UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
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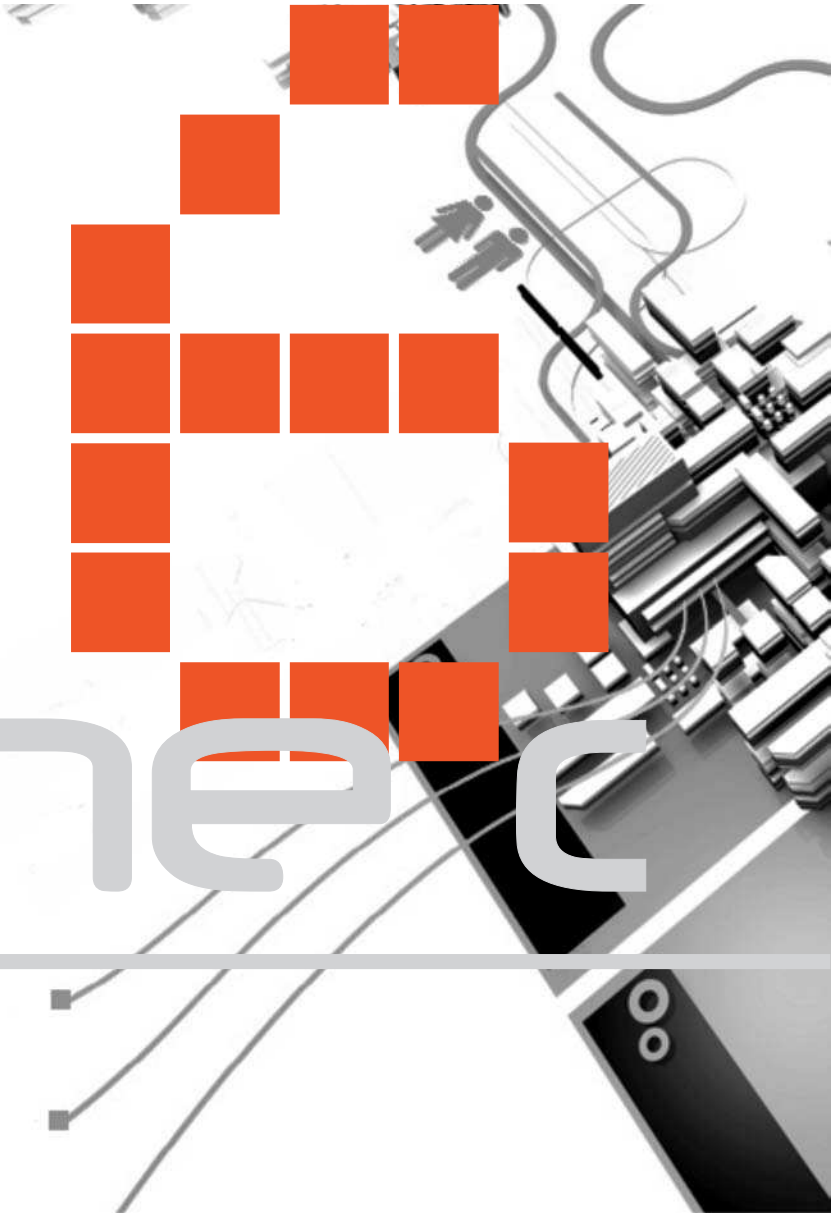
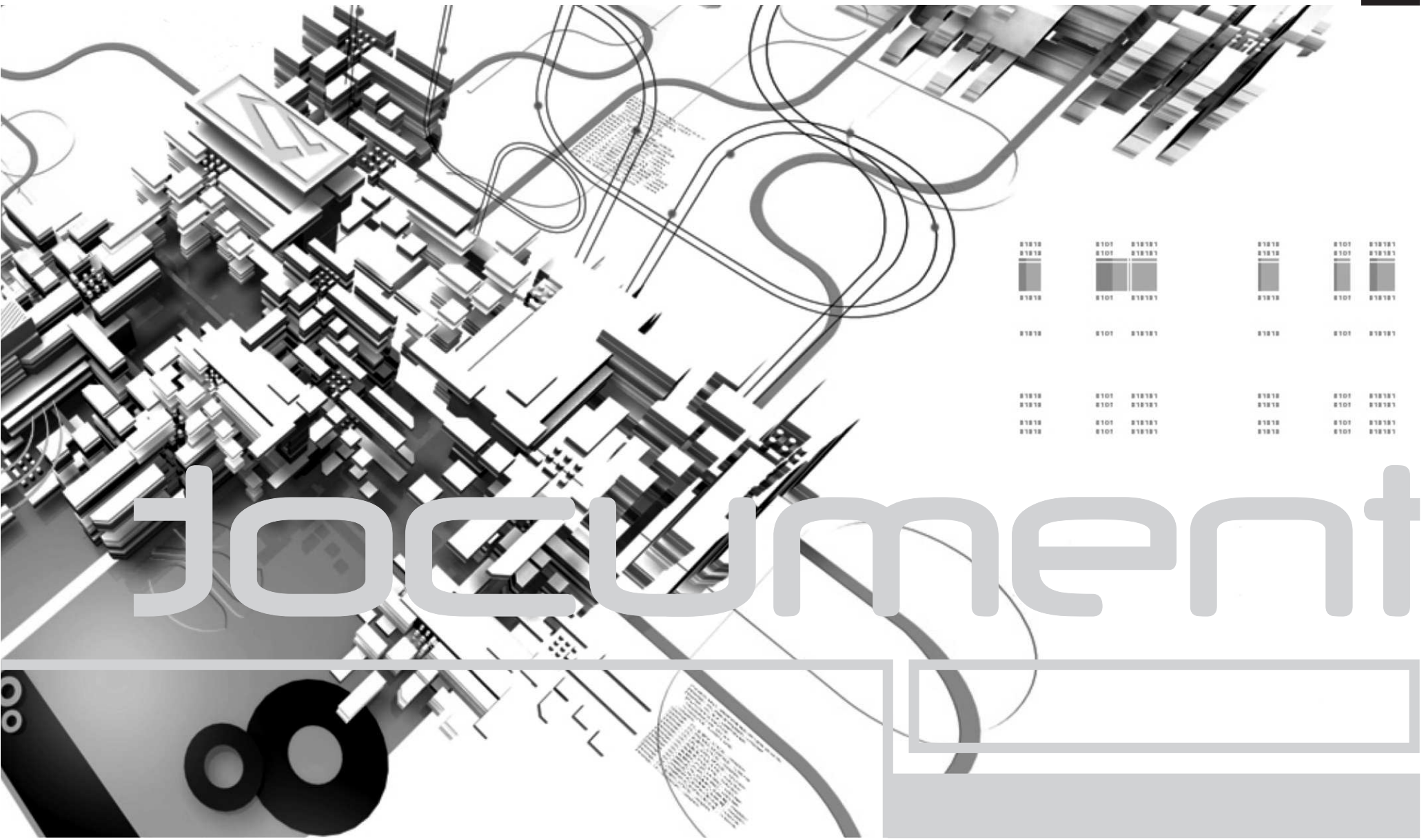
06-01

baseline





document

[social issues]

[occupant comfort]

Ventilation
use of natural ventilation where possible. Equipment rooms and offices to be mechanically ventilated. [this should be energy efficient equipment and reliable].

Thermal comfort
human performance is greatly reduced when room temperatures are above 28 degrees Celsius or below 18 degrees Celsius. Occupants must find the temperature, humidity & air movement ideal.

Hygienic comfort
air quality in a room is rarely a problem in naturally ventilated areas. Natural ventilation must be promoted as stale air causes drowsiness and affects concentration. User interaction must be promoted in private areas, public areas must cater for the general public mechanically.

Acoustic comfort
can cause discomfort if unwanted noise infiltrates quiet zones. Insulation is to be used in these areas or placement of areas must be carefully considered after analysis of site conditions.

Visual comfort
views in or out of building to be maximized. Natural light is essential throughout public spaces and controlled where artificial light is desired. Visual link to exterior essential.

[inclusive environments]

Circulation
building to promote continuous free flowing spaces across the site. Existing movement patterns to be considered as well as 100% paraplegic access to all areas.

Public transport
building to form a link into the Apie's river promenade proposal. Provision for taxi pick/up, drop/off zone to be catered for. All vehicular traffic to be kept off site i.e. subterranean parking encouraged. Project to link easily with existing public transportation network.

Access to facilities
Ablutions: existing public toilets on site to be retained if possible or reintroduced within the new proposal. Ablutions to relate to minimum requirements of the SABS0400. all sanitary fittings to promote water conservation and recycling grey water.

[Participation and control]

Environmental control
users of the building must have reasonable control over the environmental conditions, especially in private spaces.

Social spaces
users to be offered multiple choices for social interaction. these spaces are to be multi-functional and program for spaces to be easily changed by the users & public.

Amenities
easy access to toilets for users inside and public outside.

Local community
spaces to be available to the public on request if not in use.
Majority of spaces to have two or more uses. Areas to be managed to occupy spaces min 16 hours daily.

Social upliftment
the design process should incorporate purpose designed prefabricated elements to minimize wastage. detailing and material selection that requires little or unskilled maintenance to be implemented if possible.

Education
the centers vision is to cater for talented and interested artists to interact with one another, teach, view & sell art. The users will have diverse art forms to select from. Performers will also be able to introduce the community to the arts where previously a monetary entrance was required.

Safety
due to the permeable nature of the site restricting the access would contradict the public nature of the building. with this aspect firmly established security will become an important aspect within the design. for the building, access control into private spaces will be implemented and public spaces will be closed after hours. for the general external public spaces, the building will have to provide sufficient lighting with no compromising alleys or problem areas. lighting will be an important aspect within the circulation spaces through the park space.

>>

[introduction]

"according to research, buildings are responsible for 30% of raw materials used, 42% of the energy consumed, 25% of water used, 12% of land use, 40% of atmospheric emissions, 20% of water effluents, 25% of solid waste and 13% of other releases globally."

[http://www.ecospecifier.org/knowledge_base/solution_finder/materials_impacts_in_construction]

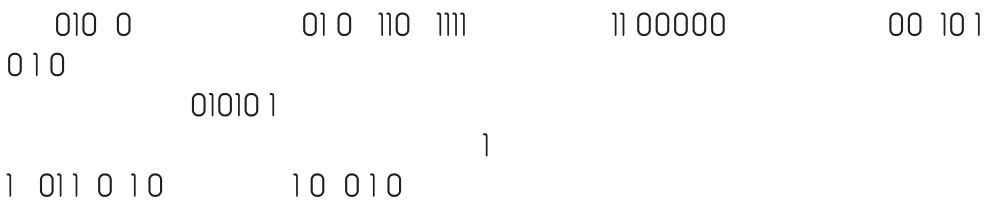
6.1

these statistics just serve to prove the responsibility bestowed upon designers to reverse the damage being done through sustainable design decisions. The entire life cycle of a building must be thought of at conceptual stage.

This baseline study is only a guideline, to inform the design process prior to conceptualizing. The sustainable building assessment tool [SBAT] has been referenced to aid this target setting process.

06-05

6.2



[economic issues]

local economy

local craftsmen and contractors to be favored for construction. Artists and /or T.U.T students to be commissioned for mosaic work. Artwork to be done by students, teachers, artist or the public as an when they so choose in designated areas. Allowing the public to identify aesthetically with the building.

Efficiency of use

in order to achieve a sustainable environment secondary uses for spaces needs to be considered. A coordinator will be employed to achieve use around the spaces primary functions.

Adaptability and flexibility

open planning should be a priority with moveable screens to be used opposed to permanent walls. 3m head room is favorable which will aid in naturally ventilating the spaces and allows for multiple uses of the space

Capital costs

the project incorporates into the Apie's river promenade proposal and will have The University of Pretoria as its lessee. The primary capital cost will be made by trustees, such as ACT [arts & culture trust], [DACST] national department of arts, culture and technology, [BASA] business and arts south Africa as well as the national lottery foundation.

[ongoing costs]

maintenance

materials with low maintenance requirements to be favored.

security

this aspect will be a large contributor to the buildings ongoing cost. As previously discussed the building should provide security for its surrounding spaces i.e. all visual links to the outside spaces must be promoted.

[Environmental issues]

water
storm water runoff to be reduced by the use of pervious or absorbent surfaces
to maximize the replenishment of ground water.

rainwater
to be harvested in two ways
·Storm water
·Rainwater on roof level
water to be collected and stored for later use as grey water for watering landscape.

water consumption
devices that minimize water usage from main water supply to be used.
·Dual flush toilet systems [connected to grey water]
·Auto flow automatic taps in all bathrooms [this water to be reintroduced into grey water collection tank]
·Aerated shower heads

planting and landscaping
to be designed to conform to sustainable principles which are a priority throughout the project. Indigenous plants to be used [low water requirements]

energy
as previously addressed, building are responsible for 42% of all energy produced.

"Conventional energy production is responsible for large contributions to environmental damage and non-renewable resource depletion." [gibberd, 2006;pg9]

passive environmental control
the design must respond to the micro climate of the site. Appropriate orientation must be prioritized, in the event that orientation cannot be achieved shading devises should be incorporated. due to Pretoria's high average temperatures air-conditioning may be required. Shading devices not to conflict with views into and out of the building.

ventilation
the building is to be divided into two zones. a mechanically and naturally ventilated zone. The naturally ventilated zone is to have mechanical ventilation systems installed as backup. Both zones need special attention as they will both interact with the outside. Lobbies and automated doors may have to be considered. Mechanically ventilated areas to be well insulated to avoid unnecessary energy usage.

renewable energy
south africa experiences very high levels of incident radiation from the sun. south africa covers 41% of the land area on the globe where 6kwh of sunlight on a winters day can be harnessed.
[joubert,2006;pg7]

This renewable resource must be harnessed to heat water or convert solar energy directly into electrical energy with the use of photovoltaic cells if within budget.

waste recycling
a policy must be implemented to sort, store and dispose of any materials to recycling plants within the area if such places exist. design limits wastage if modular elements are kept to.

site

brownfield site
the project is located on a brown built site which currently is a long distance taxi rank which is to be incorporated into the new Bloed street taxi rank.

landscape
celebrating the landscape is a theme to be exercised within the Apie's river promenade proposal and is to be implemented within the street arts center project. It is possible to achieve as much as a 30% reduction in cooling and heating costs through careful landscape planning. Landscaping can reduce direct sun from striking and heating up building surfaces. It can prevent reflected light carrying heat into a house from the ground or other surfaces. By reducing wind velocity, an energy conserving landscape slows air leakage in a house. Additionally, the shade created by trees and the effect of grass and shrubs will reduce air temperatures adjoining the house and provide evaporative cooling. A green node is to be created.

[www.greenbuilder.com/sorcebook/landscapingenergy/]