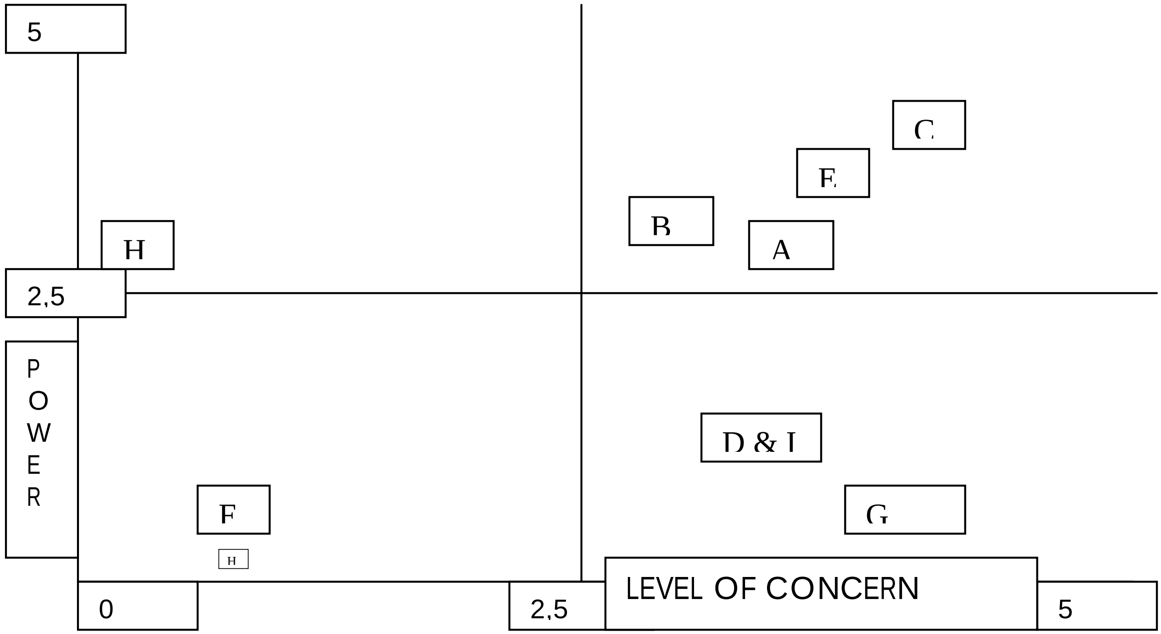
cost analysis

In doing a cost analysis and feasibility study for a building the important stakeholders are determined. A feasibility study is done to determine the cost of the building and criteria is set up to determine the management of the project. A triple bottom line balancing scorecard addressing financial status, the environment and social aspects, forms the basis of reporting to investors. Apart from the finances, the social feasibility of the project determines advantages gained for the community.
In the Berea Park Learners Resource Centre that is the most important aspect; it being a community centre. This project is funded by the European Union as part of its support to the betterment of education in South Africa. The building itself will be managed and used by a Section 21 company consisting of bureaus of the Department of Education and Department of Environmental Affairs and Tourism and tertiary institutions like the University of Pretoria, Unisa and the Technikon Pretoria. This building will become an information centre for the public. A digital library will be run by the tertiary institutions as a first contact base for future students. The resource centre will also become a study centre for students and life-skills training centre for the inner city community.

	POWER			LEVEL OF CONCERN			
STAKEHOLDER	INFLUENCE ON OTHERS	DIRECT CONTROL RESOURCES	**X-AXIS**	TECHNICAL	SOCIAL	ENVIRONMENT	**Y-AXIS**
	0,3	0,7		0,2	0,5	0,3	
A government	4	2	**2,6**	2	3	5	**3,4**
B Tertiary institution	4	2	**2,6**	3	3	2	**2,7**
C European union	5	4	**4,3**	0	5	5	**4**
D community	4	0	**1,2**	0	5	2	**3,1**
E professionals	4	5	**4,7**	3	3	5	**3,6**
F labour	1	0	**0,3**	5	1	0	**1,5**
G environment	4	0	**1,2**	3	3	5	**3,6**
H unions	0	5	**3,5**	0	1	0	**0,5**
I students	4	0	**1,2**	0	5	2	**3,1**

1 = low priority 5 = high priority



Management plan of Stakeholders

C- **European Union**- The funding off the project will be the main concern for the Union. Their interest will be managed by keeping them posted with a triple bottom line report after each phase.

E- **Professionals**- A good relationship needs to be established between the different professionals. Everyone on the professional team need to be aware of what is expected of them and do their work accordingly. A management strategy needs to be put in place to streamline communication channels.

A- **Government** – A 20% funding will be expected from them and therefore a triple bottom line reporting system will be put in place. As being part of the Section 21 company the involvement in the design will stop at the detail design stage.

B- **Tertiary Institutions**- The different tertiary institutions are part of the Section 21 Company and they will manage the building. They are sub-clients and will pay rent for the spaces they use. They will assist in compiling the accommodation schedule and they will be involved up to the detail design stage.

The other important stakeholders that need special attention, but does not fall into the upper right quadrant of the graph, are the community, students and the environment.

Schedule

The budget will be spent on specific elements. If funds need to shift around a special form need to be filled in for permission. Every month certain work will be signed off and the final account delivered. A triple bottom line report will be prepared for the European Union after every phase. The procedure for the execution of the project will be evident in the regulations and the budget.

RISK CATEGORY	PROBABILITY	IMPACT	FACTOR = P x I	RISK
Time & schedule	3	2	6	low
Special work	2	4	8	medium
By laws & legislation	3	4	12	medium
Control & management	4	5	20	high
Lifespan	4	4	16	high
Sustainable income	4	4	16	high
Security	4	4	16	high
Environmental damage	1	5	5	low
Cost	3	4	12	medium
Cash flow	2	5	10	medium
Loss of potential	1	5	5	low
Contractual	4	4	16	high
Design	1	5	5	low

1 = low probability/ impact5 = high probability/ impact

Management plans for high risks

Control and management - Every month certain work will be signed off and the final account delivered. Because funding is provided by an independent stakeholder and executed and managed by another, this is the best way to achieve the best result. A triple bottom line report will be prepared after each phase to monitor funding, the environment and the social impact. The management after construction will be by the Section 21 Company.

Lifespan- Because this is a public building in the inner city of Pretoria, a high priority is placed on the sustainability of the project. The adaptability and flexibility of the design is addressed from concept phase to reassure its use can be recyclable. The community function can easily be changed to a commercial one with the modules of the building rented out for retail or offices.

Sustainable income – The scheduling of the project can determine that certain phases of the building be finished and rented out during the construction phase. The rentable space should be adequate - in the case of the Resource centre it is 70 %. A mix of uses and more than one client and user ensures a variety of functions. This makes the development sustainable because a mix of small and big enterprises runs the project.

Security- During the construction process the security is the responsibility of the contractor. The design of the building allows for functional modules of the building to be totally closed off at will. Passive surveillance and check points will be established by the users and staff.

Contractual – The responsibility of all the different professionals and labour must be made clear in the contracts. Penalties will be paid if contracts are not adhered to.

Preliminary estimate

Ground floor

Exhibition space	454 m²	@R 1057.00	R 479878.00
Library space	909 m²	@R 1375.00	R 1249875.00
Restaurant	601 m²	@R 1057.00	R 635257.00
Foyer	723 m²	@R 500.00	R 361 500.00
Circulation, stairs, toilets	670 m²	@R 1205.00	R 807 350.00
Maintenance	104 m²	@R 950.00	R 98 800.00
Offices	310 m²	@R 1375.00	R 426250.00
Total	3771 m²		R 4058910.00

First floor

Library space	909 m²	@R 1375.00	R 1249875.00
Offices	764 m²	@R 1375.00	R 1050500.00
Auditorium	601 m²	@R 1057.00	R 635257.00
Circulation, stairs, toilets	670 m²	@R 1205.00	R 807 350.00
Maintenance	104 m²	@R 950.00	R 98 800.00
Total	3048 m²		R 3841782.00

Second floor

Library space	606 m²	@R 1375.00	R 833250.00
Conferencing	454 m²	@R 1057.00	R 479878.00
Circulation, stairs, toilets	670 m²	@R 1205.00	R 807 350.00
Maintenance	104 m²	@R 950.00	R 98 800.00
Office	310 m²	@R 1375.00	R 426250.00
Total	2144 m²		R 2645528.00

General site works

Demolishing, boundary walls etc.	R 148 000.00
Ground works	R 240 000.00
Parking paving, driveway etc.	R 620 000.00
Retaining walls etc.	R 275 000.00
Piling	R 386 000.00
Landscaping, trees etc.	R 20 000.00
Total	R 1689 000.00

Conclusion

Ground floor	3771 m²	R 4058910.00
First floor	3048 m²	R 3841782.00
Second floor	2144 m²	R 2645528.00
	8963 m²	R 10546220.00
General site work		R 1689 000.00
		R 12235220.00
Plus: Unforeseen expenditures (2,5 %)		R 305 880.5
Estimated building cost		R 12 541100.5

This estimate does not include:
Air conditioning, Equipment, Escalation and Professional fees.

Feasibility study

Total Capital: R 12541100.5

Estimated building cost

Estimate escalation:

- Before contract (2 months)	R 250 822.00	
- After contract (10 months)	R 877877.00	R 1128699.00
		R 13 669 799.5
- Disowning costs		R 2500 000.00
- Transfer fees		R 5350.00
- Diverse legal costs		R 10 000.00
- Municipality		R 21 000.00
- Plans and photocopies		R 12 000.00
- Interim property tax		R 13 680.00
- Loss due to interest on total capital investment and/or interim interest calculated at 12 % over 12 month time		R 550 000.00
- Agent commission		R 91 000.00
Total estimated capital outlay		R 16872829.5

Running costs

- Cleaners
- Cleaning material
- Property tax
- Water use
- Sanitary fees
- Electricity use
- Refuse removal - part of rent

- Building maintenance	R 4700.00
- Insurance	R 3660.00
- Auditors fees	R 1520.00
- Management fees	R 3800.00
- Diverse	R 800.00
Running costs per month for first year	R 14180.00

Income

Retail, store, restaurant etc.	2110 m²	@R 50.00/ m²	R 105 500.00
Office, Admin, Auditorium, Library	3808 m²	@R 27.50/ m²	R 104 720.00
Total rentable area	5918 m²		
Gross income per month for the first year			R 210 220.00

Gross income per year for the first year	R 2522640.00
Minus: Running costs per year for the first year	R 170 160.00
Effective nett income for the first year	R 2352480.00

Estimated nett income on total capital investment

- Total capital outlay	R 16872829.5
- Total nett income for first year	R 2352480.00

$$\frac{R\ 2\ 352\ 480.00}{R\ 16\ 872\ 829.5} \times 100 = 13{,}9\ \%$$

This cost analysis and feasibility study is based on a feasibility study done in 1996 by Andre Venter associates quantity surveyors for a shopping centre in Pretoria. The building cost will be more, but this shows the finance broken down into comprehensible parts. A more realistic figure would be R 3500/ m². This amount comprises of the steel structure @ R 400/ m², concrete walls @ R 300/ m², the concrete slab on permanent formwork @ R 400/ m², brick walls @ R 150/ m², the glass curtain walls @ R 800/ m², the dry walling system (modules) @ R 300/ m² and the painted /pigmented cement screeds @ R 30/ m².
An estimate according to these figures is R 3500 x 8963 m² = R 31 370 500. Which is double that of the estimate based on figures from 1996.

Reference: van der Kolf, H. 2002. The Project Management Processes & Cost Analysis MProf & PRS 320 notes. Photocopied notes: University of Pretoria.