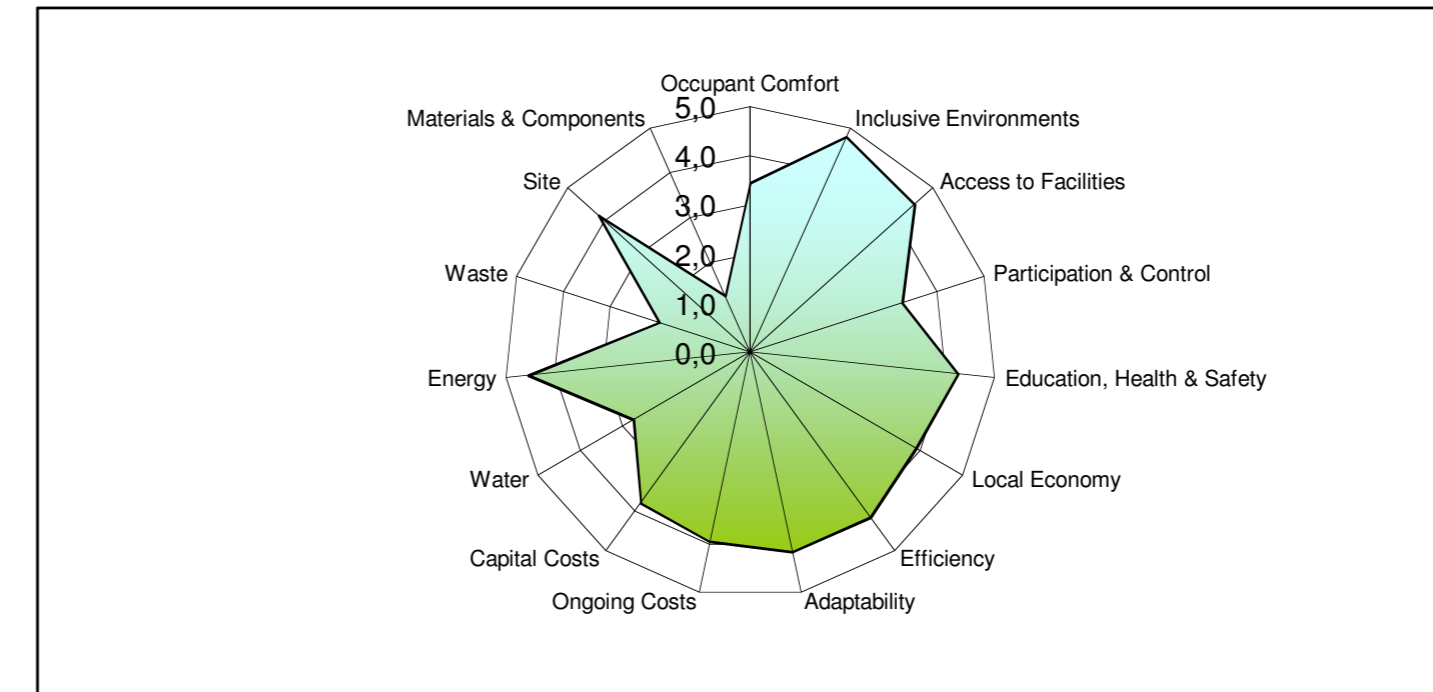


Appendix 1: SBAT Rating

SUSTAINABLE BUILDING ASSESSMENT TOOL (SBAT- P) V1

PROJECT		ASSESSMENT	
Project title:	Finding the Maputo Central Market: Seeing the Informal Economy in Formal Architecture		
Location:	Maputo, Mozambique	Undertaken by:	Byron Snow
Building type (specify):	Commercial	Company / organisation:	University of Pretoria
Internal area (m2):		Telephone:	Fax:
Number of users:	17000	Email:	
Building life cycle stage (specify):	Design	Date:	Oct-11



Social	4.1	Economic	4.0	Environmental	2.9
Overall		3.7			

Building Performance - Social

Criteria	Indicative performance measure	Measured	Points	Quantified modelled or measured performance data
SO 1 Occupant Comfort	Explanatory notes		3.5	http://greenbuilding.ca/
SO 1.1 Daylighting	% of occupied spaces that are within distance 2H from window, where H is the height of the window or where there is good daylight from skylights	100	1.0	all spaces
SO 1.2 Ventilation	% of occupied spaces have equivalent of opening window area equivalent to 10% of floor area or adequate mechanical system, with upolluted air source	95	1.0	all except bathrooms
SO 1.3 Noise	% of occupied spaces where external/internal/reverberation noise does not impinge on normal conversation (50dbA)	5	0.1	only bathrooms surrounded by sufficient mass
SO 1.5 Thermal comfort	Tempreture of occupied space does not exceed 28 or go below 19oC for less than 5 days per year (100%)	50	0.5	on warmest most humid days temperature could get high but spaces are shaded, and naturally ventilated
SO 1.5 Views	% of occupied space that is 6m from an external window (not a skylight) with a view	95	1.0	
SO 2 Inclusive Environment	Explanatory notes		4.8	
SO 2.1 Public Transport	% of building (s) within 400m of disabled accessible (20%) and affordable (80%) public transport	100	1.0	chappa/mini-bus rank 1 block away, currently used by disabled
SO 2.2 Information	Comprehensive signage provided (50%), Signage high contrast, clear print signage in appropriate locations and language(s) / use of understandable symbols / manned reception at all entrances (50%)	100	1.0	all vendors act as receptionists
SO 2.3 Space	% of occupied spaces that are accessible to ambulant disabled / wheelchair users	100	1.0	all spaces
SO 2.4 Toilets	% of occupied space with fully accessible toilets within 50m along easily accessible route	80	0.8	all
SO 2.5 Fittings & Furniture	% of commonly used furniture and fittings (reception desk, kitchenette, auditorium) fully accessible	100	1.0	all
SO 3 Access to Facilities	Explanatory notes		4.5	
SO 3.1 Children	All users can walk (100%) / use public transport (50%) to get to their childrens' schools and creches	50	0.5	single route to destinations because of Baixa being transport hub
SO 3.2 Banking	All users can walk (100%) / use public transport (50%) to get to banking facilities	100	1.0	adjacent to bank
SO 3.3 Retail	All users can walk (100%) / use public transport (50%) to get to food retail	100	1.0	food sold on site
SO 3.4 Communication	All users can walk (100%) / use public transport (50%) to get to communication facilities (post/telephone/internet)	100	1.0	all available in Baixa
SO 3.5 Exercise	All users can walk (100%) / use public transport (50%) to get to recreation/exercise facilities	100	1.0	Praca do 25 Setembro Trim Park accessible
SO 4 Participation & Contro	Explanatory notes		3.3	
SO 4.1 Environmental control	% of occupied space able to control their thermal environment (adjacent to openable windows/thermal controls)	25	0.3	each stall is under the controll of the owner
SO 4.2 Lighting control	% of occupied space able to control their light (adjacent to controllable blinds etc/local lighting control)	0	0.0	lighting is automated on a solar system
SO 4.3 Social spaces	Social informal meeting spaces (parks / staff canteens / cafes) provided locally (within 400m) (100%)	100	1.0	entertainment & eating spaces provided
SO 4.4 Sharing facilities	5% or more of facilities shared with other users / organisations on a weekly basis (100%)	100	1.0	all significant facilities shared
SO 4.5 User group	Users actively involved in the design process (50%) / Active and representative management user group (50%)	100	1.0	open building' design, and vendor organization management
SO 5 Education, Health & S:	Explanatory notes		4.3	
SO 5.1 Education	Two percent or more space/facilities available for education (seminar rooms / reading / libraries) per occupied space (75%). Construction training provided on site (25%)	25	0.3	construction training for vending stands
SO 5.2 Safety	All well used routes in and around building well lit (25%), all routes in and around buildings visually supervised (25%), secure perimeter and access control (50%), No crime (100%)	100	1.0	routes well lit, visually supervised by vendors, night thime perimeter control, dedicated poliecing
SO 5.3 Awareness	% of users who can access information on health & safety issues (ie HIV/AIDS), training and employment opportunities easily (posters/personnel/intranet site)	100	1.0	part of market management
SO 5.4 Materials	All materials/components used have no negative effects on indoor air quality (100%)	100	1.0	no paint or VOC producing materials used.
SO 5.5 Accidents	Process in place for recording all occupational accidents and diseases and addressing these	100	1.0	management of building

Building Performance - Economic

Criteria	Indicative performance measure	Measured	Points	Quantified modelled or measured performance data
EC 1 Local economy	Explanatory notes		3.9	
EC 1.1 Local contractors	% value of the building constructed by local (within 50km) small (employees<20) contractors	40	0.4	market stalls constructed by vendors
EC 1.2 Local materials	% of materials (sand, bricks, blocks, roofing material) sourced from within 50km	65	0.7	materials deliberately sourced locally
EC 1.3 Local components	% of components (windows, doors etc) made locally (in the country)	90	0.9	deliberate use of local materials
EC 1.4 Local furniture/fittings	% of furniture and fittings made locally (in the country)	100	1.0	all furniture & vending stalls made locally
EC 1.5 Maintenance	% of maintenance and repairs by value that can, and are undertaken, by local contractors (within 50km)	95	1.0	low maintainence building, with electric system being the
EC 2 Efficiency	Explanatory notes		4.2	
EC 2.1 Capacity	% capacity of building used on a daily basis (actual number of users / number of users at full capacity*100)	75	0.8	
EC 2.2 Occupancy	% of time building is occupied and used (actual average number of hours used / all potential hours building could be used (24) *100)	41	0.4	occupied 10 hours of the day
EC 2.3 Space per occupant	Space provision per user not more than 10% above national average for building type (100%)	100	1.0	
EC 2.4 Communication	Site/building has access to internet and telephone (100%), telephone only (50%)	100	1.0	Mcell' vendors make this possible
EC 2.5 Material & Components	Building design coordinated with material / component sizes in order to minimise wastage. Walls (50%), Roof and floors (50%)	100	1.0	building on 300mm modular
EC 3 Adaptability	Explanatory notes		4.3	
EC 3.1 Vertical heights	% of spaces that have a floor to ceiling height of 3000mm or more	80	0.8	all except bathrooms, some vending spaces, and some production
EC 3.2 External space	Design facilitates flexible external space use (100%)	100	1.0	adaptable market square and entertainment space
EC 3.3 Internal partition	Non loadbearing internal partitions that can be easily adapted (loose partitioning (100%), studwall (50%), masonary (25%)	50	0.5	market stands
EC 3.4 Modular planning	Building with modular stucture, envelope (fenestration) & services allowing easy internal adaptaptation (100%)	100	1.0	
EC 3.5 Furniture	Modular, limited variety furniture - can be easily configured for different uses (100%)	100	1.0	
EC 4 Ongoing costs	Explanatory notes		4.0	
EC 4.1 Induction	All new users receive induction training on building systems (50%), Detailed building user manual (50%)	0	0.0	
EC 4.2 Consumption & waste	% of users exposed on a monthly basis to building performance figures (water (25%), electricity (25%), waste (25%), accidents (25%)	100	1.0	management to include monthly reports to vendors
EC 4.2 Metering	Easily monitored localised metering system for water (50%) and energy (50%)	100	1.0	individual electricity metering, water vending
EC 4.3 Maintenance & Cleaning	% of building that can be cleaned and maintained easily and safely using simple equipment and local non-hazardous materials	100	1.0	movable furniture in market square allows this, as well as tshova acces to all of the building
SO 4.5 Procurement	% of value of all materials/equipment used in the building on a daily basis supplied by local (within the country) manufacturers	95	1.0	market stands constructed of local timber
EC 5 Capital Costs	Explanatory notes		3.8	
EC 5.1 Local need	Five percent capital cost allocated to address urgent local issues (employment, training etc) during construction process (100%)	100	1.0	preference to local labour and tradesmen
EC 5.2 Procurement	Tender / construction packaged to ensure involvement of small local contractors/manufacturers (100%)	80	0.8	shell built by large corporation, stalls locally
EC 5.3 Building costs	Capital cost not more than fifteen % above national average building costs for the building type (100%)	0	0.0	the national average is VERY low
EC 5.4 Technology	3% or more of capital costs allocated to new sustainable/indigenous technology (100%)	100	1.0	sustainable bathroom ventilation, photovoltaic energy
EC 5.5 Existing Buildings	Existing buildings reused (100%)	100	1.0	Existing market & market square plugged into

Building Performance - Environmental

Criteria	Indicative performance measure	Measured	Points	Quantified modelled or measured performance data
EN 1	Water	<u>Explanatory notes</u>		2.8
EN 1.1	Rainwater	% of water consumed sourced from rainwater harvested on site	75	0.8 approximately, see chapter 7
EN 1.2	Water use	% of equipment (taps, washing machines, urinals showerheads) that are water efficient	100	1.0 all
EN 1.3	Runoff	% of carparking, paths, roads and roofs that have absorbant/semi absorbant/permeable surfaces (grassed/thatched/looselaid paving/ absorbant materials)	0	0.0 water table is approx 1meter below the surface, there is no place for absorbed water to go, hence the existing flooding problem
EN 1.4	Greywater	% of water from washing/relatively clean processes recycled and reused	0	0.0
EN 1.5	Planting	% of planting (other than food gardens) on site with low / appropriate water requirements	100	1.0 indigenous trees
EN 2	Energy	<u>Explanatory notes</u>		4.6
EN 2.1	Location	% of users who walk / cycle / use public transport to commute to the building	95	1.0 majority of users
EN 2.2	Ventilation	% of building ventilation requirements met through natural / passive ventilation	100	1.0
EN 2.3	Heating & Cooling	% of occupied space which relies solely on passive environmental control (no or minimal energy consumption)	100	1.0
EN 2.4	Appliances & fittings	% of appliances / lighting fixtures that are classed as highly energy efficient (ie energy star rating)	85	0.9 all low voltage LED solar lighting, kitchens use regular appliances
EN 2.5	Renewable energy	% of building energy requirements met from renewable sources	75	0.8 lighting, and water pumping
EN 3	Waste	<u>Explanatory notes</u>		2.0
EN 3.1	Toxic waste	% of toxic waste (batteries, ink cartridges, flourescent lamps) recycled	95	1.0 waste seperation at buy-back area
EN 3.2	Organic waste	% of organic waste recycled	0	0.0
EN 3.3	Inorganic waste	% of inorganic waste recycled.	0	0.0
EN 3.4	Sewerage	% of sewerage recycled on site	0	0.0
EN 3.5	Construction waste	% of damaged building materials / waste developed in construction recycled on site	100	1.0 all construction waste sold for re-use
EN 4	Site	<u>Explanatory notes</u>		4.2
EN 4.1	Brownfield site	% of proposed site already disturbed / brownfield (previously developed)	100	1.0 site is parking lot/ street
EN 4.2	Neighbouring buildings	No neighbouring buildings negatively affected (access to sunlight, daylight, ventilation) (100%)	100	1.0
EN 4.3	Vegetation	% of area of area covered in vegetation (include green roofs, internal planting) relative to whole site	26	0.3 vegetable production level & green squares on south west
EN 4.4	Food gardens	Food gardens on site (100%)	100	1.0 vegetable production level
EN 4.5	Landscape inputs	% of landscape that does not require mechanical equipment (ie lawn cutting) and or artificial inputs such as weed killers and pesticides	90	0.9 majority of landscape is paved
EN 5	Materials & Componer	<u>Explanatory notes</u>		1.3
EN 5.1	Embodied energy	Materials with high embodied energy (aluminium,plastics) make up less than 1% of weight of building (100%)	100	1.0
EN 5.2	Material sources	% of materials and components by volume from grown sources (animal/plant)	25	0.3 extensive use of timber
EN 5.3	Ozone depletion	No materials and components used requiring ozone depleting processes (100%)	0	0.0 refrigeration and cold rooms
EN 5.4	Recycled / reuse	% of materials and components (by weight) reused / from recycled sources	0	0.0
EN 5.5	Construction process	Volume / area of site disturbed during construction less than 2X volume/area of new building (100%)	0	0.0