Risk Identification and Assessment

Building costs

BUILDING COSTS (Overall rates per m2 excl. VAT) Current Quarter - Gauteng Region The following information is provided to indicate the current square metre costs of a range of basic or common buildings in the industry. The rates are approximate and can vary according to the circumstances of the project. Rates should be used with extreme caution. Descriptions are abbreviated and if information is not stated specifically, the lowest industry standard The rates include preliminaries but exclude external works (indicated separately), escalation to start and during construction, professional fees and finance costs.		R/m2			ONLY TO BE USED FOR MPROF 2 PROJECT RANGE LOW 2003: R/m2	RANGE HIGH 2003: R/m2
Landscaping for low rise developments	R 250 - 450	6794.3	250	450	1,698,575.00	3,057,435.00
External works paving and services	R 250 - 400	882	250	400	220,500.00	352,800.00
Attached office buildings (no AC)	R 1 450 - 1 650	190.5	1450	1650	276,225.00	314,325.00
Ablution	R 3 400 - 3 800	64.2	3400	3800	218,280.00	243,960.00
Kitchen and dining facilities	R 2 800 - 3 050	130	2800	3050	364,000.00	396,500.00
Exhibition areas	R 2 550 - 2 950	561	2550	2950	1,430,550.00	1,654,950.00
Laboratory	R 4000	91		4000		364,000.00
Theatre	R 5000 per seat	117		5000		585,000.00
Skylight		202.8		5000		1,014,000.00
440 Concrete walls		1446.77		320		462,966.40
220 Concrete walls		1184.1		350		414,435.00
220 Recycled bricks		531.5		80		42,520.00
220 Brick walls		239		150		35,850.00
Steel I-beam and lipped channel roof system		300		300		90,000.00
440x440 reinforced concrete columns		98.2		200		19,640.00
300 dia reinforced concrete columns		11.2		250		2,800.00
Aluminium louver system with steel cable		231.4		500		115,700.00
Glass curtain wall		374.4		800		299,520.00
250 concrete roof		639.7		400		255,880.00
250 concrete floor slabs (precast)		922		500		461,000.00
Stone walls		511.3		120		61,356.00
Galvanised steel sheeting baked-on enamel, lead free finish roof sheeting		300		180		54,000.00
Brownbuilt roof sheeting		345.5		150		51,825.00
Toilet Ventilation		64.2		162		10,400.40
Sprinklers		500		56		28,000.00
Fire extinguishers	each	12		672		8,064.00
Hose reels	eash	5		1600		8,000.00
Total						**10,404,926.80**
ESCALATION FORECASTING **Pre-contract escalation** This is escalation prior to the start of a building on site. It is related to competitive building rates and monitored nationally by **Monthly projected pre-building cost escalations**					0.08	0.09
Escalation during construction This is escalation during the construction period and usually monitored by the BCAC Haylett indices published by JBCC **Monthly projected during building cost escalations**					0.06	0.08

Fig 238. Building cost

Analysing stakeholder influence

	Power			Level of concern		
Stakeholder Group	Influence on others	Direct control of resources	Y-Axis Score	Technical	Social	X-Axis Score
	0.35	0.65		0.2	0.8	
A - Neibouring buidings	2	1	1.35	1	3	2.6
B - Rand Water	4	5	4.65	4	4	4
C - Department of Education	4	2	2.7	3	4	3.8
D - Schools	3	1	1.7	2	3	2.8
E - Government	5	5	5	3	2	2.2
F - Community	2	0	0.7	1	5	4.2

Fig 239. Stakeholder analysis

Plot results

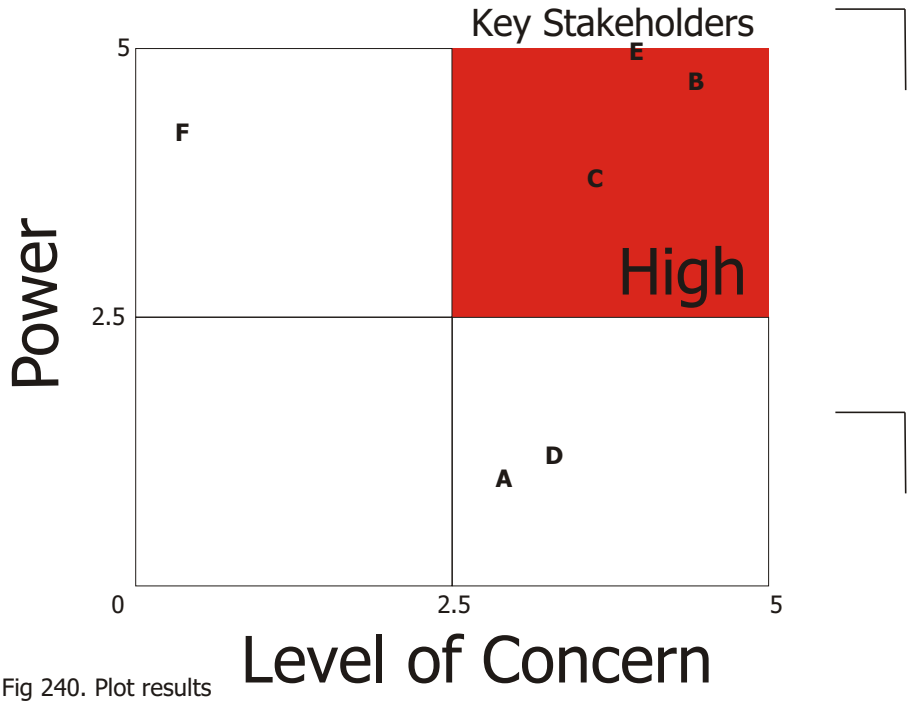

Fig 240. Plot results

In the above plot result it is evident that the Government, Rand Water and the Department of Education are the key stakeholders concerning this project. Their influence, control and level of concern should be taken in consideration from the conceptual phase till the end of the termination phase.

Probability/Impact risk rating matrix				
Risk description	Consequence measure	Likelyhood measure	Numeric Ranking	Category Ranking (Companies threshold levels)
Not enough time	4	2	8	Medium
Insufficient budget	4	3	12	Medium
Insufficient resources	4	1	4	Low
Management	4	4	16	High
Cash flow	4	3	12	Medium
Contractual	3	1	3	Low
Legislation	3	1	3	Low
Poor quality production	5	3	15	High
Design	4	2	8	Medium
Weather interference	3	3	9	Medium
Material costs	3	1	3	Medium
Insufficient users	4	3	12	Medium
Government	5	3	15	High
Inflation & escalation	3	2	6	Low

Fig 241. Stakeholder analysis

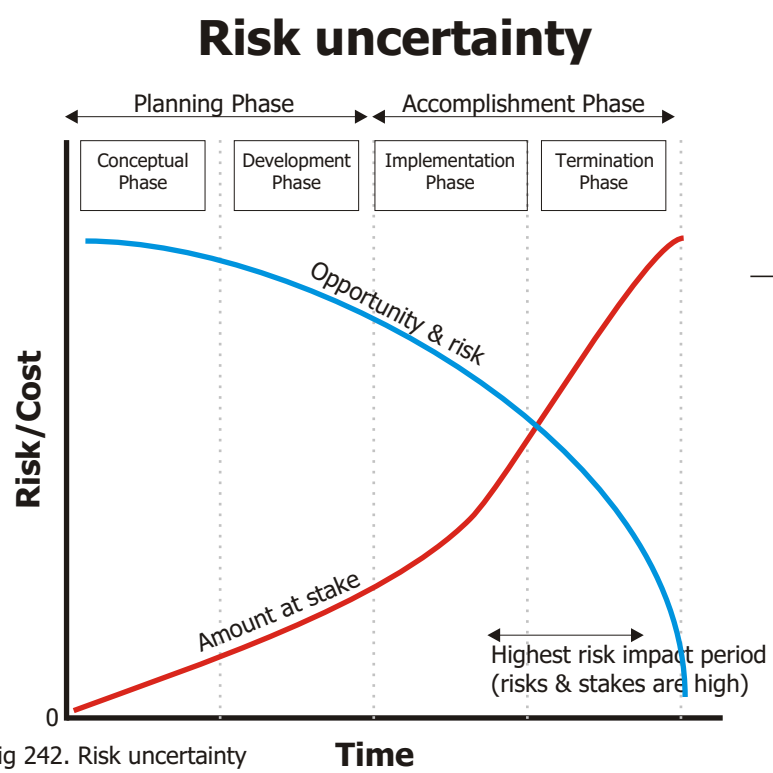

Fig 242. Risk uncertainty

Mitigation measures

The greatest degree of uncertainty exists at the conceptual phase of a project, but the amount at stake is low. As the project progresses the risk become less, but the amount at stake becomes higher.

When looking at the risk rating matrix, those risks with the greatest impact and the most likely possibility of occurring i.e. with the highest ranking, should be addressed. Close attention should be given to each of these risks.

For each one of these risks a detailed system should be in place to minimise the risk factor during each phase of the building process.

Management:
Management of the scheme as a whole, should be planned very carefully. Matrixes and diagrams should be in place to ensure that planning, construction and termination takes place within the time framework set up at the beginning of the scheme. A penalty system should be implemented for any one who exceeds beyond the time frame given for a specific part of the project.
Management is the key factor to a successful or failed project. Good management and planning can eliminate the risks on the lists mentioned above or extend on them greatly.

Poor quality production:
To prevent ending up with poor quality workmanship, and to maximise the quality of the end product, mitigation measures should be set up very early within the conceptual phase. This is a technical risk. To prevent this, the designer should, with the input of the client specify the exact building materials required for the clients need. Technical drawings should be flawless. All of this should concur with the necessary SABS standards. Local contractors should be used, but the quality of work done on previous projects should be inspected before the constructing phase start. Regular quality checks should be performed during the construction phase to ensure that construction takes place according to the given specifications.

Government:
The input and involvement of Government and more specifically the Department of Education, will have a big impact on the feasability of the whole project. The structuring of the educational system and the current curriculum, are the generators of the amount of people visiting the centre. Any changes in the educational system or curriculum might effect the feasability of the building to a great extend.