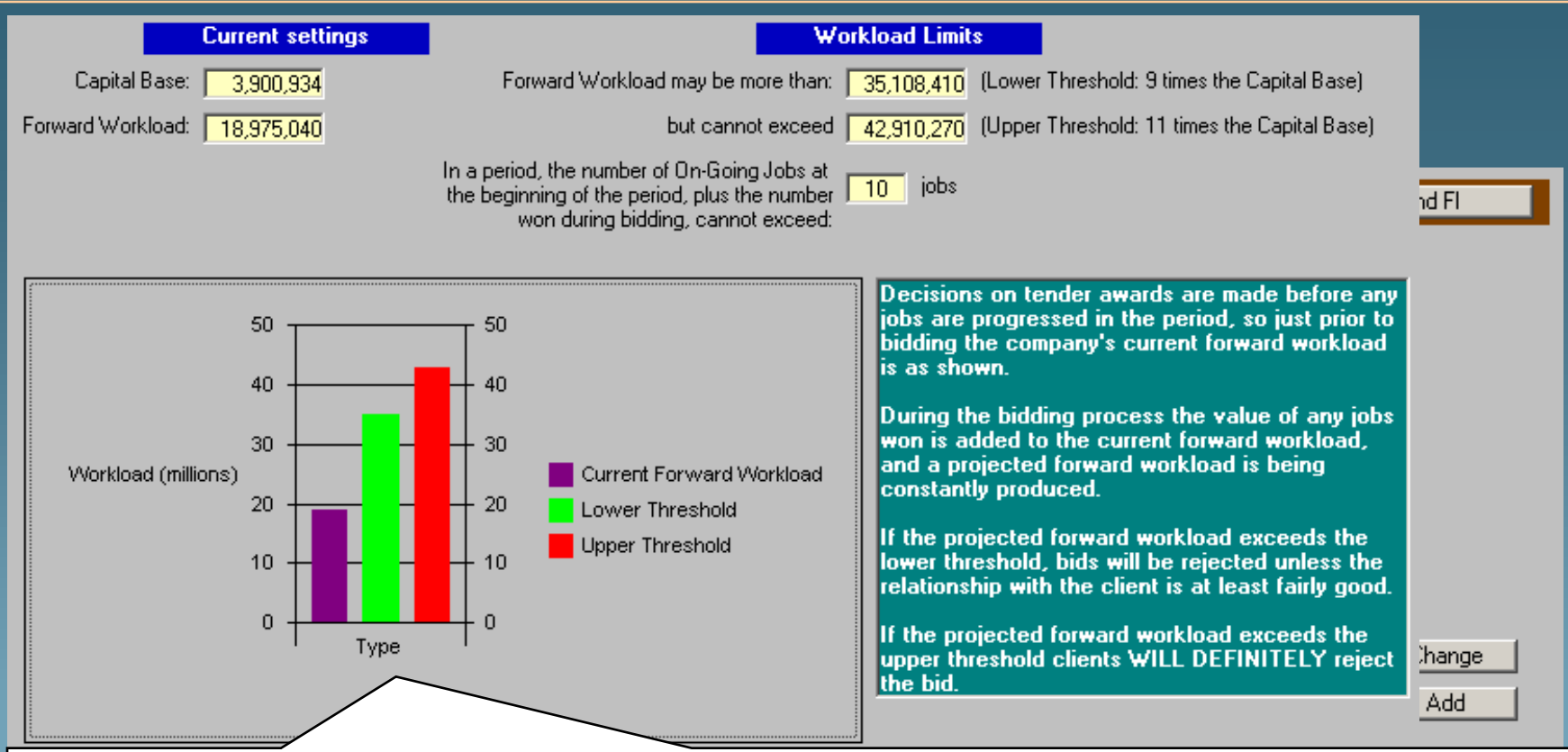
This is the responsibility of the Financial Manager, and a number of choices are available :-

- Using cash to increase the Capital Base and support further growth.
- Selling off a % of the Capital Base to raise cash, which may be desirable if the cash account is in overdraft, or if the Capital Base is not being fully utilised.
- Using cash to invest further in other companies who offer a better return than can be obtained from the bank, or who may be able to reduce costs on jobs in progress.

We'll now look at these options in more detail.



Entering Financial Decisions - 2



Capital Base

The level of future turnover/workload that can be undertaken is **limited** by the size of the company's capital base, as shown on the **Workload Limits** screen (accessed from the **Bidding Screen**).

The capital base of 3.9m can support between 35m and 43m of workload. Since the current forward workload is only 19m, there is still plenty of scope for winning more work. **However, once the company's bidding decisions have been made, there may need to be a reassessment of the size of the capital base to decide if an increase is required.**

At this point in time, since bidding decisions have not been made, and since there is plenty of 'unused' capital base, we'll leave it unchanged.

Capital Base

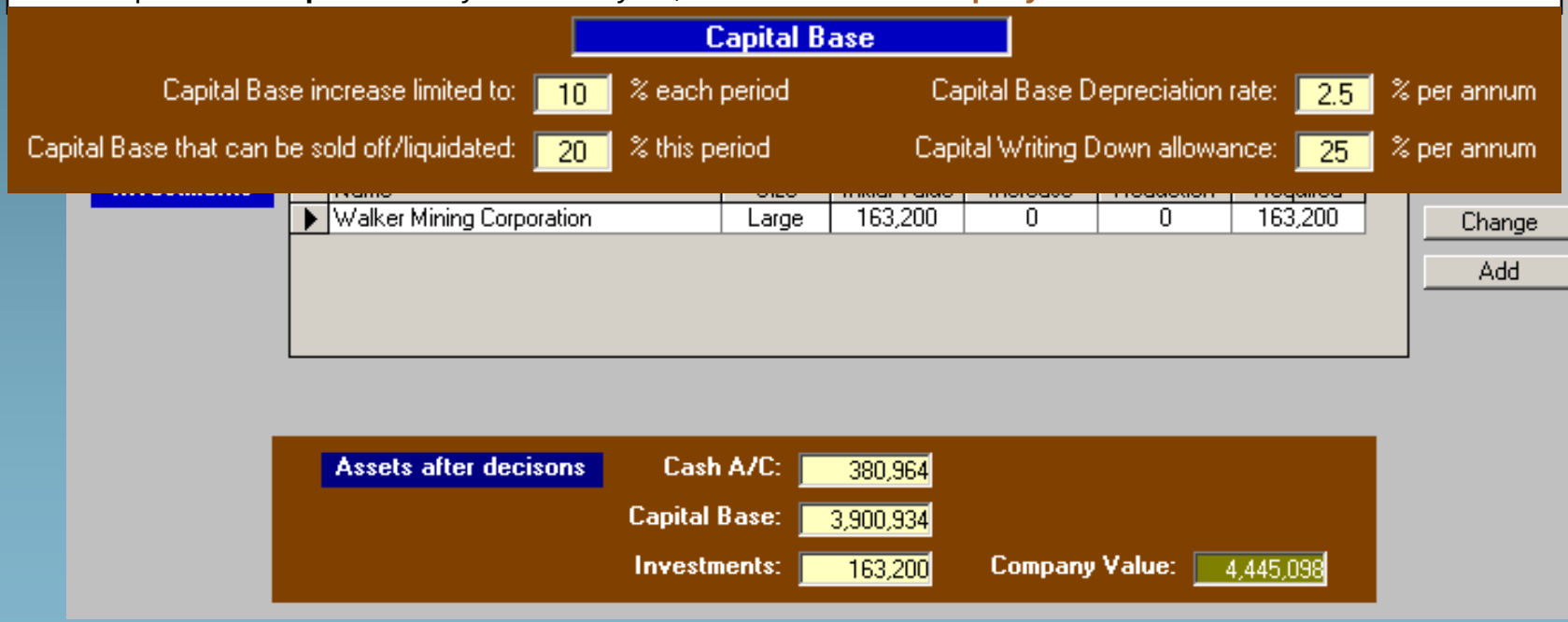
Some additional points to note :-

• Any changes to the capital base also **affect the cash account.**

• If the capital base is being **underutilised**, it may be appropriate to reduce it to raise cash for other uses, such as further investments or reducing an overdraft.

• There are limitations on the changes to the capital base each period, defined in the **Company and Financial Information**.

• The capital base **depreciates** by a % each year, as shown in the **Company and Financial Information.**



Entering Financial Decisions - 2

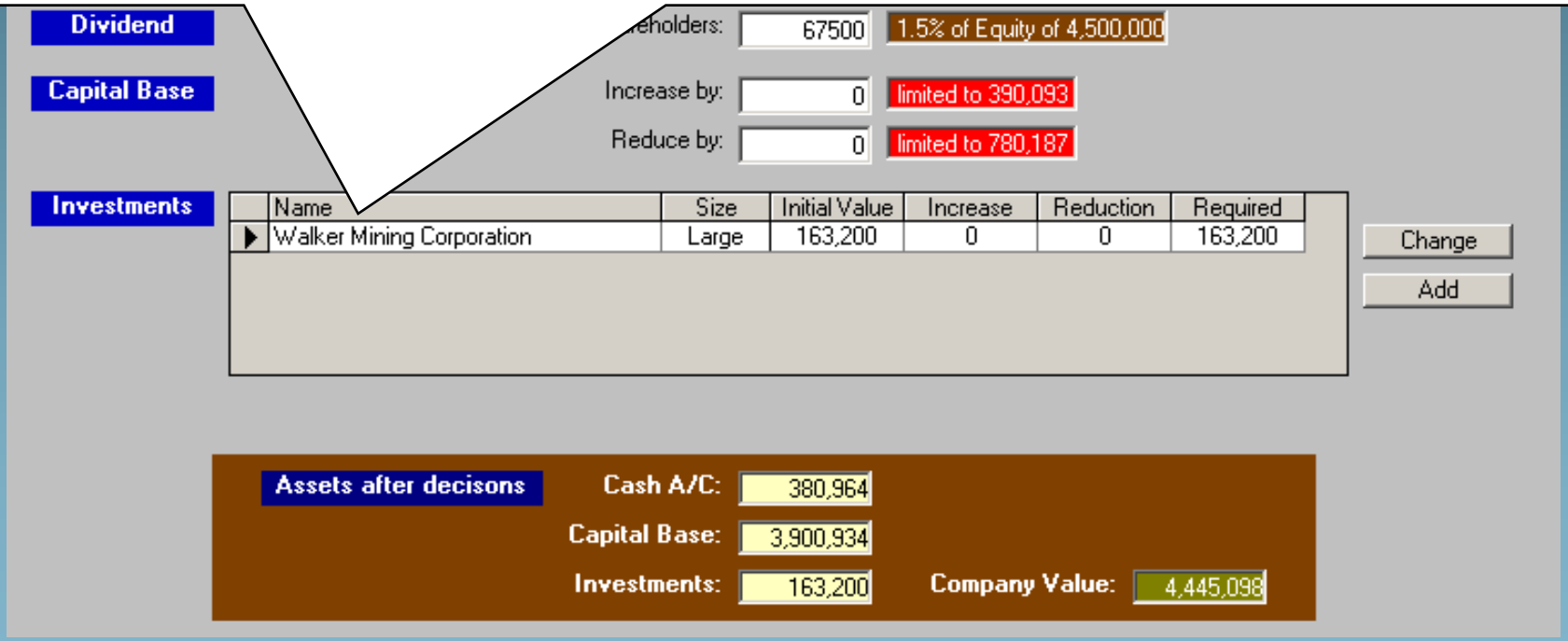
Investments

The core business of the Company is procuring and progressing contracts, and if done successfully the Company will report a healthy operating profit, and increase the Company's value.

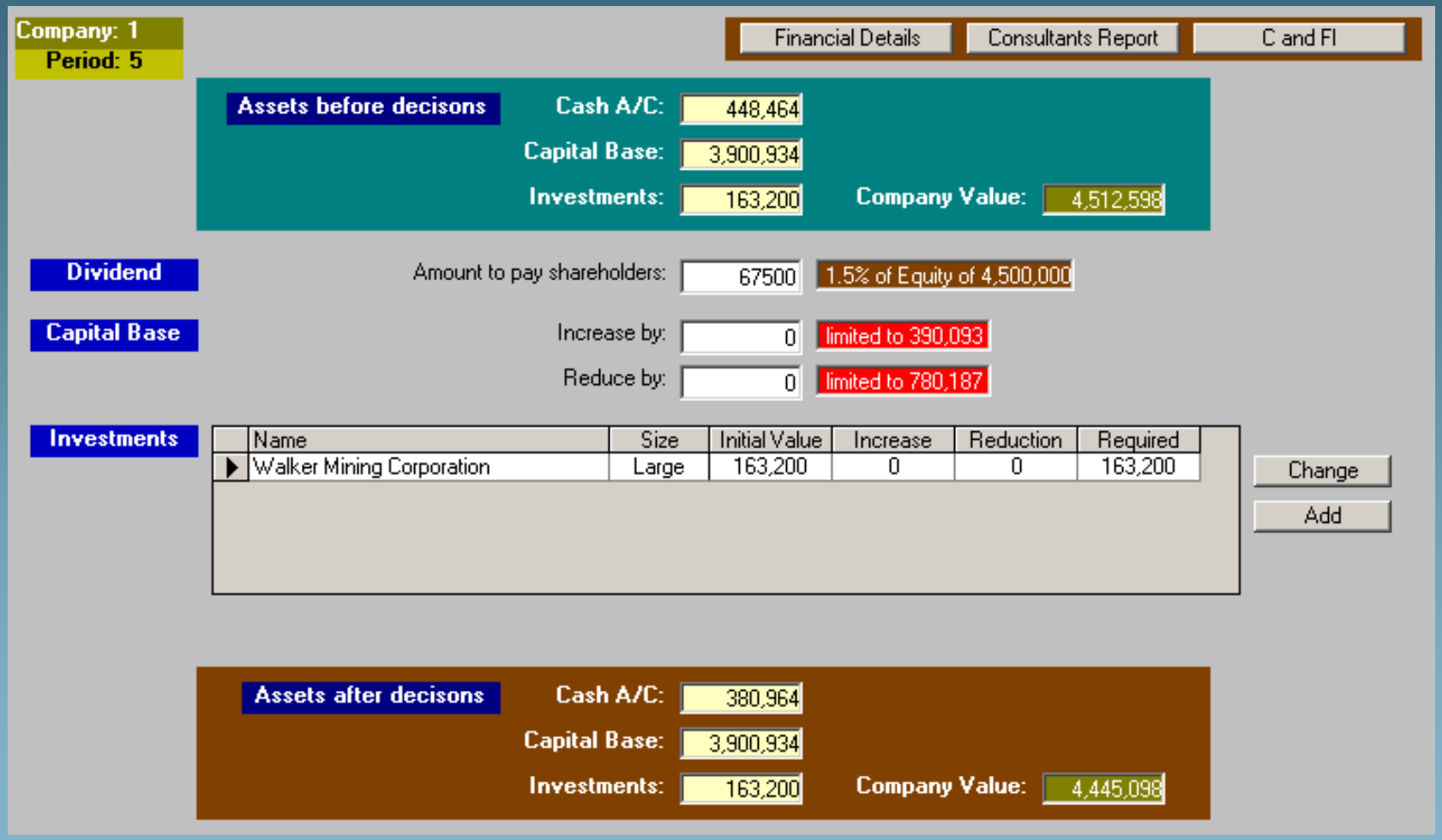
However, there are alternative ways of increasing the value of the Company, such as by investing in other concerns, which may or may not be construction-related.

We can see that the company currently has an investment of 163,200 in the Walker Mining Corporation.

There are **2 ways** of increasing the company's value through investments, and we'll examine each one in turn.



Entering Financial Decisions - 2



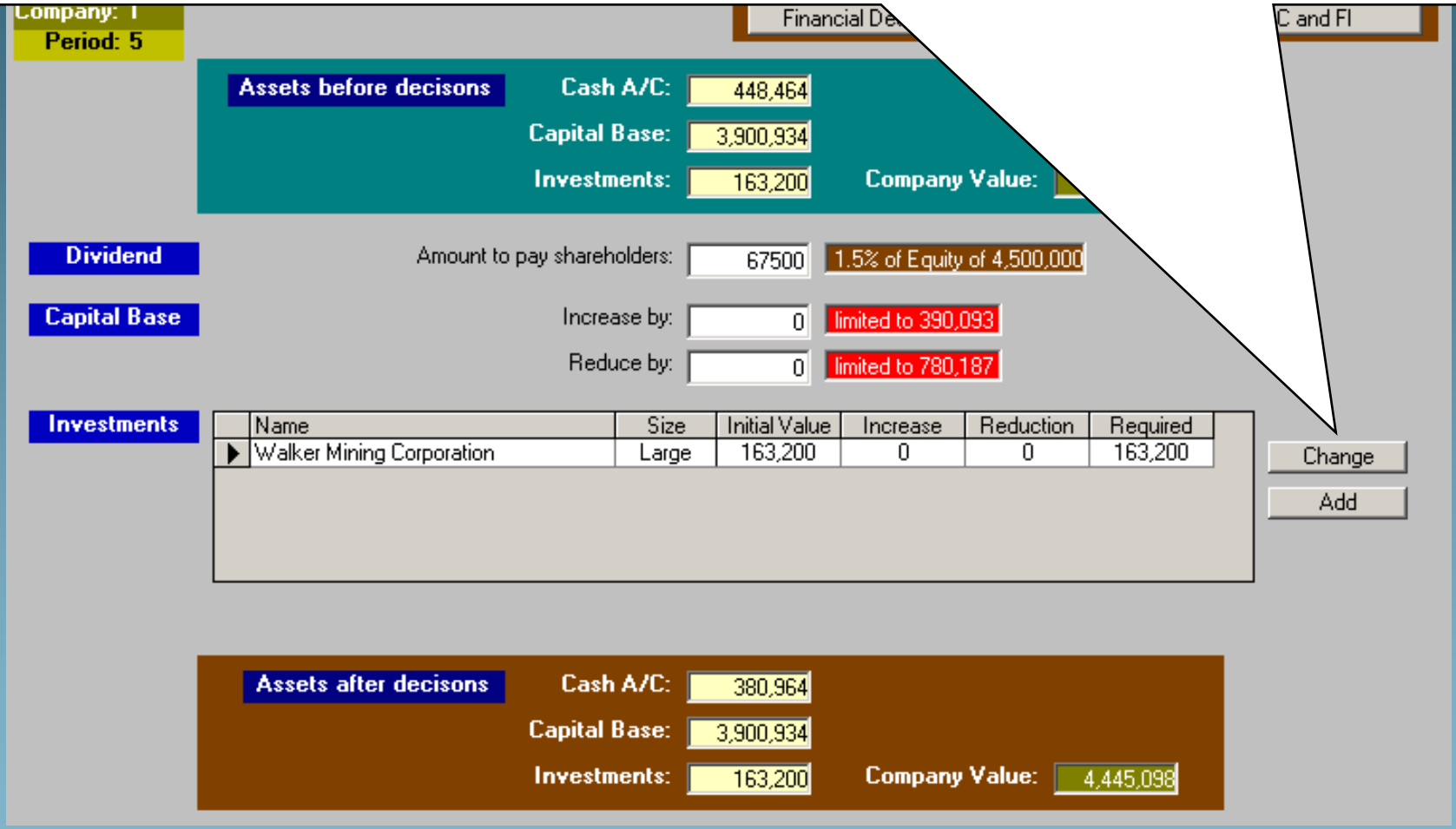
Main Quit

Entering Financial Decisions - 3

Investment Returns

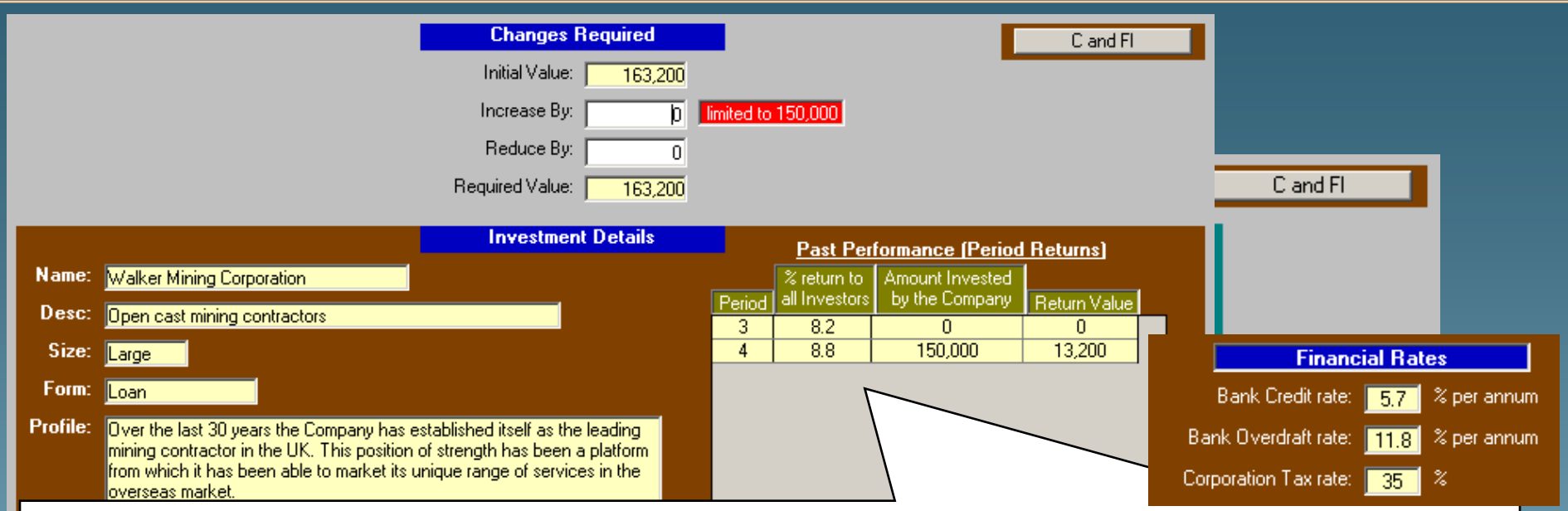
Using cash to invest further in other companies can yield a better return than can be obtained from the bank.

Use the **Change button** to determine look in more detail at the current investment.



Main Quit

Entering Financial Decisions - 3



Bearing in mind that the bank offers a credit rate return of 1.425% per period (5.7% per annum), the Walker Mining Corporation have offered a far better return in the last 2 periods of over 8% per period.

Since we have plenty of spare cash, and **bearing in mind the excellent opportunity the investment offers**, we'll increase our investment by the maximum allowed this period (150,000).

Key Point

Each investment has a number of key properties :-

- The **size** (small, medium or large) determines the amount that can be invested each period, as defined in the **Company and Financial Information**.
- The **form** is the type of investment, either a loan or shares. Loans (debentures) offer a higher return than shares, with the returns on shares being linked to dividend payments.

Entering Financial Decisions - 3

We now have an investment of 313,200 in the Walker Mining Corporation.

Changes Required

Initial Value:	163,200
Increase By:	150000 (limited to 150,000)
Reduce By:	0
Required Value:	313,200

Investment Details

Name: Walker Mining Corporation

Desc: Open cast mining contractors

Size: Large

Form: Loan

Profile: Over the last 30 years the Company has established itself as the leading mining contractor in the UK. This position of strength has been a platform from which it has been able to market its unique range of services in the overseas market.

Capable of providing expertise in all areas of mining and drilling, they also have a specialist mineral consultancy, and as such possess the ability to deliver specialist technical services to their client base.

Past Performance (Period Returns)

Period	% return to all Investors	Amount Invested by the Company	Return Value
3	8.2	0	0
4	8.8	150,000	13,200

Past Performance (Build Cost Savings On Jobs)

Sector	Saving
Industrial	0
Building & Commercial	0
Transport	0
Energy	0
Water & Sewage	0
	0

Change

Add

Capital Base: 3,900,934

Investments: 163,200

Company Value: 4,445,098

Main

Quit

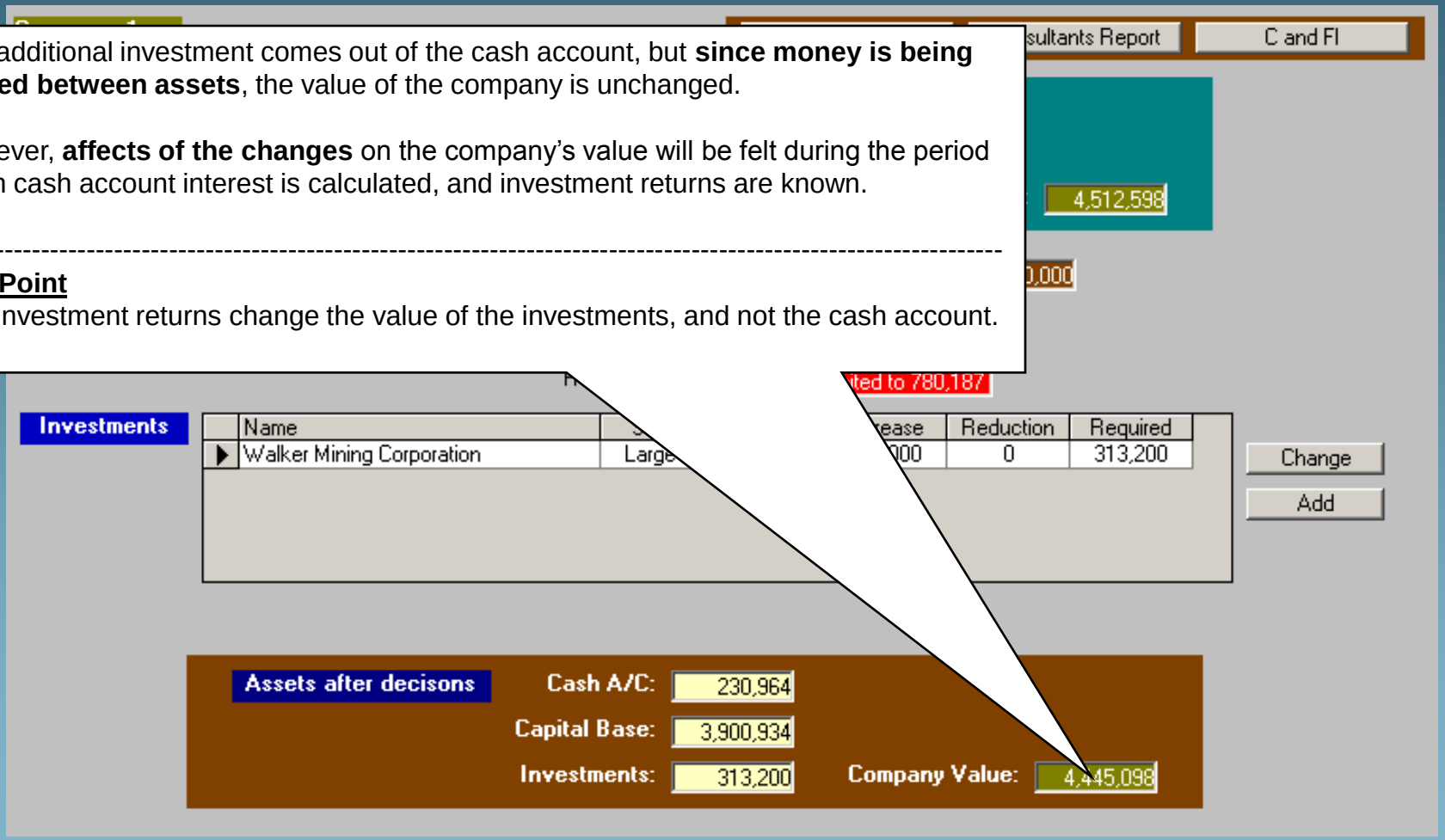
Entering Financial Decisions - 3

The additional investment comes out of the cash account, but **since money is being moved between assets**, the value of the company is unchanged.

However, **affects of the changes** on the company's value will be felt during the period when cash account interest is calculated, and investment returns are known.

Key Point

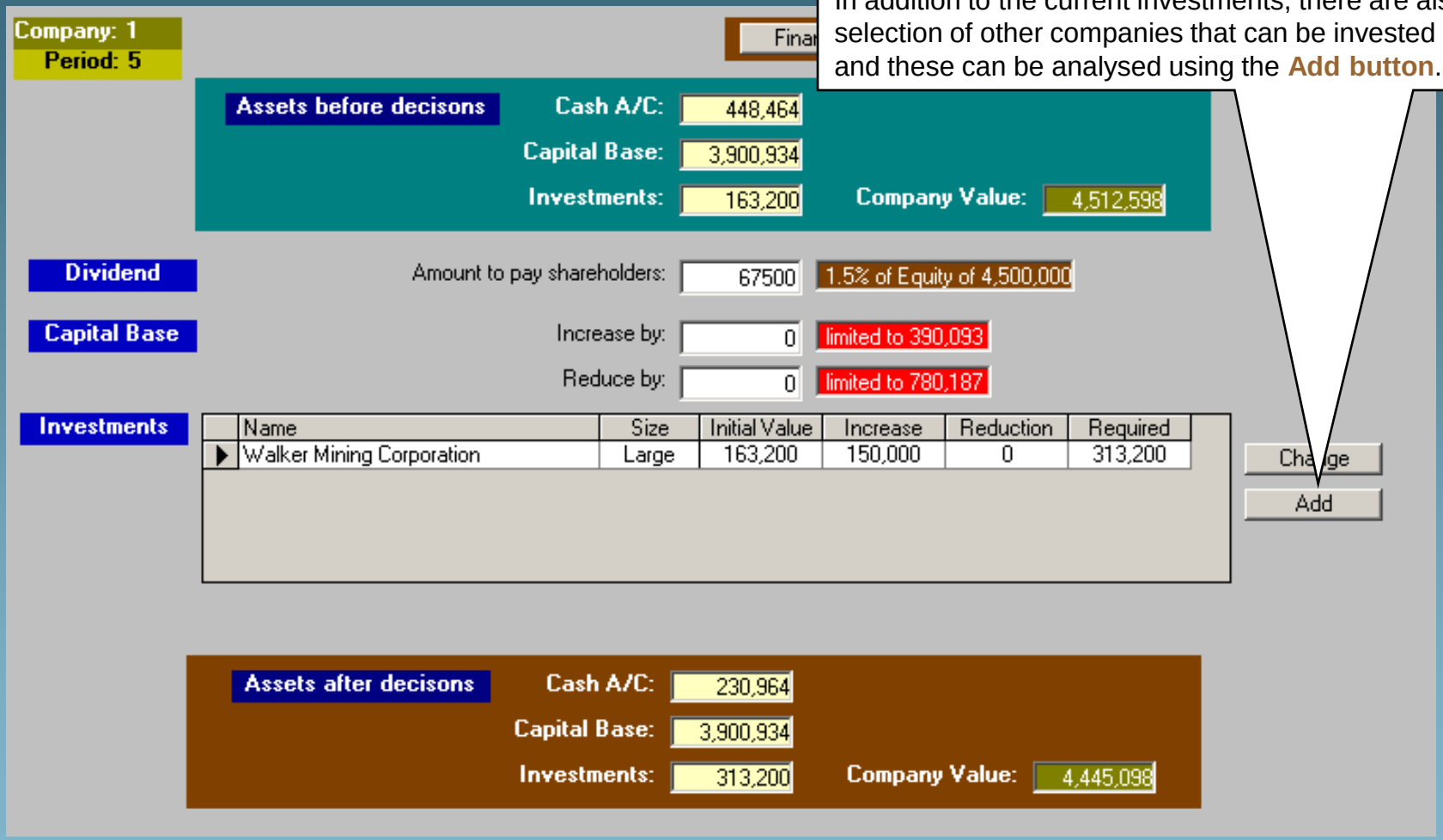
Any investment returns change the value of the investments, and not the cash account.



Entering Financial Decisions - 3

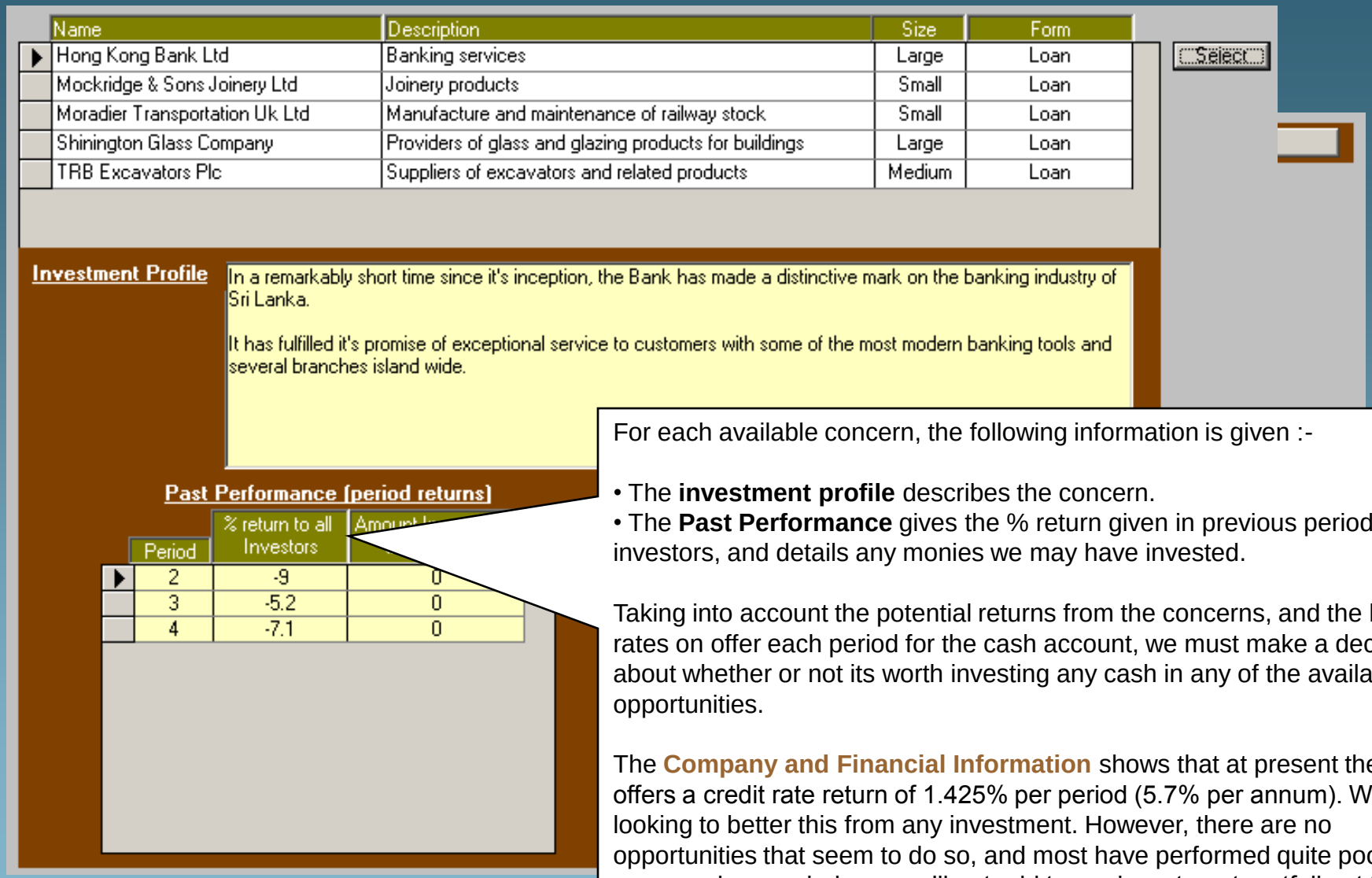
If the Walker Mining Corporation had been performing badly, we could have reduced the investment.

In addition to the current investments, there are also a selection of other companies that can be invested in, and these can be analysed using the **Add button**.



Main Quit

Entering Financial Decisions - 3



Name	Description	Size	Form
Hong Kong Bank Ltd	Banking services	Large	Loan
Mockridge & Sons Joinery Ltd	Joinery products	Small	Loan
Moradier Transportation Uk Ltd	Manufacture and maintenance of railway stock	Small	Loan
Shinington Glass Company	Providers of glass and glazing products for buildings	Large	Loan
TRB Excavators Plc	Suppliers of excavators and related products	Medium	Loan

Select

Investment Profile

In a remarkably short time since it's inception, the Bank has made a distinctive mark on the banking industry of Sri Lanka.

It has fulfilled it's promise of exceptional service to customers with some of the most modern banking tools and several branches island wide.

Past Performance (period returns)

Period	% return to all Investors	Amount
2	-9	0
3	-5.2	0
4	-7.1	0

For each available concern, the following information is given :-

- The **investment profile** describes the concern.
- The **Past Performance** gives the % return given in previous periods to all investors, and details any monies we may have invested.

Taking into account the potential returns from the concerns, and the bank rates on offer each period for the cash account, we must make a decision about whether or not its worth investing any cash in any of the available opportunities.

The **Company and Financial Information** shows that at present the bank offers a credit rate return of 1.425% per period (5.7% per annum). We'll be looking to better this from any investment. However, there are no opportunities that seem to do so, and most have performed quite poorly over previous periods, so we'll not add to our investment portfolio at the moment.

Entering Financial Decisions - 3

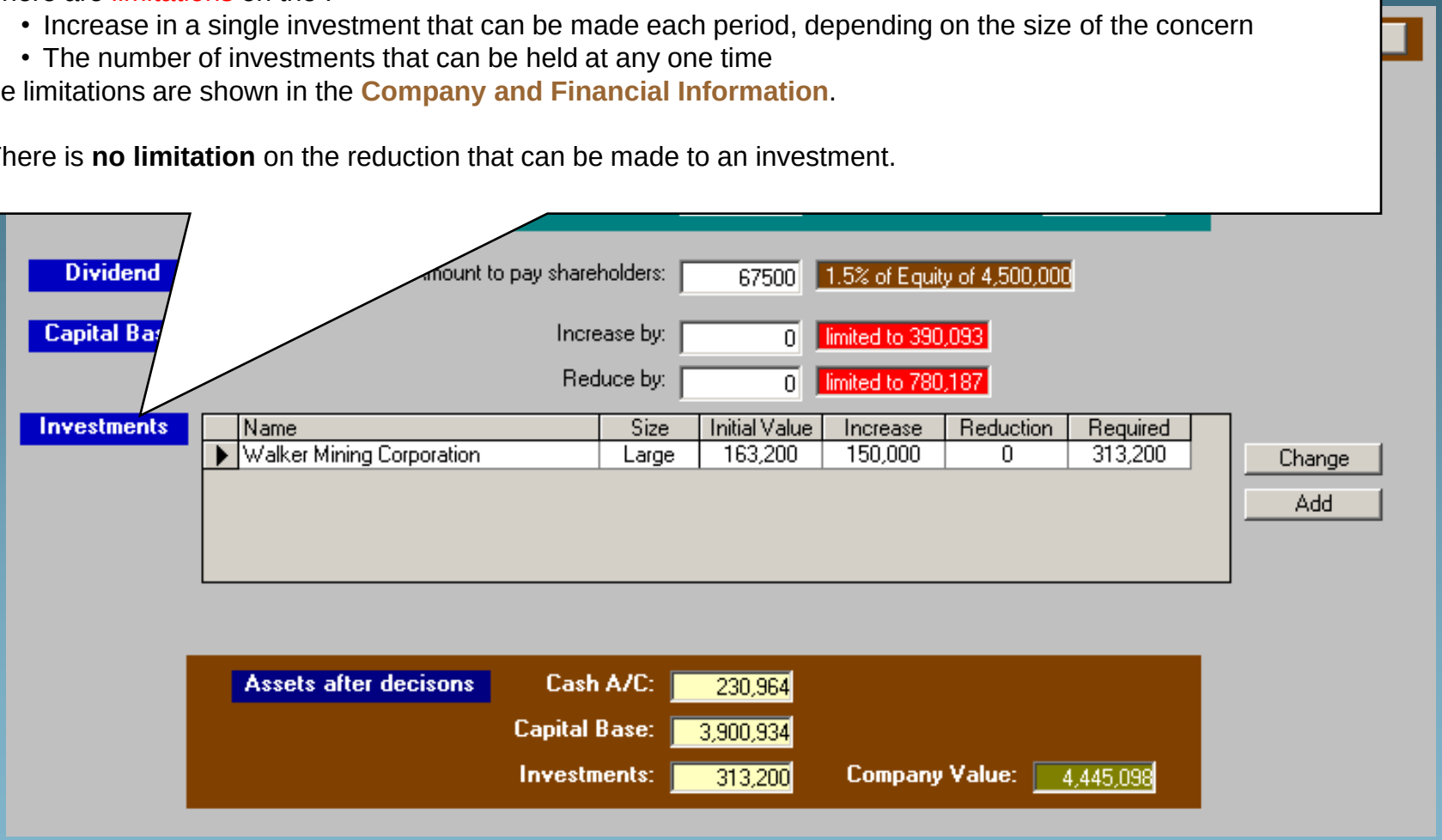
Some additional points to note about investments :-

• Any increases of reductions in investments **affect the cash account**.

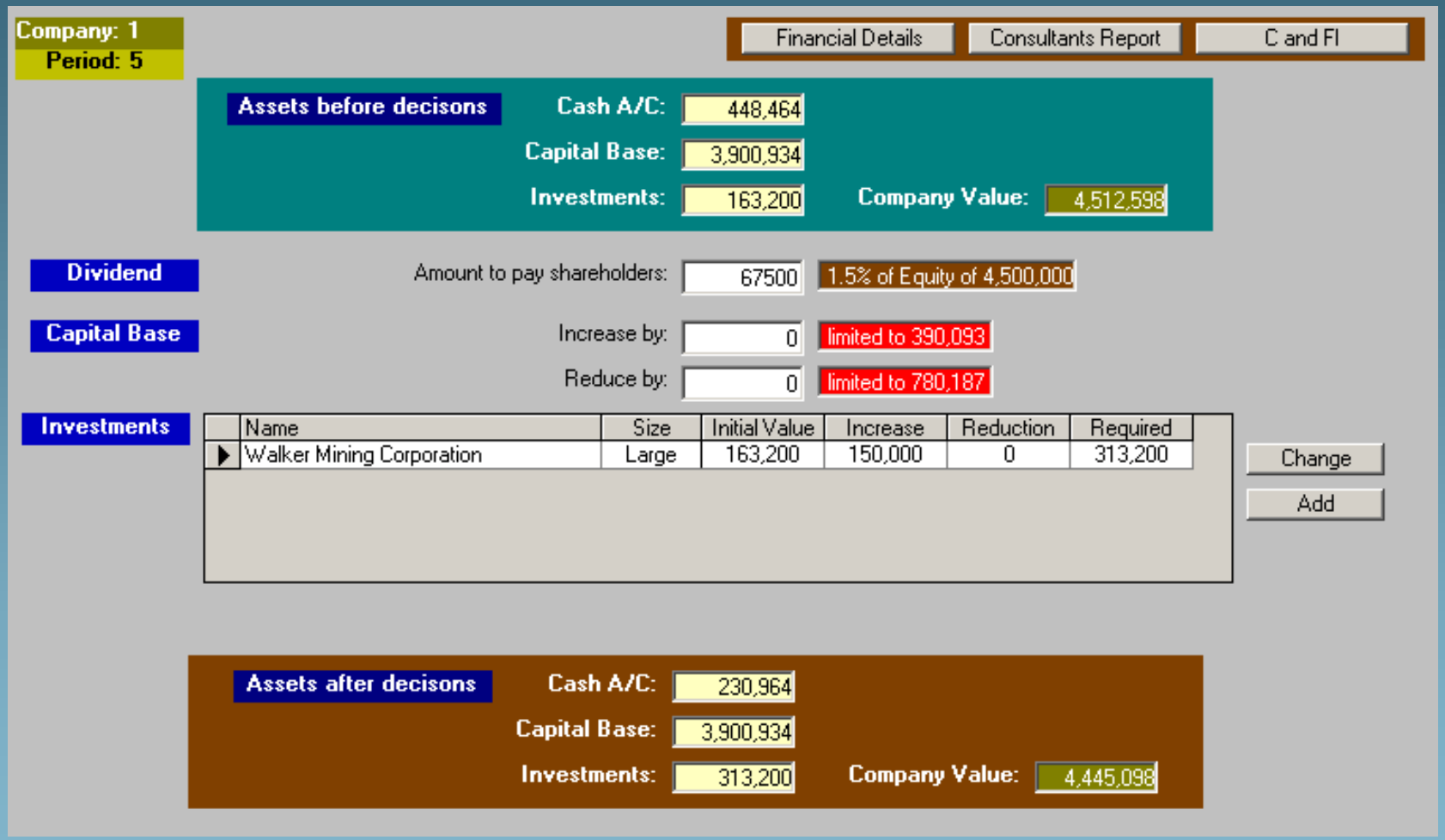
• There are limitations on the :-
  • Increase in a single investment that can be made each period, depending on the size of the concern
  • The number of investments that can be held at any one time

The limitations are shown in the **Company and Financial Information**.

• There is **no limitation** on the reduction that can be made to an investment.



Entering Financial Decisions - 3



Main Quit

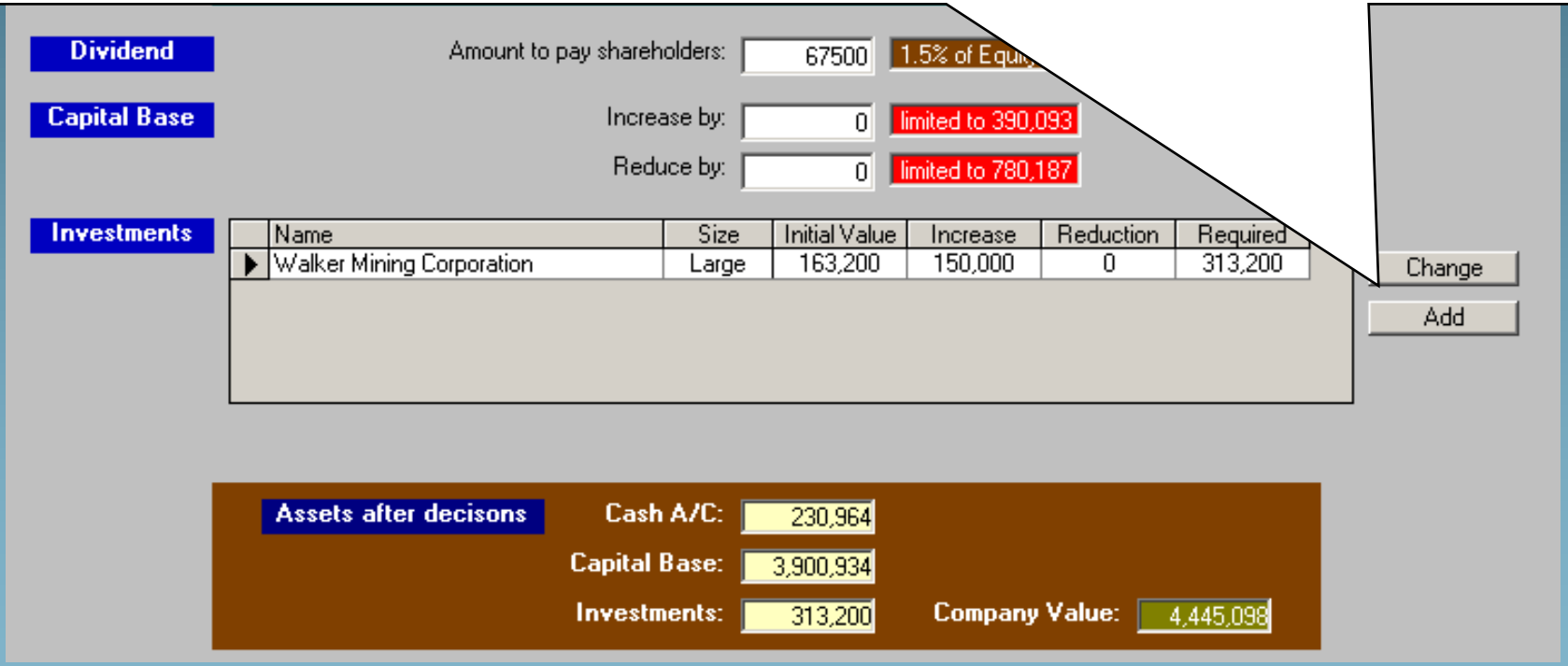
Entering Financial Decisions - 4

Build Cost Savings Due To Investments

As well as investing in other companies to yield a better return than can be obtained from the bank, there is potentially an **even more lucrative reason** for investment opportunity.

If enough money is invested in particular concerns, **build costs may be reduced** on work in progress in specific sectors due to preferential rates on materials, plant etc e.g., investing in an asphalt company would reduce build costs for any Transport work being undertaken. The concerns offering these benefits are suppliers of some commodity to the construction industry, and only where the investment is a loan.

We'll use the **Add button** to look at some available investments.



Entering Financial Decisions - 4

Name	Description	Size	Form
Hong Kong Bank Ltd	Banking services	Large	Loan
Mockridge & Sons Joinery Ltd	Joinery products	Small	Loan
Moradier Transportation Uk Ltd	Manufacture and maintenance of railway stock	Small	Loan
Shinington Glass Company	Providers of glass and glazing products for buildings	Large	Loan
TRB Excavators Plc	Suppliers of excavators and related products	Medium	Loan

Select

Investment Profile

A family business established over twenty five years ago, specialising in high quality bespoke joinery.

They have a wealth of experience in producing joinery products for contemporary and period buildings, and produce products from their own high-tech workshops.

They have an extensive customer base serving clients in the Building & Commercial sector.

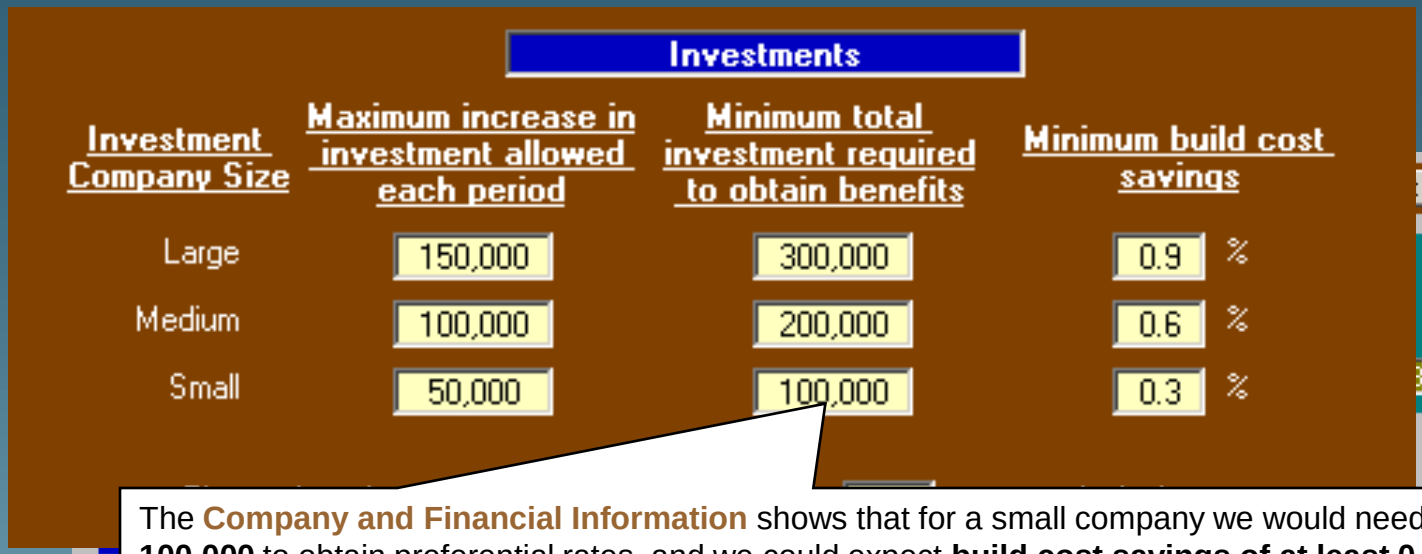
By looking at the various opportunities **Mockridge & Sons Joinery Ltd** immediately stand out. They supply joinery products to clients in the Building & Commercial Sector, and if we were undertaking work in that sector, and invested in them, we could obtain preferential rates on joinery supplies and reduce our build costs.

Mockridge & Sons Joinery Ltd are a small company so how much would we need to invest to obtain the preferential rates ?

Assets after decisons				
	Cash A/C:	230,964		
	Capital Base:	3,900,934		
	Investments:	313,200	Company Value:	4,445,098

Main Quit

Entering Financial Decisions - 4

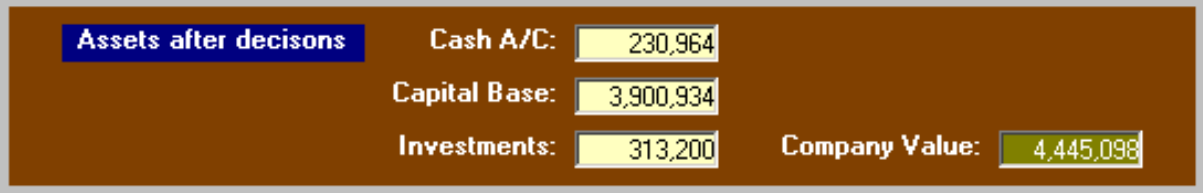


The **Company and Financial Information** shows that for a small company we would need to invest at least **100,000** to obtain preferential rates, and we could expect **build cost savings of at least 0.3%**.

Bear in mind that although a minimum of 100,000 is required, any single investment in a period cannot exceed 50,000, so it would take at least 2 periods to gain any build cost savings from the investment.

Key Point

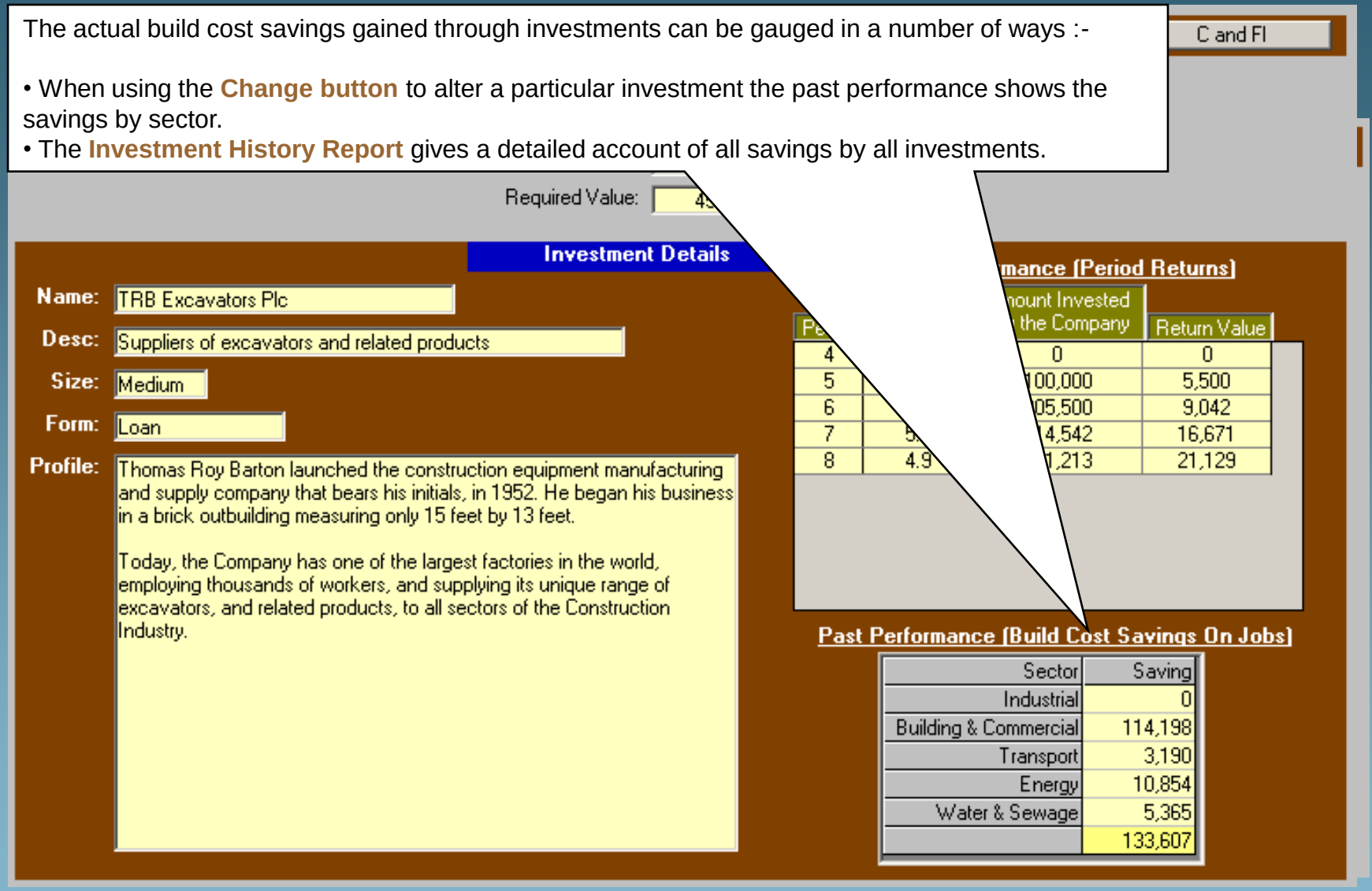
The larger the investment concern the greater the build cost savings on offer, but the more that has to be invested to secure the savings. Also, the % build cost savings rises as more is invested, up to a point.



Entering Financial Decisions - 4

The actual build cost savings gained through investments can be gauged in a number of ways :-

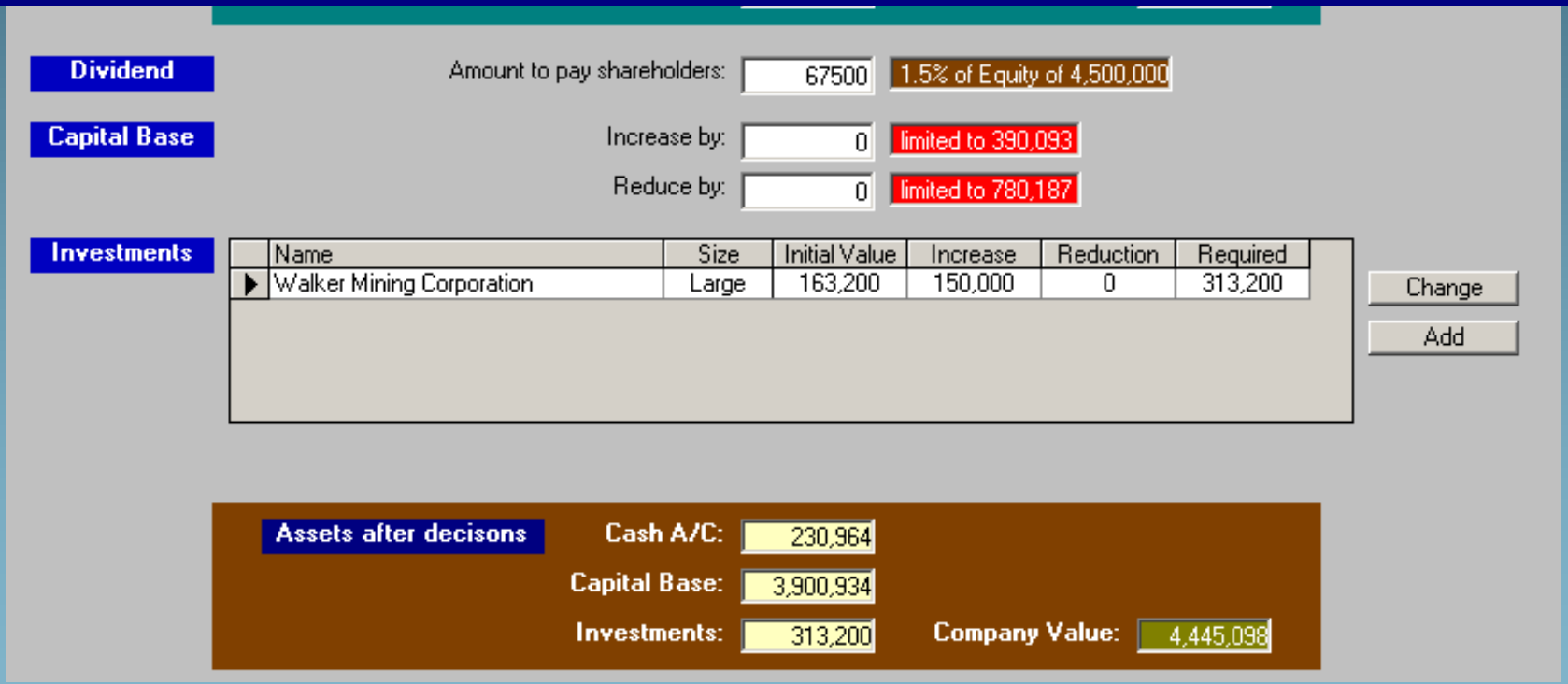
- When using the **Change button** to alter a particular investment the past performance shows the savings by sector.
- The **Investment History Report** gives a detailed account of all savings by all investments.



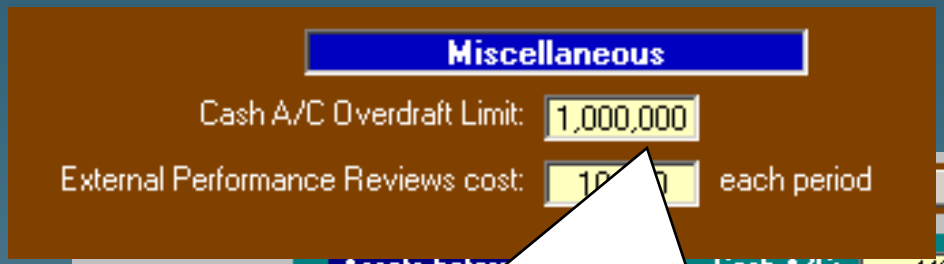
Entering Financial Decisions - 4

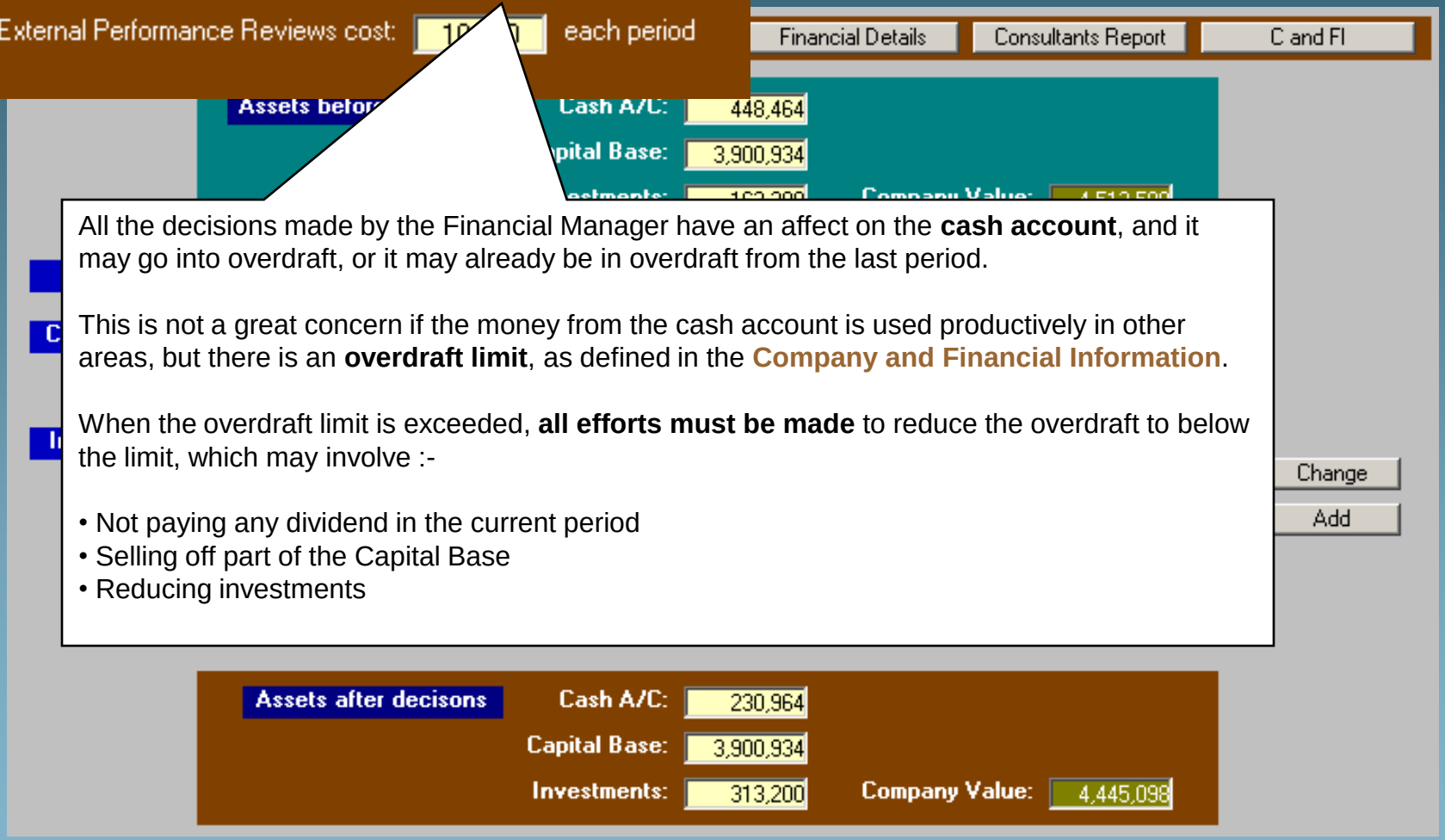
Finding an investment opportunity that offers a good return, and build cost savings due to the company's sector-based workload, is not always possible, and often a **compromise** has to be reached as to which benefit is more desirable.

For example, an investment opportunity may arise that offers substantial build cost savings in the Transport sector, in which the company are very active. However, the investment returns may not be very good, but the cost-saving benefit outweighs the risk of the investment itself not performing very well.



Entering Financial Decisions - 4





All the decisions made by the Financial Manager have an affect on the **cash account**, and it may go into overdraft, or it may already be in overdraft from the last period.

This is not a great concern if the money from the cash account is used productively in other areas, but there is an **overdraft limit**, as defined in the **Company and Financial Information**.

When the overdraft limit is exceeded, **all efforts must be made** to reduce the overdraft to below the limit, which may involve :-

- Not paying any dividend in the current period
- Selling off part of the Capital Base
- Reducing investments

Entering Financial Decisions - 4

Apart from paying dividend, each period the Financial Manager could choose to leave the rest of the financial structure of the company unchanged, and simply hope to earn some interest from a credit balance in the cash account.

However, this would be short-sighted, since there are other ways of manipulating the company's assets to improve the company's value, involving the transfer of funds between the cash account, capital base and investments.

Although these changes don't immediately change the value of the company, by the end of the period the affects of the changes will have been felt, including, amongst others :-

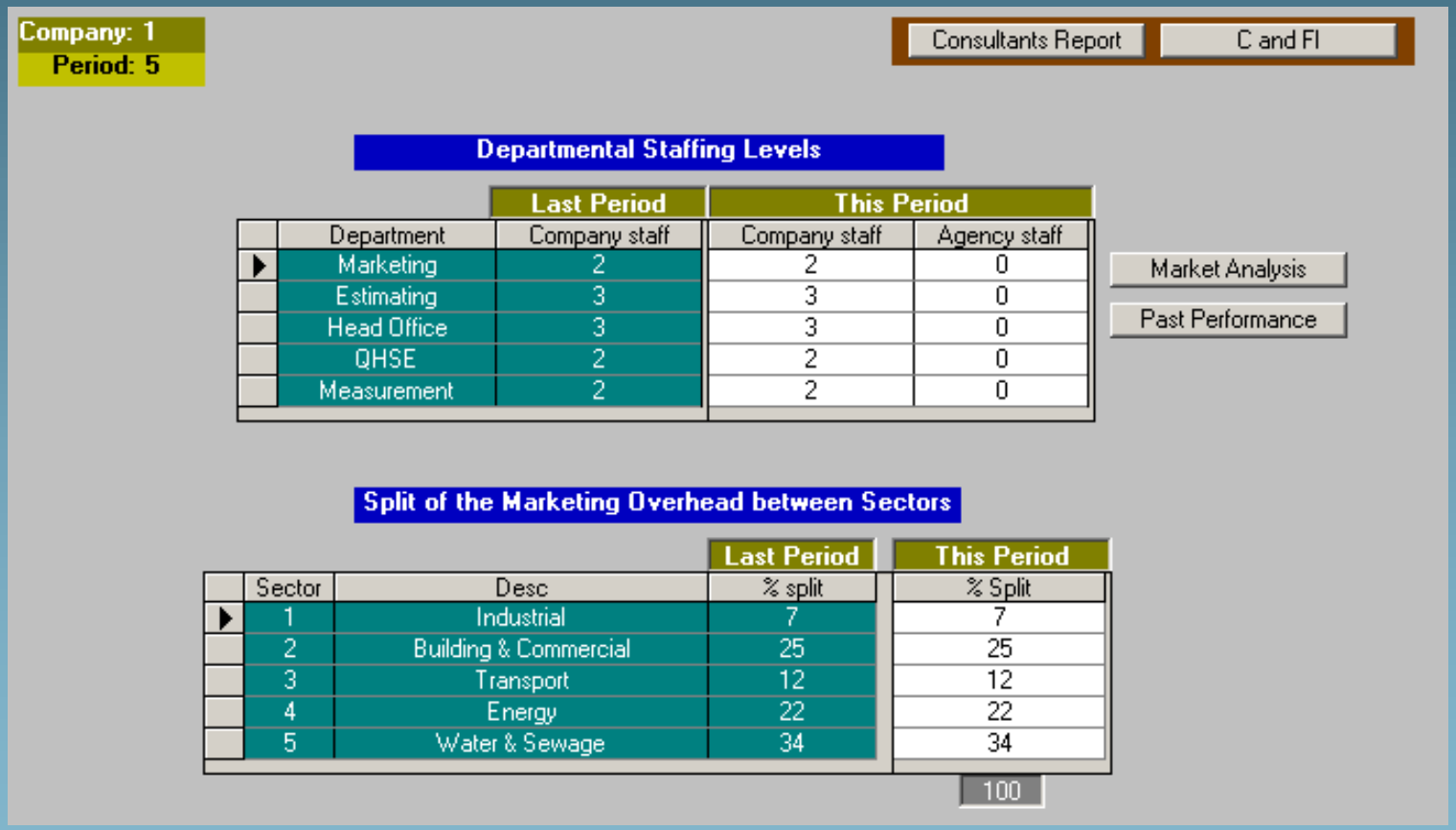
- Capital Base changes affecting the bidding, and the level of future work that can be undertaken.
- Investment changes yielding returns, and increasing operating profit through build cost savings.

The long-term objectives of the Financial Manager are to look after the interests of the shareholders, and make effective decisions to manipulate the company's assets and improve the value of the company.

Overhead Decisions

Overheads are the non-contract based support services required to enable the company to win and progress work.

They consist of 5 key departments (Marketing, Estimating, Head Office, QHSE and Measurement) and other non-departmental overheads (such as idle labour and idle project managers).



Entering Overhead Decisions

The Overhead Manager is responsible for decisions related to the departments, namely :-

- Setting the staffing levels of the Departments
- Directing marketing effort into the 5 market sectors

The non-departmental overheads are the responsibility of other managers.

Choose from the list below for detailed demonstrations.

- Marketing Department
- Estimating Department
- Head Office, QHSE and Measurement Departments
- Non-Departmental Overheads

Entering Overhead Marketing Decisions - 1

Keep Clicking Anywhere on the screen to advance the demo

Entering Overhead Marketing Decisions - 1

The Marketing Department are the first step on the ladder to winning and progressing contracts.

The marketing staff seek out and enables the company to prequalify for new contracts that become available, which the company may then decide to try and win through the procurement process.

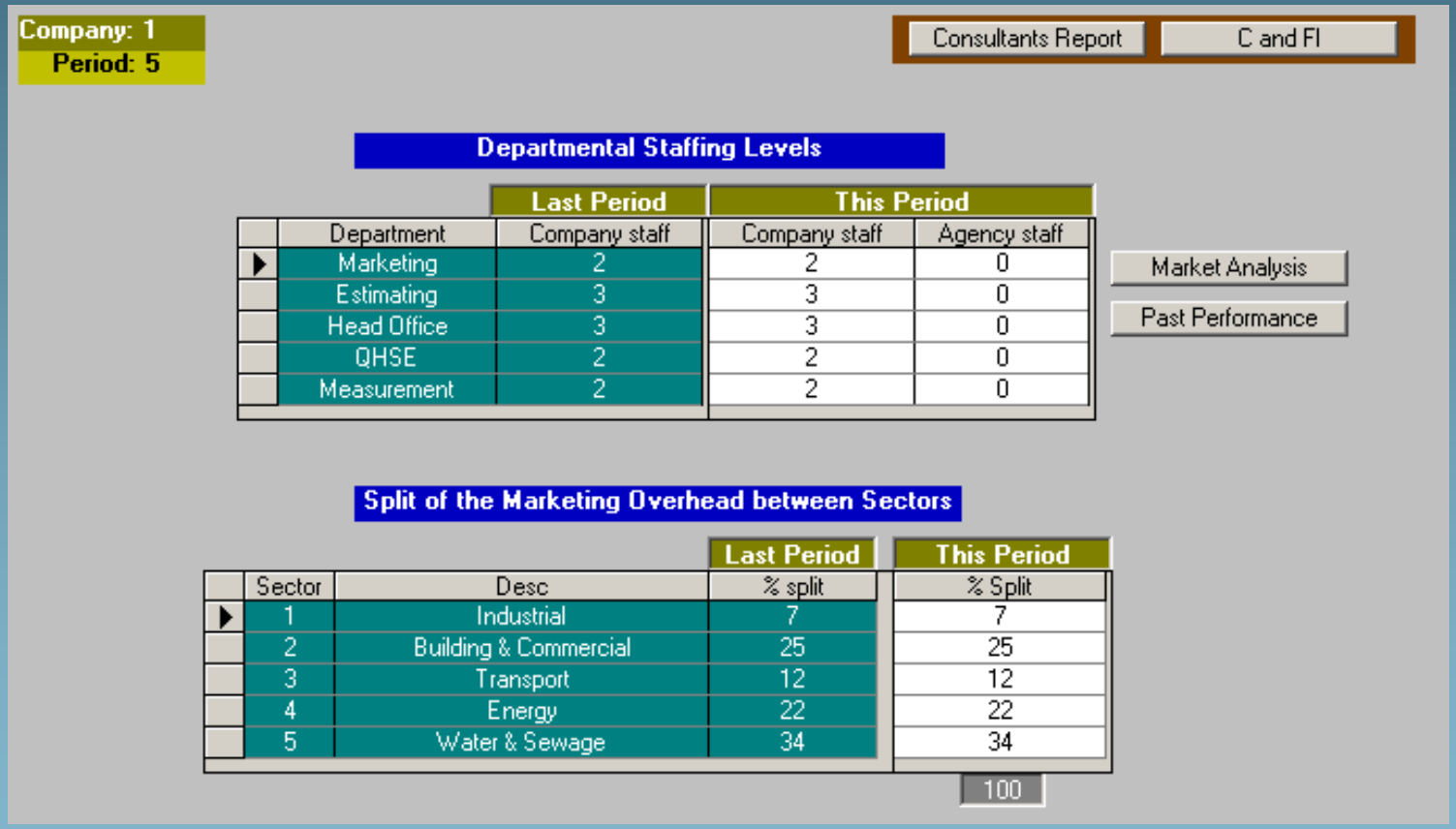
The value and number of jobs that the company can prequalify for in any period is governed by a number of factors :-

- The value and number of jobs available (size of the market)
- The number of staff in the Marketing Department
- Where the marketing effort is directed (5 potential sectors of work)
- Whether or not the company are experts in a particular sector
- The relationship with clients who announce the new contracts

Entering Overhead Marketing Decisions - 1

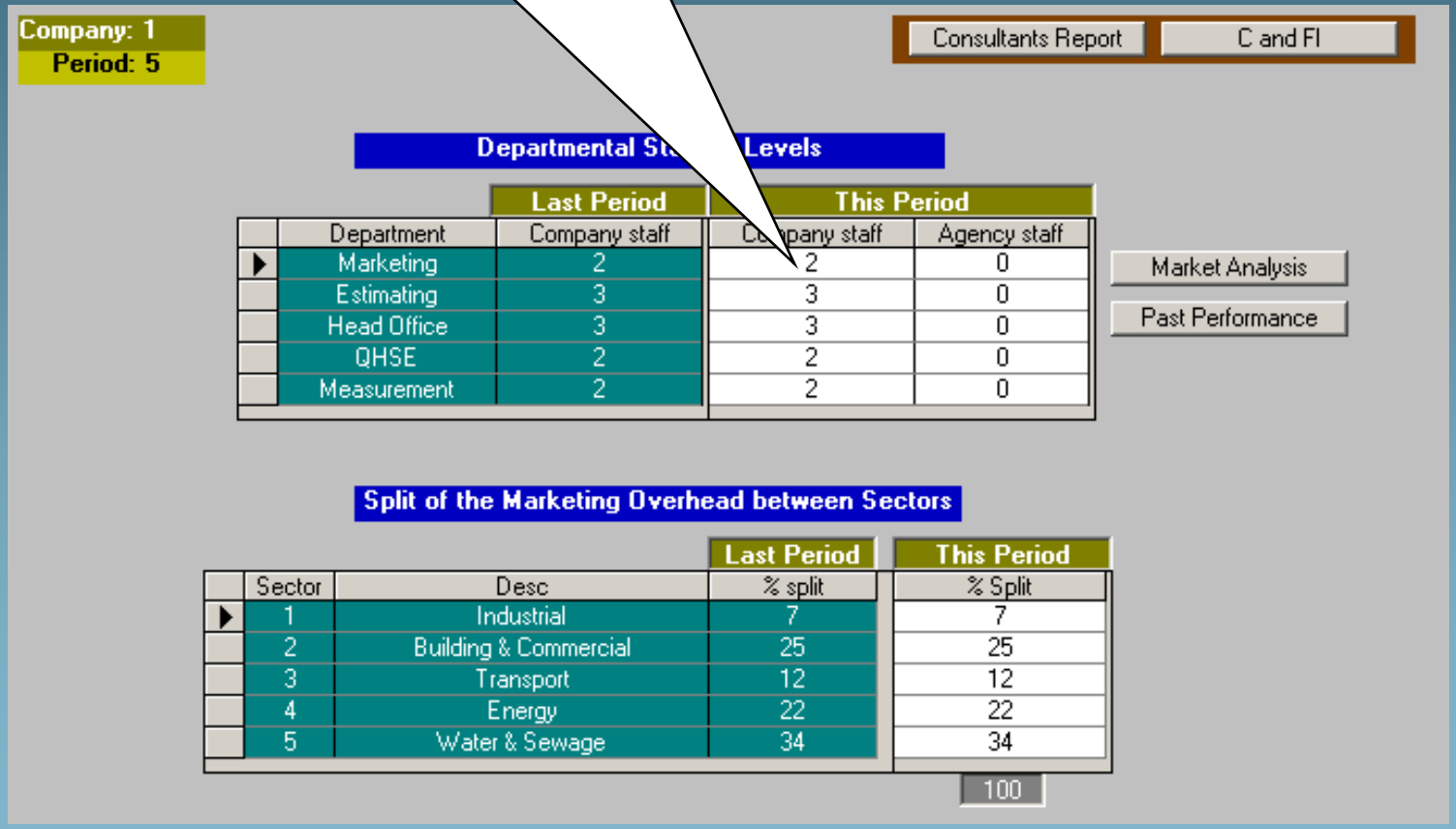
Consider the following situation.

It's the beginning of period 5, and the Overhead Manager needs to decide upon the staffing level for the Marketing Department, and into which sectors the staff's efforts are to be directed.



Entering Overhead Marketing Decisions - 1

There are currently 2 marketing staff, and the split of the marketing effort between the 5 market sectors is presently as shown, with the majority of effort being directed into the Water & Sewage sector.

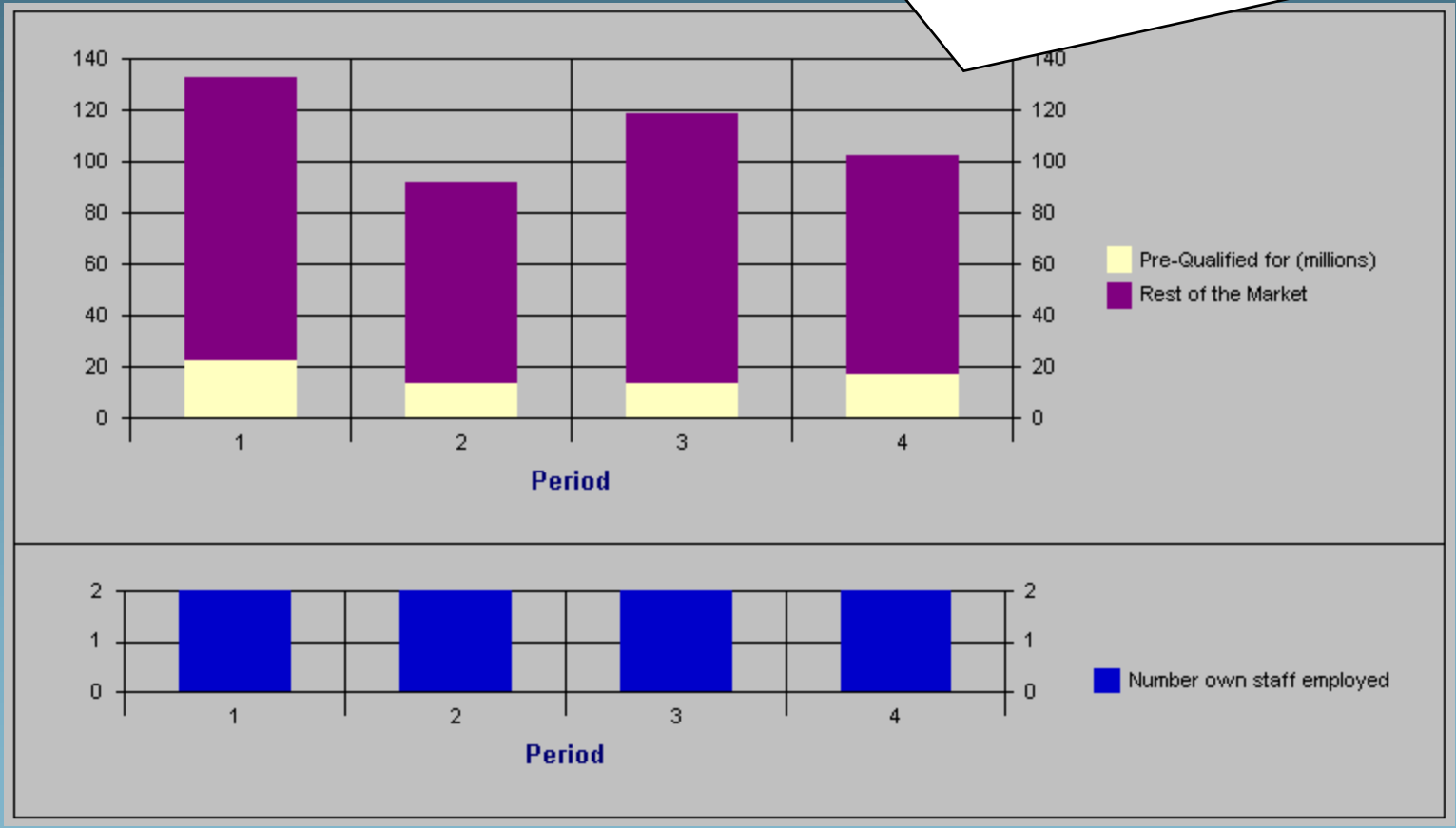


Entering Overhead Marketing Decisions - 1

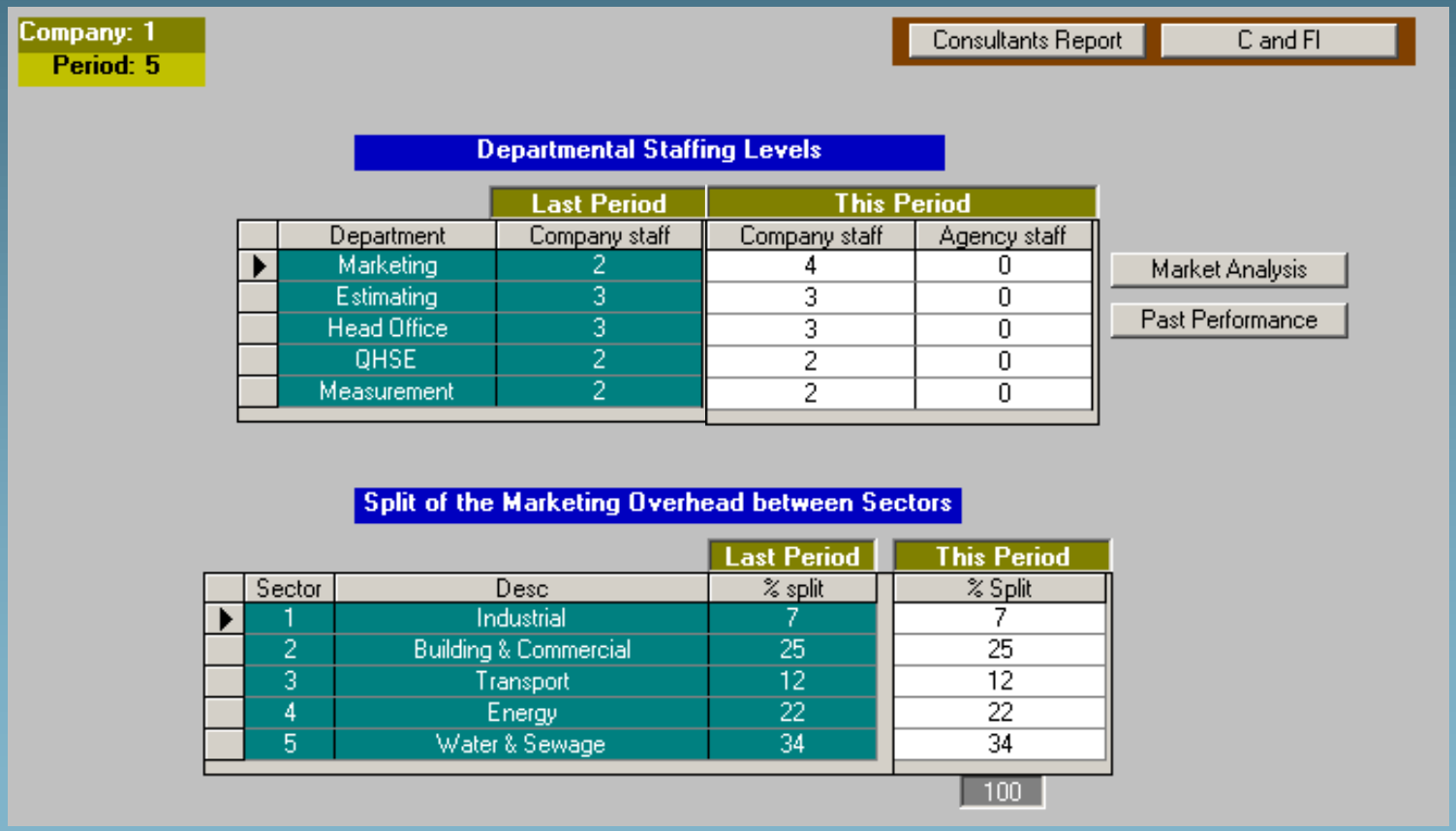
The **Past Performance button** shows the % of the overall market that the company has prequalified for in past periods.

Based upon the last year, and assuming the marketing effort was directed into sectors in which there was some new work, company was **only able** to prequalify for a maximum of about 20% of the overall market with 2 marketing staff.

The company's strategy is for steady growth, and to achieve this more work will need to be prequalified for, so we'll increase the staffing level by the maximum allowed, **2** (the limit is shown in the **Company and Financial Information**).



Entering Overhead Marketing Decisions - 1

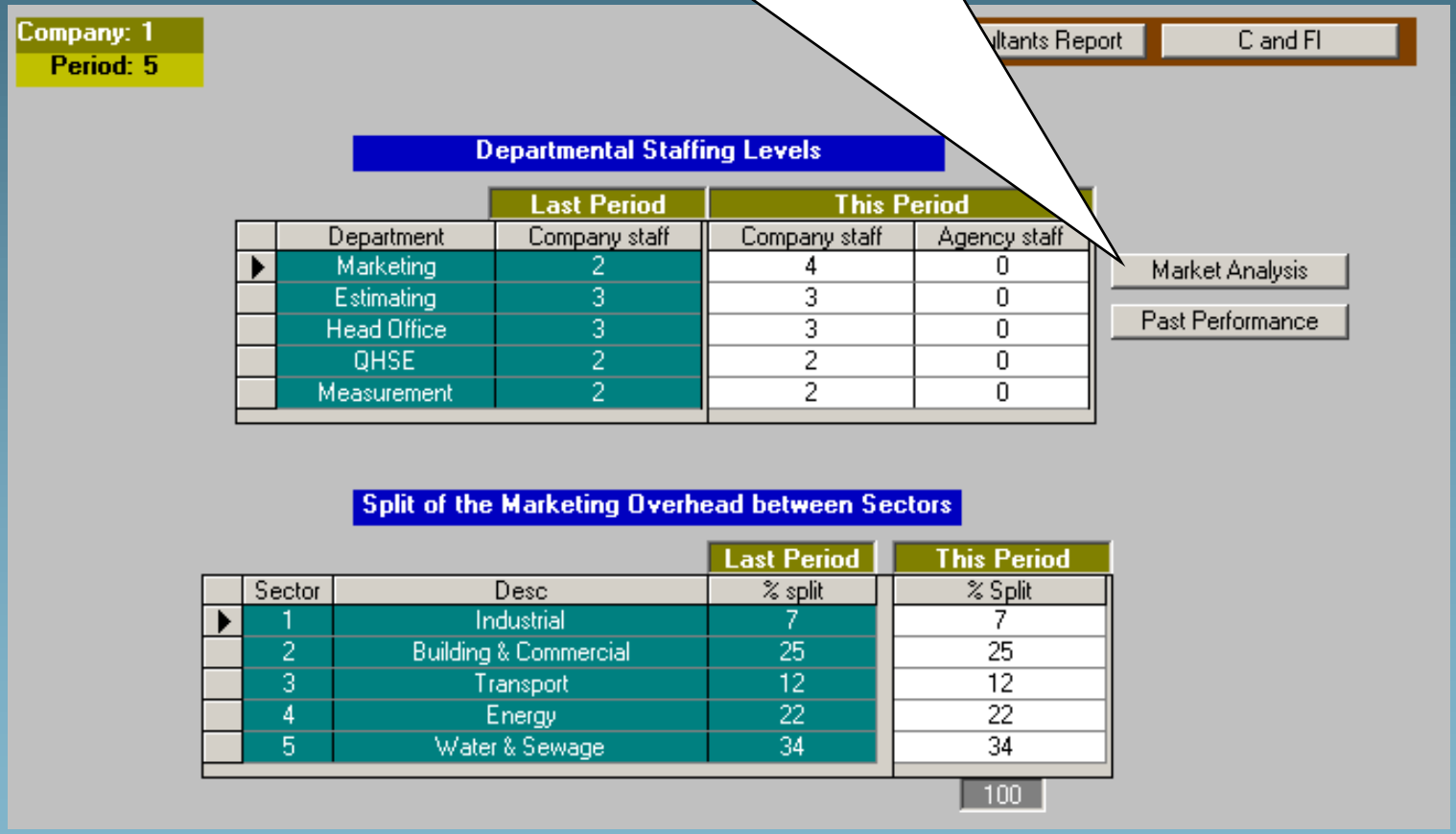


Main Quit

Entering Overhead Marketing Decisions - 2

The additional marketing staff **will have little affect** if they do not direct their efforts into the market sectors in which there is new work.

To determine where the new work is, we'll use the **Market Analysis button**.



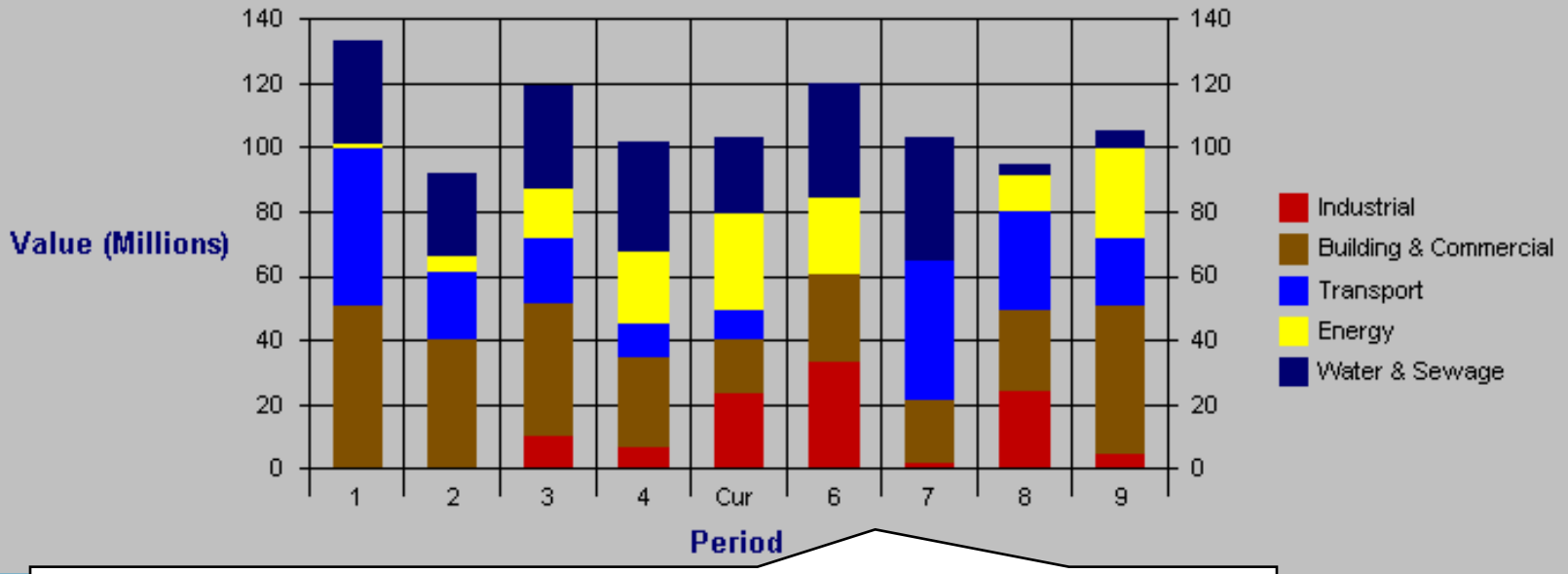
Entering Overhead Marketing Decisions - 2

The **Market Analysis button** displays the company's forecast of the market trend for the next year. The accuracy of the forecast depends upon the size of the marketing department.

Although decisions have to be made about into which sectors to direct the marketing effort in period 5, the % change in each sector is **limited** to + or - 10, as defined in the **Company and Financial Information**, since wholesale changes cannot be made in one period.

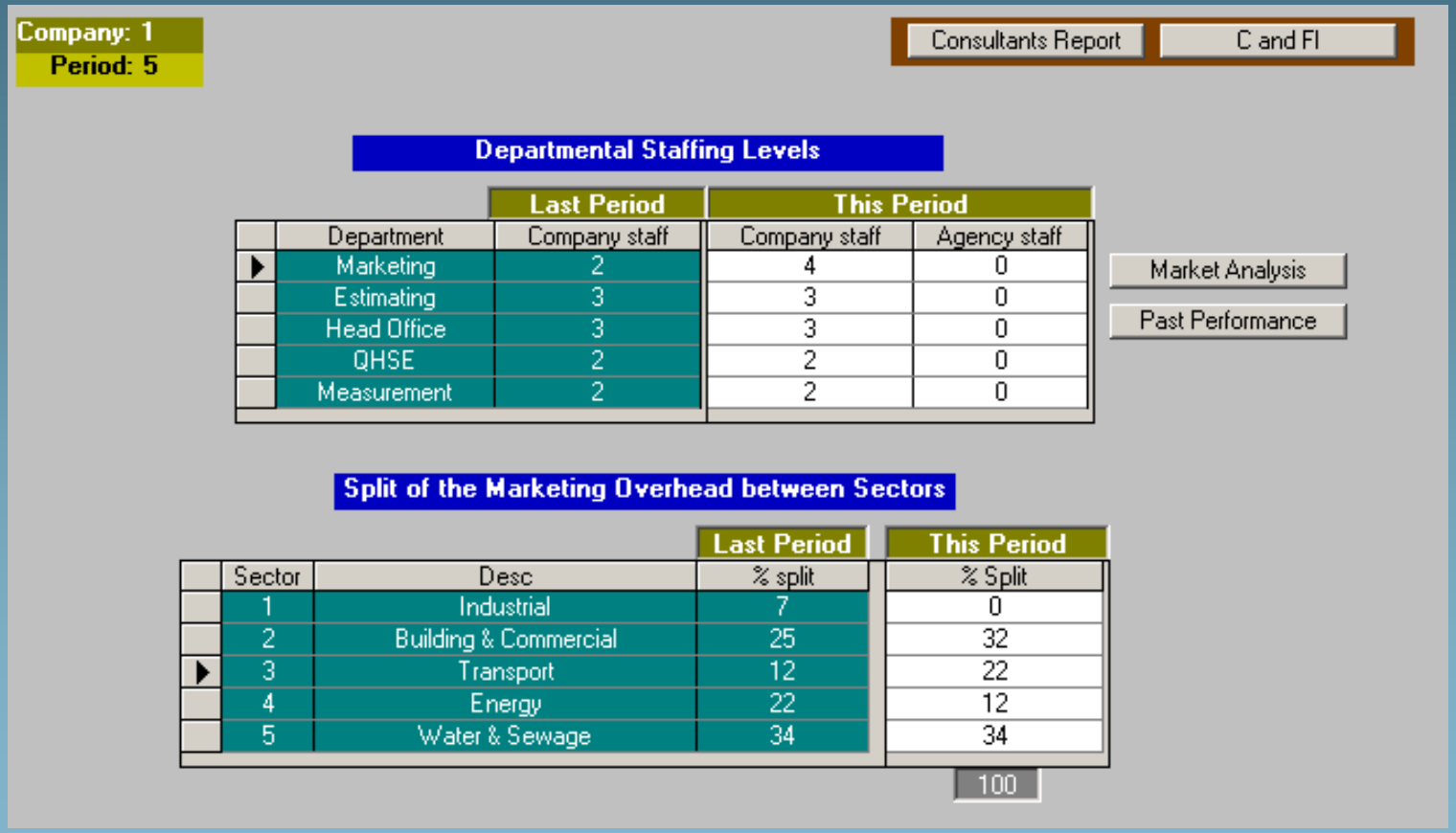
The change limitation makes it imperative that as well as the short-term, the **long-term is considered** when reviewing marketing strategy.

Based on the information about the likely market split in period 5, and also looking to the long-term, the overhead manager decides to concentrate on the Water & Sewage, Transport and Building & Commercial sectors. The Transport sector in particular appears to be improving from period 7 onwards.



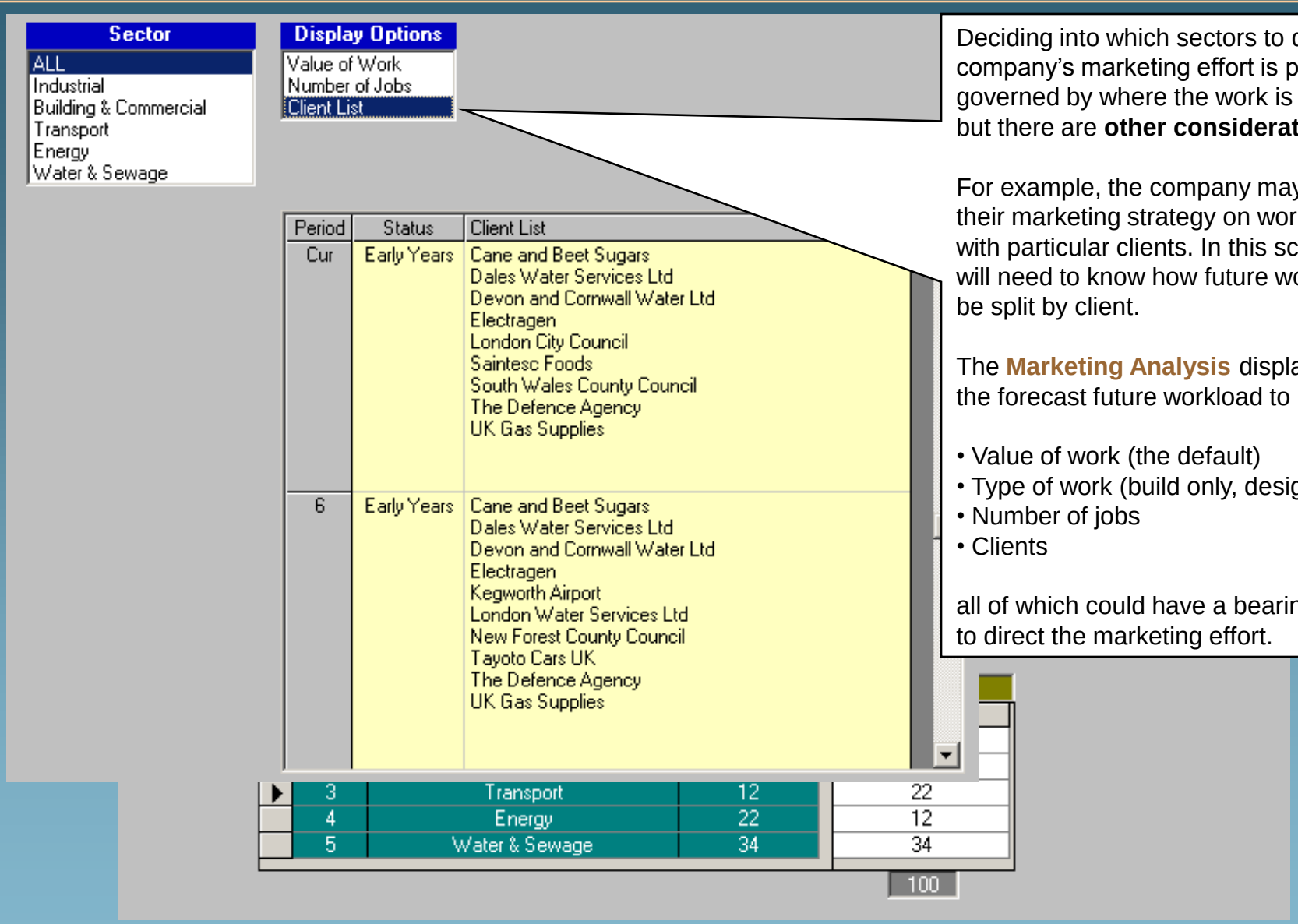
The **overall value of the market** appears to be steady at around 100m in the next year or so, except for the significant increase in period 6. Providing the marketing effort is directed sensibly, the additional marketing staff being employed should ensure the company prequalifies for a bigger share of the overall market value in the near future.

Entering Overhead Marketing Decisions - 2



Main Quit

Entering Overhead Marketing Decisions - 2



Deciding into which sectors to direct the company's marketing effort is primarily governed by where the work is likely to be, but there are **other considerations**.

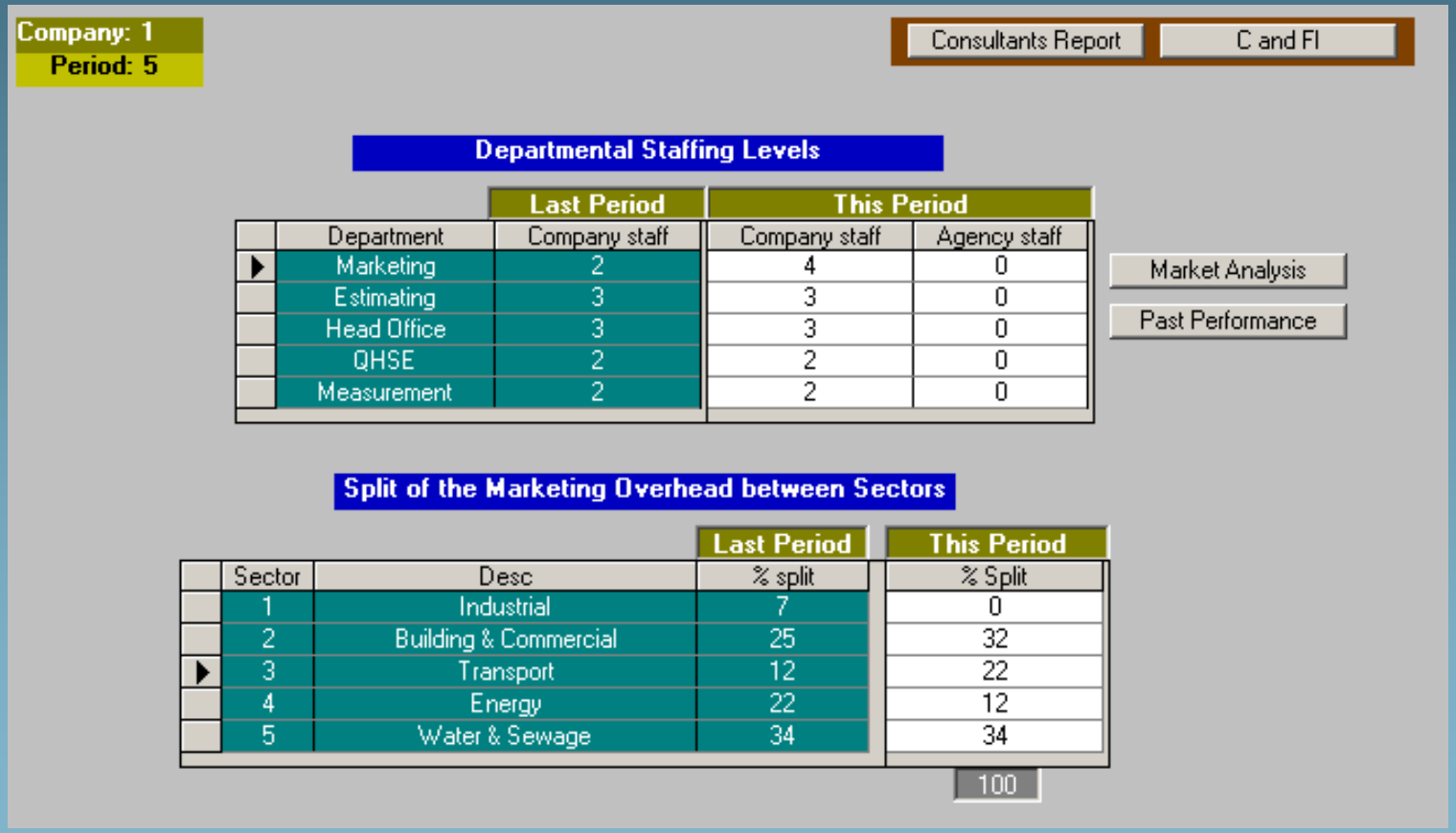
For example, the company may be basing their marketing strategy on working closely with particular clients. In this scenario they will need to know how future work is likely to be split by client.

The **Marketing Analysis** display enables the forecast future workload to be split by :-

- Value of work (the default)
- Type of work (build only, design & build)
- Number of jobs
- Clients

all of which could have a bearing on where to direct the marketing effort.

Entering Overhead Marketing Decisions - 2



Main Quit

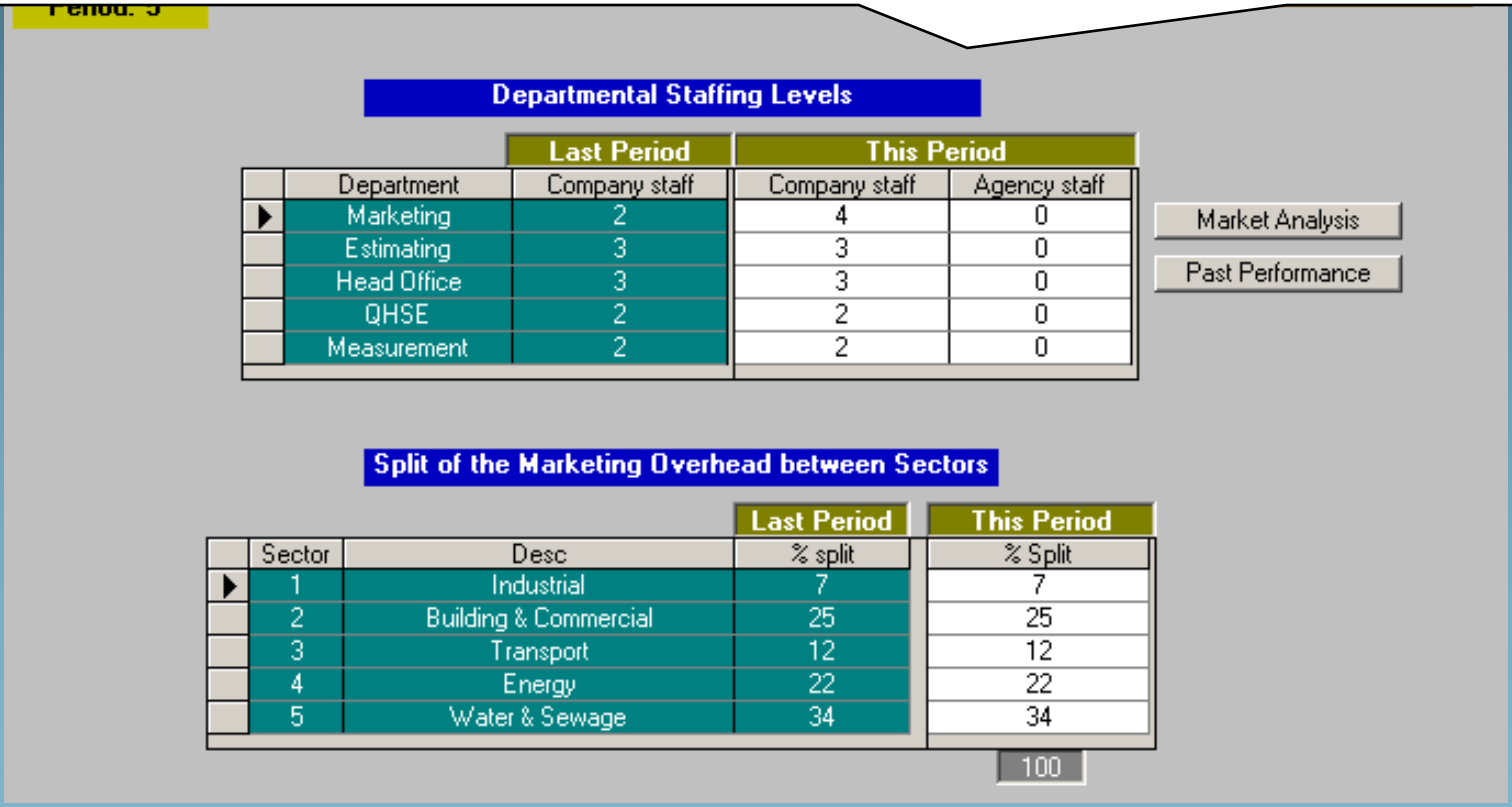
Entering Overhead Marketing Decisions - 3

Having set the staffing level, and directed the marketing effort into different job sectors, the company will be able to prequalify for a number of jobs that come onto the market in the period.

In addition, the **value of work prequalified for can be influenced** by other factors :-

- If the company are experts in a particular sector(s)
- The relationship with clients who announce the new contracts

We'll now look at each one in turn.



Departmental Staffing Levels

	Last Period	This Period	
Department	Company staff	Company staff	Agency staff
Marketing	2	4	0
Estimating	3	3	0
Head Office	3	3	0
QHSE	2	2	0
Measurement	2	2	0

Market Analysis

Past Performance

Split of the Marketing Overhead between Sectors

	Last Period	This Period
Sector / Desc	% split	% Split
1 Industrial	7	7
2 Building & Commercial	25	25
3 Transport	12	12
4 Energy	22	22
5 Water & Sewage	34	34
		100

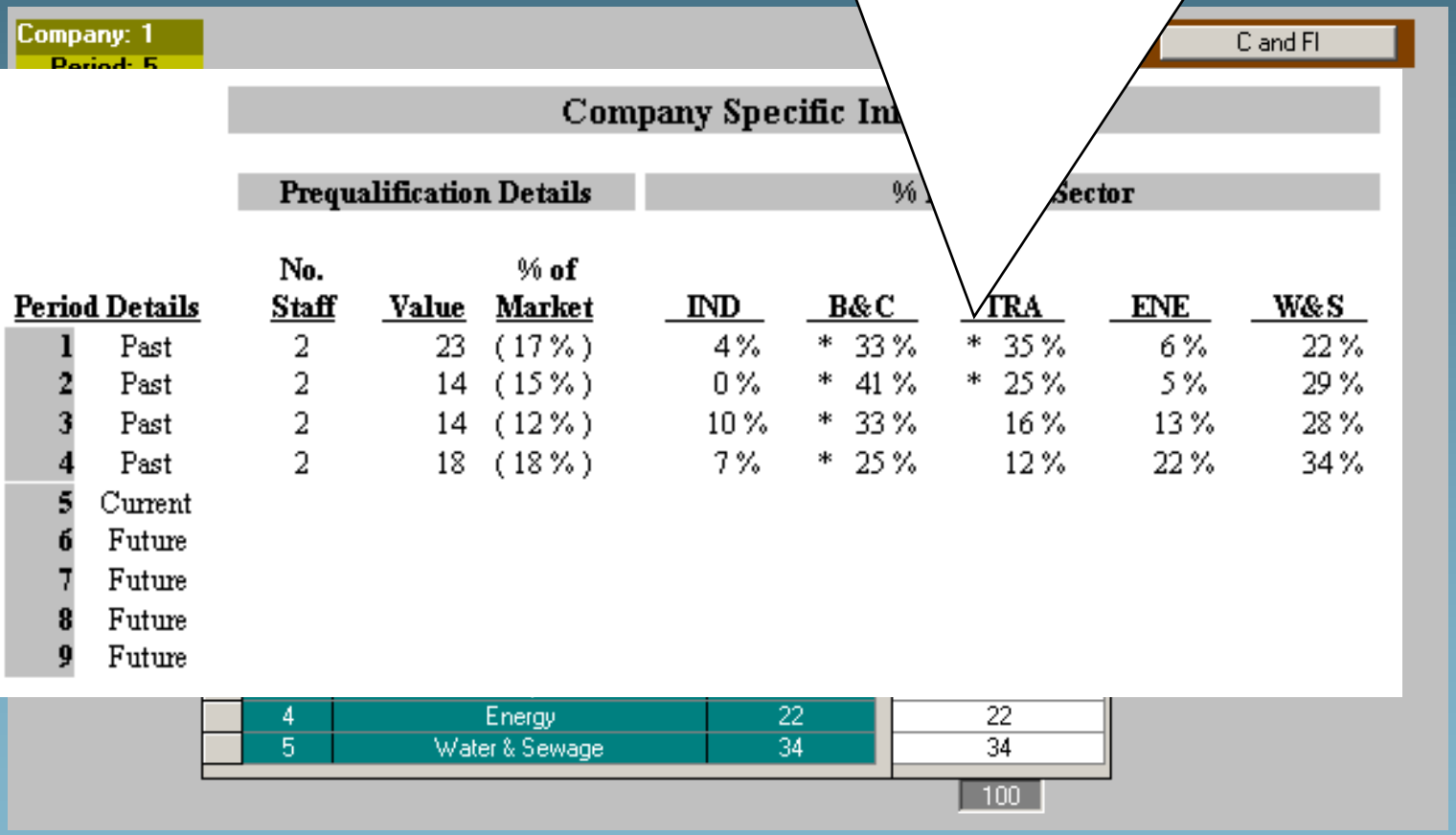
Main Quit

Entering Overhead Marketing Decisions - 3

Experts in a Sector

If the company's average marketing effort in a sector exceeds a particular %, then the company are deemed to be experts in the sector, and will prequalify for more work in the sector than anticipated.

The **Marketing Analysis Report** places a **'*'** against the sectors in which the company is an expert.

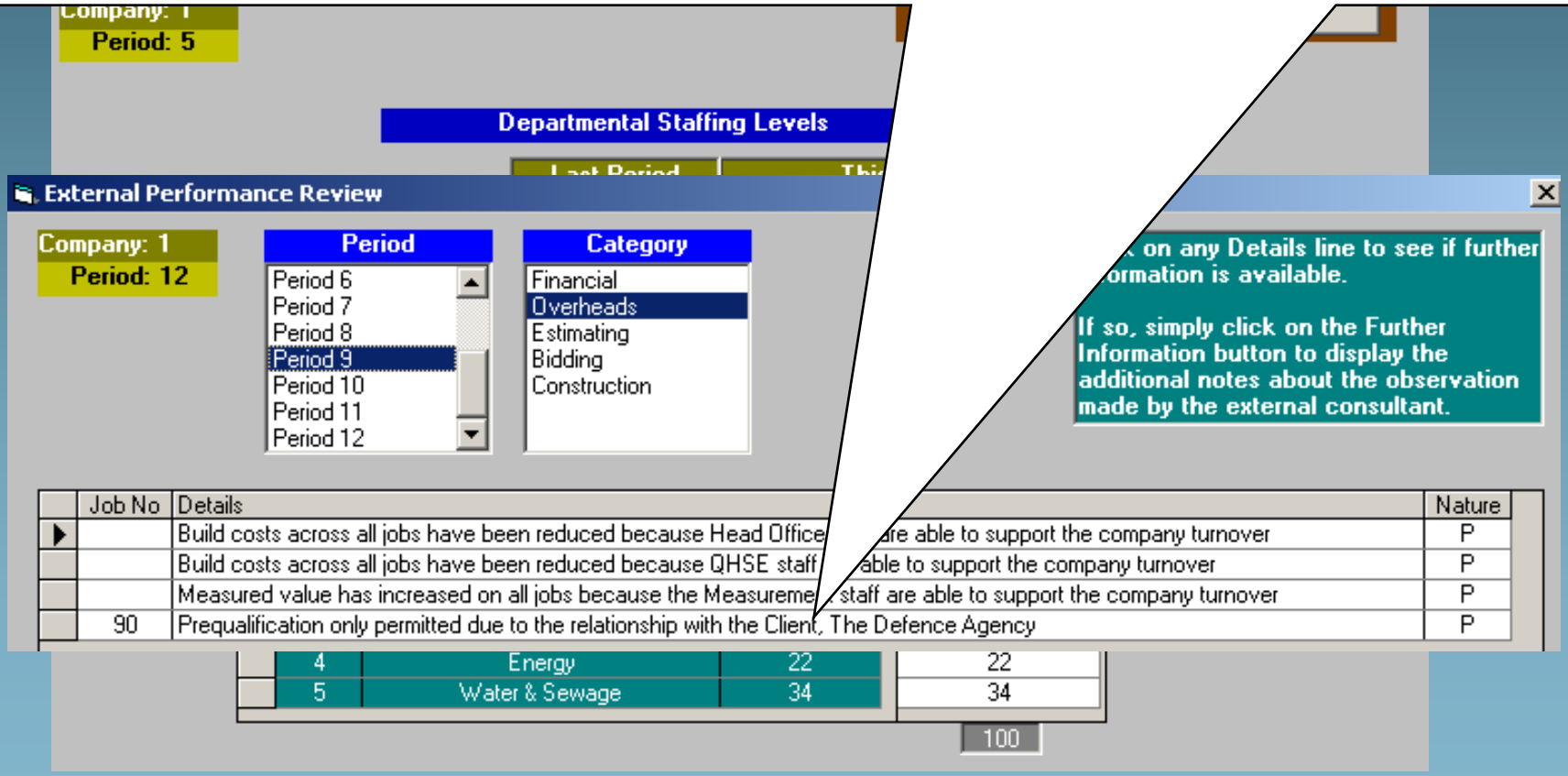


Client Relationships and Prequalification

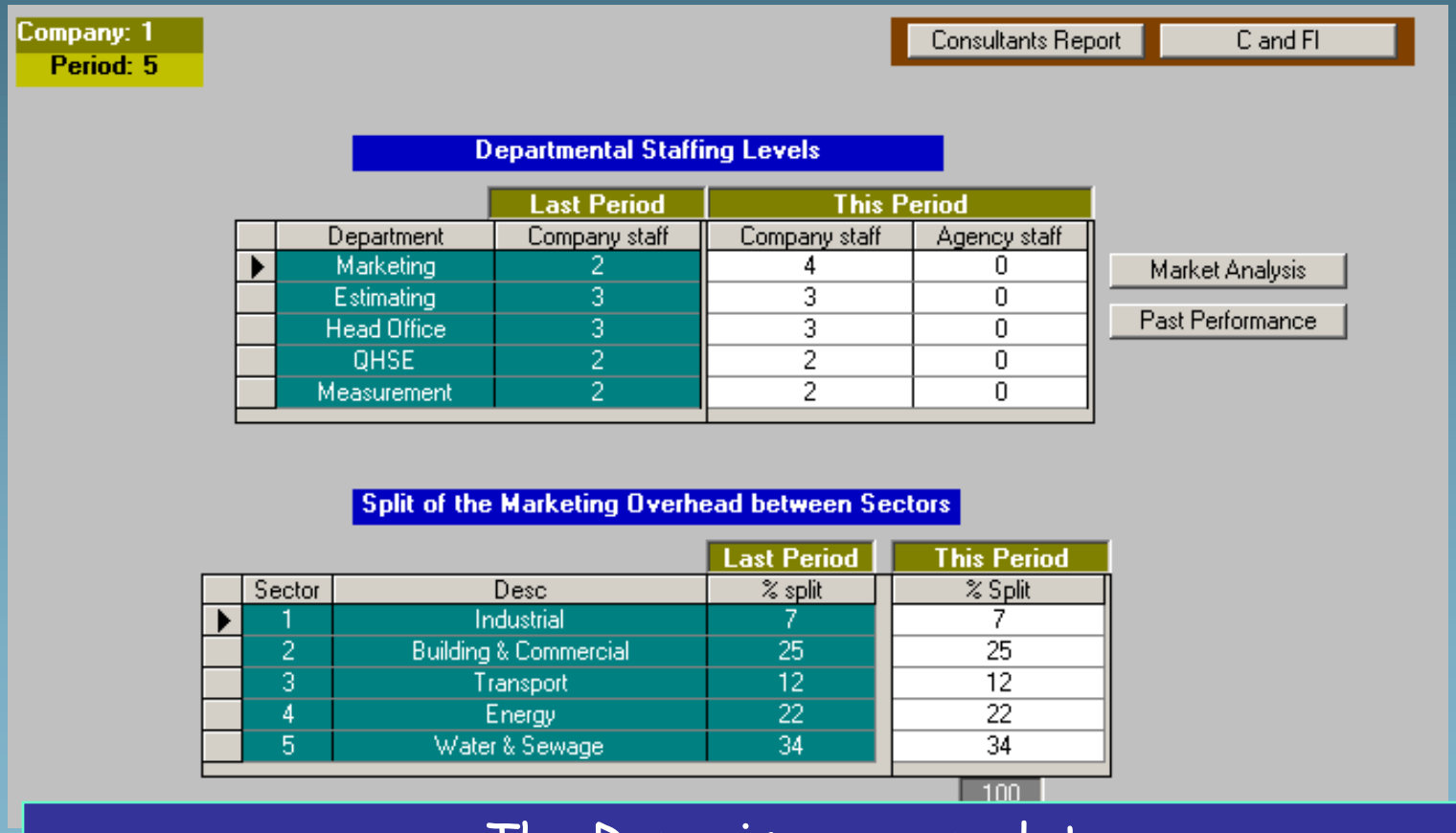
Client Relationships play a role in prequalifying for work in two ways :-

• If the relationship is an **improving one**, and at least at a certain level, the company may prequalify for a job that would have been unattainable, as shown in the **External Performance Review**.

• If the relationship is a **deteriorating one**, then there is a chance the client will not allow prequalification, regardless of the effort being put into the particular job sector.

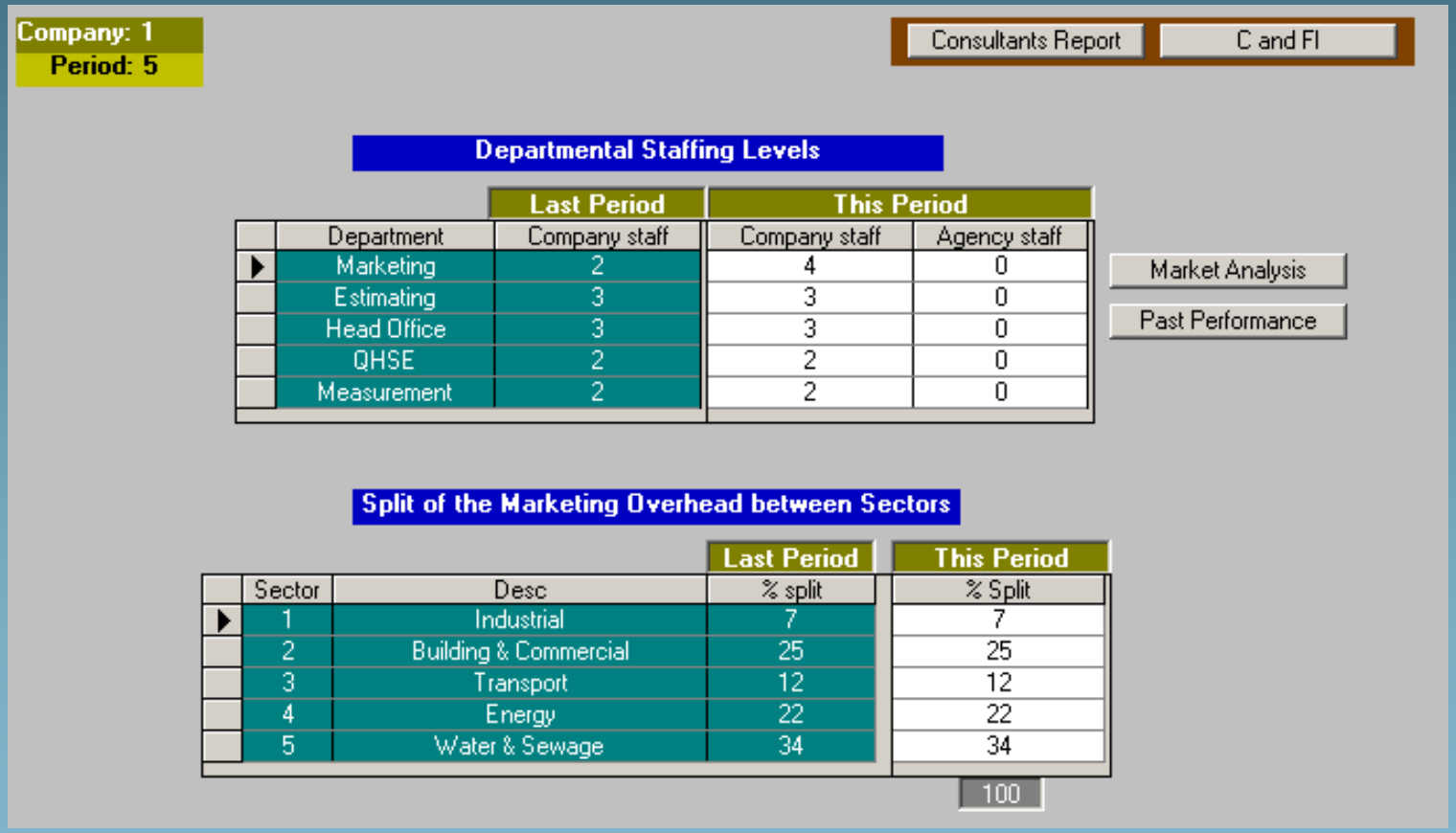


Entering Overhead Marketing Decisions - 3



The Demo is now complete

Entering Overhead Marketing Decisions - 3



Entering Overhead Estimating Decisions

Keep Clicking Anywhere on the screen to advance the demo

Entering Overhead Estimating Decisions

The Estimating staff price the jobs that the company have prequalified for, with costing decisions being made on the Estimating Screen.

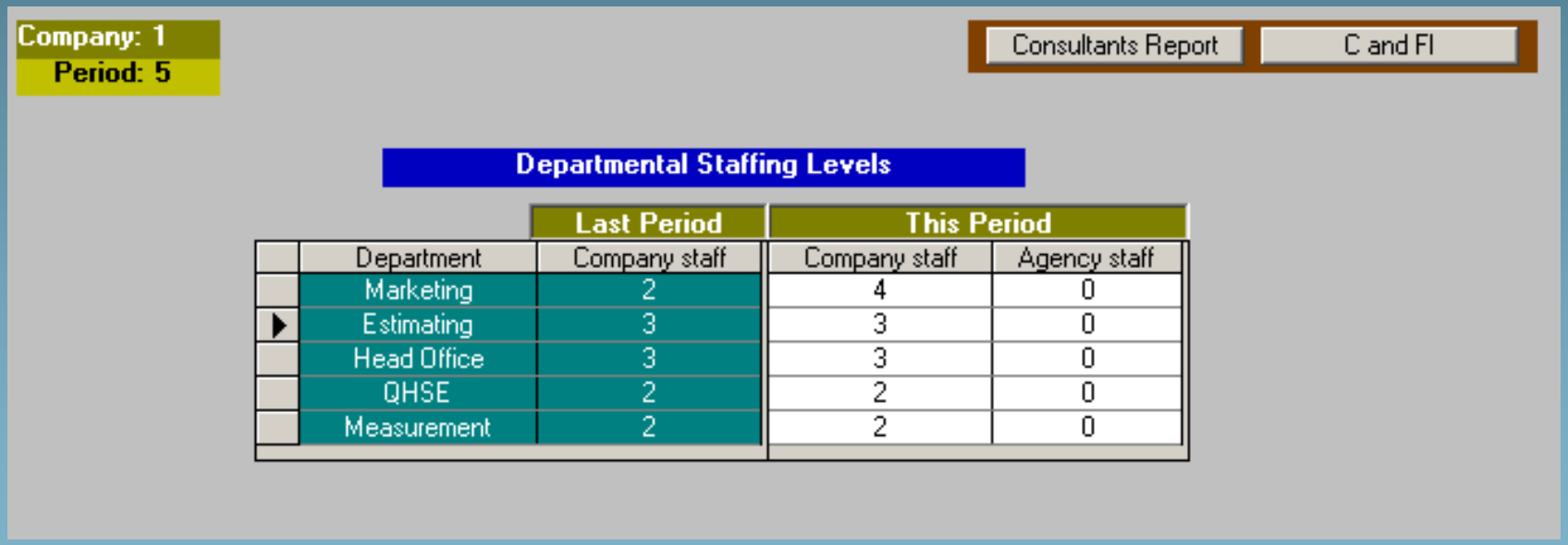
The Overhead Manager is concerned not with which jobs to price, but with the number of estimating staff needed to fulfil the estimating requirements.

If the company do not have enough man weeks available to fulfil their estimating requirements (Estimating Screen), the number of estimating staff needs to be increased by either employing more company staff, or using agency staff.

Entering Overhead Estimating Decisions

Consider the following situation.

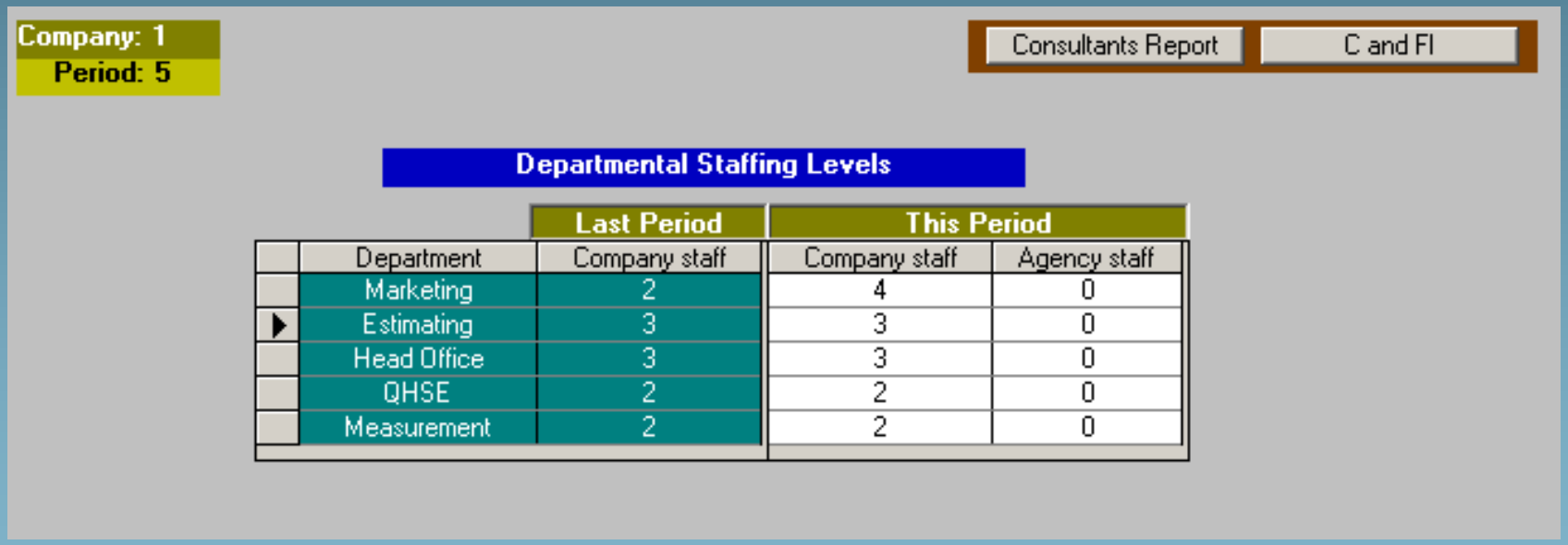
It's the beginning of period 5, and the Overhead Manager needs to decide upon the staffing level for the Estimating Department.



Entering Overhead Estimating Decisions

There are currently 3 estimating staff, each working 12 weeks per period, representing 36 estimating man weeks available.

To see if 36 man weeks is sufficient to fulfil the estimating requirements, we'll need to look at the estimating decisions that have been made.



Entering Overhead Estimating Decisions

28 man weeks of estimating time has been allocated across 3 jobs, and since the estimating time available is 36 man weeks (all the company's own staff) **there is no problem fulfilling** the estimating requirements with the current level of staff, and **no additional staff need to be employed**.

Key Point

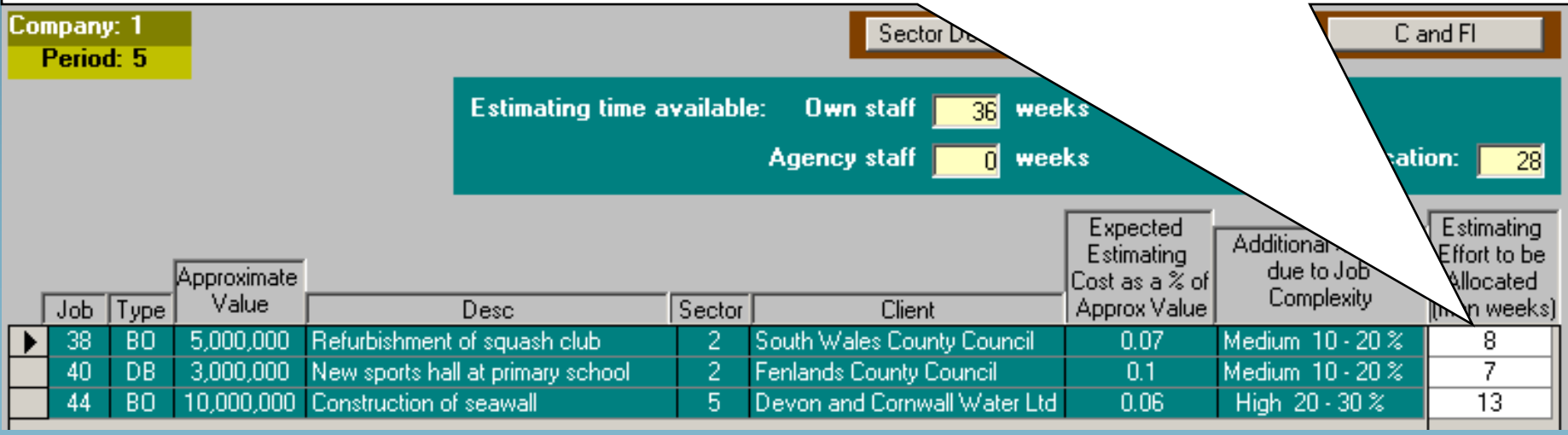
If **more man-weeks had been allocated than were available**, unless something was done, some estimates would not be completed. In this scenario jobs would be costed in job number order until the estimating resource ran out, after which point some jobs would not be costed accurately.

To overcome any shortfall, there are 2 choices :-

• Employ more company's staff, bearing in mind that there is a limit on the number of new company staff that can be employed each period, as defined in the **Company and Financial Information**. New company staff also incur a recruitment & training cost in their first period.

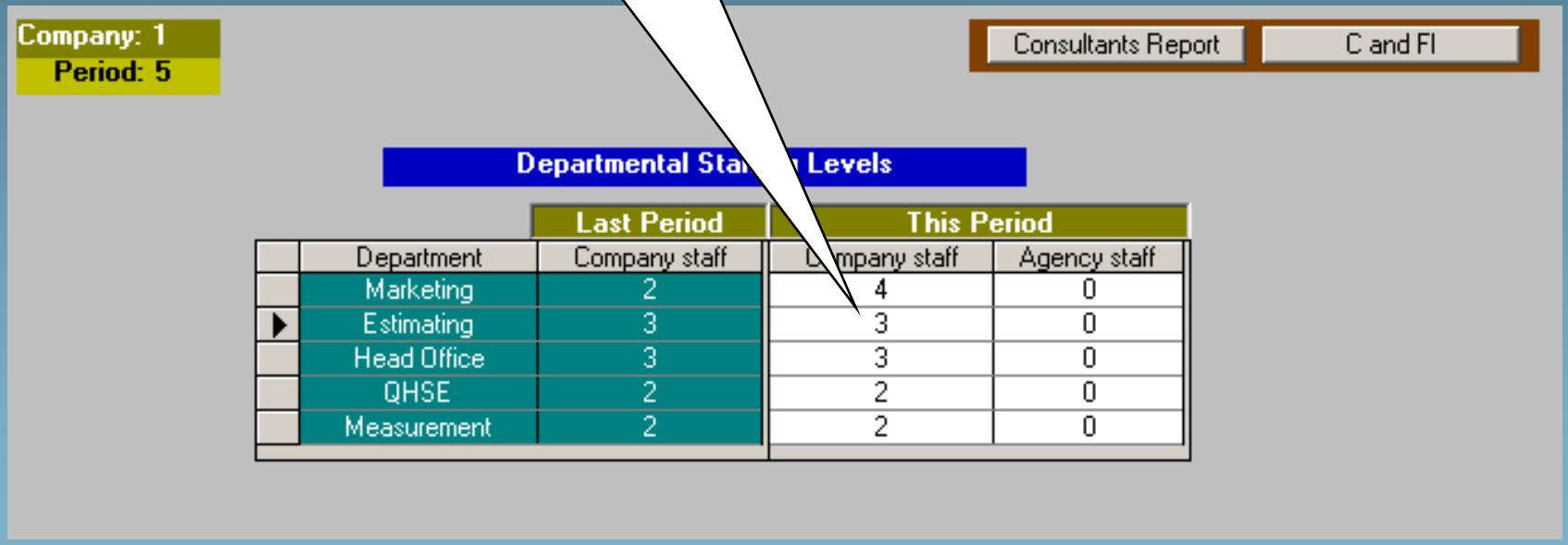
• Employ agency staff for the current period only. Agency staff attract a higher salary than company staff.

Its normally more **cost-effective** to increase the company's own staff rather than use agency staff.

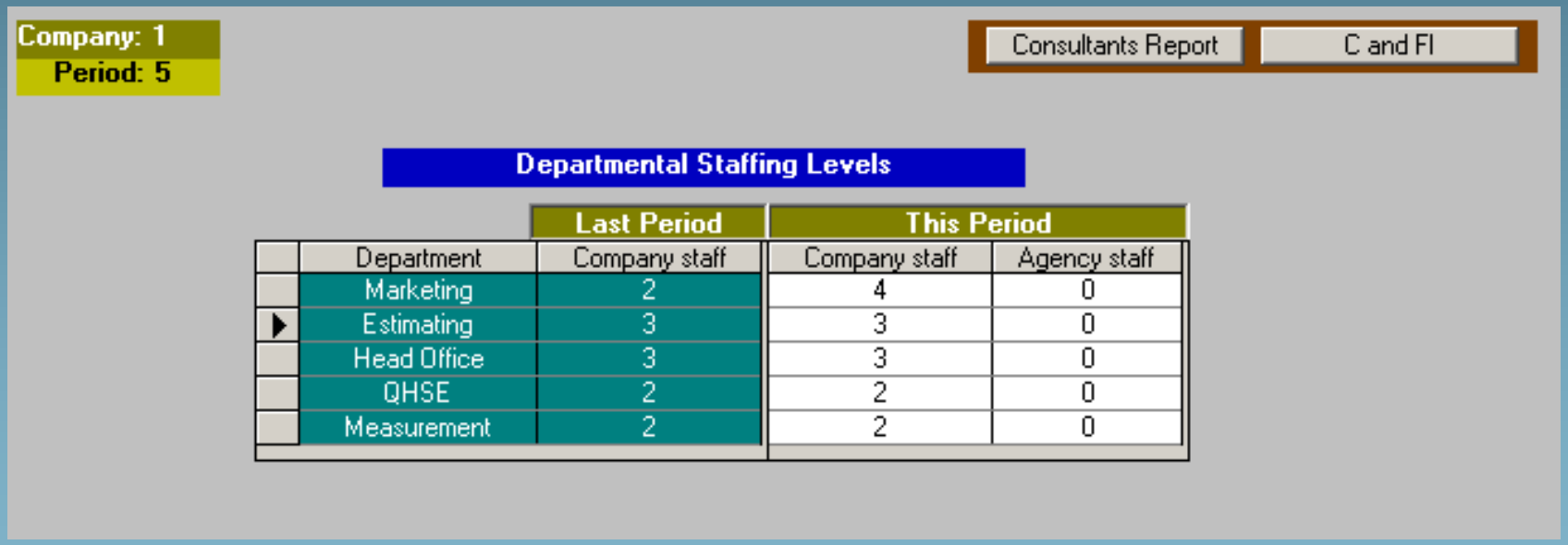


Entering Overhead Estimating Decisions

If any changes had been made to the level of estimating staff, the changes would have been immediately transferred to the **Estimating Screen**.



Entering Overhead Estimating Decisions



The Demo is now complete

Entering Overhead Estimating Decisions

Company: 1
Period: 5

Consultants Report | C and FI

Departmental Staffing Levels

	Department	Last Period: Company staff	This Period: Company staff	This Period: Agency staff
	Marketing	2	4	0
▶	Estimating	3	3	0
	Head Office	3	3	0
	QHSE	2	2	0
	Measurement	2	2	0

Entering Overhead Other Dept Decisions - 1

Keep Clicking Anywhere on the screen to advance the demo

Entering Overhead Other Dept Decisions - 1

The staff in these departments perform tasks related to the company's ongoing jobs :-

- Head Office staff deal with buying, accounting and IT issues.
- QHSE staff deal with quality, health & safety and environmental issues.
- Measurement staff (quantity surveyors) ensure that money is recovered from the client.

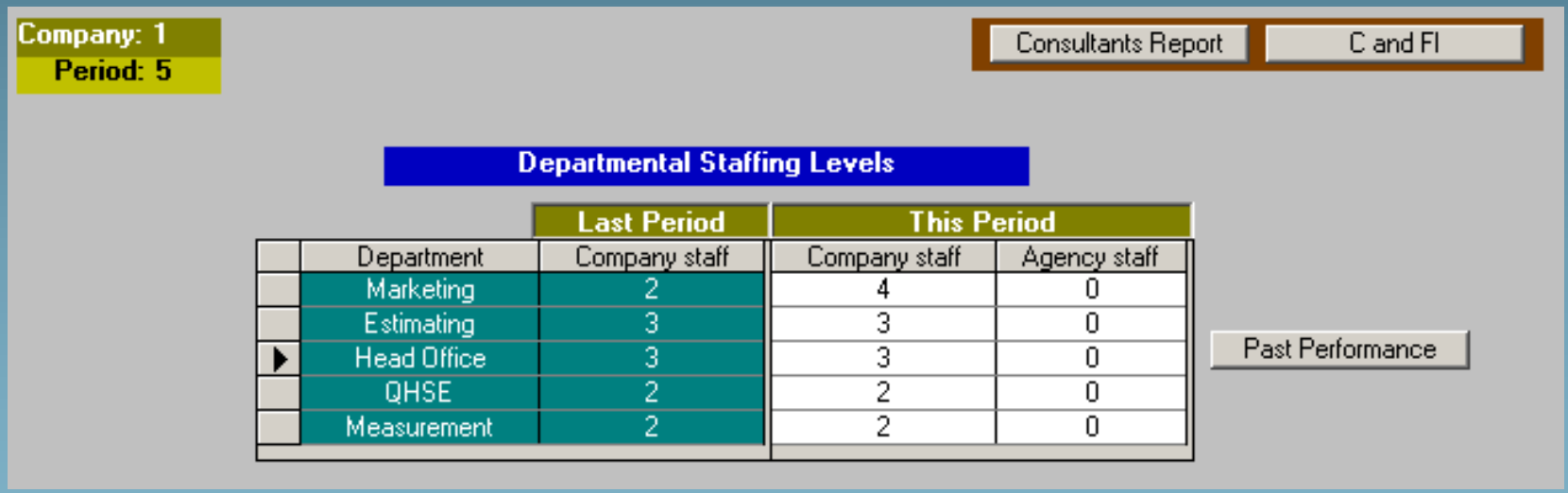
The task of the Overhead Manager is to ensure that the level of staff in each department each period is able to manage the company's ongoing jobs without any deterioration in the performance of the jobs.

We'll now look at an example of how to set the appropriate staffing levels.

Entering Overhead Other Dept Decisions - 1

Consider the following situation.

It's the beginning of period 5, and the Overhead Manager needs to decide upon the staffing levels for the Head Office, QHSE and Measurement Departments.



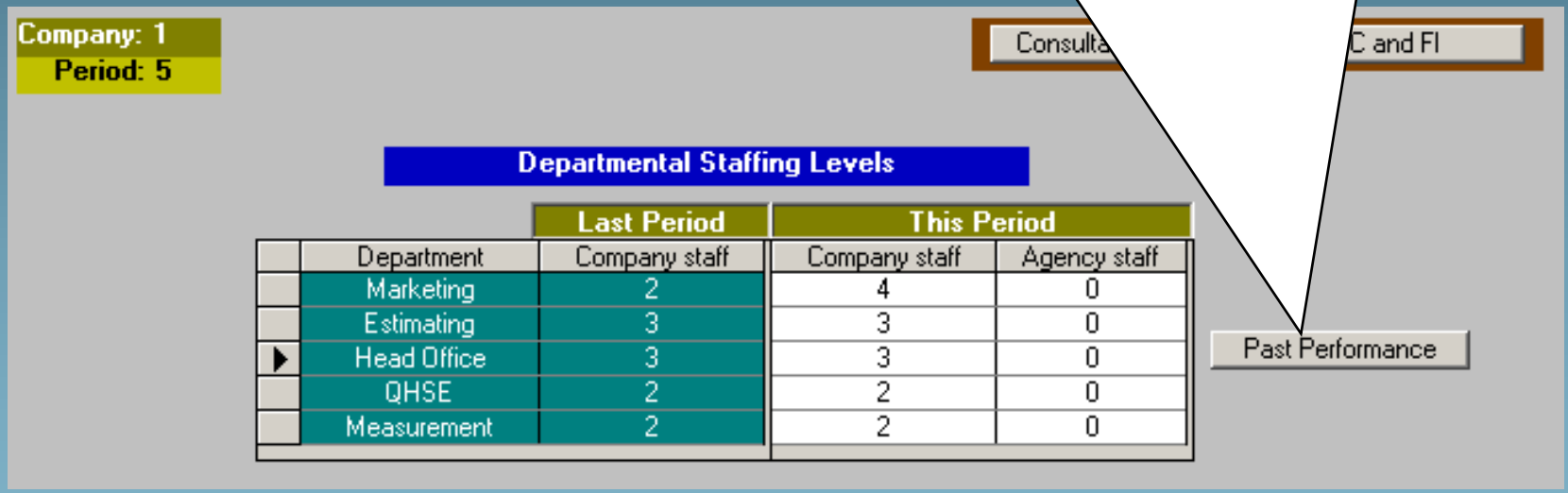
Entering Overhead Other Dept Decisions - 1

The principal for setting the staffing level applies to all 3 departments, so we'll concentrate on the Head Office Department.

This period we currently have 3 staff, all company staff and no agency staff.

How do we know if 3 staff will be able to manage the company's turnover this period ?

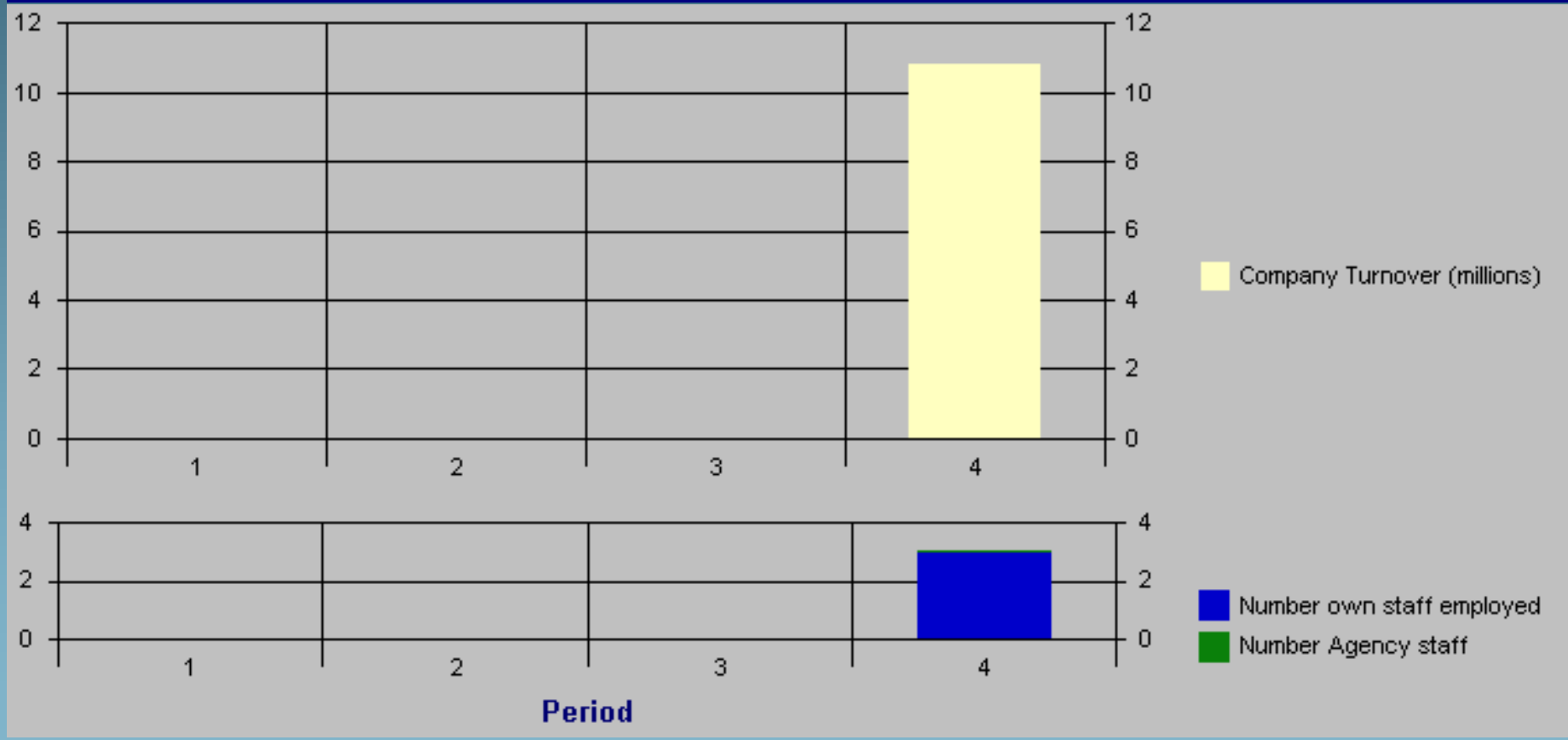
To answer this question we must first assess the level of turnover that each person can support, and to do this we need to use the **Past Performance button**.



Entering Overhead Other Dept Decisions - 1

Period 4, the last period of the History, set the benchmark staffing/turnover levels i.e., the number of staff in each department could support the level of turnover without impairing performance.

We can see that 3 staff can cope with 11m of turnover, or 3.7m per person. This is the benchmark for all future staffing levels for the Head Office Department.

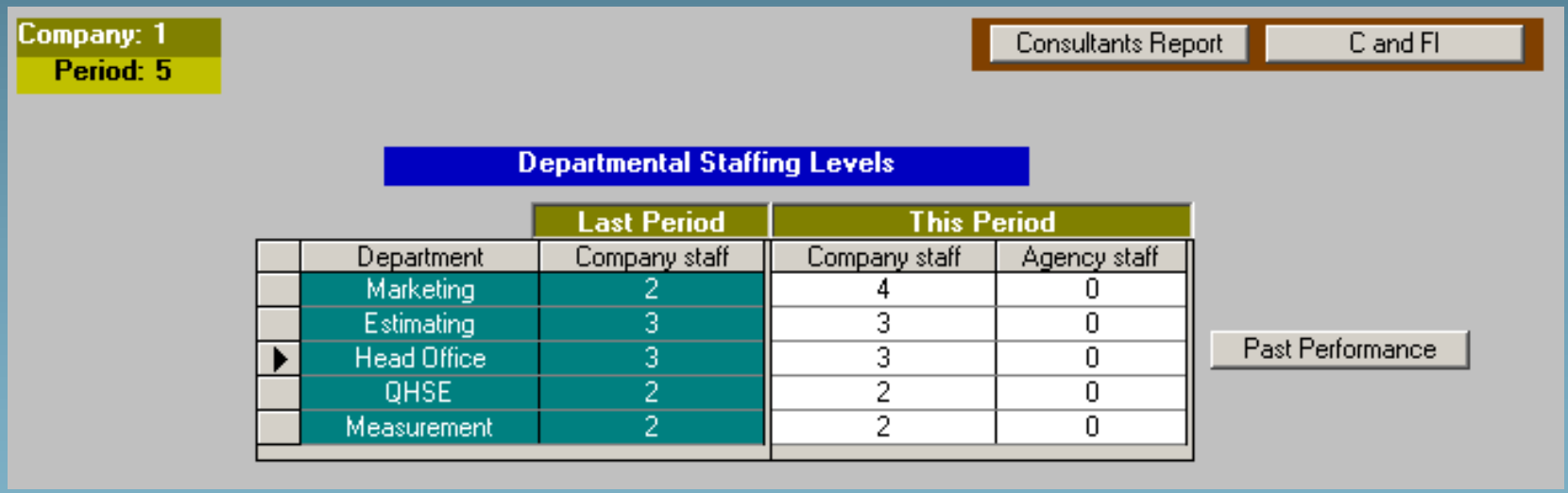


Entering Overhead Other Dept Decisions - 1

We now know that the 3 staff can handle 11m of turnover.

To see if this staffing level is sufficient we need to determine the likely turnover this period.

To do this we need to refer to the decisions made on the Construction Screen.



Entering Overhead Other Dept Decisions - 1

Company: 1
Period: 5

Consultants Report | C and FI

Departmental Staffing Levels

	Department	Last Period Company staff	This Period Company staff	This Period Agency staff
	Marketing	2	4	0
	Estimating	3	3	0
▶	Head Office	3	3	0
	QHSE	2	2	0
	Measurement	2	2	0

Past Performance

Entering Overhead Other Dept Decisions - 2

On the Construction screen, and assuming appropriate labour allocations have been made, the **anticipated turnover** for the period is calculated as follows :-

(Total Labour On Site * value per man period)

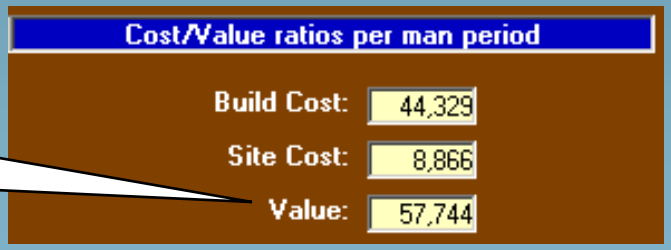
This equates to :-

```
Job 2:   (23 x 57,744) = 1.3m
Job 8:   (80 x 40,015) = 3.2m
etc
Total:                  17.6m
```

	Last Period					This Period							
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers				Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
2	20	20	0	179,088	In Second Period	26	23	23	0	0	3	0	0	205951
8	59	59	0	372,286	In Second Period	69	80	69	11	0	10	0	0	504795
9	84	84	0	438,510	In Second Period	87	104	104	0	0	20	0	0	542917
13	162	137	25	877,619	In Second Period	177	216	137	79	0	0	0	0	1170158
20	0	0	0		In First Period	12	17	17	0	0	17	0	0	173542
21	0	0	0		In First Period	17	23	0	23	0	0	0	0	167689

The **value per man period** is shown on the Job Details (for job 2), and is :-

(original bid / total man periods)



Main Quit

Entering Overhead Other Dept Decisions - 2

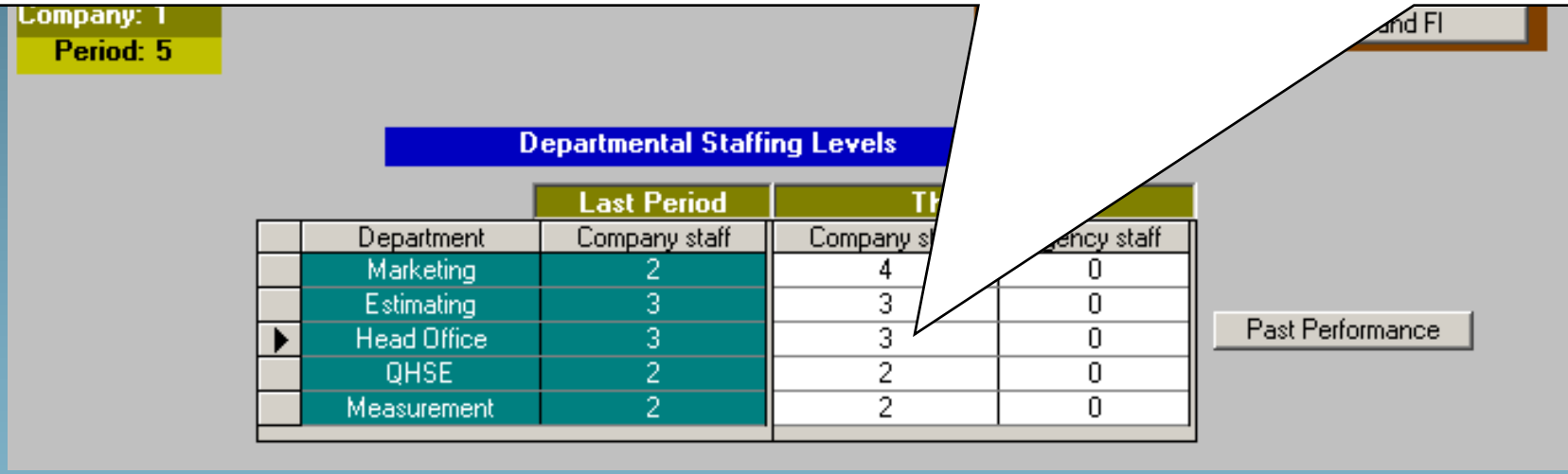
Since 3 staff can handle 11m, and the turnover is likely to be around 17.6m, we have **a shortfall** of Head Office staff, and need to take on an extra 2 staff.

To overcome the shortfall, there are 2 choices :-

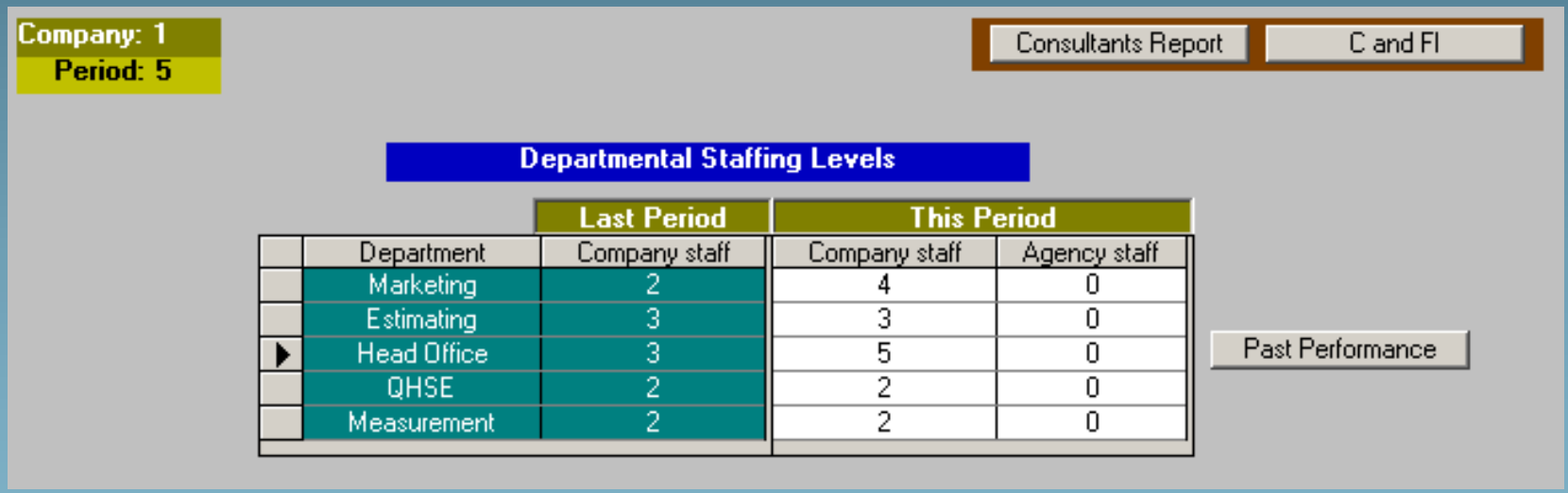
• Employ more **company's staff**, bearing in mind that there is a limit on the number of new company staff that can be employed each period, as defined in the **Company and Financial Information** (3 for Head Office). New company staff also incur a recruitment & training cost in their first period.

• Employ **agency staff** for the current period only. Agency staff attract a higher salary than company staff.

Since the company is looking to increase turnover in the next year, its more **cost-effective in the long run** to increase the company's own staff rather than use agency staff, so we'll employ an additional 2 company staff, which is within the limitations for new staff.



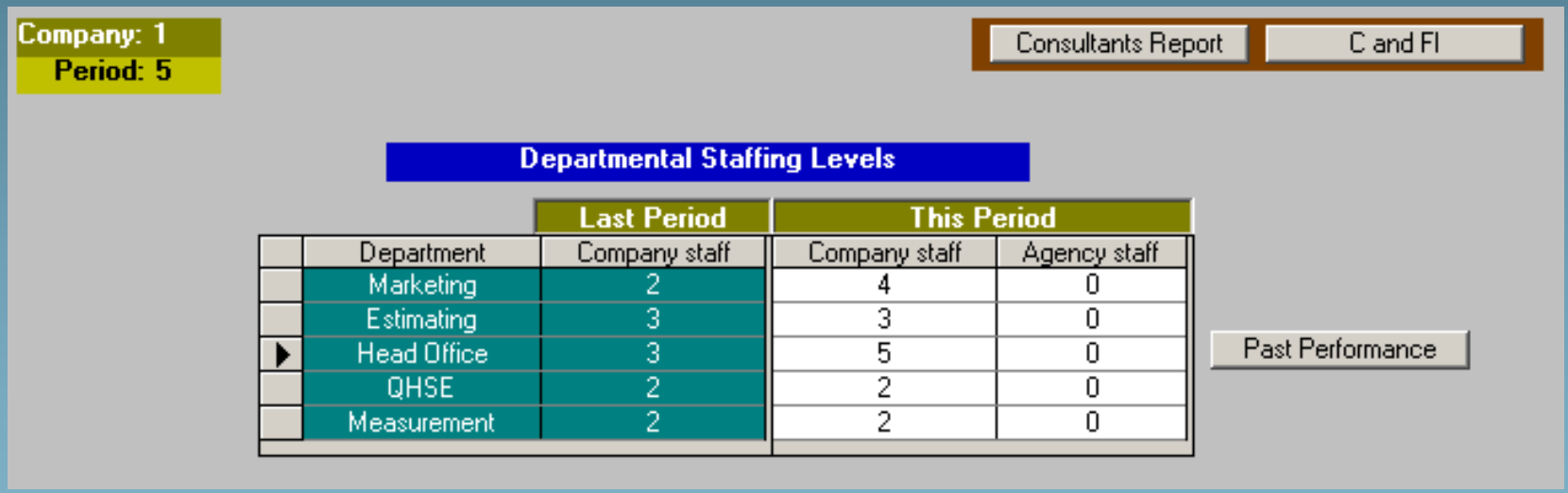
Entering Overhead Other Dept Decisions - 2



Entering Overhead Other Dept Decisions - 2

The staffing levels for the QHSE and Measurement Departments are determined in the same manner, based upon benchmark staffing levels and anticipated turnover levels.

Having performed the necessary analysis, 1 extra person is required in each department.



Entering Overhead Other Dept Decisions - 2

Company: 1
Period: 5

Consultants Report | C and FI

Departmental Staffing Levels

	Department	Last Period Company staff	This Period Company staff	This Period Agency staff
	Marketing	2	4	0
	Estimating	3	3	0
▶	Head Office	3	5	0
	QHSE	2	3	0
	Measurement	2	3	0

Past Performance

Entering Overhead Other Dept Decisions - 2

We have seen that the appropriate staffing levels in the Head Office, QHSE and Measurement Departments are linked to the company's turnover.

But what happens if we get our calculations wrong, and the staffing levels are not sufficient to cope with the turnover in a period ?

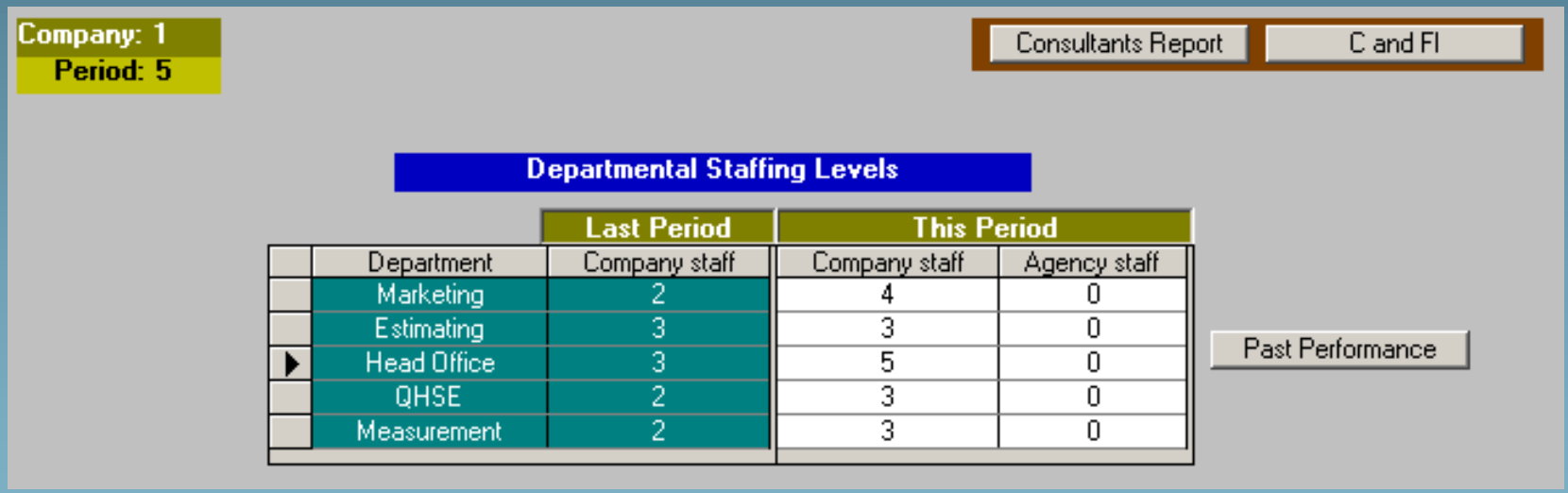
Understaffing of the departments can have serious affects across all jobs being progressed, namely :-

- Head Office, an increase in job costs (build costs)
- QHSE, an increase in job costs (build and risk costs)
- Measurement, a reduction in measured value (turnover)

Understaffing is a false economy. It might reduce overhead costs, but can significantly reduce job profits, resulting in reduced operating profits for the company.

Conversely, excess staffing levels can reduce costs and increase measured value, and the benefits can far outweigh the additional staffing costs, but only up to a point.

Entering Overhead Other Dept Decisions - 2



The Demo is now complete

Entering Overhead Other Dept Decisions - 2

Company: 1
Period: 5

Consultants Report | C and FI

Departmental Staffing Levels

	Department	Last Period Company staff	This Period Company staff	This Period Agency staff
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▶	Head Office	3	5	0
	QHSE	2	3	0
	Measurement	2	3	0

Past Performance

Entering Overhead Non Dept Decisions

Keep Clicking Anywhere on the screen to advance the demo

Entering Overhead Non Dept Decisions

As well as the departmental overheads, there are a number of non-departmental overheads for which decisions are made in other areas, namely :-

- Idle project managers (Personnel Screen)
- Idle labour pool (Construction Management Screen)

We'll take a brief look at each one.

Entering Overhead Non Dept Decisions

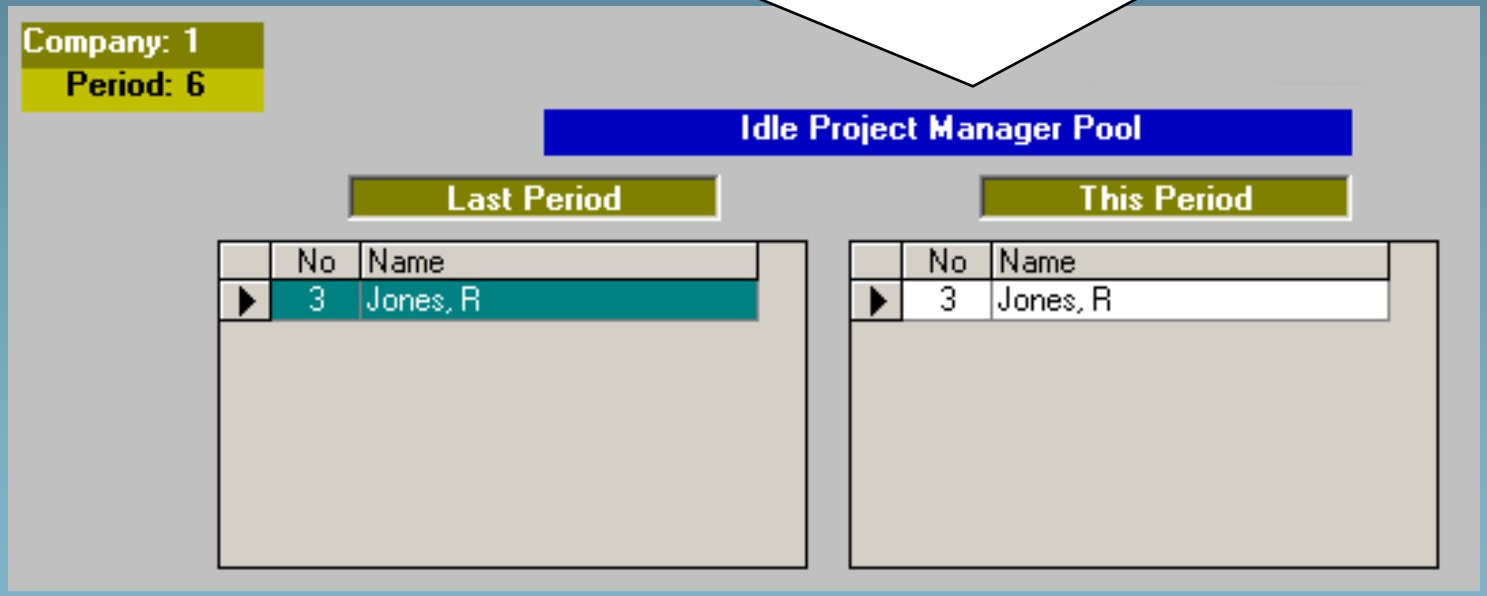
Idle Project Manager Pool (Personnel Screen)

Project managers employed by the company who are not currently allocated to an on-going job are held in the **Idle Project Manager Pool**.

They can be placed there if :-

- A job has just finished, and the project manager is placed in the pool until the company decides what to do with him
- The project manager has been recruited from the market for use on a future contract, and the company does not want to risk losing them to a rival.

Project managers must be paid their salary whilst they are in the idle pool, so it makes sense to try and allocate them to appropriate contracts, which is the responsibility of the **Personnel Manager**.



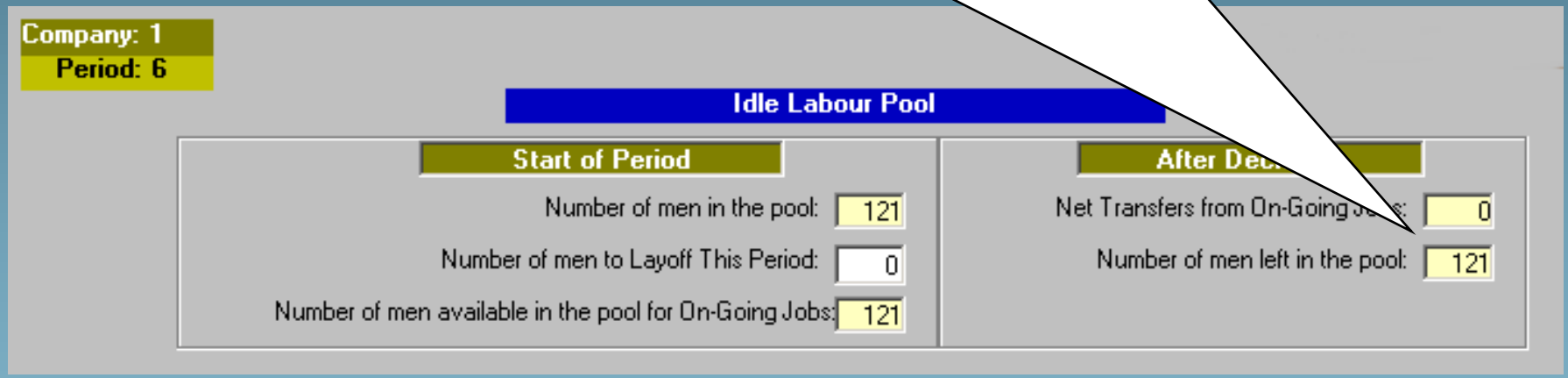
Entering Overhead Non Dept Decisions

Idle Labour Pool (Construction Management Screen)

The company's own site-based labourers who are not currently allocated to an on-going job are held in the **Idle Labour Pool**.

Idle Labourers incur a cost whilst they are in the idle pool, so it normally makes sense to either pay them off, or allocate them to appropriate contracts, which is the responsibility of the **Construction Manager**.

Sometimes a decision is made to **deliberately keep excess labour** in the idle pool. This may happen if the company is expecting to win a labour-intensive job, and its cheaper to pay them for being idle in the short-term, rather than incur high training costs in employing new staff in the future.



Main Quit

Entering Overhead Non Dept Decisions

The Demo is now complete

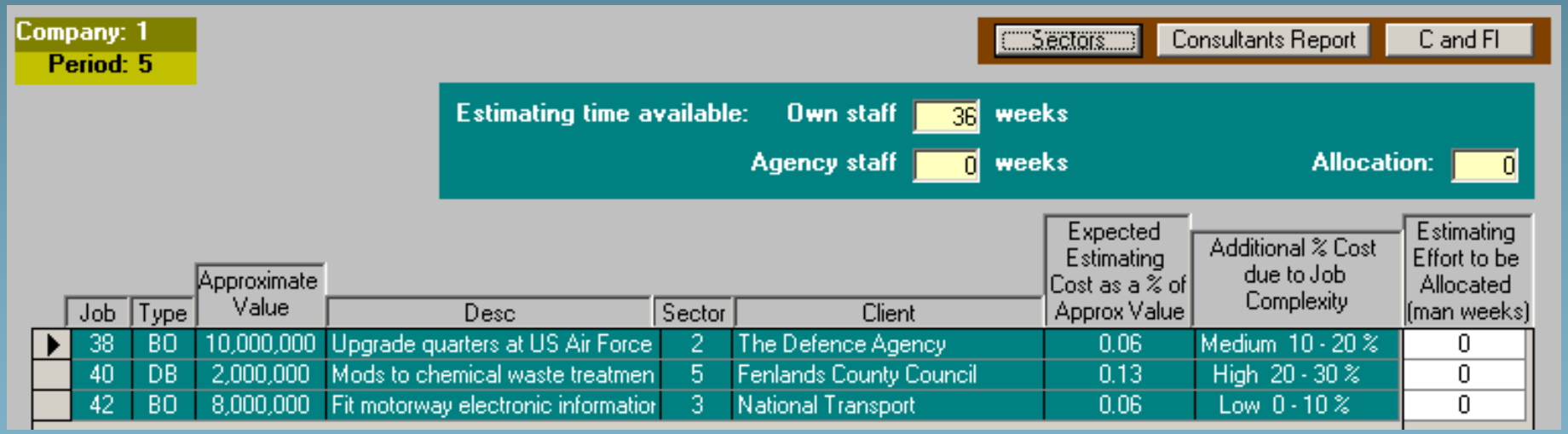
Entering Overhead Non Dept Decisions

Estimating Decisions

The Company's marketing effort last period will have enabled the Company to prequalify for a number of jobs, which are shown on the estimating screen.

If the Company intends to bid for a job, the Estimating Manager must decide how much effort (man weeks) to put into pricing the job, which involves estimating costs and associated risks.

It is important to devote the necessary resources to produce accurate estimates, creating 'high confidence' in the estimate, and enabling more informed and competitive bidding.



Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
38	BO	10,000,000	Upgrade quarters at US Air Force	2	The Defence Agency	0.06	Medium 10 - 20 %	0
40	DB	2,000,000	Mods to chemical waste treatmen	5	Fenlands County Council	0.13	High 20 - 30 %	0
42	BO	8,000,000	Fit motorway electronic informatior	3	National Transport	0.06	Low 0 - 10 %	0

Entering Estimating decisions - 1

Keep Clicking Anywhere on the screen to advance the demo

Entering Estimating decisions - 1

It's period 5, and after the company prequalified for 3 new jobs last period, the Estimating Manager needs to decide which of the jobs, if any, to price.

Company: 1
Period: 5

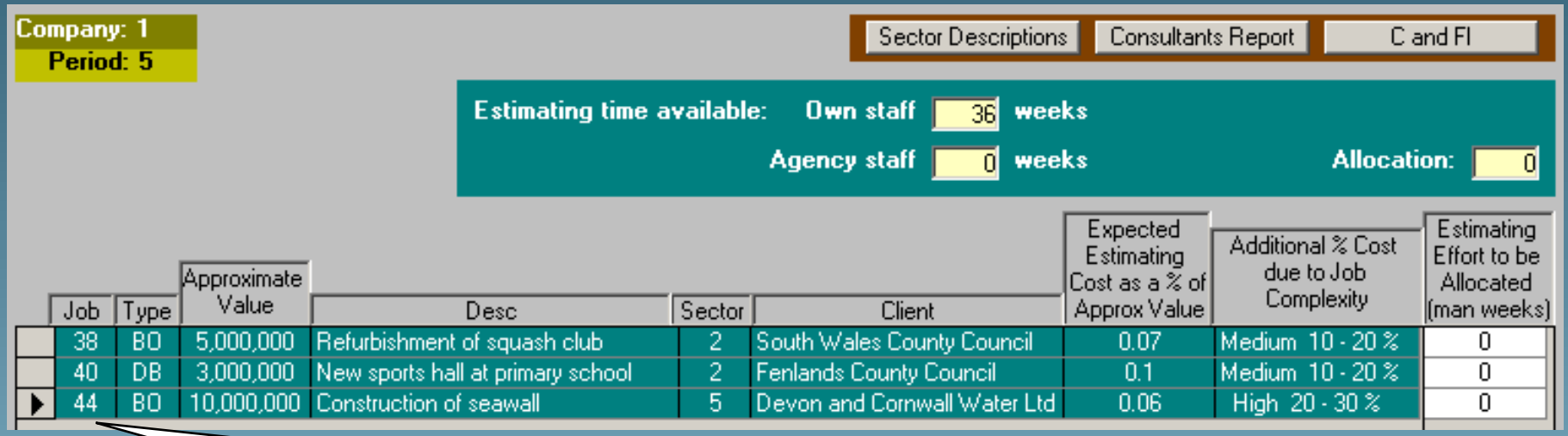
Sector Descriptions | Consultants Report | C and FI

Estimating time available: Own staff 36 weeks
Agency staff 0 weeks
Allocation: 0

Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
38	BO	5,000,000	Refurbishment of squash club	2	South Wales County Council	0.07	Medium 10 - 20 %	0
40	DB	3,000,000	New sports hall at primary school	2	Fenlands County Council	0.1	Medium 10 - 20 %	0
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	0

Main | Quit

Entering Estimating decisions - 1



Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
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40	DB	3,000,000	New sports hall at primary school	2	Fenlands County Council	0.1	Medium 10 - 20 %	0
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	0

The Estimating Manager is particularly interested in **job 44**, which has the following features :-

- It is a traditional **Build Only** job, where the contractor is responsible for the build only, and not the design
- It has an approximate value of **10,000,000**
- It involves the **construction of a seawall**
- The client is **Devon and Cornwall Water Ltd**
- The job is categorised as a **Water & Sewage** (sector 5) contract
- The job is classified as **high complexity**

Entering Estimating decisions - 1

The Estimating Manager must now decide how many man-weeks of estimating time need to be allocated to produce an accurate estimate of the costs and risk involved in the completion of job 44 ?

Company: 1
Period: 5

Sector Descriptions | Consultants Report | C and FI

Estimating time available: Own staff 36 weeks
Agency staff 0 weeks
Allocation: 0

Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
38	BO	5,000,000	Refurbishment of squash club	2	South Wales County Council	0.07	Medium 10 - 20 %	0
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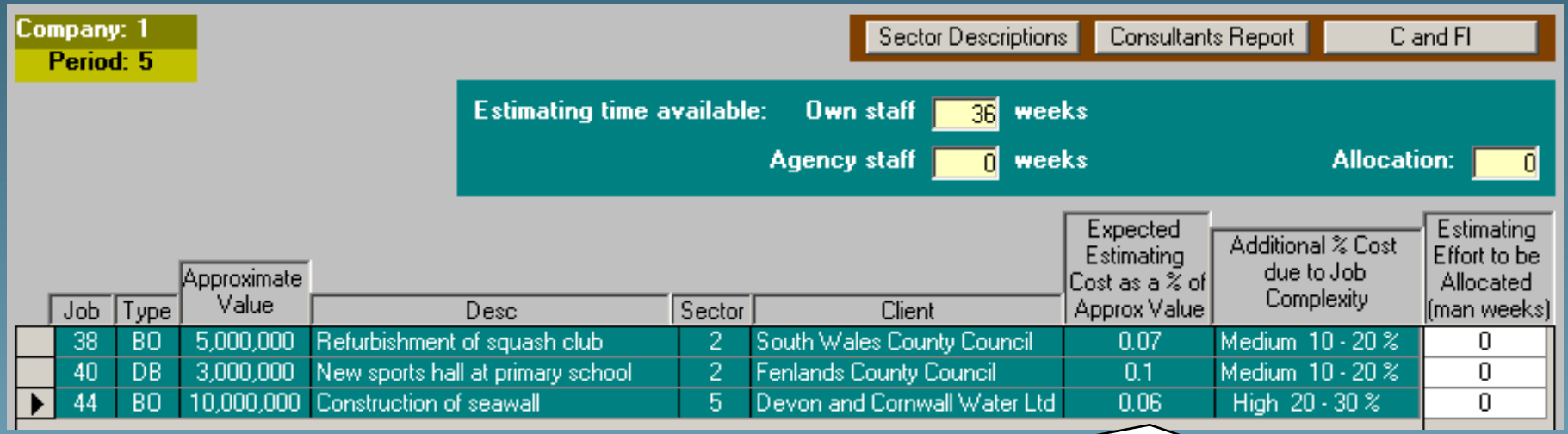
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	0

Main | Quit

Entering Estimating decisions - 1



Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
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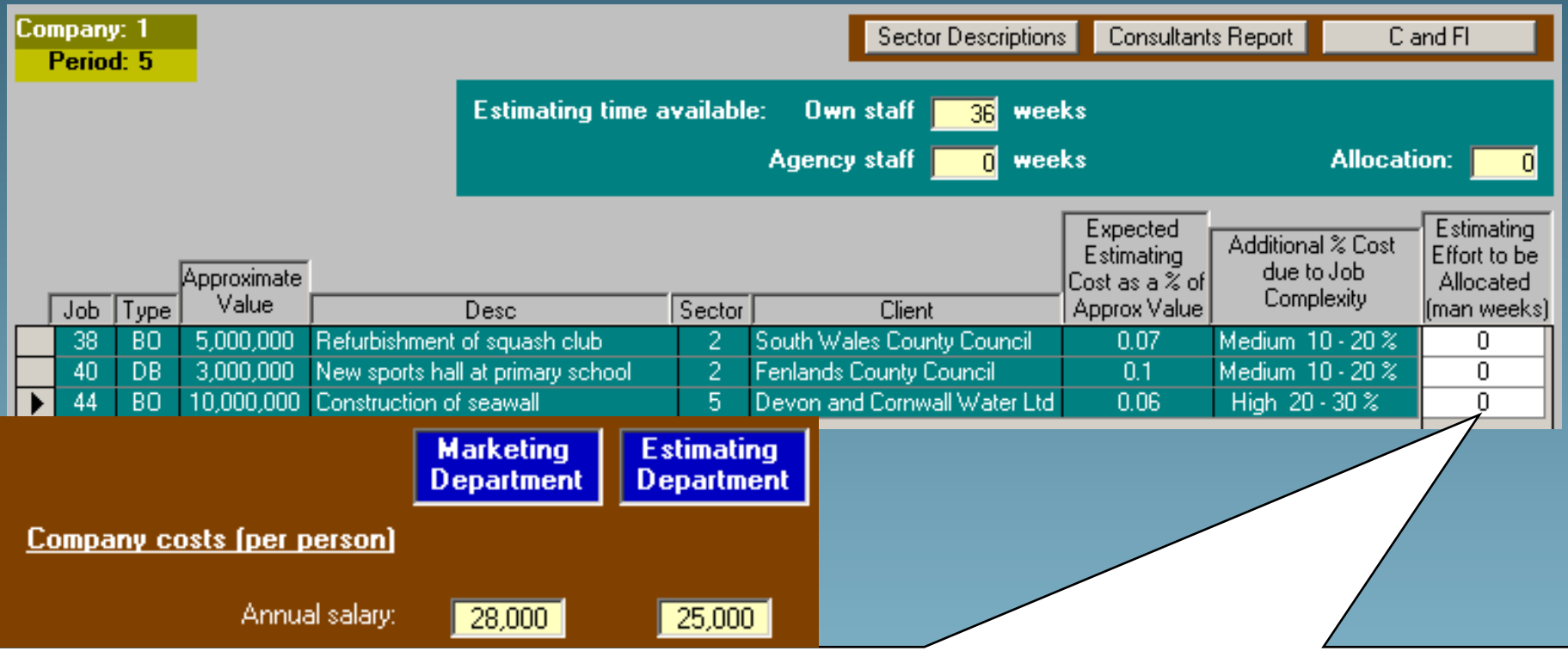
40	DB	3,000,000	New sports hall at primary school	2	Fenlands County Council	0.1	Medium 10 - 20 %	0
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	0

The Estimating Manager needs to consider two factors in determining the number of man-weeks to allocate to the estimate.

- The **anticipated estimating cost** required to produce an accurate estimate, which is based upon the job size. In this case it is 0.06% of the approximate value, or 6,000
- The job is classified as one of **high complexity**, requiring between 20 and 30% additional estimating cost. The Estimating Manager decides to add the full 30%, or 1,800

Thus, the **combined estimating cost** is 7,800, which should guarantee 'high confidence' that the estimate will be accurate.

Entering Estimating decisions - 1

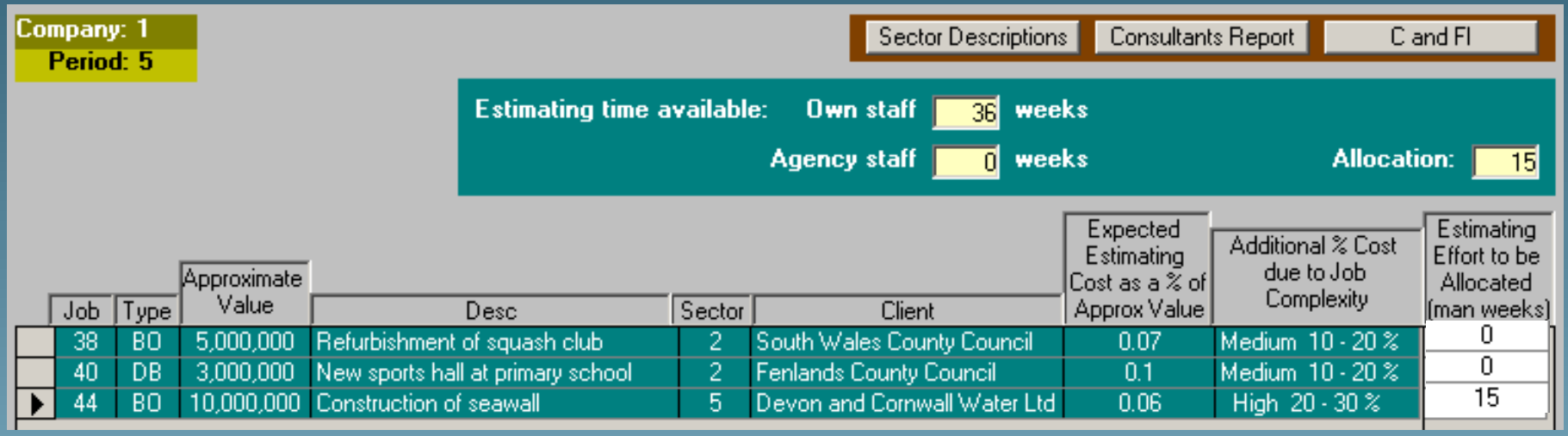


The Estimating Manager must now decide how many **man-weeks** of estimating time the 7,800 equates to ?

The **Company and Financial Information** shows that an estimator costs 25,000 per annum. Allowing for 4 weeks annual leave, this equates to 521 per week (25,000 / 48).

Based upon these calculations, the estimating cost of 7,800 is equivalent to 14.97 weeks (7,800 / 521), which the Estimating Manager decides to round up to 15 weeks.

Entering Estimating decisions - 1



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40	DB	3,000,000	New sports hall at primary school	2	Fenlands County Council	0.1	Medium 10 - 20 %	0
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	15

Main Quit

Entering Estimating decisions - 2

Because there are currently 3 estimating staff in the department this period, all of the company's own staff, there are **36 man weeks** of estimating time available.

15 man weeks have now been allocated, leaving plenty of resources for further costing of other jobs.

Company: 1
Period: 5

Estimating time available: **Own staff** 36 **weeks**
Agency staff 0 **weeks** **Allocation:** 15

Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
38	BO	5,000,000	Refurbishment of squash club	2	South Wales County Council	0.07	Medium 10 - 20 %	0
40	DB	3,000,000	New sports hall at primary school	2	Fenlands County Council	0.1	Medium 10 - 20 %	0
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	15

Entering Estimating decisions - 2

In line with the company's strategy for growth, the Estimating Manager also decides to cost jobs 38 & 40, giving plenty of choice for submitting bids next period.

Company: 1
Period: 5

Sector Descriptions | Consultants Report | C and FI

Estimating time available: **Own staff** 36 **weeks**
Agency staff 0 **weeks** **Allocation:** 15

Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
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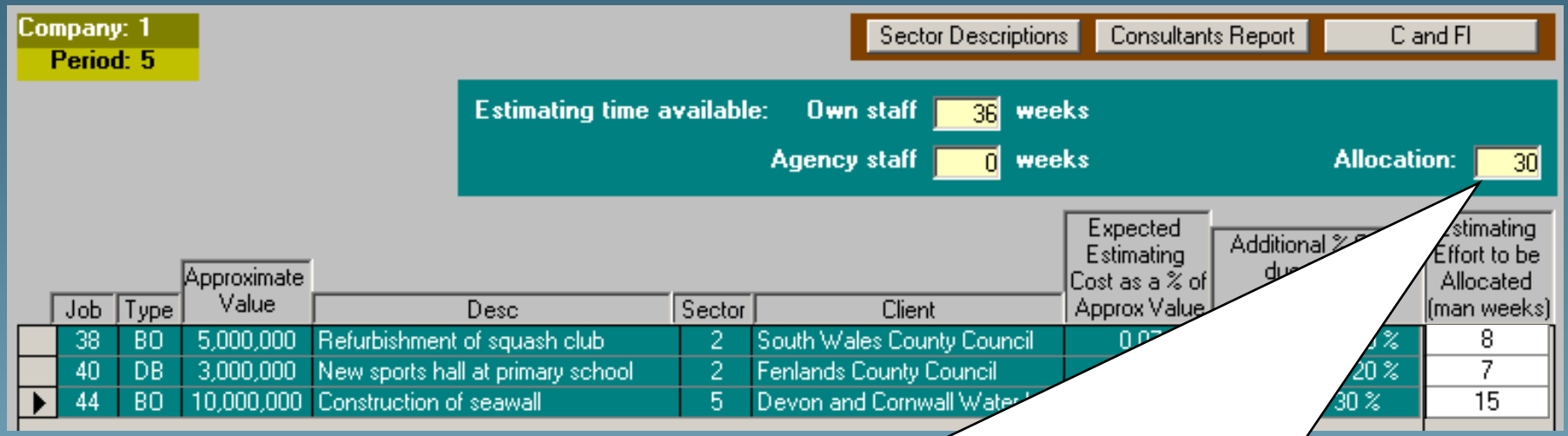
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	15

Main | Quit

Entering Estimating decisions - 2



After the estimating decisions have been made, 30 man weeks have been allocated, still leaving 6 weeks of unused estimating time.

Although the extra 6 weeks is a wasted resource, the anticipated steady growth should ensure there is no wastage in the future. Indeed, an increase in estimating staff may be required in the following periods.

Any increase in estimating staff takes place on the Overhead Screen, and is covered in more detail in the **Overheads Decision section**.

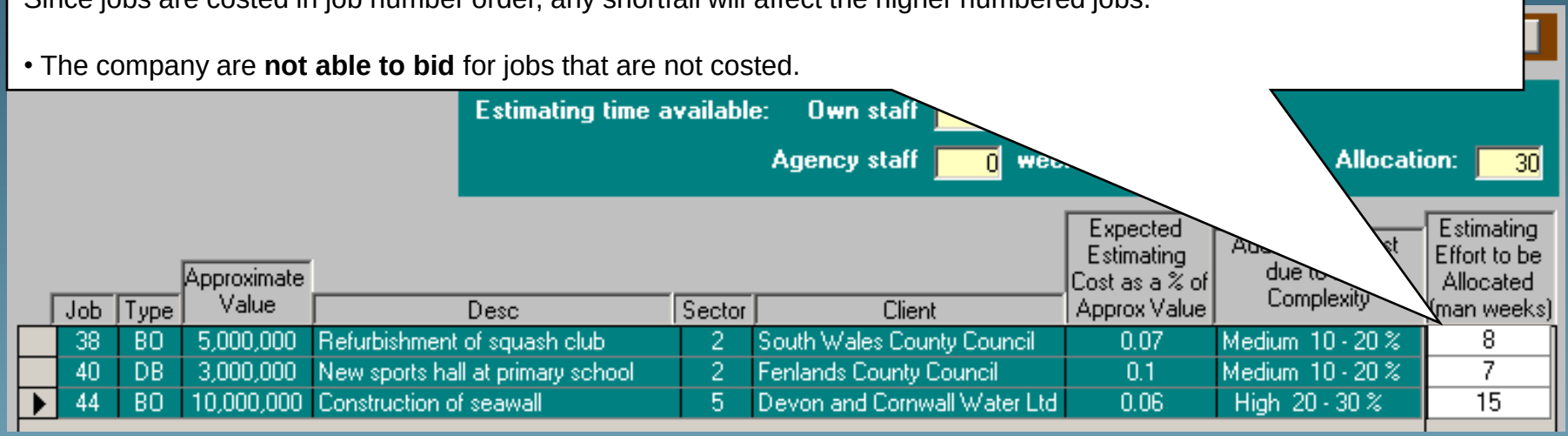
Entering Estimating decisions - 2

Key Points

• If there is a **shortfall** in estimating manpower available, some jobs will not being given their full allocated estimating time, or even worse, not be costed at all.

Since jobs are costed in job number order, any shortfall will affect the higher numbered jobs.

• The company are **not able to bid** for jobs that are not costed.



Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Complexity	Estimating Effort to be Allocated (man weeks)
38	BO	5,000,000	Refurbishment of squash club	2	South Wales County Council	0.07	Medium 10 - 20 %	8
40	DB	3,000,000	New sports hall at primary school	2	Fenlands County Council	0.1	Medium 10 - 20 %	7
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	15

Entering Estimating decisions - 2

Allocating the appropriate level of resources will instil 'high' confidence in the accuracy of the estimates, and :-

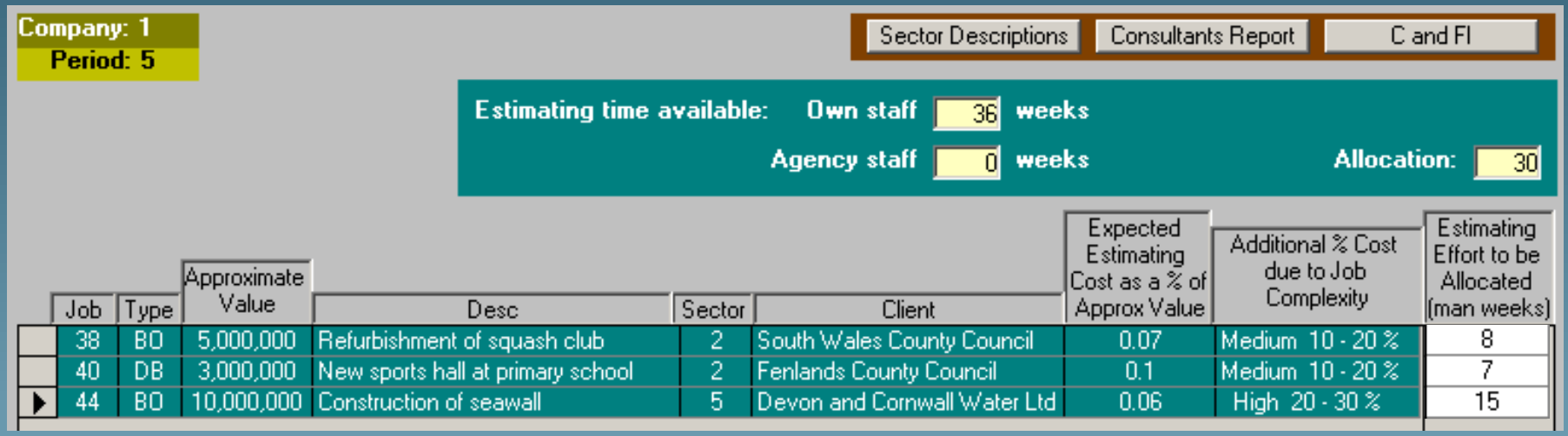
- Enable more competitive bids to be tendered.
- Enhance client satisfaction.

Allocating insufficient resources will result in 'low' confidence. This will not please the Client, and the Company may not be allowed to bid for the job. Even if bidding is permitted :-

- The estimates may be too low, resulting in a low bid. If the job is won a loss would probably be made on the job since the 'true' costs are far higher than expected.
- The estimates may be too high, resulting in a high bid. This would almost certainly mean the job is not won.

Estimating is only the first stage of the 2-stage procurement process. The bidding takes place next period, when the results of the estimating are known.

Entering Estimating decisions - 2

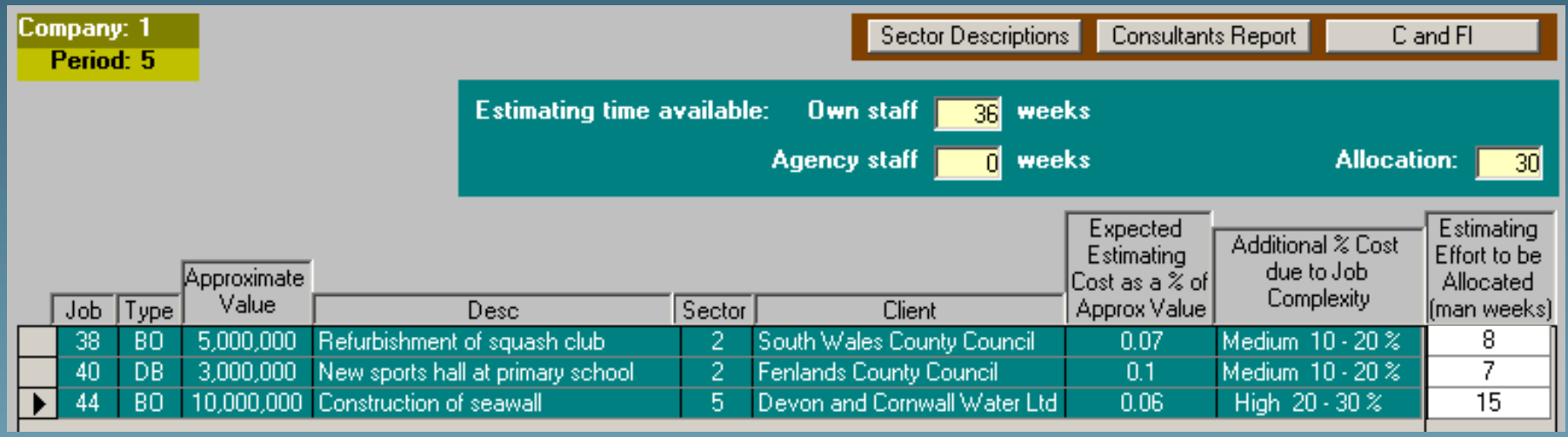


Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
38	BO	5,000,000	Refurbishment of squash club	2	South Wales County Council	0.07	Medium 10 - 20 %	8
40	DB	3,000,000	New sports hall at primary school	2	Fenlands County Council	0.1	Medium 10 - 20 %	7
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	15

The Demo is now complete

Main Quit

Entering Estimating decisions - 2



Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
38	BO	5,000,000	Refurbishment of squash club	2	South Wales County Council	0.07	Medium 10 - 20 %	8
40	DB	3,000,000	New sports hall at primary school	2	Fenlands County Council	0.1	Medium 10 - 20 %	7
44	BO	10,000,000	Construction of seawall	5	Devon and Cornwall Water Ltd	0.06	High 20 - 30 %	15

Main Quit

Bidding Decisions

Each period the company is given a number of jobs for which a bid can be entered. These are the jobs that the previous period the Estimating Manager allocated estimating resources to.

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
25	BO	City centre market rennovatior	2	South Wales County Council	N		4,594,083		0	0.0	0
31	BO	Refurbish grade II listed train s	3	Railline	N		1,727,644		0	0.0	0
34	DB	New operating theatre at local	2	South Wales County Council	N	11	8,618,222		0	0.0	0

Job Details | Allocate Consultant | Enter On-Cost | Remove Consultant

Activate Sequential Tendering: ☐

Bidding for a job - 1

Keep Clicking Anywhere on the screen to advance the demo

Bidding for a job - 1

The Company are able to bid for jobs that were costed by the Estimating Department last period, providing that the client felt the Company put enough effort into the estimating.

There are two types of jobs that the Company can bid for :-

Build Only

The design has already been produced for the Client, and you, the contractor, are only responsible for the build.

For Build Only jobs a bid consists of :-

- The estimated build cost
- Oncost; to cover additional costs not included in the build cost, consisting of :-
  - (+) Site support costs
  - (+) Contingency for risk
  - (+) Project manager costs (salary and recruitment charges)
- Markup (margin); the profit to hopefully be made on the job

Bidding for a job - 1

Design & Build

You, the contractor, has responsibility for both the design and the build.

For Design & Build jobs a bid consists of :-

- The estimated build and design costs
- An allocated consultant to produce the design
- Oncost; to cover additional costs not included in the build cost, consisting of :-
  - (+) Site support costs
  - (+) Contingency for risk
  - (+) Project manager costs (salary and recruitment charges)
  - (-) A negative element to represent anticipated savings on the build cost from the design produced by the consultant. Passing some saving onto the client makes the bid far more competitive
- Markup (margin); the profit to hopefully be made on the job

Bidding for a job - 1

For either type of job the estimated build cost has already been calculated by the Estimating Department, and for design & build jobs the estimated design cost has also been determined. These cannot be changed.

If you intend to bid for a job, you now need to enter the remaining elements.

There are more elements required for a design & build job, but the elements to be considered include all those in a bid for a build-only job. Hence, we'll concentrate on how to form the bid for a design & build job.

Bidding for a job - 1

Bidding for a job - 2

Lets assume that the Company decides to bid for job 34, a Design & Build job. How is the bid formulated ?

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
	25	BO	City centre market rennovatior	2	South Wales County Council	N		4,594,083		0	0.0	0
	31	BO	Refurbish grade II listed train s	3	Railline	N		1,727,644		0	0.0	0
▶	34	DB	New operating theatre at local	2	South Wales County Council	N	11	8,618,222		0	0.0	0

Job Details | Allocate Consultant | Enter On-Cost | Remove Consultant

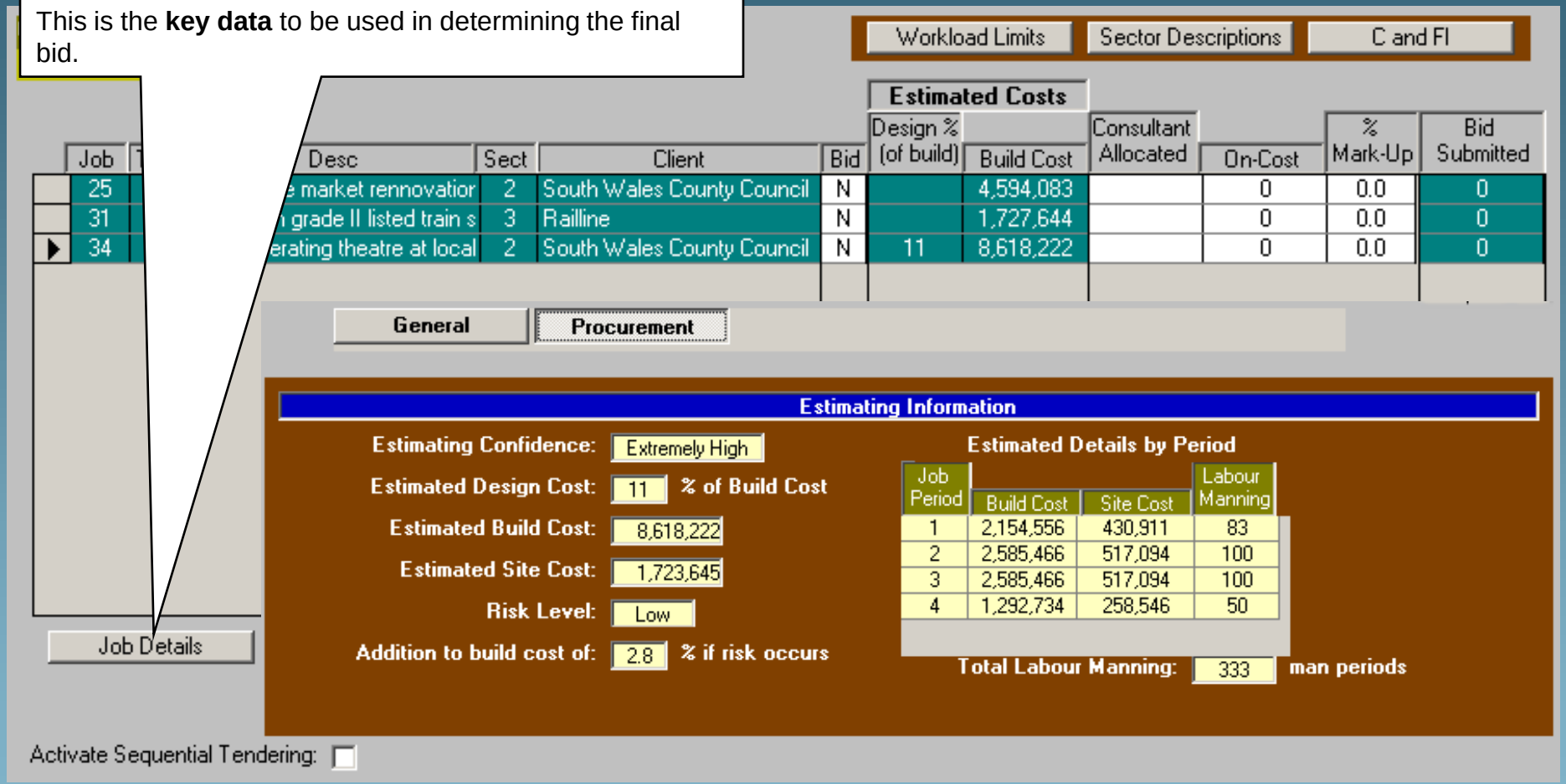
Activate Sequential Tendering: ☐

Main | Quit

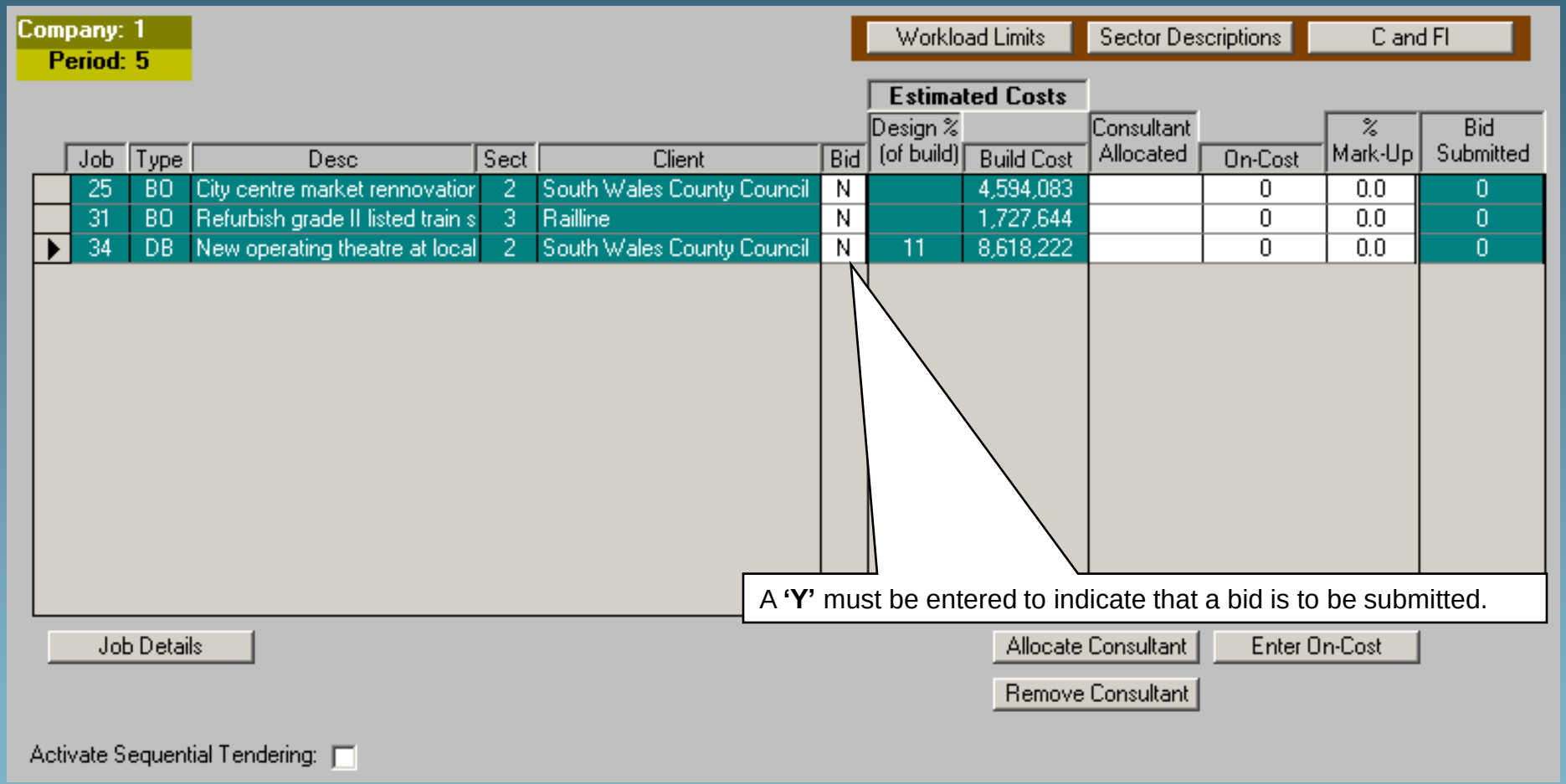
Bidding for a job - 2

The **Job Details** button can be used to display the information compiled by the estimators about job 25.

This is the **key data** to be used in determining the final bid.



Bidding for a job - 2



Bidding for a job - 2

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
	25	BO	City centre market rennovatior	2	South Wales County Council	N		4,594,083		0	0.0	0
	31	BO	Refurbish grade II listed train s	3	Railline	N		1,727,644		0	0.0	0
▶	34	DB	New operating theatre at local	2	South Wales County Council	Y	11	8,618,222		0	0.0	0

Job Details

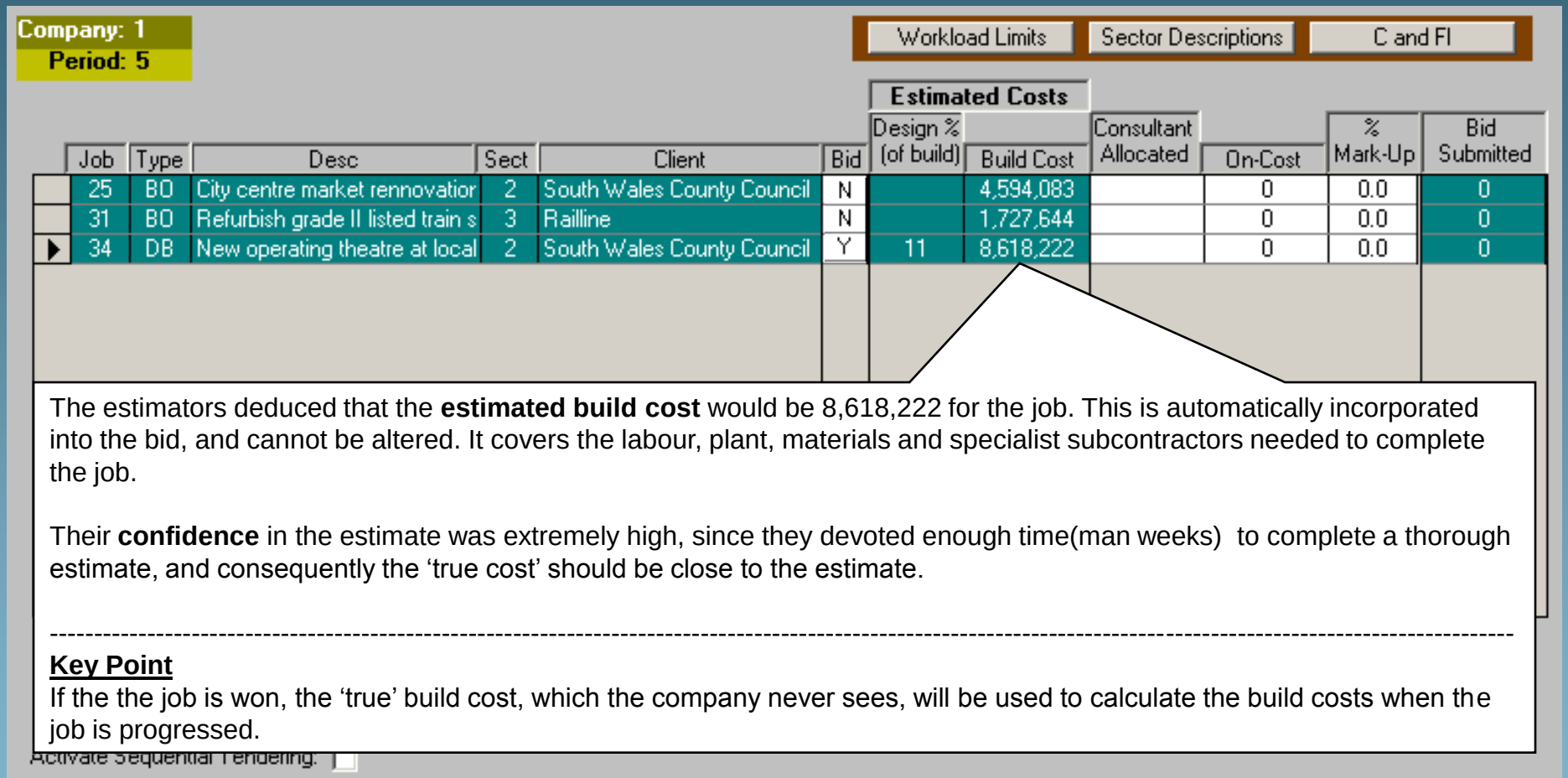
Allocate Consultant | Enter On-Cost

Remove Consultant

Activate Sequential Tendering: ☐

Main | Quit

Bidding for a job - 2



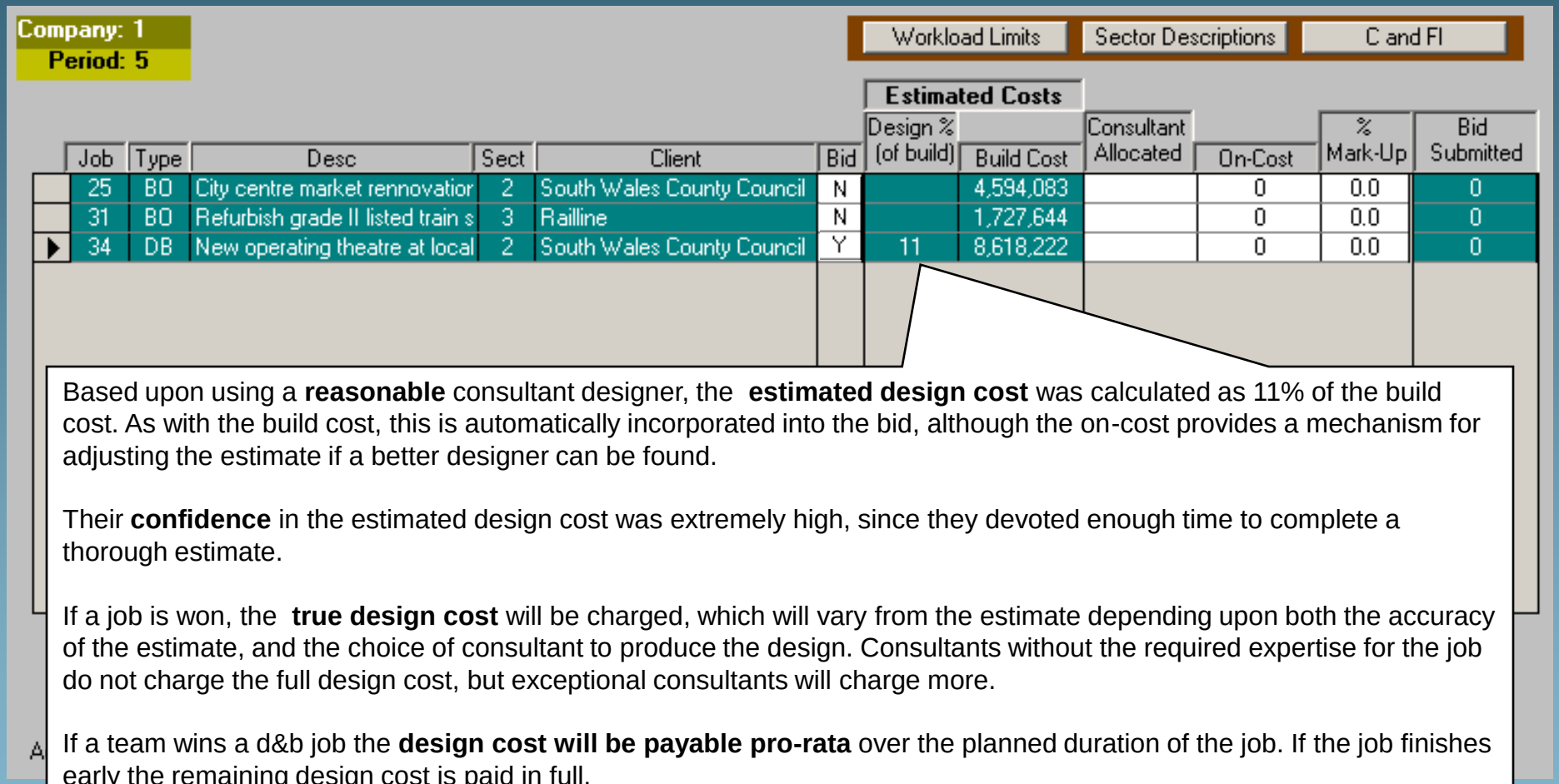
The estimators deduced that the **estimated build cost** would be 8,618,222 for the job. This is automatically incorporated into the bid, and cannot be altered. It covers the labour, plant, materials and specialist subcontractors needed to complete the job.

Their **confidence** in the estimate was extremely high, since they devoted enough time(man weeks) to complete a thorough estimate, and consequently the 'true cost' should be close to the estimate.

Key Point

If the the job is won, the 'true' build cost, which the company never sees, will be used to calculate the build costs when the job is progressed.

Bidding for a job - 2



Based upon using a **reasonable** consultant designer, the **estimated design cost** was calculated as 11% of the build cost. As with the build cost, this is automatically incorporated into the bid, although the on-cost provides a mechanism for adjusting the estimate if a better designer can be found.

Their **confidence** in the estimated design cost was extremely high, since they devoted enough time to complete a thorough estimate.

If a job is won, the **true design cost** will be charged, which will vary from the estimate depending upon both the accuracy of the estimate, and the choice of consultant to produce the design. Consultants without the required expertise for the job do not charge the full design cost, but exceptional consultants will charge more.

If a team wins a d&b job the **design cost will be payable pro-rata** over the planned duration of the job. If the job finishes early the remaining design cost is paid in full.

Bidding for a job – 2

A consultant needs to be allocated to produce the design.

The **Allocate Consultant** button can be used to display a list of all available consultants, and an appropriate consultant for the job can be found by reviewing the profiles of each consultant, and matching the **consultant's experience to the job sector**.

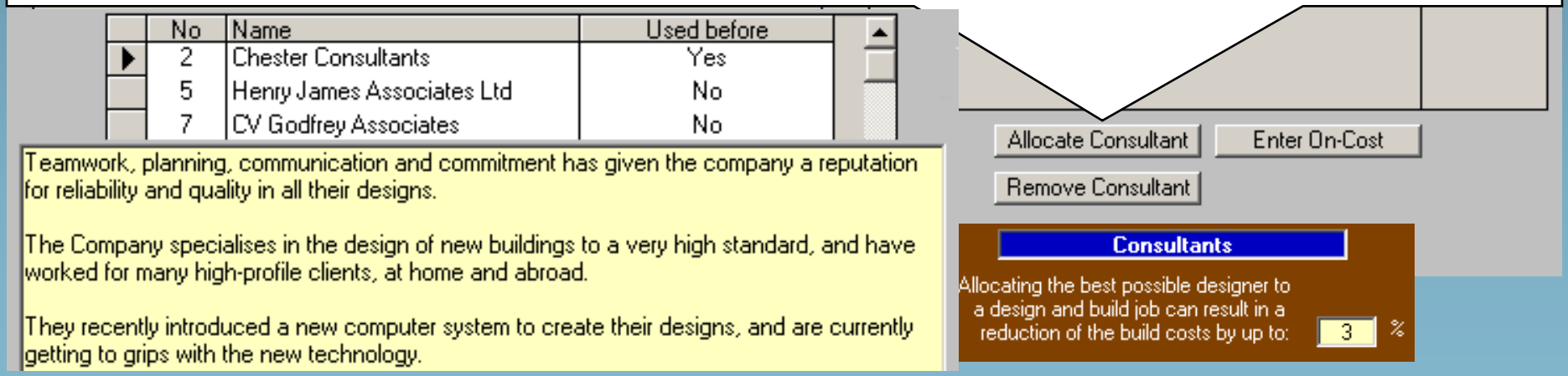
The choice of consultant **can impact on both the build and design costs**. 'Good' consultants produce designs that save on the build cost, but they charge more for the design.

The saving in build cost that can be achieved by allocating the best possible consultant for the job is given in the **Company and Financial Information**.

For job 34, a Building & Commercial contract, consultant **2, Chester Consultants** have been chosen due to their expertise in the Building & Commercial sector. They have also been used before, and performed very well.

Key Point

The list of available consultants changes each period due to some consultants being unavailable. The reasons for unavailability are displayed using the **Unavailable button** on the Allocate Consultants Screen, and a typical reason is too much current workload.



Bidding for a job - 2

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

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	31	BO	Refurbish grade II listed train s	3	Railline	N		1,727,644		0	0.0	0
▶	34	DB	New operating theatre at local	2	South Wales County Council	Y	11	8,618,222	2	0	0.0	0

Job Details

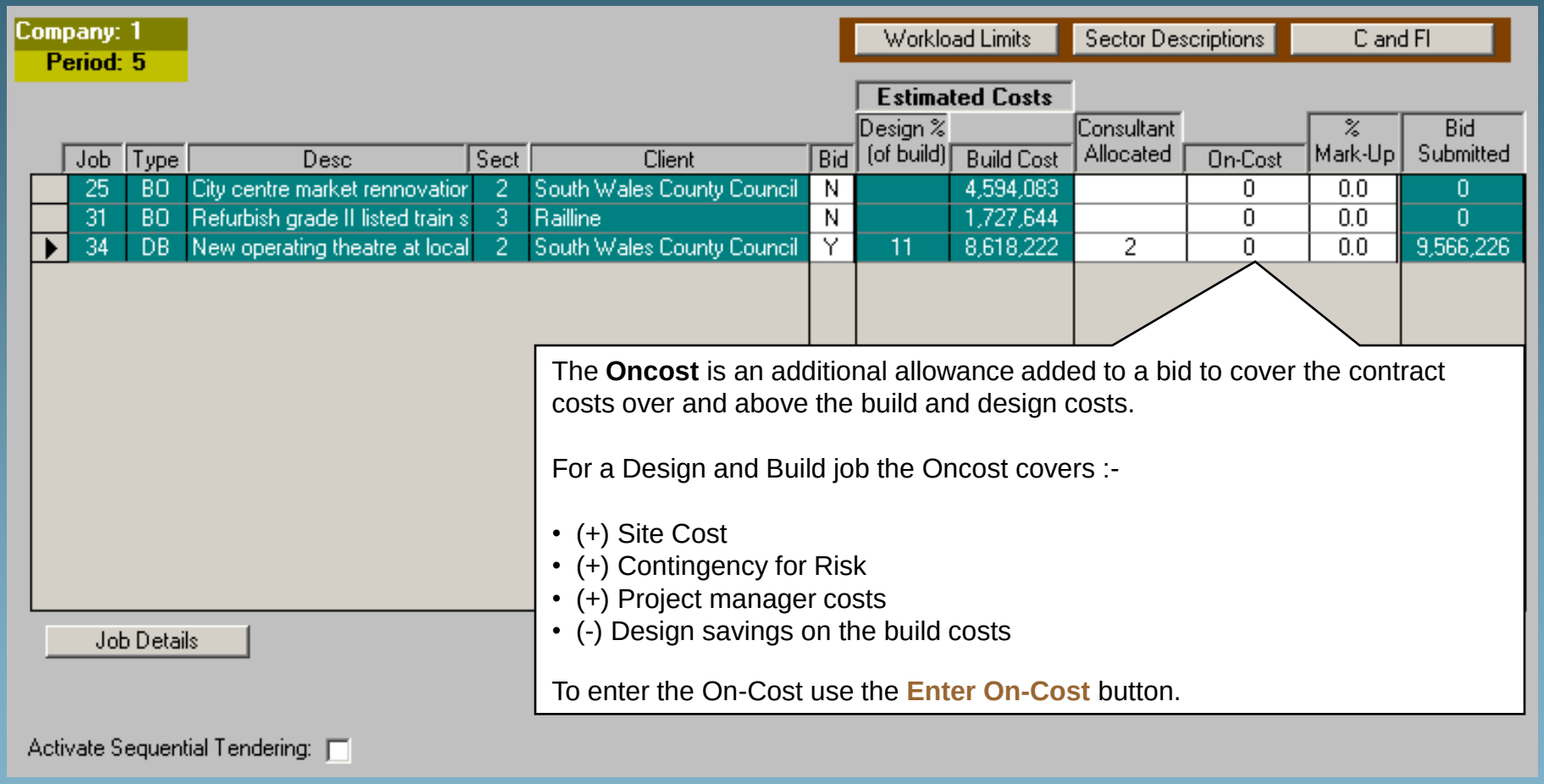
Allocate Consultant | Enter On-Cost

Remove Consultant

Activate Sequential Tendering: ☐

Main | Quit

Bidding for a job - 3



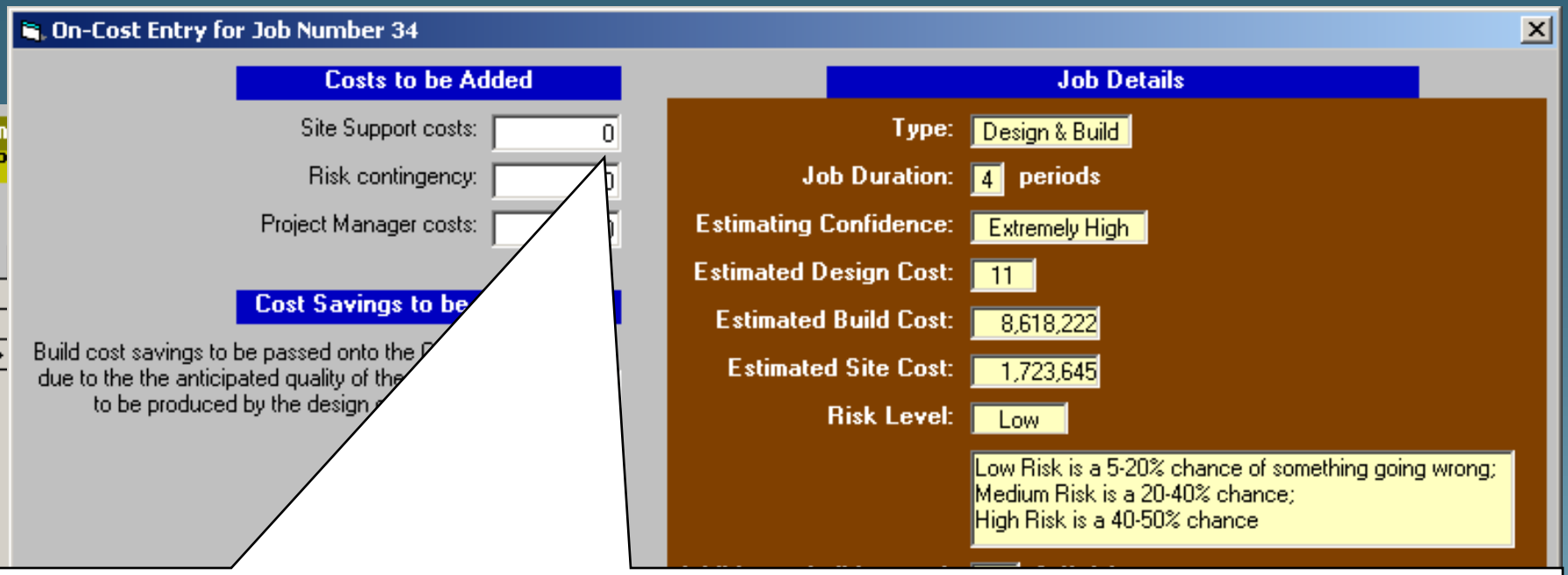
The **Oncost** is an additional allowance added to a bid to cover the contract costs over and above the build and design costs.

For a Design and Build job the Oncost covers :-

- (+) Site Cost
- (+) Contingency for Risk
- (+) Project manager costs
- (-) Design savings on the build costs

To enter the On-Cost use the **Enter On-Cost** button.

Bidding for a job - 3



Site Cost

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

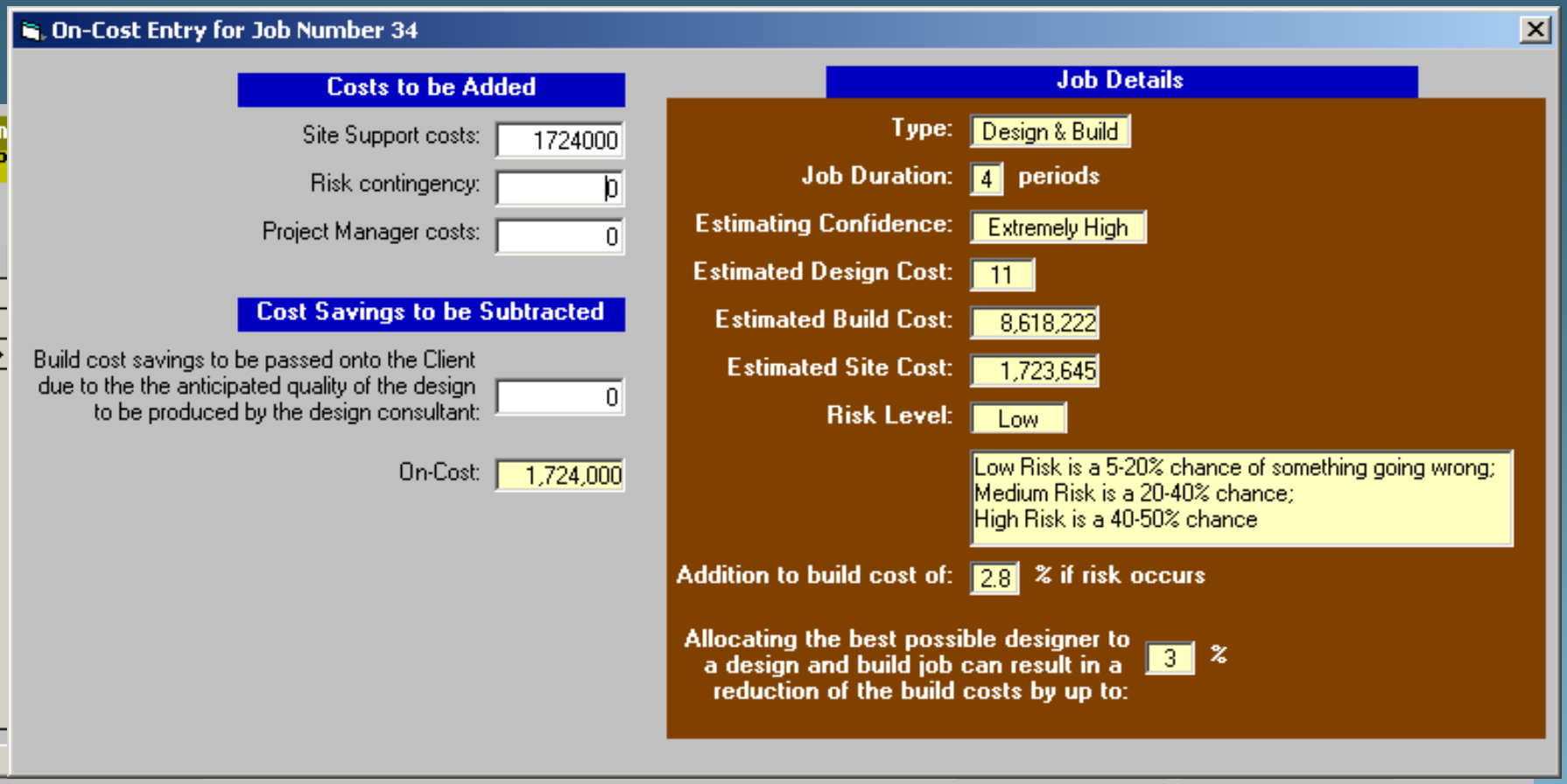
The Company's estimators determine the estimated level of site cost required. This **will not be** the 'true' cost. The degree of inaccuracy is governed by the amount of effort put into producing the estimate.

The company never sees the 'true' cost, and has **to rely on** their estimate when making bidding decisions, and deciding how much to allow for the site cost in the bid.

For Job 34, the estimated site cost is 1,723,645.

Since confidence in the estimate is very high, the estimate should be close to the true cost, so we'll allow 1,724,000 in the bid, adding a small % on to allow for estimating inaccuracy.

Bidding for a job - 3

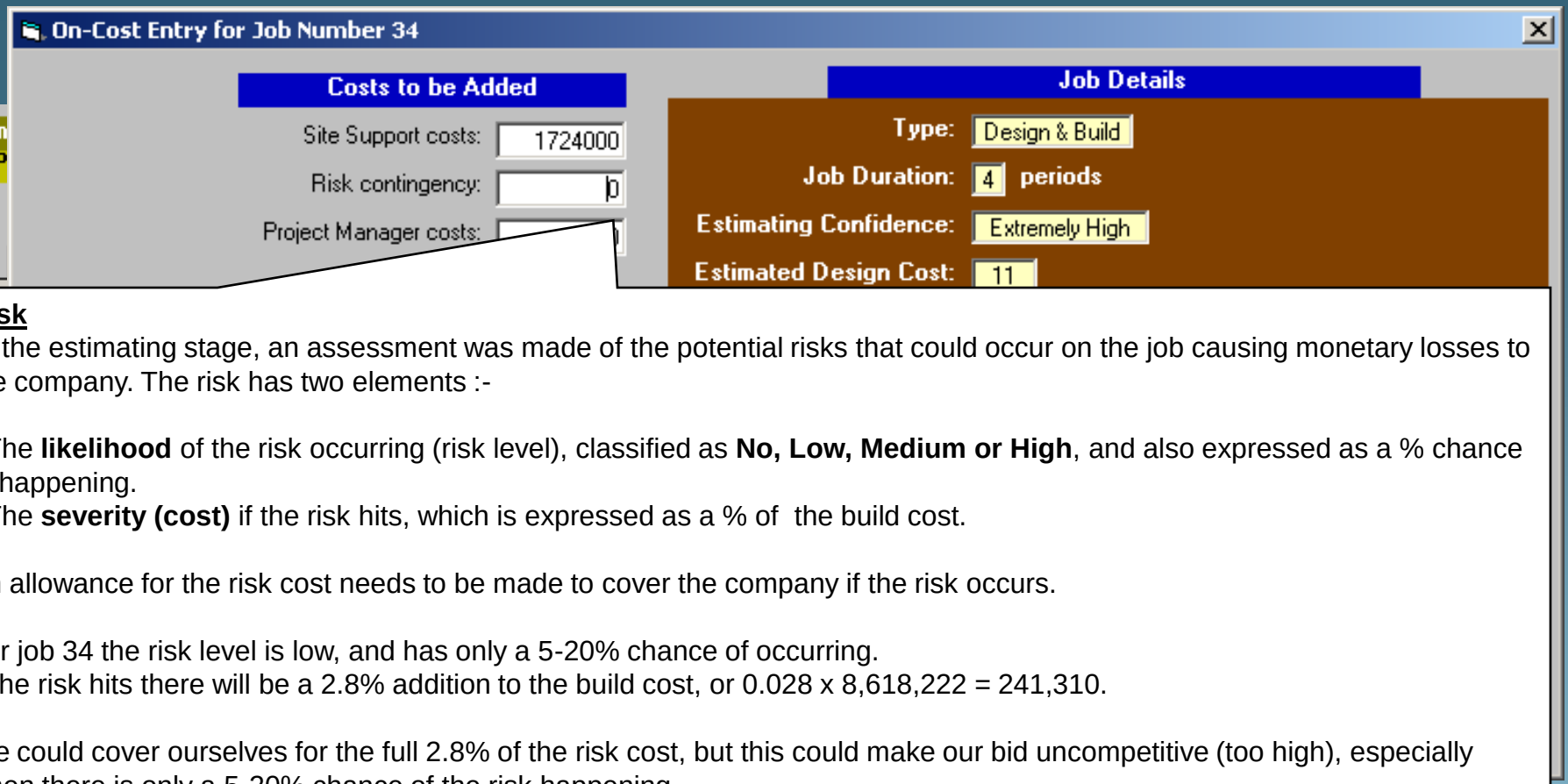


Remove Consultant

Activate Sequential Tendering:

Main Quit

Bidding for a job - 3



Risk

At the estimating stage, an assessment was made of the potential risks that could occur on the job causing monetary losses to the company. The risk has two elements :-

- The **likelihood** of the risk occurring (risk level), classified as **No, Low, Medium or High**, and also expressed as a % chance of happening.
- The **severity (cost)** if the risk hits, which is expressed as a % of the build cost.

An allowance for the risk cost needs to be made to cover the company if the risk occurs.

For job 34 the risk level is low, and has only a 5-20% chance of occurring.
If the risk hits there will be a 2.8% addition to the build cost, or 0.028 x 8,618,222 = 241,310.

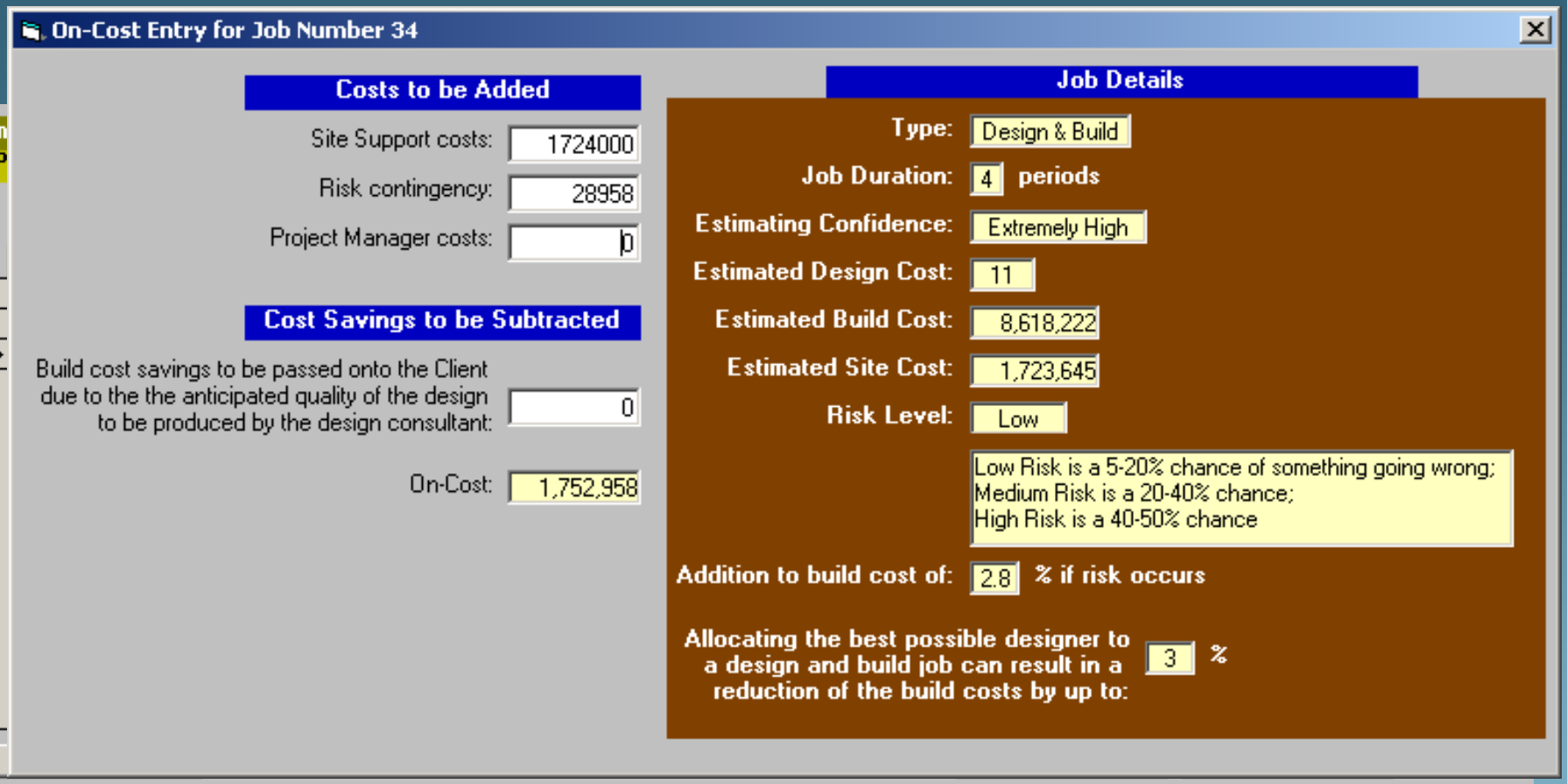
We could cover ourselves for the full 2.8% of the risk cost, but this could make our bid uncompetitive (too high), especially when there is only a 5-20% chance of the risk happening.

We'll cover ourselves for 12% of the risk cost, or 28,958, which makes our bid far more competitive, but does provide some cover if the risk occurs.

Key Point

Assuming we win the job, if the risk does not occur then the extra risk becomes profit, or margin, made on the job. Conversely, if the risk hits it will eat into job profits, although this will be offset by the risk contingency we're building into the bid.

Bidding for a job - 3

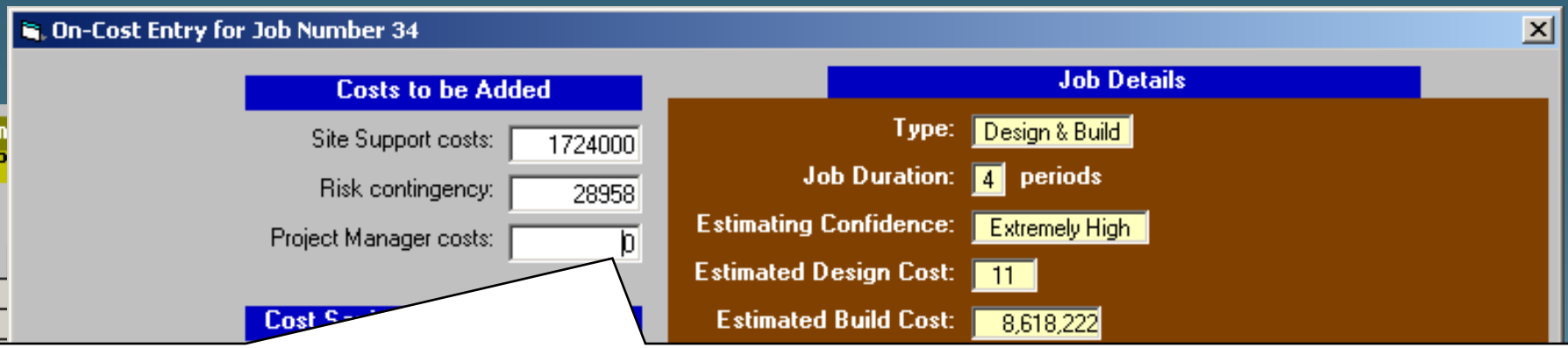


Remove Consultant

Activate Sequential Tendering:

Main Quit

Bidding for a job - 3



Project Manager Costs

An allowance is made in the bid for the costs of **recruiting and paying** a 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 consequence on the progress of the job.

Project manager details (salary etc) can be found on the **Personnel Screen**, and the **Company and Financial Information** shows the cost of recruiting a project manager.

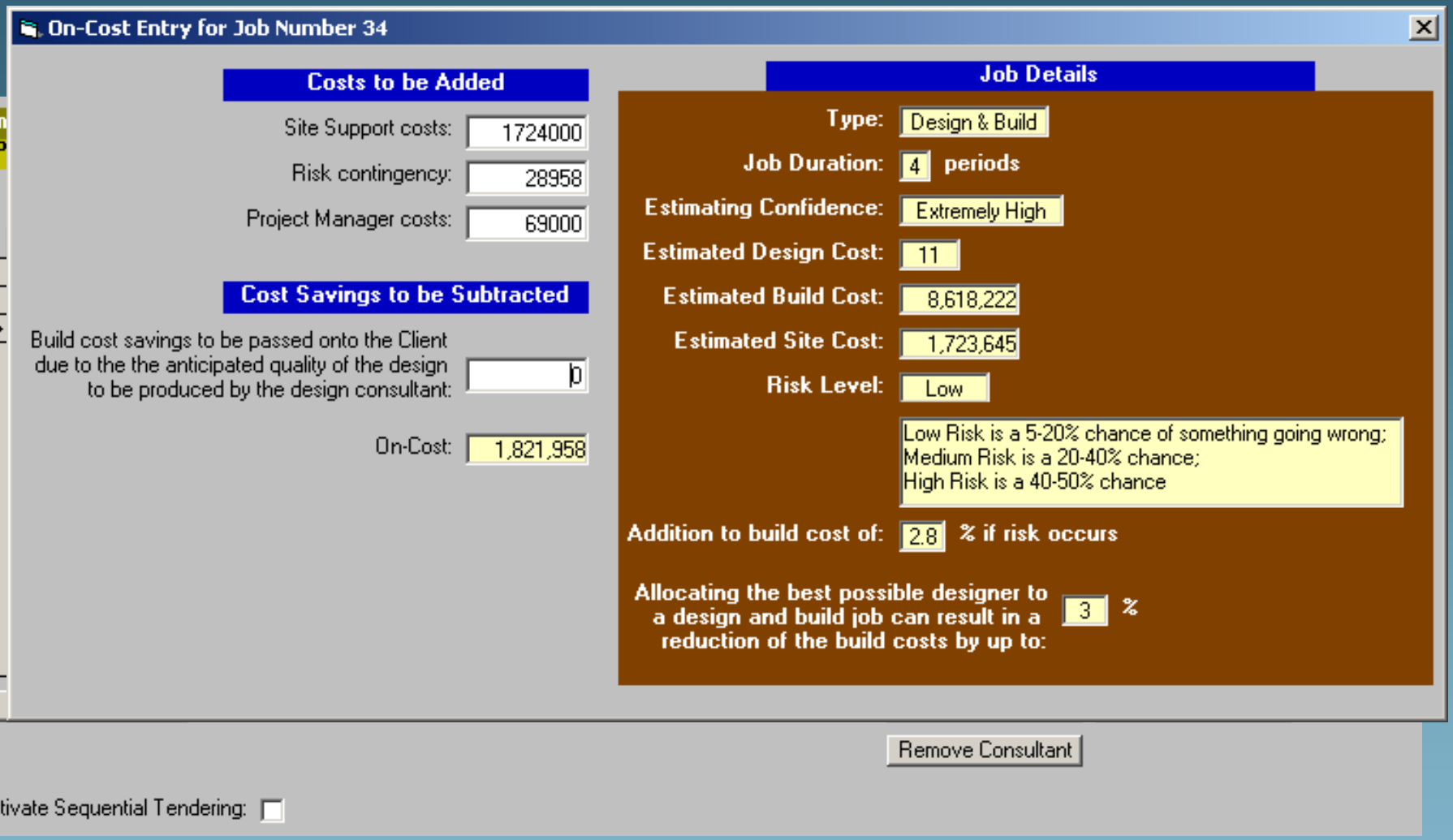
Job 34 is a 4-period (1 year) job, and we'll anticipate recruiting an excellent project manager whose annual salary is likely to be about 60,000.

Our project manager allowance is :-

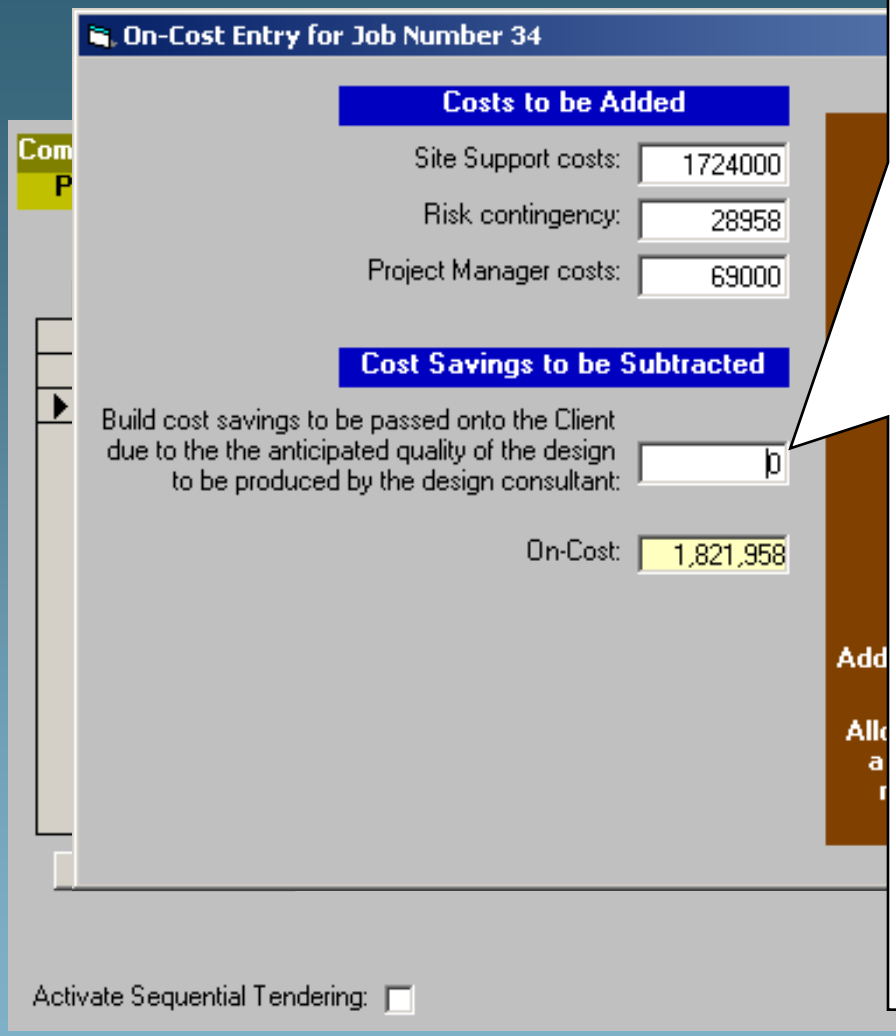
Salary: 60,000 (for the 4 periods of the job)
Recruitment Charge/ bonuses (15% of annual salary): 9,000

Total: 69,000

Bidding for a job - 3



Bidding for a job – 3



Build-cost savings due to the quality of the design

A good consultant will reduce the 'true' build costs by producing a quality design, and we are informed that the saving can be up to 3% of the build cost.

We can pass some of this **'opportunity for saving money'** onto the client by reducing the on-cost. This will make the bid **more competitive**.

For job 34, since we chose a seemingly very suitable consultant, who we deem to be one of the best in the sector, we can possibly save the full 3% on the build costs.

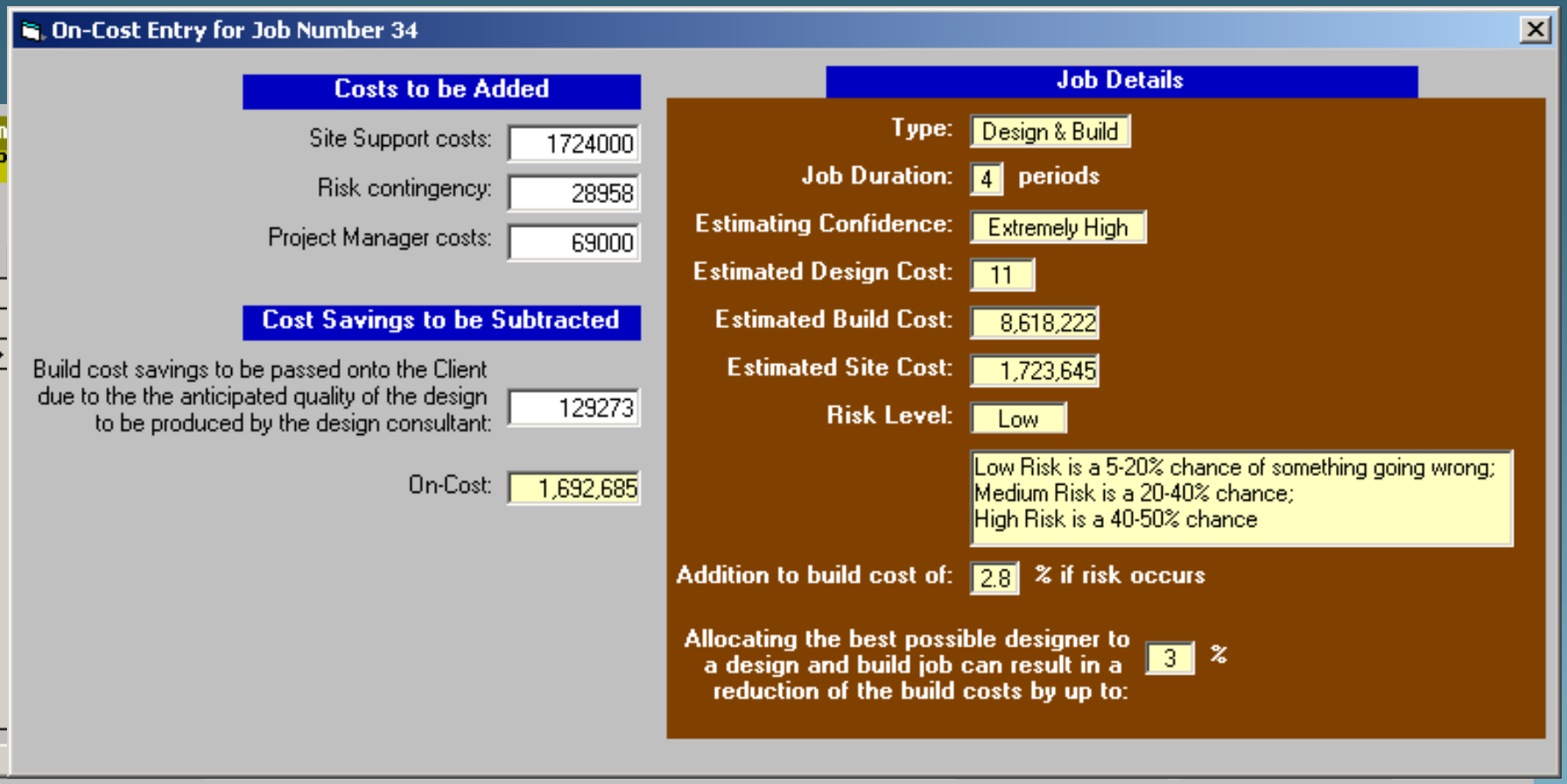
But how much should we reduce the on-cost by ?

You should always assume that rival bidders will try and allocate a good consultant, although not the very best, and will pass on a around 1% of the anticipated build cost saving onto the client, making the rival bid more competitive.

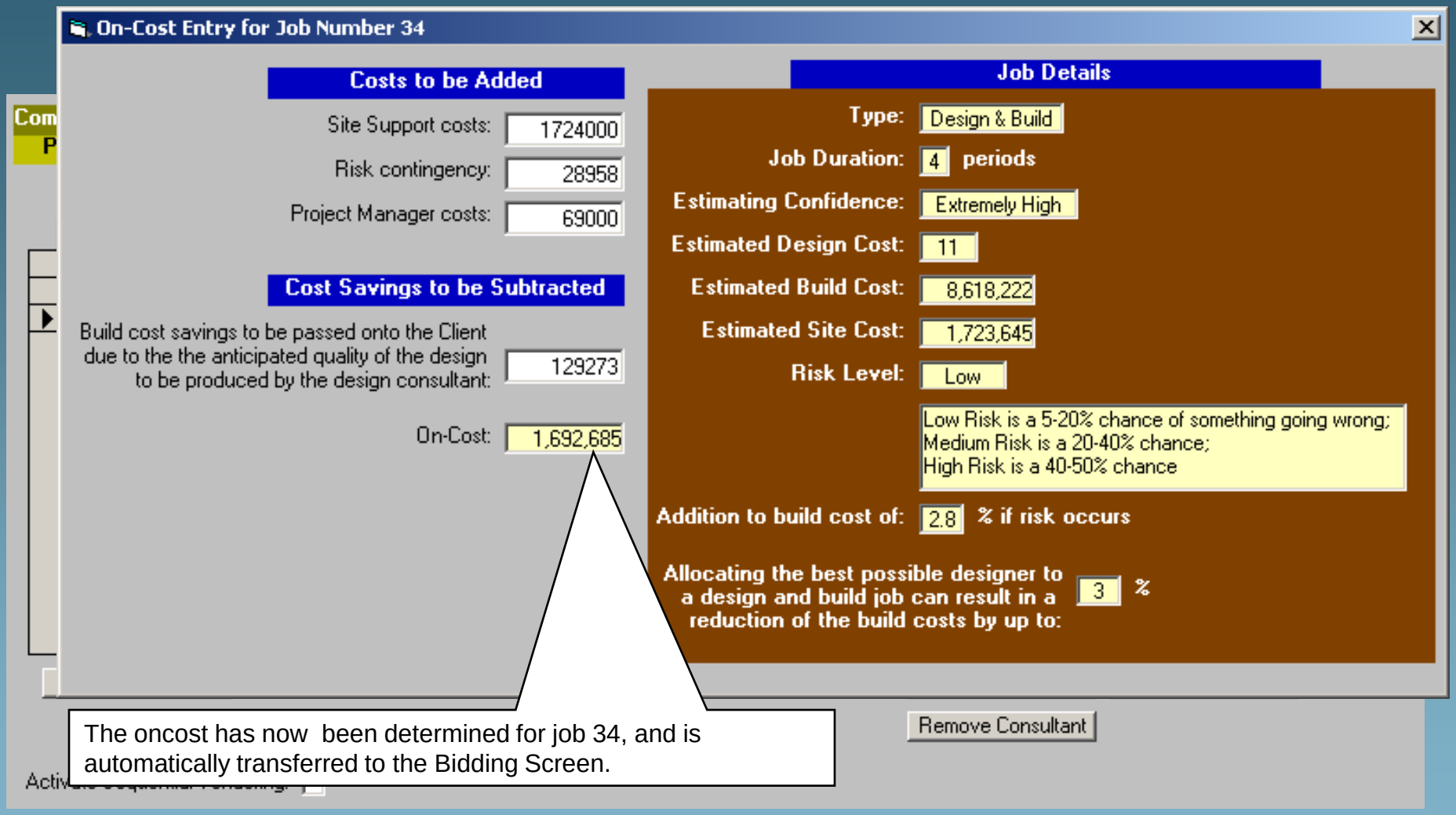
We'll pass on 1.5% i.e., .015 x 8,618,222 = 129,273 onto the Client.

If the consultant manages the anticipated 3% build cost saving, then we will have made an additional 1.5% in profit. Any saving below 1.5% will reduce any profit that is made on the job.

Bidding for a job - 3

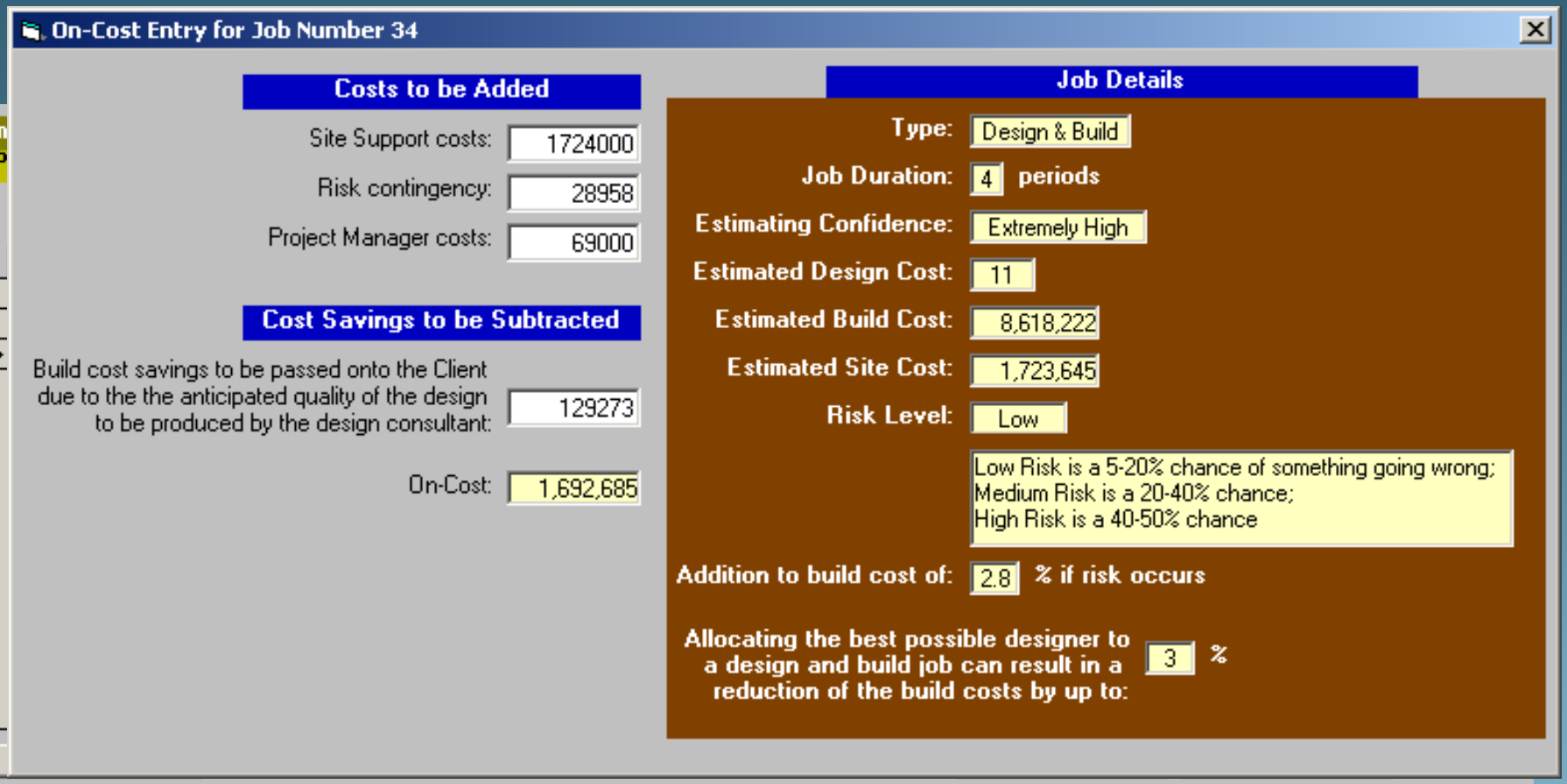


Bidding for a job - 3

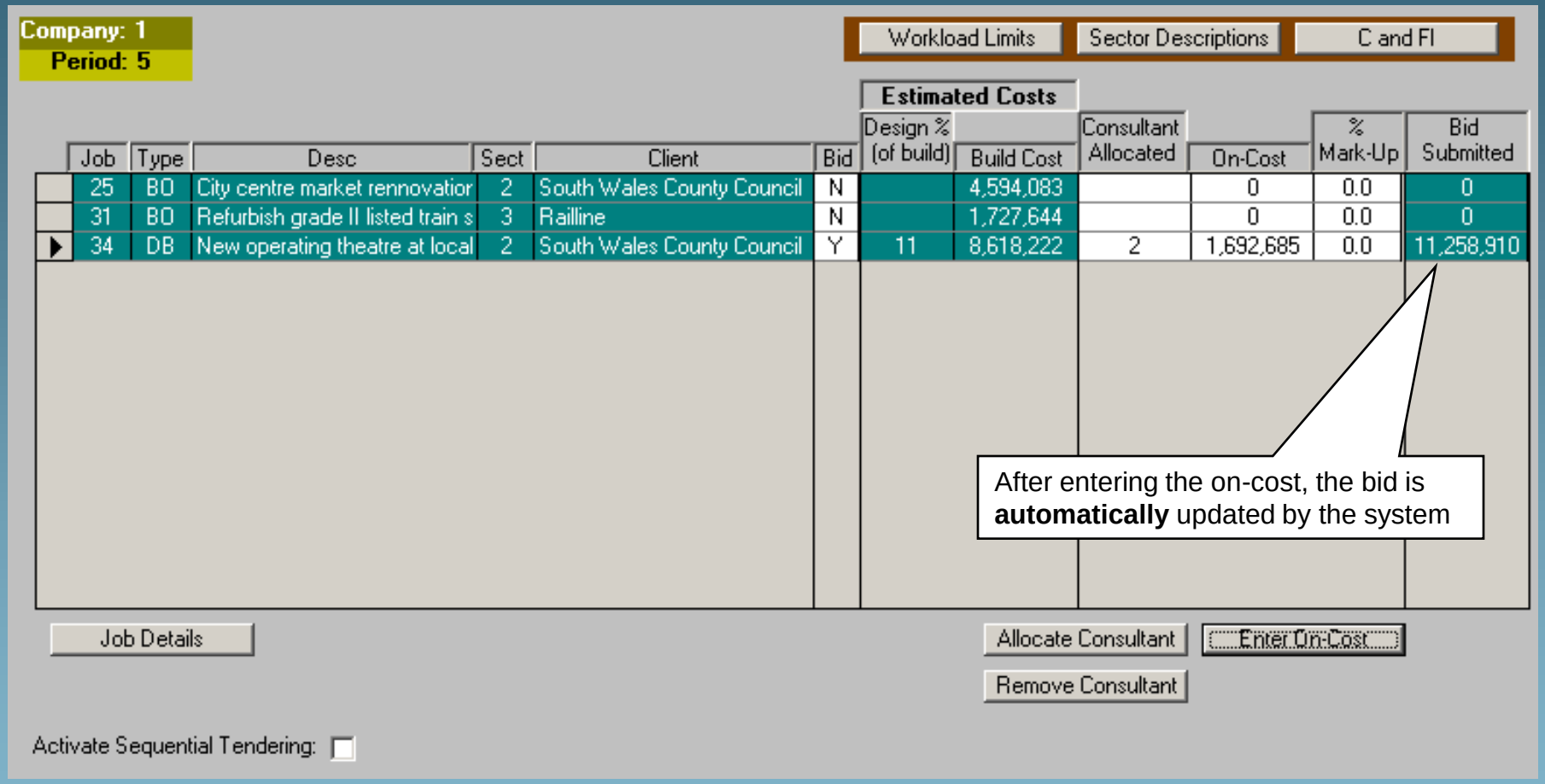


The oncost has now been determined for job 34, and is automatically transferred to the Bidding Screen.

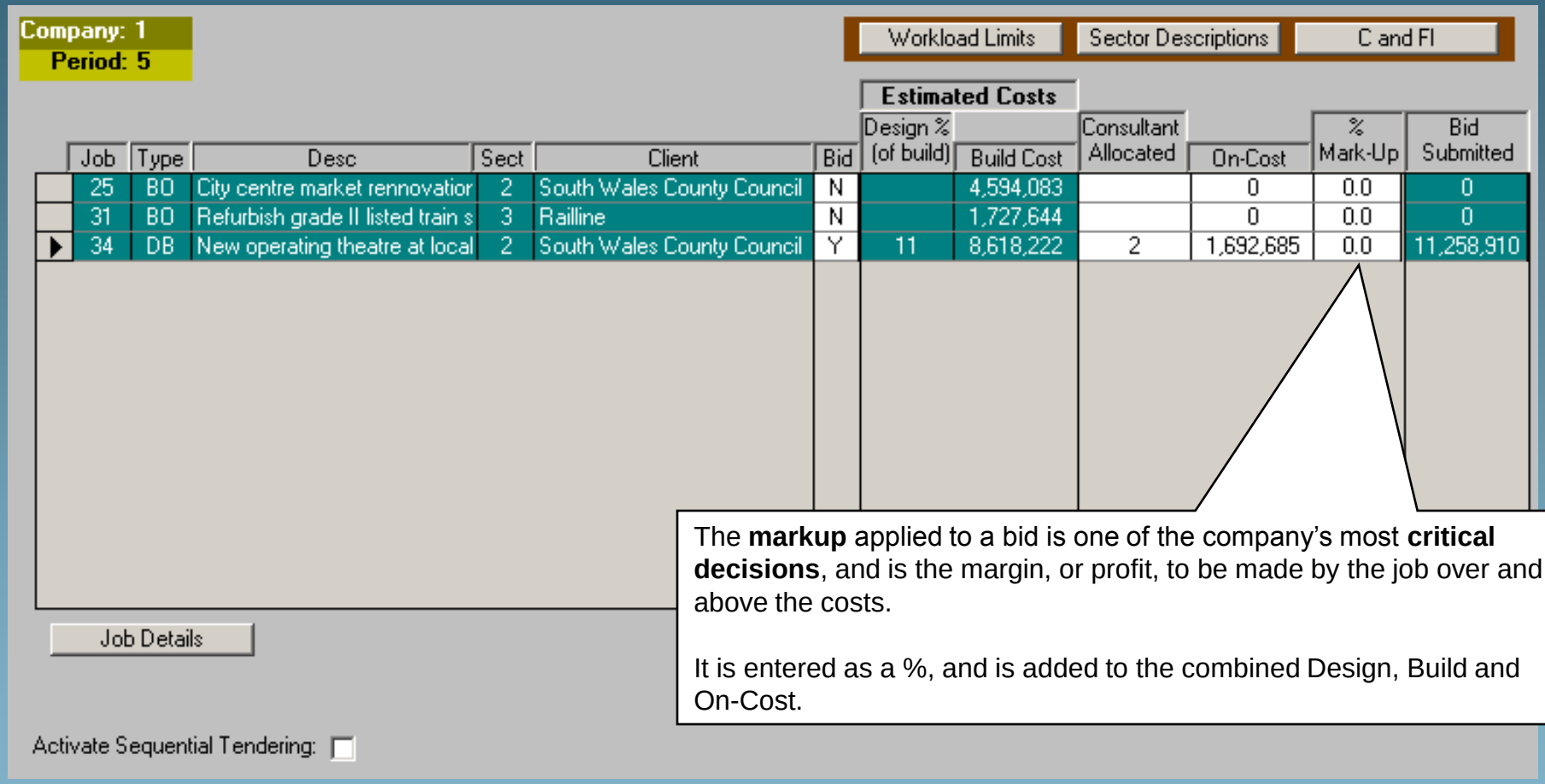
Bidding for a job - 3



Bidding for a job - 4



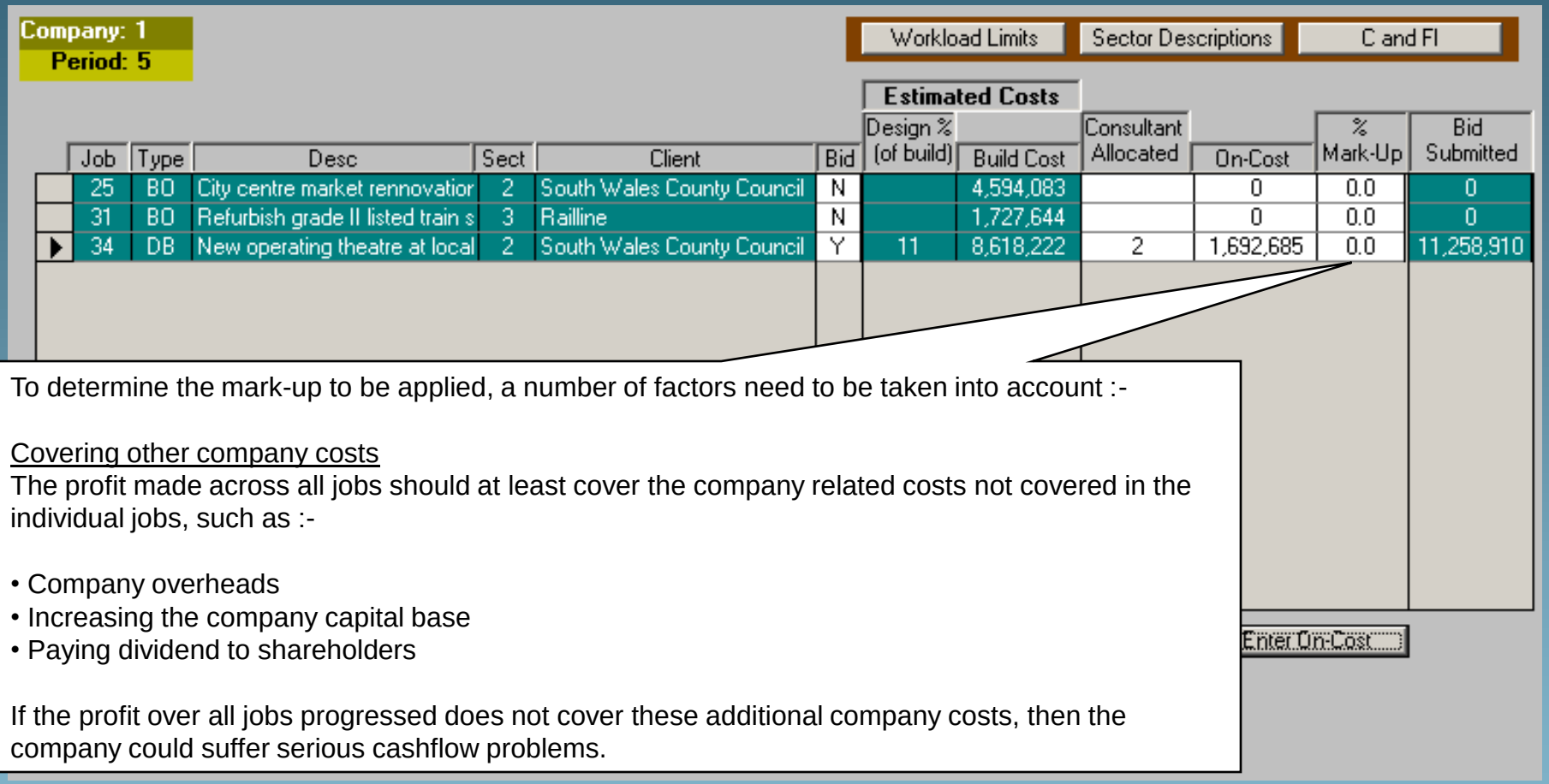
Bidding for a job - 4



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.

It is entered as a %, and is added to the combined Design, Build and On-Cost.

Bidding for a job - 4



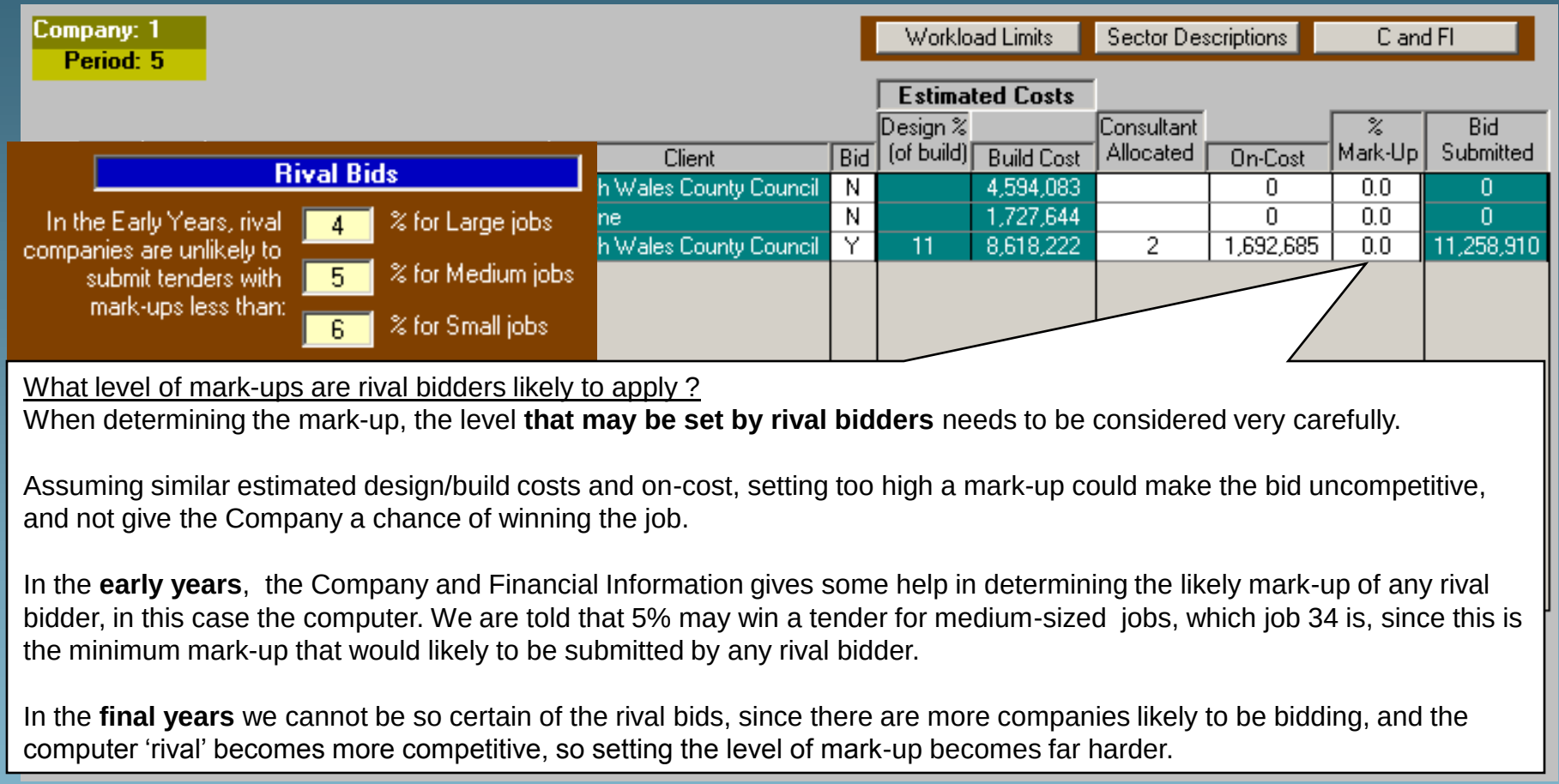
To determine the mark-up to be applied, a number of factors need to be taken into account :-

<u>Covering other company costs</u>
The profit made across all jobs should at least cover the company related costs not covered in the individual jobs, such as :-

- Company overheads
- Increasing the company capital base
- Paying dividend to shareholders

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

Bidding for a job - 4



What level of mark-ups are rival bidders likely to apply ?

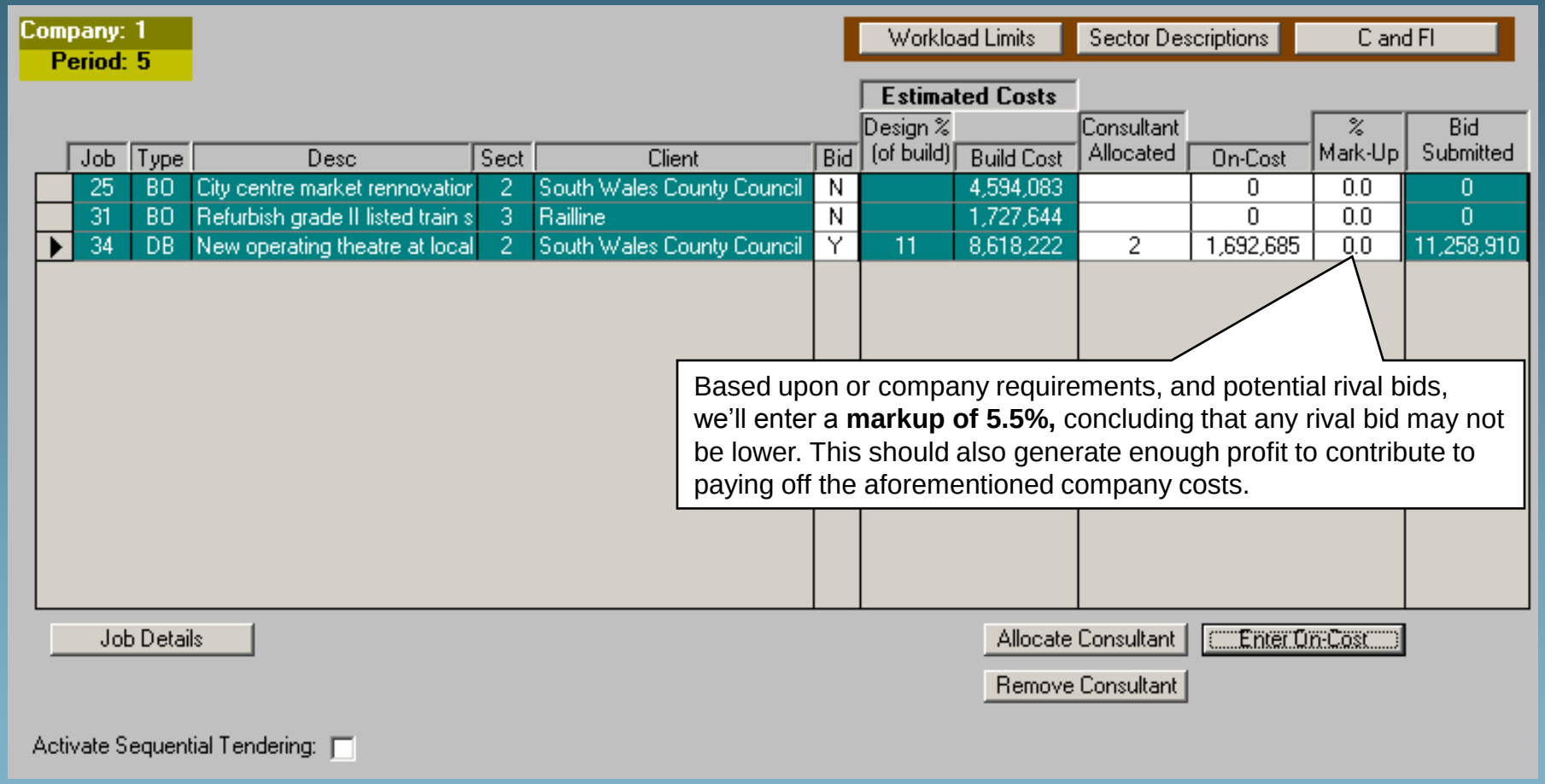
When determining the mark-up, the level **that may be set by rival bidders** needs to be considered very carefully.

Assuming similar estimated design/build costs and on-cost, setting too high a mark-up could make the bid uncompetitive, and not give the Company a chance of winning the job.

In the **early years**, the Company and Financial Information gives some help in determining the likely mark-up of any rival bidder, in this case the computer. We are told that 5% may win a tender for medium-sized jobs, which job 34 is, since this is the minimum mark-up that would likely to be submitted by any rival bidder.

In the **final years** we cannot be so certain of the rival bids, since there are more companies likely to be bidding, and the computer 'rival' becomes more competitive, so setting the level of mark-up becomes far harder.

Bidding for a job - 4



Based upon or company requirements, and potential rival bids, we'll enter a **markup of 5.5%,** concluding that any rival bid may not be lower. This should also generate enough profit to contribute to paying off the aforementioned company costs.

Bidding for a job - 4

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
	25	BO	City centre market rennovation	2	South Wales County Council	N		4,594,083		0	0.0	0
	31	BO	Refurbish grade II listed train s	3	Railline	N		1,727,644		0	0.0	0
▶	34	DB	New operating theatre at local	2	South Wales County Council	Y	11	8,618,222	2	1,692,685	5.5	11,878,150

Job Details

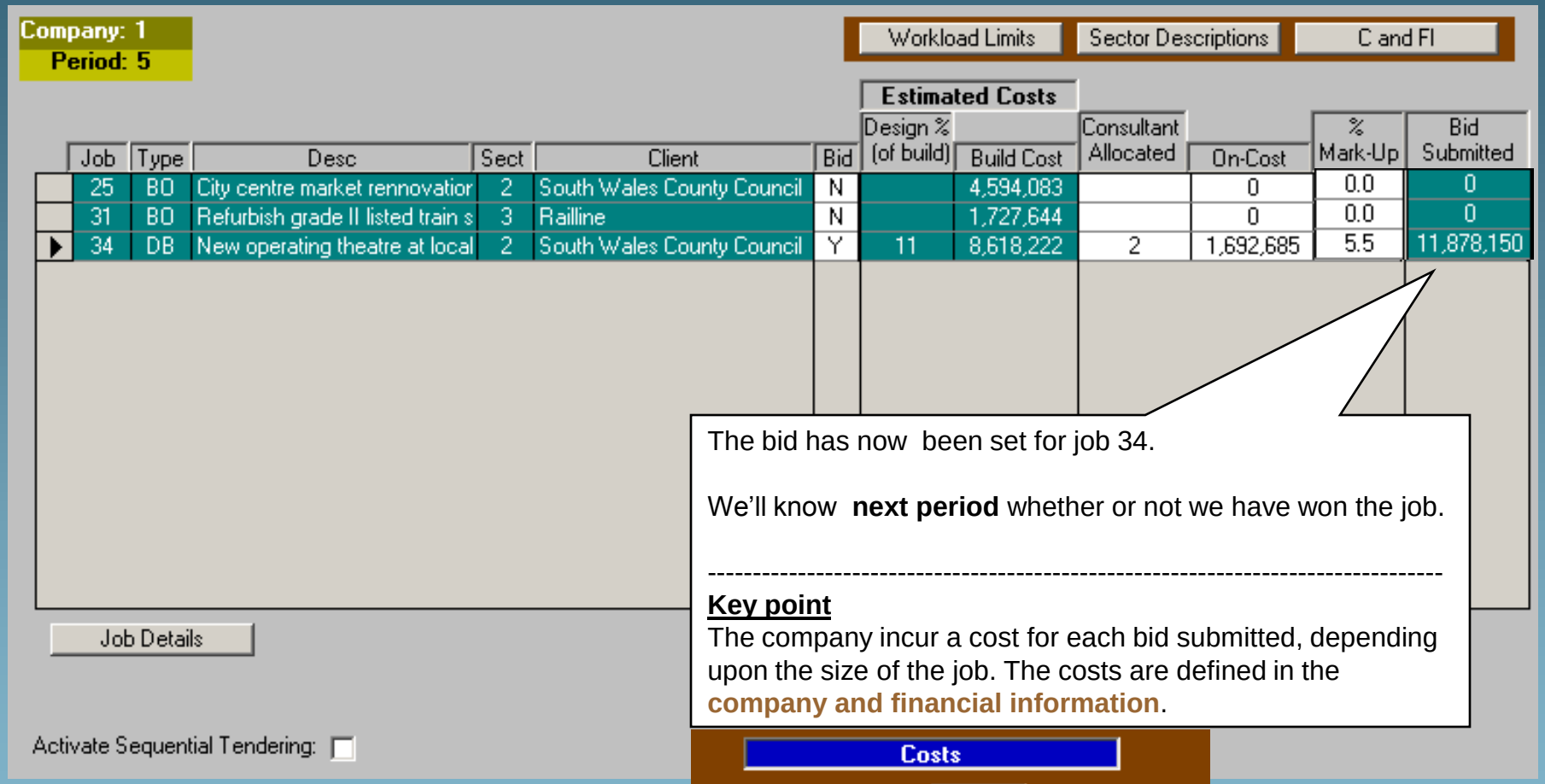
Allocate Consultant | Enter On-Cost

Remove Consultant

Activate Sequential Tendering: ☐

Main | Quit

Bidding for a job - 4

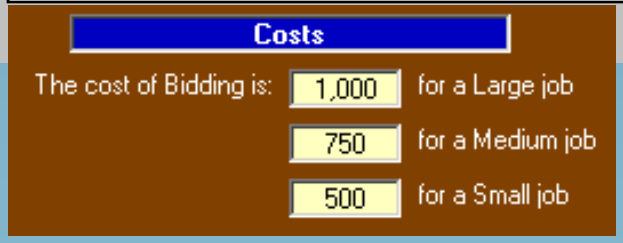


The bid has now been set for job 34.

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

Key point

The company incur a cost for each bid submitted, depending upon the size of the job. The costs are defined in the **company and financial information**.



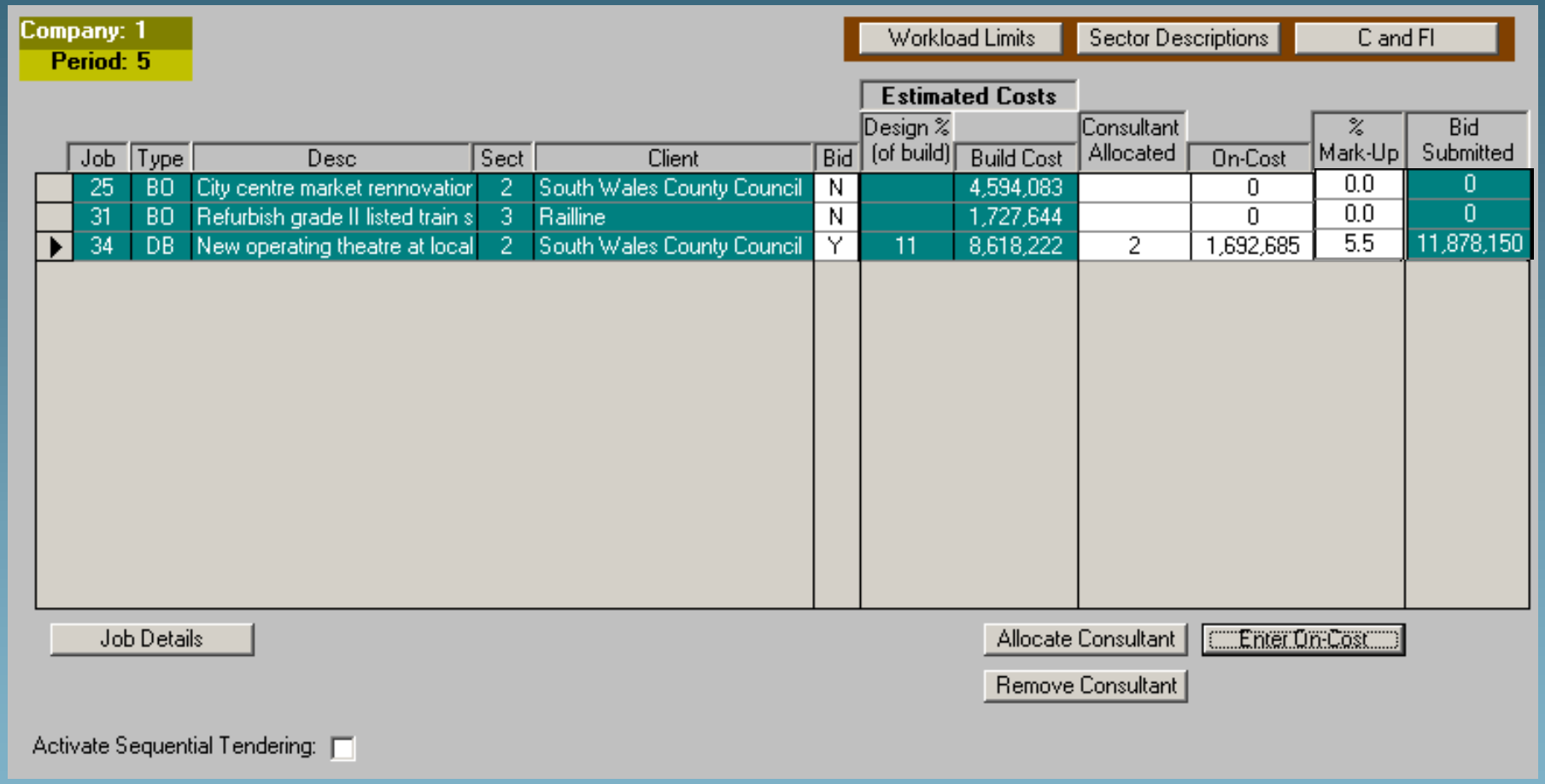
Bidding for a job – 4

The key part of the company's bidding strategy is deciding which jobs to try and win, but there are other factors that impact upon the decision process :-

- Sequential Tendering can be used to dynamically alter mark-ups as bids are submitted.
- The size of the company's capital base controls the level of work that can be undertaken, and its important to use the workload limits button to determine if the capital base needs to be altered to fit in with the company's bidding requirements.
- There is a limit on the number of ongoing jobs the company can support at any time, as defined in the company and financial information.
- The nature of the company's relationship with the clients with whom the bids are being submitted. If bids are very close, a job can be won or loss on client relationship.

Once the bids have been submitted, whether or not the company is successful is dependant both on the quality of the bids themselves, and outside influences, and it won't be till next period that the bidding results are known.

Bidding for a job - 4



The Demo is now complete

Main Quit

Bidding for a job - 4

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
	25	BO	City centre market rennovation	2	South Wales County Council	N		4,594,083		0	0.0	0
	31	BO	Refurbish grade II listed train s	3	Railline	N		1,727,644		0	0.0	0
▶	34	DB	New operating theatre at local	2	South Wales County Council	Y	11	8,618,222	2	1,692,685	5.5	11,878,150

Job Details

Allocate Consultant | Enter On-Cost

Remove Consultant

Activate Sequential Tendering: ☐

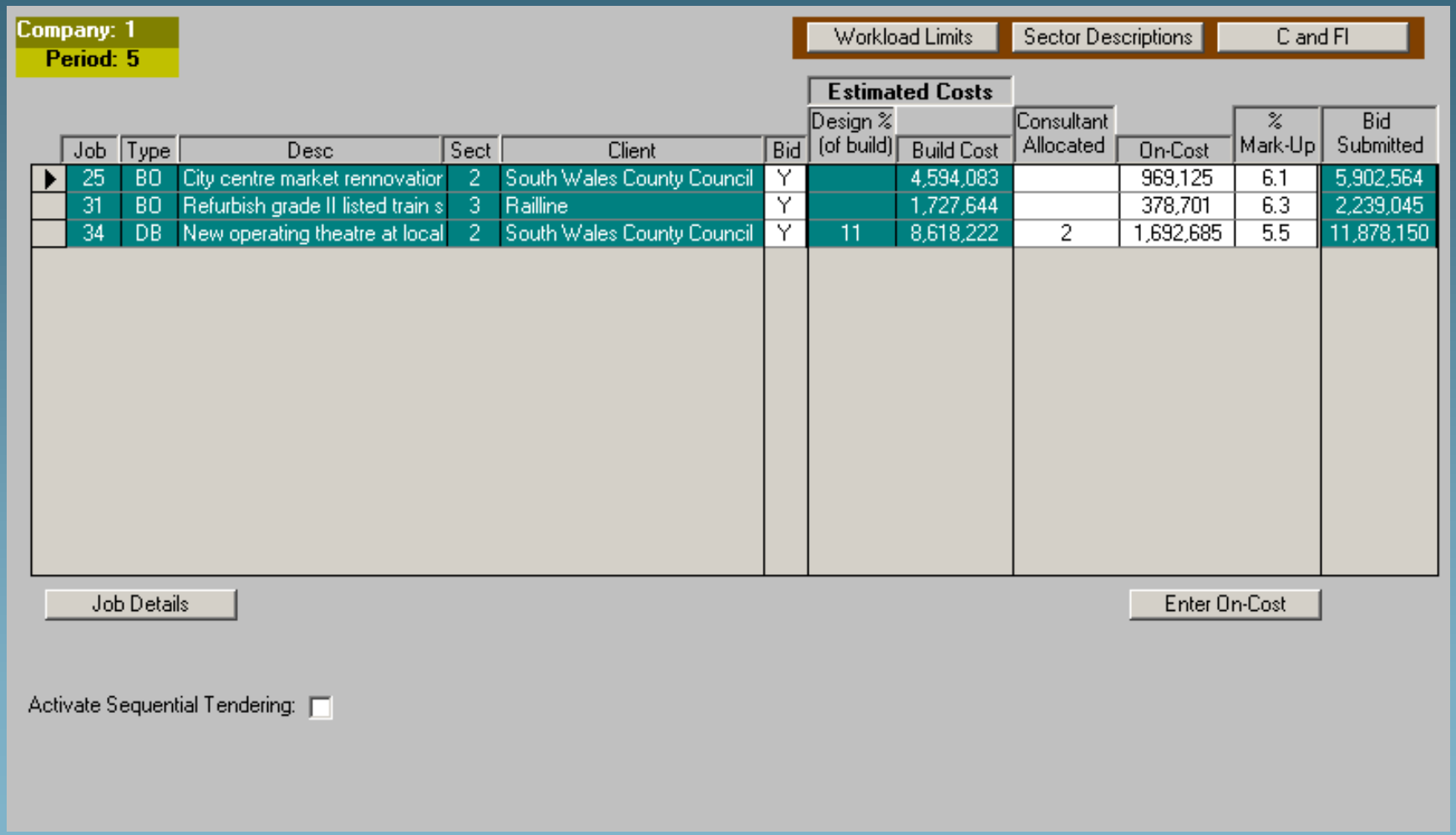
Main | Quit

Sequential Tendering

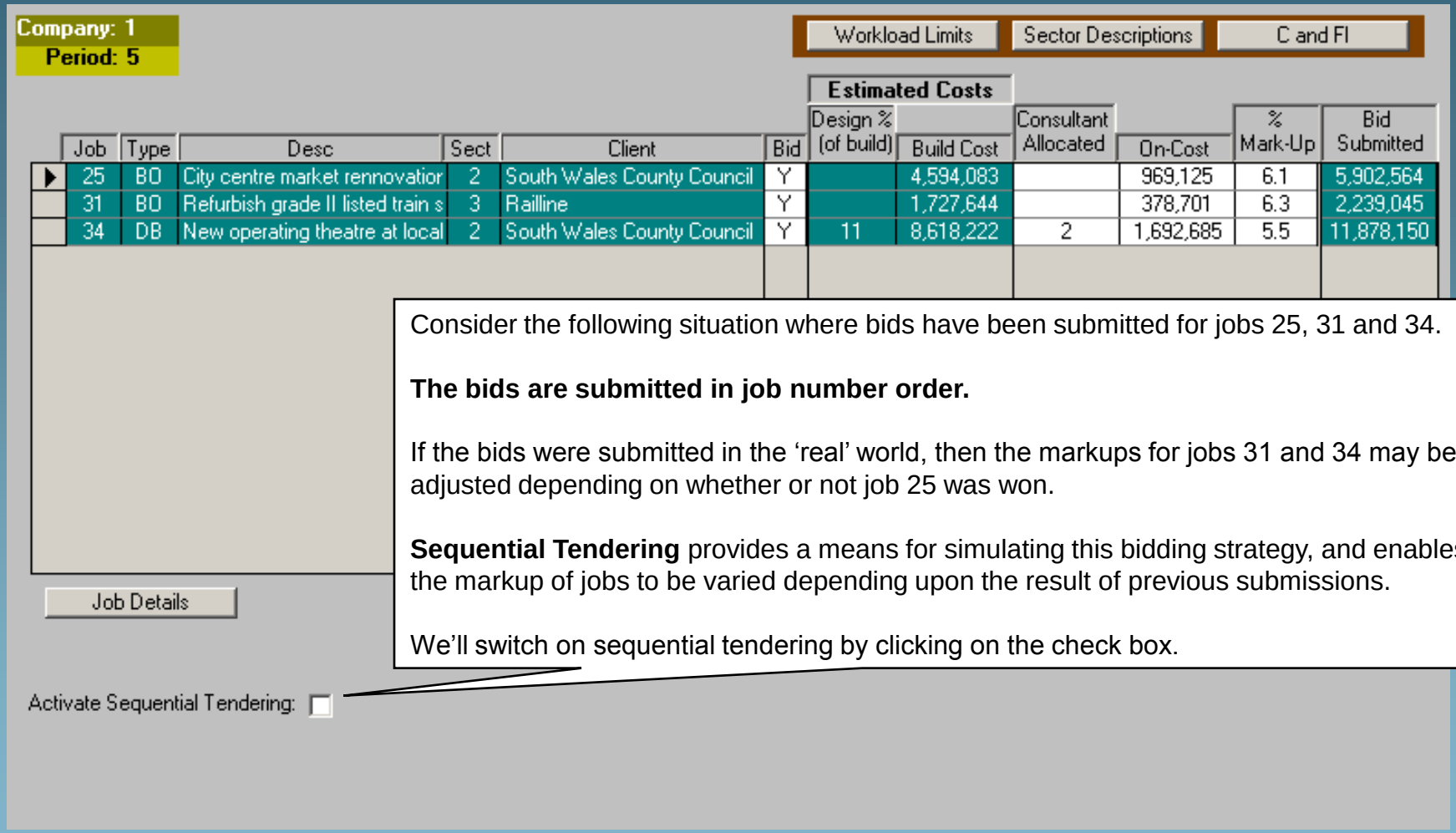
Keep Clicking Anywhere on the screen to advance the demo

Sequential Tendering

Sequential Tendering is a mechanism for varying markups during the bidding process, depending upon how many jobs have been won and/or lost.



Sequential Tendering



Consider the following situation where bids have been submitted for jobs 25, 31 and 34.

The bids are submitted in job number order.

If the bids were submitted in the 'real' world, then the markups for jobs 31 and 34 may be adjusted depending on whether or not job 25 was won.

Sequential Tendering provides a means for simulating this bidding strategy, and enables the markup of jobs to be varied depending upon the result of previous submissions.

We'll switch on sequential tendering by clicking on the check box.

Sequential Tendering

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
▶	25	BO	City centre market rennovatior	2	South Wales County Council	Y		4,594,083		969,125	6.1	5,902,564
	31	BO	Refurbish grade II listed train s	3	Railline	Y		1,727,644		378,701	6.3	2,239,045
	34	DB	New operating theatre at local	2	South Wales County Council	Y	11	8,618,222	2	1,692,685	5.5	11,878,150

Job Details | Enter On-Cost

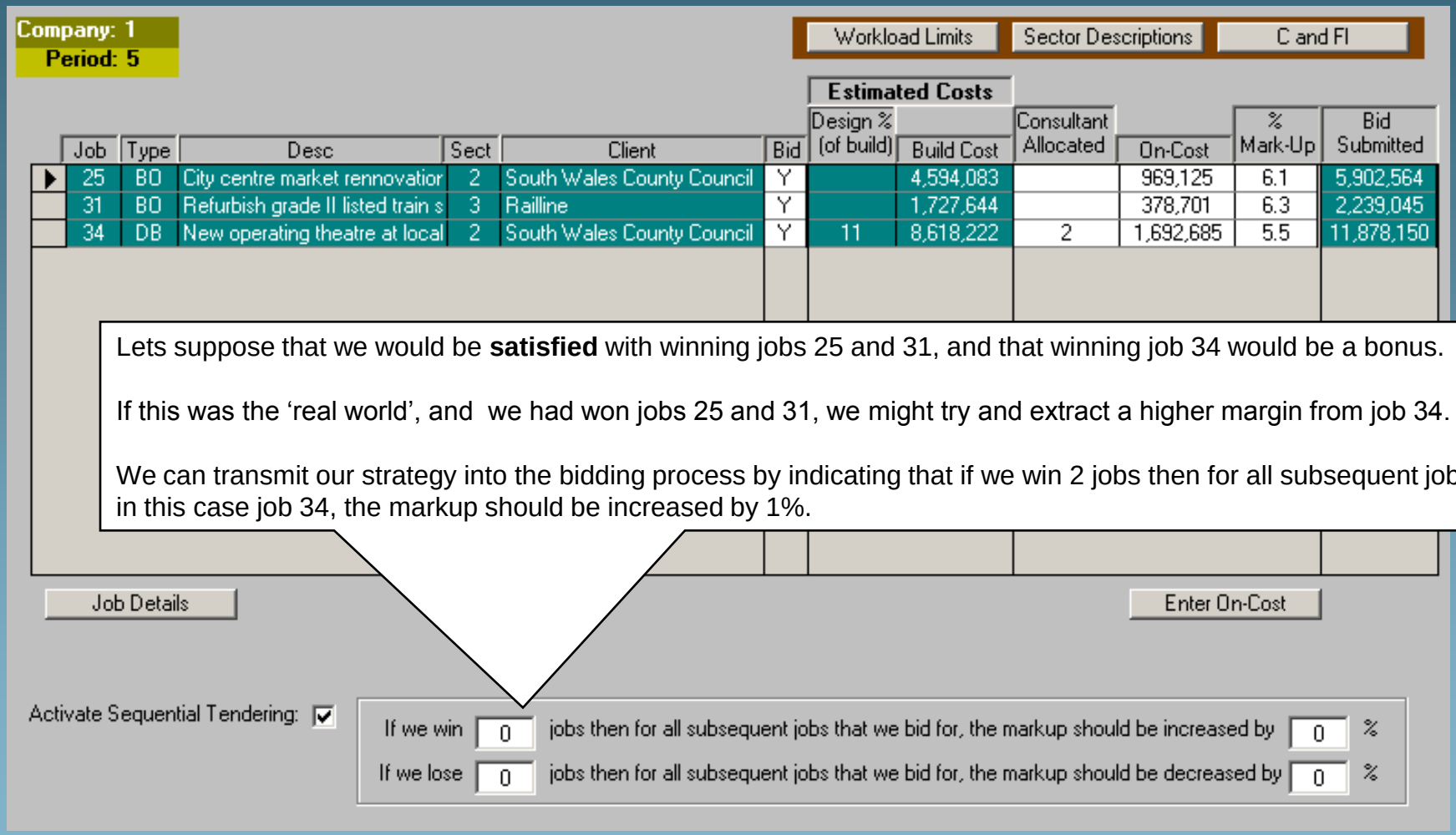
Activate Sequential Tendering: ☑

If we win [0] jobs then for all subsequent jobs that we bid for, the markup should be increased by [0] %

If we lose [0] jobs then for all subsequent jobs that we bid for, the markup should be decreased by [0] %

Main | Quit

Sequential Tendering



Sequential Tendering

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
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	34	DB	New operating theatre at local	2	South Wales County Council	Y	11	8,618,222	2	1,692,685	5.5	11,878,150

Job Details | Enter On-Cost

Activate Sequential Tendering: ☑

If we win [2] jobs then for all subsequent jobs that we bid for, the markup should be increased by [1] %

If we lose [0] jobs then for all subsequent jobs that we bid for, the markup should be decreased by [0] %

Main | Quit

Sequential Tendering

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
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	34	DB	New operating theatre at local	2	South Wales County Council	Y	11	8,618,222	2	1,692,685	5.5	11,878,150

If we win jobs 25 and 31, the markup for job 34 will be increased by 1% to 6.5%, enabling additional margin to be earned.

Job Details | Enter On-Cost

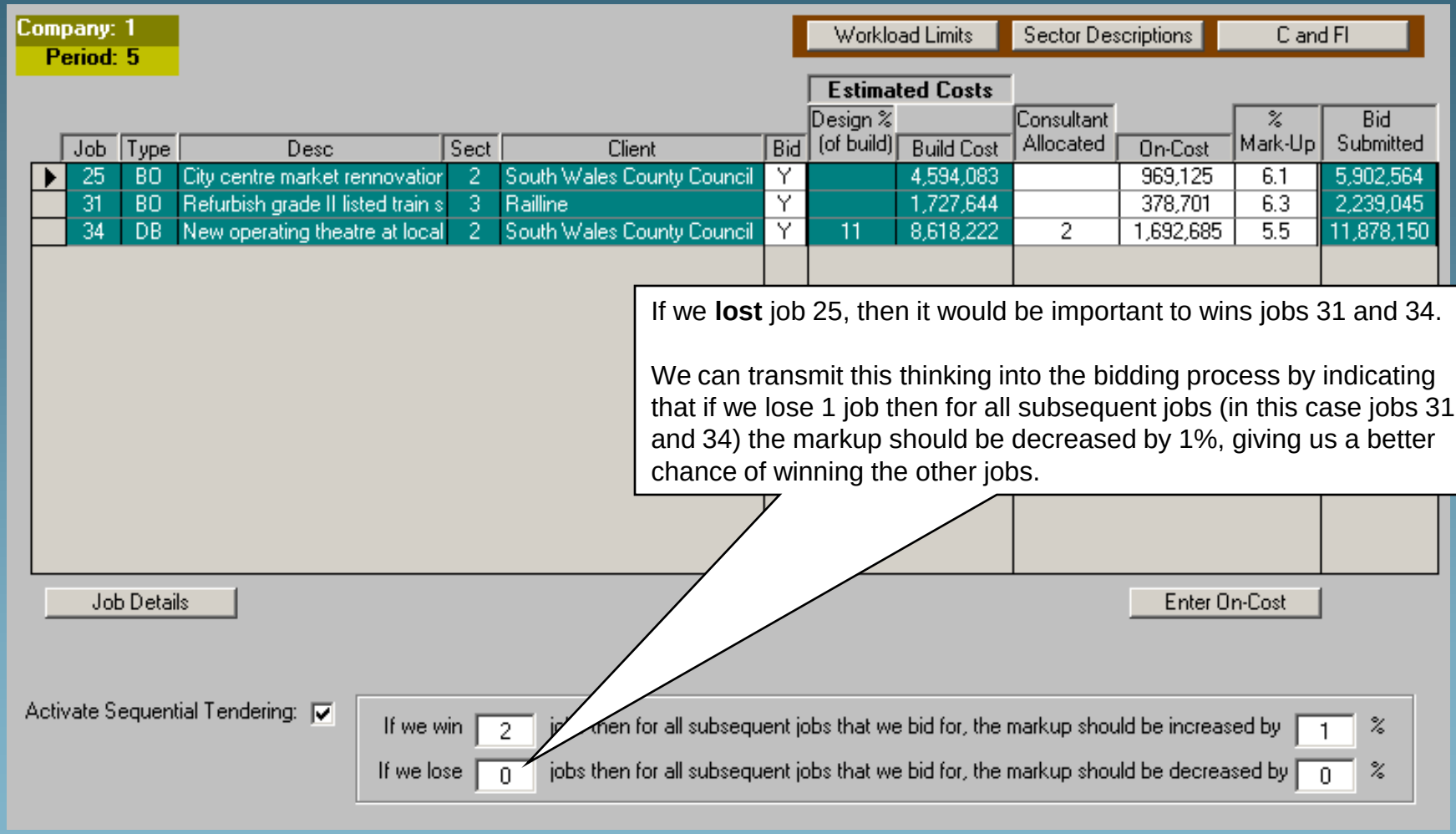
Activate Sequential Tendering: ☑

If we win [2] jobs then for all subsequent jobs that we bid for, the markup should be increased by [1] %

If we lose [0] jobs then for all subsequent jobs that we bid for, the markup should be decreased by [0] %

Main | Quit

Sequential Tendering



If we **lost** job 25, then it would be important to wins jobs 31 and 34.

We can transmit this thinking into the bidding process by indicating that if we lose 1 job then for all subsequent jobs (in this case jobs 31 and 34) the markup should be decreased by 1%, giving us a better chance of winning the other jobs.

Sequential Tendering

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
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Job Details | Enter On-Cost

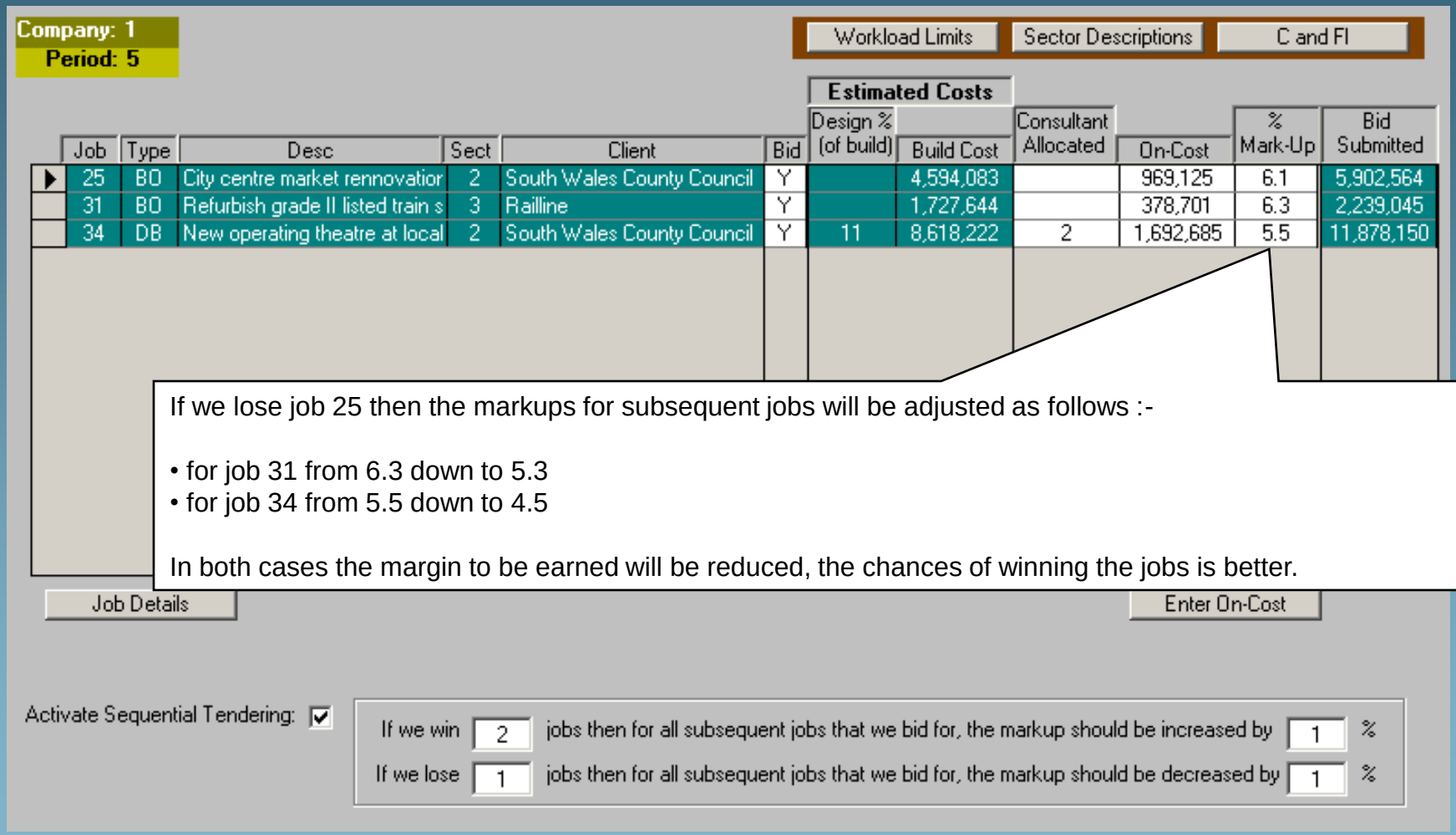
Activate Sequential Tendering: ☑

If we win 2 jobs then for all subsequent jobs that we bid for, the markup should be increased by 1 %

If we lose 1 jobs then for all subsequent jobs that we bid for, the markup should be decreased by 1 %

Main | Quit

Sequential Tendering



Sequential Tendering

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
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	34	DB	New operating theatre at local	2	South Wales County Council	Y	11	8,618,222	2	1,692,685	5.5	11,878,150

Job Details | Enter On-Cost

Activate Sequential Tendering: ☑

If we win 2 jobs then for all subsequent jobs that we bid for, the markup should be increased by 1 %

If we lose 1 jobs then for all subsequent jobs that we bid for, the markup should be decreased by 1 %

The Demo is now complete

Main | Quit

Sequential Tendering

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
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Job Details | Enter On-Cost

Activate Sequential Tendering: ☑

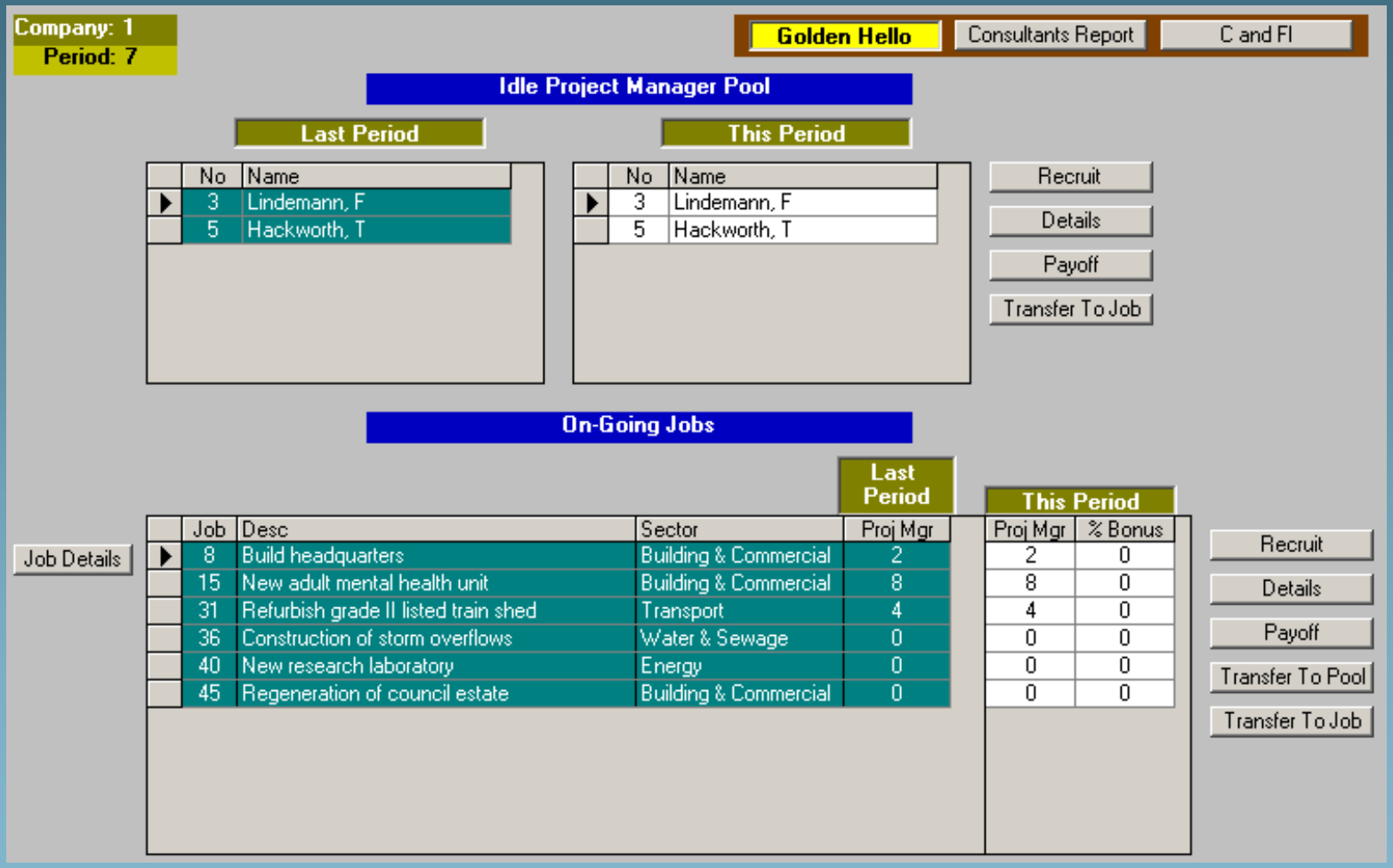
If we win 2 jobs then for all subsequent jobs that we bid for, the markup should be increased by 1 %

If we lose 1 jobs then for all subsequent jobs that we bid for, the markup should be decreased by 1 %

Main | Quit

Personnel Management Decisions

All on-going contracts require a project manager to oversee the job, and each period the Personnel Manager needs to make decisions about who the company should employ. Employing the most appropriate person can noticeably improve the progress of the job, and conversely the wrong person can adversely affect progress.



Entering Personnel Decisions - 1

Keep Clicking Anywhere on the screen to advance the demo

Entering Personnel Decisions - 1

Project managers are concerned with the overall planning and co-ordination of a project from inception to completion aimed at meeting the client's requirements and ensuring completion on time, within cost and to the required quality standards.

A project manager with well-matched experience for a particular type of job will handle available resources more efficiently, whilst a project manager with inappropriate experience will impair contract efficiency.

Project Managers employed by the company are either :-

- In the idle pool awaiting a placement on site; once a job finishes the project manager on site is placed in the idle pool. Idle project managers still have to be paid, so its far more cost-effective to have them working on site than doing nothing.
- Allocated to a specific on-going job

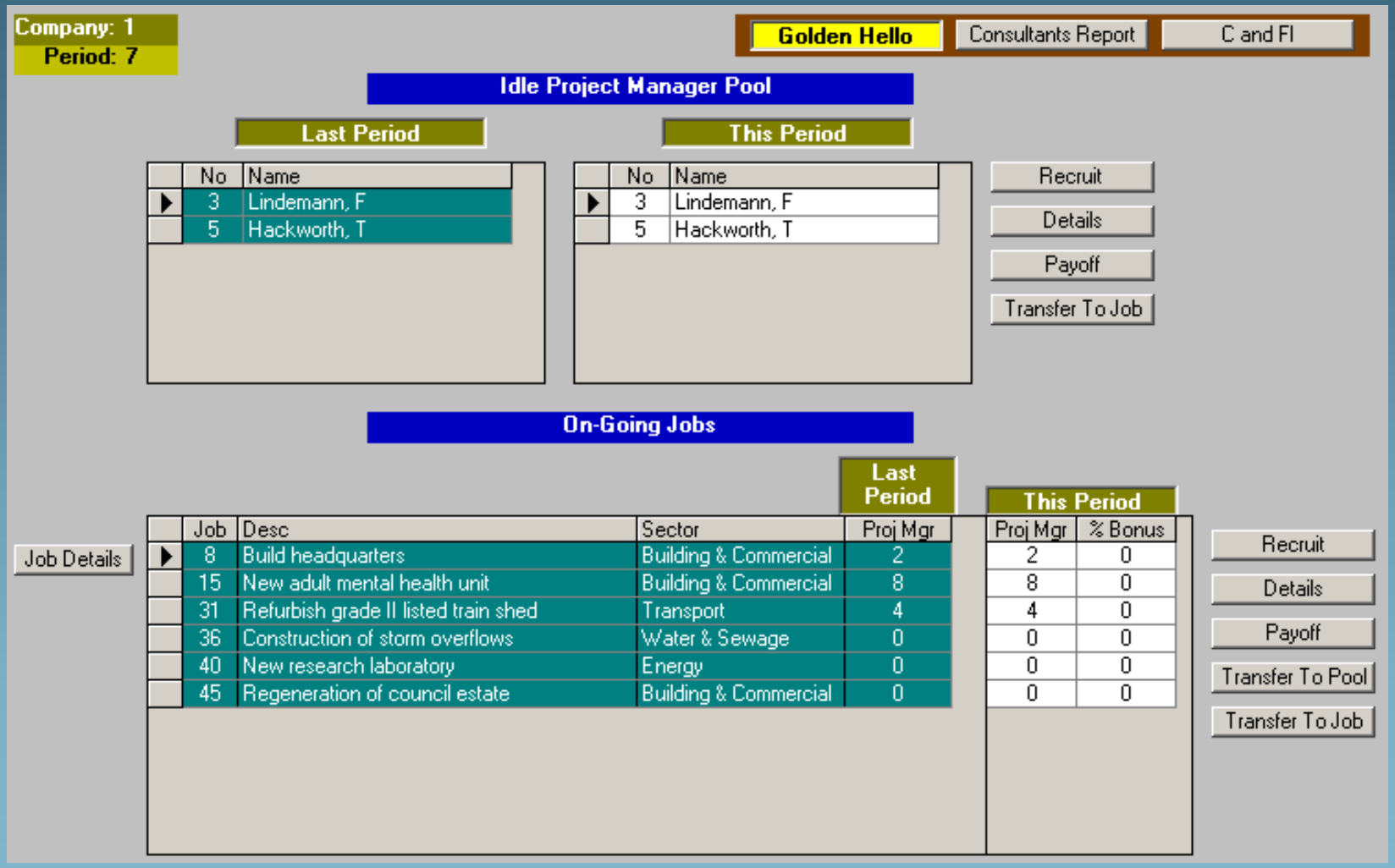
The Personnel Manager needs to make decisions about :-

- Which idle project managers to payoff
- Allocating suitable project managers to on-going jobs, especially those that don't currently have one, or have a poorly-performing one. The project manager can come from the idle pool, another job or from the the market (a list of available ones who have registered with recruitment agencies)

Entering Personnel Decisions - 1

At the start of period 7 the company employs the following project managers :-

- Lindemann and Hackworth in the idle pool
- Project Managers 2, 8, 4 on jobs 8, 15 and 31 respectively



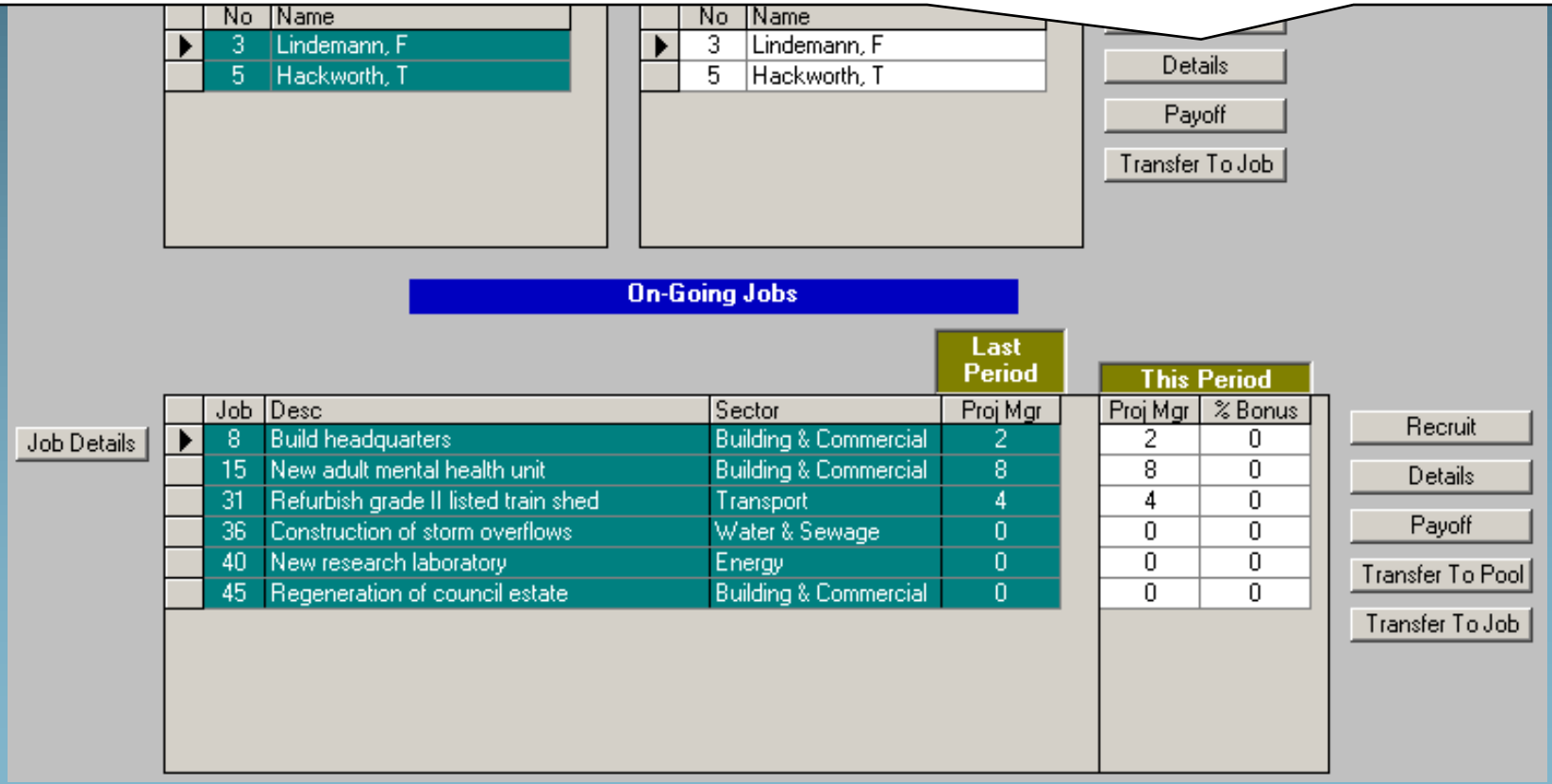
Entering Personnel Decisions - 1

If possible **Lindemann and Hackworth** should be placed on suitable on-going jobs, and there are 3 jobs beginning this period that do not have a project manager :-

- Job 36, a Water & Sewage contract
- Job 40, an Energy contract
- Job 45, a Building & Commercial contract

But how suitable are they for the jobs ?

We can determine their suitability by using the **Details** button.



Entering Personnel Decisions - 1

Lindemann's profile and past history with the company indicate a lot of experience and expertise in the Transport sector, **but not** in the Water & Sewage, Energy or Building & Commercial sectors.

Since we don't have any Transport work in the pipeline, we'll payoff Lindemann using the **payoff** button.

Project Manager Details

No: 3

Name: Lindemann, F

Age: 34

Qualifications: BSc (Hons) Building Surveying, MCIO

Salary: 46500 per annum

Cash incentive required to secure services: None

Profile: On graduating, spent 5 years as a junior surveyor on earthwork/roadwork schemes, followed by 4 years as site engineer on a major urban road regeneration project. Since then has project managed a motorway widening scheme in Cheshire.

Gets results, but is often bad-tempered and resentful of others. Has got into trouble with senior management in the past. Not many friends in the industry. Recently divorced, and can be often found propping up the bar of the local hostelry.

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	3	Transport	good	none	3	marginal	138	noticeable	none	good	
5	3	Transport	good	marginal	3	marginal	138	noticeable	none	good	
6	3	Transport	good	marginal	4	noticeable	138	noticeable	none	very good	

Main Quit

Entering Personnel Decisions - 1

Hackworth's profile and past history with the company indicate a **lot of experience and expertise** in the Building & Commercial sector.

Since job 45 is a Building & Commercial contract, we'll use the **Transfer to Job** button to put Hackworth on the job.

Project Manager Details

No: 5

Name: Hackworth, T

Age: 42

Qualifications: BSc Building Surveying, MCIOB

Salary: 52500 per annum

Cash incentive required to secure services: In the region of 25% of annual salary

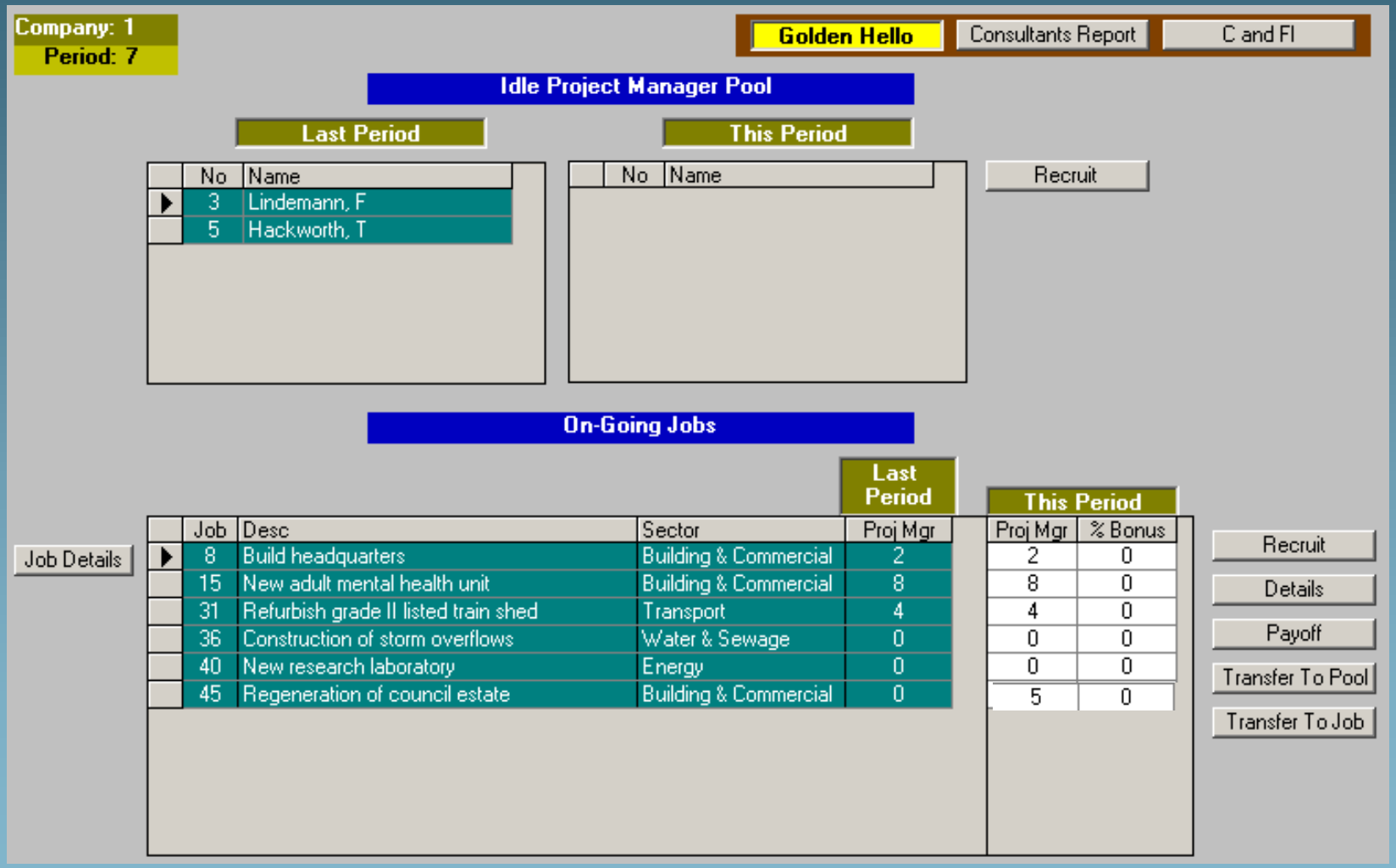
Profile: After leaving University spent 5 years as a graduate engineer in a consultants office specialising in concrete structures. This was followed by 10 years as site engineer on a variety of large building and industrial schemes. To date has been the site manager on some large commercial developments in London.

Has a solid track record in the industry. Not the easiest of people to satisfy, and sets high standards. Prefers large contracts, and can always be relied upon to produce the results.

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	9	Building & Commercial	excellent	none	3	marginal	243	marginal	none	excellent	
5	9	Building & Commercial	excellent	marginal	3	marginal	243	marginal	none	excellent	
6	9	Building & Commercial	excellent	marginal	4	noticeable	243	marginal	none	excellent	

Main Quit

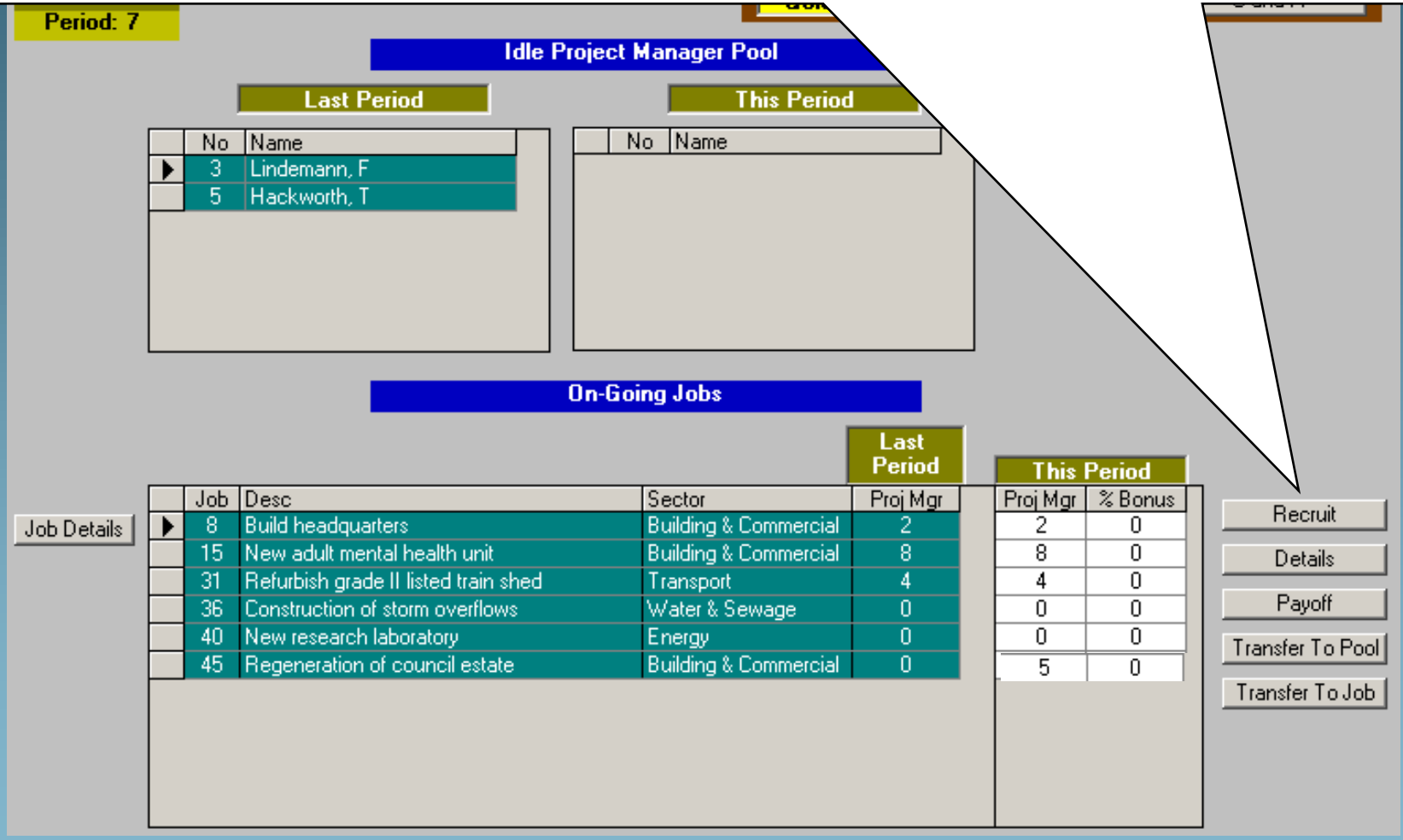
Entering Personnel Decisions - 1



Entering Personnel Decisions - 1

Since there is nobody in the idle pool suitable for jobs 36 and 40, the Water & Sewage and Energy contracts, we'll have to recruit from the market i.e., the **available project managers that have signed up with a recruitment agency**.

Starting with job 36, the Water & Sewage job, we first select the job by clicking on the appropriate line, and then use the **Recruit button** to choose from the available project managers.



Entering Personnel Decisions - 1

A **Search Phrase** can be entered to narrow down the list.

The key to finding the right person is to is to review the profile (or cv), which covers both work and personal details, both of which may be important.

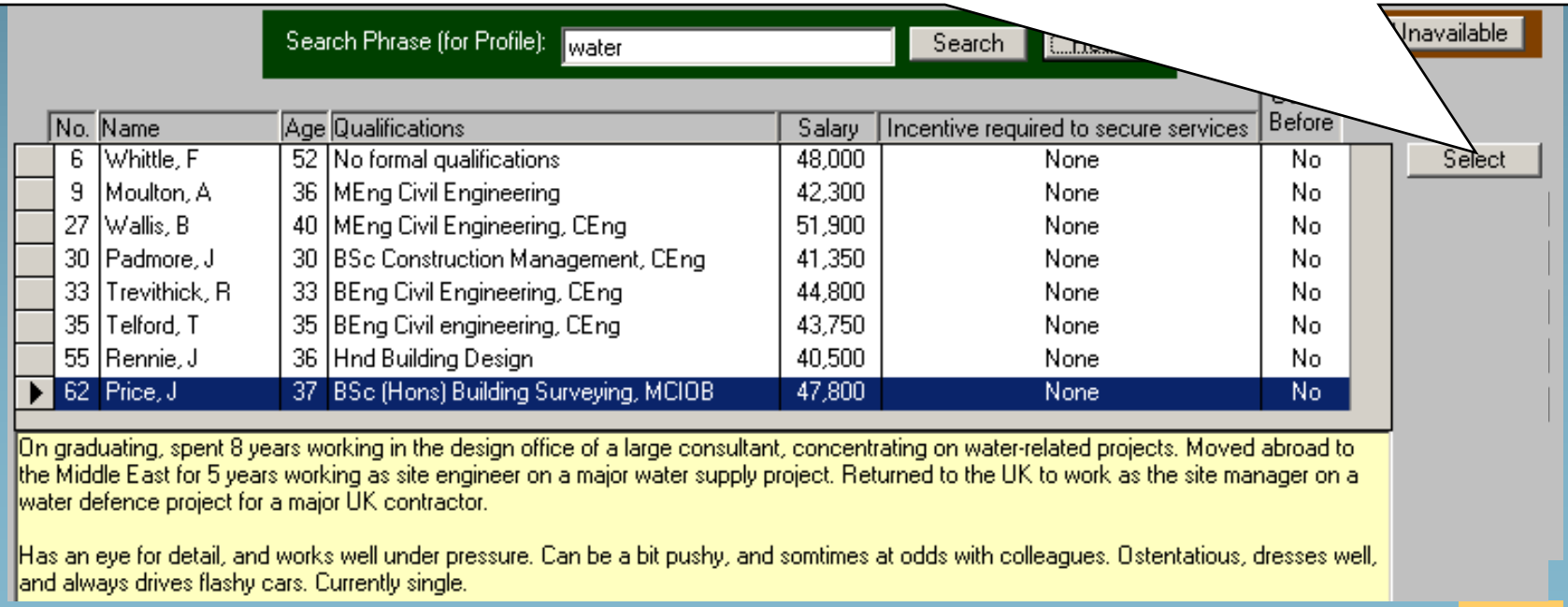
On close examination of all suitable project managers, it appears that **Price** is the ideal choice for job 36, our Water & Sewage contract.

We can use the **Select button** to identify our choice.

Key Point

Each period, the **Unavailable button** can be used to show details of project managers who are **unavailable** for a number of reasons, including :-

- They may be off work due to illness
- If they have previously resigned from the company, they may bear a grudge and be unwilling to work for us again for a while

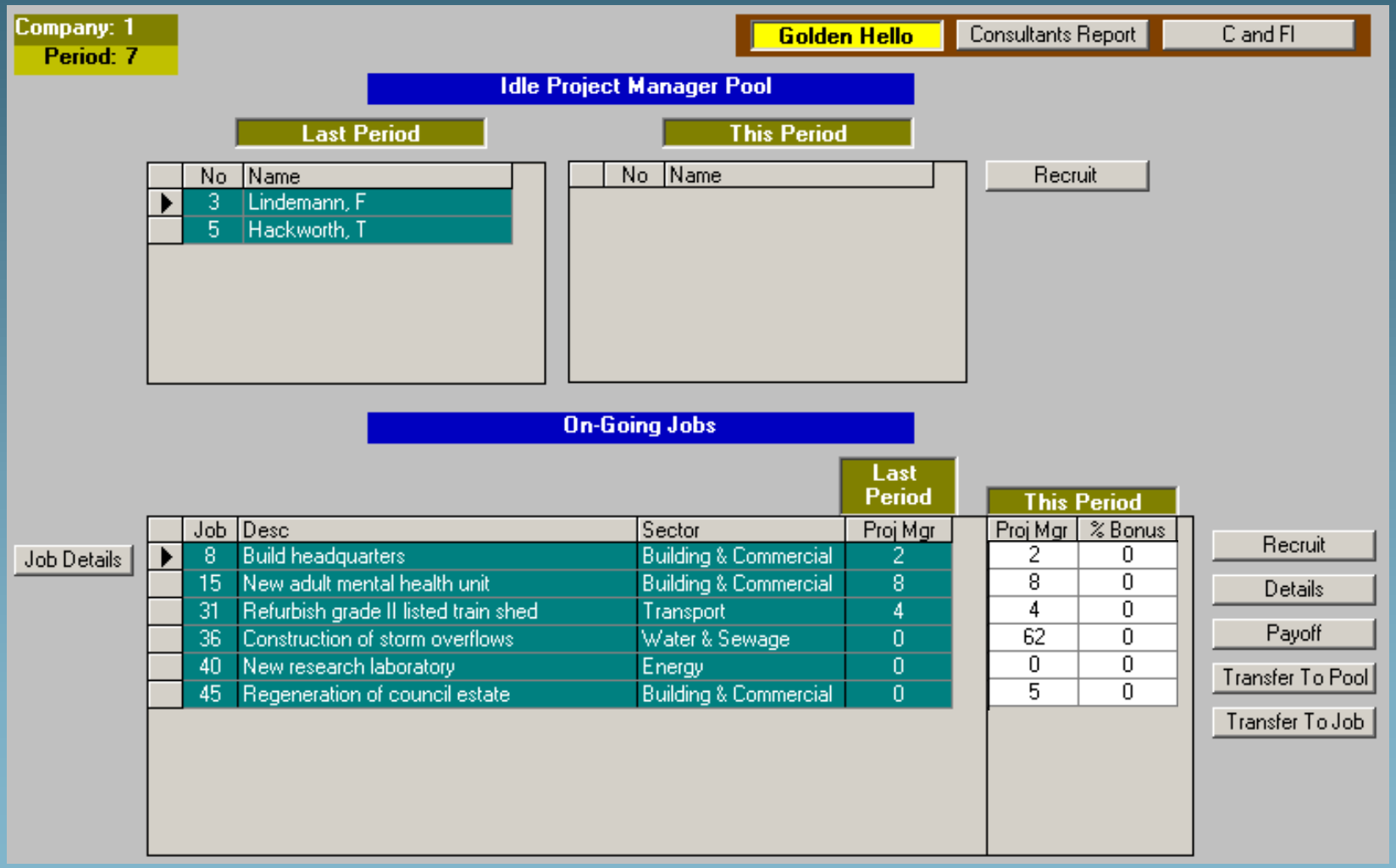


No.	Name	Age	Qualifications	Salary	Incentive required to secure services	Before
6	Whittle, F	52	No formal qualifications	48,000	None	No
9	Moulton, A	36	MEng Civil Engineering	42,300	None	No
27	Wallis, B	40	MEng Civil Engineering, CEng	51,900	None	No
30	Padmore, J	30	BSc Construction Management, CEng	41,350	None	No
33	Trevithick, R	33	BEng Civil Engineering, CEng	44,800	None	No
35	Telford, T	35	BEng Civil engineering, CEng	43,750	None	No
55	Rennie, J	36	Hnd Building Design	40,500	None	No
62	Price, J	37	BSc (Hons) Building Surveying, MCIOB	47,800	None	No

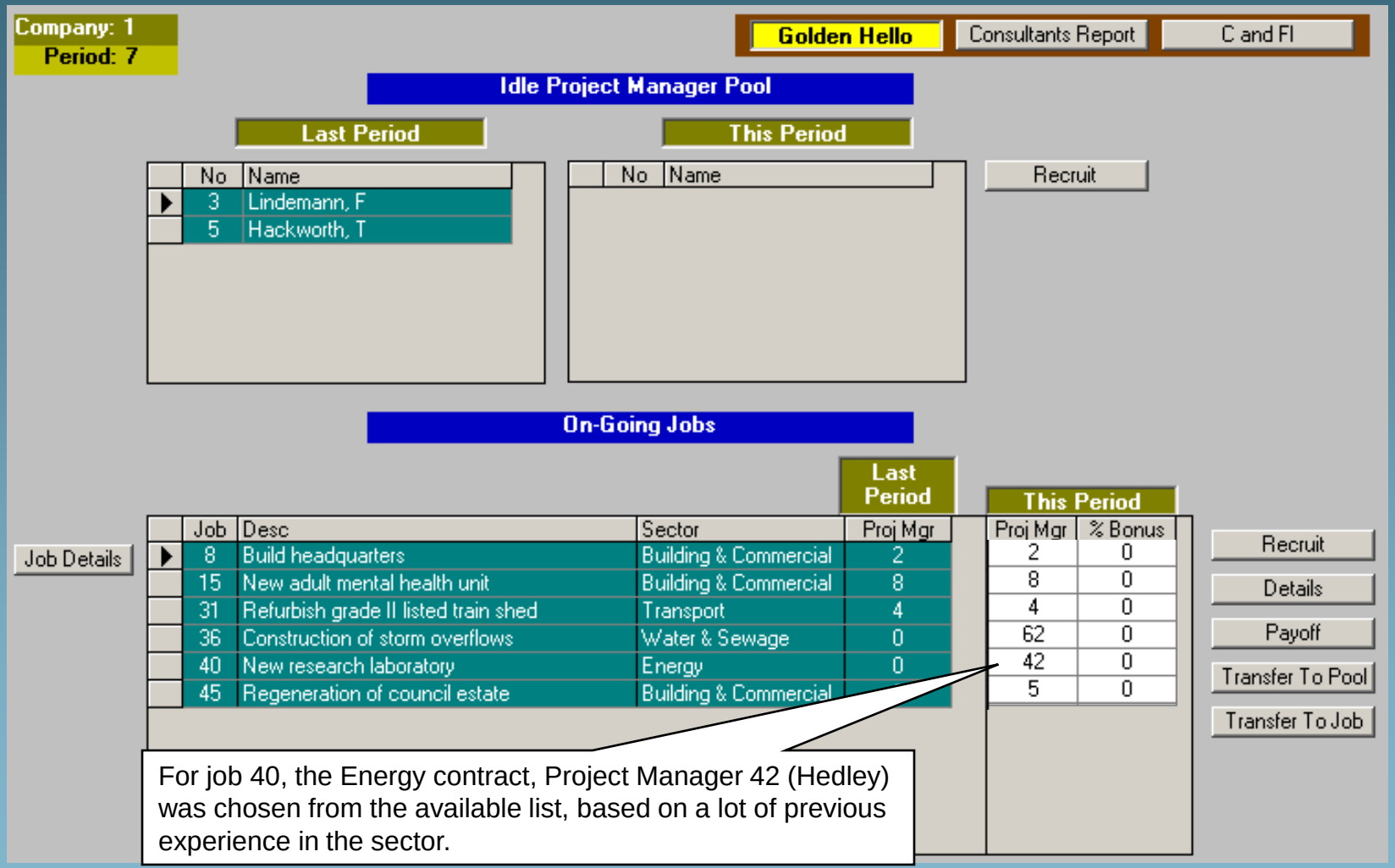
On graduating, spent 8 years working in the design office of a large consultant, concentrating on water-related projects. Moved abroad to the Middle East for 5 years working as site engineer on a major water supply project. Returned to the UK to work as the site manager on a water defence project for a major UK contractor.

Has an eye for detail, and works well under pressure. Can be a bit pushy, and somtimes at odds with colleagues. Ostentatious, dresses well, and always drives flashy cars. Currently single.

Entering Personnel Decisions - 1



Entering Personnel Decisions - 1



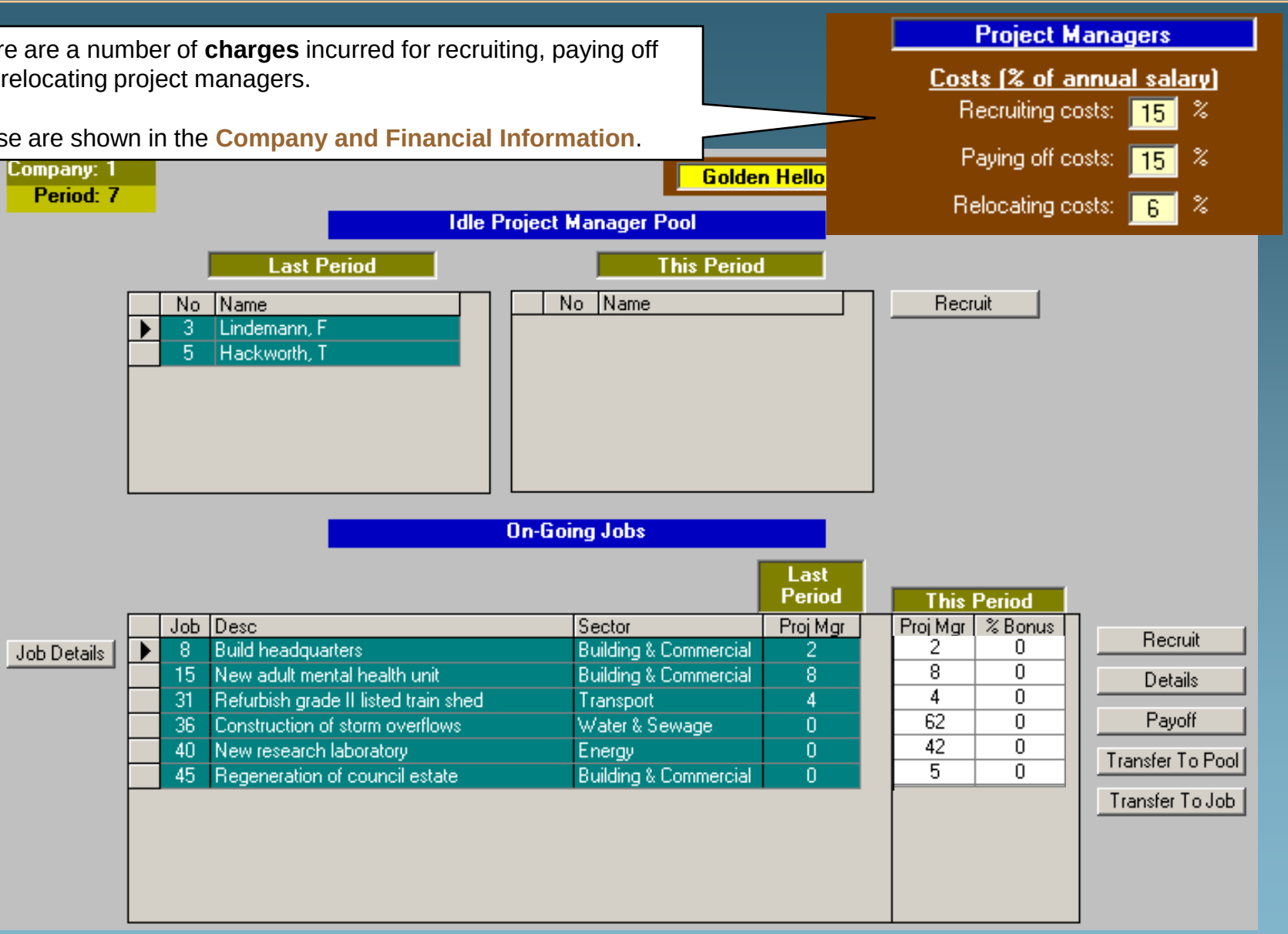
For job 40, the Energy contract, Project Manager 42 (Hedley) was chosen from the available list, based on a lot of previous experience in the sector.

Main Quit

Entering Personnel Decisions - 1

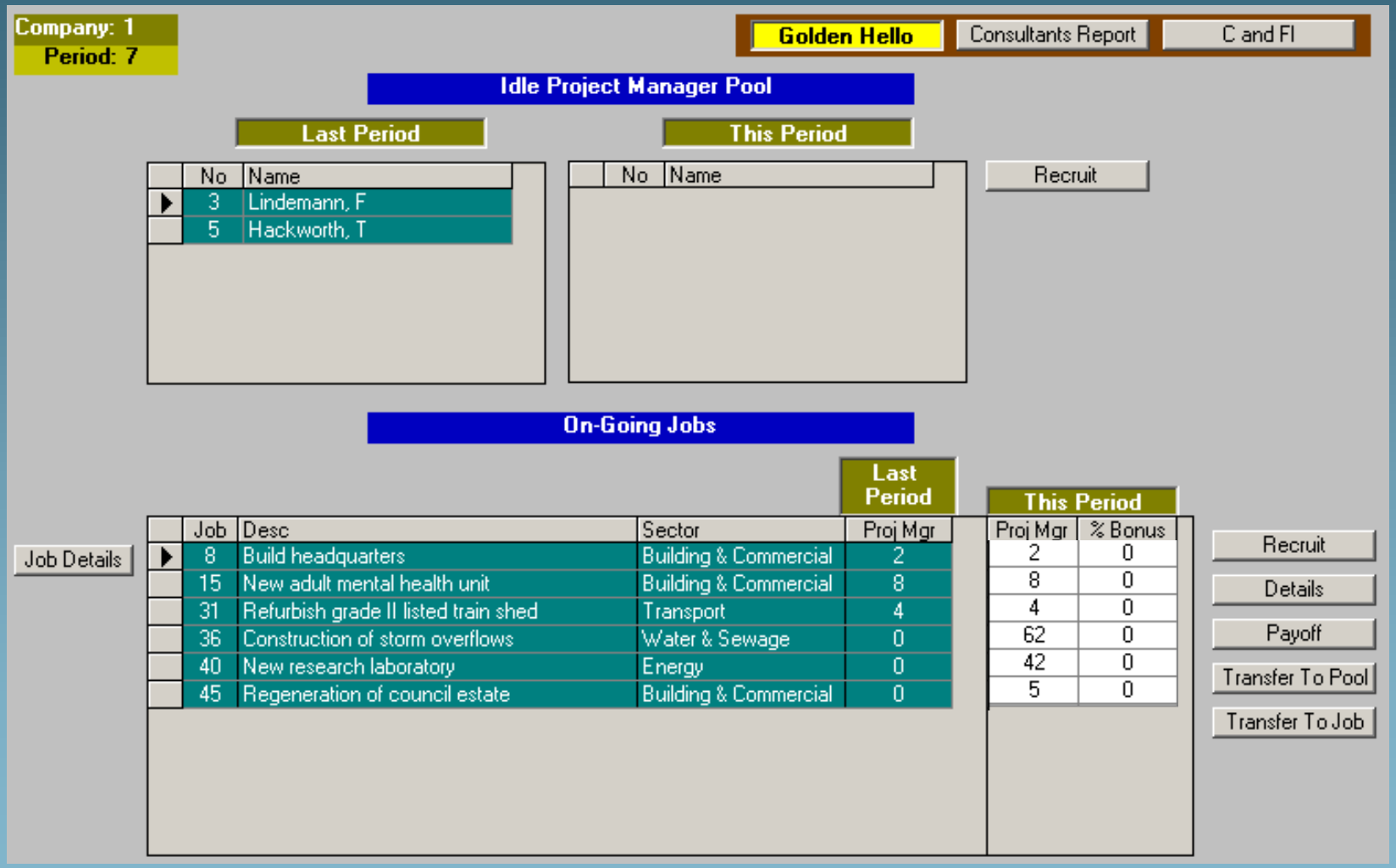
There are a number of **charges** incurred for recruiting, paying off and relocating project managers.

These are shown in the **Company and Financial Information**.



Main Quit

Entering Personnel Decisions - 1

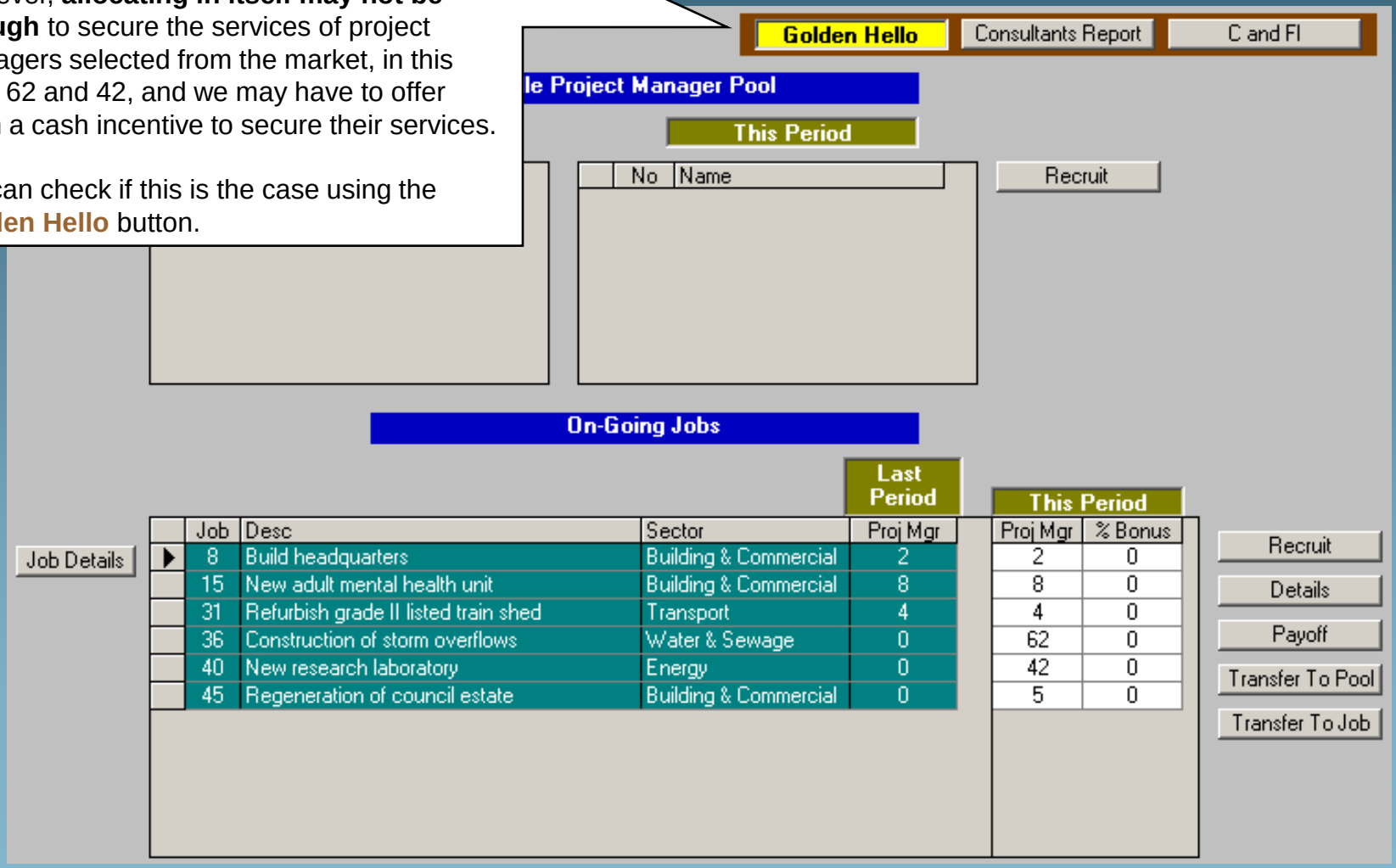


Entering Personnel Decisions - 2

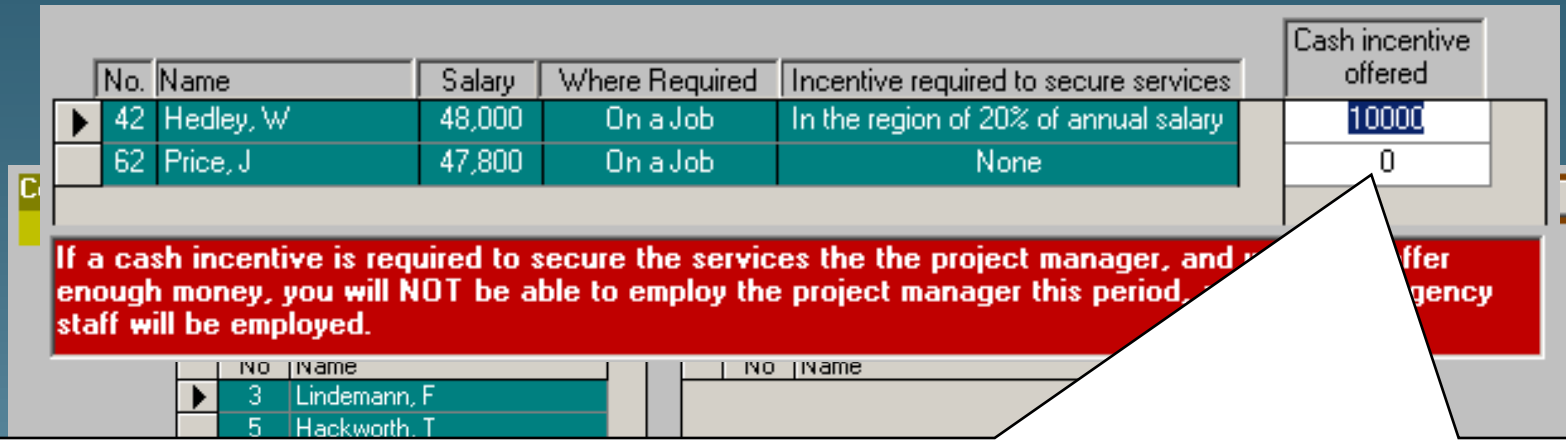
Each job now has a project manager allocated.

However, **allocating in itself may not be enough** to secure the services of project managers selected from the market, in this case 62 and 42, and we may have to offer them a cash incentive to secure their services.

We can check if this is the case using the **Golden Hello** button.



Entering Personnel Decisions - 2



The top project managers i.e., those with experience and expertise in one or more sectors, can command **'golden hellos'** to attract them to particular companies.

The 'golden hello' could be in the form of perks, such as special pension rights, share schemes, medical insurance etc. In this scenario the perk is in the form of a **cash incentive**, which incorporates all of the above and more.

You are given clues as to the likely incentive required. If the incentive required is **"None"** then no further action need be taken.

For our 2 new project managers only Hedley requires an incentive of **around** 20% of annual salary, or 9,600. Since the incentive needed could be higher or lower than 9,600, and we really want to recruit Hedley, we'll take no chances and offer **10,000**. Hopefully this will be enough.

Key Point

If we don't offer enough incentive, and our offer is rejected, we'll be allocated an **unnamed agency project manager** for the period, whose performance is average, and whose annual cost is shown in the **Company and Financial Information**.

Agency staff

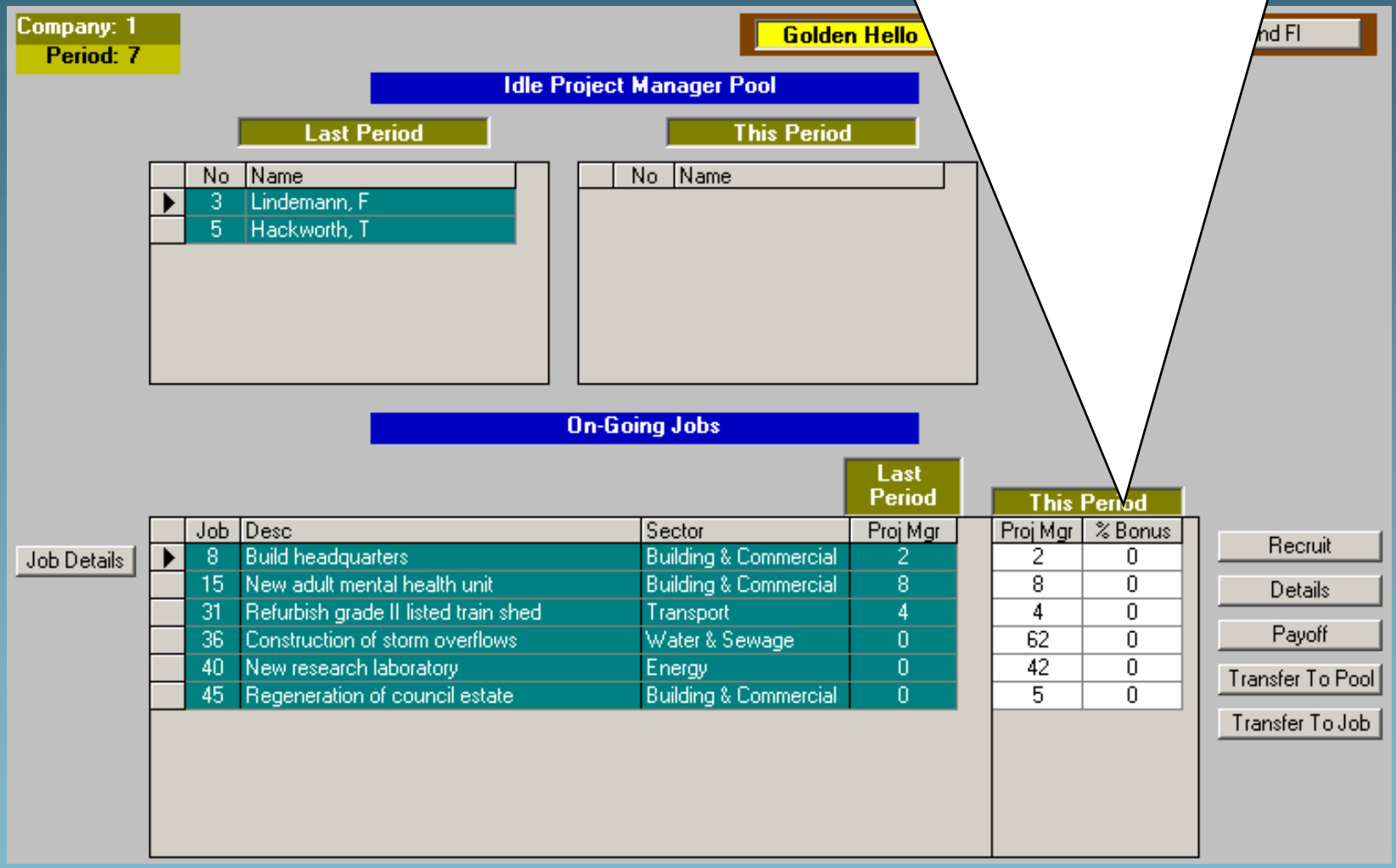
Annual cost: 50,000

Main Quit

Entering Personnel Decisions - 2

We can increase the performance level of the project managers for the period by paying them a bonus.

This is a **% of their salary for the period (quarterly salary).**



Entering Personnel Decisions - 2

But how do we know the affects that different levels of bonus have on performance ?

The clues lie in the **Project Manager History**, which shows in the level of bonus paid for each period a project manager has worked for the company (on site), and the affects.

Bearing in mind the information given, it look like a 4% bonus should improve performance 'noticeably'. If we pay too much bonus, it may be money down the drain, because there comes a point when the performance does not improve no matter how much bonus is paid; **the trick is to find the level**.

Since 4% appears to result in a 'noticeable' improvement, we'll give all the project managers a bonus of 5% each, to hopefully considerably boost performance.

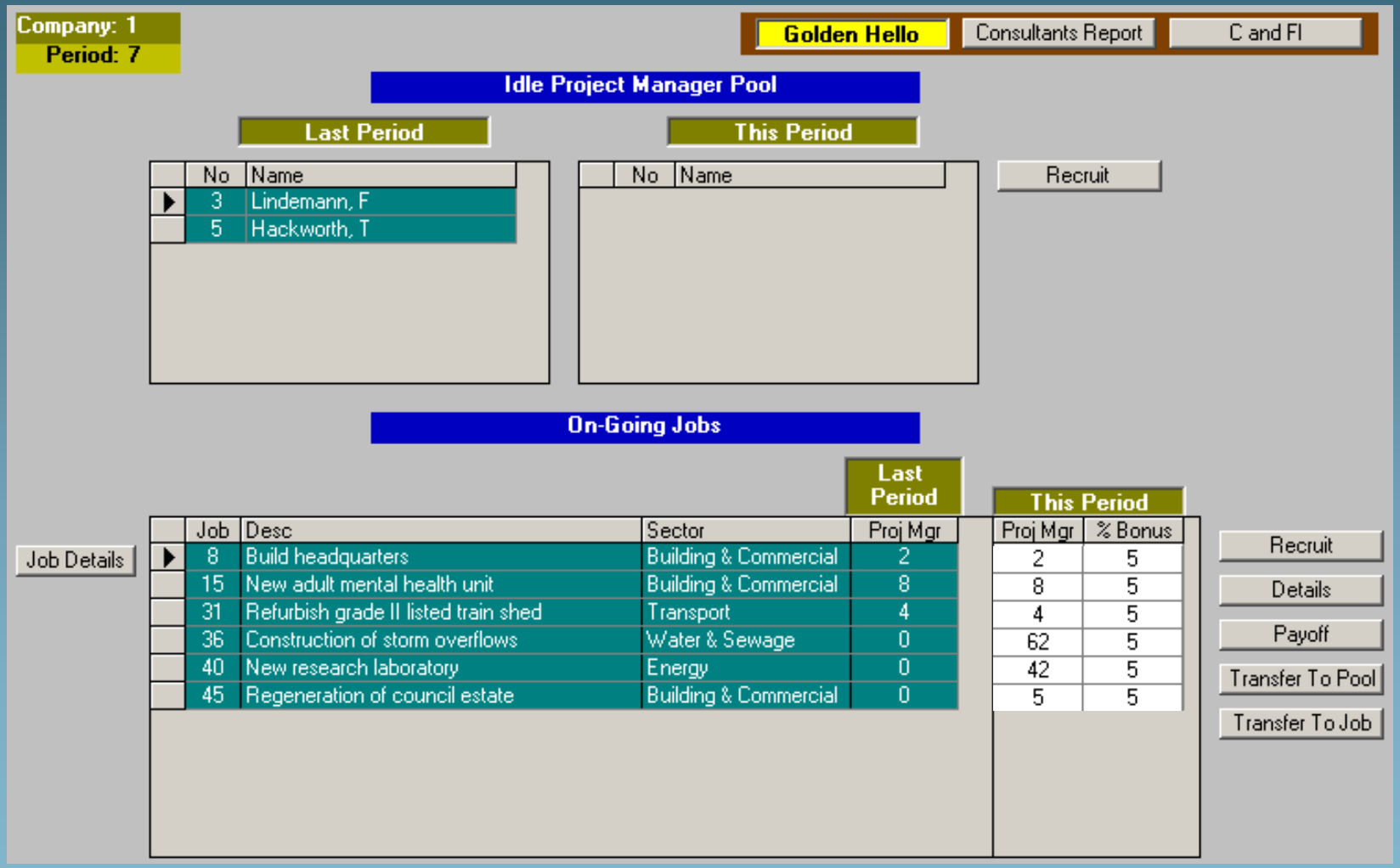
Project Manager: 2 Dickens, J

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	8	Building & Commercial	good	none	4	noticeable	102	noticeable	none	good	
5	8	Building & Commercial	good	marginal	3	marginal	102	noticeable	none	good	
6	8	Building & Commercial	good	marginal	3	marginal	102	noticeable	none	good	

Transfer To Job

Main Quit

Entering Personnel Decisions - 2



Main Quit

Entering Personnel Decisions - 2

Project Manager Resignations

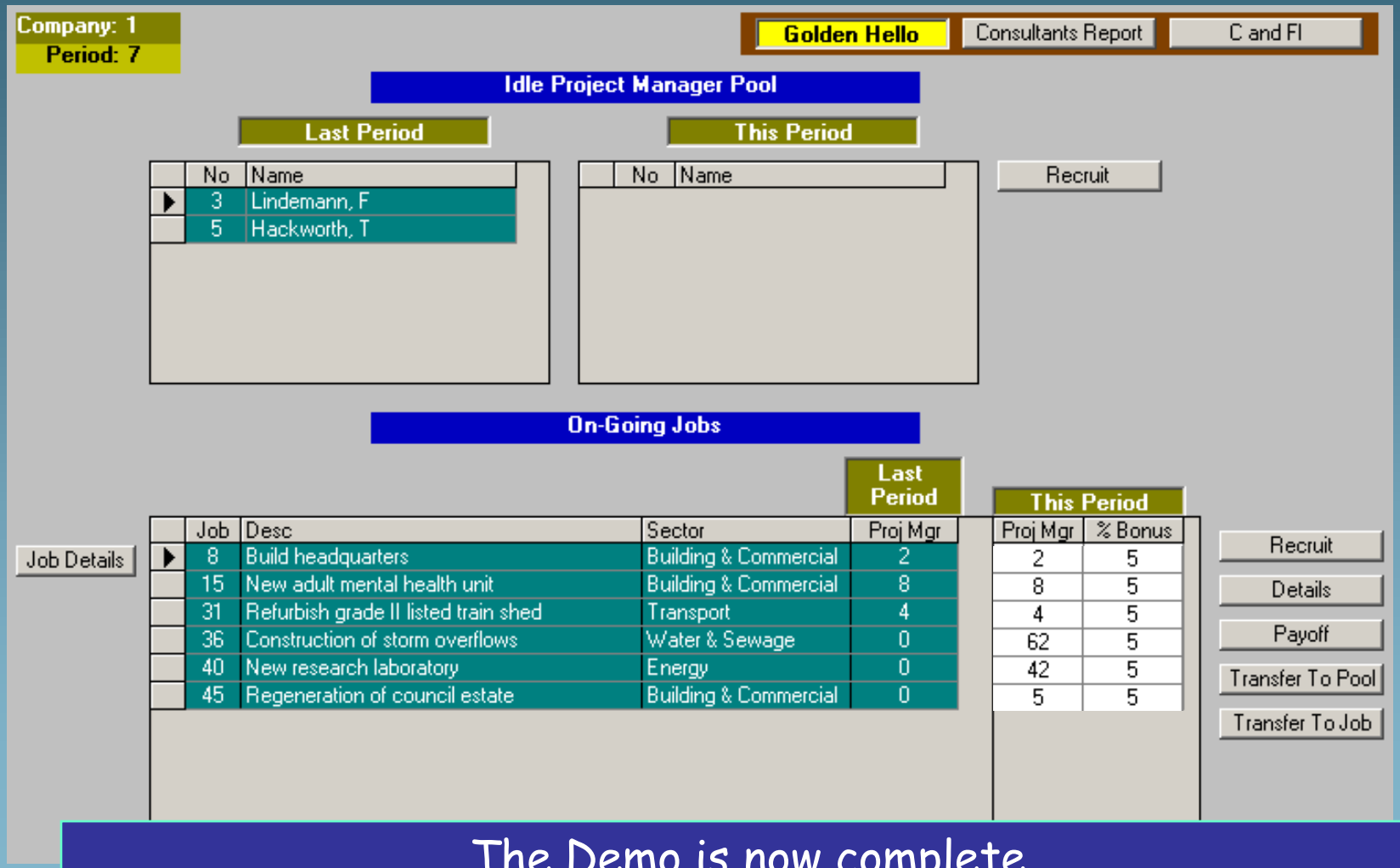
Project Managers can resign from the company for two reasons :-

- **Good** project managers whose **average bonus over the time they are on a particular job** is below a certain level may **resign** because they do not feel they are being adequately rewarded.

- The top performing project managers can be **poached** by rival companies regardless of the level of bonus they are paid.

In either case, once a project manager has resigned they cannot be re-employed next period. In addition, project managers who resigned due to feeling unrewarded may **bear a grudge**, and many not be available for some time in the future.

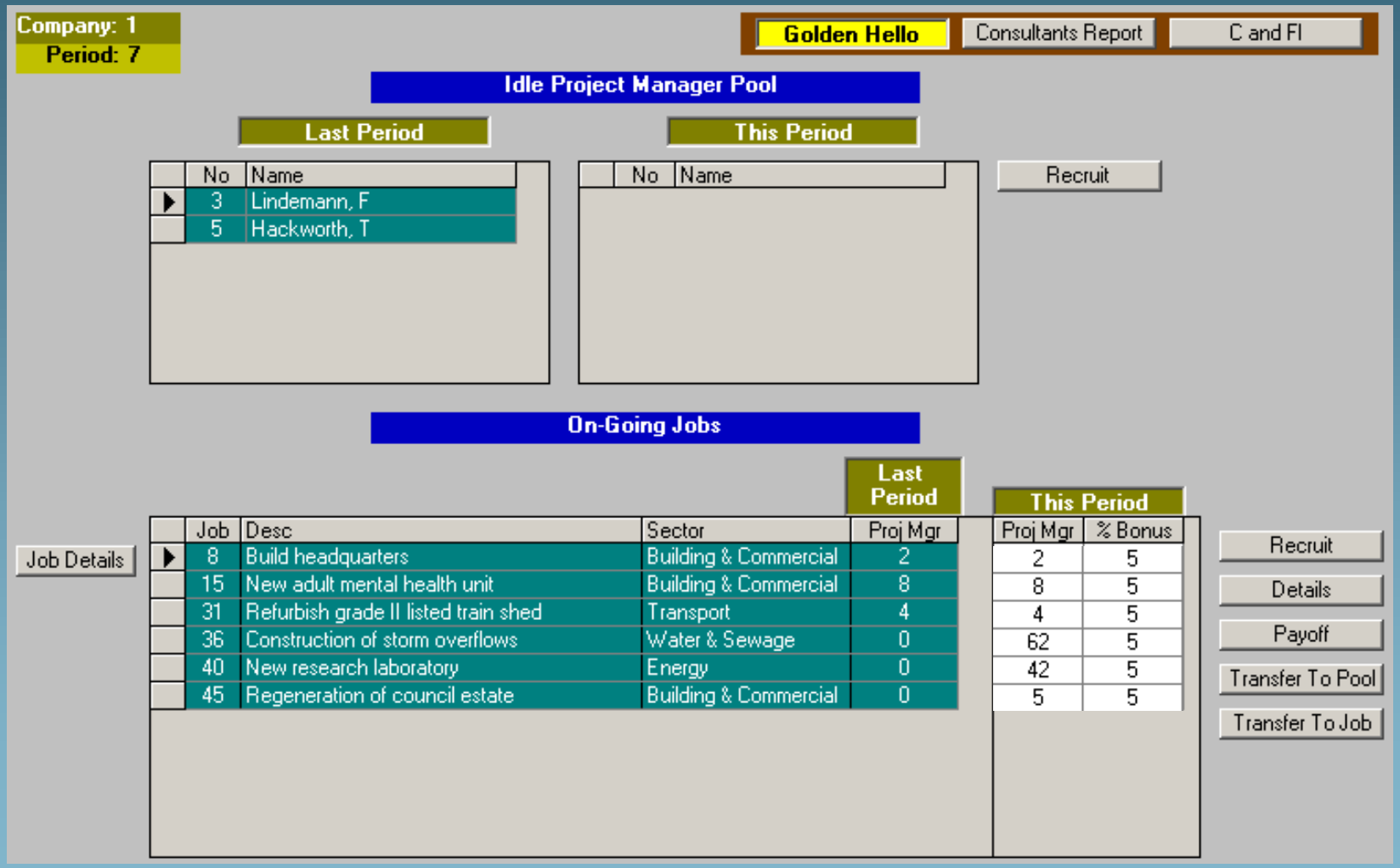
Entering Personnel Decisions - 2



The Demo is now complete

Main Quit

Entering Personnel Decisions - 2



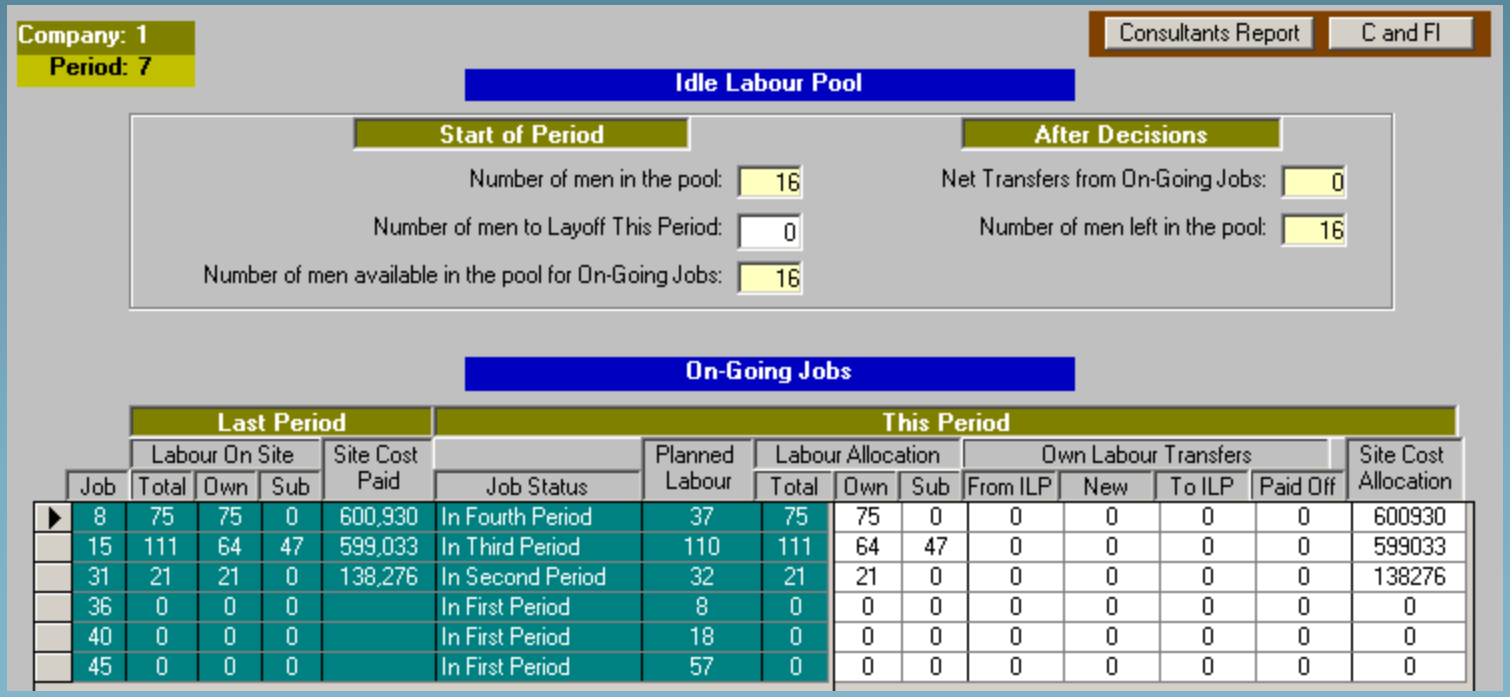
Main Quit

Construction Management Decisions

The task of the Construction Manager is to progress the jobs that have been awarded to the company by :-

- Ensuring the workforce (labour) on the sites is sufficient to progress jobs in line with the company's strategy for job completion.
- Providing enough site support to keep the jobs running smoothly.

The profits made each period on jobs progressed are paid straight into the cash account.



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	0
Number of men to Layoff This Period:	0	Number of men left in the pool:	16
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period				This Period								
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
8	75	75	0	600,930	In Fourth Period	37	75	75	0	0	0	0	0	600930
15	111	64	47	599,033	In Third Period	110	111	64	47	0	0	0	0	599033
31	21	21	0	138,276	In Second Period	32	21	21	0	0	0	0	0	138276
36	0	0	0		In First Period	8	0	0	0	0	0	0	0	0
40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Entering Construction Management Decisions - 1

Keep Clicking Anywhere on the screen to advance the demo

Entering Construction Management Decisions - 1

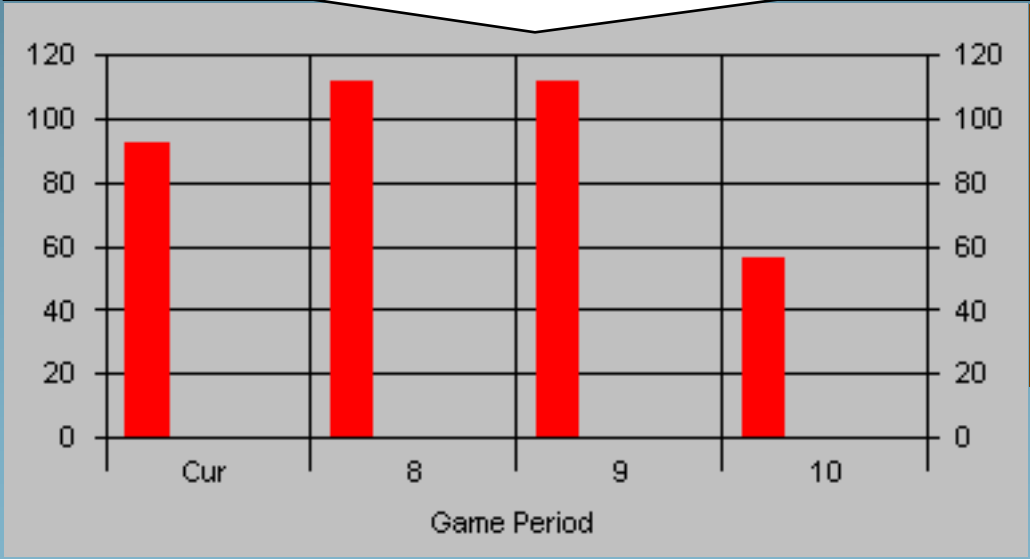
When deciding upon the strategy to be used for completing jobs a number of **different scenarios** are normally used :-

- Try and complete all jobs **on time**
- Try and complete all jobs **earlie**r than the planned duration (e.g., complete a 3-period job in 2 periods)
- A **mixture** of the above

In all cases the Construction Manager needs to **assess the labour requirements** each period for each job based upon the strategy being used.

Planned labour levels each period were determined during the estimating stage in order for the job to complete on time, and they can be used as guidelines in setting the labour levels for whichever completion scenario is chosen.

To complete a job early it is possible to overman above the planned levels. Overmanning limits are given in the **Company and Financial Information**, and are sector-based.



Overmanning Limits

Overmanning Limits

The effective labour overmanning that is allowed above the planned labour levels in a period is:

35	% for Industrial jobs
35	% for Building and Commercial jobs
45	% for Transport jobs
18	% for Energy jobs
25	% for Water and Sewage jobs

Entering Construction Management Decisions - 1

Consider the following situation.

Its the start of period 7, and the company has 6 on-going jobs :-

- Job 8 is in its 4th and final planned period, and needs to be completed this period
- Job 15 is in its 3rd period, but has a planned duration of 4 periods
- Job 31 is in its 2nd and final planned period, and needs to be completed this period
- Jobs 36, 40 and 45 were won last period, and are in their first period.

Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	0
Number of men to Layoff This Period:	0	Number of men left in the pool:	16
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period					This Period							
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
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40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Main | Quit

Entering Construction Management Decisions - 1

The Construction Manager must first ensure that each job has sufficient labour to enable them to progress in line with company strategy.

There are two types of labour that can be used :-

- The company's own labour; available either in the idle labour pool or on site
- Subcontract labour being used on site

Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

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On-Going Jobs

	Last Period					This Period							
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
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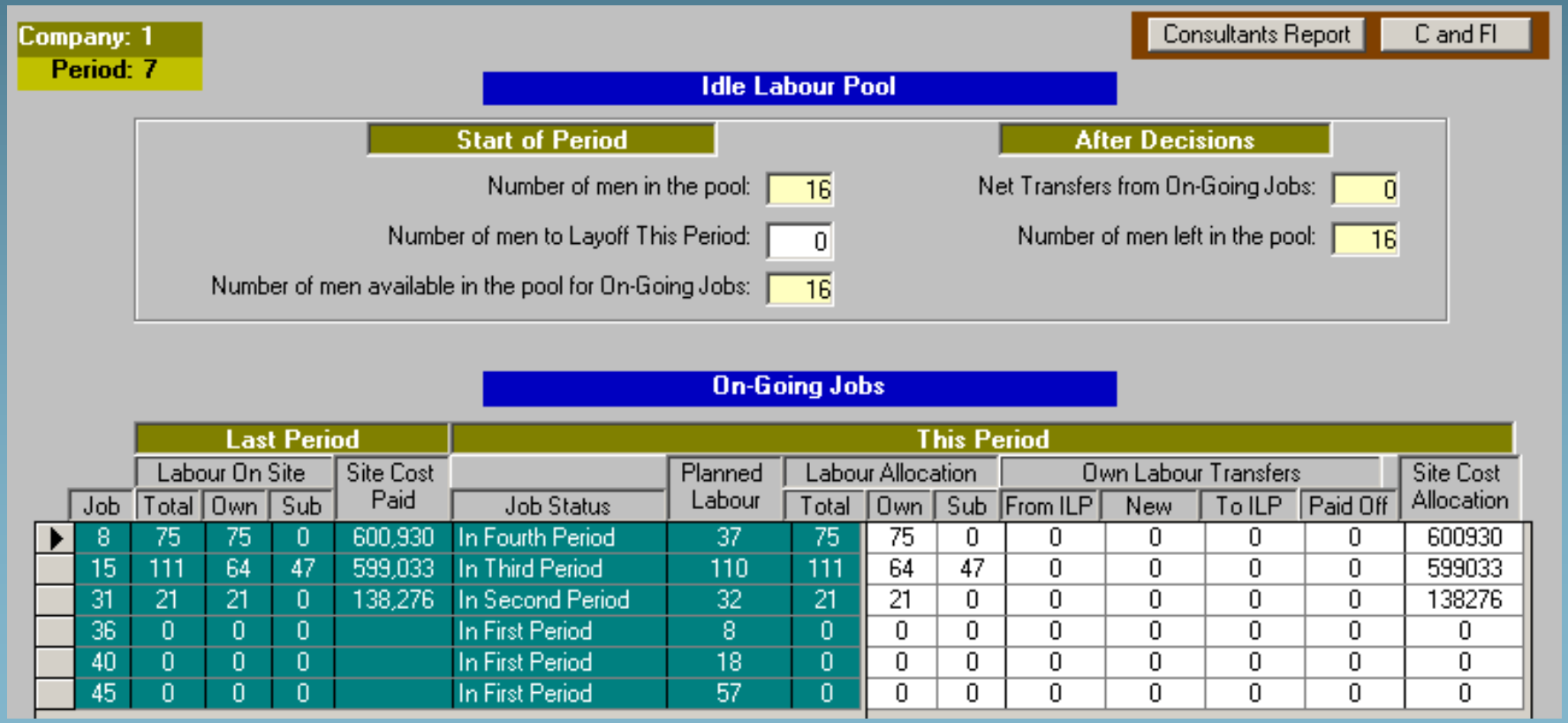
40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Entering Construction Management Decisions - 1

Due to the requirements of each individual job, it is likely that one of two situations may have to be resolved :-

- An overall labour shortfall; new recruits into the company's own workforce or subcontractors may have to be taken on, or jobs may even be delayed in the short-term.
- A labour surplus; jobs could be overmanned to aim at early completion, or labour may have to be released.



Company: 1
Period: 7

Consultants Report | C and FI

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On-Going Jobs

	Last Period					This Period								
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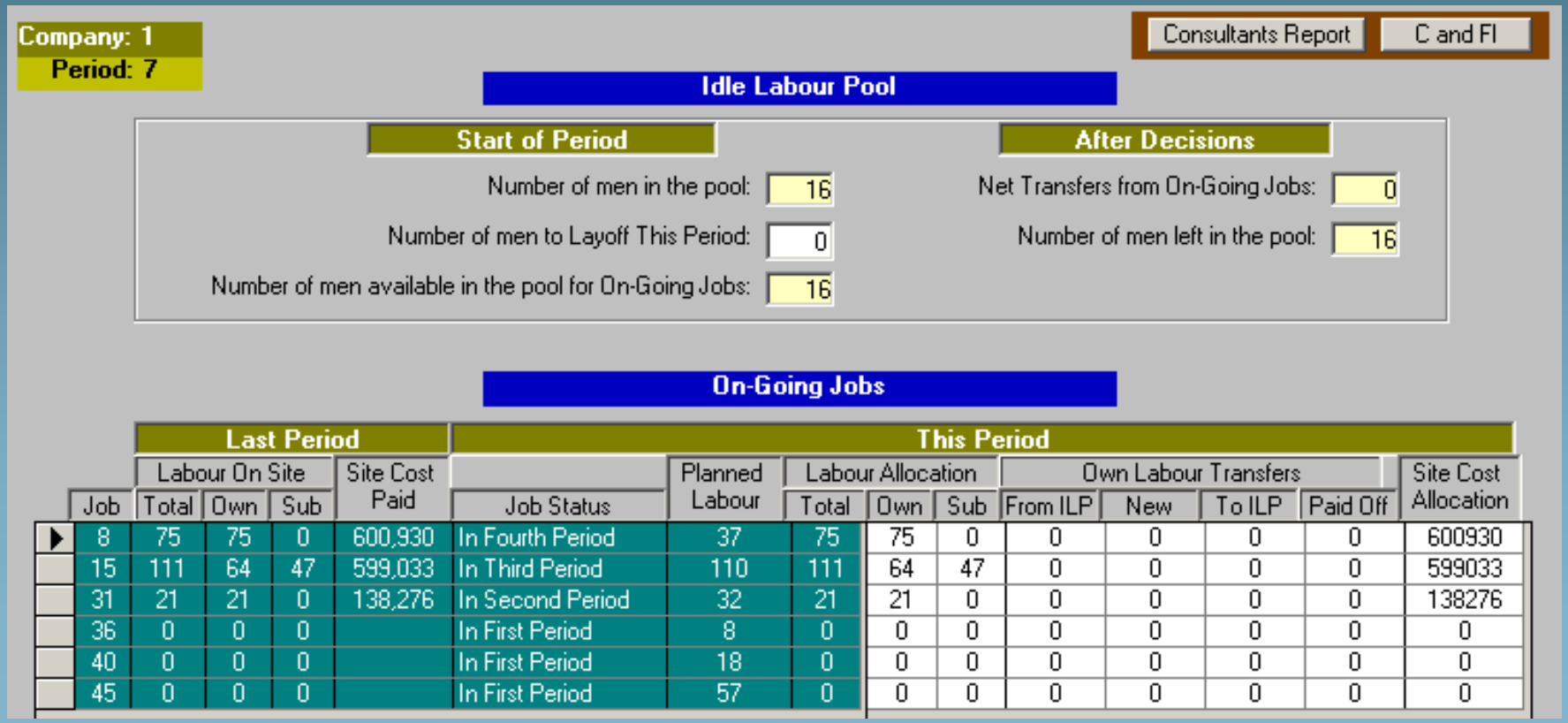
40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Entering Construction Management Decisions - 1

At the end of the last period, and available at the beginning of period 7, were :-

- 16 men in the idle labour pool
- 207 men on ongoing jobs (160 are the company's own operatives; 47 are subcontractors)

If we take the combined idle labour and site-based labour, the company has a current workforce of 223 men.



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	0
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On-Going Jobs

	Last Period					This Period								
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45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

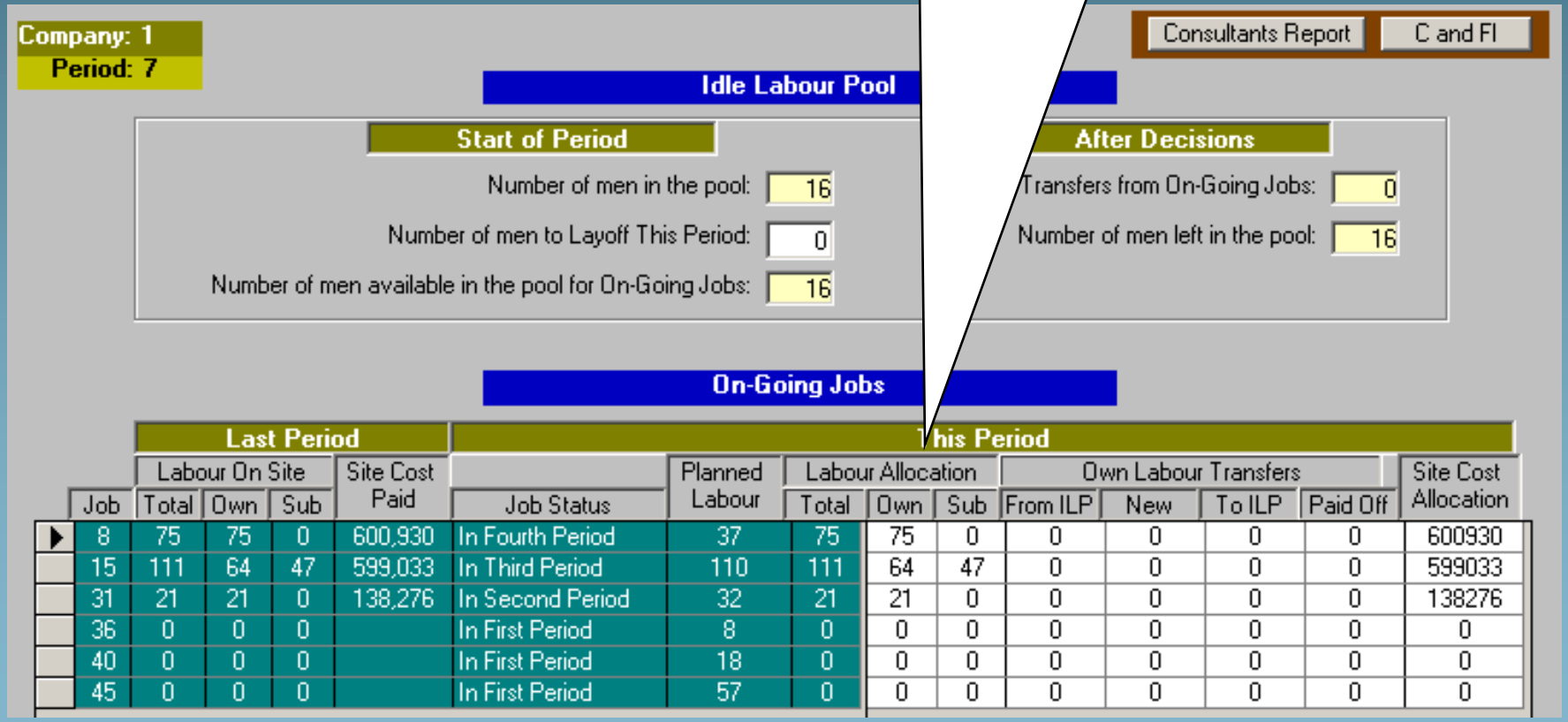
Main | Quit

Entering Construction Management Decisions - 1

Key point

The **default labour requirements** for each on-going job are the levels from the end of the last period.

However, the default levels are **unlikely to be** the required ones for the current period.



Entering Construction Management Decisions - 1

The Construction Manager begins by looking at the labour requirements for job 8.

Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	0
Number of men to Layoff This Period:	0	Number of men left in the pool:	16
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period					This Period							
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
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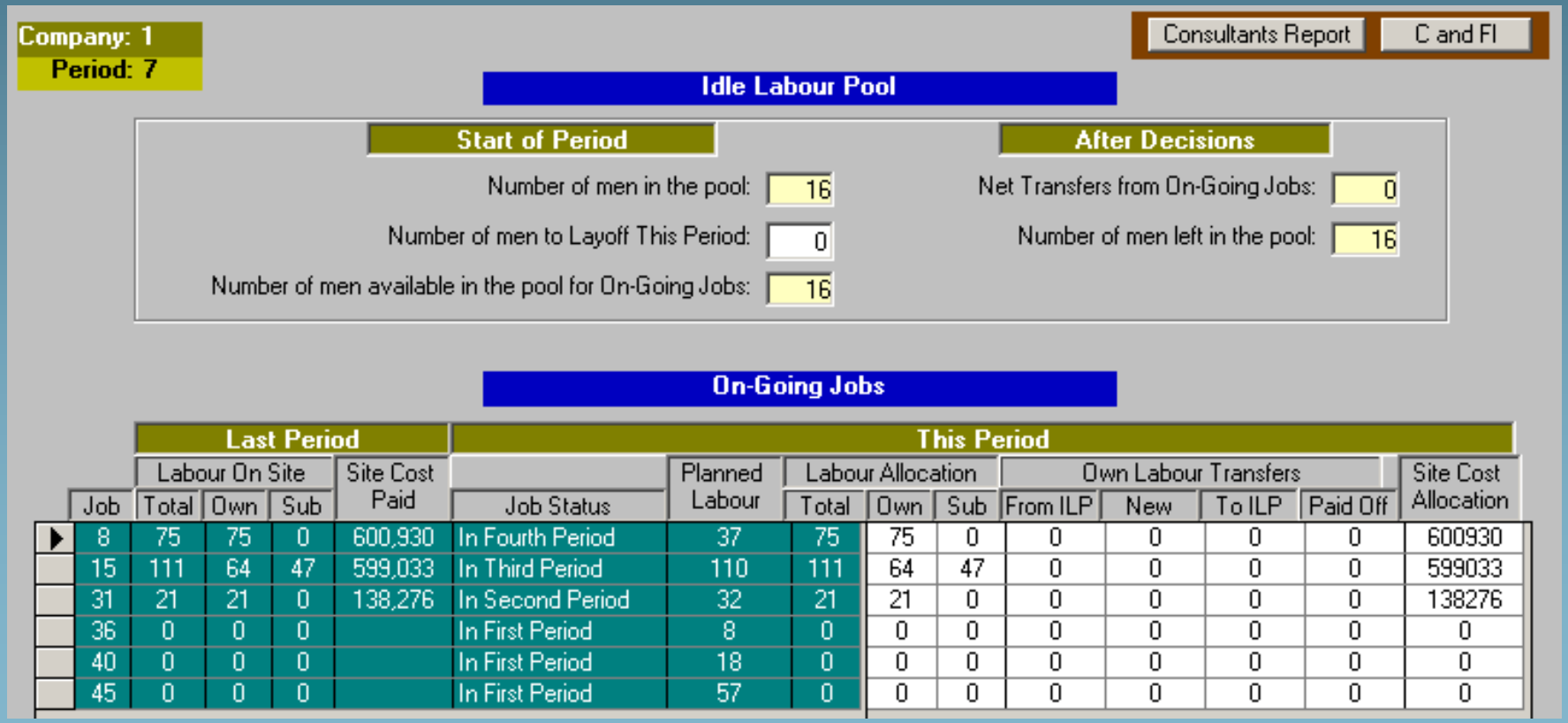
36	0	0	0		In First Period	8	0	0	0	0	0	0	0	0
40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Entering Construction Management Decisions - 1



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

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36	0	0	0		In First Period	8	0	0	0	0	0	0	0	0
40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Entering Construction Management Decisions - 2

Period 7 is the **fourth period** of job 8, and its final planned period.

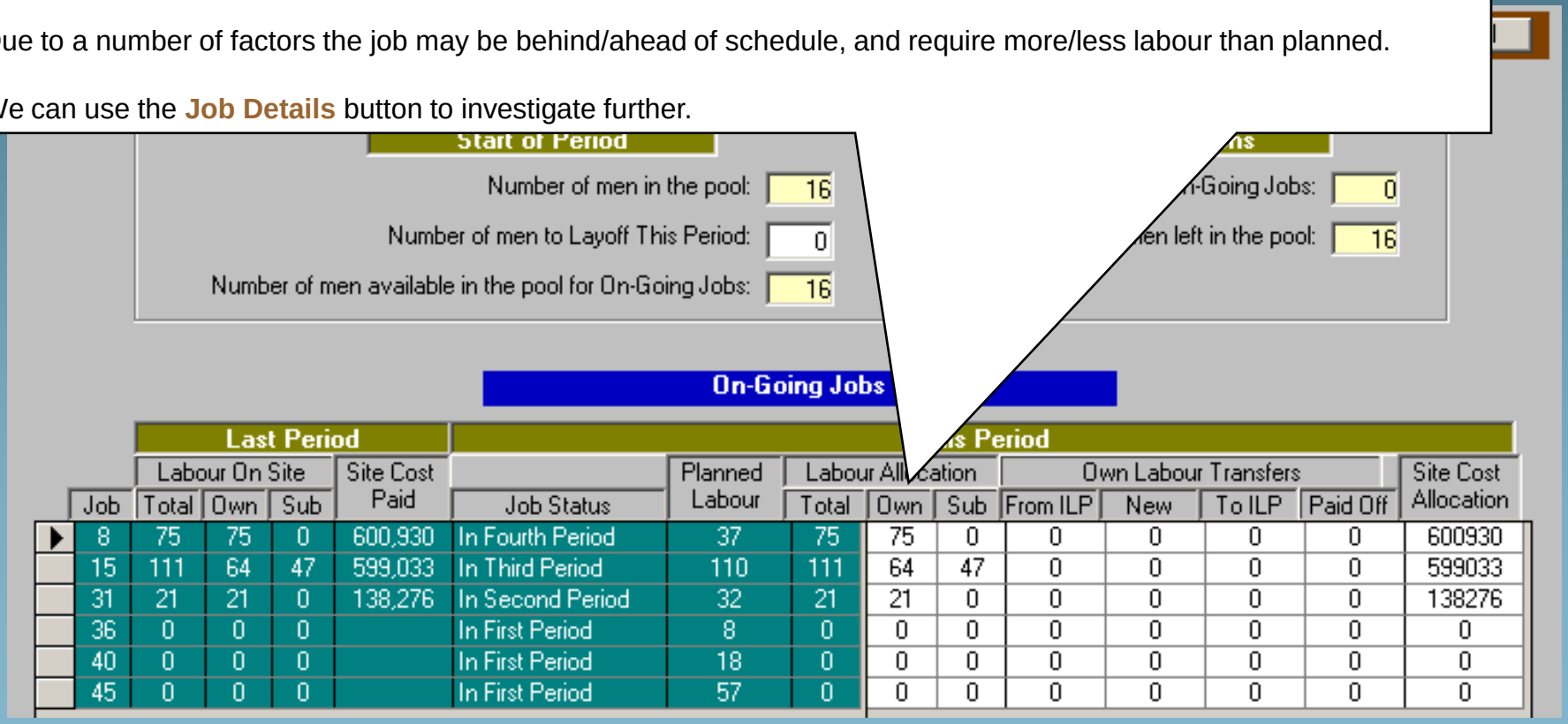
There are currently 75 of the company's own operatives on site, but the planned requirement is only 37.

Normally, allocating slightly above the planned level each period is sufficient to complete a job on time.

However, since this is the final planned period of the job, we should take a closer look at how the job has progressed to date, in order to make sure we allocate sufficient labour complete the job, and as efficiently as possible.

Due to a number of factors the job may be behind/ahead of schedule, and require more/less labour than planned.

We can use the **Job Details** button to investigate further.



Job	Labour On Site Total	Labour On Site Own	Labour On Site Sub	Site Cost Paid	Job Status	Planned Labour	Labour Allocation Total	Labour Allocation Own	Labour Allocation Sub	Own Labour Transfers From ILP	Own Labour Transfers New	Own Labour Transfers To ILP	Own Labour Transfers Paid Off	Site Cost Allocation
8	75	75	0	600,930	In Fourth Period	37	75	75	0	0	0	0	0	600930
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40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

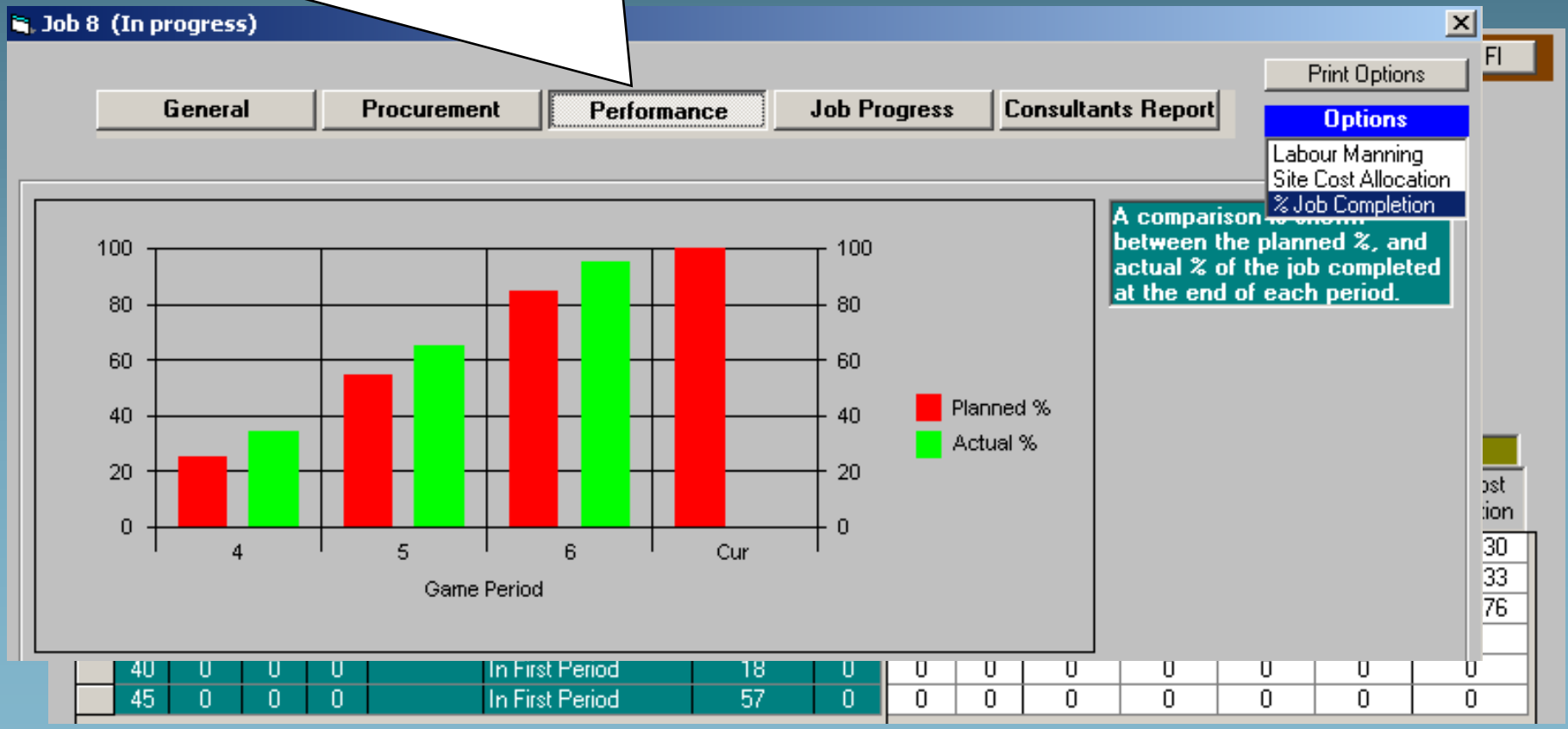
Entering Construction Management Decisions - 2

The **Performance** tab shows the **percentage of the job completed** (planned v actual)

At the end of period 6 the actual % of the job completed (**green**) was well ahead of the planned % complete (**red**), indicating that the **job was ahead of schedule**.

Bearing this in mind, to complete the job in period 7, we can allocate less than the planned labour level of 37.

But how do we determine the exact labour level ?



Main Quit

Entering Construction Management Decisions - 2

Estimated Details by Period

Job Period	Build Cost	Site Cost	Labour Manning	Expected Value	% Complete
1	2,449,335	489,867	62	3,101,186	25
2	2,939,202	587,841	74	3,721,423	55
3	2,939,202	587,841	74	3,721,423	85
4	1,469,601	293,920	37	1,860,711	100

Total Labour Manning: 247 **man periods**

Cumulative Analysis

Total Value: 11,780,220

Total Cost: 11,256,900

Gross Profit: 523,318 4.6 % of costs

% complete 95.1 **Ahead of Schedule**

Using the **Job Details** button, and focusing on the **Procurement** tab, the planned % of the job that should have been completed at the end of its third period was 85%.

However, using information from the **Job Progress** tab, it can be seen that the **actual %** of the job completed at the end of its third period was 95.1%; the job is well **ahead of schedule** (as we also deduced earlier from the graphical analysis).

Since there is only 4.9% of the job left to complete, we'll allocate 5% of the total labour (247 man periods), which allows for any productivity reductions.

Hence, **we'll allocate 13 men** (5% of 247, rounded up) to job 8.

The planned allocation was 37 men, which although guaranteeing to complete the job, would have completed the job a lot **earlier in the period**, which would have had the following **detrimental affects** :-

- Labour is still retained until the end of the period, incurring additional labour costs
- Labour could be utilised other jobs, where it may be more productively used

	36	0	0	0		In First Period	8	0	0	0	0	0	0	0
	40	0	0	0		In First Period	18	0	0	0	0	0	0	0
	45	0	0	0		In First Period	57	0	0	0	0	0	0	0

Entering Construction Management Decisions - 2

To set the new labour level for job 8 we need to adjust the **own** and **subcontract** labour required this period.

Having looked at the relative merits of using either the company's own labour or subcontractors, the Construction Manager has decided its more **cost-effective in the long-term** to try and use the company's own labour.

For job 8, we'll reduce the own labour from 75 to 13 by **transferring** the surplus of 62 to the idle labour pool.

Key Point

The choice of whether to use the company's own labour or subcontractors is dependant on a number of factors, and is discussed in a separate demo.

Period: 7

Idle Labour Pool

Start of Period

Number of men in the pool: 16

Number of men to Layoff This Period: 0

Number of men available in the pool for On-Going Jobs: 16

obs: 0

pool: 16

On-Going Jobs

	Last Period				This Period								
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers				Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
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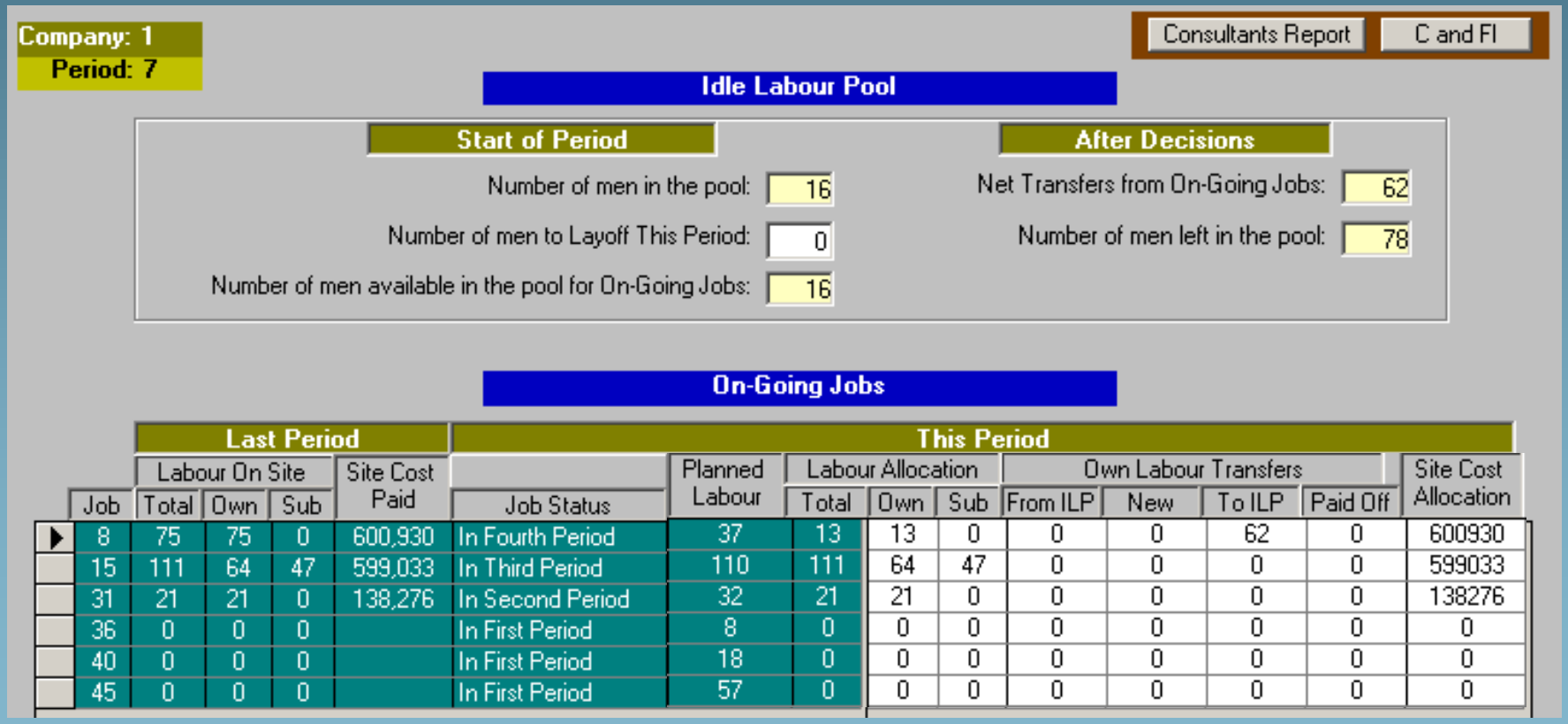
Entering Construction Management Decisions - 2



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	62
Number of men to Layoff This Period:	0	Number of men left in the pool:	78
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period				This Period								
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
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40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Main | Quit

Entering Construction Management Decisions - 2

One important point to grasp is the use of the **'Own Labour Transfers'** boxes.

When the **own labour level** is set for a job, the number **may vary** from the level on site last period. The difference (increase or decrease) **must be sourced** from the own labour transfers. This can involve a number of options.

If **more** own labour is required on site the options are :-
- Transfer labour to site from the idle labour pool (from ILP)
- Take on new recruits
- A combination of both

Conversely, if **less** own labour is required on site, the options are to :-
- Transfer excess labour to the idle labour pool (to ILP)
- Pay some of the workforce off
- Use a combination of both

Since there are a number of potential options, you must balance the labour movements on the job using the own labour transfers boxes. Failure to do so will cause an **error** to be displayed, and no further changes can be made until the line is balanced.

Subcontract labour changes are much simpler, and are automatically handled by the computer, by either taking on or laying off as required.

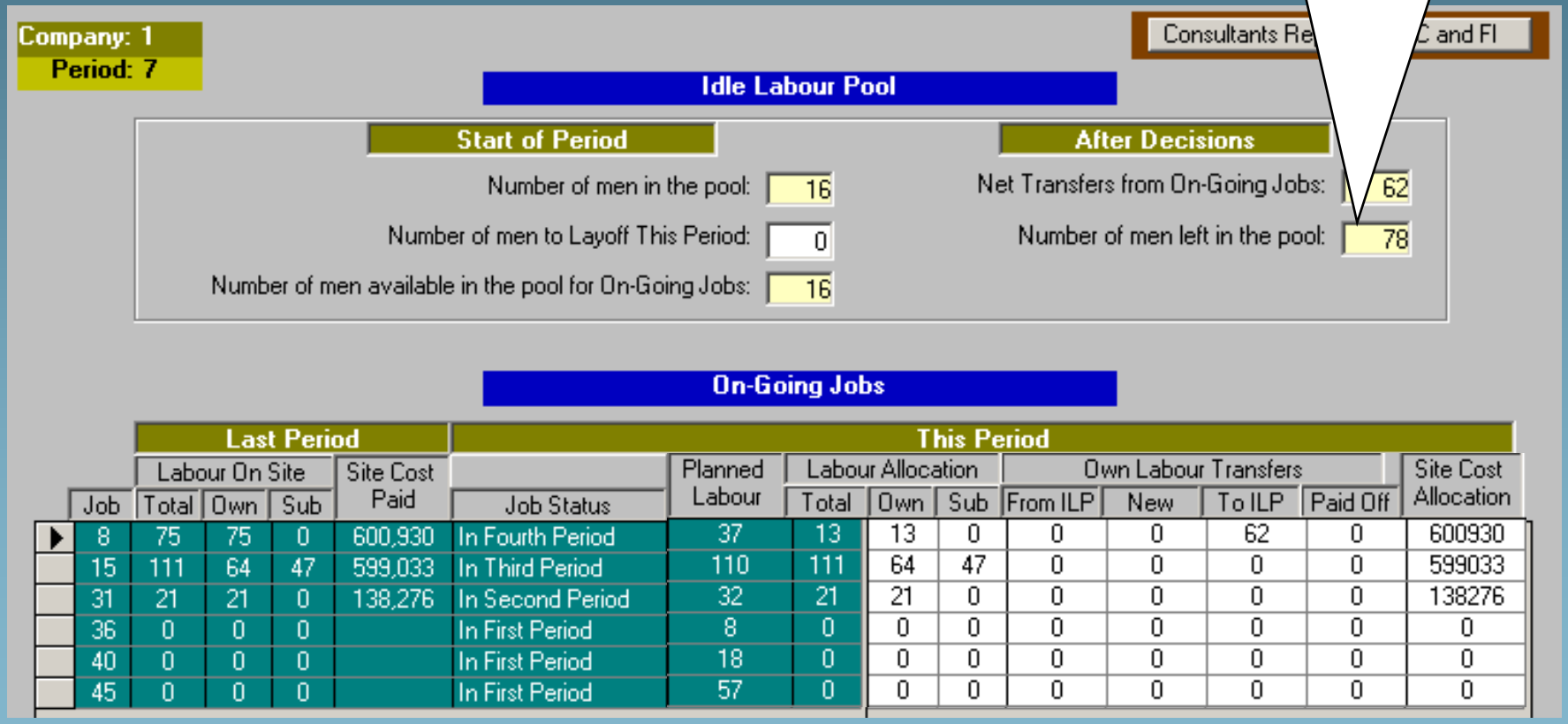
	Last Period					This Period								
	Labour On Site			Site Cost Paid		Planned Labour	Labour Allocation			Own Labour Transfers				Site Cost Allocation
Job	Total	Own	Sub		Job Status		Total	Own	Sub	From ILP	New	To ILP	Paid Off	
8	75	75	0	600,930	In Fourth Period	37	13	13	0	0	0	62	0	600930
15	111	64	47	599,033	In Third Period	110	111	64	47	0	0	0	0	599033
31	21	21	0	138,276	In Second Period	32	21	21	0	0	0	0	0	138276
36	0	0	0		In First Period	8	0	0	0	0	0	0	0	0
40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Main Quit

Entering Construction Management Decisions - 2

The 62 transfers to the idle labour pool are added to the pool, leaving 78 men in the pool.

If possible, **we'll utilise the men**, who are costing the company lying idle, on other jobs.



Company: 1
Period: 7

Consultants Re ... C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	62
Number of men to Layoff This Period:	0	Number of men left in the pool:	78
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period				This Period									
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers				Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
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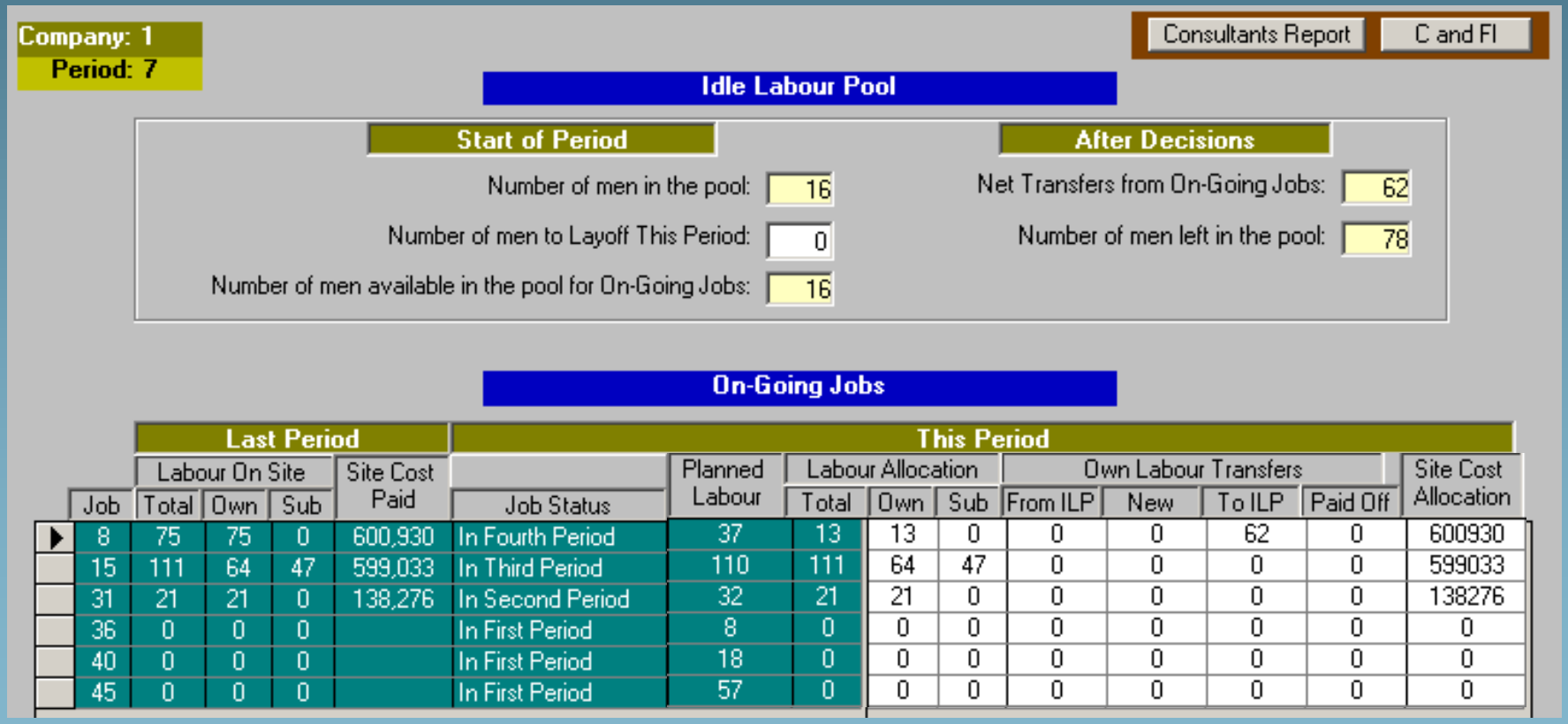
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Main Quit

Entering Construction Management Decisions - 2



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
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On-Going Jobs

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40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Main | Quit

Entering Construction Management Decisions - 3

The Construction Manager now sets the labour levels for the other on-going jobs by :-

- Setting labour levels in line with planned labour levels where jobs are NOT in their final planned period, and trying to use the company's own labour.
- Setting labour levels by examining the % job progress to date where jobs are IN their final planned period, and using the company's own labour.

For jobs 15, 31, 36 and 40 the labour levels were set as follows.

Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	62
Number of men to Layoff This Period:	0	Number of men left in the pool:	78
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period				This Period								
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
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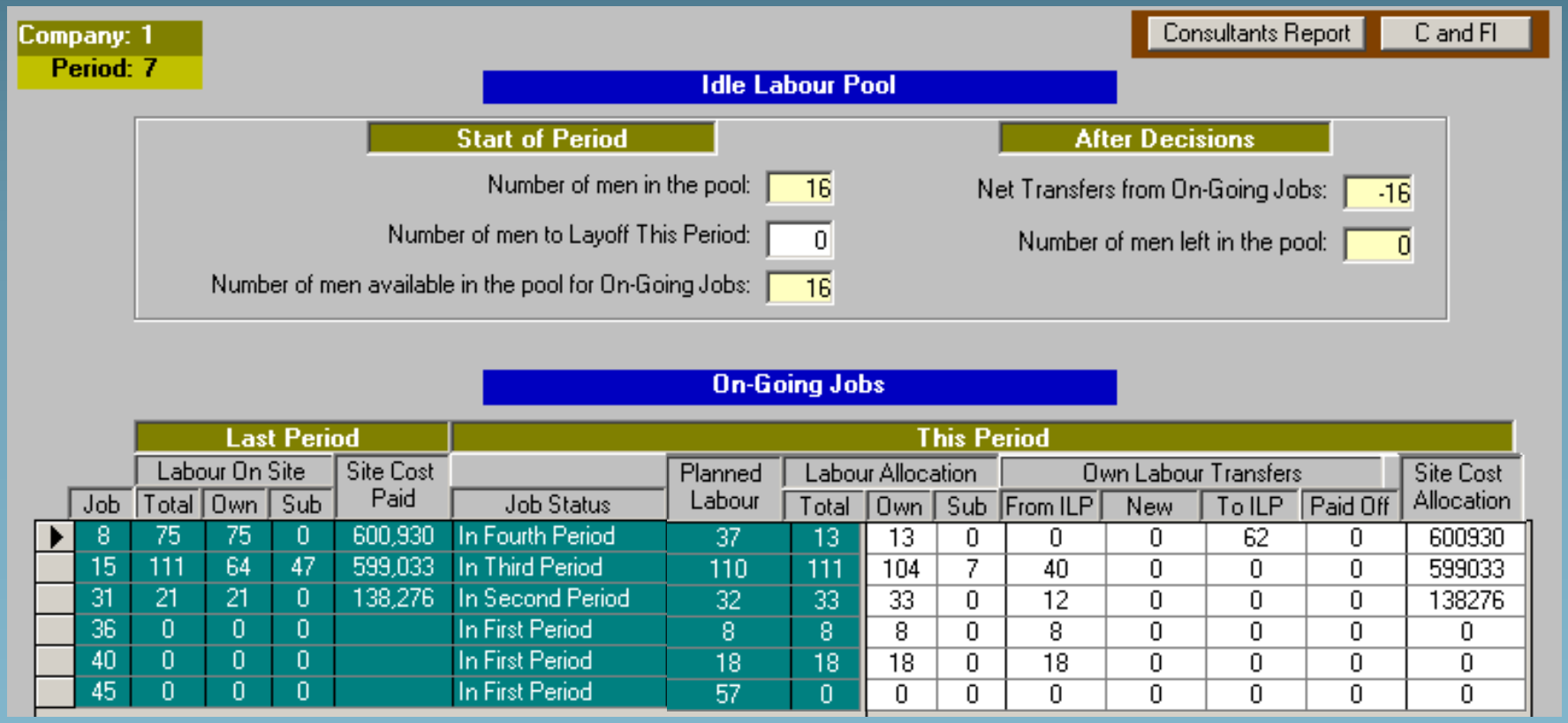
40	0	0	0		In First Period	18	0	0	0	0	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Entering Construction Management Decisions - 3



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	-16
Number of men to Layoff This Period:	0	Number of men left in the pool:	0
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period					This Period								
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40	0	0	0		In First Period	18	18	18	0	18	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Main | Quit

Entering Construction Management Decisions - 3

Attention now turns to job 45, which was won last period, and hence is in its first planned period.

In line with company strategy, we wish to try and complete the job on time, so we'll allocate the planned labour level of 57 men to the job. **The planned labour levels were determined at the estimating stage**.

However, there are no men left in the idle labour pool, and an additional 57 men are needed, so we are faced with 3 choices to make-up the shortfall :-

- **Underallocate** this period, which will put the job behind schedule, but attempt to catch-up later
- Take on some **'New' recruits** into our own workforce, who are not so effective in their first period whilst they are being trained
- Use **subcontractors**, who are fully effective, but cost incur an additional premium

Since company strategy is to employ our own operatives, and we don't want any jobs to fall behind schedule, we'll take-on and train some new recruits, **but is 57 enough bearing in mind they are not fully effective in their first period ?**

Start of Period

Number of men in the pool: 16

Number of men to Layoff This Period: 0

Number of men available in the pool for On-Going Jobs: 16

...bs: -16

...pool: 0

On-Going Jobs

	Last Period				This Period								
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
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40	0	0	0		In First Period	18	18	18	0	18	0	0	0	0
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Entering Construction Management Decisions - 3

The **Company and Financial Information** indicates that it takes 2 weeks (a sixth of a period) to train a new recruit, so a new recruit is only 5/6 effective.

To allow for this, we'll employ 69 new men (instead of 57), which should give us **effectively 57 man periods**, as required.

It takes: 2 weeks to train own labour

Annual training costs are: 30,000 per person

Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	-16
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On-Going Jobs

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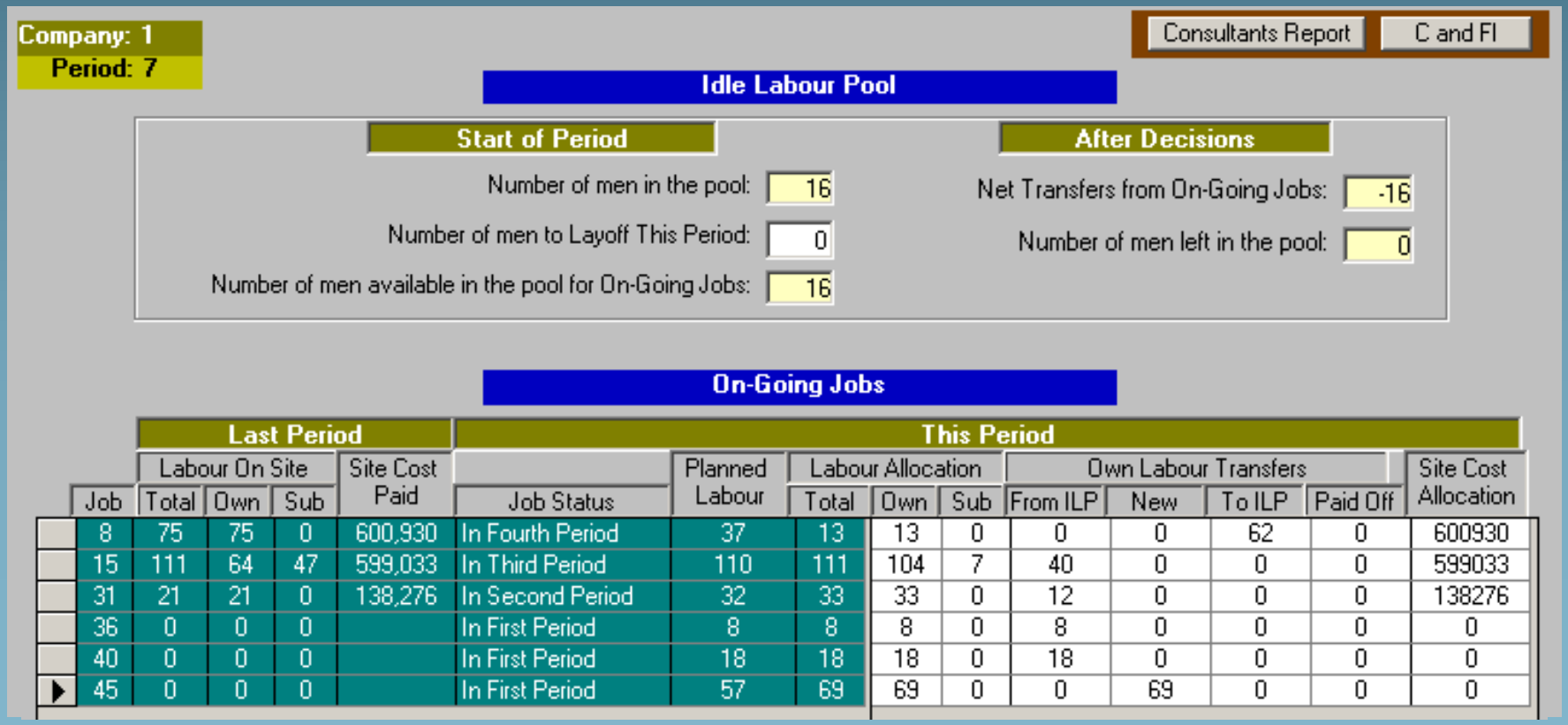
45	0	0	0		In First Period	57	0	0	0	0	0	0	0	0

Main | Quit

Entering Construction Management Decisions - 3



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
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On-Going Jobs

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45	0	0	0		In First Period	57	69	69	0	0	69	0	0	0

Main | Quit

Entering Construction Management Decisions - 3

Key Point

Where there is an overall labour shortfall in the period, and the intention is to bridge the shortfall by **taking on new recruits rather than use subcontractors**, this strategy may not be possible due to the **limit on the number of new recruits** that can be taken on in a period, as defined in the **Company and Financial Information**. The limit can vary each period.

For period 7, only 69 new recruits are required, which is lower than the limit, and so subcontractors are not required.

Miscellaneous

Retention: 1.5 % of Tender Value

No more than: 75 new recruits can be taken on this period

Consultants Report | C and FI

Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	-16
Number of men to Layoff This Period:	0	Number of men left in the pool:	0
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period					This Period							
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
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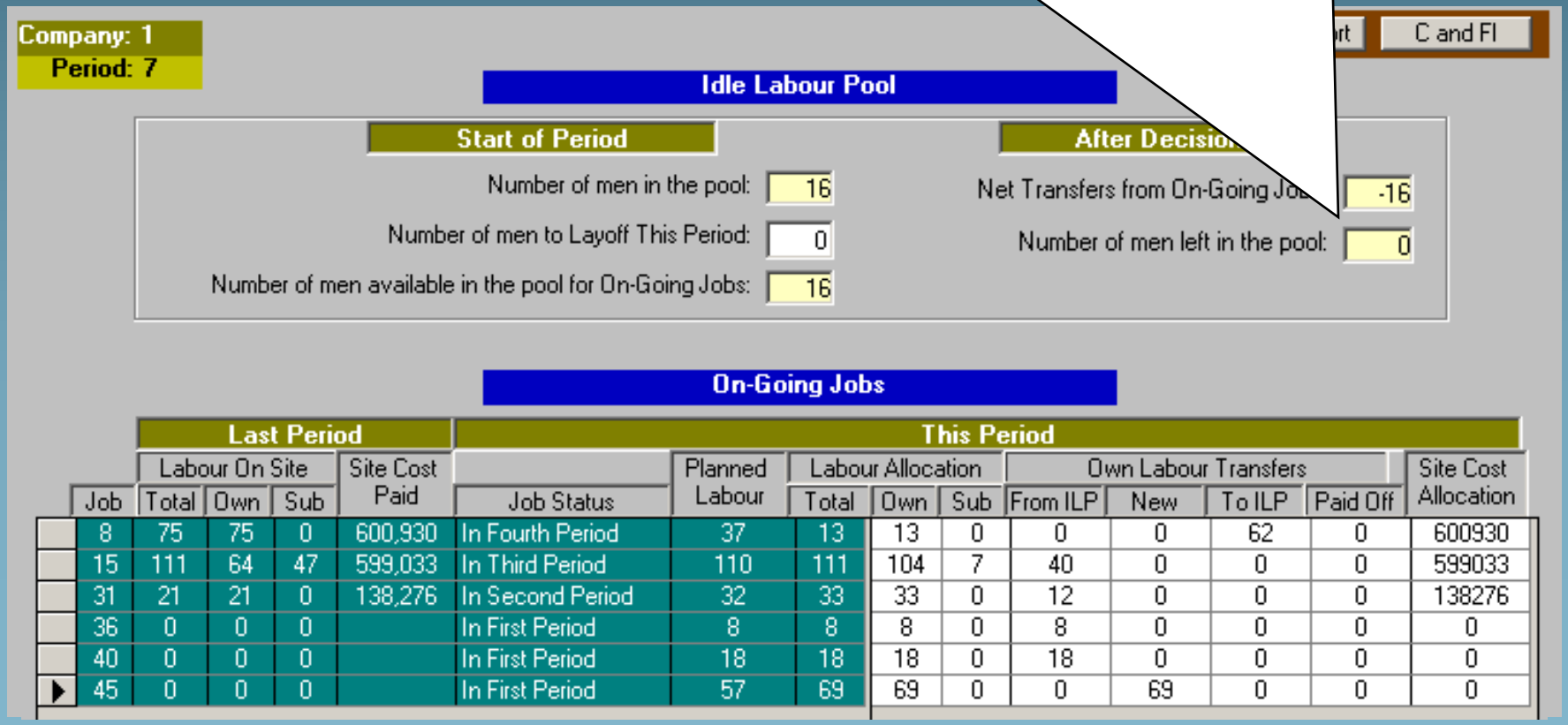
40	0	0	0		In First Period	18	18	18	0	18	0	0	0	0
45	0	0	0		In First Period	57	69	69	0	0	69	0	0	0

Entering Construction Management Decisions - 3

After making the labour allocation decisions for each job, there may be a **surplus of labour left in the idle pool**. If this is the case, there are a number of options :-

- Leave them in the pool for use next period, if they are likely to be required
- Use the **"Number of men to Layoff This Period"** to layoff as much of the surplus as possible prior to any labour allocations
- Instead of transferring men to the idle labour pool from site, pay them straight off from site



Main Quit

Entering Construction Management Decisions - 3

Having now established the labour requirements for each on-going job, the next task is to allocate site support to ensure the jobs run smoothly.

Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

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Number of men in the pool:	16	Net Transfers from On-Going Jobs:	-16
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On-Going Jobs

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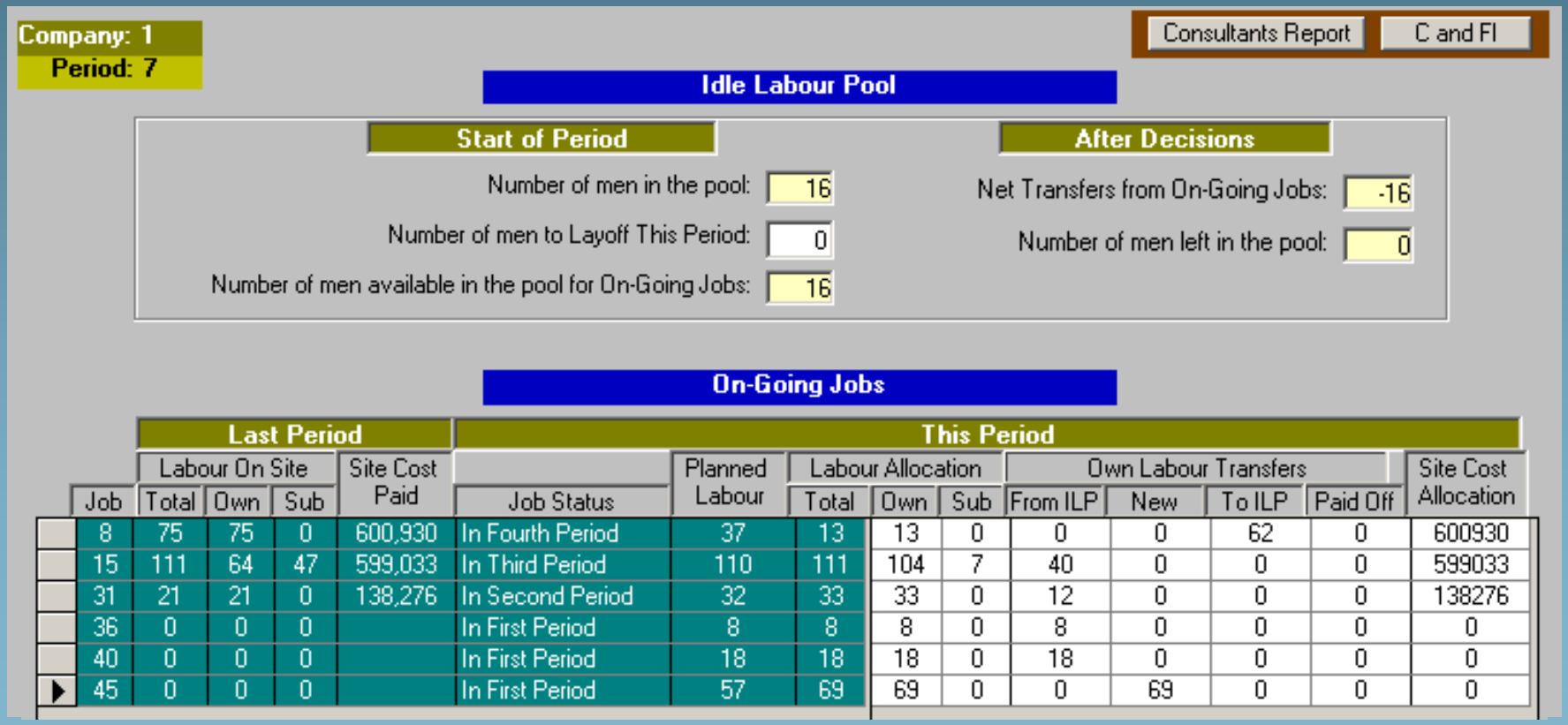
Main | Quit

Entering Construction Management Decisions - 3



Company: 1
Period: 7

Consultants Report | C and FI

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45	0	0	0		In First Period	57	69	69	0	0	69	0	0	0

Main | Quit

Entering Construction Management Decisions - 4

Site costs pay for the support staff and services that are needed to run a site.

When a bid was placed for a job, the on-cost figure included an amount for the site costs to be paid during the lifetime of the contract, based on the estimated level of site cost required.

Each period the company must decide how much site cost to allocate to the job, depending upon the level of labour allocated, irrespective of whether the labour is the company's own or subcontractors.

Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	-16
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On-Going Jobs

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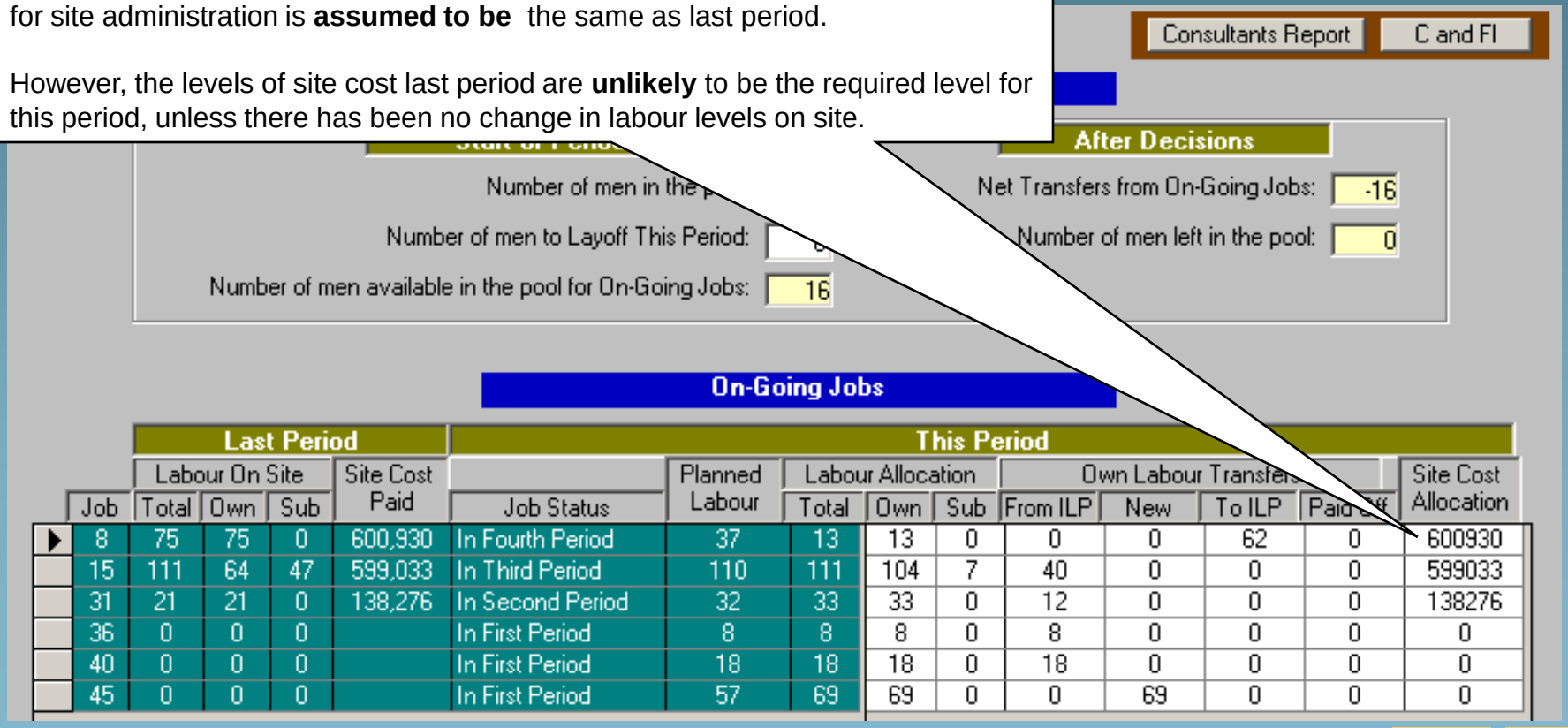
40	0	0	0		In First Period	18	18	18	0	18	0	0	0	0
45	0	0	0		In First Period	57	69	69	0	0	69	0	0	0

Main | Quit

Entering Construction Management Decisions - 4

In the same way that labour levels are initially set to the levels that were present on site at the end of the previous period, so the amount of money to be allocated for site administration is **assumed to be** the same as last period.

However, the levels of site cost last period are **unlikely** to be the required level for this period, unless there has been no change in labour levels on site.

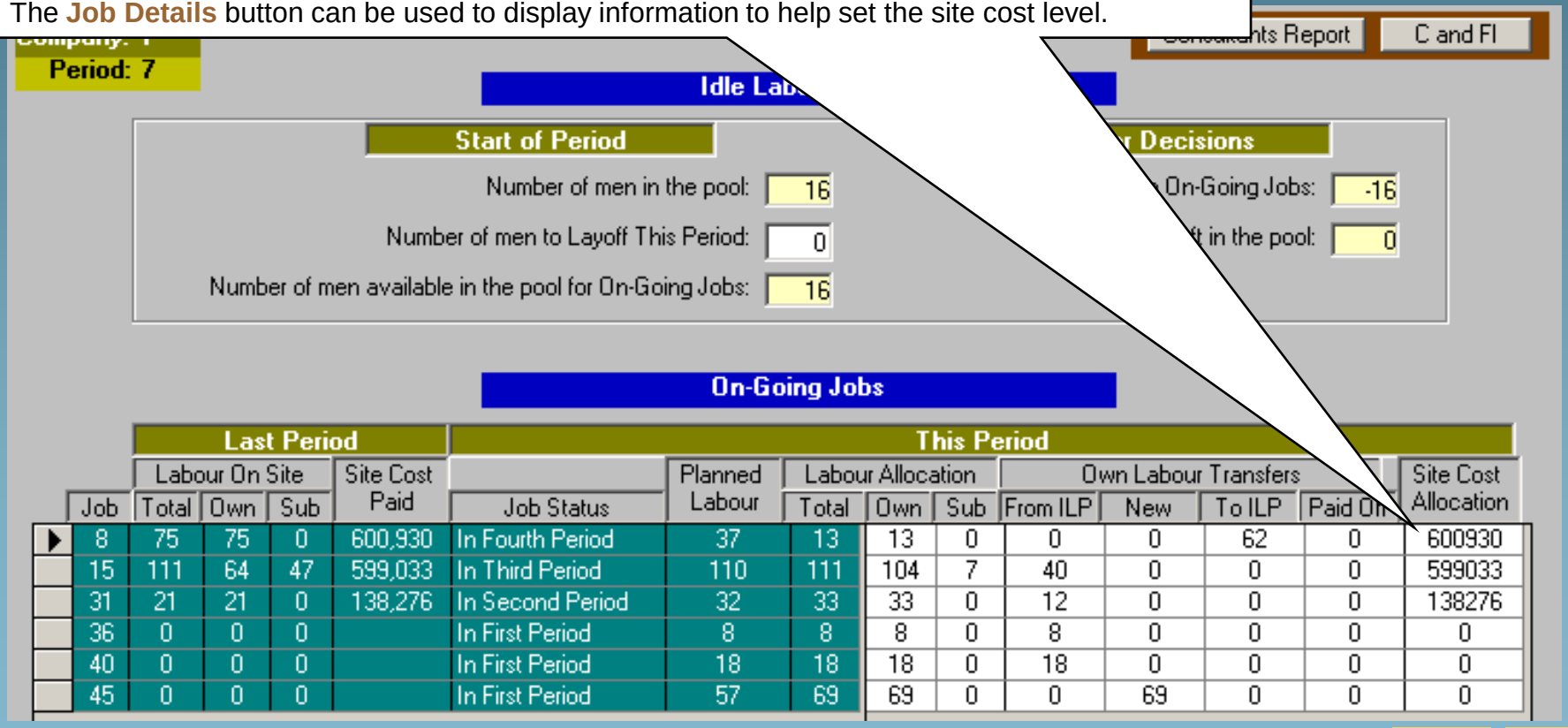


Entering Construction Management Decisions - 4

For job 8, the labour allocation for the period has been set to 13 men.

What level of site cost should we set for the 13 men ?

The **Job Details** button can be used to display information to help set the site cost level.



Main Quit

Entering Construction Management Decisions - 4

Each man period requires 7,933 site cost to enable the productivity of the workforce to be maintained i.e., there will be no reduction or improvement in the normal levels of output.

This will be the original **estimated site cost** divided by the total number of labour periods required for the duration of the job.

For 13 man periods we require 13 x 7,933 = 103,129 which we'll round up to 104,000.

It should be noted that the ratio of 7,933 is only an estimate of the 'real' ratio, and how accurate our estimate is depends on the level of estimating effort, and confidence in the estimate.

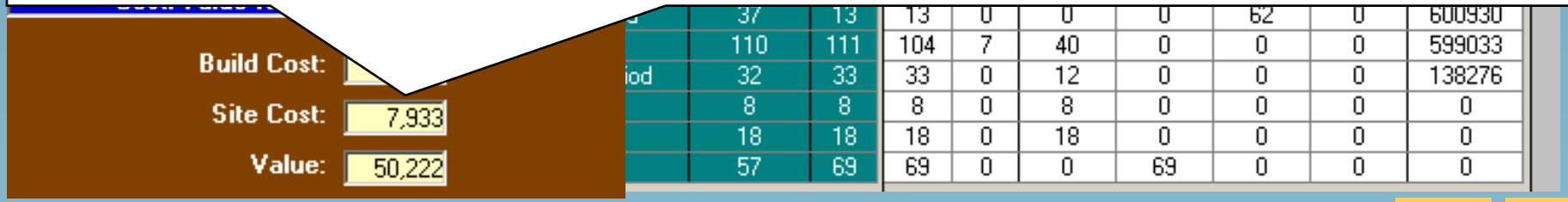
For job 8, we have **'extremely high'** confidence in the estimate, so we'll pay the calculated amount of 104,000.

Instead of paying the calculated level, there are a number of alternative strategies, which each has a number of drawbacks :-

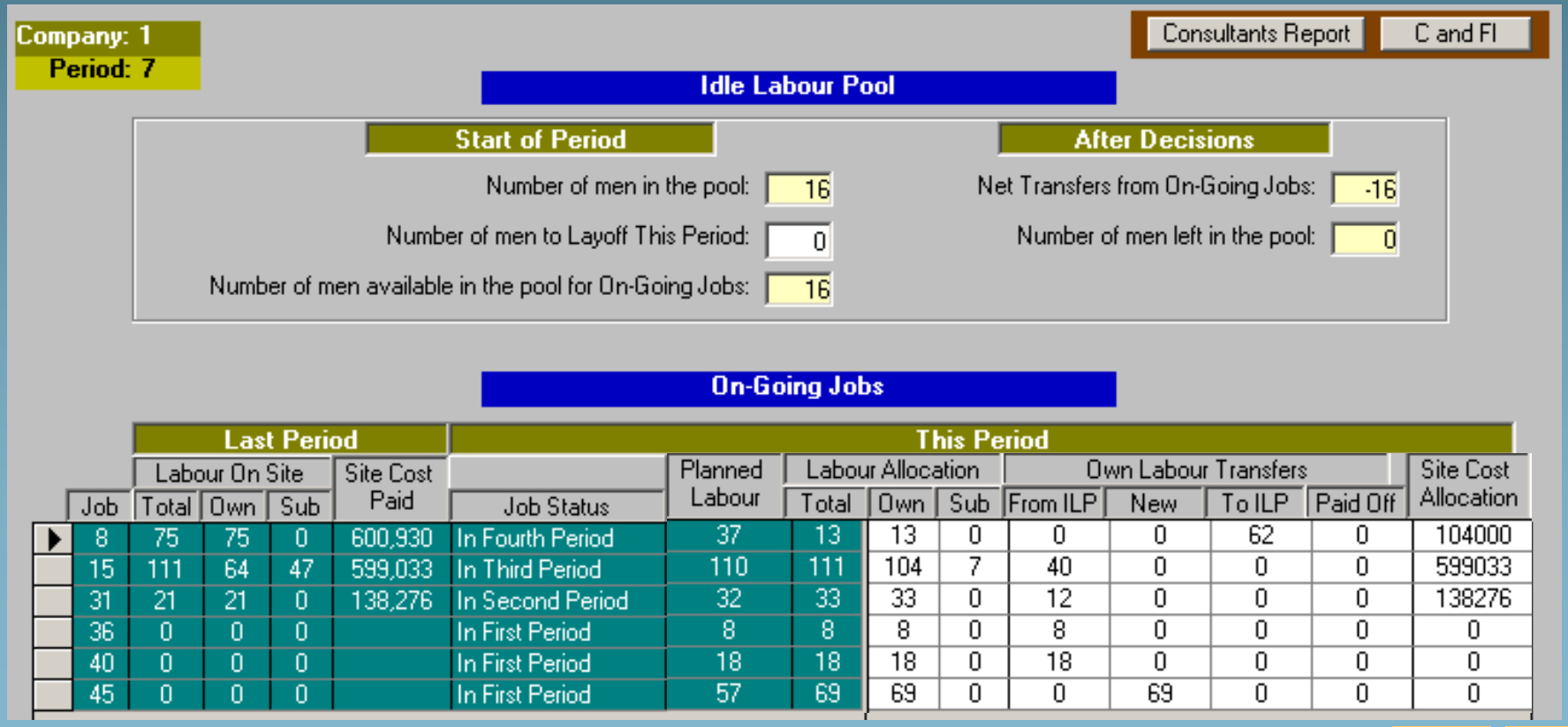
• **Pay less site cost**.
This may appear to save money, but **adverse** affects on the productivity of the labour on the site will reduce overall value, and delay the job, and the cost will outweigh the benefit.

• **Pay additional site cost**
This will cost more, but will marginally **improve** the site productivity of the labour and the progress of the job. However, the cost will almost certainly outweigh the benefit.

Key Point
Whilst a job is within its original duration, a minimum level of site cost is required to keep the site operational, based upon the planned labour for the period. This minimum amount will always be incurred, even if a job is deliberately delayed e.g., no labour allocated for the period.



Entering Construction Management Decisions - 4



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

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Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period					This Period							
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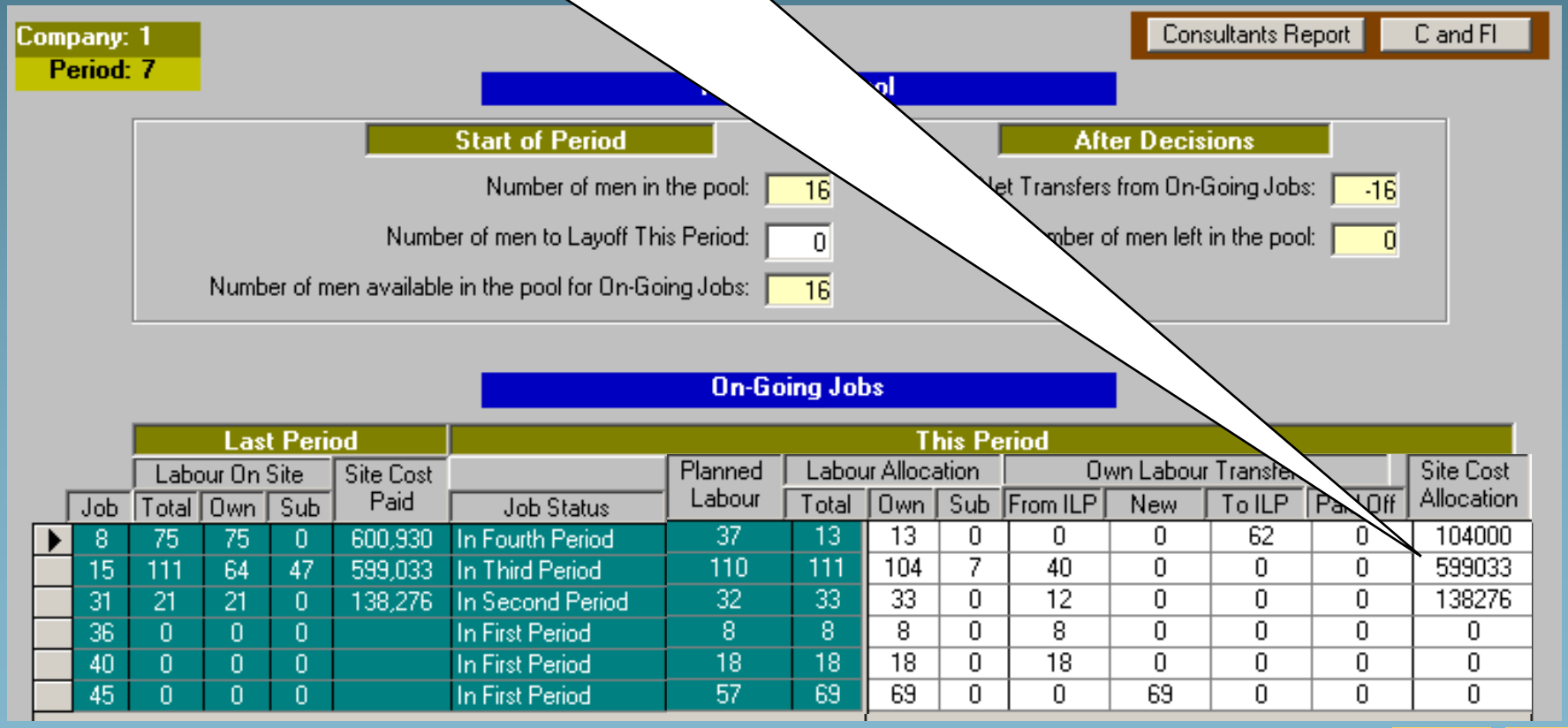
45	0	0	0		In First Period	57	69	69	0	0	69	0	0	0

Main | Quit

Entering Construction Management Decisions - 4

We'll now set the level for the other jobs using the same technique.



Company: 1
Period: 7

Consultants Report | C and FI

Start of Period

Number of men in the pool: 16

Number of men to Layoff This Period: 0

Number of men available in the pool for On-Going Jobs: 16

After Decisions

Net Transfers from On-Going Jobs: -16

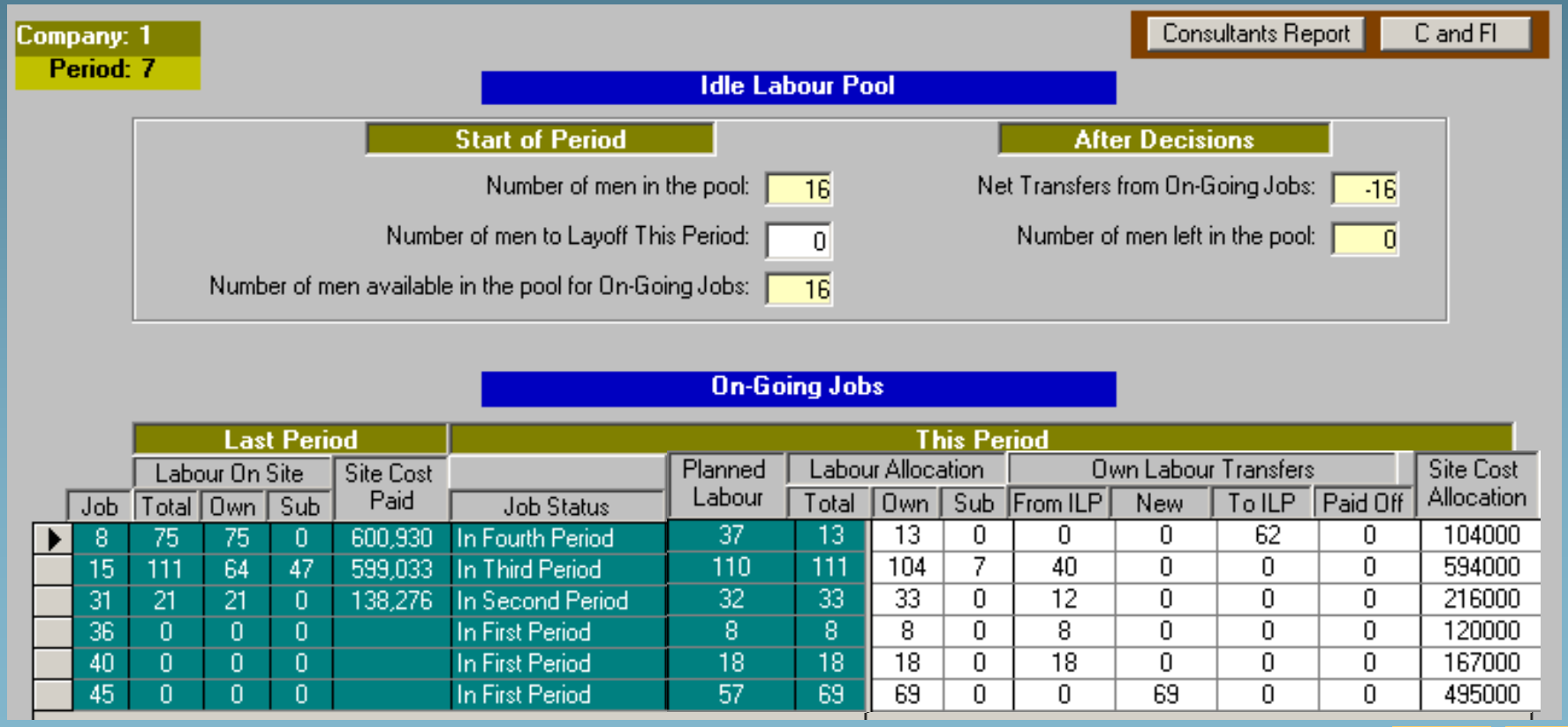
Number of men left in the pool: 0

On-Going Jobs

	Last Period					This Period							
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfer			Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Layoff	Allocation
8	75	75	0	600,930	In Fourth Period	37	13	13	0	0	0	62	0	104000
15	111	64	47	599,033	In Third Period	110	111	104	7	40	0	0	0	599033
31	21	21	0	138,276	In Second Period	32	33	33	0	12	0	0	0	138276
36	0	0	0		In First Period	8	8	8	0	8	0	0	0	0
40	0	0	0		In First Period	18	18	18	0	18	0	0	0	0
45	0	0	0		In First Period	57	69	69	0	0	69	0	0	0

Main | Quit

Entering Construction Management Decisions - 4



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	-16
Number of men to Layoff This Period:	0	Number of men left in the pool:	0
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period					This Period								
	Labour On Site			Site Cost Paid		Planned Labour	Labour Allocation			Own Labour Transfers				Site Cost Allocation
Job	Total	Own	Sub		Job Status		Total	Own	Sub	From ILP	New	To ILP	Paid Off	
8	75	75	0	600,930	In Fourth Period	37	13	13	0	0	0	62	0	104000
15	111	64	47	599,033	In Third Period	110	111	104	7	40	0	0	0	594000
31	21	21	0	138,276	In Second Period	32	33	33	0	12	0	0	0	216000
36	0	0	0		In First Period	8	8	8	0	8	0	0	0	120000
40	0	0	0		In First Period	18	18	18	0	18	0	0	0	167000
45	0	0	0		In First Period	57	69	69	0	0	69	0	0	495000

Main | Quit

Entering Construction Management Decisions - 4

The labour and site cost decisions have now been made for all the company's on-going jobs.

At first glance it appears that efficient use was made of the company's existing 'own' labour, since the idle labour is empty, and some subcontractors used on job 15 were replaced. However, it won't be until next period that a full analysis can be undertaken of just how well the jobs were progressed this period.

Key Point

Any profits (or losses) generated from the jobs will be added to the company's cash account at the end of period. Hopefully, overall there will be a profit that will help to increase the company's value.

Company: 1
Period: 7

Assets after decisons

Cash A/C: [illegible]
Capital Base: 4,253,421
Investments: 566,906
Company Value: 4,702,325

Number of men to Layoff This Period: 0
Number of men left in the pool: 0
Number of men available in the pool for On-Going Jobs: 16

On-Going Jobs

	Last Period					This Period							
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
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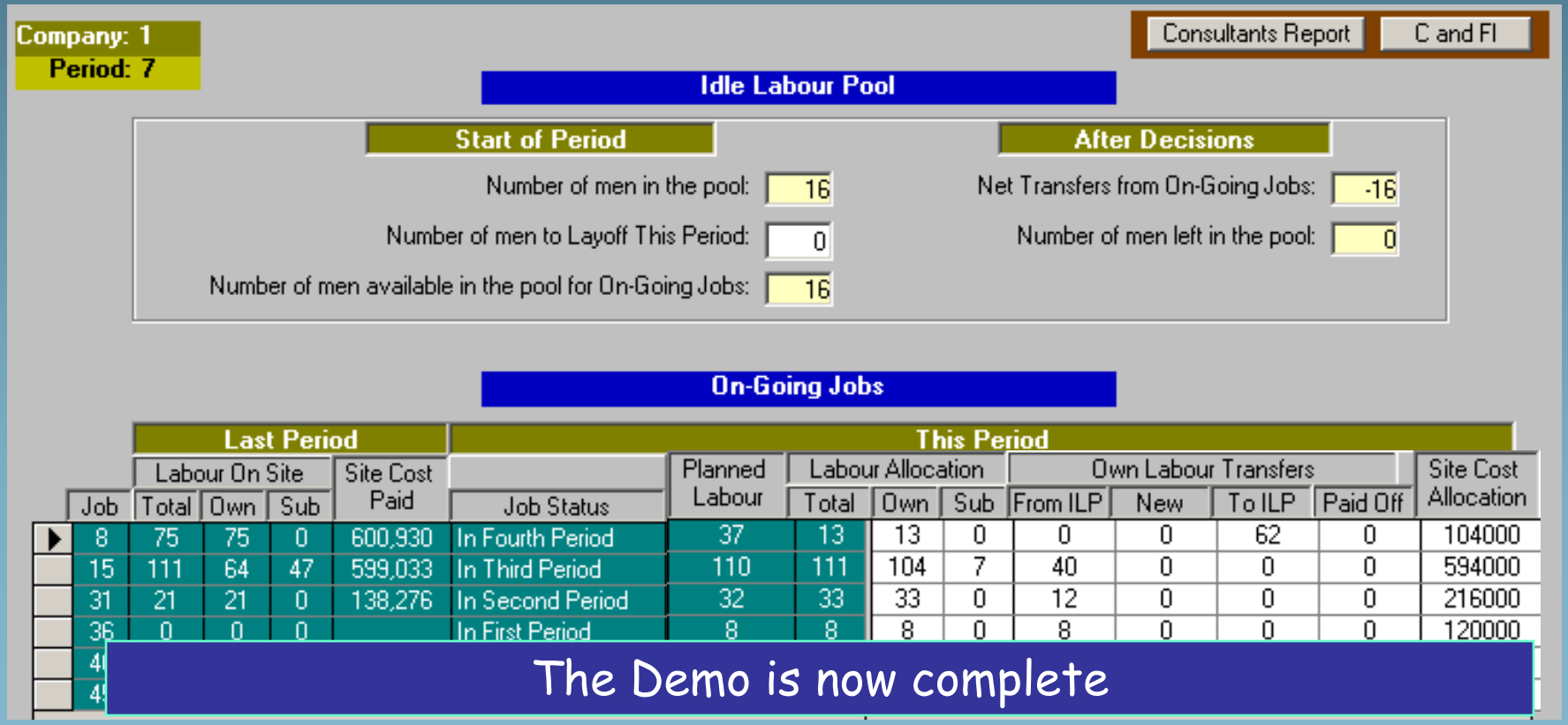
15	111	64	47	599,033	In Third Period	110	111	104	7	40	0	0	0	594000
31	21	21	0	138,276	In Second Period	32	33	33	0	12	0	0	0	216000
36	0	0	0		In First Period	8	8	8	0	8	0	0	0	120000
40	0	0	0		In First Period	18	18	18	0	18	0	0	0	167000
45	0	0	0		In First Period	57	69	69	0	0	69	0	0	495000

Main Quit

Entering Construction Management Decisions - 4



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	-16
Number of men to Layoff This Period:	0	Number of men left in the pool:	0
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period					This Period								
	Labour On Site			Site Cost Paid		Planned Labour	Labour Allocation			Own Labour Transfers				Site Cost Allocation
Job	Total	Own	Sub		Job Status		Total	Own	Sub	From ILP	New	To ILP	Paid Off	
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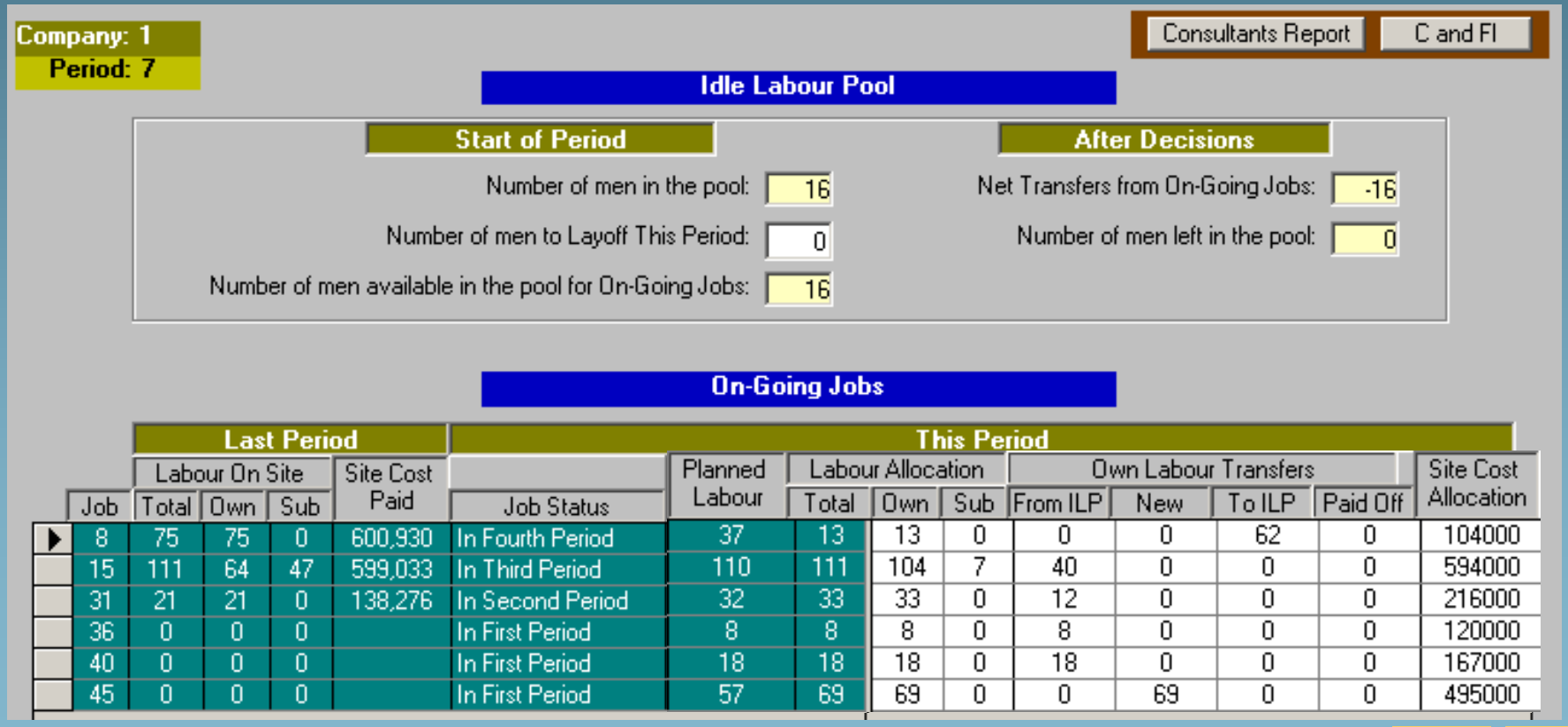
15	111	64	47	599,033	In Third Period	110	111	104	7	40	0	0	0	594000
31	21	21	0	138,276	In Second Period	32	33	33	0	12	0	0	0	216000
36	0	0	0		In First Period	8	8	8	0	8	0	0	0	120000

The Demo is now complete

Main | Quit

Entering Construction Management Decisions - 4



Company: 1
Period: 7

Consultants Report | C and FI

Idle Labour Pool

Start of Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	-16
Number of men to Layoff This Period:	0	Number of men left in the pool:	0
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

	Last Period					This Period								
	Labour On Site			Site Cost Paid		Planned Labour	Labour Allocation			Own Labour Transfers				Site Cost Allocation
Job	Total	Own	Sub		Job Status		Total	Own	Sub	From ILP	New	To ILP	Paid Off	
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31	21	21	0	138,276	In Second Period	32	33	33	0	12	0	0	0	216000
36	0	0	0		In First Period	8	8	8	0	8	0	0	0	120000
40	0	0	0		In First Period	18	18	18	0	18	0	0	0	167000
45	0	0	0		In First Period	57	69	69	0	0	69	0	0	495000

Main | Quit

Measuring Performance

Choose from one of the following options

- Performance Indicators
- External Performance Review
- Performance Statistics

Performance Indicators

The success of a team in managing their company is measured by the changes in 10 key performance indicators :-

- Turnover
- Gross Profit to Turnover ratio
- Operating Profit to Turnover ratio
- Company Value
- Capital Employed
- Contract Completion
- Forward Workload
- Forward Margin
- Share Price
- Client Satisfaction

The indicators are weighted according to their variability, totalling a 1000 at the start of the early years.

As the early years progress the value of each indicator will change, highlighting improvements or deteriorations in that area, but the overall total will be the measure by which the ultimate progress of the company is determined.

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1350	94	103	198	152	224	160	73	130	108	108
6	1542	109	105	212	155	266	160	103	192	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

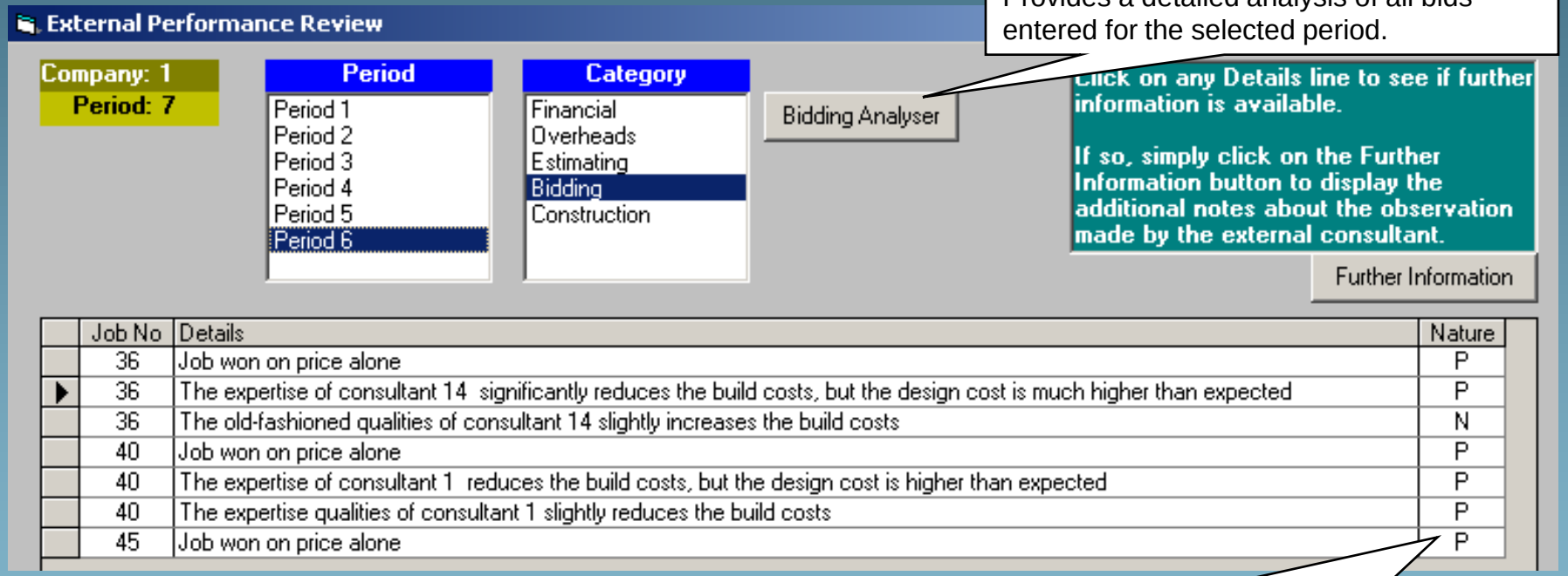
Calculating Performance Indicators

Main Quit

External Performance Review

An external performance review (EPR) is carried out each period by an external consultant, and is an essential aid in managing the company successfully.

The consultant looks in detail at all areas of the company's business, especially where there may be problems, and compiles an appropriate report.

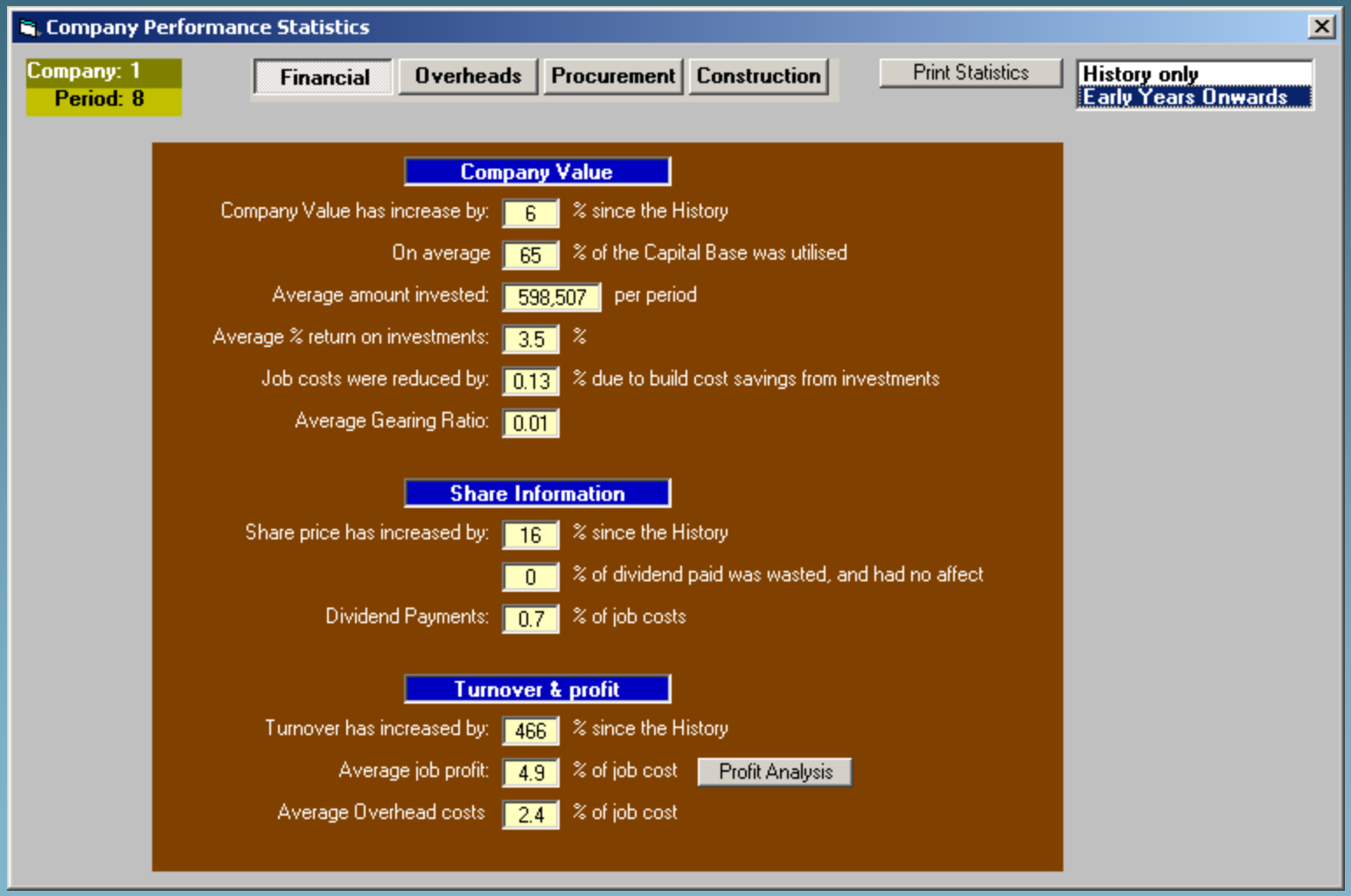


The nature is either :-
- **'P'** if the comment is positive
- **'N'** if the comment is negative
- **'U'** if the comment is unclassified

Further Information

Performance Statistics

Company Performance Statistics provide a detailed set of statistics relating to all aspects of the company's activities, and can be used to identify strengths and weaknesses, and explain the rise and fall of particular performance indicators.



Obtaining Information

Choose from one of the following options

- Company and Financial Information
- Job Analyser
- Bidding Analyser
- Interactive Information
- Reports

Company and Financial Information

Company and financial information parameters define the environment in which the company is operating.

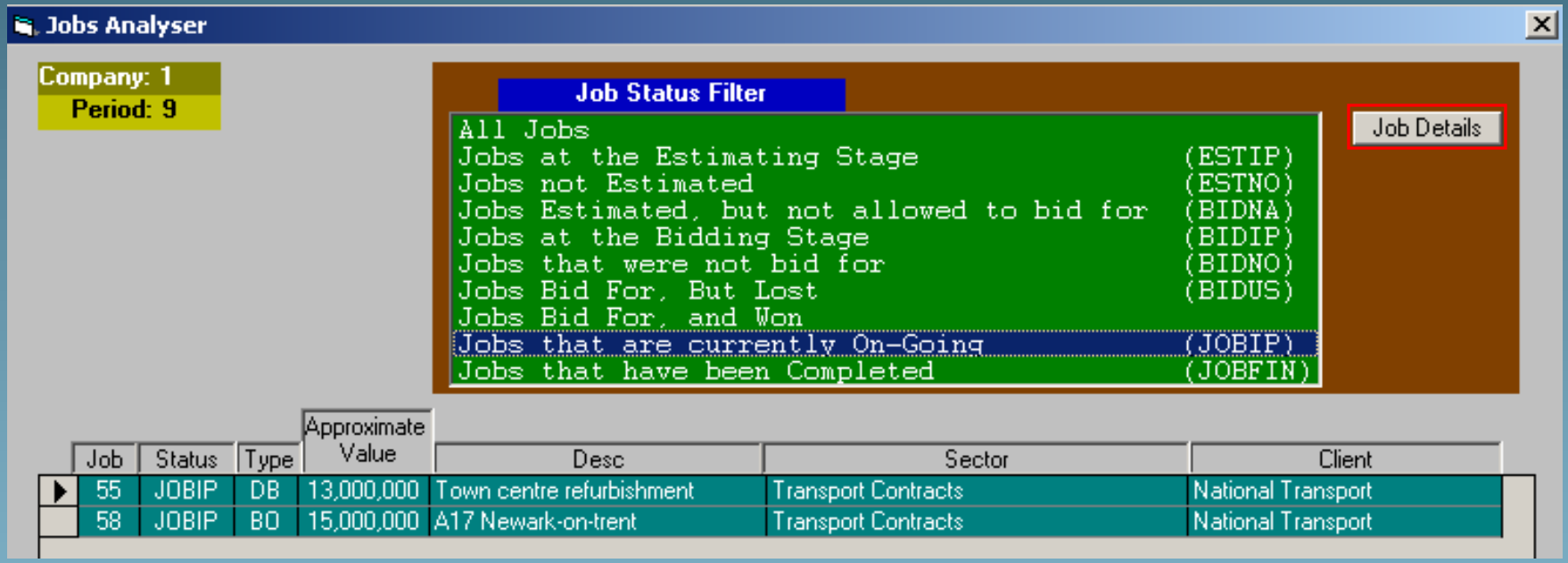
Most remain fixed for the time you are managing the Company but some can vary from period to period, such as the prevalent interest rates.

Click on a hotspot for further information.

Job Analyser

The Job Analyser is the gateway to detailed information about any of the jobs that the company has prequalified for.

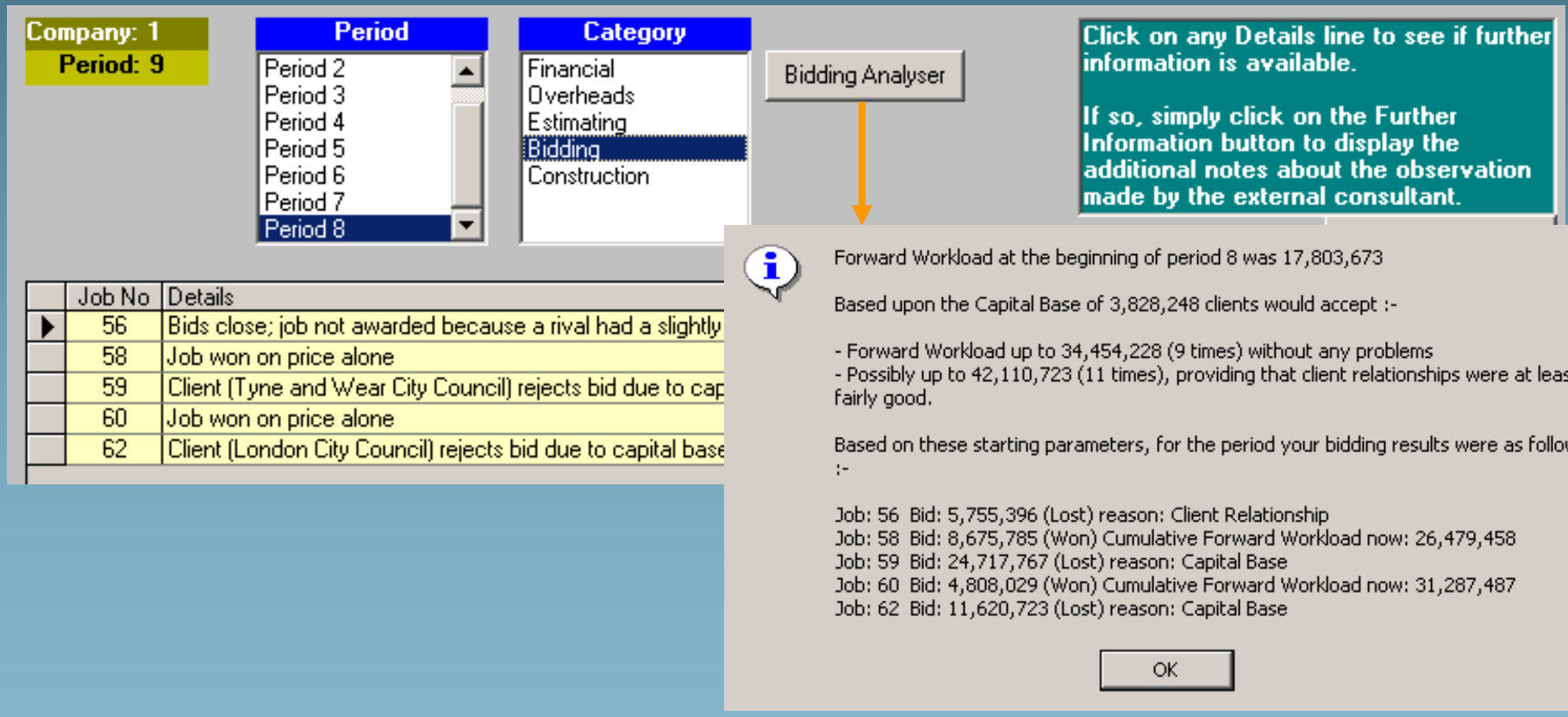
All Jobs can be displayed, or they can be filtered dependant upon their current status, as show.



Bidding Analyser

The Bidding Analyser, available from the External Performance Review screen, displays the company's bidding results for a period.

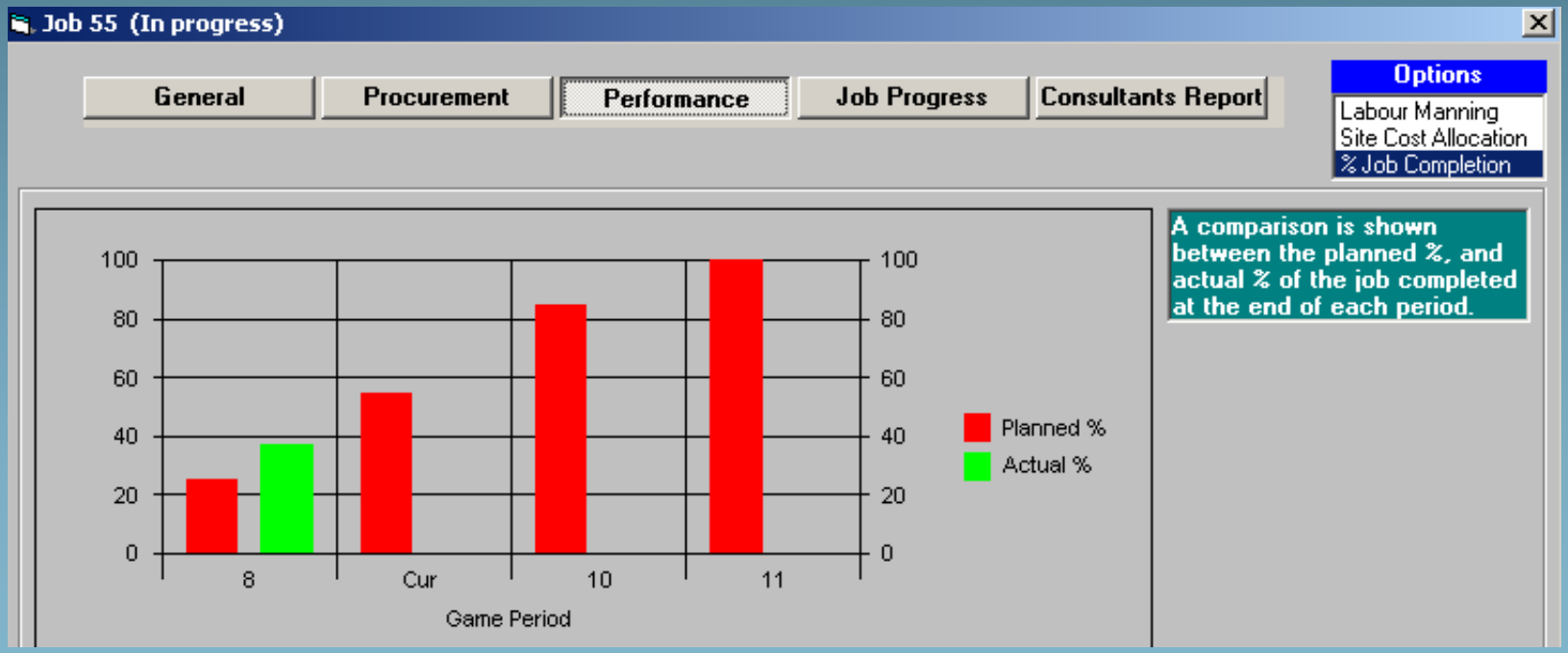
Each job is examined in turn to see why it was won or lost, taking into account the various factors that affect the bidding, such as cumulative workload and the size of the company's capital base.



Job Analysis Details

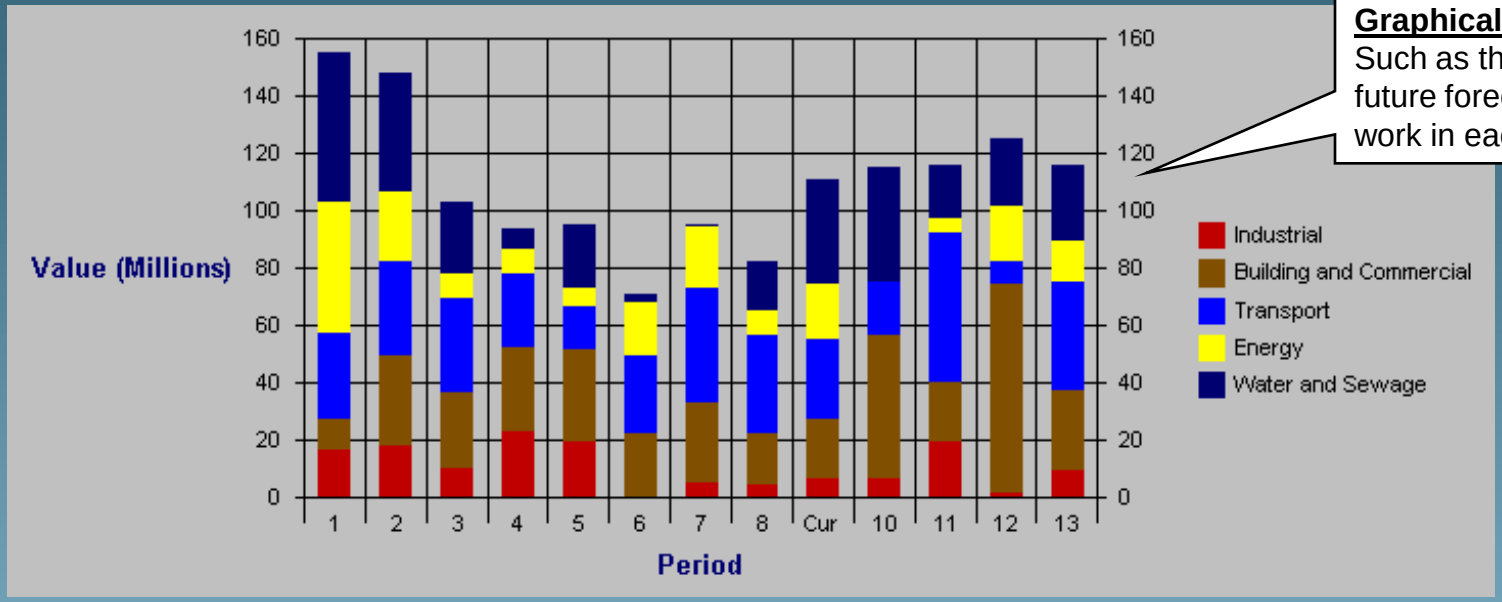
Depending upon the job status, different types of information is displayed :-

Information	Availability
General	Always
Procurement	Estimating & Bidding stage onwards
Graphical Performance	Job in Progress onwards
Job Progress	Job in Progress onwards
External Consultants	Job in Progress onwards

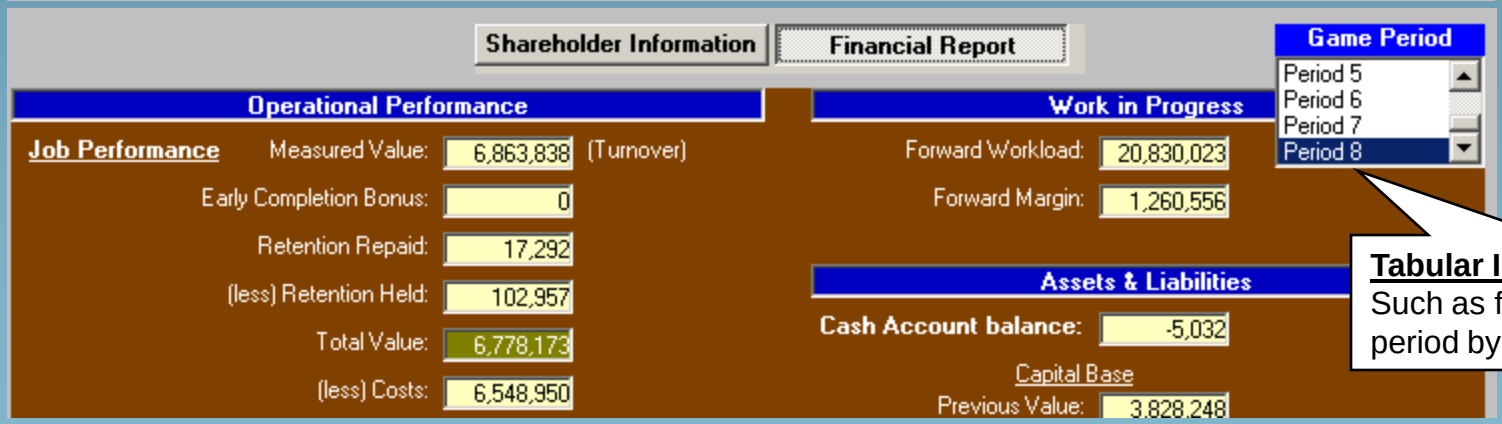


Interactive Information

Interactive information is available in a number of formats to provide details of the status of the company, as shown below.



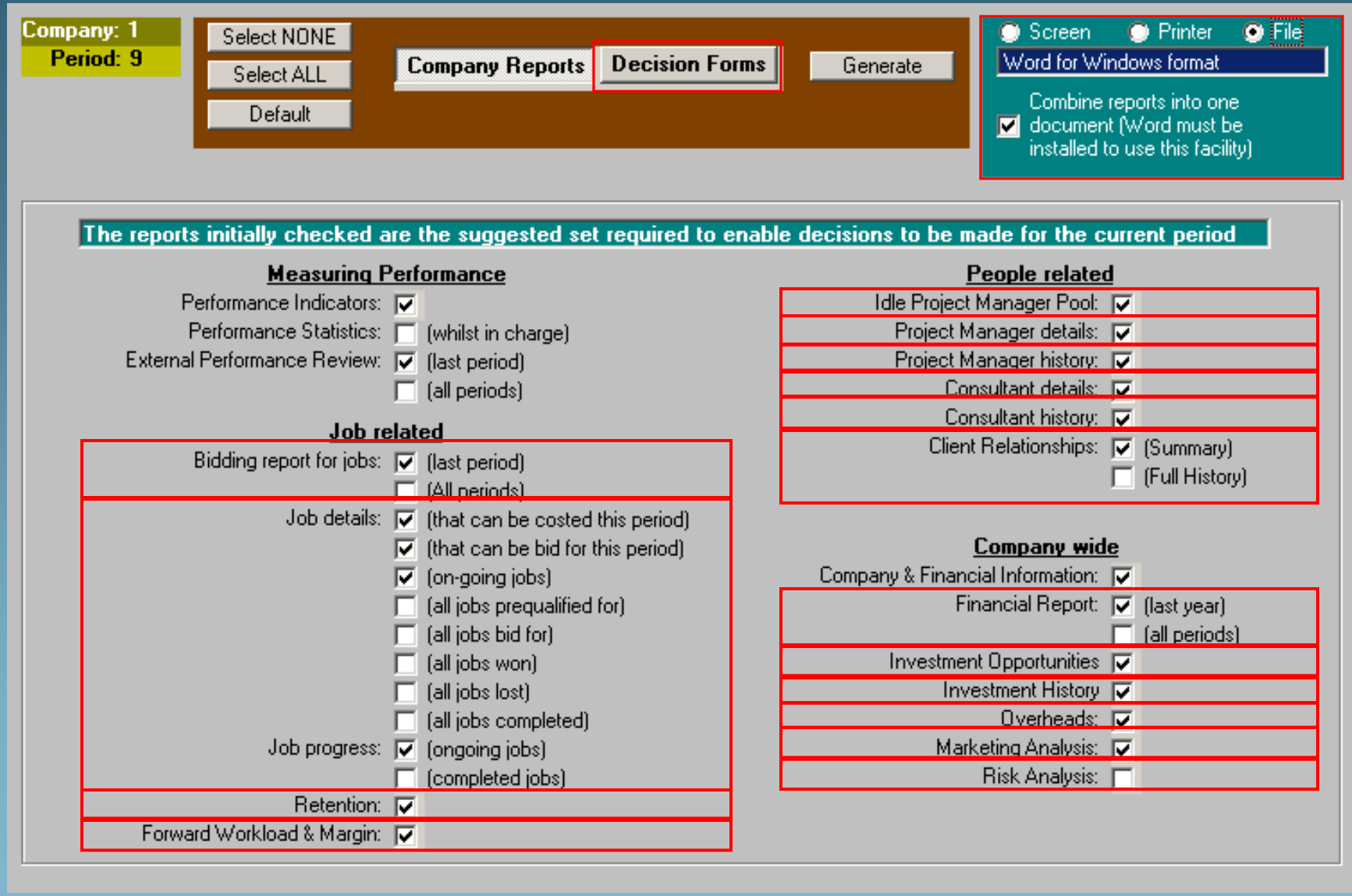
Graphical Information
Such as the past, current and future forecast of the value of work in each market sector



Tabular Information
Such as financial details period by period.

The Report Options

You can select multiple reports. Click on the hotspots for more information.



Output Options for Reports

There are 3 output options for the reports :-

The Screen

This is the default.

The Printer

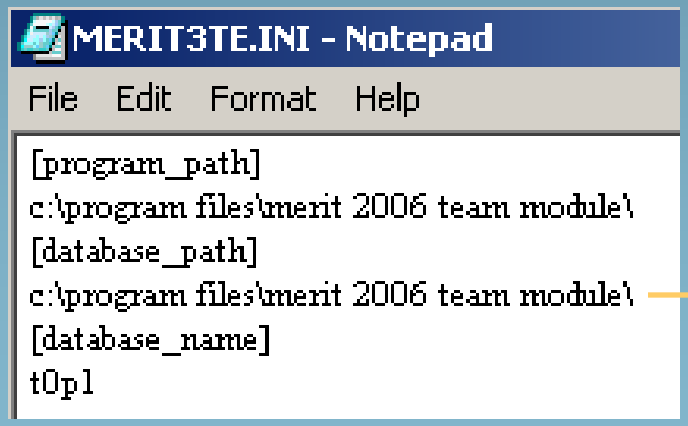
The current windows printer.

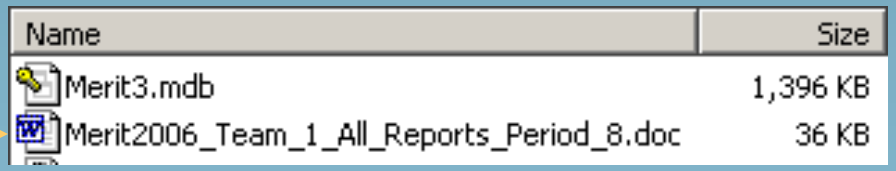
file format

This is currently limited to Word format, and the default is to combine the individual reports into a book of reports, which can be e-mailed to appropriate team members.

Note that the feature is only available if word is installed.

The word document will be placed in the [database_path] folder defined in the Merit3te.ini file.

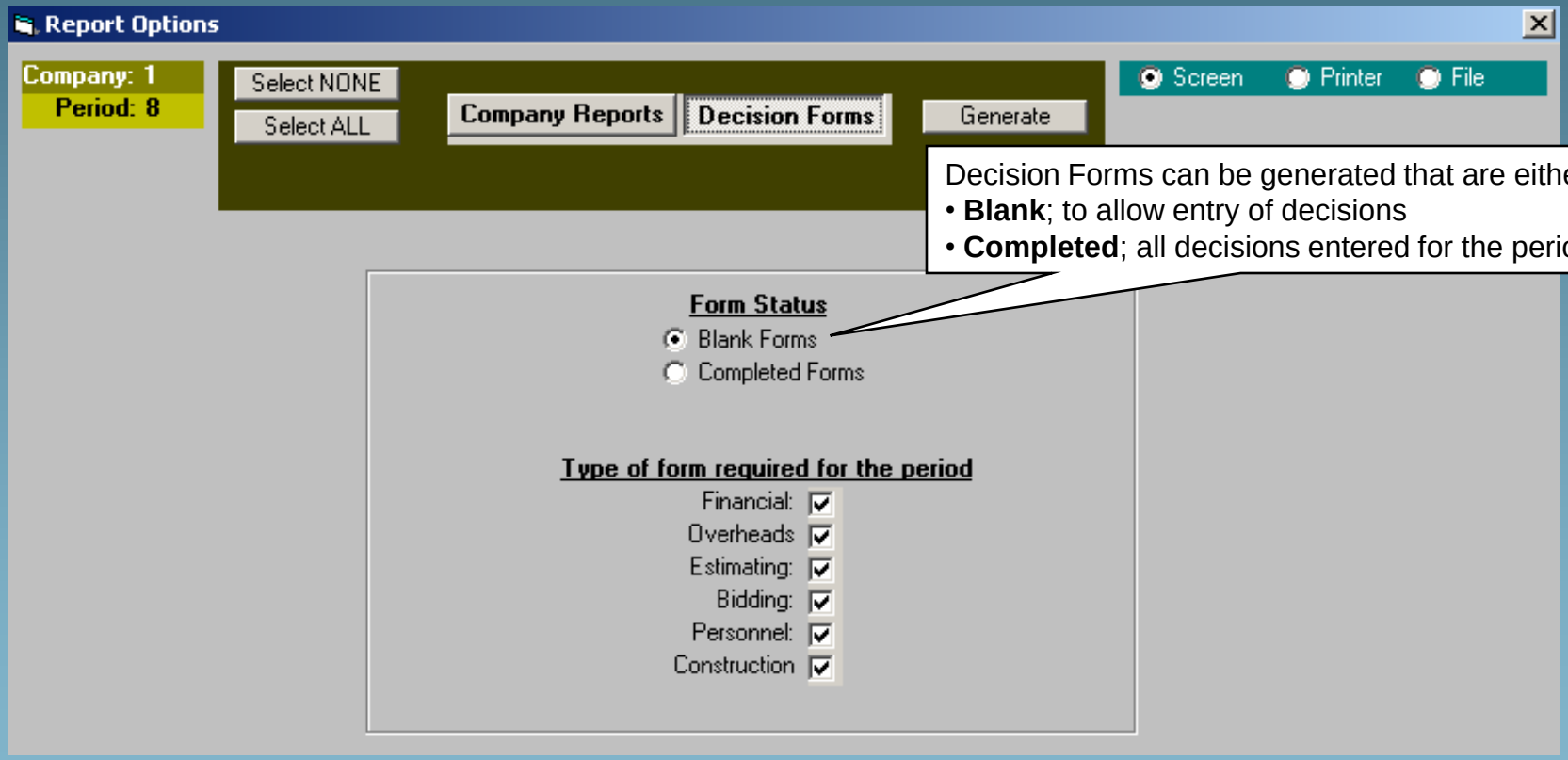




Decision Form Options

Sometimes it is more suitable to enter the decisions for a period on printed forms prior to using the team module interface.

In this case, multiple decision forms can be generated by clicking on the Decision Forms tab.



Bidding Report

The Bidding Report shows the outcome of the bidding that took place in a particular period.

Different Bidding Reports exist for the early and final years, as illustrated below.

Early Years (company specific)

All jobs bid for by a particular company are shown, along with the rival bid (computer), and if the job is not won the reason is given.

Job	Desc	Client	Company Bid	Rival Bid	Job Won	Client reason for rejecting Company bid
71	Construct day-care unit at local hospital	Fenlands County Council	12,358,615	12,247,225	No	Bid Too High

Final Years (all jobs bid for in the period)

All jobs bid for in the period by any company are shown, along with the winning company and bid, and the rival bids.

Job No	Desc	Winning Details		Other Bidding Details	
		Team	Bid	Team	Bid
42	Medical School Alterations, Phase II,		3,902,522		
43	American School, Phase 2,		1,658,592	1	1,687,724
				2	1,639,703

Since no team/company number is given, the computer-simulated company won job 43.

Companies 1 and 2 also bid for job 43, but their bids were not successful.

There is **no direct link** from the companies to the bids, so company 1 could have submitted either of the two bids shown.

Job Details/Progress Report

The Job Details Report displays comprehensive information about jobs that the company prequalified for, including estimating and bidding details.

Job Details

Job	Period Prequal	Type of Job	Size	Approx Value	Complex
15	2	Design & Build	Medium	13,000,000	Medium

Estimating Details

Job Per	Build Cost	Site Cost	Lab Man
1)	2,451,224	490,244	92
2)	2,941,468	588,294	110
3)	2,941,468	588,294	110
4)	1,470,733	294,146	55
	9,804,893	1,960,978	367

Bidding Details

Bid Details	Reason For Loss	Expected Value	% Done	Finish (per)
Bid submitted, Job Won		3,328,218	25 %	Yes (7)
		3,993,862	55 %	
		3,993,862	85 %	
		1,996,931	100 %	

Duration: 4 periods
Desc: New adult mental health unit
Location: Basingstoke, 88 miles from the Company H/O
Sector: 2 Building & Commercial
Client: New Forest County Council

Design Cost is 9.0 % of the Build Cost
Estimating confidence Extremely High
The job has a Medium risk level
Risk costs are 1.5 % of the build cost

Design Cost	882,440	(Consultant No 2)
Build Cost:	9,804,893	
On-Cost:	1,991,592	
Mark-Up:	5.0 %	Bid: 13,312,872

The Job Progress Report displays progress information on a period by period basis for each job awarded to the company.

Job	Dur	Per
15	4	5

Labour Analysis

Labour on Site

Planned:	92				
Actual:	125	Own:	5	+ Sub:	120
		New:	5		
		From ILP:	0		
		Paid Off:	0		
		To ILP	0		
Effective:	124.2				
Ineffective:	0.8	Training:	0.8		
		Overman:	0.0		

Costs incurred during the period

Cost breakdown

Design Fee:	224,905
Build Cost:	3,256,636
Site Cost:	674,587
Risk Cost:	0
Penalty:	0
Training New Recruits:	6,000
Labour Payoff:	0
Sub Premium:	180,000

Project Manager Details

Agency Cost:	0
Person on Site: 8	
Salary:	11,650
Bonus:	466
Relocation:	0
Golden Hello:	0
Recruit:	6,990
Previous mgr Payoff:	0
Period Costs:	**4,361,234**

Value Accrued

Measured value:	4,594,298
Completion bonus:	0
Period Value:	**4,594,298**

Progress/Profit

34.4	% Complete
Ahead of Schedule	
Profit:	**233,064**

Retention Report

The Retention Report gives a detailed breakdown for each job progressed of any monies withheld and repaid by the client.

Job	Desc	Client	Finished Details	<-- Period Retention Details --> Period	Held	Repaid
4	Upgrade Membrane Microfiltration Plant	London Water Services Ltd	Yes (in period 5)	4	58,119	0
				5	96,439	77,279
				7	0	77,279
					154,558	**154,558**
6	New low head hydro power station	Electragen	Yes (in period 6)	4	46,735	0
				5	77,546	0
				6	6,194	65,238
				8	0	65,238
					130,475	**130,476**
10	Pier redevelopment	Fenlands County Council	Yes (in period 5)	4	63,577	0
				5	83,036	73,306
				7	0	73,306
					146,613	**146,612**
17	Install fibre-optic cables in towpaths	English Waterways	Yes (in period 6)	5	10,362	0
				6	12,340	11,351
				8	0	11,351
					22,702	**22,702**

A % of the measured value each period is **withheld by the client** until the job is completed.

The retention is **repaid** by the client in two equal instalments in :-
- The period the job is completed
- Two periods after completion

Forward Workload and Margin Report

The Forward Workload and Margin Report gives a snapshot of the remaining workload (turnover) and margin on any on-going jobs.

The company's capital base can only support a certain level of forward workload (turnover), so the value at the beginning of the period can have a significant bearing on the company's ability to win work.

No	Desc	Sector	Size	Client	Remaining Value	Forward Workload	Remaining Cost	Forward Margin
55	Town centre refurbishment	3 Transport Contracts	Medium	National Transport	8,540,389	**8,540,389**	8,058,652	**481,737**
58	A17 Newark-on-trent	3 Transport Contracts	Large	National Transport	15,289,734	**15,289,734**	14,562,858	**726,876**
						23,830,123		**1,208,613**

Idle Project Manager Pool Report

The Idle Project Manager Pool Report gives a snapshot of the company's current idle project managers.

Projects Managers can be held in the idle pool for use on future contracts, provided they are not kept idle for too long, since they still have to be paid.

No	Name	Age	Qualifications	Salary	Profile
1	Arkwright, R	42	BEng Building Engineering, MCIOB	48,900	On graduating, spent a very rewarding 4 years working for a large consultancy specialising in energy contracts. This was followed by 6 years as senior planning engineer on the construction of a nuclear plant in Cumbria. Since then, has progressed into site management, working for a number of contractors on a wide variety of different types of work. A real all-rounder who can adapt to most types of work. Conscientous and a good team player. One failing is sometimes cutting corners to get the job done, which resulted in disciplinary action a few years ago. Married, two children, and a keen rugby player.
2	Tennant, C	42	BSc Building Technology, MIOB	52,780	On graduation, spent 4 years as an estimator on all types of building works, followed by 11 years as site engineer on some large commercial building projects. Since then, has been the area manager for a well-known housing contractor. A real achiever, very self-motivated, and prepared to travel if the right opportunites present themselves. Had a string of personal relationships, but never married. A keen fitness fanatic.

Project Manager Details Report

The Project Manager Details Report shows all the possible project managers that can be used by the Company. Some will already be employed, but many will be awaiting employment.

No.	Name	Age	Qualifications	Salary	Profile	Incentive required to secure services	Employment Status
1	Snickerton, L	29	BSc Quantity Surveying	30,000	After an undistinguished time at University, acquired a post as a graduate engineer on a small building contract. After only a year, moved to a larger company working as a trainee site engineer on building estate work. Recently moved again to take up a site engineer's post on a commercial building contract in Liverpool. Has many outside interests, which often cause work distraction, and is suspected of having a drink problem. Is looking for a break into site management, and hoping to do so soon.	None	Awaiting employment
2	Parsons, C	32	HNC Building practice	39,800	Spent 5 years as a jun or engineer on housing and shopping developments. Changed companie nd worked for 4 years as a building surveyor with a contractor speci in providing sheltered housing. Was promoted recently to site manage ven special responsibility for a new inner city housing developmen Alway ed percent to the job, but sometimes by nature finds it hard ecisions. Has a stable family life, and likes nothing bet e with the family.	None	Employed by yourselves on job 11

The **profile** provides clues to the project manager's **expertise** in each market sector, and should enable project managers to be allocated to appropriate jobs.

Having a project manager on site with the appropriate skills can **improve** the progress of a job, but conversely progress can be **hindered** by a poor project manager.

The employment status indicates whether the project manager is :-

- **Currently employed** by the company (on site or idle)
- Employed by another company, and **unavailable** (final years only)
- In the market, and **available**

Project Manager History Report

The Project Manager History Report gives a detailed account of which jobs a project manager was used on each period, along with performance information.

<- Improvement Factors -> <- Deteriorating Factors ->

No.	Name	Per	Job	Sector	Basic Performance	Time with the Company Improvement	Bonus Paid %	Bonus Paid Improvement	Distance from H/O (miles)	Distance from H/O Deterioration	Taking over from another Deterioration	Overall Performance	Reason for leaving, if applicable
2	Parsons, C	9	68	Building and Commercial Contr	good	none	3.0 %	marginal	94	noticeable	none	good	
		10	68	Building and Commercial Contr	good	marginal	3.0 %	marginal	94	noticeable	none	good	
3	Gurney, J	9	61	Energy Contracts	excellent	none	3.0 %	marginal	78	marginal	none	excellent	
		10	61	Energy Contracts	excellent	marginal	3.0 %	marginal	78	marginal	none	excellent	
6	Haldane, J	9	65	Industrial Contracts	reasonable	none	3.0 %	marginal	115	noticeable	none	reasonable	
		10	65	Industrial Contracts	reasonable	marginal	3.0 %	marginal	115	noticeable	none	reasonable	
13	Trentham, G	5	24	Transport Contracts	good	none	3.0 %	marginal	44	marginal	none	good	
		6	24	Transport Contracts	good	marginal	3.0 %	marginal	44	marginal	none	good	
		7	24	Transport Contracts	good	marginal	3.0 %	marginal	44	marginal	none	good	
		8	55	Energy Contracts	reasonable	marginal	3.0 %	marginal	280	noticeable	none	reasonable	
		9	55	Energy Contracts	reasonable	noticeable	3.0 %	marginal	280	noticeable	none	good	
		10	55	Energy Contracts	reasonable	noticeable	3.0 %	marginal	280	noticeable	none	good	

The project manager's **basic performance** is shown each period, along with the effects of :-

- Time spent with the company
- Any bonus paid in the period
- The distance of the job from the company's head office
- Taking over from another project manager at the beginning of the period, if that was the case

which result in the **overall performance.**

Main Quit

Consultant Details Report

This Consultant Details Report shows all of the consultants that can be used by the Company. Some will already be being used on design & build jobs, but there may be many others who have not been used to date.

No	Name	Profile	Availability
6	SD Partridge Consultants	A family owned and managed company that has been providing a design and service solely to the aerospace, automotive, and associated Industries in excess of 40 years. They believe firmly in providing a high level of customer care and support, and this has resulted in a lot of repeat business over the years. Although their work is always of a high standard, their facilities are in need of modernisation, especially on the technology side.	Available
7	CV Godfrey Associates	Formed over thirty years ago, the company draws on its proven experience and management skills to provide its extensive list of clients with a high quality service. The company operates exclusively in the Building & Commercial sector, and is renowned throughout the Industry for its supermarket and residential developments. The practice is located centrally within the UK enabling it to operate successfully in all regions of the country. Management are looking to exp[illegible] overseas markets.	Unavailable: Influx of overseas work

The **company profile** provides clues to the consultant's **expertise** in each market sector, and should enable consultants to be allocated to appropriate design and build jobs.
Employing a consultant with the appropriate skills can **improve** the design, and save on the build costs, albeit at a higher design fee. Conversely build costs can be far higher by using a poorer consultant, but there may be a lower design fee.

The **availability** status indicates whether the consultant is currently available for use.

Consultant History Report

For each design & build job on which a consultant is used, the report gives an indication of the consultant's impact on the :-

- build cost, which is affected by their expertise in the job sector, and innovative qualities. The % change in build costs is also shown
- design cost; which is affected by their expertise in the job sector

In the example show, Crawford & Partners were the 'best' consultants used.

		<---------- Job Details ---------->			<---------- Factors Affecting Build Costs ---------->			<-- Affects on Design Costs -->
No.	**Name**	**Job**	**Status**	**Sector**	**Expertise in the Sector**	**Innovative qualities**	**% change**	**Expertise in the Sector**
3	Crawford and Partners	102	In First Period	Water and Sewage Contracts	significantly reduces	slightly increases	-2.52	much higher than expected
11	Henry Croft Associates	43	Completed	Water and Sewage Contracts	no noticeable affect on	slightly increases	0.51	as expected
12	Design International Ltd	96	In First Period	Building and Commercial Contract	reduces	slightly reduces	-2.02	higher than expected
23	MDK Basford Consulting Ltd	28	Completed	Transport Contracts	no noticeable affect on	slightly increases	0.49	as expected
32	DR Cowlishaw & Partners	94	In Second Period	Water and Sewage Contracts	no noticeable affect on	reduces	-1.02	as expected

Client Relationships Report

The Client Relationships Report (Summary) describes the current state of the company's relationship with each Client, and gives details of the value of work won, and at what markup.

Client	Relationship	Value of work Won, and % Markup above Cost		
National Transport	satisfactory			
New Forest County Council	fairly good	13,312,872	at 5.0 %	*(19.5 % of the Total)*
Railline	fairly good	5,440,605	at 6.3 %	*(8.0 % of the Total)*
Saintesc Foods	satisfactory			
South Wales County Council	satisfactory			
Sport England	fairly good	21,088,508	at 4.8 %	*(30.9 % of the Total)*

The Client Relationships History expands upon the summary, showing how the relationship was arrived at.

	Job	Period Preq	Description	Estimating Confidence	Bidding Details	Job Progress Details: Contract Completion Time	Consultant Designer Used	Project Manager Used	Level of Site Admin Cost Allocated
Sport England									
	8	1	Build headquarters	Extremely High	competitive bid, and the job was won	early		good	very good
	49	5	Build Wheelchair tennis centre	Extremely High	competitive bid, and the job was won	not finished	good		

The relationship **depends** on a number of factors relating to each job that the company prequalified for with the client, such as :-

- the quality of the estimate
- how competitive the bid was
- how the job was progressed

Financial Report

The Financial Report shows the period by period financial structure of the Company.

Per	Profit & Cashflow	Balance Sheet
7		

Cash Account changes due to Financial Decisions

Additional Income

Reducing the Capital Base:	0	
Reducing Investments:	513,856	
	513,856	

Additional Expenditure

Dividend:	81,000	*(1.5% of equity)*
Increasing the Capital Base:	0	
Increasing Investments:	400,000	
	481,000	
Net change:	**32,856**	

Operational Performance of the Company

Job Performance

Measured Value:	9,234,875	*(Turnover)*
Early Completion Bonus:	66,564	
Retention Repaid:	183,836	
(less) Retention Held:	138,523	
Monies Received:	**9,346,752**	
(less) Costs:	8,964,860	
Gross Profit:	**381,892**	*(4.3 % of costs)*

Operating Profit

(less) Overheads	251,580	*(2.8 % of costs)*
	130,312	*(before Tax & Interest)*
(less) Corporation Tax:	38,225	*(21,098 Capital Allow; 35% rate)*
(plus) Credit Interest:	0	*(5.2% pa from Cash A/C)*
(less) Overdraft Interest:	3,442	*(11.3% pa from Cash A/C)*
Operating Profit:	**88,645**	

Cash Account Summary

Previous balance:	-121,838	*(prior to any decisions)*
Impact of Financial Decisions:	32,856	
Net Operating Profit:	88,645	
Cash Account balance:	**-337**	

Shareholder Information

Number of Shares:	5,000,000
Current Share Price:	**1.23**
Equity:	6,150,000

Work in Progress

Forward Workload:	26,406,906
Forward Margin:	1,524,708

Debt Burden

Gearing Ratio:	0.00

Assets & Liabilities

Cash Account:	**-337**	

Capital Base

Previous Value:	4,253,421	
Increased by:	0	
Reduced by:	0	
Depreciation:	26,584	*(2.5% pa)*
	4,226,837	*(76% Capital Employed)*

Investments

Previous Value:	764,314	
Increased by:	400,000	
Reduced by:	513,856	
	650,458	
Investment Returns:	10,446	*(1.6 %)*
	660,904	

Company Value: **4,887,404** *(0.2% decrease)*

Investment Opportunities Report

The Investment Opportunities Report shows all the possible investment opportunities available at the current time along with past performance information for each one.

Name	Desc	Size	Form	Status	:- Previous Performance -> Period	% Return
AGT Design Services Ltd	Providers of construction design solutions	Medium	Loan	Available for investment		
They provide efficient and well engineered structural and civil design solutions for all sectors of industry, commerce and leisure. When commissioned to work within the framework of a multi-disciplinary design team, they aim to integrate the structural and civil elements into the overall project philosophy, with considered attention down to the finest detail.					6 7	-7.1 % -9.9 %
British Fuels Plc	Nuclear energy services	Medium	Loan	Currently investing in		
An international nuclear energy business that employs some 20,000 people in 15 countries. Their activities span the entire nuclear energy cycle. That means everything from reactor design and fuel manufacture to power station decommissioning and clean-up. They have around a 15% share of the world nuclear market.					5 6 7	-0.5 % 3.2 % 1.4 %

Investment History Report

The Investment History Report shows all the concerns that the company has invested in to date, along with the % returns and any build costs savings earned.

Investment Details			Period changes				Period Returns			Job Benefits
Name	Desc	Period	Starting Value	Increase by	Reduced by	Required Value	% Return	Return Value	Final Value	Build Cost Savings
British Fuels Plc	Nuclear energy services									
		7	0	100,000	0	100,000	1.4 %	1,400	101,400	0
						100,000	**1.40 %**	**1,400**		**0**
Cymru Water Plc	Water supply and waste water management									
		4	0	150,000	0	150,000	8.1 %	12,150	162,150	0
		5	162,150	150,000	0	312,150	7.1 %	22,163	334,313	0
		6	334,313	150,000	0	484,313	6.1 %	29,543	513,856	0
		7	513,856	0	513,856	0	7.5 %	0	0	0
						946,463	**6.75 %**	**63,856**		**0**
DBY Equipment Ltd	Suppliers of construction equipment									
		5	0	100,000	0	100,000	-1.4 %	-1,400	98,600	0
		6	98,600	100,000	0	198,600	-0.6 %	-1,192	197,408	0
		7	197,408	100,000	0	297,408	0.7 %	2,082	299,490	40,615
						596,008	**-0.09 %**	**-510**		**40,615**

Overhead Report

The Overhead Report gives a period by period breakdown of the staffing levels and costs in each overhead department, including unproductive staff, along with other overhead costs.

		Departmental										Non-Departmental		
		Staffing Levels					Period Costs							
		<--- Company Staff ---:					<------- Company Staff ------->							Total
Per	Department	New	Paid off	Own	Agency	Total	Salaries	Recruit	Pay Offs	Agency	Total	Other Overhead Costs		Overheads
5														
	Marketing	2	0	4	n/a	4	28,000	10,080	0	n/a	38,080			
	Estimating	0	0	3	0	3	18,750	0	0	0	18,750			
	Head Office	3	0	6	1	7	33,000	7,920	0	8,250	49,170			
	QHSE	2	0	4	1	5	30,000	10,800	0	11,250	52,050			
	Measurement	2	0	4	1	5	35,000	14,000	0	13,500	62,500			
											220,550	Cost of Bidding:	1,750	
												Idle Labour Pool:	0	
												Idle Project Manager Pool:	0	
												External Performance Review:	10,000	232,300

Marketing Analysis Report

The Marketing Analysis Report provides the Overhead manager with detailed information about the past, present and future market trends, along with the value of work prequalified for to date.
The information enables informed decisions to be made about marketing strategy, in terms of where marketing effort needs to be directed, and the size of the marketing department needed to achieve the required prequalification targets.

		Market Information						Company Specific Information						
		<---------- The value of new tenders (millions, % in brackets) ---------->						<- Prequalification Details ->			<---------- % Effort By Sector ---------->			
Period	Details	Overall	IND	B&C	TRA	ENE	W&S	No. Staff	Value	% of Market	IND	B&C	TRA	ENE	W&S
1	Past	162	8 (5%)	45 (28%)	35 (22%)	34 (21%)	40 (25%)	2	40	(25 %)	5 %	28 %	22 %	21 %	24 %
2	Past	125	7 (6%)	34 (27%)	25 (20%)	44 (35%)	15 (12%)	2	14	(11 %)	6 %	31 %	17 %	31 %	15 %
3	Past	111	0 (0%)	29 (26%)	38 (34%)	1 (1%)	43 (39%)	2	12	(11 %)	0 %	25 %	27 %	23 %	25 %
4	Past	111	0 (0%)	45 (41%)	25 (23%)	23 (21%)	18 (16%)	2	16	(14 %)	1 %	35 %	22 %	24 %	18 %
5	Past	104	5 (5%)	14 (13%)	30 (29%)	8 (8%)	47 (45%)	4	25	(24 %)	5 %	25 %	30 %	14 %	26 %
6	Past	108	0 (0%)	43 (40%)	29 (27%)	0 (0%)	36 (33%)	6	62	(57 %)	0 %	35 %	27 %	4 %	34 %
7	Past	72	4 (6%)	16 (22%)	31 (43%)	4 (6%)	17 (24%)	8	37	(51 %)	5 %	26 %	37 %	6 %	26 %
8	Past	68	0 (0%)	30 (44%)	26 (38%)	12 (18%)	0 (0%)	10	27	(40 %)	0 %	34 %	37 %	13 %	16 %
9	Current	90	12 (13%)	25 (28%)	38 (42%)	12 (13%)	3 (3%)								
10	Future	101	8 (8%)	34 (34%)	42 (42%)	6 (6%)	11 (11%)								
11	Future	105	9 (9%)	24 (23%)	32 (30%)	28 (27%)	12 (11%)								
12	Future	120	19 (16%)	24 (20%)	20 (17%)	21 (18%)	36 (30%)								
13	Future	128	21 (16%)	44 (34%)	25 (20%)	23 (18%)	15 (12%)								

The **size** of the past, present and future market is shown, along with sector breakdowns. The current and future periods are estimated, with the accuracy of the estimates depending upon the size of the marketing department.

The **value** of work prequalified for each period is shown, along with the amount of marketing effort (dept size), and where the effort was directed (by sector).

Risk Analysis Report

The Risk Analysis Report provides a detailed analysis of the affect risk has had on the company, up to the current point in time.

The report shows, for each job secured, the :-

- Risk contingency included at the procurement stage
- The total risk cost incurred to date on the job, along with influencing factors

There is also an overall summary.

Ideally, the company would be hoping that the overall risk contingency would exceed the total adjusted risk cost, providing additional profit across jobs progressed.

<----------Job Progression (to date)----------->

Job	Job Details	Procurement Details		Risk Cost Incurred/Influencing Factors		When the Risk Occurred
58	**Type:** Build Only	**Estimated Build Cost:**	12,099,521	**Initial risk cost incurred:**	0	Not ocurred to dat
	Sector: 3 Transport Contracts	**Risk level:**	High	**QHSE Department staffing level:**	0.0 %	
	Description: A17 Newark-on-trent	**Estimated % Risk Cost:**	2.5 % of Build Cost	**Project Manager performance:**	0.0 %	
	Client: National Transport	**Estimated Risk Cost:**	302,488	**Number of own labour paid off:**	0.0 %	
				Number of subcontractors used:	0.0 %	
		Risk Contingency in the Bid:	136,120	**Adjusted risk cost incurred:**	0	(0 % of Contingency)
	TOTALS for ALL jobs ==>	**Risk Contingency:**	348,329	**Adjusted Risk Cost Incurred:**	0	(0 % of Contingency)

Period of the Game

Each round of the simulation is known as a period, which represents 3 trading months, or one quarter.

The periods fall into three distinct phases :-

Historical Year

This covers periods 1 to 4, and is used to establish the history of the company before you take over its management.

The Early Years

You take over the management in period 5, and run the company for a number of periods, normally 8 (2 trading years). During this time the company is competing against a computer-simulated company for any jobs that are available.

The Final Years

At the end of the early years the leading companies will be invited to compete against each other and the computer-simulated company in the final years, which normally last another 6 periods (1½ more trading years). During this time the competition will be for both jobs and people, such as project managers and consultants.

Based on the three phases the game period can be any value from 5 onwards, normally finishing at 18.

Overdraft Limit

Keep Clicking Anywhere on the screen to advance the demo

Overdraft Limit

The amount of money that can be borrowed from the bank is not unlimited, and the **overdraft limit** is shown in the **Company and Financial Information**.

The overdraft limit is fixed, and does not vary from period to period.

But what happens if the overdraft limit is exceeded ?

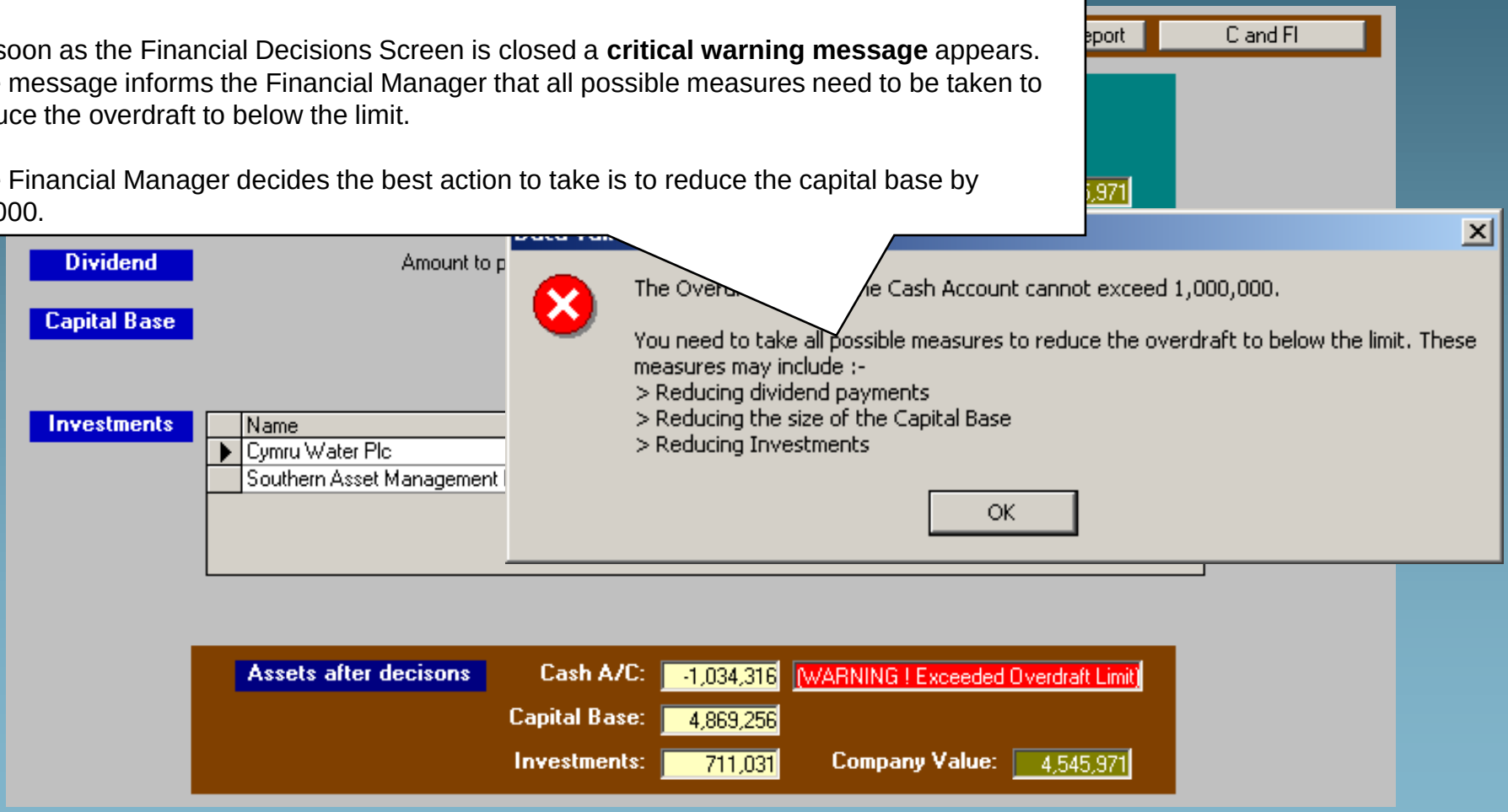
Overdraft Limit

Consider the following example.

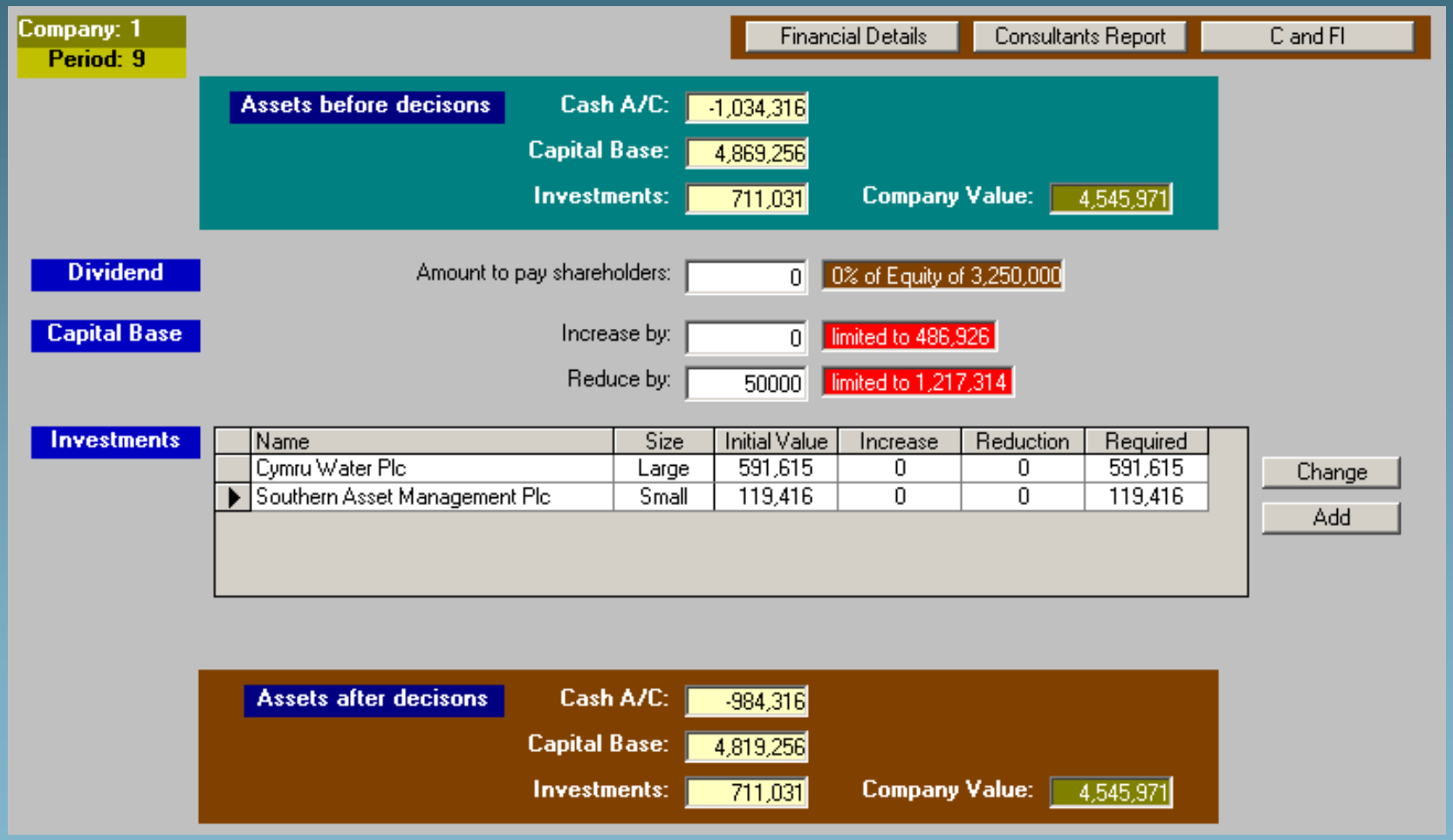
Its period 9, and after decisions were processed last period the company's overdraft has reached 1,034,316, which has exceeded the limit of 1,000,000. As a result, a warning message is displayed.

As soon as the Financial Decisions Screen is closed a **critical warning message** appears. The message informs the Financial Manager that all possible measures need to be taken to reduce the overdraft to below the limit.

The Financial Manager decides the best action to take is to reduce the capital base by 50,000.



Overdraft Limit

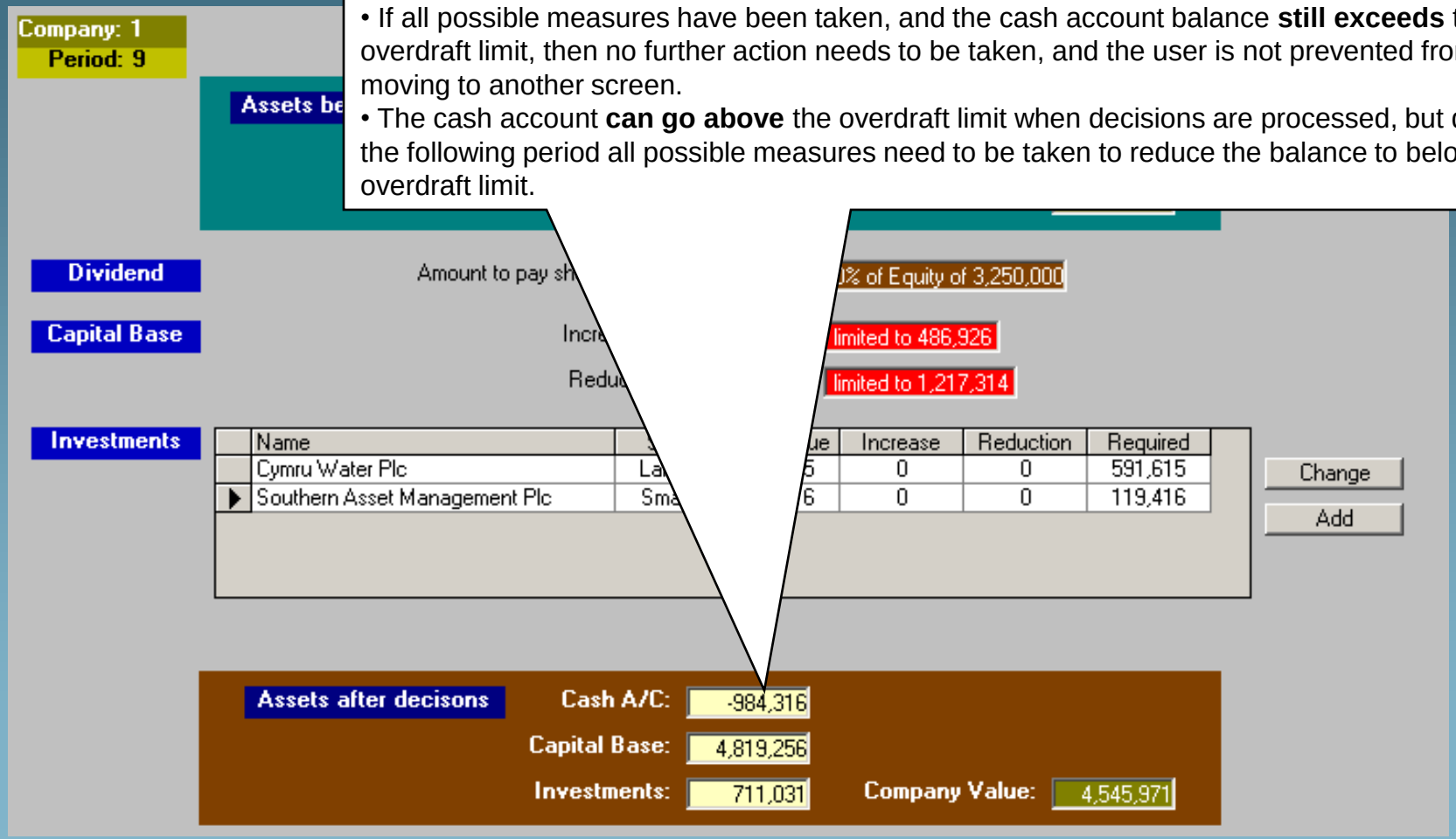


Overdraft Limit

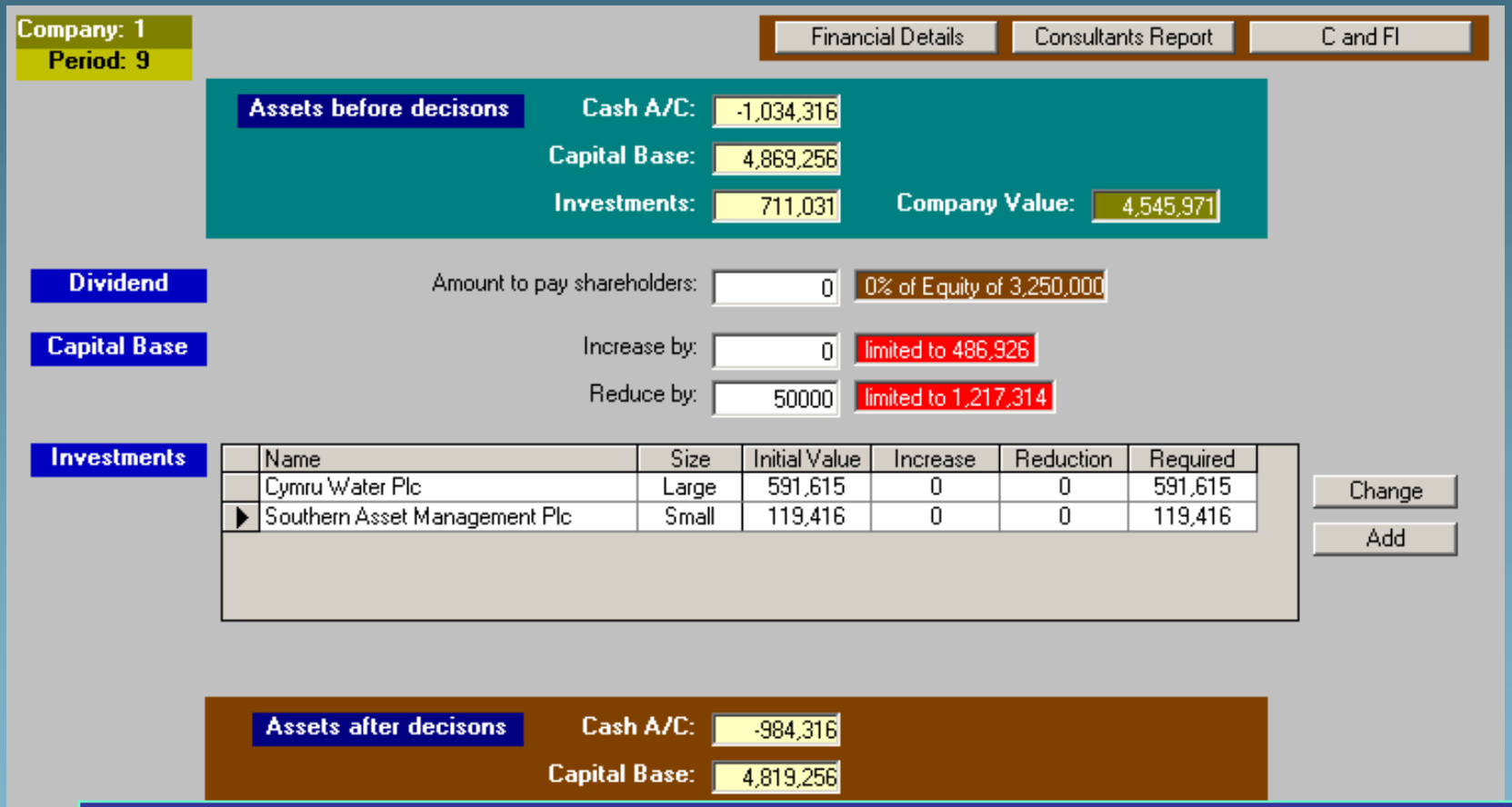
The warning message has now disappeared, and the cash account balance is below the overdraft limit.

Key Points

- If all possible measures have been taken, and the cash account balance **still exceeds** the overdraft limit, then no further action needs to be taken, and the user is not prevented from moving to another screen.
- The cash account **can go above** the overdraft limit when decisions are processed, but during the following period all possible measures need to be taken to reduce the balance to below the overdraft limit.

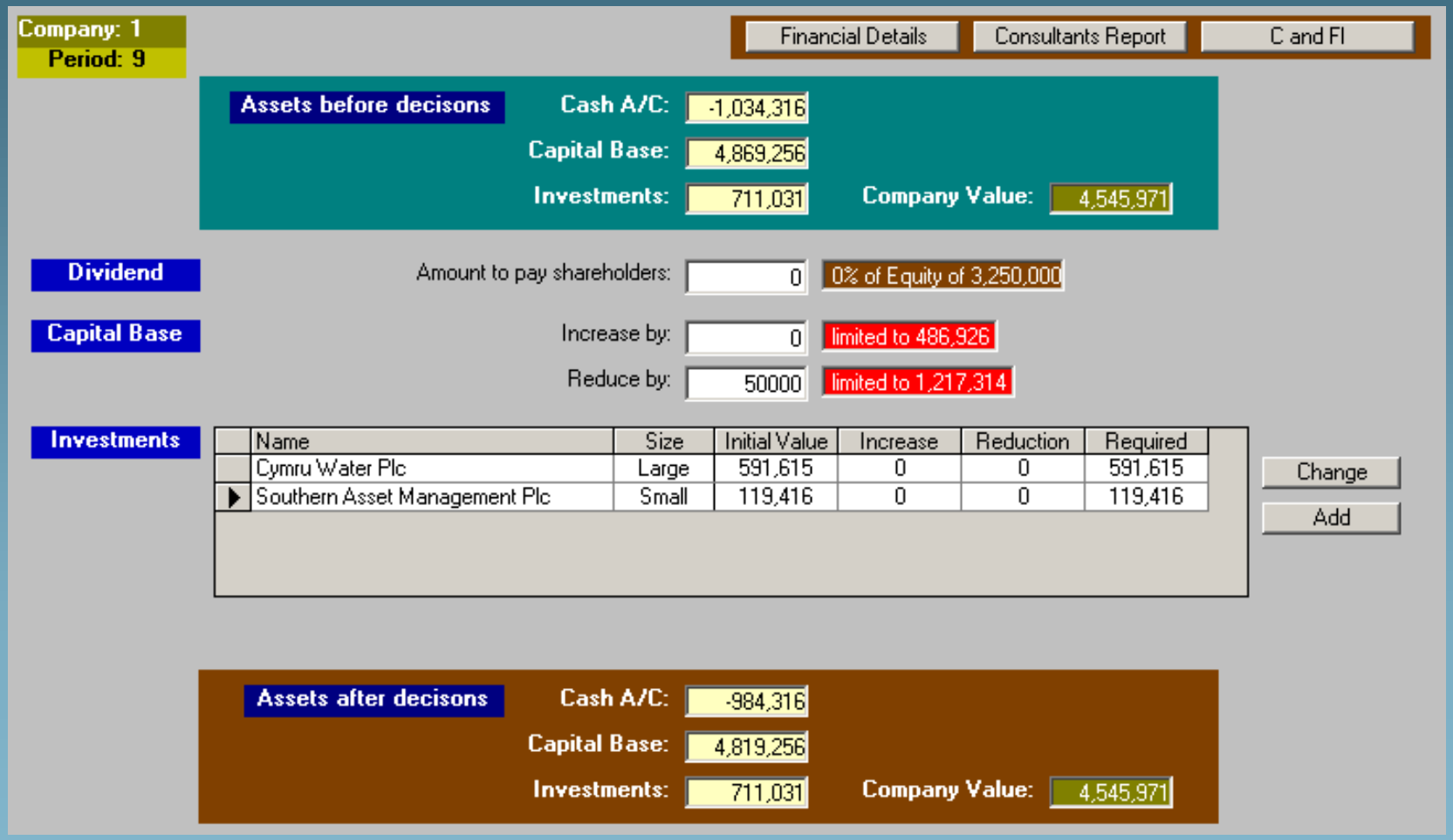


Overdraft Limit



The Demo is now complete

Overdraft Limit



Factors that affect Share Price

Keep Clicking Anywhere on the screen to advance the demo

Factors that affect Share Price

The company's share price is one of the key performance indicators in measuring the success or failure of the company, with a rising share price signifying increasing industry confidence in the fortunes of the Company.

The share price is influenced by :-

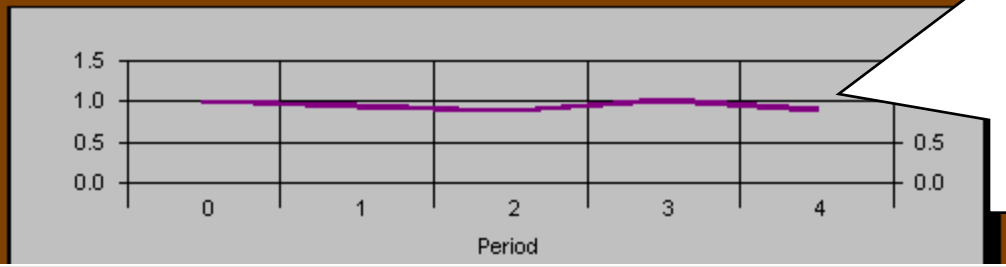
- The level of Dividend paid to the shareholders
- The value of the company
- The future profitability of the company
- The debt burden (gearing ratio) of the company

Factors that affect Share Price

Factors Affecting Share Price

Period	Dividend Payments			Company Value	Forward Margin	Gearing Ratio	Share Information at end o	
	Initial Equity	Dividend	% of Equity				Num Shares	Share Price
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	0.94
2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000	0.88
3	4,400,000	66,000	1.5	4,624,096	1,410,421	0.000	5,000,000	1.02
4	5,100,000	76,500	1.5	4,512,598	1,011,325	0.000	5,000,000	0.9

Share Price Movement



Period	Details
1	Shareholders are content with the level of dividend paid
1	The declining company value has not helped industry confidence in the company
2	Shareholders are content with the level of dividend paid
2	The declining company value has not helped industry confidence in the company
3	The increasing future profitability has dramatically improved industry confidence in the company
3	Shareholders are content with the level of dividend paid
3	The declining company value has not helped industry confidence in the company
4	The declining future profitability has not helped industry confidence in the company
4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the company

Consider the following example, where a company is in period 5.

To analyse the **share price history** we can use :-

- The **Financial Details button** from the Financial Screen
- Information from the **Consultants' Report**

The share price trend for the the first 4 periods has been an **fluctuating** one.

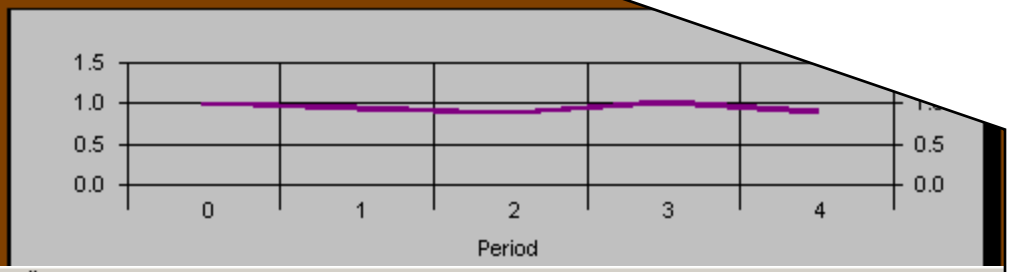
We'll now look in more detail at why this has been the case.

Factors that affect Share Price

Factors Affecting Share Price

Period	Dividend Payments: Initial Equity	Dividend	% of Equity	Company Value	Forward Margin	Gearing Ratio	Share Information at end of: Num Shares	Share Price	
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1	5
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	0.94	4
2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000		
3	4,400,000	66,000	1.5	4,624,096					
4	5,100,000	76,500	1.5						

Share Price M



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3	The declining company value has not helped industry confidence in the company
4	The declining future profitability has not helped industry confidence in the company
4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the company

Dividend payments

Dividends are taxable payments declared by a company's board of directors and given to its shareholders, normally quarterly. They provide an incentive to own stock in stable companies even if they are not experiencing much growth. Dividend payments are based upon the current share price.

The **equity** of the company at any time is the overall share value i.e., the number of shares in circulation multiplied by the current price per share.

There is a level of dividend, measured as a % of the equity, at which the share price **does not change**. Paying more than the 'equilibrium' level will cause the share price to rise, but paying less will be not be well received by the shareholders, and the price will fall.

Dividend payments of 1.5% of equity have been made each period, and the affect has been **"Shareholders are content with the level of dividend paid"**, implying no change to the share price.

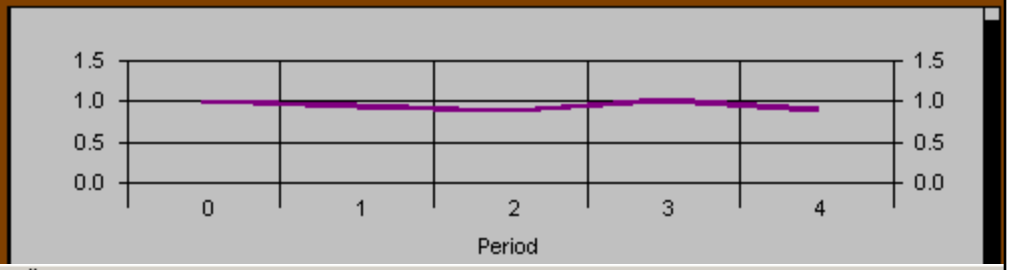
If dividend has had little affect on the share price, what about other factors ?

Factors that affect Share Price

Factors Affecting Share Price

Period	Dividend Payments: Initial Equity	Dividend	% of Equity	Company Value	Forward Margin	Gearing Ratio	Share Information at end of: Num Shares	Share Price
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	
1	5,000,000	75,000	1.5	4,883,920	0	0.000		
2	4,700,000	70,500	1.5	4,750,528	0			
3	4,400,000	66,000	1.5	4,624,096				
4	5,100,000	76,500	1.5	4,512,598	1,011,325	0.000		

Share Price Movement



Period	Details
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3	The declining company value has not helped industry confidence in the company
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4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the company

Company Value

Changes in the **value of the company** from period to period also affect the share price.

If the company value falls in a period, it will have a **depressing effect on share price** as shareholder and industry confidence falls. Conversely, if the value increases then confidence will improve, and the **share price will increase**.

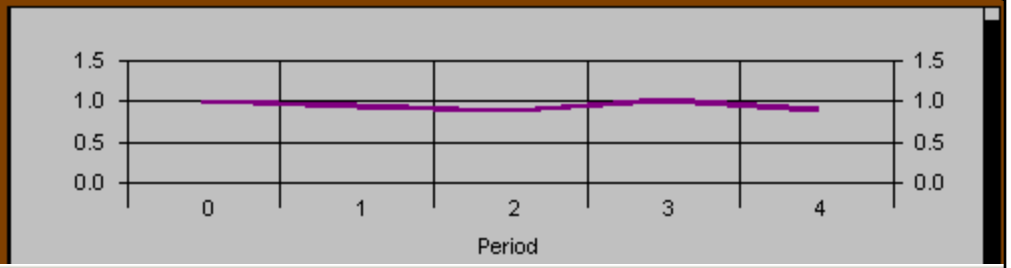
As can be seen the **trend has been for the value to fall**, adversely affecting industry confidence in the company, and having a negative affect on the share price, as indicated in the **Consultants Report**.

Factors that affect Share Price

Factors Affecting Share Price

Period	Dividend Payments: Initial Equity	Dividend	% of Equity	Company Value	Forward Margin	Gearing Ratio	Share Information at end of: Num Shares	Share Price
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	
2	4,700,000	70,500	1.5	4,750,528	0	0.000		
3	4,400,000	66,000	1.5	4,624,096	1,410,421			
4	5,100,000	76,500	1.5	4,512,598	1,011,325			

Share Price Movement



Period	Details
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1	The declining company value has not helped industry confidence in the company
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3	Shareholders are content with the level of dividend paid
3	The declining company value has not helped industry confidence in the company
4	The declining future profitability has not helped industry confidence in the company
4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the company

Future Profitability

Another factor that affects the share price is the **future profitability** (forward margin) of the company, which is based upon the company's work in progress.

At the end of periods 1 and 2, whilst the company was being established, there were no ongoing jobs, and hence no forward margin.

However, successful tendering in period 3 secured some profitable work, and by the end of the period the forward margin was standing at a healthy 1,410, 421. This dropped slightly in period 4.

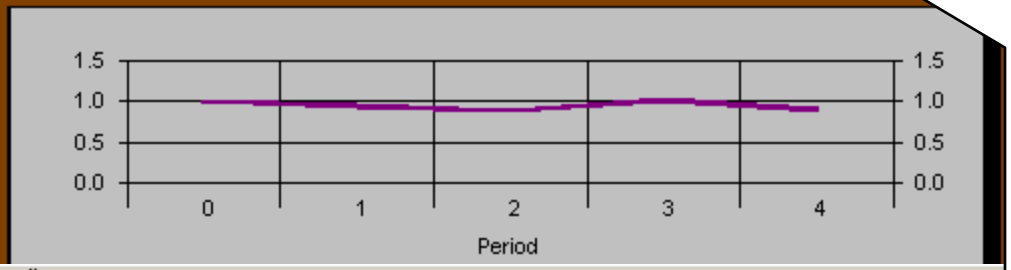
The **fluctuating changes** are reflected in the changes in industry confidence in the company, which had both positive ("dramatic improvement") and negative ("not helped") affects on the company's share price.

Factors that affect Share Price

Factors Affecting Share Price

Period	Dividend Payments			Company Value	Forward Margin	Gearing Ratio	Share Information at end of		
	Initial Equity	Dividend	% of Equity				Num Shares	Share Price	
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1	5
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	0.9	
2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000		
3	4,400,000	66,000	1.5	4,624,096	1,410,421	0.000			
4	5,100,000	76,500	1.5	4,512,598	1,011,325	0.000	5,000		

Share Price Movement



Period	Details
1	Shareholders are content with the level of dividend paid
1	The declining company value has not helped industry confidence in the company
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4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the company

Gearing Ratio

The final factor affecting the share price is changes in the **gearing ratio**.

The Gearing Ratio is the ratio of the company's borrowings (cash account overdraft) to its assets (cash account in credit, capital base and investments, and indicates the **debt burden** of the company. If there is no cash account overdraft, the gearing ratio is 0.

If the gearing ratio increases the company will be viewed as being vulnerable to both interest rate rises, and its ability to service its debts from its future profit flows. Consequently, this will have a **depressing effect on share price**. Conversely, if the gearing ratio decreases then the company will be viewed as being more financially sound, and the **share price will increase**.

As can be seen, there was no cash account overdraft in periods 1-4, and the **gearing ratio rose** remained at 0, with no affect on the share price.

Factors that affect Share Price

Factors Affecting Share Price

	Dividend Payments			Company Value	Forward Margin	Gearing Ratio	Share Information at end of period		
Period	Initial Equity	Dividend	% of Equity				Num Shares	Share Price	Equity
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1	5,000,000
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	0.94	4,700,000
2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000	0.88	4,400,000
3	4,400,000	66,000	1.5	4,624,096	1,410,421	0.000	5,000,000	1.02	5,100,000
4	5,100,000	76,500	1.5	4,512,598	1,011,325	0.000	5,000,000	0.9	4,500,000

Share Price Movement

Summary

Each of the 4 factors :-

- Dividend payments
- Changes in company value
- Changes in future profitability
- Changes in gearing

have different levels of impact upon the company share price. It may be, for example, that the share price rises even though 3 of the factors have negative affects, but the positive affect of the 4th factor has the greatest impact.

Careful examination is needed of the company data to determine which factors have had which affects, and to what level.

4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the company

Factors that affect Share Price

Factors Affecting Share Price

	Dividend Payments			Company Value	Forward Margin	Gearing Ratio	Share Information at end of period		
Period	Initial Equity	Dividend	% of Equity				Num Shares	Share Price	Equity
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2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000	0.88	4,400,000
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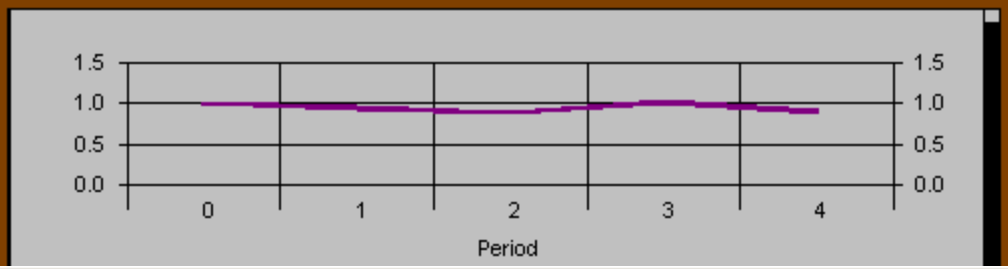
Share Price Movement



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4	Shareholders are content with the level of dividend paid
4	The declining company value has not helped industry confidence in the company

The Demo is now complete

Factors that affect Share Price

Factors Affecting Share Price

	Dividend Payments			Company Value	Forward Margin	Gearing Ratio	Share Information at end of period		
Period	Initial Equity	Dividend	% of Equity				Num Shares	Share Price	Equity
0	5,000,000	0	0.0	5,000,000	0	0.000	5,000,000	1	5,000,000
1	5,000,000	75,000	1.5	4,883,920	0	0.000	5,000,000	0.94	4,700,000
2	4,700,000	70,500	1.5	4,750,528	0	0.000	5,000,000	0.88	4,400,000
3	4,400,000	66,000	1.5	4,624,096	1,410,421	0.000	5,000,000	1.02	5,100,000
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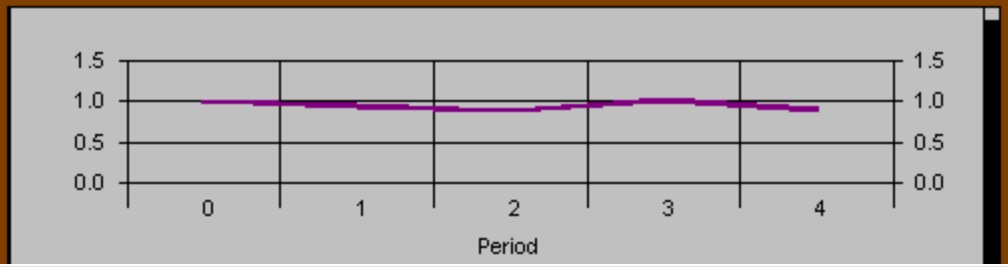
Share Price Movement



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4	The declining company value has not helped industry confidence in the company

Company Value

The value of the Company at any time is measured by its assets and liabilities, which consist of :-

- Cash in the bank. This can either be in credit (an asset) or in overdraft (a liability). There is an overdraft limit.
- Capital Base. This is the company's investment in plant, equipment, buildings etc, which determine the level of work that the company can undertake.
- Investments. The company's cash investment in other concerns, which may not be construction-related.

The value is increased by :-

- Generating an operating profit through the company's activities, which goes into the cash account
- Good investments

The value is reduced by :-

- Dividend payments to shareholders
- Making an operating loss through the company's activities, which comes out of the cash account
- Depreciation of the capital base
- Poor investments

Cash Account

The Company has one bank account, known as the Cash Account.

The Cash Account can be in two states :-

- In Credit, when it is considered an asset
- In Overdraft, when it is considered a liability. There is an overdraft limit defined in the Company and Financial Information.

The Cash Account is increased by :-

- The company generating an operating profit
- Selling off a % of the capital base
- Selling investments

The Cash Account is reduced by :-

- Dividend payments to shareholders
- The company making an operating loss
- Increasing the capital base
- Increasing investments

Dividend

The dividend paid to shareholders each period is one of the key factors that affects the share price of the company.

The dividend paid is expressed as a % of the equity of the company.

The equity of the company at any time is the overall share value i.e., the number of shares in circulation multiplied by the current price per share.

The dividend % of equity can be :-

- Insufficient to satisfy the shareholders, which will reduce the share price
- Sufficient to satisfy the shareholders, which will have a no effect on the share price
- More than sufficient to satisfy the shareholders, which increase the share price

The External Performance Review gives an indication of how the shareholders felt about the level of dividend paid in a particular period.

	Period	Details
	1	Shareholders are content with the level of dividend paid
	1	The declining company value has badly affected industry confidence in the company
	2	Shareholders are content with the level of dividend paid

Profit Definitions

Gross Profit

Gross profit is the difference between measured value and total costs across all jobs progressed.

It is a measure of how profitable the company's jobs have been.

On some reports, such as the Company profit and Cashflow Report, retentions paid and withheld by the client are also taken into account.

Operating Profit

Operating profit is gross profit less other company costs/revenues, and is a measure of the overall profitability of the Company.

The 'other' company costs/revenues are :-

- Overheads (cost)
- Corporation Tax (cost)
- Credit interest from the Cash Account (revenue)
- Overdraft interest from the Cash Account (cost)

The Capital Base

Defined

The **capital base** is the company's investment in plant, equipment, buildings etc, which determine the level of work that the company can undertake.

Increasing

Changes to the capital base are the responsibility of the Financial Manager.

It can be increased from cash reserves in order to support further growth. There are limitations on the increase possible each period. The increase in the Capital Base cannot exceed: 1,000,000 this period

The **Workload Limitations** button on the Bidding Screen gives an indication of when an increase may be necessary.

Reducing

The capital base can be Reduced to raise cash, which may be desirable if money is needed for other things, or it is not being fully utilised. There are limitations on the % of the Capital Base that can be sold off each period. Capital Base that can be sold off/liquidated: 5 % this period

Depreciation

Each period the Capital Base depreciates by a %, reducing the overall value of the Company. This occurs at the end of the period.

Capital Base Depreciation rate: 2.5 % per annum

Measuring Usage

One of the key company performance indicators is **Capital Employed**, which measures how well the Capital Base is being utilised over a period of time.

Investments

The core business of the Company is procuring and progressing contracts, and if done successfully the Company will report a healthy operating profit, and increase the Company's value.

However, there are alternative ways of increasing the value of the Company, such as by investing in other concerns, which may or may not be construction-related. Such investments can :-

- Offer a better return than can be obtained from the bank.
- Offer a competitive advantage for work in progress e.g., investing enough money in a tarmac company would reduce build costs for Transport jobs as preferable material rates would be obtained.

- Each period a number of new investment opportunities may arise, adding to the list of available investments, and for each one some key information is given to help in making investment decisions :-
- The investment profile describes the concern.
- The Past Performance gives the % return given in previous periods to all investors, and details any money the Company invested, and any build cost savings gained.

There are limitations to any investments made, described in the company and financial information :-
- The increase in a single investment each period cannot exceed a given amount, depending upon the size of the investment concern.
- Depending upon the size of the concern, there is a minimum level of investment required to gain build cost savings, and a minimum potential % saving.
- The number of investments that can be held at any one time is fixed.

Gearing Ratio

The Gearing Ratio is the ratio of the company's borrowings (cash account overdraft) to its assets (cash account in credit, capital base and investments), and indicates the debt burden of the company.

If there is no cash account overdraft, the gearing ratio is 0.

Changes in the Gearing Ratio have an impact on the Company share price :-

- If the gearing ratio increases the company will be viewed as being vulnerable to both interest rate rises, and its ability to service its debts from its future profit flows. Consequently, this will have a depressing effect on share price.

- Conversely, if the gearing ratio decreases then the company will be viewed as being more financially sound, and the share price will increase.

Corporation Tax

Corporation Tax is calculated on the company's Operating Profit each period before tax and interest (Gross Profit – Overheads) each period, less any Capital Allowances accrued by the company; details of the rate are shown in the company and financial information.

Corporation Tax rate: 35 %

If the company makes an Operating Loss, then no Corporation Tax is paid, and any capital allowances are carried forward to future periods.

Capital Allowances are acquired by investing in the company's capital base, and are calculated on a 'written down' basis; the rate of writing down allowances is given in the company and financial information.

Capital Writing Down allowance: 25 % per annum

Capital Allowances

Main Quit

Calculating Capital Allowances

Keep Clicking Anywhere on the screen to advance the demo

Calculating Capital Allowances

Consider the following example where a company is in period 6, and the Financial Report is being reviewed for period 5.

Operational Performance of the Company

Job Performance

Measured Value:	19,507,719	*(Turnover)*
Early Completion Bonus:	109,667	
Retention Repaid:	252,492	
(less) Retention Held:	292,615	
Monies Received:	**19,577,263**	
(less) Costs:	18,466,315	
Gross Profit:	**1,110,948**	*(6.0 % of costs)*

Operating Profit

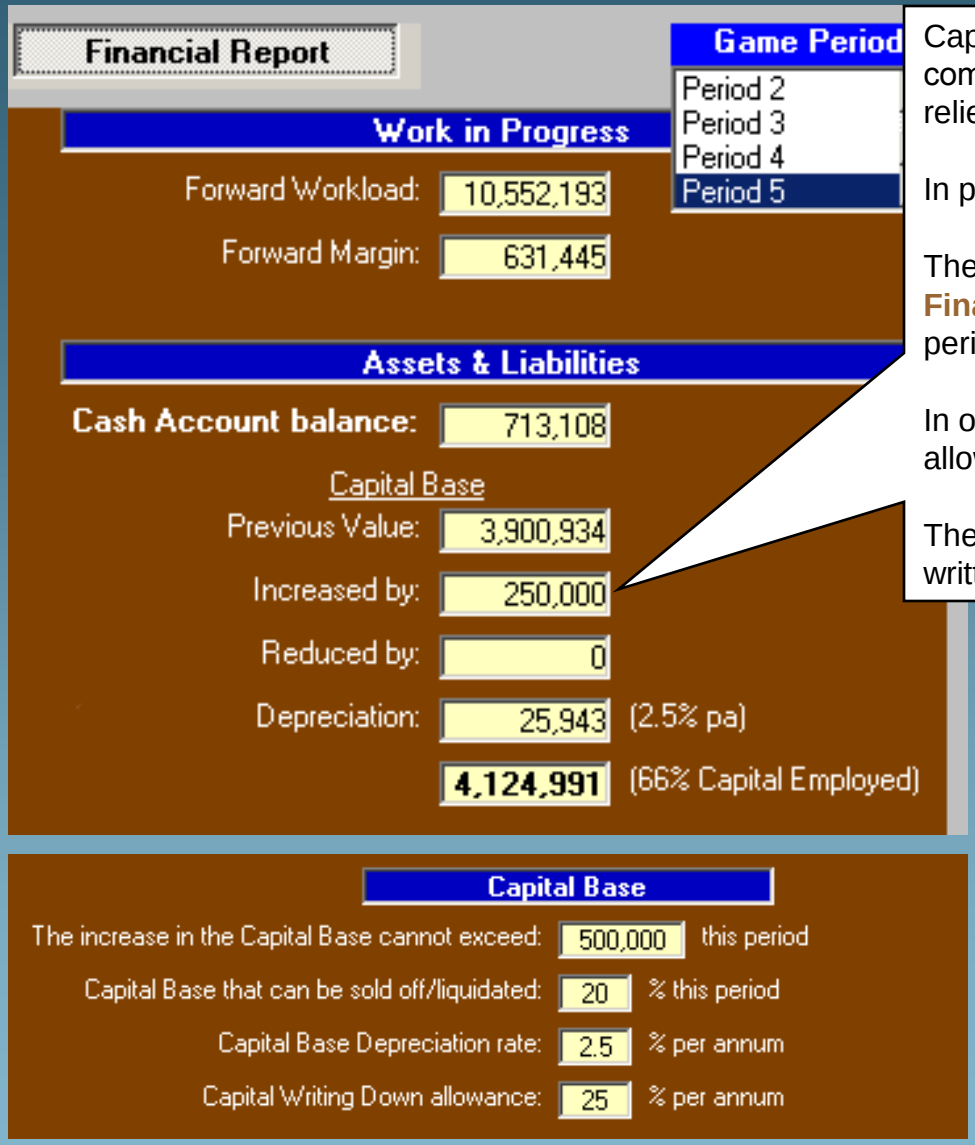
(less) Overheads	195,660	*(1.1 % of costs)*
	915,288	*(before Tax & Interest)*
(less) Corporation Tax:	314,882	*(15,625 Capital Allow; 35% rate)*
(plus) Credit Interest:	10,013	*(5.7% pa from*
(less) Overdraft Interest:	0	*(11.8% p*
Operating Profit:	**610,419**	

The Company made an Operating Profit before tax & interest of 915,288 in period 5.

Corporation Tax at 35% was paid on the 915,288 less Capital Allowances of 15,625.

But how was the Capital Allowance figure determined ?

Calculating Capital Allowances



Capital Allowances are the result of investment in the company's capital base i.e., any investment can be used as tax relief to offset the affects of corporation tax.

In period 5 the company invested 250,000 in their capital base.

The Capital Writing Down Allowance (given in the **Company & Financial Information**) is 25% per annum, or 6.25% per period.

In other words 6.25% of the 250,000 could be used as capital allowance in period 5, or **15,625**.

The remaining balance (250,000 – 15,625) would be similarly written off in the same way in future periods.

Calculating Capital Allowances

If an **Operating Loss** is made, then any Capital Allowances accrued will be carried forward to future periods.

Operational Performance of the Company

Job Performance

Measured Value:	5,898,200	*(Turnover)*
Early Completion Bonus:	0	
Retention Repaid:	63,191	
(less) Retention Held:	88,473	
Monies Received:	**5,872,918**	
(less) Costs:	7,581,905	
Gross Profit:	**-1,708,987**	*(-22.5 % ...osts)*

Operating Profit

(less) Overheads	179,261	*(2.4 % of costs)*
	-1,888,248	*(before Tax & Interest)*
(less) Corporation Tax:	0	
(plus) Credit Interest:	10,286	*(5.4% pa from Cash A/C)*
(less) Overdraft Interest:	0	*(11.5% pa from Cash A/C)*
Operating Profit:	**-1,877,962**	

Calculating Capital Allowances

The Demo is now complete

Calculating Capital Allowances

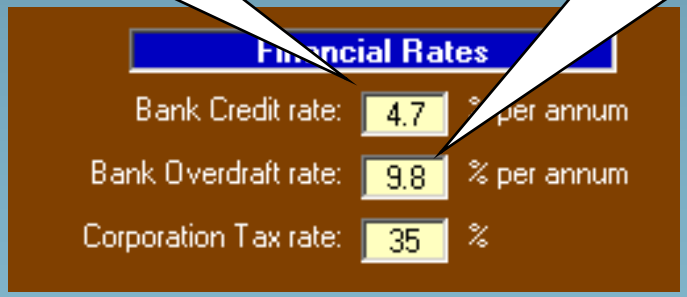
Interest Rates

The prevalent interest rates each period are defined in the Company and Financial Information.

Cash Account interest is earned/paid on the Cash Account balance at the beginning of the period.

Cash Account Credit Interest
If the Cash Account is in credit, interest is earned at the annual rate shown.

Cash Account Overdraft Interest
If the Cash Account is overdrawn, interest is paid at the annual rate shown



Overhead Staff

Overheads are the non-contract based support services required to enable the company to win and progress work.

They consist of :-

- 5 key departments; Marketing, Estimating, Head Office, QHSE and Measurement.
- Non-departmental overheads, such as idle labour and project managers, who are not assigned to jobs being progressed.

The staff in each department can be either :-

- The company's own staff
- Agency staff

and are subject to costs and limitations shown in the company and financial information :-

Costs

- Company staff incur an annual salary per person.
- Agency staff incur an annual cost per person, which is higher than for company staff.
- For new company staff, the recruitment and training cost per person expressed as a % of the annual salary. Agency staff incur no recruitment/training cost.

Limitations

- There is a cap on the number of new company staff that can be employed in a period.

Market Sectors

Keep Clicking Anywhere on the screen to advance the demo

Market Sectors

All jobs belong to one of 5 sectors :-

- Industrial
- Building and Commercial
- Transport
- Energy
- Water and Sewage

It is the role of the marketing department to identify jobs that the company can prequalify for in each of the sectors.

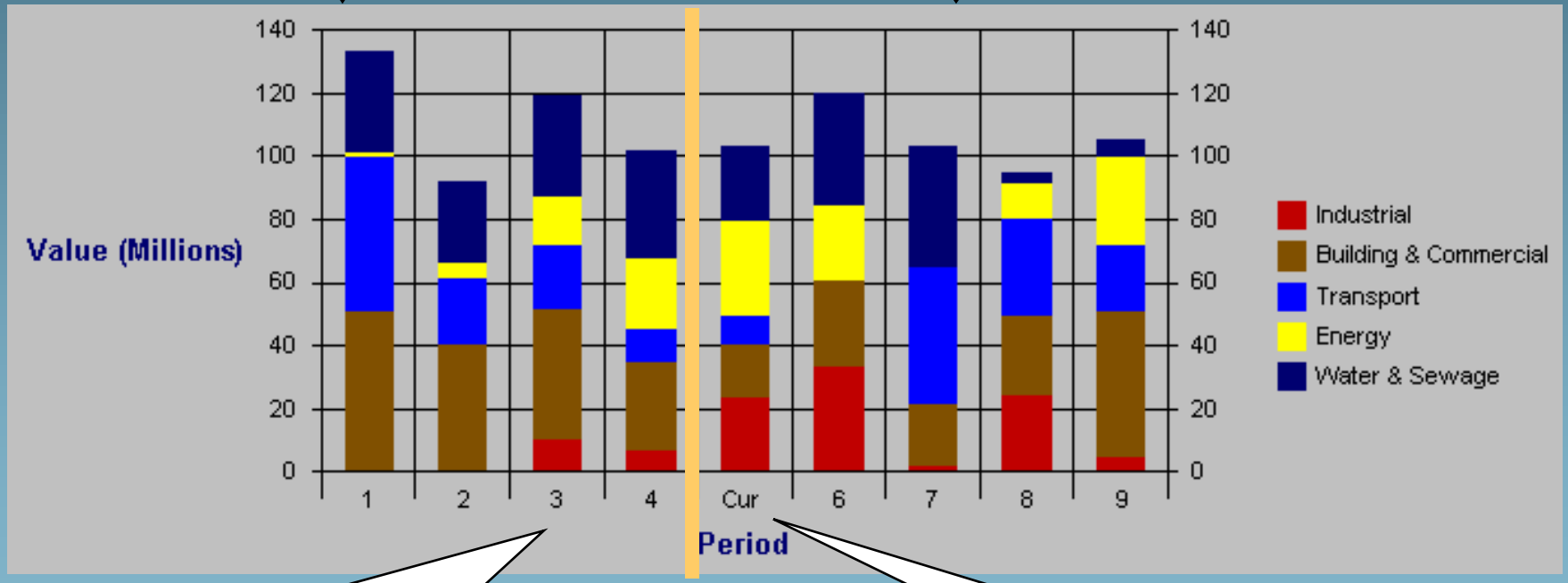
But how do they identify in which sectors work will be available ?

Market Sectors

At any point in time the marketing department are able to :-

Accurately determine the past value of work available in each sector

Forecast the future trend of the market, the accuracy of the data based upon the marketing effort, or number of staff in the department



The market trend for periods 1 to 4 is **accurate**, since the data for the past is readily available.

The market trend for the current period onwards is a **forecast**.

Market Sectors

Having identified the market trend, the value of work the company is able to prequalify for depends upon :-

- The marketing effort applied, based upon the number of staff in the department. As the department grows more work can be identified, up to a point.

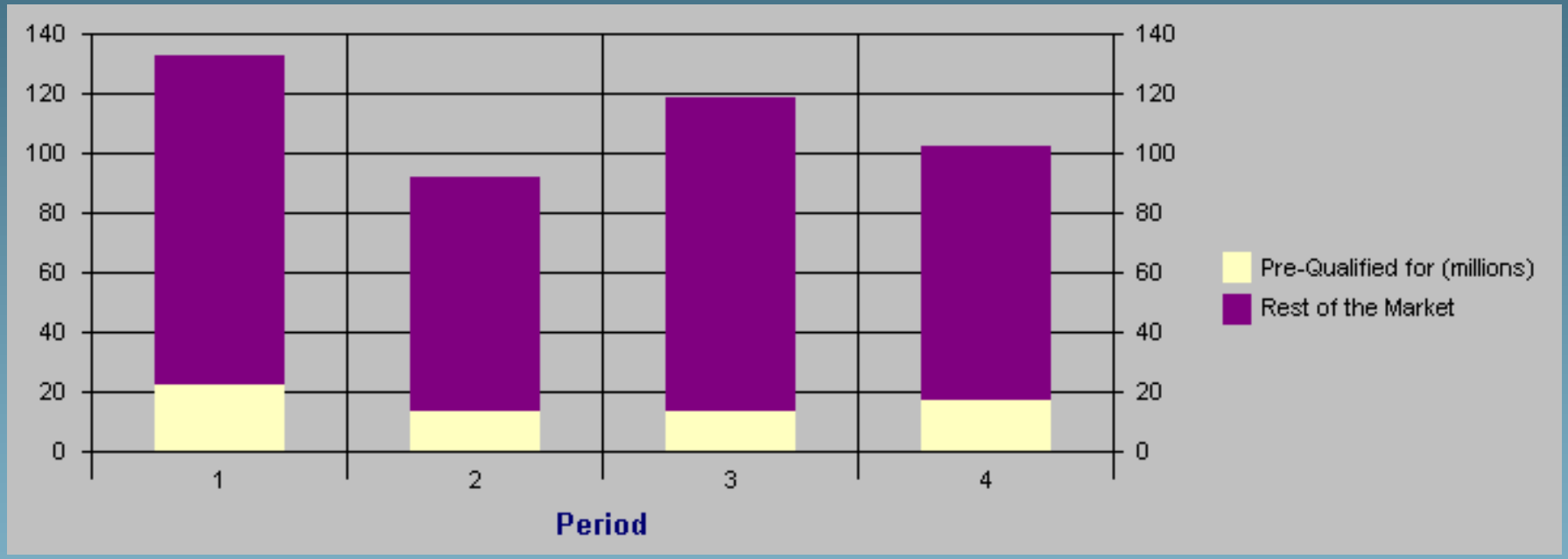
- Where the marketing effort is directed. If effort is directed into sectors with no work, then jobs will not be identified, so it is vital that resources are used as efficiently as possible.

- Whether or not the company are experts in a particular sector. If enough effort is consistently directed into one particular sector, then they will become experts in the sector, and prequalify for more work than might be expected

- The relationship with clients. The company may not be able to prequalify for a job if the relationship with the client is deteriorating. Conversely, an improving relationship may secure additional prequalification

Market Sectors

The value of work actually prequalified for each period can be obtained from the marketing performance analysis.



Market Sectors

The Demo is now complete

Market Sectors

The Job Period

Keep Clicking Anywhere on the screen to advance the demo

The Job Period

The company is managed over a number of game periods. You takeover the management in period 5, and could be in charge until period 18, if your company is involved in both the Early and Final Years.

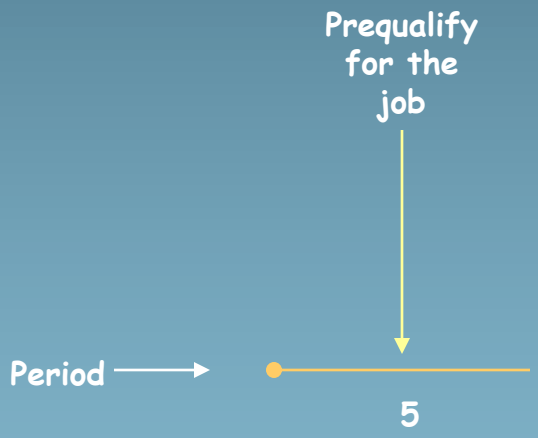
During this time a number of jobs will become available in the market, and you will prequalify, bid for and hopefully win a number of them.

You will begin progressing the jobs won in one of the game periods between 5 and 18, and the jobs can last from 2 to 5 job periods. It is important then to grasp the concept of the period of a job, as distinct from the game period.

The following example should illustrate the difference.

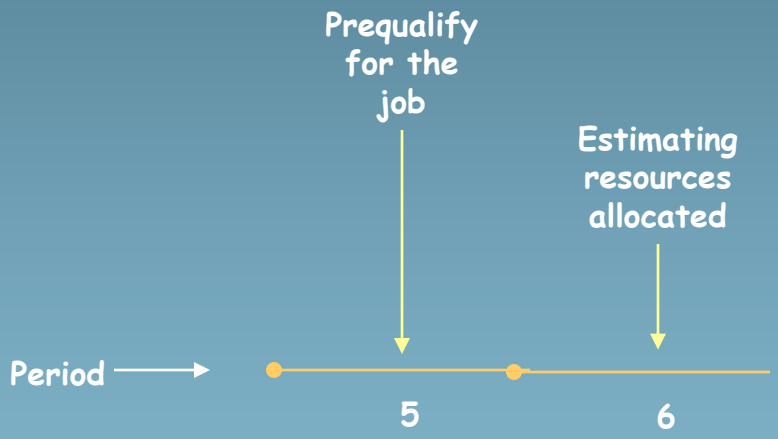
The Job Period

The company prequalifed for a job in period 5. The job had a planned duration of 4 periods.



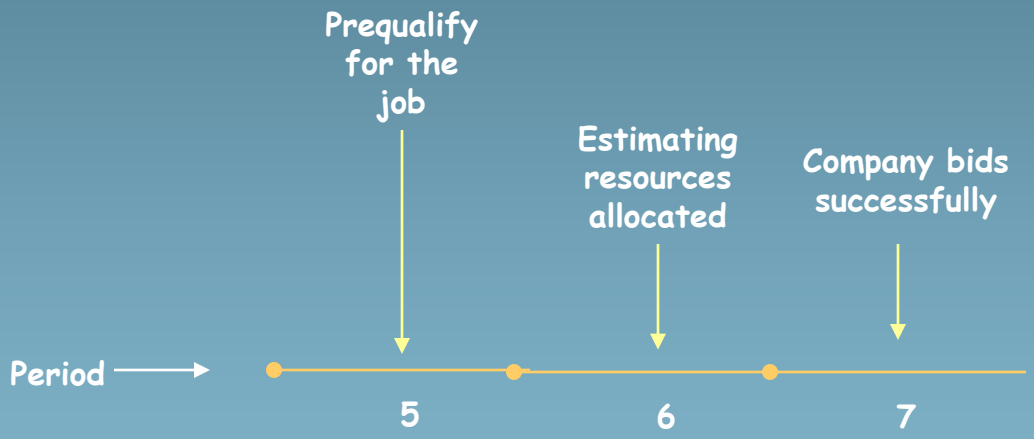
The Job Period

The company were interested in bidding for the job, so the estimating manager allocated resources to cost the work in period 6.



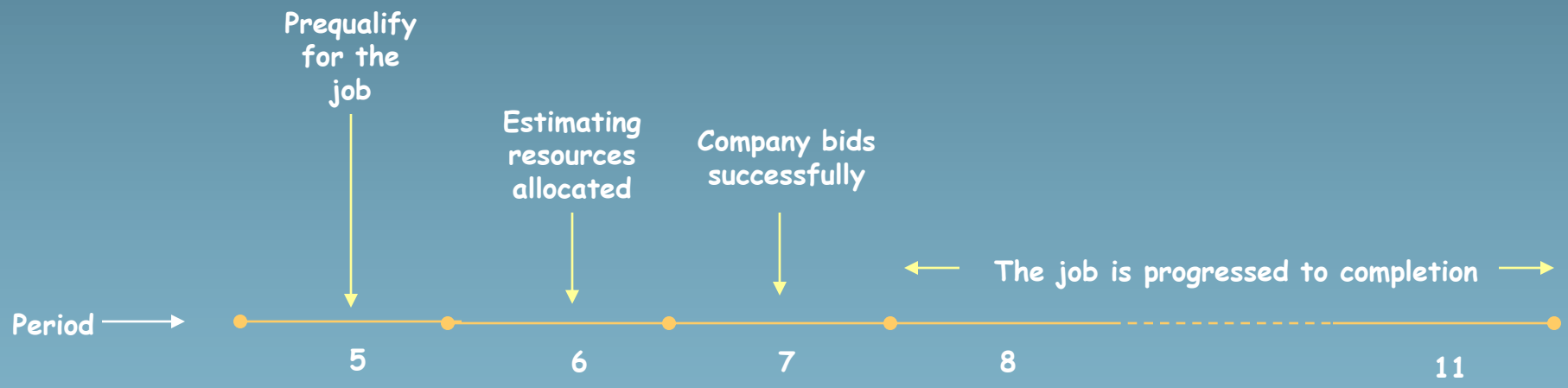
The Job Period

In period 7 the company put in a bid for the job, which was successful.



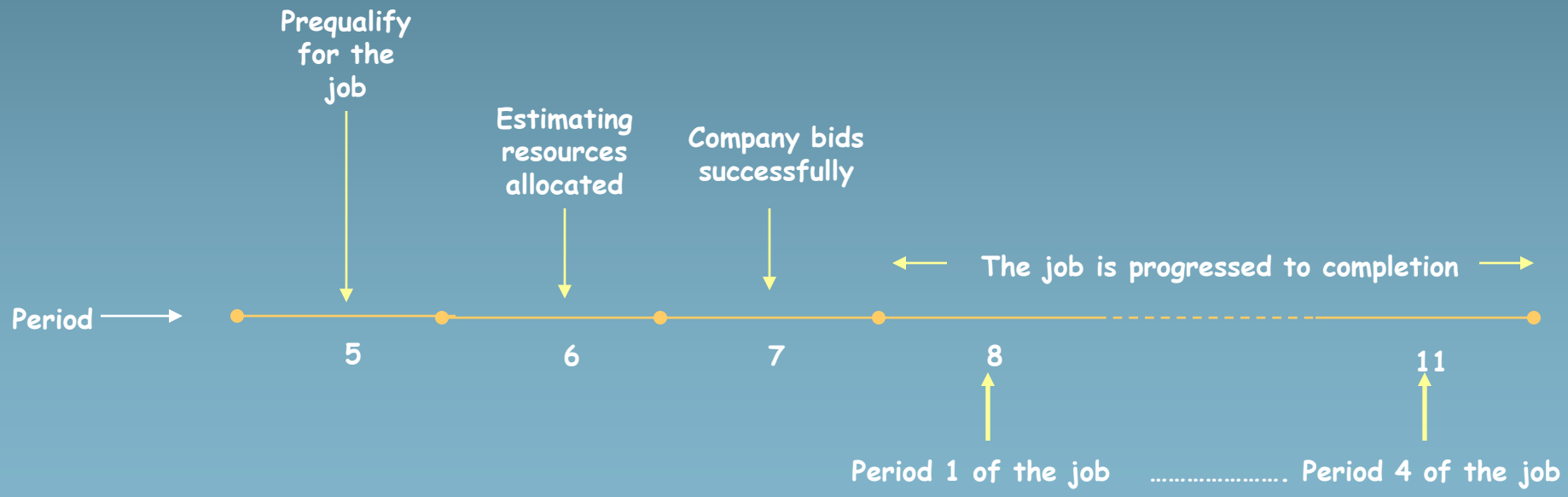
The Job Period

Work started in period 8, and the job was completed in its planned duration, 4 periods, finishing in period 11.



The Job Period

You can see now where the job period becomes relevant, since period 1 of the job is actually period 8 of the game, and period 2 of the job is period 9 of the game etc.



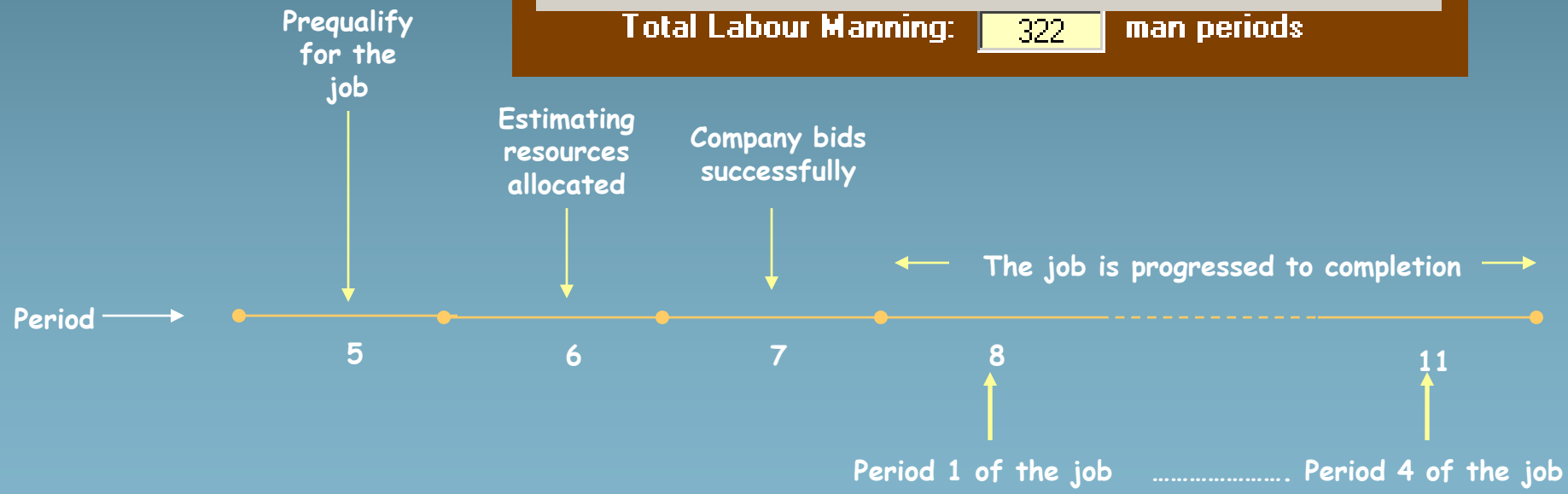
The Job Period

Close examination of the job details shows the breakdown of the costs and labour manning period by period. Since the job was a 4-period job, the breakdown is given for the 1st, 2nd, 3rd and 4th periods of the job.

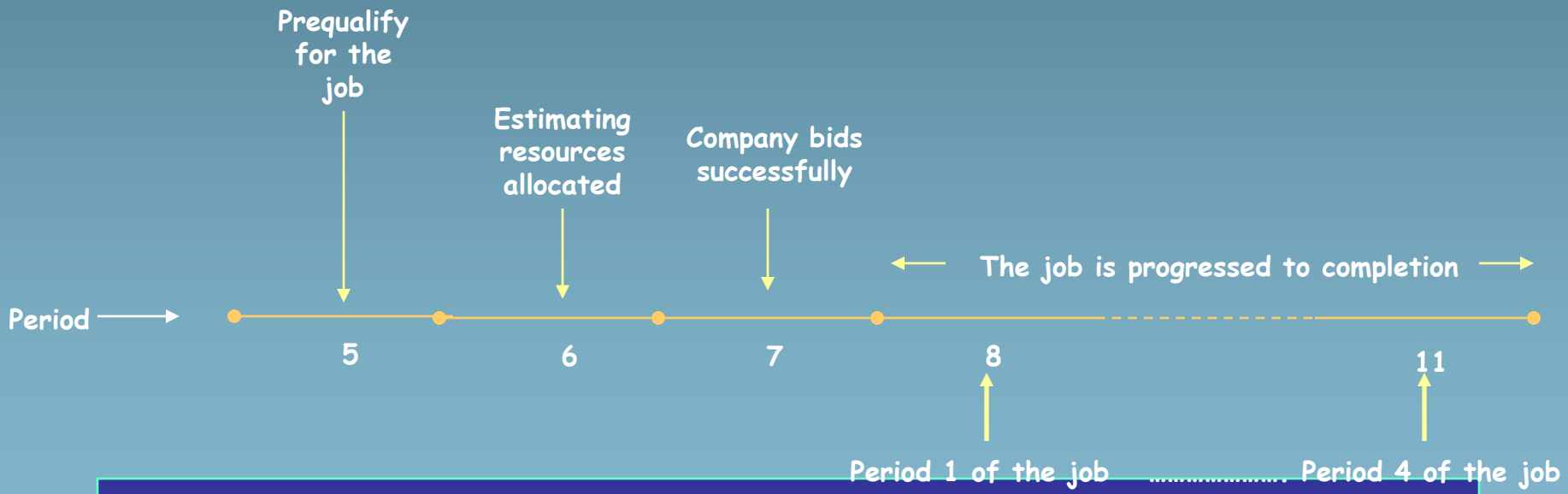
Estimated Details by Period

Job Period	Build Cost	Site Cost	Labour Manning	Expected Value	% Complete
1	1,546,837	309,368	80	1,975,217	25
2	1,856,204	371,241	97	2,370,261	55
3	1,856,204	371,241	97	2,370,261	85
4	928,102	185,620	48	1,185,130	100

Total Labour Manning: 322 **man periods**

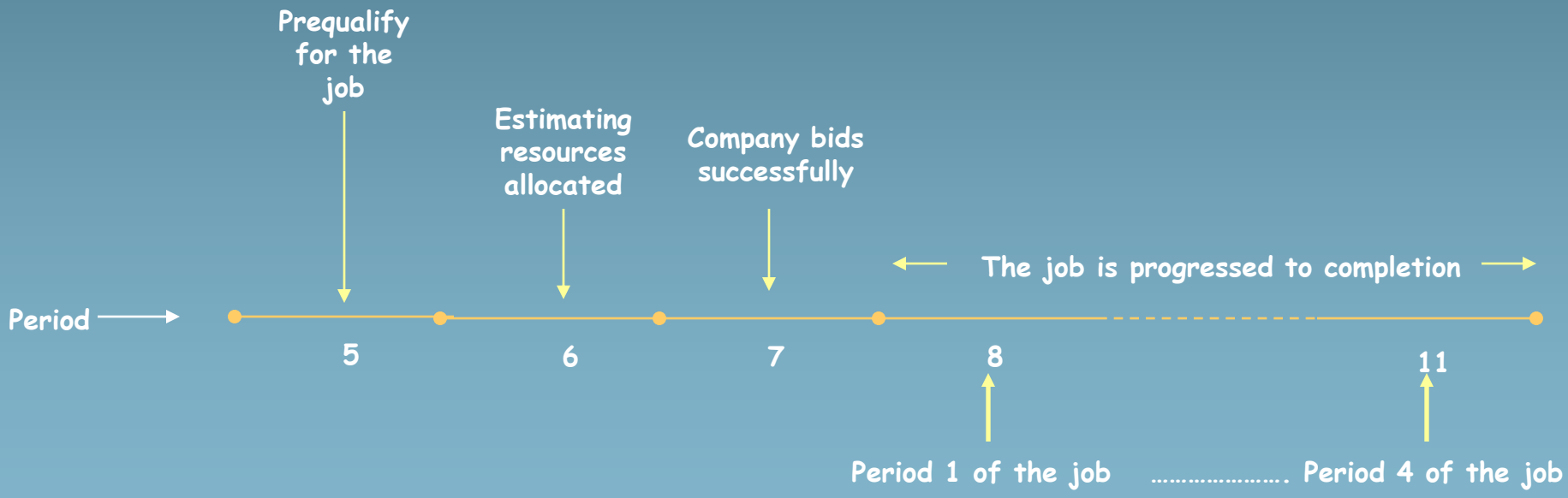


The Job Period



The Demo is now complete

The Job Period



Job Details

Keep Clicking Anywhere on the screen to advance the demo

Job Details

Job Number

A unique number that identifies a job, ranging from 1 (earliest jobs) onwards.

Period Offered

The period in which the company prequalified for the job.

Type

There are two types of job :-

- BO (Build Only); traditional type of job where the client is responsible for the design, and the contractor is only responsible for the build. A bill of quantities is available to the contractor for use during the estimating process.
- DB (Design and Build); the contractor has responsibility for both the design and build.

Sector

Each job falls into one of 5 market sectors :-

1. Industrial
2. Building and Commercial
3. Transport
4. Energy
5. Water and Sewage

Size

A job can either be small, medium or large, depending upon the value of the job.

Job Details

Approximate Value
The anticipated cost of the job rounded to the nearest million.

Complexity
How complex the construction of the job is likely to be; grade as low, medium high complexity.

Description
A brief description of what the job entails.

Duration
The duration of the job in periods (2 to 5).

Total Labour Manning
The total number of man periods required to complete the job.

Location and Distance from Head Office
Where the job is physically located, and its distance (in miles) from the company's head office.

Client
The public or private-sector organisation for whom the job is being carried out.

Job Details

The Demo is now complete

Job Details

Estimating Accuracy

Keep Clicking Anywhere on the screen to advance the demo

Estimating Accuracy

The company prequalifies for a number of jobs as a result of the effort of the Marketing Department.

If the Company intends to bid for a job, the job costs need to be determined in order to enable a sensible bid to be submitted. This is done by allocating man-weeks of estimating time to the job, and enough resources need to be allocated to produce an accurate estimate.

The Estimating Manager must decide how many man-weeks to allocate, and in doing so needs to consider two factors :-

- The anticipated estimating cost for the size of the job
- The additional estimating cost arising from the complexity of the job

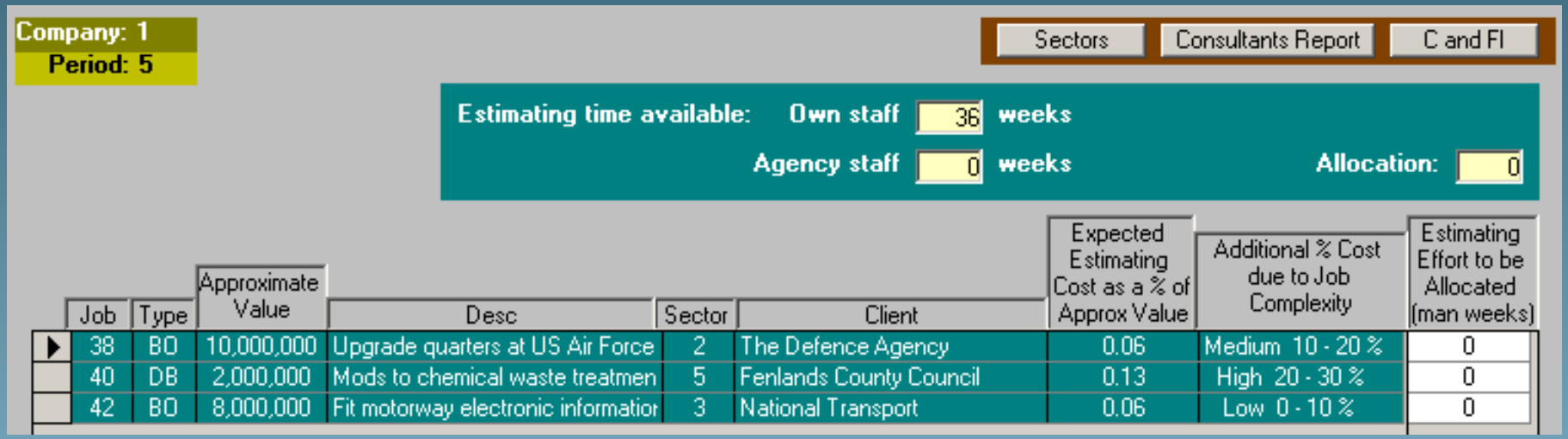
If enough estimating effort is allocated an accurate estimate will be produced, but less than the required effort will result in poorer estimates.

But how accurate is an 'accurate' estimate, and conversely how inaccurate is a 'poor' estimate ?

The following example will demonstrate these points.

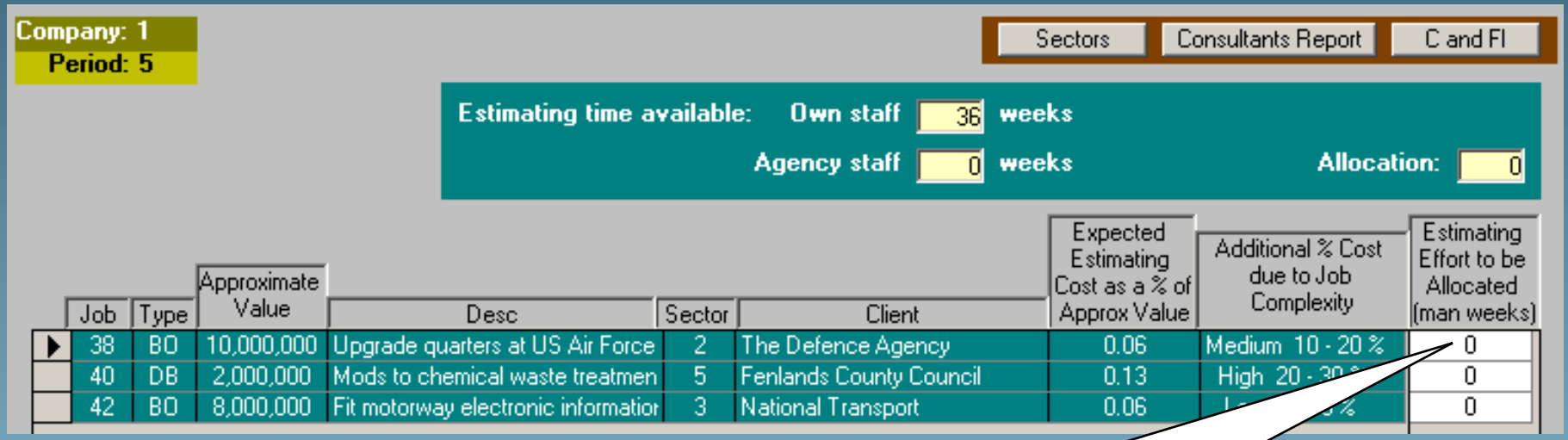
Estimating Accuracy

In period 5 the Estimating Manager must decide how much estimating effort to allocate to the following jobs.



Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
38	BO	10,000,000	Upgrade quarters at US Air Force	2	The Defence Agency	0.06	Medium 10 - 20 %	0
40	DB	2,000,000	Mods to chemical waste treatmen	5	Fenlands County Council	0.13	High 20 - 30 %	0
42	BO	8,000,000	Fit motorway electronic informatior	3	National Transport	0.06	Low 0 - 10 %	0

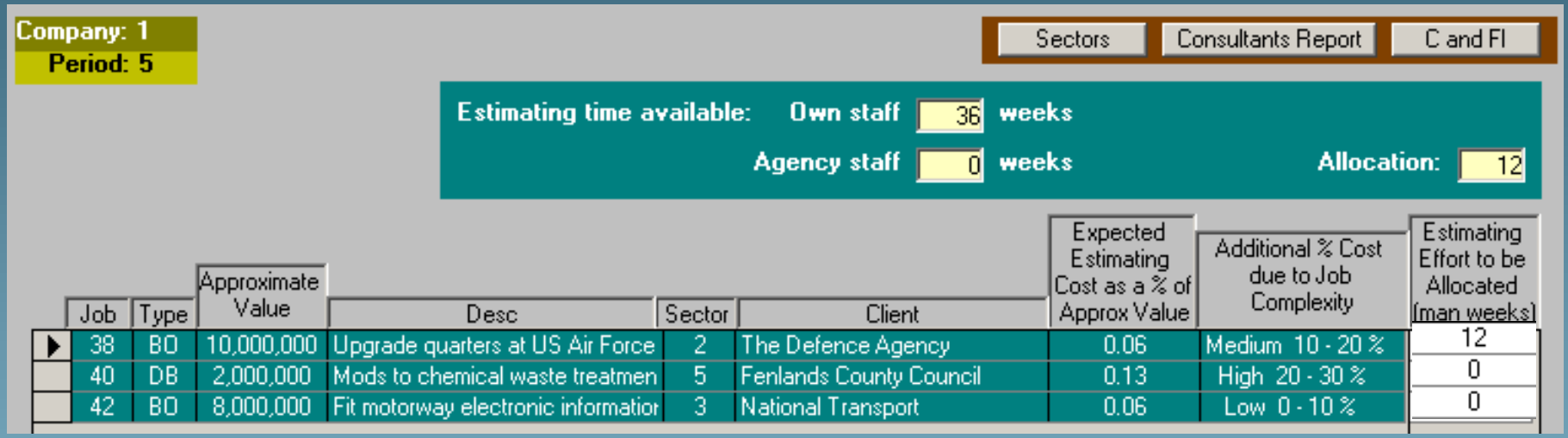
Estimating Accuracy



The Estimating Manager is **very interested** in job 38, and decides to allocate 12 weeks of estimating time.

Based on the anticipated cost, and allowing for the job complexity, 12 weeks should be enough time to produce an accurate estimate.

Estimating Accuracy



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40	DB	2,000,000	Mods to chemical waste treatmen	5	Fenlands County Council	0.13	High 20 - 30 %	0
42	BO	8,000,000	Fit motorway electronic informatior	3	National Transport	0.06	Low 0 - 10 %	0

Main Quit

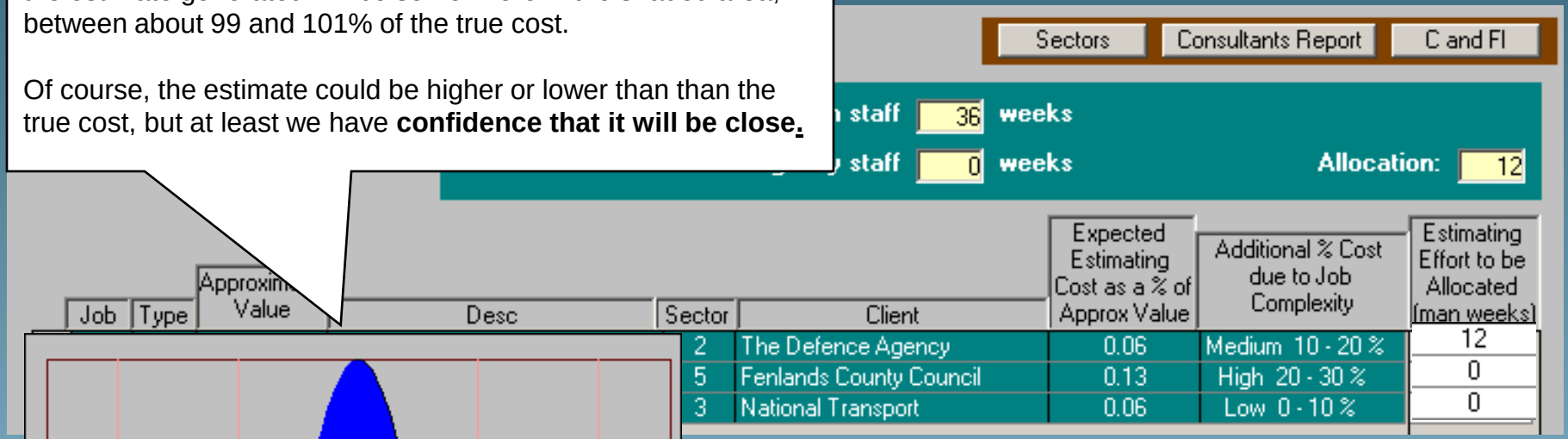
Estimating Accuracy

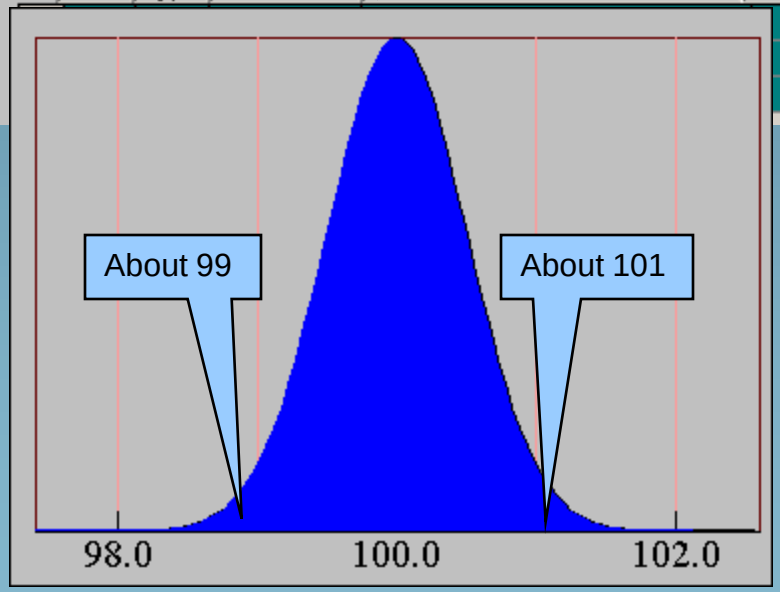
How accurate is the estimate ?

The accuracy is based upon the normal distribution shown.

If we assume that the **true costs** are represented by 100%, then the estimate generated will be somewhere in the shaded area, between about 99 and 101% of the true cost.

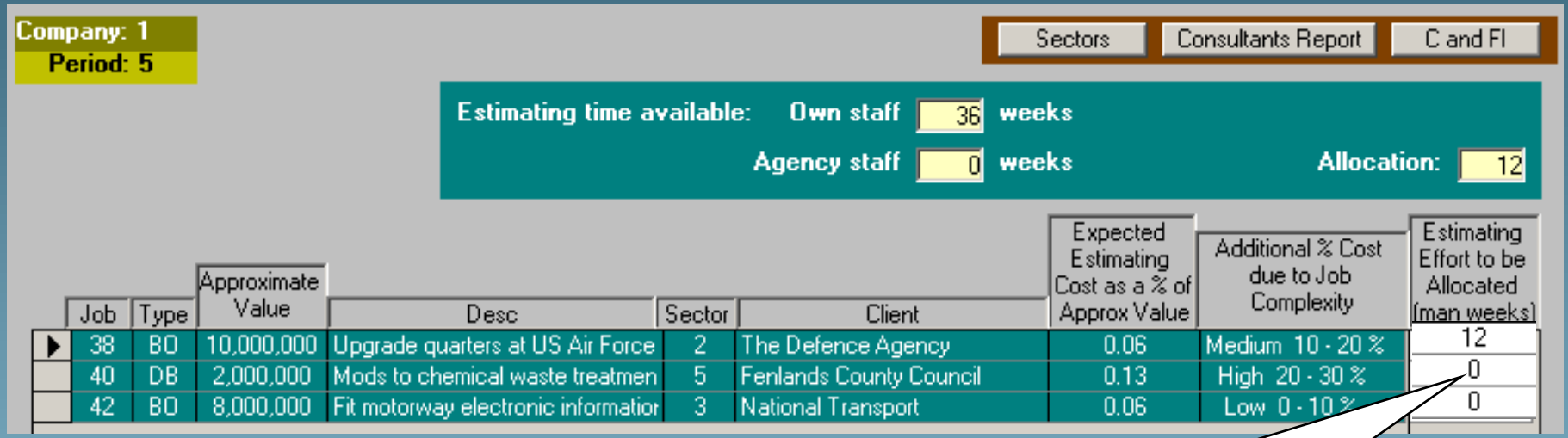
Of course, the estimate could be higher or lower than than the true cost, but at least we have **confidence that it will be close.**





Main Quit

Estimating Accuracy



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42	BO	8,000,000	Fit motorway electronic informatior	3	National Transport	0.06	Low 0 - 10 %	0

The Estimating Manager is **not so interested** in job 40, and decides to allocate only 3 weeks of estimator time to produce the estimate.

7 weeks are actually required for an accurate estimate, so the estimate **will not be 'accurate'.**

Estimating Accuracy

Company: 1
Period: 5

Sectors | Consultants Report | C and FI

Estimating time available: Own staff 36 weeks
Agency staff 0 weeks
Allocation: 15

Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
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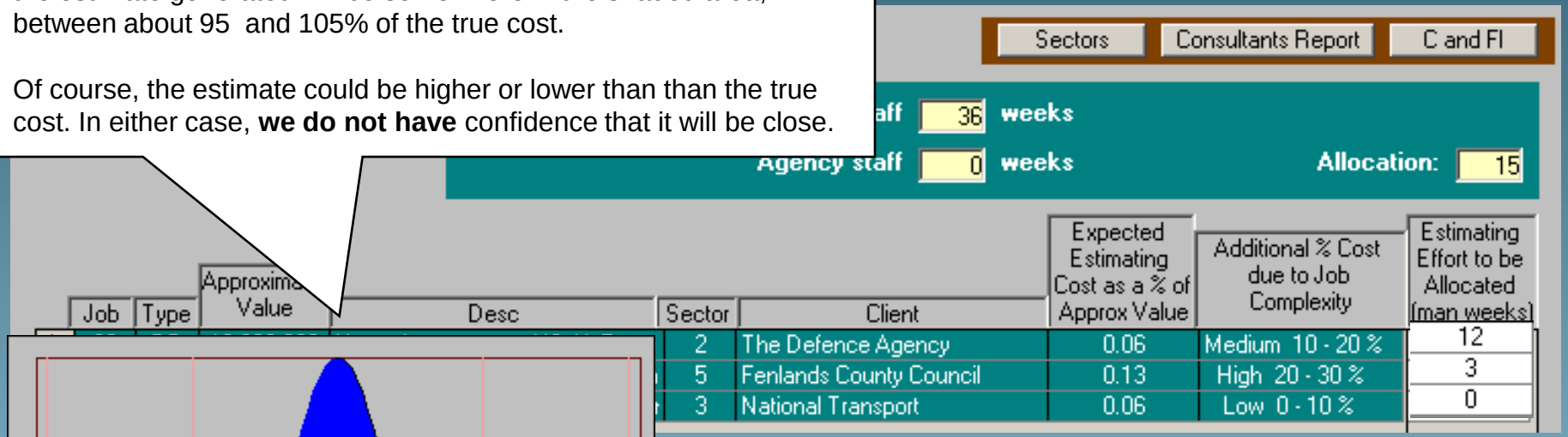
Estimating Accuracy

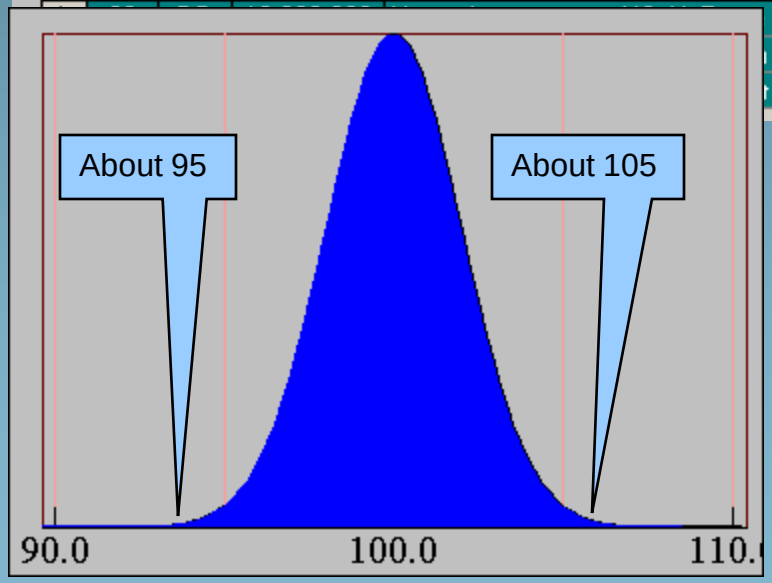
How accurate is the estimate ?

The accuracy is based upon the normal distribution shown.

If we again assume that the true costs are represented by 100%, then the estimate generated will be somewhere in the shaded area, between about 95 and 105% of the true cost.

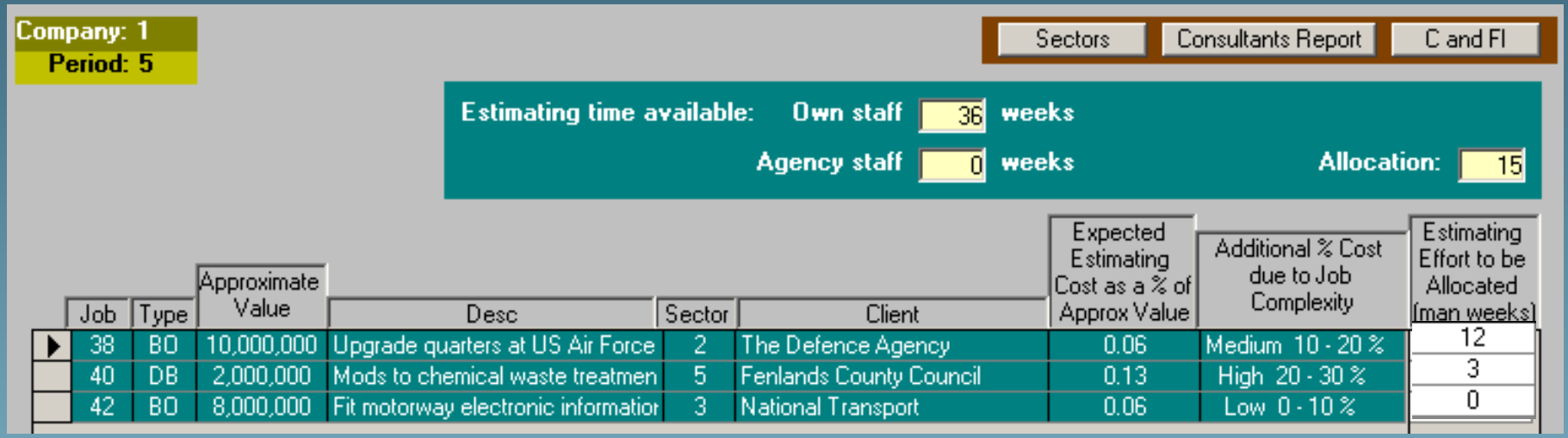
Of course, the estimate could be higher or lower than than the true cost. In either case, **we do not have** confidence that it will be close.





Main Quit

Estimating Accuracy



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The Demo is now complete

Main Quit

Estimating Accuracy

Company: 1
Period: 5

Sectors | Consultants Report | C and FI

Estimating time available: Own staff 36 weeks
Agency staff 0 weeks
Allocation: 15

Job	Type	Approximate Value	Desc	Sector	Client	Expected Estimating Cost as a % of Approx Value	Additional % Cost due to Job Complexity	Estimating Effort to be Allocated (man weeks)
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Choosing the right designer

Keep Clicking Anywhere on the screen to advance the demo

Choosing the right designer

One of the key decisions when bidding for a design & build job is the choice of the consultant to produce the design.

But why is the decision so important ?

A consultant who has expertise in designing the type of work in question can produce designs that can significantly reduce the build costs, which in turn can improve the profit margin on the job.

There are a number of consultants available, and there is no restriction on the number of design & build jobs a particular consultant can work on at any one time, but finding the consultant whose experience matches the type of work is not always easy.

Choosing the right designer

Consider the following example.

The company is submitting a bid for design & build job 34, a medium-sized building & commercial contract.

Company: 1
Period: 5

Workload Limits | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
	25	BO	City centre market rennovatior	2	South Wales County Council	Y		4,594,083		969,125	6.1	5,902,564
	31	BO	Refurbish grade II listed train s	3	Railline	Y		1,727,644		378,701	6.3	2,239,045
▶	34	DB	New operating theatre at local	2	South Wales County Council	Y	11	8,618,222	2	1,692,685	5.5	11,878,150

Choosing the right designer

No	Name	Used before
1	Avery Associates	No
2	Chester Consultants	Yes
3	Melbourne Consultants	No
4	Logan & Partners	No
5	Henry James Associates Ltd	No
6	SD Partridge Consultants	No
7	CV Godfrey Associates	No
9	Alan Armstrong Associates	No
10	Steiner Consulting Ltd	No
11	The Robotham Group	No
12	Reighton Consulting Ltd	No
13	Atlantis Strutures Ltd	No
14	James Every & Partners	No
15	Crane & Moore Design Services	No

Select

History

Teamwork, planning, communication and commitment has given the company a reputation for reliability and quality in all their designs.

The Company specialises in the design of new buildings to a very high standard, and have worked for many high-profile clients, at home and abroad.

They recently introduced a new computer system to create their designs, and are currently getting to grips with the new technology.

Consultant no 2, **Chester Consultants**, have been allocated to produce the design.

Their company profile indicates that they have a **lot of experience** in the building & commercial sector, and they appear to be an ideal choice.

They have also been **used before**, and we can look at their past performance by using the **History button**.

Choosing the right designer

Consultant: 2 **Chester Consultants**

Teamwork, planning, communication and commitment has given the company a reputation for reliability and quality in all their designs.

The Company specialises in the design of new buildings to a very high standard, and have worked for many high-profile clients, at home and abroad.

They recently introduced a new computer system to create their designs, and are currently getting to grips with the new technology.

			Factors Affecting Build Costs			Factors Affecting design Costs
Job	Status	Sector	Expertise in the Sector	Innovative qualities	% change	Expertise in the Sector
15	In First Period	Building & Commercial	reduces	no noticeable affect on	-1.53	higher than expected

Chester Consultants were used on job 15, and their expertise **reduced the overall build cost** on the job by 1.53%, quite a saving.

Design costs were higher as they charged a higher than average fee, but the build cost saving would have more than compensated for this.

Clearly Chester Consultants are worth using again.

Choosing the right designer

If the company wins the job then the design produced by Chester Consultants should ensure significant saving on the build costs, although they may be charged a slightly higher design fee than anticipated. However, the savings should easily outweigh the additional design costs.

Some of the anticipated reduction in build costs due to the quality of the design can be passed onto the client by including part of the saving as a negative amount in the on-cost, making the bid more competitive. Additional profit would still be made on the job, since only part of the expected saving is being passed onto the client.

The reduction in build cost possible for the best possible designer for the job is shown in the Company and Financial Information.

Consultants

Allocating the best possible designer to a design and build job can result in a reduction of the build costs by up to: 3

Choosing the right designer

The Demo is now complete

Choosing the right designer

Design Fee

Whilst tendering for a Design & Build job the company :-

- Estimates the likely design costs, based on average designer
- Approaches an external consultant to produce the design, should the job be awarded

If the job is won, the consultant completes the design and charges a design fee, which is payable pro-rata over the planned duration of the job.

The design fee is subject to variation from the original estimate depending upon :-

- The accuracy of the original estimate
- The expertise of the consultant in the sector of work with which the job is associated.

A top consultant would charge a higher design fee (but save on the build costs), but one without the required expertise for the job do not charge the full design fee, although additional build costs can be incurred from inferior designs.

Risk

Keep Clicking Anywhere on the screen to advance the demo

Risk

At the estimating stage, an assessment was made of potential risks occurring on a job that could cause monetary losses to the company.

The likelihood of the risk occurring **(risk level)** is classified as **None, Low, Medium or High**, and also expressed as a % chance of happening.

The **severity (cost)** if the risk hits is expressed as a % of the estimated build cost.

Risk

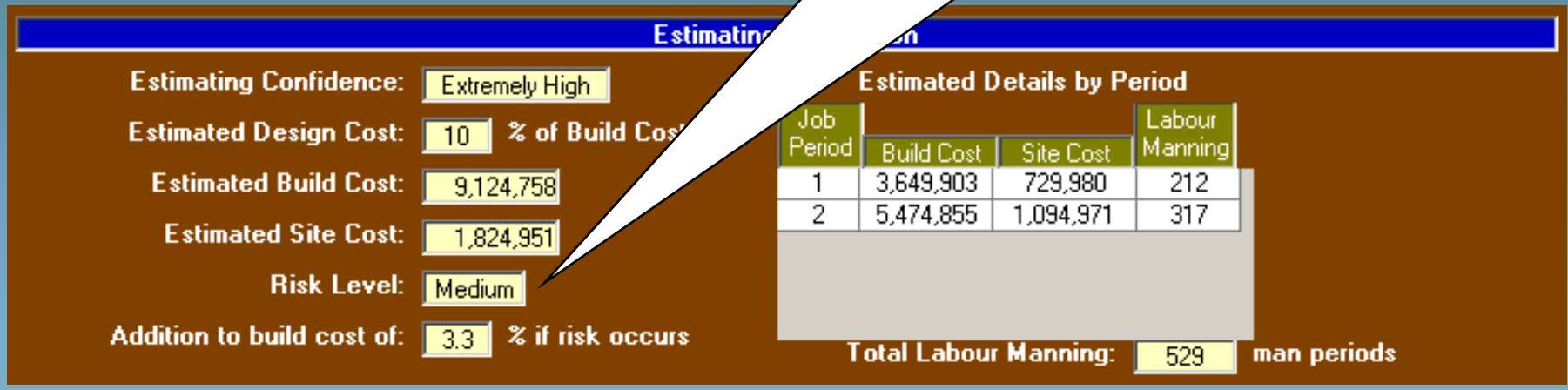
Consider job 67, a medium-sized Transport contract.

The job is classified as having **Medium** risk.

The Company and Financial Information reveals that for medium-sized contracts there is a 20-40% chance the risk will occur **at some point** during the progressing of the job.

If it does, there will be a 3.3% addition to build cost, or :-

0.033 x 9,124,758 = 301,117



Risk

Lets suppose the Company decides to bid for the job.

If the risk occurs the additional cost incurred could have serious affects on the cashflow of the Company, unless an allowance is made during the bidding stage to provide contingency for the risk.

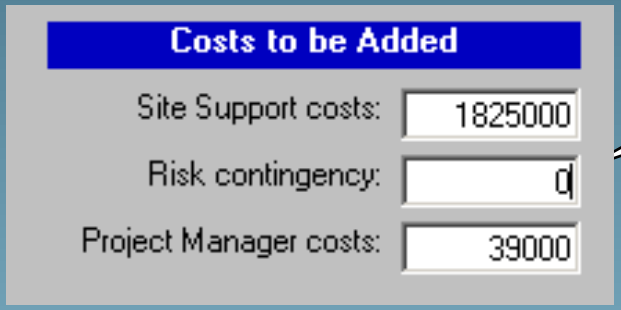
The contingency for risk forms part of the oncost, and there are 3 possible scenarios for the contingency.

Risk

Scenario 1: No risk contingency

If no risk contingency is added to the oncost then there is a good chance of the company winning the job since their bid would be lower than their competitors who have included some risk contingency.

However, if they do win the contract, and the risk occurs the additional cost could seriously affect the job profits, and adversely affect the cashflow of the company.

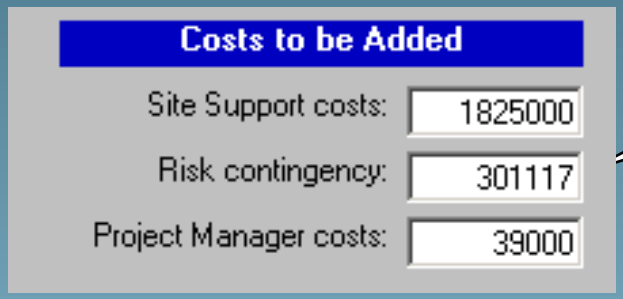


Risk

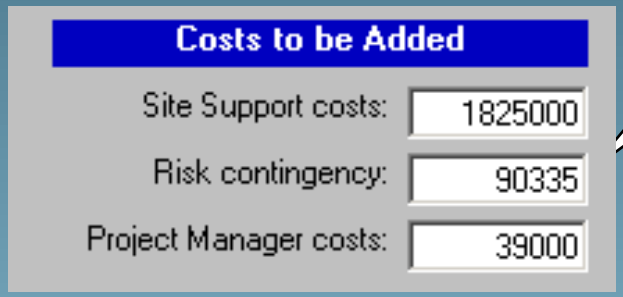
Scenario 2: Full risk contingency

If the full cost of the risk is added to the oncost then there is less chance of the company winning the job since their bid would be higher than competitors who may have included some, but not full, risk contingency.

However, if they are awarded the contract, and the risk occurs the additional cost will have been covered, and will not affect the job margin. If the risk does not occur the margin would be significantly improved.



Risk



Scenario 3: Some risk contingency

If some of the risk cost is added to the oncost then there is a fair chance of the company winning the job, and they have partly covered themselves in case the risk occurs.

Since there is a 20-40% chance of the risk occurring, it may be reasonable to cover 30% of the risk cost, or 90,335.

If the risk occurs, the company has to find the other 70% of the risk cost, or 210,782, which eats into the margin. However, if the risk does not occur then the 90,335 is additional margin.

Risk

As we have seen, the setting of the risk contingency can have significant effects on both a company's chances of winning a contract, and subsequent margins and cashflows if the job is awarded and progressed.

If a job is being progressed, and risk costs are incurred, the costs can be reduced by :-

- Employing a good project manager, who will be able to identify and address the potential effects of the risk. Conversely, employing a poor project manager may increases the risk costs.

- A good labour relations policy, using the company's own labour in preference to subcontractors and not laying off own labour. Conversely, a poor labour relations policy, with reliance on subcontractors and laying off own labour, can increase the risk costs.

- Having a well-staffed QHSE Dept.

Conversely, risk costs can be increased if the above factors are not adequate.

Risk

The Demo is now complete

Risk

Build Cost

The build cost covers all the labour, plant, material and subcontract costs incurred during the completion of a job.

During the tendering stage the company estimated the build costs, the degree of inaccuracy being governed by the amount of effort put into producing the estimate.

However, once the job commences the 'true' build costs are generated, which should be very close to the estimated costs providing that there is high confidence in the accuracy of the estimate.

The company never sees the 'true' build cost, although they can be deduced from careful examination of the job progress report.

The build costs incurred each period depend upon the level of labour allocated to the site.

Site Staff Cost

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

During the tendering stage estimates were made of the level of site cost required for the job, the degree of inaccuracy being governed by the amount of effort put into producing the estimate.

Once the job is undertaken the 'true' level of site cost needs to be paid, which should be close to the estimated cost if there was high confidence in the estimate produced.

Unlike build costs, which are automatically generated by the level of labour used on site, site costs have to be allocated by the construction manager each period. The level of site cost should be sufficient to administer the labour allocated to the site.

Paying insufficient site costs can have severe adverse affects on the productivity of the labour on site, reducing the progress of the job.

Paying additional site cost over and above the required levels can marginally improve the productivity, but the benefit is offset by the additional cost.

Successful Tendering - 1

Keep Clicking Anywhere on the screen to advance the demo

Successful Tendering - 1

Based upon the company's strategy for growth, a number of bids may be submitted in a period, but there are a number of factors that can affect the company's ability to secure the contracts ?

These tendering factors fall into 2 categories :-

- Company factors, such as the size of the company's capital base
- Job-specific factors, such as the price submitted

We'll look at each set in turn.

Successful Tendering - 1

Company Factors

Company growth, and successful tendering, is limited by :-

- The size of the company's capital base. Clients will not accept a bid from the company if they feel that the company does not have the resources to complete the job.

- The number of jobs in progress. If the company has too many job commitments, clients will reject a company's bid because they feel that the company will not be able to manage further contracts efficiently.

Successful Tendering - 1

Its period 9, and the company has bid for 3 jobs.

Will the company be able to support winning the 3 jobs, on top of any existing workload ?

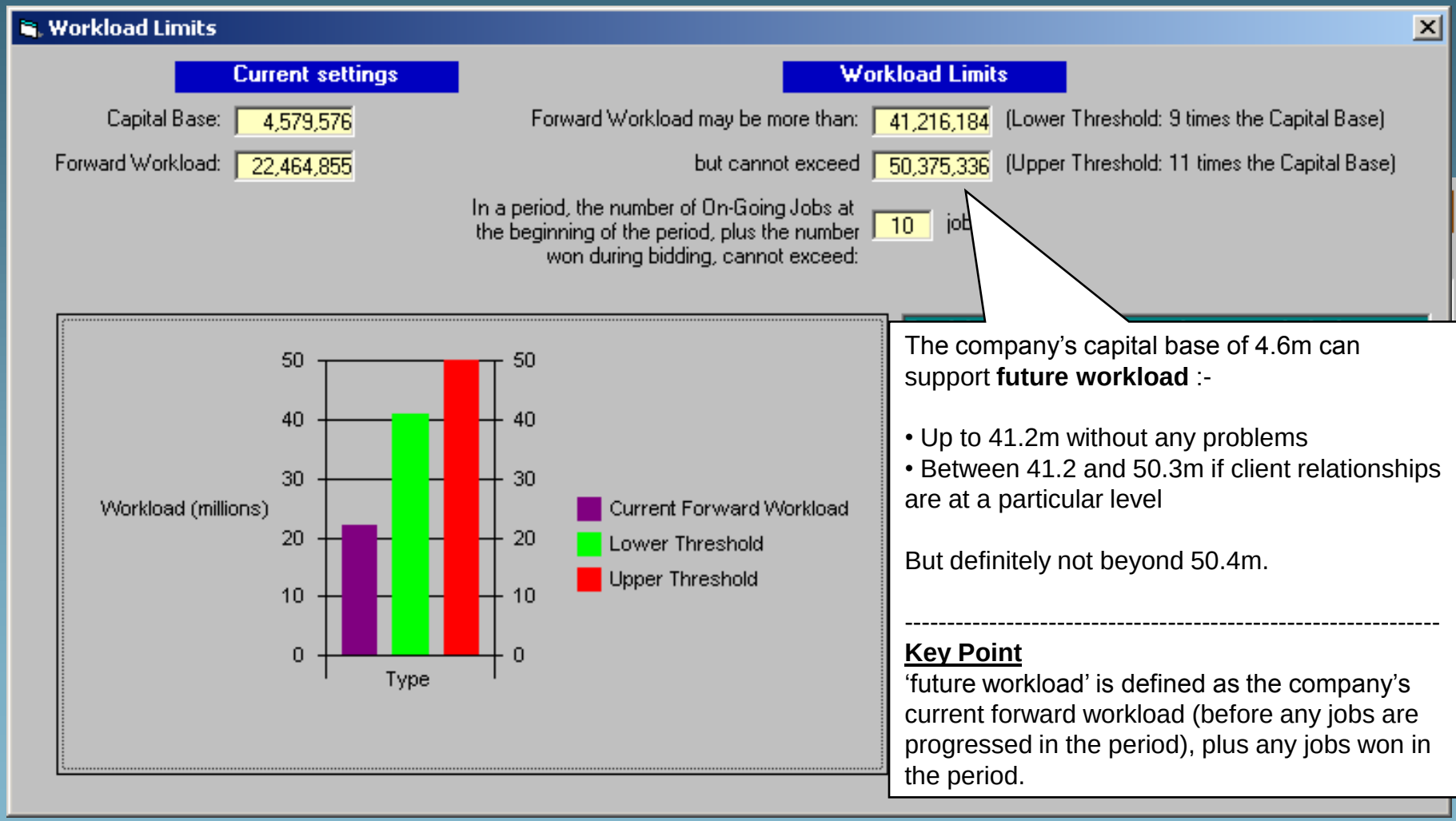
We'll use the **Workload Limits** to find out.

Company: 1
Period: 9

Workload Limits | Project Managers | Sector Descriptions | C and FI

	Job	Type	Desc	Sect	Client	Bid	Estimated Costs: Design % (of build)	Estimated Costs: Build Cost	Consultant Allocated	On-Cost	% Mark-Up	Bid Submitted
▶	64	BO	Facelift to existing stores	2	Tasty Foods	Y		3,450,304		763,000	6.6	4,491,382
	67	DB	Upgrade road link between vil	3	East Midlands County Council	Y	10	9,124,758	9	1,817,464	5.5	12,506,706
	68	BO	Upgrade of existing tram lines	3	East Midlands County Council	Y		8,606,396		1,820,000	5.5	10,999,848

Successful Tendering - 1



The company's capital base of 4.6m can support **future workload** :-

- Up to 41.2m without any problems
- Between 41.2 and 50.3m if client relationships are at a particular level

But definitely not beyond 50.4m.

Key Point

'future workload' is defined as the company's current forward workload (before any jobs are progressed in the period), plus any jobs won in the period.

Successful Tendering - 1

The current forward workload is 22.5m, and if the 3 bids were to be won the affect would be :-

- Job 64: 4.5m (cumulative workload 27m)
- Job 67: 12.5m (cumulative workload 39.5m)
- Job 68: 11m (cumulative workload 50.5m)

However, the workload limitations will affect the bidding as follows :-

- Jobs 64 and 67 could be secured since the cumulative workload would not exceed the lower threshold of 41.2m.
- If jobs 64 and 67 are won, job 68 cannot be won since the cumulative workload would exceed the upper threshold. If the lower threshold was exceeded, but not the upper threshold, the job could only be won, price permitting, if the relationship with the client is at least 'fairly good', as defined in the **Company and Financial Information**.

If a company's projected forward workload falls between the lower and upper thresholds, then the company's bid will be rejected if the relationship with the client is at least: fairly good

During the bidding process the value of any jobs won is added to the current forward workload, and a projected forward workload is being constantly produced.

If the projected forward workload exceeds the lower threshold, bids will be rejected unless the relationship with the client is at least fairly good.

If the projected forward workload exceeds the upper threshold clients WILL DEFINITELY reject the bid.

Successful Tendering - 1

The **lower and upper thresholds can be raised for the current period** by using more of the company's cash reserves to increase the capital base.

Using cash reserves in this way is the responsibility of the Financial Manager.

Workload Limits

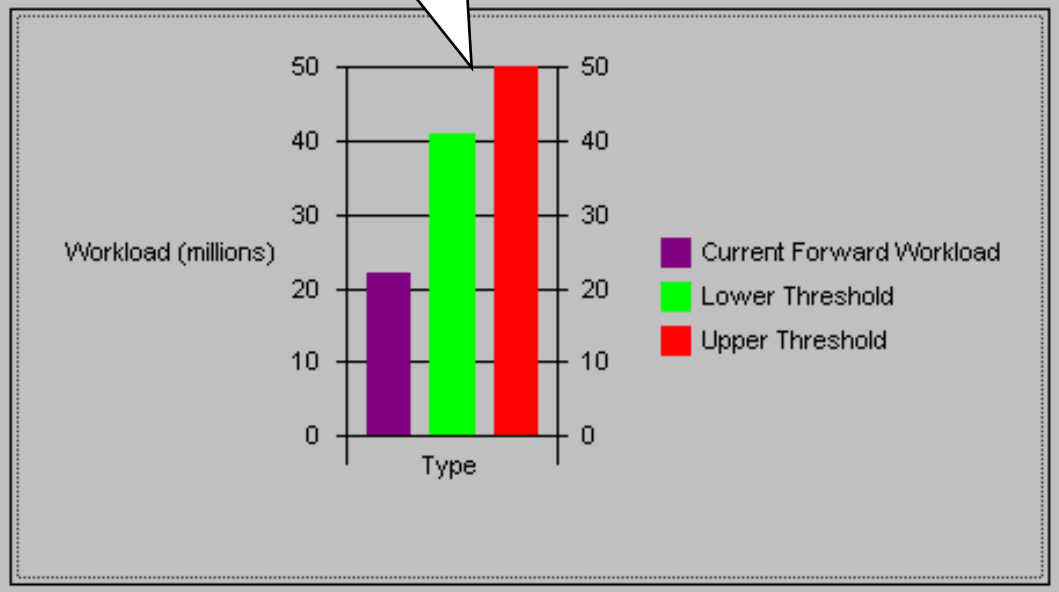
Capital Base:

Forward Workload: 22

Forward Workload may be more than: 41,216,184 (Lower Threshold: 9 times the Capital Base)

but cannot exceed 50,375,336 (Upper Threshold: 11 times the Capital Base)

In a period, the number of On-Going Jobs at the beginning of the period, plus the number won during bidding, cannot exceed: 10 jobs



Decisions on tender awards are made before any jobs are progressed in the period, so just prior to bidding the company's current forward workload is as shown.

During the bidding process the value of any jobs won is added to the current forward workload, and a projected forward workload is being constantly produced.

If the projected forward workload exceeds the lower threshold, bids will be rejected unless the relationship with the client is at least fairly good.

If the projected forward workload exceeds the upper threshold clients WILL DEFINITELY reject the bid.

Successful Tendering - 1

The current forward workload of 22.5m comprises 4 on-going jobs. If the 3 submitted bids are successful, the number of on-going jobs would be 7, still well short of the upper limit of 10.

However, in future periods the choice of jobs to tender for could well be affected by the on-going job limitation.

Limits

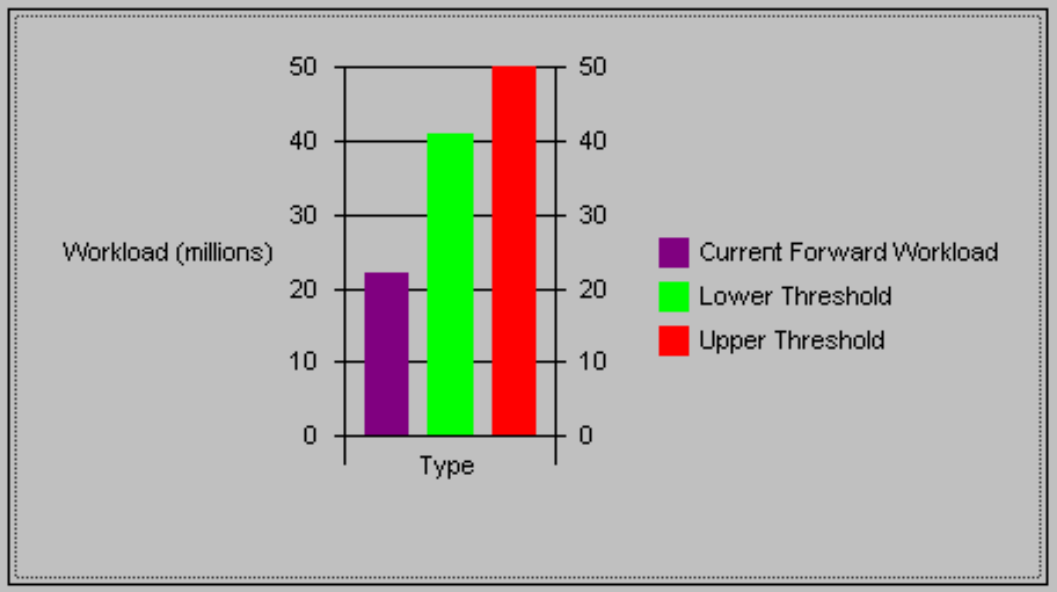
Capital Base: 4,579,576

Forward Workload: 22,464,855

than: 41,216,184 (Lower Threshold: 9 times the Capital Base)

but can... 50,375,336 (Upper Threshold: 11 times the Capital Base)

In a period, the number of On-Going Jobs at the beginning of the period, plus the number won during bidding, cannot exceed: 10 jobs



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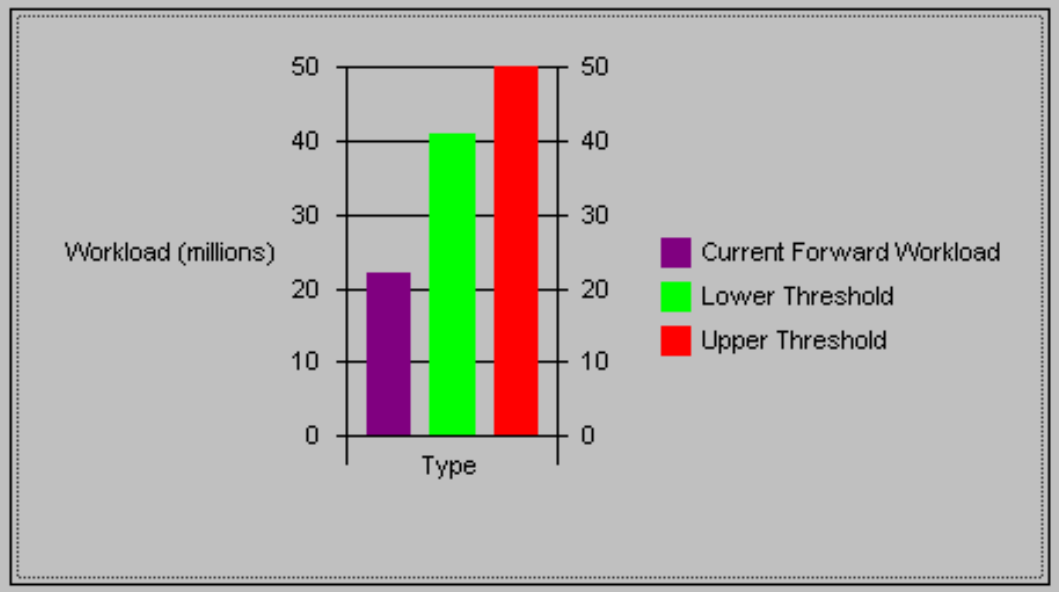
Successful Tendering - 1

Workload Limits

Current settings		Workload Limits		
Capital Base:	4,579,576	Forward Workload may be more than:	41,216,184	(Lower Threshold: 9 times the Capital Base)
Forward Workload:	22,464,855	but cannot exceed	50,375,336	(Upper Threshold: 11 times the Capital Base)
		In a period, the number of On-Going Jobs at the beginning of the period, plus the number won during bidding, cannot exceed:	10	jobs



Decisions on tender awards are made before any jobs are progressed in the period, so just prior to bidding the company's current forward workload is as shown.

During the bidding process the value of any jobs won is added to the current forward workload, and a projected forward workload is being constantly produced.

If the projected forward workload exceeds the lower threshold, bids will be rejected unless the relationship with the client is at least fairly good.

If the projected forward workload exceeds the upper threshold clients WILL DEFINITELY reject the bid.

Successful Tendering - 2

Job-Specific Factors

If the Client does not immediately reject the company's bid because of company factors, then job-specific factors may prevent the Company from being awarded the contract.

These can be summarised as :-

- The price submitted
- The relationship with the job client

We'll look at them in more detail.

Successful Tendering - 2

In the early years the company is always bidding against a computer-simulated rival company.

In the final years the company bids against both the computer-simulated rival company and the other companies that are involved the final years, so the competition is far more fierce.

In either case there is some competition.

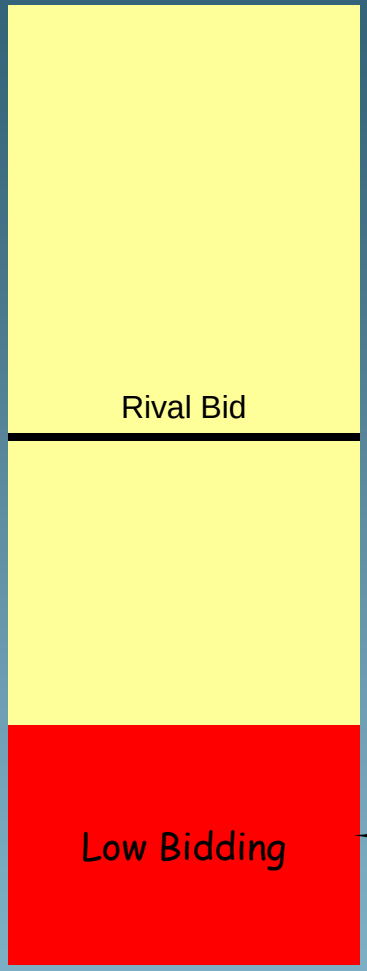
Successful Tendering - 2

Rival Bid

Consider the following example in the Early Years.

The rival bid is as shown

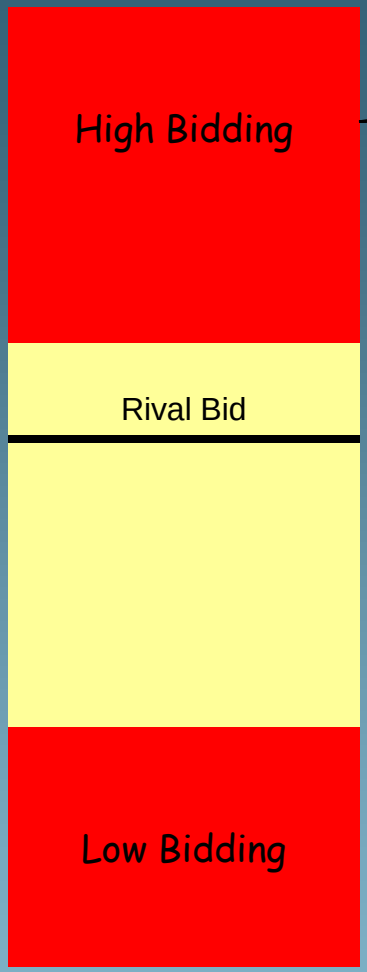
Successful Tendering - 2



Low Bidding

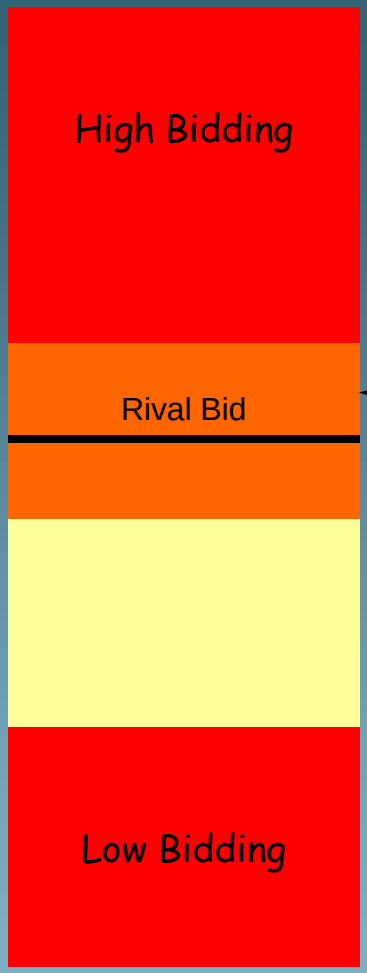
If the company's bid is too far below the rival bid, the client will reject the company's bid on the grounds of **low bidding**, believing that the quality of the work will be undermined because the company cannot possibly complete the project without cutting costs.

Successful Tendering - 2



High Bidding
If the company's bid is too far above the rival bid, the client will reject the company's bid on the grounds of **price**.

Successful Tendering - 2



Client Relationship

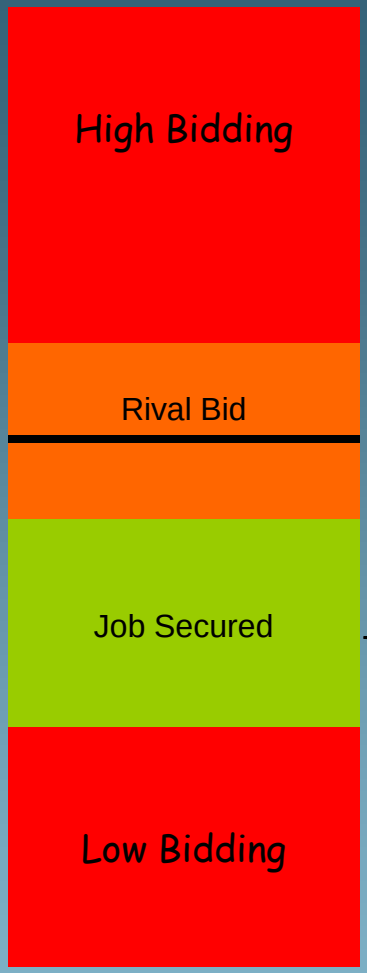
If the company's bid is within a certain % of the rival bid, the contract is awarded to the company if they have a better client relationship than the rival company.

The company's client relationship is based on a number of factors, such as :-

- The quality of previous tenders submitted to the client
- How well the company has managed previous contracts with the client

Note that your rivals improve their relationships with each client as each period passes, so bidding for a job with a client with whom you have not formed a reasonable relationship might prove unsuccessful if the bids are very close.

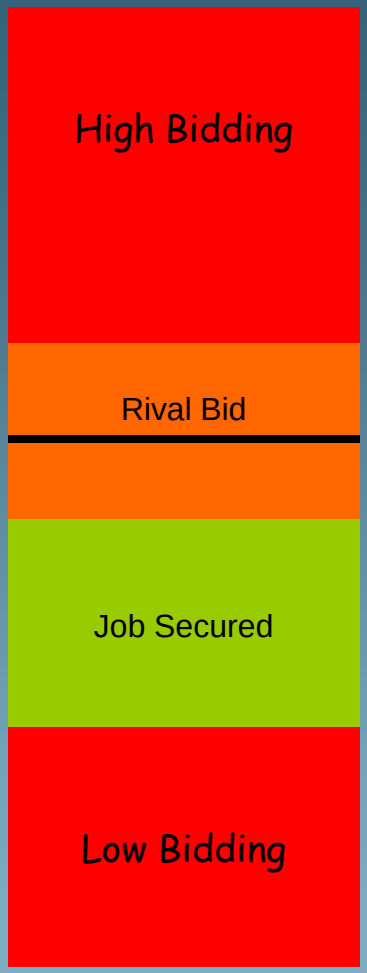
Successful Tendering - 2



‘Safe’ area

If the company’s bid falls outside the other ranges, then the job will definitely be won.

Successful Tendering - 2



Submitting a Bid for a Job

The bid (or planned value) to be submitted to the client consists of :-

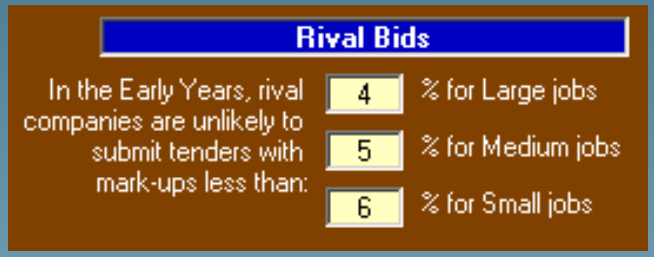
Mark-Up	The margin to be made by the job, expressed as a percentage of the sum of the Build, Design and Oncost. It is one of the company's critical decisions because it affects the job's gross profit. The gross profit is required to fund the company related costs not covered in the individual jobs, such as head office overheads, increases to the company capital base and paying dividend to shareholders.
On-Cost	An additional allowance to cover costs not covered by the estimated build and design costs, which should include :- • (+) Site costs • (+) Contingency for Risk • (+) Project Manager Costs • (-) an allowance to represent the anticipated savings on the build cost due to the design produced by the consultant
Estimated Build Cost,Design Cost and Consultant designer	The estimated build and design costs (D&B jobs only) are determined by the estimators. They cannot be altered during bidding.

Mark-Up that may secure a job

The markup, or margin included in a submitted bid is one of the company's critical decisions because it affects the job's gross profit. The gross profits on all jobs are required to fund the company related costs not covered in the individual jobs, such as company overheads and dividend payments to shareholders.

Considerable care is required at the bidding stage in coming to a decision on mark-up, and assuming that the oncosts are set at appropriate levels, what level of mark-up would be likely to secure a job ?

This information is given in the Company and Financial Information, by job size.



The mark-up given is the minimum that the computer (rival company) is likely to include in its bid, and a useful benchmark in the Early Years for setting mark-ups.

However, bear in mind that :-

- The level given may not be higher enough to satisfy the long-term profit requirements of the Company, and a higher level may be needed
- In the Final Years other companies, as well as the computer, are bidding for the same job, and their mark-up strategy is unknown. Indeed, lower margins may be entered to try and secure work in a more competitive environment.

Rival Bid

In both the early and final years there is always competition for the available jobs from a computer-simulated company.

In the early years the computer is the only rival, but in the final years the other competing teams provide tendering competition, and securing work becomes far harder.

The computer bid has certain characteristics :-

- It is based on accurate estimates of build and design costs.

- The oncost element includes :-
  Sufficient site costs, adequate risk contingency and allowance for a reasonable project manager (including salary and recruitment charges)
  If the job is design & build, then it is assumed that the consultant allocated will produce a design that reduces the build costs, and some of the reduction is passed onto the client by taking money off the the oncost. The reduction can be up to 1% of the estimated build cost.

- The markup is at least at the level shown in the Company and Financial Information, dependent upon the size of the job

Bearing in mind these factors the computer bid is always competitive, and acts as a stabilising influence on the bidding process i.e., bids submitted with markups that are too high will be rejected by the client in favour of the computer-simulated company. Conversely bids that are much lower than the computer bid will also be rejected, since the client does not believe you can produce a quality job at the price suggested.

Forward Workload and Margin

The **forward workload (or potential turnover)** on a job is the remaining value to be recovered from the present time until the job has been completed.

If a job is 40% complete then a further 60% of the job's value, the submitted bid, has not not yet been recovered from the client, and forms the forward workload.

In this scenario 60% of the job's 'true' remaining cost has not been incurred, and the difference between the remaining value and cost is referred to as the **forward margin**.

Forward workload and margin are two of the key performance indicators upon which a company's progress is measured.

Key point for progressing jobs

Progressing jobs to completion is often a complex task, and the decisions that have to be made are often the result of the strategies adopted in other areas.

For example, if the company has an aggressive tendering policy, and secures a large number of profitable new contracts in a particular period, this can cause problems when it comes to adequately resourcing the new and existing jobs.

More work normally means more labour, and the company may have a significant shortfall of its own fully-trained labour. This would then require decisions on how to overcome the shortfall, by taking on new recruits into the company's own direct workforce, or using subcontractors. An alternative policy may even be to deliberately delay jobs in the short-term, but this can affect the relationship with the clients.

Some of the key issues are dealt with in the following demos.

- Labour used to progress a job
- Attempting to complete jobs early
- What happens if a job overruns ?
- The choice of taking on new recruits or subcontractors to overcome labour shortfalls
- The factors that can affect labour relations
- Setting varying levels of site administration cost

Labour used to progress a job

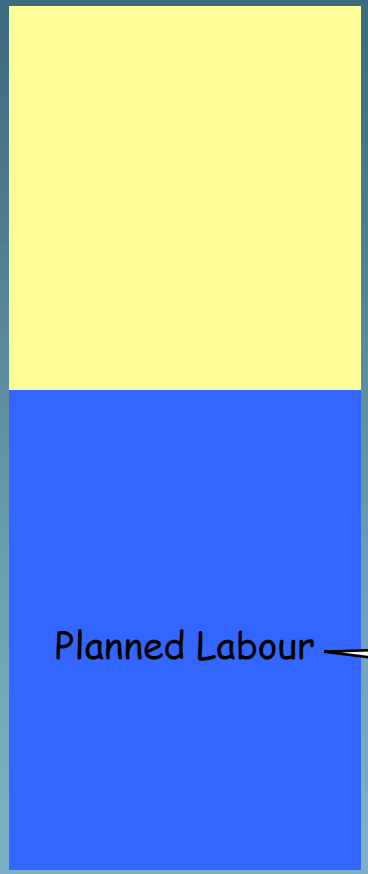
Keep Clicking Anywhere on the screen to advance the demo

Labour used to progress a job

To progress jobs the Construction Manager must allocate labour to the site, and in doing so there are a number of alternatives available.

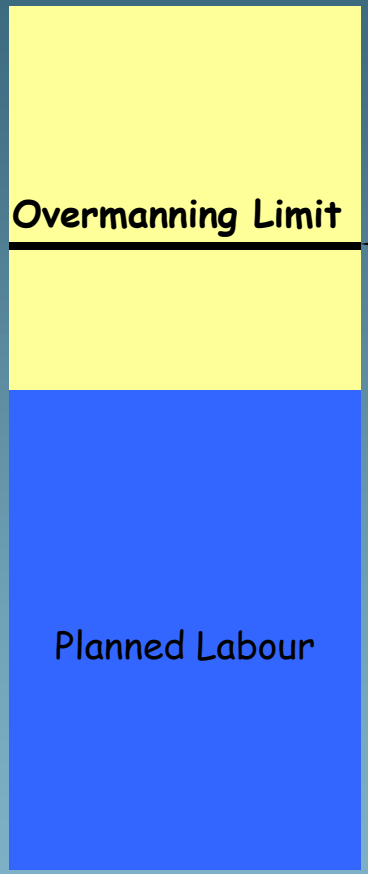
The following example should demonstrate the choices, based upon a job within its planned duration.

Labour used to progress a job



Planned Labour
The planned labour level for the period was estimated during tendering in order to complete a contract on time.

Labour used to progress a job



Overmanning limit

Based upon the job sector, and the overmanning limits shown in the **Company & Financial Information**, the **permitted level of effective labour** that can be allocated without any detrimental affect on performance is as shown.

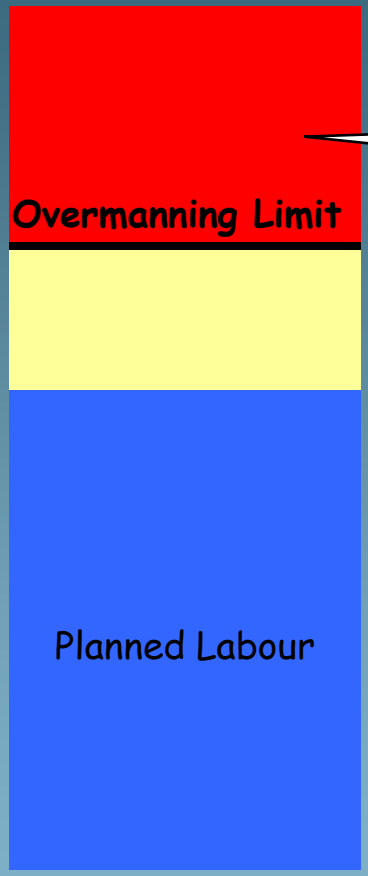
The **effective labour** at this point is the total labour allocated less the ineffective labour due to the **training** of the company's new recruits.

Overmanning Limits

The effective labour overmanning that is allowed above the planned labour levels in a period is:

35	% for Industrial jobs
35	% for Building and Commercial jobs
45	% for Transport jobs
18	% for Energy jobs
25	% for Water and Sewage jobs

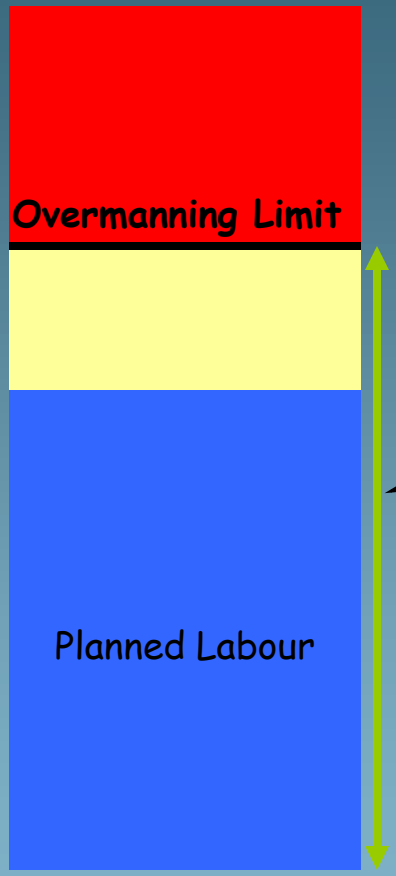
Labour used to progress a job



Above the overmanning limit

After taking into account the training of new recruits, any labour above the permitted level of overmanning is classed as ineffective labour.

Labour used to progress a job



Job Progression

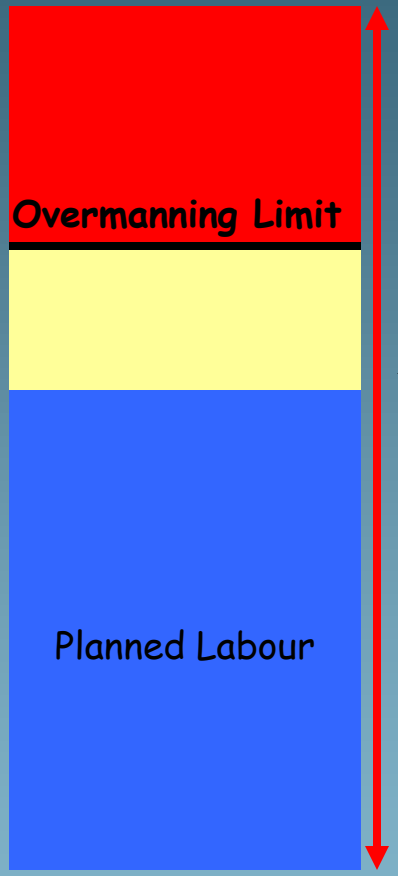
Its **only the effective labour** that contributes to progressing the job.

As a rough guide, if the effective labour is 30% of the total labour required to complete a job, 30% of the job's value (original bid) should be earned from the client.

However, there are numerous other factors that can affect the measured value recovered, including :-

- The quality of the project manager on the site
- Morale of the company's own labour
- The level of site admin allocated
- Measurement effort across the company

Labour used to progress a job



Build costs

Both the effective and ineffective labour contribute to the build costs.

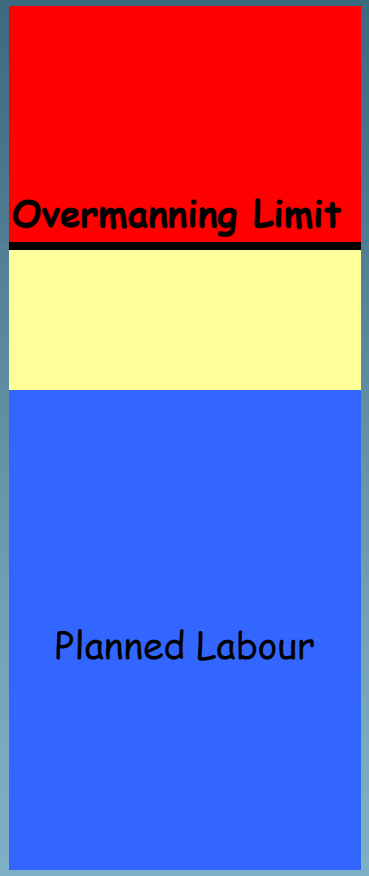
As a rough guide, if the effective labour is 30% of the total labour required to complete a job, 30% of the job's total build costs will be incurred.

The ineffective labour incurs labour costs only, which are incorporated in the build costs.

There are numerous other factors that can affect the overall job costs, including :-

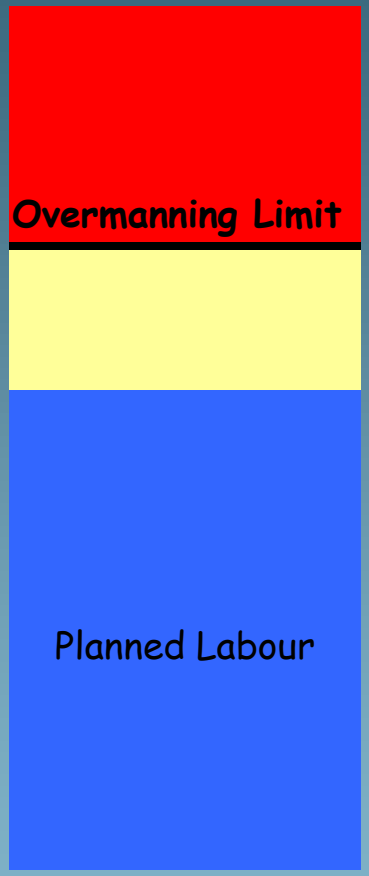
- project manager salary
- site administration costs
- training cost for new recruits
- risk
- Head Office and QHSE effort across the company

Labour used to progress a job



The Demo is now complete

Labour used to progress a job



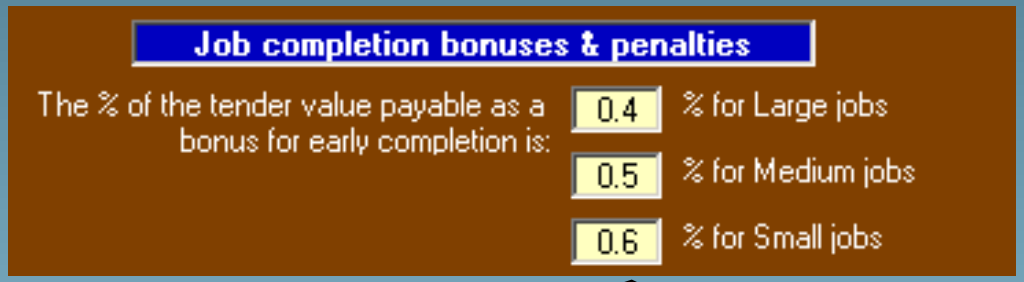
Trying to complete a job early

Keep Clicking Anywhere on the screen to advance the demo

Trying to complete a job early

Trying to complete a job **early** has a number of benefits to the company, including :-

- The client may pay a bonus for early completion (see below).
- The company's own labour that was being used on the completed job can be used on other sites, preventing the need to take on new recruits, or perhaps having to use more costly subcontractors.
- The company's capital assets (plant, buildings etc) being used on the job can be diverted elsewhere.
- Cashflows are improved



Early completion of a job means **completing at least one period before the end of the planned duration** e.g., if the planned duration is 4 periods, it must be completed in 3 periods or less to obtain the client bonus.

The bonus paid by the client varies depending upon the job size.

Trying to complete a job early

To complete a job early the Construction Manager needs to refer to the sector-based overmanning limits given in the **Company and Financial Information** **(shown below).**

For example, consider a Building & Commercial job that has a planned duration of 3 periods, and that can be overmanned by up to 35%. If the Construction Manager follows the overmanning guidelines, the completion schedule should be as follows :-

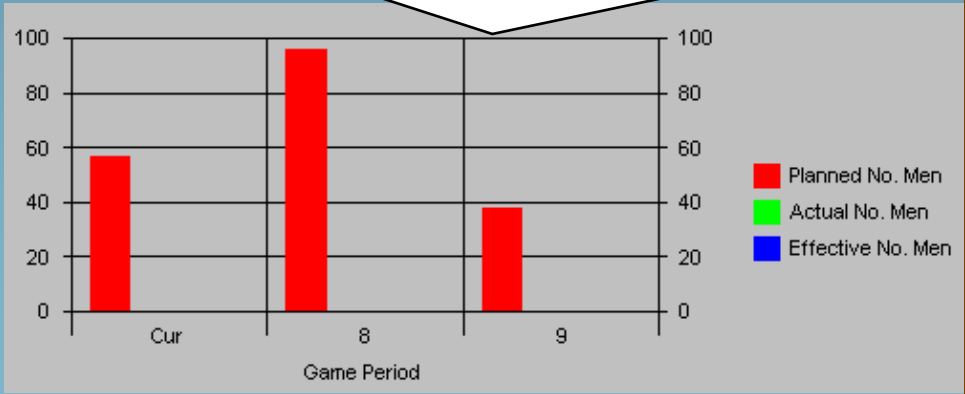
Period	Planned Labour	Actual Labour	% overmanning	Cumulative Labour
1	57	77	35 %	77
2	96	114	19 %	191
3	38			

	191			

The job should complete a period early, securing a bonus from the client.

Key Point

Overmanning above the limits results in ineffective labour that does not contribute to the progress of the job, but incurs labour costs.



Overmanning Limits

Overmanning Limits

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35	% for Industrial jobs
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45	% for Transport jobs
18	% for Energy jobs
25	% for Water and Sewage jobs

Trying to complete a job early

But what happens if the Construction Manager attempts to complete the job early, but is not able to do so ?

This may occur if a job is not overmanned enough, or 'ineffective labour' resulting from the training of new recruits into the company's workforce delays the anticipated progress of the job.

In this scenario, the job would enter its final planned period ahead of schedule, and the Construction Manager must be very careful about setting the labour level, since the planned level cannot be relied upon.

Trying to complete a job early

Consider the following job, which has a planned duration of 3 periods, and is in its final planned period.

The Job Details button shows :-
- The planned % complete after each period (Procurement tab).
- The actual % of work completed to date (Job Progress tab).

The job was overmanned in its first period to try and complete the job early, but this strategy was only partially adhered to in its second period due to staffing shortfalls on other jobs. The net result is that overall the job is ahead of schedule going into the final planned period, and is currently 95.3% complete, as opposed to the planned % complete after 2 periods of 80%.

The Construction Manager needs to allocate less than the planned level of labour (38 men) in the job's final period to enable the job to complete at the end of its final period. If the full 38 men are allocated, the job will complete before the end of the period, and additional labour costs will be incurred until the period end.

Since there is 5% of the job left to complete, the labour level required is 5% of the total labour (191), or 10 men (rounded up), well short of the planned level of 38.

Estimated Details by Period

Job Period	Build Cost	Site Cost	Labour Manning	Expected Value	% Complete
1	2,051,213	410,242	57	2,622,905	30
2	3,418,689	683,738	96	4,371,508	80
3	1,367,476	273,496	38	1,748,603	100

Total Labour Manning: 191 man periods

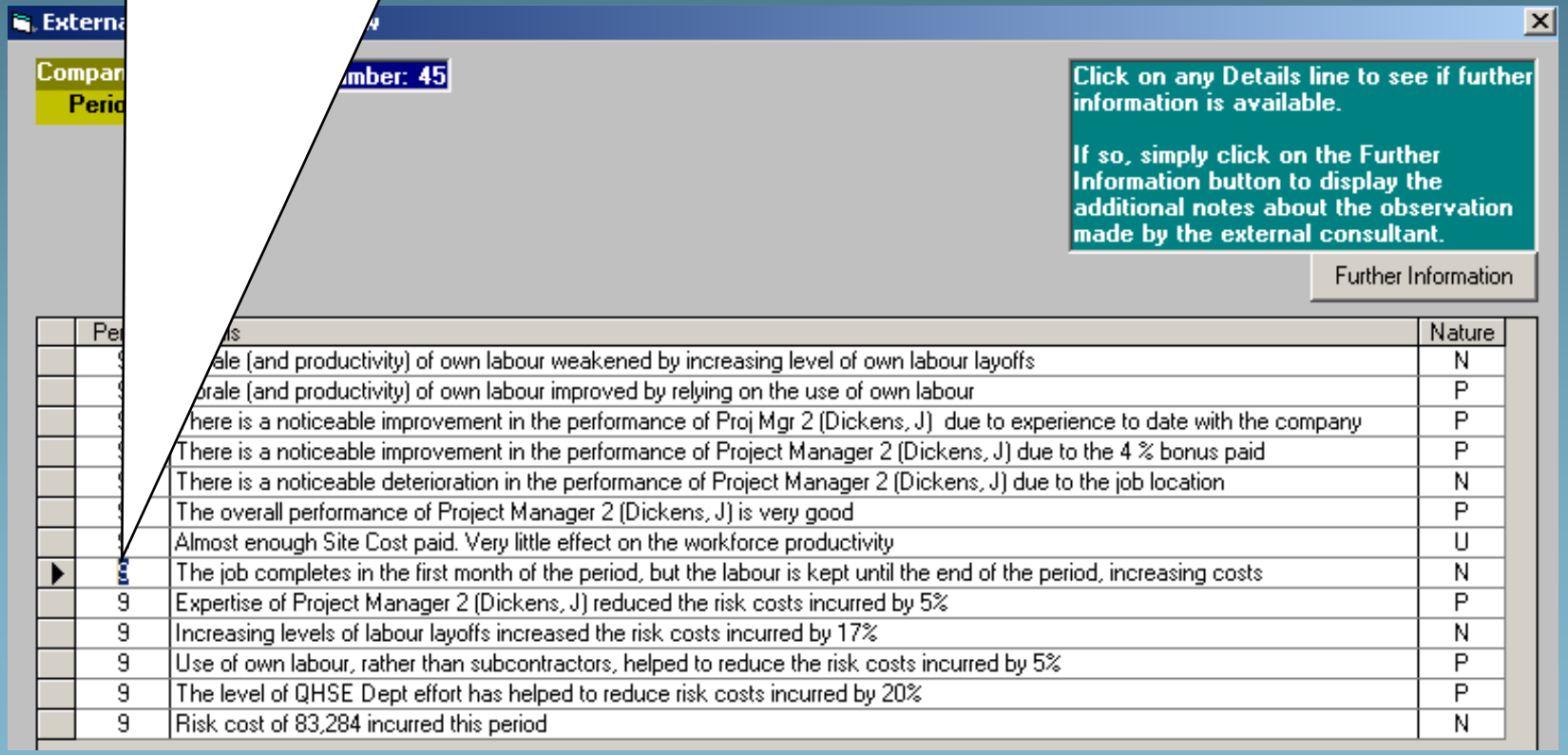
Cumulative Analysis

Total Value:	8,330,122	
Total Cost:	7,849,037	
Gross Profit:	481,085	6.1 % of costs
% complete	95.3	**Ahead of Schedule**

Trying to complete a job early

If the planned level of 38 men was allocated, the job would have completed very early in the period, with the following affects (ref: **External Performance Review**) :-

- An **increase in costs** as ineffective labour was retained until the end of period.
- **Inefficient use** of ineffective labour that could have been used elsewhere.



Pe	ls	Nature
	ale (and productivity) of own labour weakened by increasing level of own labour layoffs	N
	orale (and productivity) of own labour improved by relying on the use of own labour	P
	here is a noticeable improvement in the performance of Proj Mgr 2 (Dickens, J) due to experience to date with the company	P
	There is a noticeable improvement in the performance of Project Manager 2 (Dickens, J) due to the 4 % bonus paid	P
	There is a noticeable deterioration in the performance of Project Manager 2 (Dickens, J) due to the job location	N
	The overall performance of Project Manager 2 (Dickens, J) is very good	P
	Almost enough Site Cost paid. Very little effect on the workforce productivity	U
	The job completes in the first month of the period, but the labour is kept until the end of the period, increasing costs	N
9	Expertise of Project Manager 2 (Dickens, J) reduced the risk costs incurred by 5%	P
9	Increasing levels of labour layoffs increased the risk costs incurred by 17%	N
9	Use of own labour, rather than subcontractors, helped to reduce the risk costs incurred by 5%	P
9	The level of QHSE Dept effort has helped to reduce risk costs incurred by 20%	P
9	Risk cost of 83,284 incurred this period	N

Trying to complete a job early

The Demo is now complete

Trying to complete a job early

What happens if a job overruns ?

Keep Clicking Anywhere on the screen to advance the demo

What happens if a job overruns ?

Ideally all jobs progressed will be completed either early or on time.

However, if a job is badly managed it may well overrun, which has several affects :-

- A penalty will be incurred from the client for late completion, expressed as a % of the tender value for each period the job overruns. This can have a severe affect on the company's cash account, and value.
- Resources will be needed to complete the job (labour, project manager, site admin), diverting them from elsewhere.
- It reflects badly on the industry's perception of the company, reflected in the 'contract completion' and 'client satisfaction' key performance indicators used to measure the progress of the company.

If a job overruns, it is imperative that the Construction Manager allocates enough labour to complete the job in its first overrunning period.

What happens if a job overruns ?

Consider the following example.

Job 31, planned to be a 2-period job, has overrun into its third period.

There are currently 25 men on site, but with no planned labour as a guide, what level of labour is required to complete the job this period ?

On-Going Jobs

	Last Period					This Period							
		Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers				Site Cost
	Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
	15	111	104	7	594,000	In Fourth Period	55	111	104	7	0	0	0	0	594000
▶	31	25	25	0	163,000	In Third Period	Overrun	25	25	0	0	0	0	0	163000
	36	8	8	0	120,000	In Second Period	11	8	8	0	0	0	0	0	120000
	40	18	18	0	167,000	In Second Period	30	18	18	0	0	0	0	0	167000
	45	69	69	0	495,000	In Second Period	96	69	69	0	0	0	0	0	495000

What happens if a job overruns ?

The Job Details button shows :-

- The planned % complete after each period (Procurement tab).
- The actual % of work completed to date (Job Progress tab).

The job is currently 87.1% complete, and has overrun.

There is 12.9% of the job left to complete, equating to 6.8 men (.129 x 53).

To ensure the job completes we'll allocate 7 men, and appropriate site cost to support them.

If a job overruns you can allocate as much labour as is required to complete the job, and the normal overmanning rules do not apply, since there is no planned labour as a guide.

Estimated Details by Period

Job Period	Build Cost	Site Cost	Labour Manning	Expected Value	% Complete
1	691,057	138,211	21	897,918	40
2	1,036,587	207,317	32	1,346,876	100

Total Labour Manning: 53 man periods

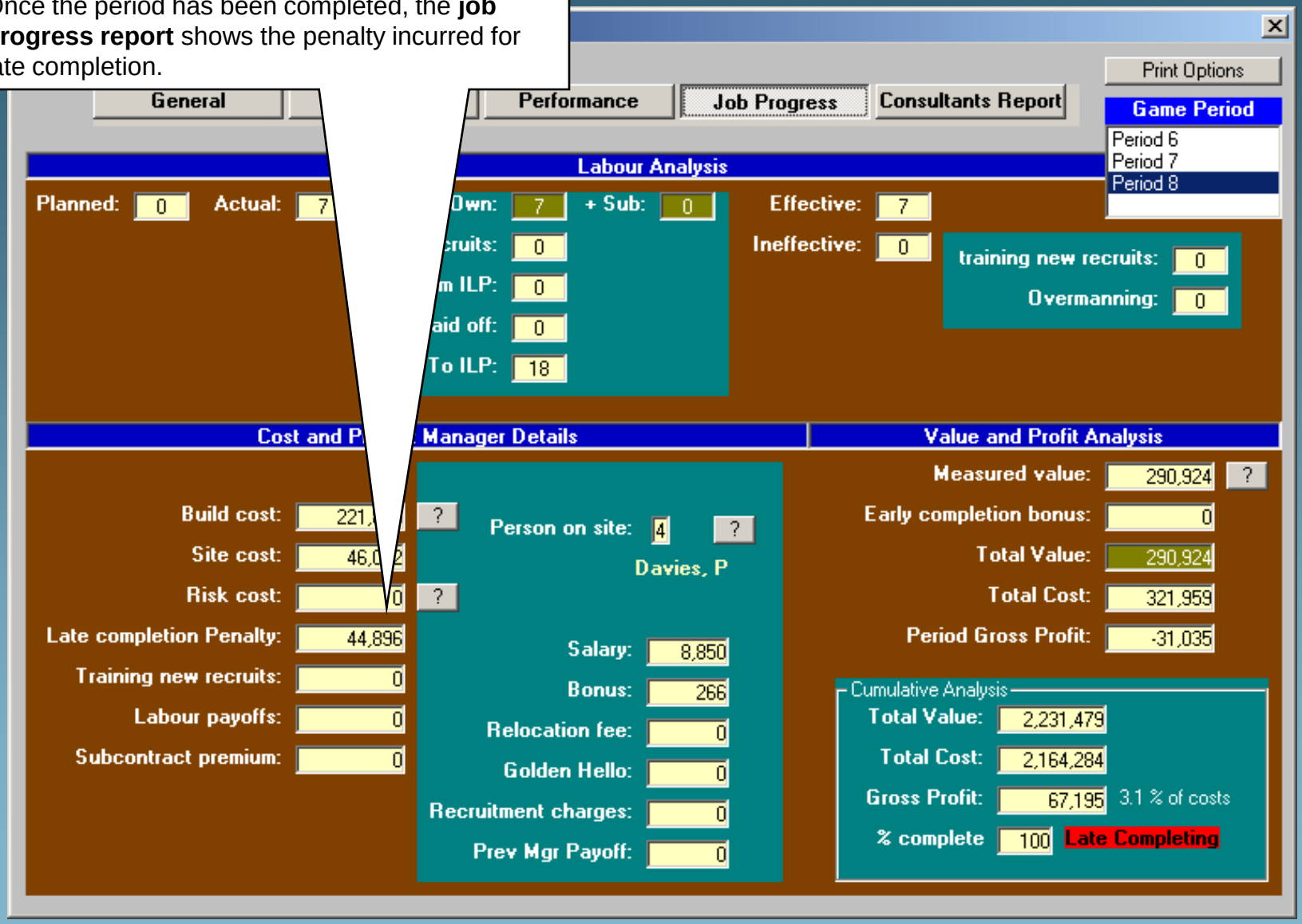
Cumulative Analysis

Total Value:	1,940,555	
Total Cost:	1,842,325	
Gross Profit:	98,230	5.3 % of costs
% complete	87.1	Behind Schedule

What happens if a job overruns ?

Glossary

Once the period has been completed, the **job progress report** shows the penalty incurred for late completion.



Main Quit

What happens if a job overruns ?

The **relationship with the client** will also have been affected by the late completion of the job.

In this particular example, the relationship with Railline has deteriorated to a 'poor' one as a results of completing job 31 late, and it will be hard to procure any further work with the client.

Client: **Railline**

Current Relationship: **poor**

Job	Per Preq	Description	Estimating Confidence	Bidding details	Job Progress Details: Contract Completion Time	Job Progress Details: Consultant Designer used	Job Progress Details: Project Manager used	Job Progress Details: Level of Site Admin cost allocated
8	1	Renovation to rail junction	Extremely High	competitive bid, and the job was won	on time		very good	
17	2	Construct new turnbank sidin	Extremely High	competitive bid, but the job was lost				
31	3	Refurbish grade II listed train	Extremely High	competitive bid, and the job was won	late		very good	

What happens if a job overruns ?

The Demo is now complete

What happens if a job overruns ?

Own v Subcontract Labour

Keep Clicking Anywhere on the screen to advance the demo

Own v Subcontract Labour

In progressing jobs it is always far more cost-effective to use the company's own fully-trained operatives since subcontractors :-

- Cost more than own labour
- Reliance on subcontractors can affect the morale of the company's own labour

However, if there is an overall labour shortfall that the Construction Manager needs to address, two options are available :-

- Take-on new recruits, adding to the company's own labour
- Use subcontractors

But which option is the most cost-effective ?

To answer this question we need to compare the costs involved in taking on one new recruit against one subcontractor.

Own v Subcontract Labour

Subcontractors
Subcontractors do not need to be trained, and are fully effective from day one.

However, they do incur an additional subcontract premium, shown in the **Company and Financial Information**.

In this example the premium is 1,500 per period for each Subcontractor used.

Key Point
The subcontractor premium is the same regardless on the job upon which they are used.

Subcontractors cost an extra: 1,500 per period

Own v Subcontract Labour

New Recruits

The cost of employing a new recruit into the company's own labour force varies depending upon the job they are allocated to.

We'll take a closer look at the costs involves.

Own v Subcontract Labour

New Recruits: Training Cost

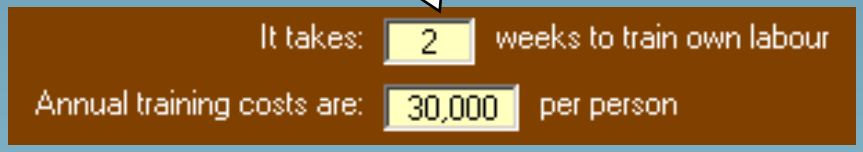
A new recruit needs to be trained in their first period with the Company, and as a result there is an associated training cost.

Using information in the **Company & Financial Information** the training cost per new recruit is calculated as follows :-

- The training time is 2 weeks
- The training cost per week is 577 (training cost per annum / 52)
- The training cost is 1,154 (2 x 577)

Key Point

The training cost is the same regardless of the job upon which the new recruit is used.



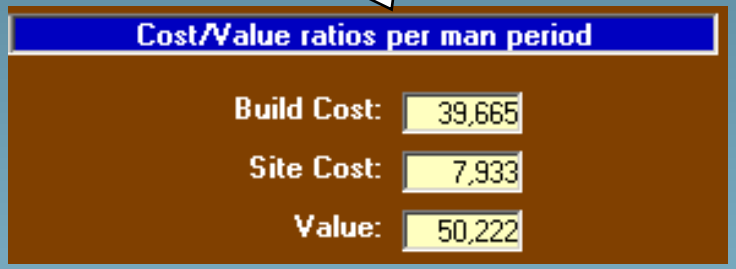
Own v Subcontract Labour

New Recruits: Site Cost

Even though the new recruit is being trained, and is not effective on site, site costs still need to be paid to cover them on the job they are allocated to.

Site costs per man period vary from job to job, but tend to be cheaper in sectors that are more labour intensive, such as the Transport Sector

In the example shown, the site cost per man period is 7,933. The cost per week is 661 (7,933/12). For the 2 weeks training for a new recruit, the cost is 1,322.



Own v Subcontract Labour

New Recruits: Hidden Costs

As well as the training and site costs, there are also a number of hidden costs that are hard to quantify :-

• The training time could extend the planned contract time resulting in penalty charges, although this could be offset by allocating labour levels above the planned ones.

• Eventually own labour may need to be paid off when work dries up, incurring additional labour payoff charges. The laying off of own labour may then impact on labour relations, affecting the morale and productivity of the workforce across the company.

Labour Payoff Rate: 750

Own v Subcontract Labour

Clearly the decision as to whether to employ new recruits or use subcontractors is complex, and involves many factors and costs, including :-

- The time it takes to train new recruits, and cost involved.
- The site costs that need to be paid whilst people are being trained.
- The additional cost of employing subcontractors.
- The anticipated duration of a contract.
- How many periods subcontractors need to be employed for.
- The affect of using subcontractors on the morale of the company's own labour, which is covered in another demo.

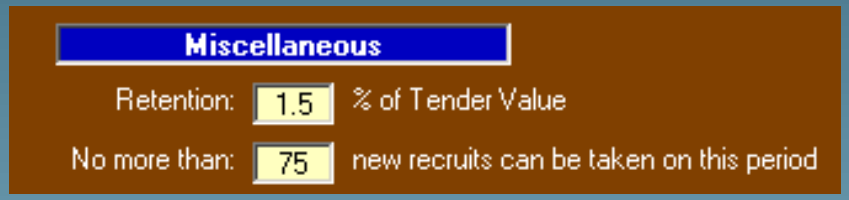
However, it is worth taking the time to determine the most cost-effective approach, which is often job-dependant, as this can affect the profitability of a contract.

In general, in the short-term the choice can vary, but in the long-term the continued use of subcontractors will almost certainly prove more costly than taking on and training new staff, since the subcontract premium has to be paid every period.

Own v Subcontract Labour

Key Point

Where there is an overall labour shortfall in the period, the decision as to whether to employ new recruits or use subcontractors is further complicated by the **limit on the number of new recruits** that can be taken on in a period, as defined in the **Company and Financial Information**. The limit can vary each period.



Own v Subcontract Labour

The Demo is now complete

Own v Subcontract Labour

Labour Relations

Keep Clicking Anywhere on the screen to advance the demo

Labour Relations

In any period a Company's total labour force consists of :-

- Men in the Idle Labour Pool (Own Labour)
- Men on On-Going Jobs (Own Labour+ Subcontract Labour)

Each period the Construction Manager has to decide how best to manipulate the labour force in order to progress the on-going jobs.

The options available include :-

For the Company's Own Labour

- Laying men off from the Idle Labour Pool (ILP)
- Transferring men from the ILP to jobs, or from jobs to the ILP
- Taking on new recruits onto jobs or laying off labour from jobs

For Subcontract Labour

- Taking on or releasing subcontractors

Labour Relations

The most cost-effective way of managing the labour force is to use the company's own fully trained labour, rather than subcontractors.

For example, if 50 men are transferred to the idle labour pool from job A, then they are immediately used on job B. No training is required, no men are laid off, and the company does not incur any additional costs such as subcontractor premiums.

In this scenario the company would be perceived to have a good labour relations policy, and the morale of the company's own labour would be high, ensuring greater productivity.

The least cost-effective way of managing the labour force is to be constantly hiring and laying off, and also relying on subcontractors.

For example, if a high proportion of the company's own labour is laid off in a period, then the morale of the remaining own labour (not subcontractors) would be weakened, leading to reduced productivity. In this case the Company would have a poor labour relations policy.

We'll now look at more detailed examples that illustrate good and bad labour relations.

Labour Relations

Example 1: good labour relations in action

16 men were available in the idle labour pool, and none were laid off. Indeed, all 16 men were used on On-Going jobs.

All 16 idle labour transferred to site.

Idle Labour Pool

Start Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	-16
Number of men to Layoff This Period:	0	Number of men left in the pool:	0
Number of men available in the pool for On-Going Jobs:	16		

On-Going Jobs

No men were laid off from site.

	Last Period					This Period								
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers				Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
8	75	75	0	600,930	In Fourth Period	37	13	13	0	0	0	62	0	104000
15	111	64	47	599,033	In Third Period	110	111	111	0	40	7	0	0	594000
31	21	21	0	138,276	In Second Period	32	33	33	0	12	0	0	0	216000
36	0	0	0		In First Period	8	8	8	0	8	0	0	0	120000
40	0	0	0		In First Period	18	18	18	0		0	0	0	167000
45	0	0	0		In First Period	57	69	69	0	0	69	0	0	495000

The Construction Manager was able to manipulate the labour force so that :-

- None of the company's own labour was laid off
- No subcontractors were used
- All idle labour was redeployed to site

This is an example of **good labour relations**, and the productivity of the company's own labour would be improved.

No subcontractors were used.

Labour Relations

Example 2: poor labour relations in action

16 men were available in the idle labour pool. All 16 were laid off when they could have been utilised on jobs.

Consultants Report | C and FI

Idle Labour Pool

Period		After Decisions	
Number of men in the pool:	16	Net Transfers from On-Going Jobs:	0
Number of men to Layoff This Period:	16	Number of men left in the pool:	0
Number of men available in the pool for On-Going Jobs:	0		

62 men were laid off from site, when they could have been utilised on other jobs.

On-Going Jobs

	Last Period				This Period								
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers			Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
8	75	75	0	600,930	In Fourth Period	37	13	13	0	0	0	0	62	104000
15	111	64	47	599,033	In Third Period	110	111	64	47	0	0	0	0	594000
31	21	21	0	138,276	In Second Period	32	33	21	12	0	0	0	0	216000
36	0	0	0		In First Period	8	8	0	8	0	0	0	0	120000
40	0	0	0		In First Period	18	18	0	18	0	0	0	0	167000
45	0	0	0		In First Period	57	69		69	0	0	0	0	495000

154 subcontractors were used.

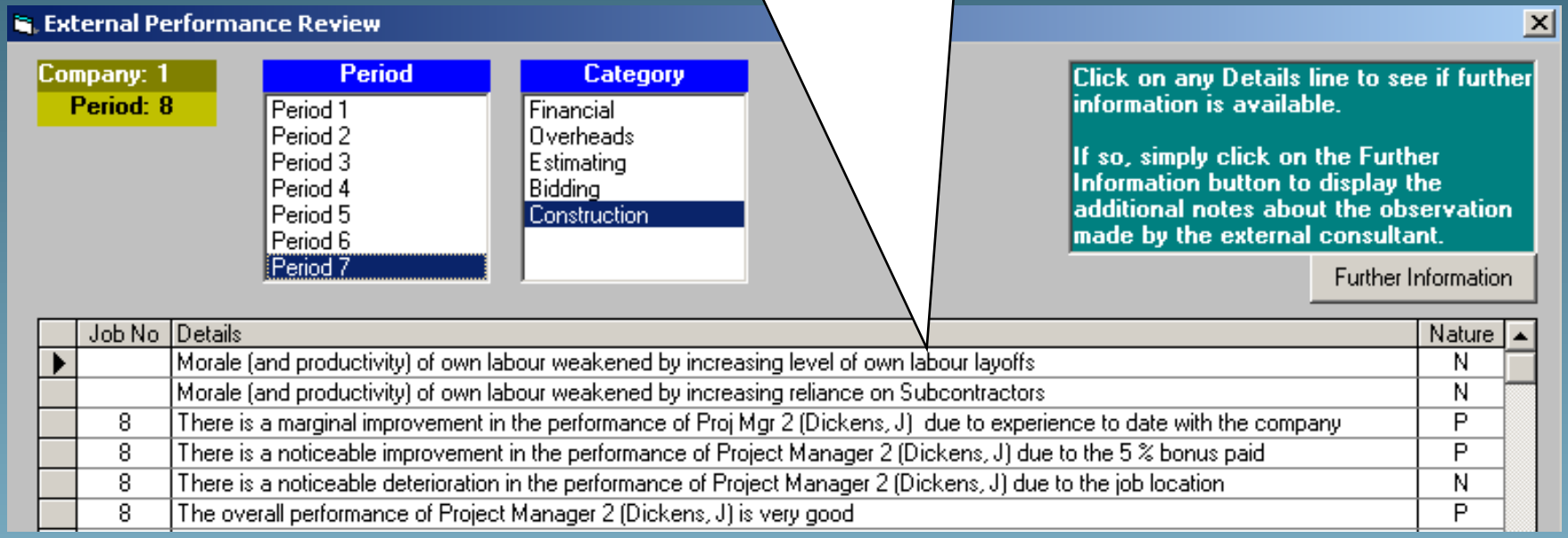
The Construction Manager did not manipulate the labour force effectively, and :-

- Used 154 subcontracts when men were available in the idle pool, but were paid off
- Laid off 62 men from site, some of whom could have been used instead of subcontractors

This is an example of **poor labour relations**, and the productivity of the company's own labour would be adversely affected.

Labour Relations

The affect of the company's construction management decisions on labour relations is reflected in comments in the **External Performance Review**.



Job No	Details	Nature
	Morale (and productivity) of own labour weakened by increasing level of own labour layoffs	N
	Morale (and productivity) of own labour weakened by increasing reliance on Subcontractors	N
8	There is a marginal improvement in the performance of Proj Mgr 2 (Dickens, J) due to experience to date with the company	P
8	There is a noticeable improvement in the performance of Project Manager 2 (Dickens, J) due to the 5 % bonus paid	P
8	There is a noticeable deterioration in the performance of Project Manager 2 (Dickens, J) due to the job location	N
8	The overall performance of Project Manager 2 (Dickens, J) is very good	P

Labour Relations

As we have seen, the morale (and productivity) of the company's own labour can be influenced by :-

- The % of the company's own labour that is laid off
- The % of subcontractors used

If the company's own labour is more productive, jobs will be progressed quicker, with reduced costs. Conversely, a more unproductive workforce will delay the progress of jobs, and result in higher costs.

In either case, the Construction Manager must constantly review the actual progress of jobs against planned levels in order to ensure that the labour allocations are as required each period.

Labour Relations

The Demo is now complete

Labour Relations

Different levels of Site Administration

Keep Clicking Anywhere on the screen to advance the demo

Different levels of Site Administration

Allocating enough money for Site Administration is crucial to keep a job progressing as productively as possible.

The alternatives, both of which are can adversely affect a job, are two-fold :-

- Paying far too much site cost. This may improve site productivity, and a job may be slightly ahead of schedule. However, the benefits are far outweighed by the increased costs, and can seriously affect profit
- Not paying enough site cost. This reduces site productivity, puts a job behind schedule, and results in inefficient use of the labour resources available

We'll now demonstrate the scenarios outlined.

Different levels of Site Administration

Its period 7, and the Construction Manager made the labour allocations shown below for the company's two on-going jobs.

We'll concentrate on job 30, which is in its final planned period

The required level of site cost to support the 215 men on site is 978,000. This was allocated.

The job progress details for the period reveal that :-

- A healthy gross profit of 420,240 was made
- The job completed on schedule

There appear to be no problems with the job.

Cumulative Analysis

Total Value:	11,194,071	
Total Cost:	10,773,831	
Gross Profit:	420,240	3.9 % of costs
% complete	100	On Schedule

On-Going Jobs

	Last Period				This Period								
	Labour On Site			Site Cost		Planned	Labour Allocation		Own Labour Transfers				Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
30	196	196	0	890,000	In Second Period	230	215	215	0	19	0	0	0	978000
38	0	0	0		In First Period	93	107	107	0	21	86	0	0	465000

Different levels of Site Administration

This time, the actual site cost allocation was 1,173,600, 20% above the required level.

The affects this time were :-

- on the positive side, the job still completed on schedule.
- On the negative side, and more worryingly, gross profit was down from 420,240 to 243,995 as a direct result of the increased site costs

This situation would become much worse as the % of additional site cost increased, showing that the cost far outweighs the benefits.

Cumulative Analysis

Total Value:	11,201,495	
Total Cost:	10,957,500	
Gross Profit:	243,995	2.2 % of costs
% complete	100	On Schedule

On-Going Jobs

	Last Period					This Period								
	Labour On Site			Site Cost Paid		Planned Labour	Labour Allocation			Own Labour Transfers				Site Cost Allocation
Job	Total	Own	Sub		Job Status		Total	Own	Sub	From ILP	New	To ILP	Paid Off	
30	196	196	0	890,000	In Second Period	230	215	215	0	19	0	0	0	1173600
38	0	0	0		In First Period	93	107	107	0	21	86	0	0	465000

Main Quit

Different levels of Site Administration

This time, no site cost is allocated in an attempt to save money.

The affects this time are all negative :-

- At 91.2% complete, the job has not completed on time
- Gross profit is down from 420,240 to only 140,065, and further analysis would show that a minimum level of site cost was incurred to keep the site operational
- The site productivity is much lower than it should have been, and labour resources have been wasted

This situation is as serious as wasting money on paying too much site cost.

Cumulative Analysis

Total Value:	10,227,594	
Total Cost:	10,087,529	
Gross Profit:	140,065	1.4 % of costs
% complete	91.2	Behind Schedule

On-Going Jobs

	Last Period					This Period								
	Labour On Site			Site Cost		Planned	Labour Allocation			Own Labour Transfers				Site Cost
Job	Total	Own	Sub	Paid	Job Status	Labour	Total	Own	Sub	From ILP	New	To ILP	Paid Off	Allocation
30	196	196	0	890,000	In Second Period	230	215	215	0	19	0	0	0	0
38	0	0	0		In First Period	93	107	107	0	21	86	0	0	465000

Different levels of Site Administration

The Demo is now complete

Different levels of Site Administration

Job Costs

The **total cost** accrued on a job in a particular period can include :-

- Design fees
- Build costs
- Site staff costs
- Risk costs if the risk has occurred
- Penalty for late completion
- Training of new recruits
- Labour payoffs
- Subcontractor premiums
- Agency project manager costs
- Project manager salary, recruitment charge, payoff cost, bonus

Labour Costs

The labour costs relate to costs incurred on or off site. Each one is shown in the company and financial information

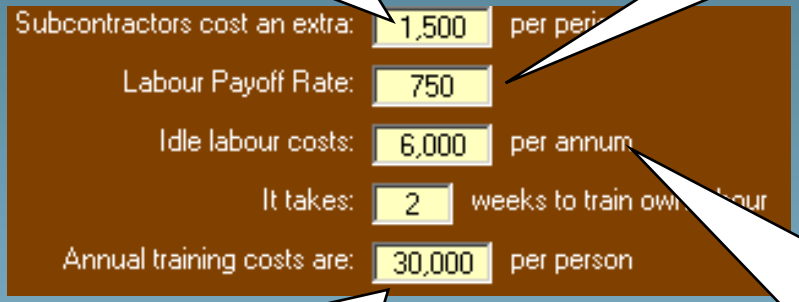
On-site costs

Subcontract premium
Subcontractors are 100% productive as soon as they are taken on by the Construction Manager, and require no training. However, using them incurs an additional cost above the normal labour cost.

On/Off site costs

Labour payoff rate
This is the cost per person of laying off the Company's own labour from either :-

- The Idle Labour Pool
- An On-Going Job



On-site costs

Training costs
A new recruit needs to be trained in their first period with the Company, and as a result there is an associated training time and cost.

Off-site costs

Annual cost of idle labour
This is the cost of keeping someone idle for a year, and takes into account the redeployment of the person in other areas.

Penalty for Late Completion of a Job

If the duration of a job exceeds its planned duration, the company is charged a penalty for each late period.

The penalty is a percentage of the total planned value (bid entered) for the job; details are given in the company and financial information.

Penalty clause for late completion is: 2 % of Tender Value per period

As well as the monetary cost of completing a job late, there is a serious affect on the relationship with the client, which is reflected in the overall client satisfaction performance indicator.

Retention

Retention is a percentage of the measured value (turnover) achieved on a job in a period that is retained by the client, until the job is completed.

It is repaid in two equal instalments, in the period when the job is completed and two periods later.

Details of the percentage retained are shown in the company and financial information.

Retention: 1.5 % of Tender Value

Percentage of a job completed

Keep Clicking Anywhere on the screen to advance the demo

Percentage of a job completed

A job was awarded with the following bidding details.

The bid itself			Cost/Value ratios per man period	
Estimated Build Cost:	8,093,851		Build Cost:	21,699
On Cost:	1,734,684	Breakdown	Site Cost:	4,340
Mark-Up:	5.3 %		Value:	27,747
Bid:	10,349,447	(Job Won)		

The job was won with a bid of **10,349,447**

Percentage of a job completed

The job has just completed its 2nd period, and has two periods left to complete on time.

The Job Progress screen shows that after 2 periods of the job the **total value** to date is 7,825,452.

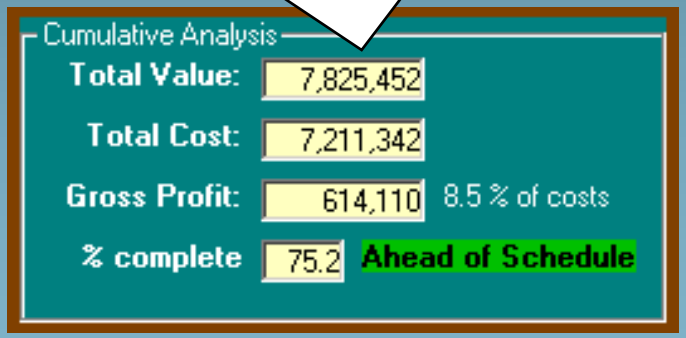
This equates to **75.6%** of the bid i.e.,

(7,825,452 / 10,349,447) * 100

However, the % complete shown is **75.2%**, so why is there a difference ?

The % complete is derived from the **Actual amount of the job completed** to date.

However, the company's **measurement effort** has secured an extra 0.4% of value over the 2 periods, which is incorporated in the total value.



Percentage of a job completed

The Demo is now complete

Percentage of a job completed

Measured Value (Turnover)

For each job awarded to the company, there is a planned value per man period based upon :-

Bid (planned value) submitted by the company / Planned labour manning (number of man-periods, to complete the job in the planned duration)

Each period, three values are calculated for a job :-

- **Expected value** is the labour on site that contributes to progressing the job (effective labour) multiplied by the planned value per man period

- **Actual value** is the expected value adjusted to take into account a number of factors that affect productivity on the job :-
  - The performance of the project manager allocated to the job
  - The level of site support (site cost allocated)
  - The labour relations policy of the company

- **Measured Value (Turnover)** is the actual value adjusted by the measurement effort of the company for the period.

The measurement effort depends upon how well the company's measurement staff are able to cope with the turnover in the period across all jobs. The last period of the history provides the benchmark for determining the appropriate level of staff required.

Bonus for Early Completion of a Job

The client pays a bonus for early completion of a job.

Early completion of a job means completing at least one period before the end of the planned duration e.g., if the planned duration is 4 periods, it must be completed in 3 periods or less to obtain the client bonus.

The bonus varies depending upon the size of the job, and is expressed as a percentage of the tender value (bid entered) for the job; details are given in the company and financial information.

The % of the tender value payable as a bonus for early completion is:		
	0.4	% for Large jobs
	0.5	% for Medium jobs
	0.6	% for Small jobs

Company and Financial Information

Company: 1
Period: 8

Financial | Overheads | Procurement | Construction

Capital Base

Capital Base increase limited to: 10 % each period
Capital Base that can be sold off/liquidated: 25 % this period
Capital Base Depreciation rate: 2.5 % per annum
Capital Writing Down allowance: 25 % per annum

Investments

Investment Company Size	Maximum increase in investment allowed each period	Minimum total investment required to obtain benefits	Minimum build cost savings
Large	150,000	300,000	0.9 %
Medium	100,000	200,000	0.6 %
Small	50,000	100,000	0.3 %

The total number of investments cannot exceed: 5 at any point in time

Financial Rates

Bank Credit rate: 5 % per annum
Bank Overdraft rate: 11 % per annum
Corporation Tax rate: 35 %

Miscellaneous

Cash A/C Overdraft Limit: 1,000,000
External Performance Reviews cost: 10,000 each period

CFI - Overheads

Company and Financial Information

Company: 1
Period: 8

Financial | Overheads | Procurement | Construction

	Marketing Department	Estimating Department	Head Office Department	QHSE Department	Measurement Department
Company costs (per person)					
Annual salary:	28,000	25,000	22,000	30,000	35,000
Recruitment and training (% of annual salary):	18 %	15 %	12 %	18 %	20 %
Paying off (% of annual salary):	16 %	14 %	14 %	16 %	17 %
General					
Maximum additional staff that can be employed each period:	2	2	3	2	2
Agency staff cost (per annum):		38,000	33,000	45,000	54,000

Miscellaneous

The absolute change in % Marketing effort directed into each sector cannot exceed: 10 each period

CFI - Procurement

Company and Financial Information

Company: 1
Period: 8

Financial | Overheads | Procurement | Construction

Rival Bids

In the Early Years, rival companies are unlikely to submit tenders with mark-ups less than:

- 4 % for Large jobs
- 5 % for Medium jobs
- 6 % for Small jobs

Costs

The cost of Bidding is:

- 1,000 for a Large job
- 750 for a Medium job
- 500 for a Small job

Job Risk Definition

Low Risk is a 5-20% chance of something going wrong;
Medium Risk is a 20-40% chance;
High Risk is a 40-50% chance

Workload and Number Of Jobs

Forward Workload may be more than: 9 times the Capital Base

but cannot exceed 11 times

If a company's projected forward workload falls between the lower and upper thresholds, then the company's bid will be rejected unless the relationship with the client is at least: fairly good

In a period, the number of On-Going Jobs at the beginning of the period, plus the number won during bidding, cannot exceed: 10 jobs

Consultants

Allocating the best possible designer to a design and build job can result in a reduction of the build costs by up to: 3 %

CFI - Construction

Company and Financial Information

Company: 1
Period: 8

Financial | Overheads | Procurement | Construction

Project Managers

Costs (% of annual salary)

Recruiting costs: 15 %
Paying off costs: 15 %
Relocating costs: 6 %

Agency staff

Annual cost: 50,000

Overmanning Limits

Overmanning Limits

The effective labour overmanning that is allowed above the planned labour levels in a period is:

35 % for Industrial jobs
35 % for Building and Commercial jobs
45 % for Transport jobs
18 % for Energy jobs
25 % for Water and Sewage jobs

Miscellaneous

Retention: 1.5 % of Tender Value
No more than: 100 new recruits can be taken on this period
Subcontractors cost an extra: 1,500 per period
Labour Payoff Rate: 750
Idle labour costs: 6,000 per annum
It takes: 2 weeks to train own labour
Annual training costs are: 30,000 per person

Job Completion Bonuses & Penalties

The % of the tender value payable as a bonus for early completion is:

0.4 % for Large jobs
0.5 % for Medium jobs
0.6 % for Small jobs

Penalty clause for late completion is: 2 % of Tender Value per period

Project Manager Information

Keep Clicking Anywhere on the screen to advance the demo

Project Manager Information

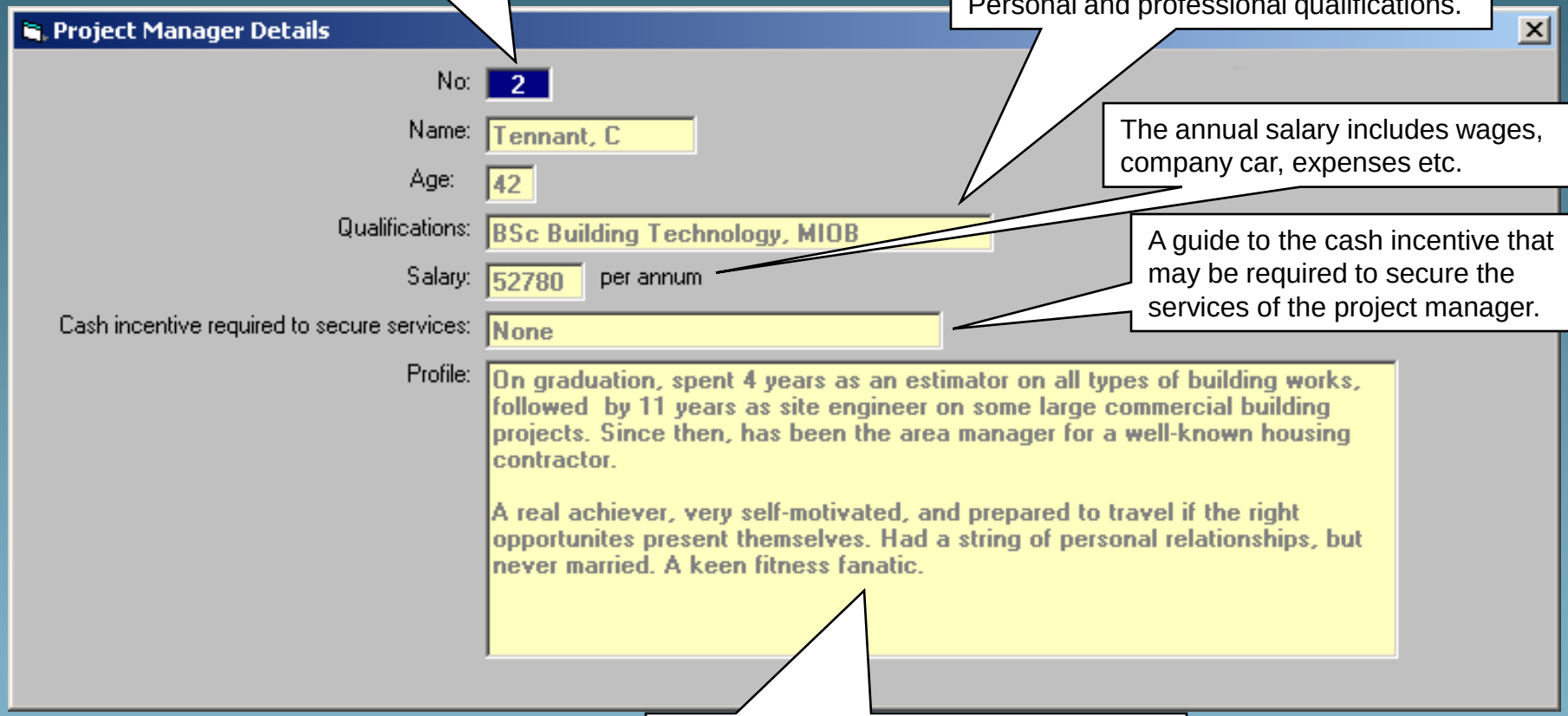
A unique number that identifies a project manager, ranging from 1 onwards.

Personal and professional qualifications.

The annual salary includes wages, company car, expenses etc.

A guide to the cash incentive that may be required to secure the services of the project manager.

Work and personal details to help identify suitability for a particular type of work.



Project Manager Information

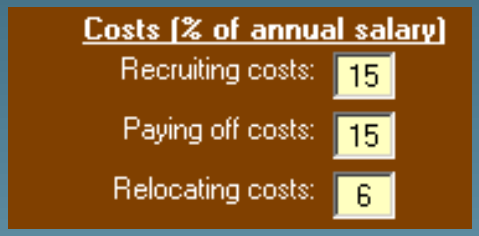
Weighting (never seen)

A factor between 1 and 10 that measures performance in each market sector.
This is adjusted further by a number of other factors (time with the company, bonus payments, taking over from another, job distance from the company's head office) to determine overall performance on a particular job in a period.

Recruitment, Payoff and Relocation charges

Project managers can be :-

- Recruited into the company
- Paid off from the company
- Moved from job to job within the company



Each action attracts a cost expressed as a % of annual salary; details are given in the company and financial information.

Bonus

A bonus may be paid to the Project Manager on a job, expressed as a % of the salary paid in the period.
This is a one-off payment that does not change the current salary level.
The payment of a bonus will improve performance in the period in which the bonus is paid.
Good project managers who are not paid a regular bonus may resign due to dissatisfaction, and can also be poached by rival companies. A project manager who has resigned cannot be reappointed by the company for 2 periods.

Agency Staff

Agency staff may be used if the services of a particular project manager cannot be secured e.g., if not enough cash incentive is offered. Agency project managers incur a cost above normal salary levels, and their performance is average.

Project Manager Information

The Demo is now complete

Project Manager Information

Project Manager's Performance - 1

Keep Clicking Anywhere on the screen to advance the demo

Project Manager's Performance - 1

Project managers are concerned with the overall planning and co-ordination of a project from inception to completion aimed at meeting the client's requirements and ensuring completion on time, within cost and to the required quality standards.

But how do we know the affect a project manager has had on the performance of the company's jobs ?

Project Manager's Performance - 1

The Project Manager History indicates how well the project manager has managed the company's jobs, and shows :-

- The basic performance; based on the project manager's profile
- The overall performance, taking into account a number of performance factors

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	3	Transport Contracts	very good	none	6	noticeable	115	noticeable	none	excellent	
5	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	very good	
6	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Project Manager's Performance - 1

F Freshwater has managed jobs 3 and 49 since period 4, both Transport contracts, and has a **very good** basic and a generally **excellent** overall performance level each period.

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	3	Transport Contracts	very good	none	6	noticeable	115	noticeable	none	excellent	
5	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	very good	
6	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Project Manager's Performance - 1

We'll take a look at the factors that have contributed to Freshwater's excellent overall performance level.

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	3	Transport Contracts	very good	none	6	noticeable	115	noticeable	none	excellent	
5	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	very good	
6	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Project Manager's Performance - 1

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	3	Transport Contracts	very good	none	6	noticeable	115	noticeable	none	excellent	
5	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	very good	
6	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Project Manager's Performance - 2

Profile: Spent 4 years as a graduate engineer working for the Highways Agency, followed by 6 years as site engineer for a major UK contractor on a motorway extension scheme. Moved into site management for the same company, and has worked on numerous further roadwork schemes

Pays a lot of attention to detail, and as a result can be over-critical at times. However, is very well-respected and an excellent team player. Currently single, and is a member of an amateur band.

Profile

Dickens basic performance is **very good** because of an excellent track record in the Transport sector.

A good project manager, one with the relevant experience for a particular job, will produce more output from the resources available, while a poor project manager will impair contract efficiency.

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	3	Transport Contracts	very good	none	6	noticeable	115	noticeable	none	excellent	
5	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	very good	
6	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Project Manager's Performance - 2

Time with the Company

The longer a project manager works for the Company, the better the performance, as they gain experience and knowledge and how the company operates.

We can see that Freshwater has been with the Company 5 periods, and over that time there has been an improvement in performance due to experience gained.

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	3	Transport Contracts	very good	none	6	noticeable	115	noticeable	none	excellent	
5	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	very good	
6	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Project Manager's Performance - 2

Bonus

The performance of the project manager can be improved for the current period only by paying a **bonus**, which is a % of the salary for the period.

A 3% bonus has been paid to Dickens most periods, and this has **marginally improved** performance.

Other reasons for paying a bonus ?

Paying a bonus to good project managers will prevent them from resigning. Its the average bonus over all the periods a Project Manager has been on a particular job that governs resignations due to disaffection, so its possible to pay a large bonus in one period, and none in another period.

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	3	Transport Contracts	very good	none	6	noticeable	115	noticeable	none	excellent	
5	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	very good	
6	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Project Manager's Performance - 2

Good project managers that are not consistently given a reasonable bonus may not only resign because they do not feel they are being adequately rewarded, but they may be poached by another company, regardless of any bonuses paid.

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
4	3	Transport Contracts	very good	none	6	noticeable	115	noticeable	none	excellent	
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6	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Project Manager's Performance - 2

Distance from the Company's Head Office

The distance of the job from the company's head office can also affect the performance of the project manager, especially those without the necessary experience..

Job 6, for example, was 115 miles from the company's head office, a fair distance, and this **'noticeably'** deteriorated performance.

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
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Project Manager's Performance - 2

Taking over from another project manager

Taking over from another project manager can impair performance. The previous project manager will have worked differently, and there will be a period of adjustment. Better project managers are not affected so much.

Since Freshwater has managed jobs 3 and 49 since they began, there has been **no deterioration** in performance due to taking over from another manager.

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriora Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
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6	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Project Manager's Performance - 2

To summarise, the **main factor** that affects a project manager's performance is the Past experience in the job sector.

There are additional factors that can improve performance :-

- Time spent with the Company
- Bonus payments

and others that can deteriorate performance :-

- Distance of the job from the company's head office
- Taking over from another project manager

Although these can be graded from "None" to "Dramatic" for affect, none of them has anything like the impact as the past experience.

The experience/performance of the project manager can be gauged from :-

- Their profile
- Their career history with the company

Project Manager's Performance - 2

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
Per	Job	Sector	Basic Performance	Improvement	% Bonus	Improvement	(miles)	Deterioration	Deterioration	Overall Performance	Reason for leaving, if applicable
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7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

The Demo is now complete

Main Quit

Project Manager's Performance - 2

Project Manager: 8 Freshwater, F

				Factors Improving Performance			Factors Deteriorating Performance				
				Time with the Company	Bonus payments in the period		Distance of the job from Head Office		Taking over from another		
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7	3	Transport Contracts	very good	marginal	3	marginal	115	noticeable	none	excellent	
8	49	Transport Contracts	very good	noticeable	3	marginal	144	noticeable	none	excellent	

Consultant Details

Number

A unique number that identifies the consultant, ranging from 1 onwards.

Experience

Company profile which highlights the sectors of expertise of the consultant.

The choice of consultant can impact on both the build and design costs.

Consultants with the appropriate expertise for a particular design and build job will produce designs that save on the build cost, but they charge more for the design. The saving in build cost that can be obtained by using the best possible consultant is defined in the Company and Financial Information.

Allocating the best possible designer to a design and build job can result in a reduction of the build costs by up to: 3 %

Consultants with insufficient experience will produce designs that result in higher than anticipated build costs, although they may be cheaper. However, the savings on the design cost are no compensation for the higher build costs.

Weighting

A factor between 1 and 5 that measures the experience of the consultant in each market sector, based on the profile.

Idle Staff

Idle Labour Pool

Contains the company's own fully-trained workers who are not currently allocated to a job.

Labour can reside in the pool for a number of reasons :-

- They may have been deliberately transferred there by the construction manager, and not reallocated to site
- Own labour is automatically transferred to the pool upon completion of a job

It is always more cost-effective to keep the idle labour pool as low as possible, using the company's own fully-trained staff on contracts that are in progress.

Idle Project Manager Pool

Contains the company's project managers who are currently not allocated to a job.

Project managers can reside in the pool for a number of reasons :-

- They may have been deliberately recruited by the personnel manager prior to being used on site, perhaps to prevent other companies from employing them (final years)
- Project Managers are automatically transferred to the pool upon completion of a job

Forming Relationships with Clients

Keep Clicking Anywhere on the screen to advance the demo

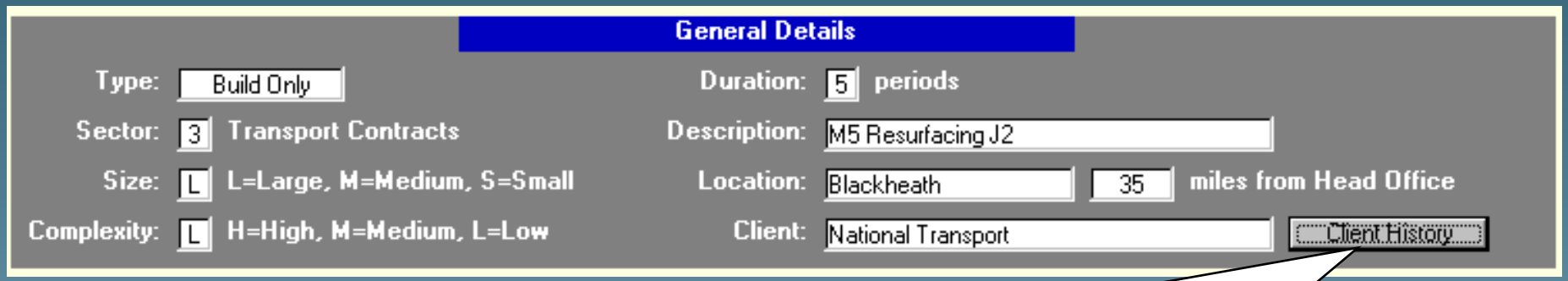
Forming Relationships with Clients

Each period a number of jobs are available in the market. The company's marketing effort will determine how many of the jobs the company prequalify for.

Each job has a client, in either the public or private sector, for whom the work is to be carried out.

Forming Relationships with Clients

Consider the following job for which the company has prequalified.



The client is **National Transport**.

As the company tenders for and secures work with the client a **relationship** is built up between the two parties, which can analysed using the **client history** button.

The company can **influence** this relationship in a number of ways :-

positively by :-
- Submitting a good tender
- Completing the job on time

negatively by :-
- Submitting an uncompetitive (poor) bid for a job
- Managing the job poorly, and completing late

The **Client History button** gives a detailed analysis of the factors affecting the company's relationship with the client.

Forming Relationships with Clients

In this example, the company **appears to have a good relationship** with National Transport based upon :-

- Producing good estimates for jobs 2,29 and 37 (Extremely high estimating confidence)
- Competitive bidding for jobs 29 and 37
- Completing job 29 on time, and managing it well (good designer, project manager and site support)

But how can the assumed 'good relationship' be verified ?

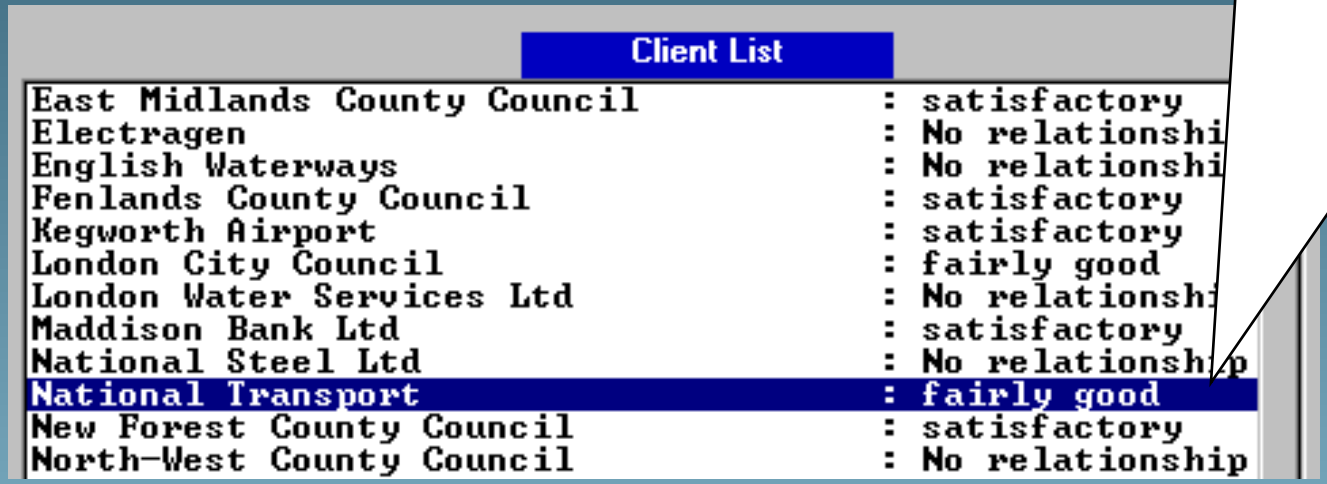
Client: National Transport

Job	Per Preq	Description	Estimating Confidence	Bidding details	Job Progress Details: Contract Completion Time	Job Progress Details: Consultant Designer used	Job Progress Details: Project Manager used	Job Progress Details: Level of Site Admin cost allocated
2	1	Fit motorway electronic inform	Extremely High	did not bid				
29	3	Upgrade of A11 trunk road	Extremely High	competitive bid, and the job was won	on time	excellent	good	very good
37	4	Holywell Road tunnel refurbis	Extremely High	competitive bid, but the job was lost				
92	9	M5 Resurfacing J2						

Forming Relationships with Clients

The **client relationships button** (from the main menu) details in words the type of relationship the company has with all clients.

Clearly, the relationship with the National Transport is currently **fairly good**.



Forming Relationships with Clients

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Cash Account	Contract Completion	Forward Workload	Forward Margin	Return On Capital	Share Price	Client Satisfaction
4	1000	80	150	120	60	100	70	90	100	110	120
5	1154	97	132	187	39	108	106	122	109	121	133
6	961	135	69	98	11	116	98	92	80	118	144
7	1081	162	89	160	5	124	80	71	126	110	154
8	1086	172	103	164	40	132	32	30	157	92	164

But why is the relationship with the client so important ?

- If two companies submit very similar bids for a job company with the best relationship with the client is **awarded** the contract

- The company's relationships with ALL clients forms one of the **key performance indicators** upon which the progress of the company is measured

- The company may **not be able to prequalify** for work with a client if the relationship has deteriorated

Forming Relationships with Clients

The Demo is now complete

Forming Relationships with Clients

Performance Indicator Definitions

Turnover

Value accrued across all jobs progressed.

Gross Profit to Turnover ratio

The ratio of gross profit to turnover across all jobs progressed; a measure of how profitable the company's jobs have been.

Operating Profit to Turnover ratio

The ratio of operating profit to turnover; a measure of how profitable the company is after taking into account all operating factors.

Company Value

A measure of the assets of the company.

Capital Employed

Measures how much of the company's Capital Base is being utilised.

Contract Completion Rate

A measure of the number of jobs completed early, on time or late.

Forward Workload

The anticipated remaining workload (turnover/value) on jobs still in progress.

Future Margin

The anticipated profit remaining on jobs still in progress.

Share Price

Current market share price.

Client Satisfaction

A measure of how happy the company's clients are; based on tendering and job progression.

Calculating Performance Indicators

The weighting for each indicator at the end of a period is based on a comparison with the position at the end of the History year, and there are two types of comparison :-

Trend comparison

Smoothes the calculations over the time the company has been operating.

Applies to Turnover, Gross Profit to Turnover ratio, Operating Profit to Turnover ratio, Capital Employed, Contract Completion Rate and Client Satisfaction.

Snapshot comparison

Compares the current indicator to the position at the end of the History.

Applies to Company Value, Forward Workload, Forward Margin and Share Price.

Click on the hotspots below for more information about how each indicator is calculated at the end of period 8.

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1350	94	103	198	152	224	160	73	130	108	108
6	1542	109	105	212	155	266	160	103	192	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Calculating PI's - Turnover

Keep Clicking Anywhere on the screen to advance the demo

Calculating PI's - Turnover

The Company is now in period 9, but how was the Turnover indicator value of 137 calculated at the end of period 8 ?

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1350	94	103	198	152	224	160	73	130	108	108
6	1542	109	[illegible]	212	155	266	160	103	192	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Calculating PI's - Turnover

By examining the Financial Report we first determine the turnover (measured value) for the History Year (periods 1-4).

The Historical turnover is 9,147,819, and serves as the benchmark for any changes in turnover in future periods.

The turnover indicator weighting of 60 at the end of the History is the Performance indicator benchmark.

Operational Performance of the Company

Job Performance

Measured Value:	9,147,819	*(Turnover)*
Early Completion Bonus:	0	
Retention Repaid:	0	
(less) Retention Held:	137,218	
Monies Received:	**9,010,601**	
(less) Costs:	8,824,042	
Gross Profit:	**186,559**	*(2.1 % of costs)*

History Year

The turnover (measured value) was :-

```
Period 1:             0
Period 2:             0
Period 3:             0
Period 4:     9,147,819
--------------------
                9,147,819
```

Calculating PI's - Turnover

We now need to determine what has happened to turnover up to the end of period 8.

The cumulative turnover (measured value) for all 8 periods the company has been operating totals 41,911,339.

To compare fairly this with the Historical benchmark of 9,147,819, which is based upon one year, we need to work out the average per year, which is 20,955,670 (41,911,339 / 2).

The yearly average by the end of period 8 was 2.29 times the value at the end of the History.

This improvement is reflected in a rise in the turnover performance indicator from 60, the initial weighting, to 137 (60 x 2.29).

Calculating PI's - Turnover

The Demo is now complete

Calculating PI's - Turnover

Calculating PI's – Gross Profit to Turnover ratio

Keep Clicking Anywhere on the screen to advance the demo

Calculating PI's – Gross Profit to Turnover ratio

The Company is now in period 9, but how was the **Gross Profit to Turnover** indicator value of 105 calculated at the end of period 8 ?

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	[illegible]	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1350	94	103	[illegible]	152	224	160	73	130	108	108
6	1542	109	105	212	155	266	160	103	192	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Calculating PI's – Gross Profit to Turnover ratio

By examining the Financial Report we first determine the turnover (measured value) and gross profit values for the History Year (periods 1-4).

- The Historical turnover was 9,147,819
- The Historical gross profit 186,559

The historical gross profit to turnover ratio was .0204 (186,559 / 9,147,819) and serves as the benchmark for any changes in the ratio in future periods.

The gross profit/turnover indicator weighting of 60 at the end of the History is the Performance indicator benchmark.

Operational Performance of the Company

Job Performance

Measured Value:	9,147,819	*(Turnover)*
Early Completion Bonus:	0	
Retention Repaid:	0	
(less) Retention Held:	137,218	
Monies Received:	**9,010,601**	
(less) Costs:	8,824,042	
Gross Profit:	**186,559**	*(2.1 % of costs)*

History Year

The values were :-

	Turnover	Gross Profit
Period 1:	0	0
Period 2:	0	0
Period 3:	0	0
Period 4:	9,147,819	186,559
	9,147,819	**186,559**

Calculating PI's – Gross Profit to Turnover ratio

We now need to determine what has happened to the ratio up to the end of period 8.

For all 8 periods the company has been operating the values were :-

- Turnover (measured value) of 41,911,339
- Gross Profit of 1,500,479

The gross profit to turnover ratio was 0.0358.

The ratio at the end of period 8 was 1.75 (0.0358 / 0.0204) times the value at the end of the History.

This improvement is reflected in a rise in the gross profit to turnover performance indicator from 60, the initial weighting, to 105 (60 x 1.75).

Calculating PI's – Gross Profit to Turnover ratio

The Demo is now complete

Calculating PI's – Gross Profit to Turnover ratio

Calculating PI's – Operating Profit to Turnover ratio

Keep Clicking Anywhere on the screen to advance the demo

Calculating PI's – Operating Profit to Turnover ratio

The Company is now in period 9, but how was the **Operating Profit to Turnover** indicator value of 202 calculated at the end of period 8 ?

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Compa… Va…	…pital …mployed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40		180	150	60	100	100	100
5	1350	94	103	198	…2	224	160	73	130	108	108
6	1542	109	105	212	155	266	160	103	192	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Main Quit

Calculating PI's – Operating Profit to Turnover ratio

By examining the Financial Report we first determine the turnover (measured value) and operating profit values for the History Year (periods 1-4).

- The Historical turnover was 9,147,819
- The Historical gross profit -33,256

The historical operating profit to turnover ratio was -0.0036 (-33,256 / 9,147,819) and serves as the benchmark for any changes in the ratio in future periods.

The operating profit/turnover indicator weighting of 40 at the end of the History is the performance indicator benchmark.

Operating Profit		
(less) Overheads	118,220	*(1.3 % of costs)*
	68,339	*(before Tax & Interest)*
(less) Corporation Tax:	23,919	*(0 Capital Allow; 35% rate)*
(plus) Credit Interest:	7,986	*(5.2% pa from Cash A/C?*
(less) Overdraft Interest:	0	*(9.9% pa fr…*
Operating Profit:	**52,406**	

History Year

The values were :-

	Turnover	Operating Profit
Period 1:	0	-18,580
Period 2:	0	-41,444
Period 3:	0	-25,638
Period 4:	9,147,819	52,406
	9,147,819	**-33,256**

Main Quit

Calculating PI's – Operating Profit to Turnover ratio

We now need to determine what has happened to the ratio up to the end of period 8.

For all 8 periods the company had been operating the values were :-

- Turnover (measured value) of 41,911,339
- Operating Profit of 464,419

The operating profit to turnover ratio was 0.011, which we must now compare to the historical one of –0.0036

The ratio at the end of period 8 was 5.05 times the value at the end of the History.

This improvement is reflected in a rise in the operating profit to turnover performance indicator from 40, the initial weighting, to 202 (40 x 5.05).

Calculating PI's – Operating Profit to Turnover ratio

The Demo is now complete

Calculating PI's – Operating Profit to Turnover ratio

Calculating PI's – Company Value

Keep Clicking Anywhere on the screen to advance the demo

Calculating PI's – Company Value

The Company is now in period 9, but how was the **Company Value** indicator 155 calculated at the end of period 8 ?

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	[illegible]	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	[illegible]	150	60	100	100	100
5	1350	94	103	198	152	224	160	73	130	108	108
6	1542	109	105	212	155	266	160	103	192	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Calculating PI's – Company Value

Balance Sheet

Shareholder Information

Original Equity:	5,000,000	
Current Share Price:	0.93	

Work in Progress

Forward Workload:	11,304,793	
Forward Margin:	586,894	

Assets & Liabilities

Cash Account:	**566,744**	
Capital Base		
Previous Value:	3,925,468	
Increased by:	0	
Reduced by:	0	
Depreciation:	24,534	*(2.5% pa)*
	3,900,934	*(47% Capital Emplo*
Investments		
Previous Value:	0	
Increased by:	100,000	
Reduced by:	0	
	100,000	
Investment Returns:	7,100	*(7.1 %)*
	107,100	
Company Value:	**4,574,778**	*(0.8% increase)*

By examining the Financial Report we first determine the company value at the end of the History Year, which was **4,574,778**

Calculating PI's – Company Value

By the end of period 8 the company value was 4,714,302.

The value at the end of period 8 was 1.03 times the value at the end of the History (4,714,302 / 4,574,778).

This slight improvement was reflected in a rise in the company value performance indicator from 150, the initial weighting, to 155 (150 x 1.03).

Calculating PI's – Company Value

The Demo is now complete

Calculating PI's – Company Value

Calculating PI's – Capital Employed

Keep Clicking Anywhere on the screen to advance the demo

Calculating PI's – Capital Employed

The Company is now in period 9, but how was the **Capital Employed** indicator of 314 calculated at the end of period 8 ?

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40		180	150	60	100	100	100
5	1350	94	103	198	15	224	160	73	130	108	108
6	1542	109	105	212	155	266	160	103	192	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Calculating PI's – Capital Employed

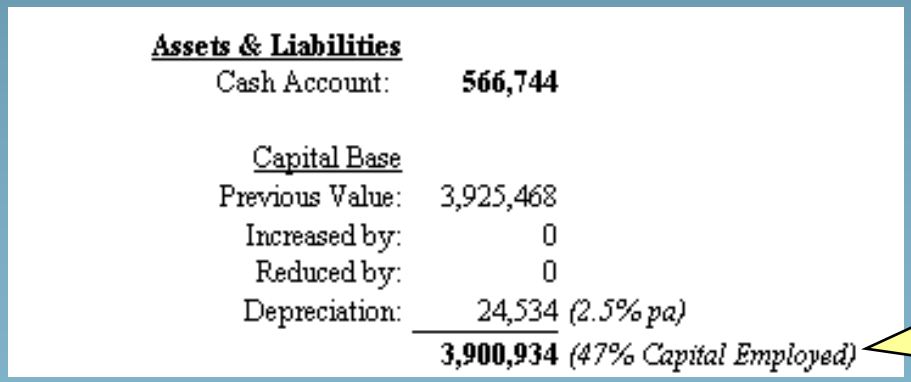
By examining the Financial Report we first determine the average capital employed per period during the History Year (periods 1-4).

This equates to 23.5 % (94 / 4), and serves as the benchmark for any changes in the average in future periods.

The capital employed indicator weighting of 80 at the end of the History is the performance indicator benchmark.

Definition

After Bids have been processed, the workload of the company as a % of the upper threshold of workload that can be undertaken, based upon the company's capital base, is defined as the capital employed.



Assets & Liabilities	
Cash Account:	**566,744**
Capital Base	
Previous Value:	3,925,468
Increased by:	0
Reduced by:	0
Depreciation:	24,534 *(2.5% pa)*
	3,900,934 *(47% Capital Employed)*

History Year

The capital employed figures were :-

	Capital Employed
Period 1:	0 %
Period 2:	0 %
Period 3:	47 %
Period 4:	47 %
	-----
	94 %

Calculating PI's – Capital Employed

At the end of period 8 the average capital employed per period was 41 %.

The value at the end of period 8 was 1.74 times the value at the end of the History (41 / 23.5).

The improvement was reflected in a rise in the company value performance indicator from 180, the initial weighting, to 314 (180 x 1.74).

Calculating PI's – Capital Employed

The Demo is now complete

Calculating PI's – Capital Employed

Calculating PI's – Contract Completion

Keep Clicking Anywhere on the screen to advance the demo

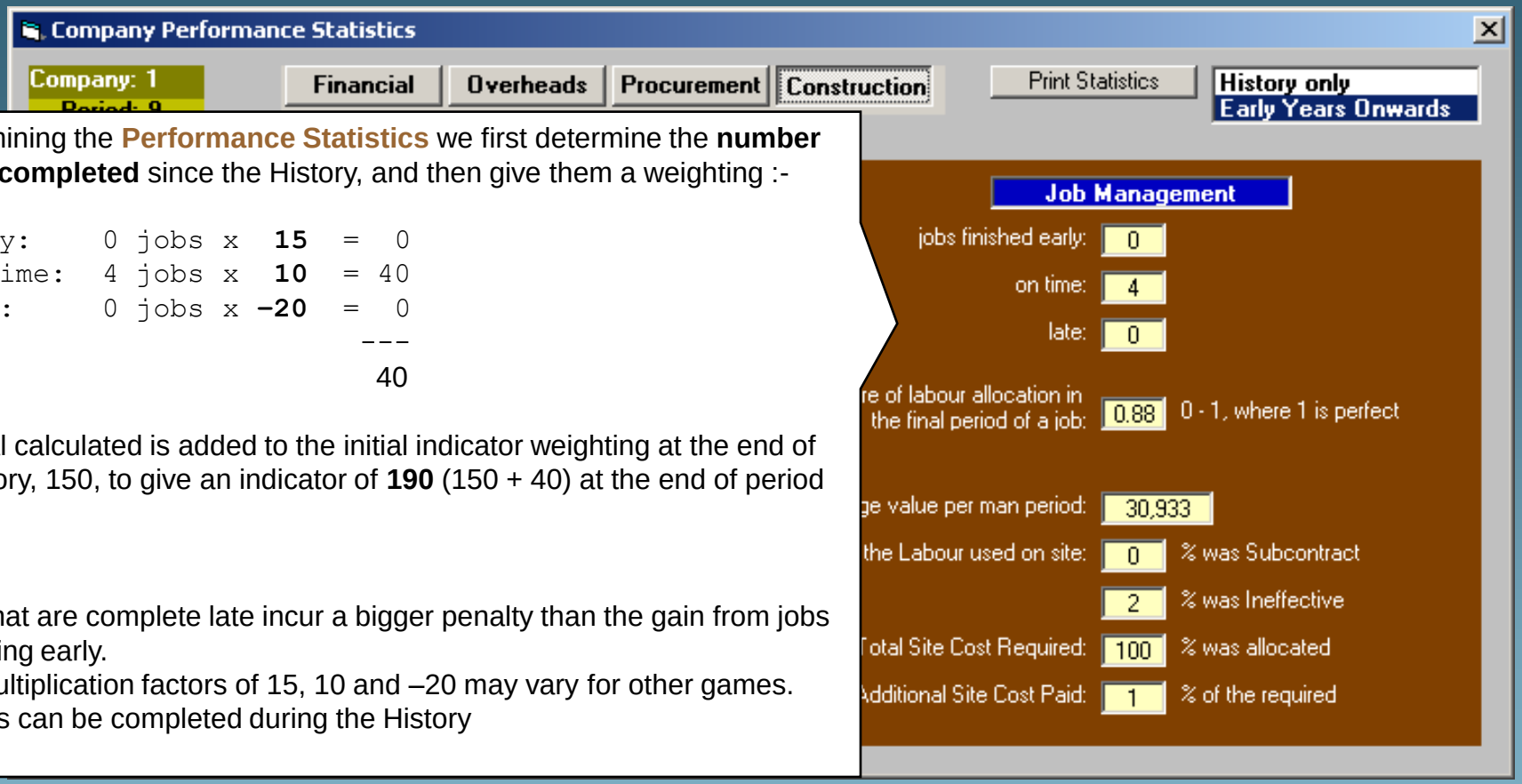
Calculating PI's – Contract Completion

The Company is now in period 9, but how was the **Contract Completion** indicator of 190 calculated at the end of period 8 ?

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Compa… Value	…apital …loyed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150		150	60	100	100	100
5	1350	94	103	198	152		160	73	130	108	108
6	1542	109	105	212	155	266	160	103	192	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Calculating PI's – Contract Completion



By examining the **Performance Statistics** we first determine the **number of jobs completed** since the History, and then give them a weighting :-

• Early:	0 jobs x	**15**	=	0
• On Time:	4 jobs x	**10**	=	40
• Late:	0 jobs x	**–20**	=	0
				40

The total calculated is added to the initial indicator weighting at the end of the History, 150, to give an indicator of **190** (150 + 40) at the end of period 8.

Notes

- Jobs that are complete late incur a bigger penalty than the gain from jobs completing early.
- The multiplication factors of 15, 10 and –20 may vary for other games.
- No jobs can be completed during the History

Calculating PI's – Contract Completion

The Demo is now complete

Calculating PI's – Contract Completion

Calculating PI's – Forward Workload and Margin

developing successful managers

Glossary

Keep Clicking Anywhere on the screen to advance the demo

Main Quit

Calculating PI's – Forward Workload and Margin

The Company is now in period 9, but how were the **Forward Workload and Margin** indicators of 111 and 215 respectively calculated at the end of period 8 ?

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1350	94	103	198	152	224	160	73	130	108	108
6	1542	109	105	212	155	266	160	103	192	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Calculating PI's – Forward Workload and Margin

Balance Sheet

Shareholder Information

Original Equity:	5,000,000
Current Share Price:	0.93

Work in Progress

Forward Workload:	11,304,793
Forward Margin:	586,894

By examining the **Financial Report** we first determine the forward workload and margin values at the end of the History Year :-

- Forward Workload was **11,304,793**
- Forward Margin was **586,894**

Calculating PI's – Forward Workload and Margin

By the end of period 8 the values were :-

- Forward Workload of 20,830, 023 (1.85 times the value at the end of the History)
- Forward Margin of 1,260,556 (2.15 times the value at the end of the History)

The improvements were reflected in a rise in the performance indicators :-

- For forward workload from 60, the initial weighting, to 111 (60 x 1.85)
- For forward margin from 100, the initial weighting, to 215 (100 x 2.15)

Calculating PI's – Forward Workload and Margin

The Demo is now complete

Calculating PI's – Forward Workload and Margin

Calculating PI's - Share Price

Keep Clicking Anywhere on the screen to advance the demo

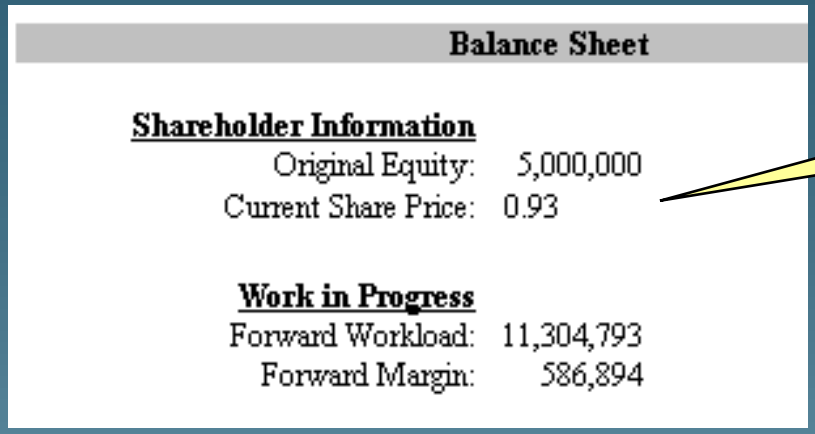
Calculating PI's - Share Price

The Company is now in period 9, but how was the **Share Price** indicator of 123 calculated at the end of period 8 ?

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	ard	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1350	94	103	198	152	224	160	73	130	108	108
6	1542	109	105	212	155	266	160	103	[illegible]	122	118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Calculating PI's - Share Price



Balance Sheet

Shareholder Information

Original Equity:	5,000,000
Current Share Price:	0.93

Work in Progress

Forward Workload:	11,304,793
Forward Margin:	586,894

By examining the **Financial Report** we first determine the share price value at the end of the History Year, which was 0.93.

Calculating PI's - Share Price

By the end of period 8 the share price was 1.14.

The value at the end of period 8 was 1.23 times the value at the end of the History (1.14 / 0.93).

This slight improvement was reflected in a rise in the company value performance indicator from 100, the initial weighting, to 123 (100 x 1.23).

Calculating PI's - Share Price

The Demo is now complete

Calculating PI's - Share Price

Calculating PI's – Client Satisfaction

Keep Clicking Anywhere on the screen to advance the demo

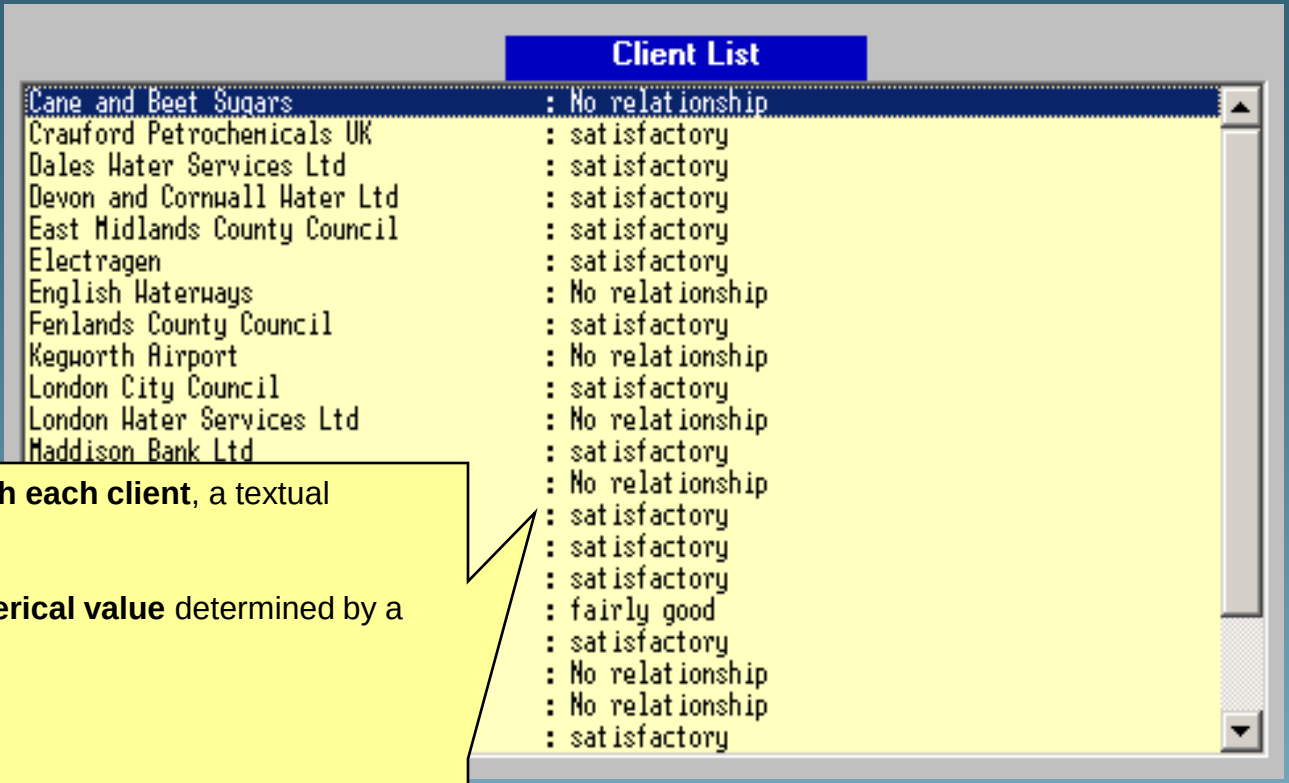
Calculating PI's – Client Satisfaction

The Company is now in period 9, but how was the **Client Satisfaction** indicator of 156 calculated at the end of period 8 ?

Company: 1
Period: 9

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60		100	100
5	1350	94	103	198	152	224	160	73	130	108	108
6	1542	109	105	212	155	266	160	103	192		118
7	1627	131	107	227	155	298	180	89	179	120	141
8	1708	137	105	202	155	314	190	111	215	123	156

Calculating PI's – Client Satisfaction



To gain a feel for the **relationship with each client**, a textual description is given.

The description is based upon a **numerical value** determined by a number of factors :-

- Prequalifying for jobs with the client
- How well jobs were costed
- How competitive the submitted bids were
- How well the jobs were managed

The sum of the numerical values across all clients is calculated for the **relationship changes since the History**, and then added to the performance indicator weighting at the end of the History.

In this example the numerical value during periods 5-8 came to 56. This was added to the Historical client satisfaction indicator of 100 to give an indicator of 156 at the end of period 8.

Calculating PI's – Client Satisfaction

Although the factors use in calculating the client satisfaction values are hidden, the relative affects, from largest to smallest are :-

- Job Progression
- Procurement (estimating and bidding)
- Prequalification

Calculating PI's – Client Satisfaction

The Demo is now complete

Calculating PI's – Client Satisfaction

EPR - Further Information

Keep Clicking Anywhere on the screen to advance the demo

EPR - Further Information

The External Performance Review report gives brief details of any points that the external management consultant feels are important, most of which need no further explanation.

However, some of the points need elaborating upon, and further information is provided in such cases.

EPR - Further Information

Consider the following situation, in which the company is in period 8, but is reviewing performance in period 7.

Company: 1
Period: 8

Period
Period 1
Period 2
Period 3
Period 4
Period 5
Period 6
Period 7

Category
Financial
Overheads
Estimating
Bidding
Construction

Click on any Details line to see if further information is available.

If so, simply click on the Further Information button to display the additional notes about the observation made by the external consultant.

Further Information

	Job No	Details	Nature
	31	There is a marginal improvement in the performance of Proj Mgr 3 (Lindemann, F) due to experience to date with the company	P
	31	There is a noticeable improvement in the performance of Project Manager 3 (Lindemann, F) due to the 4 % bonus paid	P
	31	There is a marginal deterioration in the performance of Project Manager 3 (Lindemann, F) due to the job location	N
	31	The overall performance of Project Manager 3 (Lindemann, F) is very good	P
	31	An adequate amount of site admininistration cost has been paid to cover the labourforce on site	P
	31	Investment in DBY Equipment Ltd has reduced build costs by 0.58%	P
	40	There is a noticeable improvement in the performance of Project Manager 7 (Weston, I) due to the 4 % bonus paid	P
	40	There is a marginal deterioration in the performance of Project Manager 7 (Weston, I) due to the job location	N
	40	The overall performance of Project Manager 7 (Weston, I) is excellent	P
	40	An adequate amount of site admininistration cost has been paid to cover the labourforce on site	P
	40	Investment in DBY Equipment Ltd has reduced build costs by 0.63%	P
	45	There is a marginal improvement in the performance of Proj Mgr 5 (Hackworth, T) due to experience to date with the company	P
	45	There is a noticeable improvement in the performance of Project Manager 5 (Hackworth, T) due to the 4 % bonus paid	P
	45	There is a marginal deterioration in the performance of Project Manager 5 (Hackworth, T) due to the job location	N
	45	The overall performance of Project Manager 5 (Hackworth, T) is excellent	P
▶	45	The effective labour on site has been reduced by very slight overmanning of the site, which has also increased labour costs	N
	45	An adequate amount of site admininistration cost has been paid to cover the labourforce on site	P
	45	Investment in DBY Equipment Ltd has reduced build costs by 0.58%	P

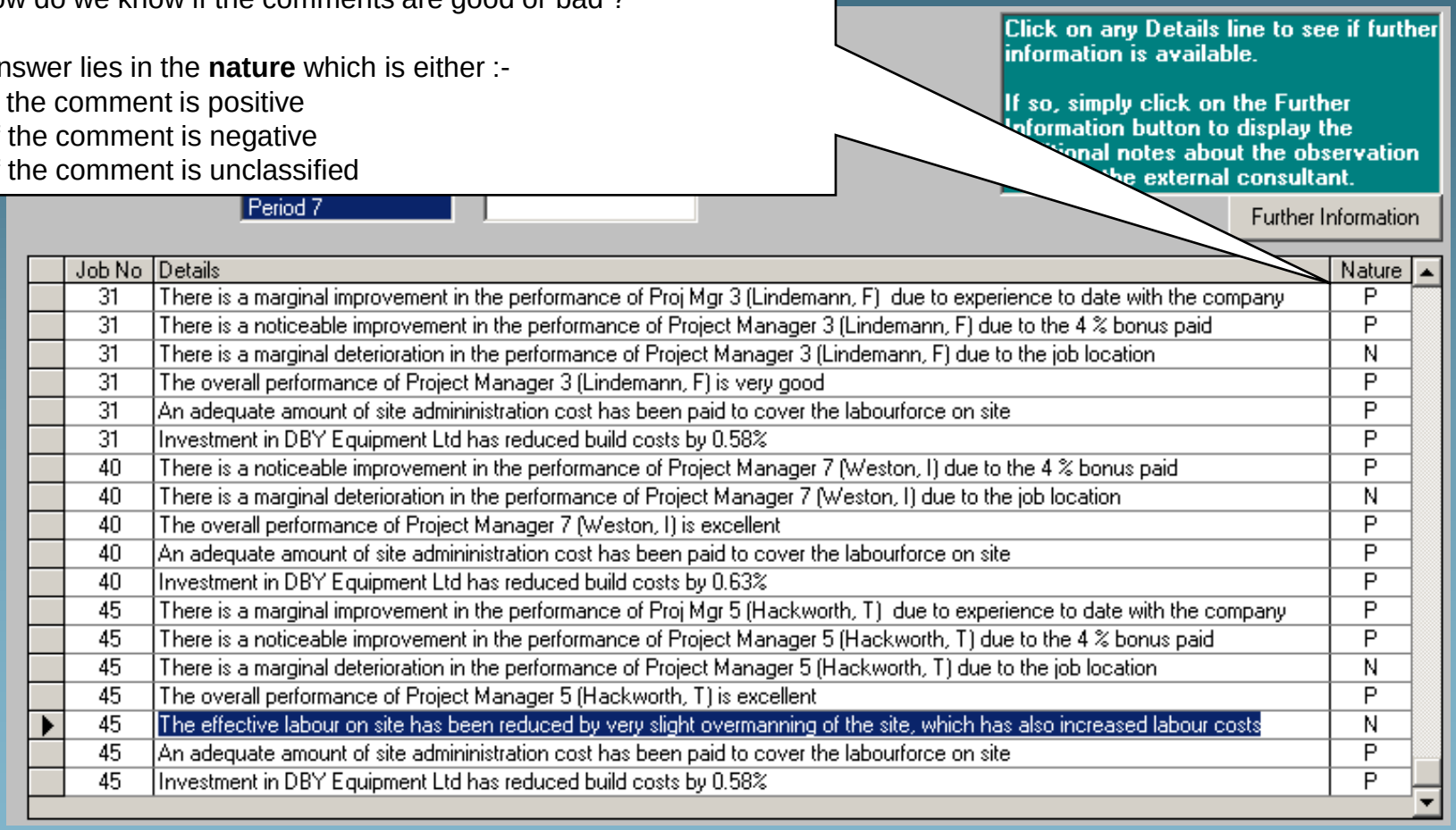
EPR - Further Information

The external management consultant has made a number of comments in relation to the construction management decisions in period 7.

But how do we know if the comments are good or bad ?

The answer lies in the **nature** which is either :-

- **'P'** if the comment is positive
- **'N'** if the comment is negative
- **'U'** if the comment is unclassified



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31	Investment in DBY Equipment Ltd has reduced build costs by 0.58%	P
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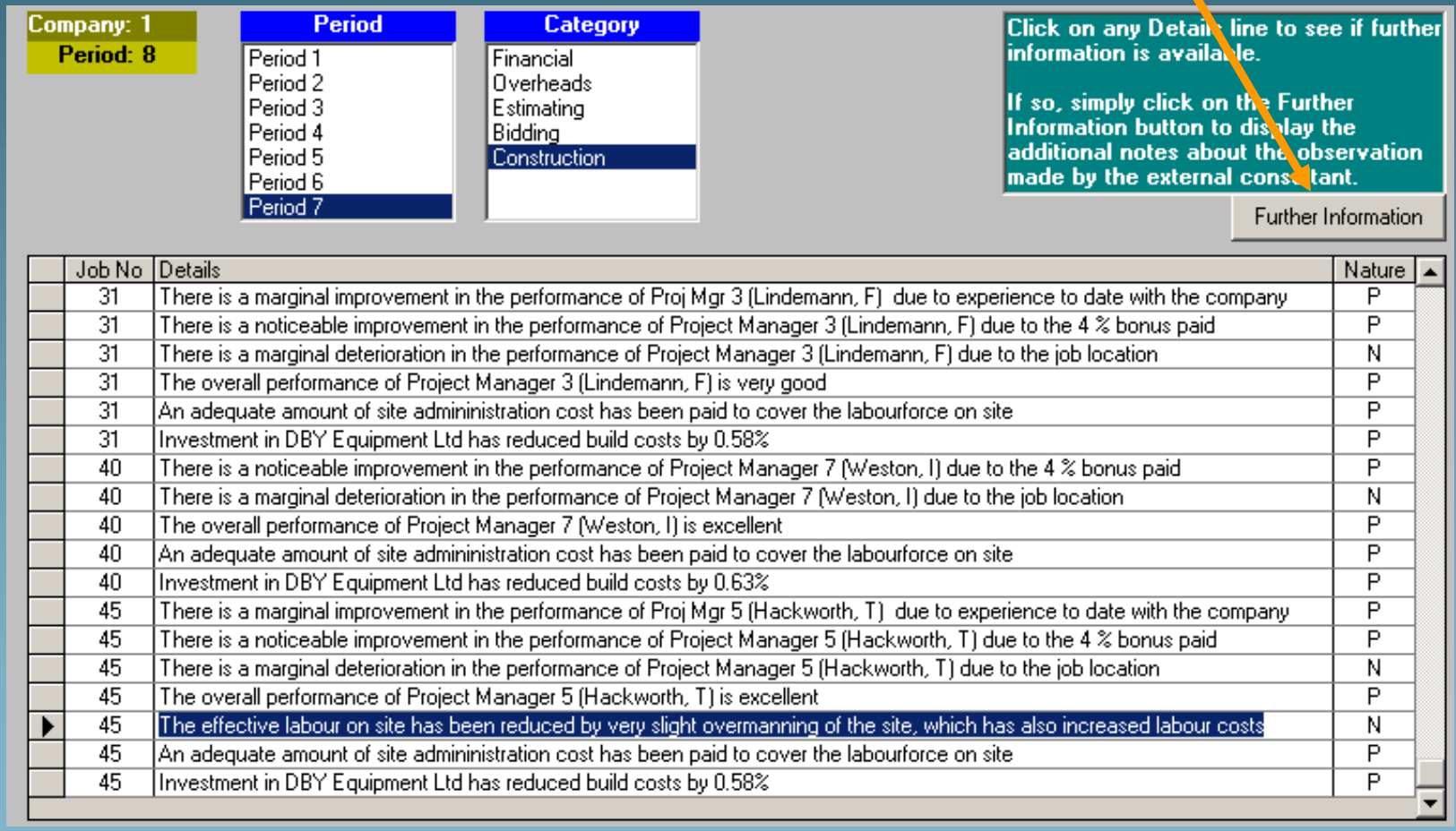
40	There is a marginal deterioration in the performance of Project Manager 7 (Weston, I) due to the job location	N
40	The overall performance of Project Manager 7 (Weston, I) is excellent	P
40	An adequate amount of site admininistration cost has been paid to cover the labourforce on site	P
40	Investment in DBY Equipment Ltd has reduced build costs by 0.63%	P
45	There is a marginal improvement in the performance of Proj Mgr 5 (Hackworth, T) due to experience to date with the company	P
45	There is a noticeable improvement in the performance of Project Manager 5 (Hackworth, T) due to the 4 % bonus paid	P
45	There is a marginal deterioration in the performance of Project Manager 5 (Hackworth, T) due to the job location	N
45	The overall performance of Project Manager 5 (Hackworth, T) is excellent	P
45	The effective labour on site has been reduced by very slight overmanning of the site, which has also increased labour costs	N
45	An adequate amount of site admininistration cost has been paid to cover the labourforce on site	P
45	Investment in DBY Equipment Ltd has reduced build costs by 0.58%	P

EPR - Further Information

The external consultant made a negative comment relating to labour overmanning on job 45 in period 7, for which further information is available.

The more detailed explanation can be viewed by clicking on the Further Information button.



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45	There is a marginal improvement in the performance of Proj Mgr 5 (Hackworth, T) due to experience to date with the company	P
45	There is a noticeable improvement in the performance of Project Manager 5 (Hackworth, T) due to the 4 % bonus paid	P
45	There is a marginal deterioration in the performance of Project Manager 5 (Hackworth, T) due to the job location	N
45	The overall performance of Project Manager 5 (Hackworth, T) is excellent	P
45	The effective labour on site has been reduced by very slight overmanning of the site, which has also increased labour costs	N
45	An adequate amount of site admininistration cost has been paid to cover the labourforce on site	P
45	Investment in DBY Equipment Ltd has reduced build costs by 0.58%	P

EPR - Further Information

A detailed explanation of the external consultant's brief comment is given, and a pointer to where even more information is available.

Details

The effective labour on site has been reduced by very slight overmanning of the site, which has also increased labour costs

Description

Overmanning of a job, above the planned labour levels, is neccessary to complete a job early.

In the case of 3,4 and 5-period jobs, they can be completed early, but it is not possible to complete a 2-period job in 1 period.

However, there are sector-based restrictions on the overmanning allowed above the planned labour levels. These restrictions are defined in the "Company and Financial Information".

Failure to observe the restrictions will result in ineffective labour, which does not contribute to progressing the job, but does incur labour costs.

Consider the following example :-

Planned Labour: 100 men
Sector 3 (30% overmanning allowed)
Permitted level of labour: 130 men (after allowing for the training of new recruits)

Any labour allocation above 130 WOULD NOT contribute to the progress of the job, but would incur labour costs.

Suggested additional help

Merit Tutorial/"Entering Decisions"/ "Construction Decisions"/"Progressing a job" demo

EPR - Further Information

Company: 1
Period: 8

Period

Period 1
Period 2
Period 3
Period 4
Period 5
Period 6
Period 7

Category

Financial
Overheads
Estimating
Bidding
Construction

Click on any Details line to see if further information is available.

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Further Information

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45	The effective labour on site has been reduced by very slight overmanning of the site, which has also increased labour costs	N
45	An adequate amount of site admininistration cost has been paid to cover the labourforce on site	P
45	Investment in DBY Equipment Ltd has reduced build costs by 0.58%	P

The Demo is now complete

Main Quit

EPR - Further Information

Company: 1
Period: 8

Period

- Period 1
- Period 2
- Period 3
- Period 4
- Period 5
- Period 6
- Period 7

Category

- Financial
- Overheads
- Estimating
- Bidding
- Construction

Click on any Details line to see if further information is available.

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Further Information

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45	Investment in DBY Equipment Ltd has reduced build costs by 0.58%	P

The Use of Company Performance Statistics

Keep Clicking Anywhere on the screen to advance the demo

The Use of Company Performance Statistics

Consider the performance indicators of the company after after 7 periods.

Company: 1
Period: 8

(TIP: Click on an indicator heading to alter the graphical display)

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1322	137	87	240	157	216	180	32	55	98	120
6	1452	164	97	257	160	236	195	38	65	102	138
7	1615	180	96	246	159	266	220	60	105	116	167

The Use of Company Performance Statistics

Company: 1
Period: 8

(TIP: Click on an indicator heading to alter the graphical display)

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1322	137	87	240	157	216	180	32	55	98	120
6	1452	164	97	257	160	236	195	38	65	102	138
7	1615	180	96	246	159	266	220	60	105	116	167

The Contract Completion indicator has **risen** considerably since the beginning of the early years.

The reason for the rise should be that many of the jobs completed to date have done so either early or on time.

To **verify** our reasoning, we can look at the performance statistics for the early years.

The Use of Company Performance Statistics

Company: 1
Period: 8

(TIP: Click on an indicator heading to alter the graphical display)

Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
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6	1452	164	97	257	160	236	195	38	65	102	138
7	1615	180	96	246	159	266	220	60	105	116	167

Company: 1
Period: 8

Financial | Overheads | Procurement | Construction | Print Statistics | History only | Early Years Onwards

Project Manager Weighting (1-10)

Basic weighting: 7.8

Adjustment due to :-

Experience with the Company: 0.1

Bonus payments: 0.3

Distance of job from Head Office:

0

8

Job Management

jobs finished early: 4

on time: 1

late: 0

Measure of labour allocation in the final period of a job: 0.97 0 - 1, where 1 is perfect

As suspected, **4 jobs have completed early, and 1 on time** in the Early Years, which explains why the contract completion indicator has risen so much.

The Use of Company Performance Statistics

Company: 1
Period: 8

(TIP: Click on an indicator heading to alter the graphical display)

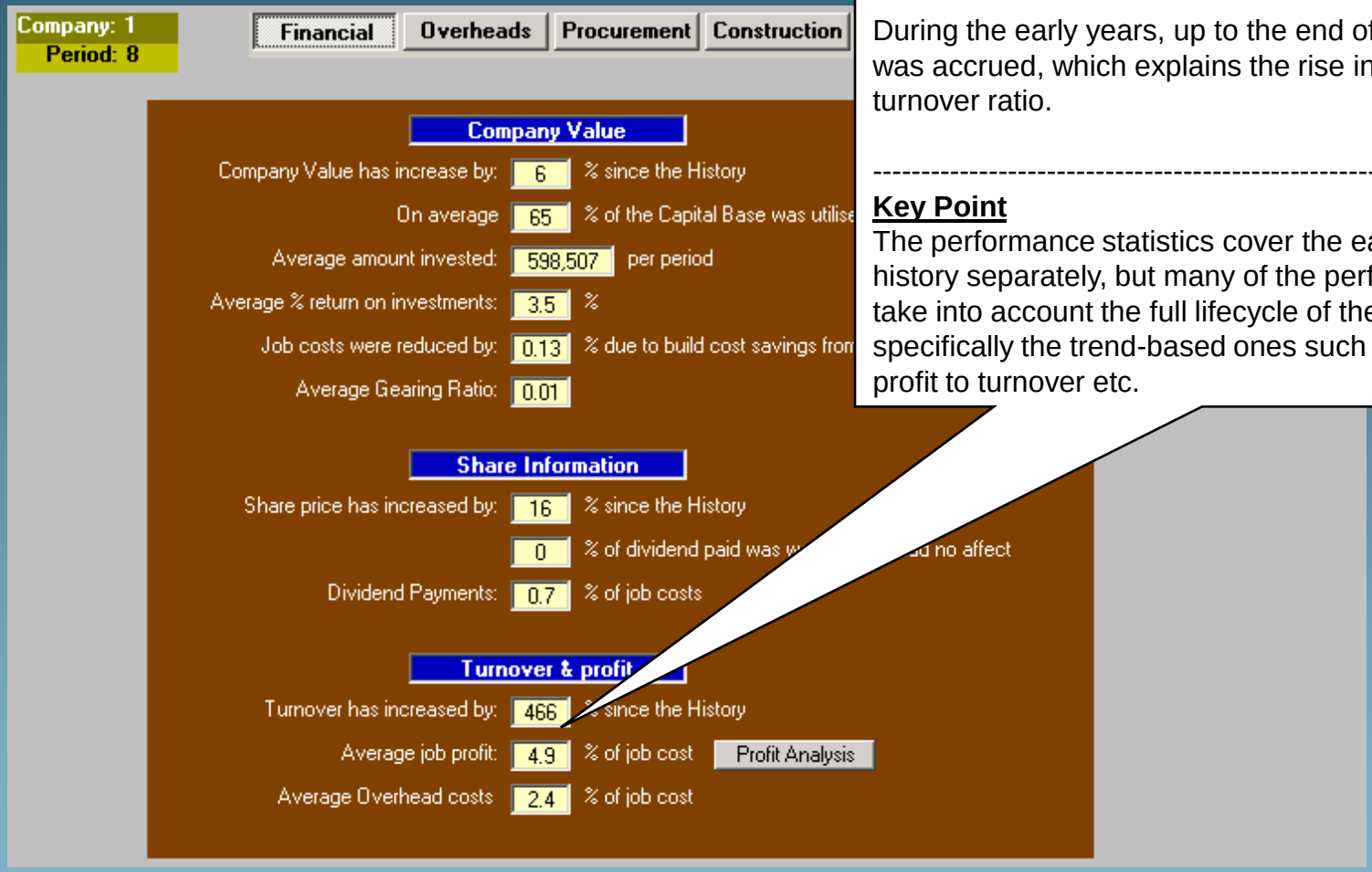
Per	Total	Turnover	Gross Profit to Turnover	Operating Profit to Turnover	Company Value	Capital Employed	Contract Completion	Forward Workload	Forward Margin	Share Price	Client Satisfaction
4	1000	60	60	40	150	180	150	60	100	100	100
5	1322	137	87	240	157	216	180	32	55	98	120
6	1452	164	97	257	160	236	195	38	65	102	138
7	1615	180	96	246	159	266	220	60	105	116	167

Since the end of period 4 the **Gross Profit to Turnover** indicator has increased.

This would appear appear to indicate that jobs have been managed better since the end of the History.

Again, to **verify** our reasoning, we can look at the performance statistics for both the History and the Early Years.

The Use of Company Performance Statistics



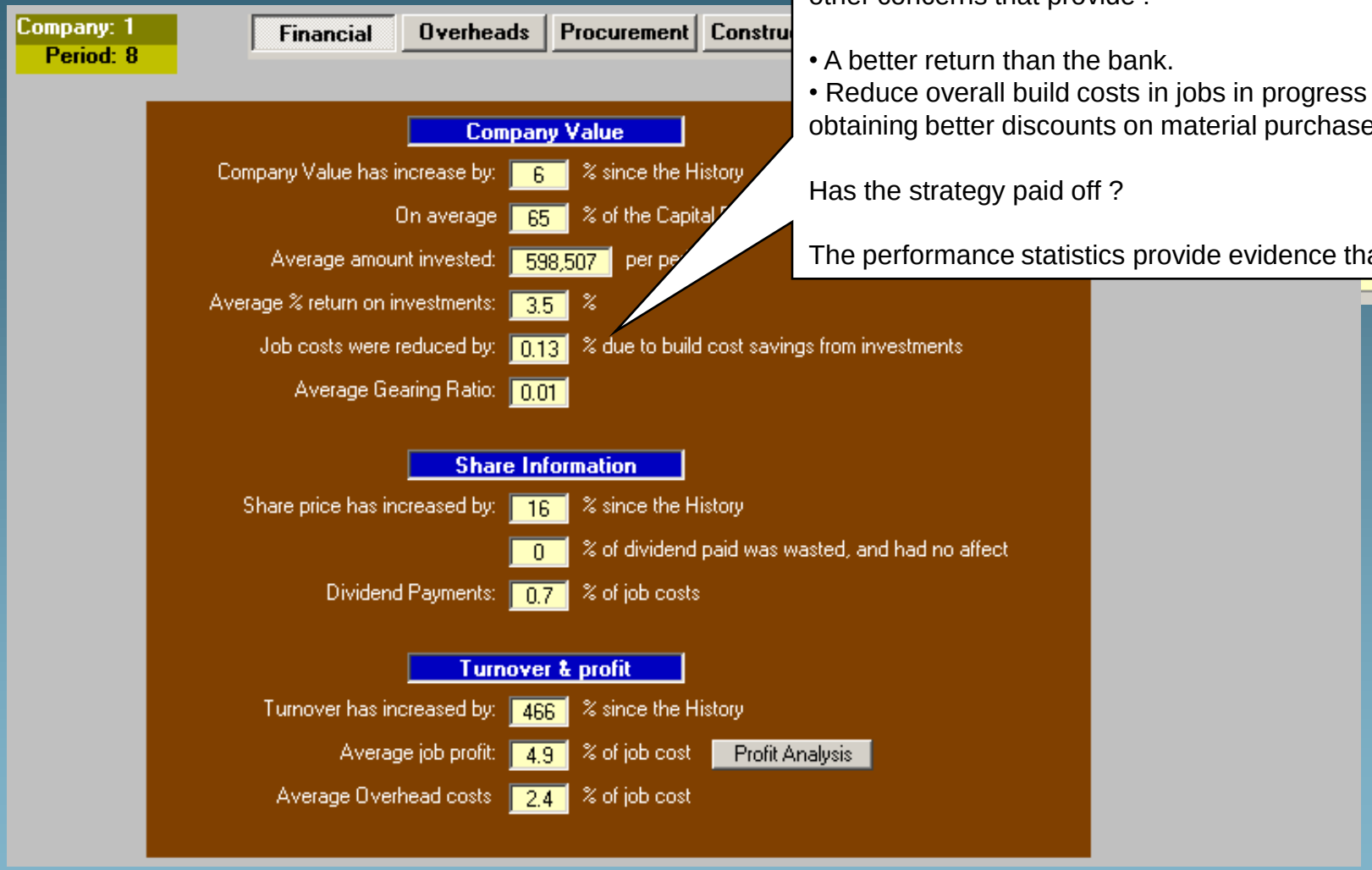
In the History year the average job profit was **2.8%** (of cost).

During the early years, up to the end of period 7, **4.9%** profit was accrued, which explains the rise in the gross profit to turnover ratio.

Key Point

The performance statistics cover the early years and the history separately, but many of the performance indicators take into account the full lifecycle of the company. These are specifically the trend-based ones such as turnover, gross profit to turnover etc.

The Use of Company Performance Statistics



During the Early Years the company have tried to invest in other concerns that provide :-

- A better return than the bank.
- Reduce overall build costs in jobs in progress e.g., by obtaining better discounts on material purchases.

Has the strategy paid off ?

The performance statistics provide evidence that it has.

The Use of Company Performance Statistics

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Period: 8

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The Demo is now complete

The Use of Company Performance Statistics

Company: 1
Period: 8

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