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B A S E L I N E D O C U M E N T

C L I E N T B R I E F

Feasibility of a project is mainly dependant on the client's requirement which the project must serve and the client's resources which the project must draw from.

S C E N A R I O O N E

The principal client would be the CBE (Council for the Built Environment) but since they are a council instituted by a government act, any structure for their intended use would be financed by the government. With this being the case, additional space within this facility could be made to serve other government departments too such as the DPW or DAC. The six main councils comprising the CBE (SACAP, SACLAP, EISA etc) will be relocated into this facility.

S C E N A R I O T W O

Examination of the Spatial Development Framework (SDF) reveals the government's intention to consolidate fragmented government departments into singular units. The reshuffle of department premises is also planned to maximize the usage of government owned properties within the city.

As such, it is unlikely that the government will be willing to purchase or develop new facilities within Pretoria.

Due to the fact however that the CBE and subsidiary councils were formed and continue to operate out of government funds, a third party structure would suffice as the location for CUBE with payments executed by the government on behalf of the CBE and the other councils.

A third party developer or property owner is thus

the second option available to us with which to find adequate occupation. Groups such as Old Mutual or Investec, who own numerous properties throughout the city and lease these out to companies as office space could be approached. In addition, property developers such as Century which buy existing rundown buildings in the city and refurbish or alter their usage from residential to office spaces can be approached to develop a solution.

The ideal client would be one which owns underutilised inner city land and is seeking to build to capitalise on an investment opportunity not fully developed.

P A R T N E R S H I P S

A Public Private Partnership (PPP) is the funding and management processes defined by government regulations and established through the National Treasury to develop city projects with both private and government investment. In this manner the government is aiming to generate renewed inner city growth by providing partial support during the development stages. Government will retain part ownership of the project but with a minor share, allowing government resources to be allocated across a larger number of other potential projects.

A similar kind of partnership is envisioned for this project. The site owner or developer together with government will provide the initial capital outlay to build the facility. Upon completion government subsidies will help provide a continuing operating budget for the project through the financing of the statutory councils while private sector businesses and manufacturers will be approached for partnerships with CUBE to promote the construction fields. Thus government, private partnerships and the site owner will each retain a 33% stake in the project overall.

C L I E N T R E Q U I R E M E N T S

C . B . E .

The CBE is seen as the principle client. However with the inclusion of the six subsidiary councils, the needs of these bodies will also need to be taken into account. But since the various councils operate in a similar manner, it is not envisioned that there will be much deviation from the core requirements.

- According to information laid down by Act 43 of 2000 responsible for the formation of the CBE, the council is to be constituted as follows:
 - 1 member from the Public Works Department
 - Up to an additional 3 persons from related government departments
 - 2 members from each subsidiary council
 - 4 members from the general public

In total this leads to a preliminary membership of 20 people, requiring space in the CBE offices.

C O U N C I L S

Requirements are similar in nature to those of the CBE except with differences pertaining to the specific nature of the technical skill represented by the different councils. Yet all deal with the evaluation of design and as such it is merely workspace that is required.

SACAP

- According to information laid down by Act 44 of 2000 responsible for the formation of the SACAP, the council is to be constituted as

follows:

- 7 registered members of which 4 must be practising
- 2 members in service of the State
- 2 members from the general public

SACLAP

- According to information laid down by Act 45 of 2000 responsible for the formation of the CBE, the council is to be constituted as follows:
 - 1 member from the Public Works Department
 - Up to an additional 3 persons from related government departments
 - 2 members from each subsidiary council
 - 4 members from the general public

ECSA

- According to information laid down by Act 46 of 2000 responsible for the formation of the CBE, the council is to be constituted as follows:
 - 1 member from the Public Works Department
 - Up to an additional 3 persons from related government departments
 - 2 members from each subsidiary council
 - 4 members from the general public

SACPVV

- According to information laid down by Act 47 of 2000 responsible for the formation of the CBE, the council is to be constituted as follows:
 - 1 member from the Public Works Department
 - Up to an additional 3 persons from related government departments

- 2 members from each subsidiary council
- 4 members from the general public

SACPCMP

- According to information laid down by Act 48 of 2000 responsible for the formation of the CBE, the council is to be constituted as follows:
 - 1 member from the Public Works Department
 - Up to an additional 3 persons from related government departments
 - 2 members from each subsidiary council
 - 4 members from the general public

SACQSP

- According to information laid down by Act 49 of 2000 responsible for the formation of the CBE, the council is to be constituted as follows:
 - 1 member from the Public Works Department
 - Up to an additional 3 persons from related government departments
 - 2 members from each subsidiary council
 - 4 members from the general public

S I T E O W N E R

Due to the fact that the selected site already contains an existing structure and has an owner already, the main motivation for the owner/s to give the go ahead for this project would be to develop under-utilised portion of the site.

With the principal design being developed for the CBE and its subsidiary councils, it is proposed that additional office space be developed to allow other groups, still in the built environment fields, to operate from this facility.

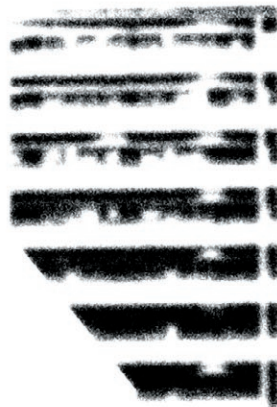
Preference is given to any non-profit or public group such as the PIA, GIA etcetera rather than allowing individual architectural firms to operate from this facility. If this were to be allowed an unfair sense of advantage may be given to those firms which operate out of this public interface.

This inclusion of additional sources of income generated through the letting of space to localised councils and institutes will promote the idea of developing this location to the client.

U S E R P R O F I L E

As a publicly orientated structure, all manner of people are welcomed into the building. Naturally due to special interest in the fields, professionals and students of the built environment will be the principle users. But in reality the targeted user is any pedestrian in the vicinity of the project.

The design aims to appropriate the walking time of pedestrians by providing interesting and informational displays along the public arcade route. In so doing the facility will influence and reach more people than it ordinarily would were all exhibits isolated from public view. This process of walking and viewing is the hook utilised to shift pedestrians from the role of passer-by into that of user.



P R E L I M I N A R Y A C C O M M O D A T I O N S C H E D U L E

The total composition of the required functional spaces in the facility will be required to serve the various roles the building adopts as a public interface. Thus the final schedule has been broken down into the various networks and developed to ensure that these services can be provided for.

EDUCATION NETWORK – the spaces in facility centered on architectural learning.

- Library – space for 30 people, similar to reading room, (+- 16m x 7m)
- Archive – attached to library (accessible by itself?). archive for project material rather than historical books and references which should be available through library, possibly a reserved section. model storage, drawing storage, project material storage required here. (possible entire lower level or one 2nd or 3rd level)
- Reading Room area – take material to examine (located within library area)
- Computer research area – viewing of drawings and 3D models (link this with honours and masters working labs with public works – this space must double as computer lab when not in use by students and be able to be part sectioned off to allow public pc access when in use by students.)

BUILT ENVIRONMENT NETWORK – spaces utilized by those in councils, practicing individuals and informed professionals in the administrative field of the built environment.

- Lecture rooms – 2 or 3 in facility, used for lecturing of students; addressing and making announcements to the public; utilize for

internal talks between councils; rented and utilized for business/company talks; designed for 100 - 160 people

- Meeting rooms – smaller than lecture halls, these serve the individual councils for small scale administration in the built environment; due to the similar nature in use these rooms can probably be shared between councils and used at differing times creating a better use of spaces and freeing space for additional uses in the building; serve as connection between larger lecture rooms and office areas.
- Display Area – mainly for architecture related items; can be hired to host exhibitions of art and sculpture as well; certain rooms convertible for architectural and art installations.

OFFICE NETWORK – Each module for the various groupings to be designed for a base of 10-20 people; open plan office layout to be followed with ease of use partitioning system that will enable re-configuration for changing needs and spaces.

Consideration must also be made for working professionals that belong to the boards of the councils and as such require temporary office environments to do work on an intermittent basis. These spaces should be easily re-configurable into working space for the permanent staff. **SACAP, SACLAP, ECSA, SACPCMP, SACPVP, SACQSP.**

Smaller councils and institutes – module here to be designed for a base of 5-10 individuals; individual modules must be reconfigurable to be opened into larger spaces to incorporate larger office environments or compartmented into smaller modules should smaller councils seek position. **PIA, GIA, CIDB, CETA**

PRACTICAL NETWORK – spaces for the teaching and building of physical construction to students in

first and second year. Utilized as showcase elements in facility on sculpture/feature basis.

- Material storage – place for cement, bricks, tiles etc.; locate products that can be viewed by public; artists and artisans can display building products (mosaics, air bricks etc)
- Building area – open for viewing by public; locate possibly near central courtyard or connected to; will need to accommodate 25 – 50 people and constructable objects. Surface to be cleanable, access to water and drainage.
- Tool storage/service shed type space

EXHIBITION NETWORK – the spaces in the facility that inform the public visitors on the world of architecture and developments through Pretoria and South Africa. Specific display rooms can be hired as location for exhibiting individual artist or architects work.

- Main display area – located along route throughout facility sharing circulation space.
- Installation rooms – themed/selected artwork exhibition in secluded spaces connected to main circulation space; final year exhibition space; new projects in the city etc.

HISTORICAL NETWORK – the informative routes through the city depicting the best of Pretoria's architecture.

- Starting point - located near entrance to CUBE, facing paul kruger street onto the boulevard; initial meeting area usable as reception waiting area for clients of CBE or other council; information regarding tour to be located near this point, near entrance.
- Tour routes – can be selected from a preset according to choice of the tourist group, either pastiche of everything, or selected styles, selected time periods, selected designers or selected usage based on cultural or economic

significance etc.

A D D I T I O N A L

BUILDING FACILITIES – spaces of use to both the general public and building occupants.

- Restaurant/Eatery – place connected to viewable interior courtyard, connected to both the bookshop and near to offices of users, serving all visitors and working individuals within the building.
- Bookshop – purchases of books some of the books in the library, mainly architecture in selection, along the guidelines of RIBA bookshop in CUBE.
- Receptions – at both entry points into the structure.
- Archive – models of well known buildings in both Pretoria and South Africa accessible to viewing as well as building plans

BUILDING SERVICING

- Air conditioning plant
- Lift room and core
- Fire stairwells, extinguisher and hose positions
- Openly accessible toilet space to serve public in building
- Privately accessible toilet space for working occupants
- Kitchen, chef office, food storage and prep to serve restaurant with air extraction
- Book storage, manager office attached to bookshop
- Central server and networking room, intelligent building operation centre
- Telephone exchange
- Maintenance storage of tools, chemical, locker room
- Main reception/directions to the various parts

- Security desk, observation post, alarm control
- Electrical connection point, emergency shutoff etc
- Water, waste connection room, shutoff

CBE FACILITIES

- Office area
- Enclosed main office (dependant on requirement)
- Meeting rooms
- Lecture hall
- Reception
- Maintenance

COUNCIL FACILITIES

- Office area
- Enclosed main office (dependant on requirement)
- Shared meeting area
- Reception

RENTABLE OFFICE SPACE

- Office area
- Shared reception area
- Shared meeting space

T A R G E T S

In order to gauge the project and its potential successes and failures, focus on the central objectives must be highlighted and examined with regards to the setting of targets. In particular, the social objectives are considered to be of greatest importance with the educational role the project is seeking to take as the principle reason for its establishment.

01_Interface equals access

Primarily seen as a public interface with office working area, the promotion of information towards the public must begin from the entrance of the structure and remain prevalent throughout the visitor's journey. In order to achieve this, ground and first floor have will be designed together to act as the public realm within the structure. Between these two floors all the public serving and informative areas will be accommodated to ensure maximum usability by visitors.

02_Circulation

On a functional level, the building is required to be accessible to all members of the public including the disabled and the partially sighted.

03_Multi-Use

This target seeks to maximise the role of the facility by incorporating many methods for interaction with the public on a functional level. Diversification of functions will ensure a continued use of the facility throughout the day rather than experiencing peaks in user numbers.

04_Diversification (of networks)

In connection with the target of Multi-use, this target however seeks the generation of diversity on a spatial rather than functional level. Development of urban spatial relationships between the facility and other elements in the city fabric will promote the integration, acceptance and usage of the facility once complete.

05_Construction

The process of erection of the project structure must incur a minimal impact on the surrounding buildings during the construction phase. Method of construction and fabrication processes must be considered in order to achieve this target which will depend in large on the amount of earthworks involved and the construction of structure near to boundaries, each of which must be reduced to a minimum to comply with this objective.



T R I P L E B O T T O M L I N E

“And, of course, delight: a building which both works and feels good to be in will be a much better investment in the long run than one which is functional but unloved.”

Metric Handbook, 1999

S O C I A L I S S U E S

Occupant comfort

Office environments are where most people spend the majority of their day, in front of computers or reading material. With the prolonged amount of time spent in offices, the design must respond to the users comfort and health.

Lighting

Maximising the utilisation of natural light is a must in a climate with plentiful solar radiation. Thus the use of skylights to illuminate the central atrium and circulation spaces will lessen the energy requirement to light these spaces. Offices, lecture rooms and other functional spaces will be lit with energy efficient luminaires to the correct and suitable working levels required specific to the room's function.

Direct sunlight penetration should be avoided through either the use of fenestration, recessing or solar reflective glass panes. Night lighting to be provided in all publicly accessible parts of the facility with

Ventilation

Passive ventilation through the central atrium spaces and out through the skylight roof vents will be employed as principle air circulator in the main spaces of the building. Mechanical ventilation will only be employed when necessary and will only serve the individual office compartments, reducing the energy

requirement were the entire building volume to be mechanically circulated.

Provision of ground floor openings through doorways and stacking window facades will allow multiple points of entry and exit to air flow, generating cross ventilation throughout the public levels in the structure.

Working Environments

The avoidance of sterile, working environments is considered a must especially with the potential for internal office spaces to have negative, unhealthy effects on the people working within them. Design focus will be placed on creating interesting, individualised spaces within the building that allow a relationship between outside and inside, stimulating and informing the users of their surroundings.

Indoor/Outdoor

The climate in Pretoria with predominantly high percentages of solar incidence has generated communities which centre about external activities. This relationship of the people to the outdoors must be adapted into the design and provide such a space for the gathering and interaction of people external from the building.

Thermal Comfort

Suitable internal temperatures must be maintained to ensure the ability of users and visitors to perform normal daily functions and work processes. Control of the temperature however will be restricted to internal office and working spaces which are smaller in scale and thus able to be regulated quicker and improve energy efficiency.

Views

The dense urban environment surrounding the site and the site shape restricts much of the views afforded a normal site within the city. The western and southern side edges will allow the only two visible facades from the street. These have thus been designed to be the

principle viewpoints, becoming glass facades with a sun protection louver system. This will allow control of both light intensity and visibility into and out of the structure. The remainder of the building design has an internal focus on spaces generated through the many atriums. Views are thus established within the structure where no other option exists.

Entrances

Provision through design must be made to enhance the possible opportunities in which to enter the CUBE building. Regular and visible entrances and exits to be located throughout the structure to introduce the concept of permeability between building and urban environments.

The linear length of the building and shape would inhibit circulation and pedestrian movement were access restricted to a single entrance. Thus entrances at both ends of the facility have been created. In addition to this, secondary entrances via the courtyard have been added to increase the permeability of flow between structure and urban environment.

Inclusive environment

The ability of disabled and partially sighted persons to utilise the building and its services should not be restricted in any way. Changes in levels will be accommodated through either lifts or ramps at no greater than a 1:12 slope and complying with the relevant building codes.

Access to facilities

The regular use of building services and spaces must be considered and the design should reflect a relative level of access according to frequency and function.

Participation and control

Variable control of ventilation, air heating and cooling, sunlight penetration as well as the configuration and adaptability of working space will allow users to be in control of their environment to a degree. The ability

to conform to user wishes will mean the building shall remain functional and not disused.

Education, Health and Safety

User and visitor learning is a key design objective in this facility. The spread of information occurs not only between the building and the public but also between councils and the larger citywide planning networks. Working environments must be considered in depth and through design, seek to create healthy and exciting places in which to work.

E C O N O M I C I S S U E S

Local economy

Sources of labour and construction management will be utilised from the surrounding area. Technical work of high standards requiring special workmanship or specific construction techniques will be completed by local fabricators and builders who will be trained in the necessary techniques. This will aid in establishing a sense of construction quality in the local environment.

Efficiency of use

The designed composition of the final structure will focus to achieve the continued use of the building throughout the day. Constant use through diversification of services and activities will facilitate this. In addition the ability of the building to operate after business hours will be achieved by permitting social gathering and events to occur with the necessary safety and security considerations.

Adaptability and Flexibility

The use of reinforced concrete frame structure removes the dependency on load-bearing walls to provide structural support. Thus infill clay brick wall construction will allow future spatial alterations to be achieved if so required. The same principle will apply to open plan office spaces which will allow maximum

adaptability utilising temporary and permanent partitioning, according to the office operating processes.

Capital costs

Where possible, design must help achieve a cost-effective solution to building construction. Standardisation of jointing, fixings and building elements will help reduce costs in complicated construction work. Initial costs into the project are seen to be feasible through the development of under-utilised space on the client's site. The building must serve the public interest and not isolate any services from general use due to expense.

Ongoing costs

After initial expenditure on the construction of the building, continued financing will be required to clean, maintain and secure the facility. Through the income generated by the rentable office space and government subsidies, the cost of maintenance will be reduced. The design must consider each process of cleaning, maintenance and security to alleviate unnecessary wastage and expenditure.

Repairs and Maintenance

The cleaning of windows, replacement of broken elements and fixing of potential building flaws must be considered and provision for the manner and processes involved in such operations to be kept in mind during the design phase.

Cost Monitoring

Methods to inform users of building consumption will be developed to create awareness in the user/visitors of the facility, and indeed of all buildings, of the various energy demands and requirements. This follows closely the ideology of the building in establishing public knowledge of building operation, not only design.

Diversification

To provide a stable economic base on which the building can operate, multiple use spaces and a variety of services will be developed to ensure continued operation. The failure of one aspect will thus not place the feasibility of the entire project into jeopardy.

ENVIRONMENTAL ISSUES

Water

The use of water-efficient dispersing fixtures will be mandatory throughout the building to reduce the total amount of water consumed by the building occupants.

Energy

The use of natural lighting and ventilation will aim to alleviate excessive energy demands the building may require. Luminaires throughout the building must be energy-efficient with suitable ratings for both energy consumption and light intensity in order to facilitate working in suitably lit conditions.

Direct sunlight will be used to provide a heating source during winter months and the incorporation of atrium spaces in the design will facilitate air flow through the structure.

Waste

Brown water waste management will remain the responsibility of the city infrastructure. Due to the large percentage of office space, recycling of waste material such as paper and plastic will be performed. Electrical sources will be turned off during the night, including all computers and office lighting, in order to reduce energy waste.

Site

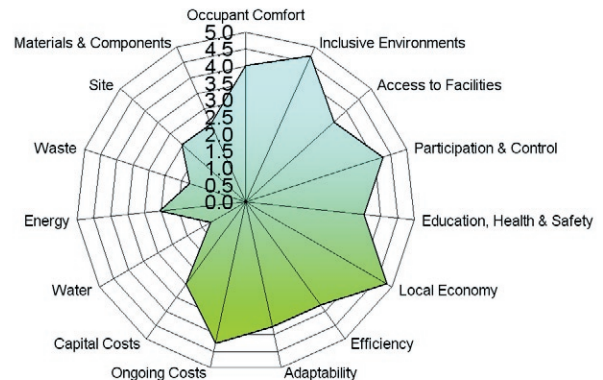
By developing an existing site within the inner city, the upgrade of an existing brownfield site will prevent

the disturbance of development on another site which possibly may be virgin land more suitable for public spaces and parks.

Materials

All materials chosen for construction must either be commonly available and allow ease of workmanship or have the ability to be recycled and reused later in the material's lifespan should they contain a high embodied energy. The aesthetic of the materials must reflect the local built environment in style and use to provide contextual suitability.

Fig.3_01.SBAT performance graph



S B A T P E R F O R M A N C E

Final examination of the results from the SBAT analysis shows a marked difference between the social and economic fields when compared to the environmental section. Performance ratings are high for both social and economic aspects related to the project which highlights the focus in this project.

Socially, the design seeks to begin an interaction between the city and its residents, utilizing the building as ground zero for the establishment of this social activity. All the design goals dealing with the accessibility of the structure, not only physically but intellectually have been achieved through the involvement of people in the buildings operation.

Economically, the project is seen to be slightly less successful although remaining quite within acceptable limits. Consideration must however also be given to the external positive economic effects of this project. The development of the under-utilised space on the site will improve the overall site's performance economically, returning additional funds to the land owner through rent and leasing, improving the land utilisation within the city centre and the incorporation of income generating aspects such as the bookshop and restaurant will provide streams of future funds. Some of these elements are not considered through the SBAT analysis yet such aspects however must be held in mind when considering the larger picture economic performance of the project.

Environmentally however, the performance of the project is rather disappointing. Indeed the analysis shows minimum acceptable limits with regards to target levels. For such a marked difference between these fields, closer examination is required.

The SBAT analysis breaks the environmental section into five smaller categories as listed above.

With regards to waste and water management and recycling, extremely narrow site dimensions prevent anything other than the project structure from occupying the site. Recycling systems for waste and water would also require integration with the existing building on site which places much doubt whether this could be achieved. The building scores average under the remaining three categories but again an understanding of the larger picture may help to dispel conceptions of poor performance.

The enhanced development of an inner city site such as this one by converting previously unused space into a functional and economically active space will alleviate the impact a similar development elsewhere in the city. Minimal infrastructure upgrades will be required alleviating the need for extensive groundworks since all services are readily available on the site. Far distances to the periphery of the city will not be required during the construction phase due to the central location of the proposed site, saving on fuel and transport costs and the impact of pollution. Indeed, utilising this site prevents the unnecessary development of undeveloped plots in the city which can in turn be used for public green spaces or parks. With the existing site being a brownfield site too, the development of disturbed land is far more acceptable than that of virgin natural land.

Under these criteria it was decided that the minimal performance of the project in this regard was acceptable.