TAASISI YA SANAANI NA UTAMADUNI BAGAMOYO - MASTER PLAN
Ministry of Education and Vocational Training | Pontvik; May 2005, updated February 2010
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The Ministry of Education and Vocational Training of Tanzania, MoEVT, has initiated the design of a master plan for the Institute of Arts and Culture Bagamoyo, TaSUBa (previous Bagamoyo College of Arts, BCA), in order to assess the needs of the institution and develop the potential of the college site. The project has been executed by Pontvik Architects in Stockholm, Sweden, in collaboration with the Physical Planning and Maintenance section of MoEVT and Mr. Juma Bakari, chief executive at the Institute of Arts and Culture in Bagamoyo. The development of the master plan for TaSUBa has been financed by the Swedish International Development Cooperation.

The purpose of this master plan is to give guidelines that allow TaSUBa to develop its campus towards becoming a fully equipped and functional institution promoting the arts in East Africa. The potential of the TaSUBa site is unique and the will and motivation of its staff and leadership is commendable.

Every year a large number of national and international students apply to study at the TaSUBa. With an enhanced physical framework, the school would become even more successful in using its extensive resources to the benefit of its students.

The master plan is a tool for the TaSUBa to deal with future development. The new and old buildings are integrated to alter the character of the site while retaining the most important qualities of the present TaSUBa area. The detailed master plan was designed with the conscious aim of creating a new campus identity. The overall design creates spaces in which communication between students and staff is improved, and similarly the contact with the local community is given a spatial frame in which interaction can take place. The campus identity is achieved through the disposition of structures and space according to the master plan. The theatre, the flexible hall and all future buildings of the campus have shared aesthetical aspects that strengthen the identity of the TaSUBa. These aspects may be architectural elements, shapes and materials that will enhance the visual uniqueness of the campus. It is important to choose from the elements and materials available and make them reinforce the character of the place. The master plan has several main goals:

- To study the needs of the school and develop a new program for the school and translate this into a new campus layout.
- To study the main organisation of the school facilities and the regulation of them to different functional zones.
- To analyse the existing college facilities concerning their functions and their present technical status.
- To propose/develop new facilities and integrate them in the existing environment.
- To assess questions of overall security. To study the relationship between the two separated sites and the degree of interrelationship with the local community.
- To find and implement an overriding structure laid over the site, which coincides with the new functional program that has been devised.
- To raise maintenance questions and to initiate routines for maintenance of the TaSUBa facilities in general, sketch up a framework for the organisation/administration of maintenance work, analyse/list up/describe specific problems.

The design of the master plan shall be guided by the common vision that TaSUBa aspires to: “In recognition of the importance of democracy, multiculturalism, in development and poverty alleviation, TaSUBa shall be a dynamic, creative and innovative and transparent institution for high quality training, research and professionalism in the arts”.

The services of the facilities will be maximised by allowing for a certain flexibility of use in the proposed buildings, such as combination of backstage and studio space. Simplicity and variability in the use of the new facilities must be catered for. The TaSUBa area must be planned for the daily use by students and staff, but also consider that the premise will host large amounts of people at festivals and other events and that the facilities must be accessible for the disabled.

The unique site at the sea and the harmonisation with the Bagamoyo environment and heritage status has been taken in consideration in the design process. All new buildings will be subject to environmental impact, considering both cultural values and ecological concern. The construction should aim at labour intensive construction methods targeting Bagamoyo citizens. Maintenance considerations must be developed when choosing materials and construction methods, and a maintenance plan must be developed.

For the master plan to be successful in catering for the needs of students and staff as well as for visitors and the inhabitants of Bagamoyo, the challenging work to maintain and improve the area lies in front of us and is a shared responsibility.

Stockholm / Dar es Salaam May 2010

Martin Mwanukuzi
Director Physical Planning and Maintenance Section
of Ministry of Education and Vocational Training

Alexis Pontvik
Pontvik Architects AB, Stockholm, Sweden
GENERAL

BACKGROUND TASUBA

The Tanzania Government funded the Institute of Arts and Culture Bagamoyo (previous Bagamoyo College of Arts) in 1981. The main aim was to produce governmental cultural officers who were going to work on local or regional basis. In the 1990's the Government found it increasingly difficult to employ all the graduates of the TaSUBa. Due to lack of employment opportunities for TaSUBa graduates a review of objectives and curriculum was carried out. Following the revised objectives, the TaSUBa graduates were provided with more marketable skills. Specialised programs allowed student to choose major and minor subjects among the following areas of study: music, dance, stage technology, drama and fine arts. The curriculum from 1997 still prevails today.

Since the introduction of the Master Plan in 2005 a serious of buildings have been erected. The rebuilt main theatre was inaugurated in October 2008. The core of the theatre was a remain from the 2001 burned down structure. In addition a large hall, a house for the institutions principal and a guests house have been built at the sea shore. The dormitory area has been extended with three new houses in 2009. New buildings are being planned for the coming building phases.

It is important to underline that TaSUBa, on top of its local and national significance, is of vital regional importance. The theatre is used for festivals and hired out for not only for local but also for regional events.

MASTER PLAN PROCESS

The collaboration between the Physical Planning- and Maintenance Section of the Ministry of Education and Vocational Training, MoEVT, and Pontvik Architects was initiated in December 2003. Mr Martin Mwanukuzi of MoEVT have been assisted by Gilbert Bakula QS, Christopher Lwila Arch., Ishaka Sudi Arch., Agnes N.M.Mosha QS, E.T. Rogheko QS, F.H. Machinda civ. ing. The architect Harald Kopf has assisted Mr. Alexis Pontvik of Pontvik Architects in Stockholm.

This brochure is a summary and brief documentation of this joint work. The working process was carried out in four main phases that at times overlapped each other:

Phase 1 - Collection of information and creating base material for the plan

The project started up by collection of data and drawing up plans and schedules of inventory. A photographic survey was done over the whole site. An analysis of existing facilities was carried through in terms of quality and condition of existing buildings and available surfaces. The collaboration started with the team from the MoEVT led by Mr Martin Mwanukuzi and the architect's team led by Mr. Alexis Pontvik.

Phase 2 - Communication and analysis

Meetings and discussions took place with college principals and students at several occasions to ascertain present and future needs for the stakeholders. Problems were analysed and alternative solutions looked for. Proposals and alternative plans were drawn up as base for discussions. New material was communicated with the stakeholders and discussed and elaborated further.

Phase 3 - Evaluation and Design development

The process continued with revising and updating drawn and written material. Visualisations of different aspects of the master plan layout were made so that the plan could be used to simplify and clarify the communications with TaSUBa staff and students and the MoEVT.

Phase 4 - Conclusions and presentation of final documents

In 2005 all material was brought together. It was presented to college management team and Sida. Later a brochure A3 containing the summary of the master plan process was made. A hardback containing the complete reports, schedules and earlier stages of the master plan development has been submitted to the MoEVT and Sida and shared with the other stakeholders.

Phase 5 - Initial building: Theatre and Hall

As a first step in the realisation of the master plan the reconstruction and extension of theatre and construction of flexible hall have been carried out. Additional a variety of improvements of the site and technical facilities have been an extended part of the building activities. The reconstruction of the theatre TaSUBa has initiated both further building construction on campus and intensifies school activities.

Phase 6 - Development of campus buildings

As a continuation of the master plan process several campus buildings have been further sketched up. The design of specific buildings has been developed and discussed. Some of these structures have been realised until 2009.

Phase 7 - Maintenance and security

As part of the TaSUBa development a commitment towards securing and maintaining its structures and valuables is paramount. Strategies and routines towards these aims have been initiated through documents, workshops and lectures. Concrete proposals for a perimeter security fence have been submitted as part of this phase.

The working process was illustrated via several sets of analytical and pictorial drawings dealing with the different aspects of the plan to be developed. The drawings had several aims.

A) To clarify the issue involved, for example: questions of security, condition of buildings, position of theatre, etc.
B) To become the base around which a dialogue could take place.
C) To show all taking part in the discussions how planning decisions could be handled.

For instance the security question became all but black and white; demand of closing the college of with a perimeter wall for security reasons was after discussions revised to a solution building on visual hinders. Using the set of drawings different methods of achieving security were discussed and advantages were compared with disadvantages. The master plan drawing material has also been used to make requests to other donor countries.

The new development of the TaSUBa may allow for additional income for the school and the opportunities have already started to be explored. The new facilities will help improving the possibilities to increase the revenues for TaSUBa. Both the main theatre and the mango theatre have previously and since the reerection been rented out for a variety of functions. Art works and tapes from recordings and other products will be sold at the shops around the entrance park. There are further possibilities to find other and new means of income generation for the TaSUBa and it is vital that the TaSUBa seize the opportunities and work pro actively on income generating.
DEVELOPMENT OF THE TaSUBa PROGRAM

PRESENT AND FUTURE SIZE OF THE TaSUBa

From the very first visit to Bagamoyo, discussions have been held concerning an increased enrolment of students at the TaSUBa. In December 2003 the school aimed to expand from 88 to 120 ordinary full time students, divided on three years of study. In 2009 around 120 students were examined in all three years. Training in advanced courses for the East African region and students from other countries are arranged.

The teaching staff is today around 30 persons and will expand in the future depending on the growing number of students. Additional staff is employed for the running of the institute. The major part of the staff lives in their own houses in the township. Some of them will in the future live on campus to supervise the daily functioning of the school.

The figures above have formed the base for the development of the schematic layout, organisational plan and individual program for the TaSUBa master plan. However, future expanding will take place and the student numbers will increase. Up to 220 students can be accommodated in the new dormitories on two floors. The replacement of old dormitories will allow for a larger number of students.

PRESENT NEEDS

The College is faced with a series of different needs, some of which are being addressed at present. Infrastructure on the campus has to a large extend not been improved. Electrical supply lines are of a provisional character. Roads are not in an acceptable state. Especially the fresh water supply and the sewage water system must be brought up-to-date and adjusted to the future campus size. Another important item is the general improvement of the security at the campus (see security).

STUDENT HOUSING

Three new dormitories have been completed in 2009. Still, there is an acute need for student housing as the old dormitories are in an unacceptable state. New housing is also needed to avoid students living off campus. As the teaching of the school is based on a boarding school system, students living outside the campus represent a problem both for the TaSUBa and the individual students having to return to the township in the afternoon.

Diagrams have been made analysing the present student houses. In conclusion it could be said that net room area per student in the old houses is between 5,2 to 4,2 m², which is not an acceptable standard. A good ratio should be at least 6 m² per student in a room with the proportion of minimum 4 x 3 metres. This size would also allow for a more flexible furnishing of the room. The recently built dormitories are adapted to this standard.

The student housing has been studied in alternative plan types. Subsequently schematic clusters, terraces or semi-detached varieties have been looked at. The student housing has been studied in alternative plan types. Subsequently schematic clusters, terraces or semi-detached varieties have been looked at. The developed dormitory concept with common rooms at the entrance side and individual/double rooms at the back side can be realised in one or two floors to increase the capacity of the living area. An arcade can be attached to the building to give access to the second level. External staircases can be shared in order to save both space and cost.

Common facilities both for daily life, such as laundry, and for leisure, such as sport facilities, TV room etc., are still lacking. Laundry facilities do not exist. The impression of the site at present is that it is a left over piece of land seemingly not belonging to anyone. This must be changed. It is necessary to improve the housing situations for the students, to upgrade the common facilities and to create a sports ground were students could engage in physical activities.

TEACHING FACILITIES

The reerrected theatre building and the new flexible hall have been finalised in 2008. The buildings give space for education activities and practically all departments use the new facilities. But there are limitations due to the availability and suitability of the rooms and the commercial exploitation of the facilities. To establish good teaching conditions with customised rooms for all school sections. New department buildings are needed. The extension of the education facilities must keep up with the expansion of student numbers. Ad hoc alterations of the room functions should be avoided. All buildings and rooms have specific properties, which may not suit other functions. (For example a sound studio should not be placed in the daylit studios along the theatre building.)
The different functions of the TaSUBa have been brought together in the diagram of organisation. The expansion from the present stage will of course depend on the economic resources yet the master plan shows phases in which the plan can be developed. The concept for the building faces has been outlined and presented in the first edition of the master plan in 2005. However the expansion is not just linear. Facilities will grow at different pace, as the diagram of quantities clearly shows.

ORGANISATION OF THE TaSUBa

The organisational diagram shown above forms the base for the overall layout and brings together the physical conditions of the site with the new working structure of the college, which has been developed in this master plan. The creation of three main segments is a result of the study of the topography on site (see description and illustration of site plan on the next page). An architectural arrangement, formed by spaces and buildings ties the three areas together. The segments are from left to right:

1) the dwelling area as an independent zone separated by the existing road
2) the area of public interface with all functions and activities dealing with this aspect, main entrance, restaurant, café, shop, ITC/internet café, administration, entrance to theatres
3) the campus with all educational functions of the college centred on the theatre, studios, classrooms, department buildings, teacher offices, etc.

EXTENSION

The different functions of the TaSUBa have been brought together in the diagram of organisation. The expansion from the present stage will of course depend on the economic resources yet the master plan shows phases in which the plan can be developed. The concept for the building faces has been outlined and presented in the first edition of the master plan in 2005. However the expansion is not just linear. Facilities will grow at different pace, as the diagram of quantities clearly shows.

DIAGRAM OF ORGANISATION
The Institute of Arts and Culture Bagamoyo is situated at the edge of the Indian Ocean on a site sloping towards the sea near Bagamoyo Township. The road is the artery with immediate connection to Bagamoyo Township and it divides the upper campus in two - on one side the housing and on the other the public campus facilities.

However, the TaSUBa campus consists topographically of a third element. The slope, in which the theatre is positioned, separates the upper and lower campus. It runs in a north south direction across the site, parallel to the coast line. The lower campus area is positioned between the slope and the edge of the Indian Ocean. The lower campus is of a more internal character with educational facilities. The exposure of the campus site to the outside world is mainly on the sides to the road and the public beach.

The only principle that organises the existing buildings is the diagonal geometry of the early buildings on the site. This principle is difficult to continue as it works against a general planned layout. The large theatre volume dominates the centre of the site. It can be understood as a focal point for the campus around. The existing theatre reaches far down onto the campus.

It has not been possible to gain control over the exact dimensions and site plans required to execute a proper work. Contradicting plans and surveys have been brought together as well as possible. Still, the worked out document lack accuracy. The plan can therefore only to a certain extent become a precise instrument for the detailed execution of new buildings on site. Yet the main principles of the plan are unambiguous. All dimensions of the existing site and surfaces of the existing houses have to be controlled or re-measured on site (see details about this aspect in the chapter Inventory). MoEVT commissioned a new survey in 2005, which has been executed with satellite technology and which did not lead to a satisfactory result. Still, the necessity for a new survey has arisen due to unclear boundaries, new buildings, but also doubts about the accuracy of previous surveys.
AERIAL OVER THE 3D MODEL OF THE TaSUSA MASTER PLAN

* NOTE: BUILDINGS IN ILLUSTRATIONS ARE NOT UPDATED; SOME BUILDINGS ARE CHANGED OR REMOVED IN THE MASTER PLAN
A BIRDS EYE VIEW OF THE PLAN

The aerial view of the master plan illustrates the sequence of spaces forming the central axis running east west through the whole TaSUBa site. A central zone is conceived where three buildings and three spaces form a linear succession, which holds the site together from one end to another.

The open areas along the central zone allow for public functions and special events both for college and spare time activities, for instance the student service facilities, open spaces, the theatre, and the flexible hall.

The existing public road runs across the site in north-south direction. The main access to the entrance is made from this road. The central arrangement reinforces the relationship with the housing area and the campus on the other side of the road. Two parallel roads move further into the site linking up with the lower part of the site and all the adjoining facilities.

In accordance with the functional diagram the upper campus houses the public functions and represents the main interaction area between the wider public and the college. The existing slope marks a clear limit between the upper and the lower campus. The lower campus is laterally divided in three zones: the theatre volume and the flexible hall in the middle with the two roads on either side. Institutional buildings have been arranged in a row consisting of both new and existing buildings at the northern roadside. A further expansion is planned as a second row of department buildings. At the southern side the existing buildings contain classrooms and offices.

The main layout of the master plan is orthogonally positioned to the campus site. This is a result of the road layout, the overall organisation of the site with existing theatre and other buildings. The older existing buildings are oriented diagonally to the site layout. This is due to climatic considerations exposing only gable ends to the main solar direction. To continue this diagonal pattern was difficult.

THE CENTRAL SEQUENCE - THREE SPACES

The final master plan reorganises the two sites separated by the public road and proposes a new layout of new and existing buildings to become an overall designed totality. The central sequence of open spaces joins the two sites to a single entity. The three large open spaces relate in function to their immediate surrounding. The main southern road will be car linking the two, the classroom facilities and surrounding activities. The northern one will link the principals house, guest facilities plus future departments buildings with the main road.

The first space will be used as the sports facilities for the surrounding student housing. The student communal facilities and a large covered roof run along the western side of the space. The area would become the centre and meeting point for the student in their spare time.

The second space is at the entrance to the campus and acts as a large assembly area. It is surrounded with the functions relating to external activities and the interface intended to engage the local community. The public shall enter and exit the theatre from this space. The purpose of this is to refrain from having the public entering too much into the inner campus area. There are ideas to get extra revenue from these activities. For example: shop (selling drink, food and maybe stationary material), exhibition space (selling handicrafts and artworks), music performance (selling tapes) and so on. The public Internet café would allow locals to get access to the World Wide Web.

The third space is positioned between the theatre and the flexible hall. The space is surrounded with campus facilities and will be used as assembly space for the college. Alternatively it can be used in connection with the eastern stage of the theatre. This space is placed in the centre of the teaching activities.
BUILDING LAYOUT AND ROAD SYSTEM

Typology of housing area

The housing area consists of a mix of six existing houses and several planned student dormitories making space for a total of 90-110 student rooms, as the program requires. The rooms are mainly double rooms, but individual rooms are planned for foreign or part-time students.

The proposed houses have the individual dormitory rooms arranged towards the more quiet backsides. The living rooms face the more active access road. The houses are terraced, and can be joined to two to four assembled units. A second floor can be accessed via arcades that are attached to the building front.

The service house for the students is given a central position in the housing area. It has several functions shared by all students: Laundry, student union, television room, reading room, visiting parent’s room, etc.

The houses of the warden, the matron, and other staff are arranged along the road opposite the dormitories. (In the history of the college the dean has always been living at the school). The principal’s house, combined with a residence for visitors and a representation room has been finalized in 2009 at the seaside, and an additional guest house is planned adjacent to it.

Entrance park and upper campus

The following buildings surround the entrance park: The gatekeeper and the shop are positioned at the roadside at the corner to the park. Two building wings flank the sides of the entrance park. These contain the main administration at the north and the art gallery and café make up the opposite side. The entrance pavilion to the main theatre forms the backdrop to the park.

The access to the theatre has been altered in relationship to the original layout. This is done to achieve a division between the public and the campus area. It keeps the public on the upper campus, thus avoiding security problems. In addition, it allows for great flexibility in use without interfering the teaching activities. All buildings face the entrance park with colonnades/verandas. The five old buildings (dining hall, teachers offices, mango tree theatre, guest house and library) at the upper campus is intended to be kept and partly given new functions.

Lower campus and lower square

On the lower campus the new flexible hall ends the sequence of public buildings towards the sea and replaces the previously enclosed theatre. The rebuilt theatre has been extended with a series of studio spaces on either side. Many technical improvements have also been made to update the teaching and performance facilities. The east stage of the theatre orientates towards the lower square and the combination of the large theatre, the open lower square and the flexible hall allow for a wide range of different use.

New buildings will complement the department buildings on the northern side. A second row of departments for a future expansion has been defined by the master plan.

The existing open end exposed space between class room building and the present administration building will be transformed into an open-air communication space sheltered under trees and in relationship to the teaching facilities. (administration will be moved to new building at upper campus)
VEGETATION AND LANDSCAPE

In order to gain control over the future landscape environment of the TaSUBa, the master plan prescribes a future planting scheme for the whole campus. Although a precise position of all existing trees has not been possible to establish, the plan takes important existing alleyways and trees into account. The plan describes different types of trees with different functions in the campus environment.

There are a whole set of different objectives for the planting scheme:

- Improve the microclimate and environment of the campus
- Frame and create landscaped spaces
- Form place identity and character
- Visually relate to the seasons
- Enclose the site, creating boundaries with bushes

A planting concept has been devised in order to reinforce the architectural setting.

Trees for avenues

The main tree type, which is lined up in avenues along the roads, creates order and should preferable be of the same or similar type. Existing avenues should be kept if they are in good condition and filled in with new trees. The access road to the student houses is lined with trees. They define the access road and give the dormitory entrances additional shadow.

Trees: Cordia sebastine (Mkodia)
          Terminalia (Superbal / Jamii ya Mkungu / Mwalambe)
          Acacia Mangium (Mkasia)
          (Bauhonia petesiana – if already used along promenades)

Trees in park, garden, patio

Another type of tree is the ones planted in the courtyards, gardens, and various backyards; improving the exterior/interior environment. They could be placed shading a sitting area and be mixed with a few small trees and bushes or small palm trees.

Trees: Araucaria angustifolia (Mraukavia)
          Nerium Oleander (Karimiji)
          Mango (Mangifera Indica / Mwembe)
          Cape mahogany (Trichilia emetica / Ngormwali, Mgołimas, Mwamaji)
          Terminalia (Superbal / Jamii ya Mkungu / Mwalambe)
          Jerusalem thorn (Parkinsonia akuleata)
          African wild date palm (Phoenix reclinata / Mkindu)

Palms: Royal Palm (Roystonearegea / Mnazi)
          African wild date palm (Phoenix reclinata / Mkindu)
          Coconut palm (Cocos nucifera)
          Queen Palm (Syagrus romanzoffiana)

Accentuating trees

A third type of tree has the special task of demarcation and accentuating the landscape as a landmark. There should be prominent or large trees to draw attention to meeting points, important entrance areas etc. They may have a full and symmetrical treetop or can be high palm trees or an exotic kind of tree with special leaves, colour or form.

Trees: Mango (Mangifera Indica / Mwembe)
          Coconut palm (Cocos nucifera)
          Queen Palm (Syagrus romanzoffiana)
**Tree Promenade**

- Trees in Park, Garden
- Accents
- Palm Tree
- Small Trees
- Medium Trees
- Hedge

**Line of Trees**

- View Relation
- Shadowing Trees
- Big Trees
- Infill Trees
- Property Boundary

**Park Trees**

- Entrance
- Park
- Lower Square (Open Air Area)

**Sport and Leisure Field**

- Public
- Main Road

**Trees for Shadow in Patios**

- Row of Palm Trees Along Beach, Behind Deciduous Trees for Shadow and Hedge as Security Barrier

**Shadowing of Parking Area**

- Roof of Big Trees Above Communication Space

**Corner Avenue with Trees**

- Existing Avenue of Trees
- Existing Avenue with Trees
- Row of Trees Frames the Square

**Avenue of Trees**

- At Each Entre Avenue of Trees

**Accentuation with Palm Trees**

- Sight Barrier

**Work Places with View at Slope**

- Sitting Steps with View

**Yard**

- Backyard

**Patio**

- Waiting and Meeting Area
- Waiting and Meeting Point

**Court Yard with Palm Trees**

- Courtyard

**Beach**

- (Public)

**Fence Towards Adjoining Site**

- Hedge

**Drawing/Version Date**

- 2010-01-28

**Scale**

- 1:1000

**Status**

- Illustration

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*Sources: Alexis Pontvik / Ministry of Education and Vocational Training*
Shadowing trees
A fourth type is a tree offering shadow, particularly planted to improve interior climate. The positions are aimed at maximising sun protection. These trees could shadow buildings, building facades and open spaces. The individual tree size will depend on the situation and the solar radiation. Small trees and bushes will preferably be used to protect house gables and exposed areas.

Trees:  
- Nerium Oleander (Karinju)
- Cordia sebastine (Mkodia)
- Tecoma, Yellow elder (Tecoma stans / Mtekoma)
- African false wattle (Peltophorum africanum)
- Black-wood cassia, Ironwood (Senna siamea / Mjohoro)
- Bauhonia petesiana
- Jerusalem thorn (Parkinsonia akuleata)
- Acacia

Palms:  
- Triangle Palm (Neodypsis decaryi)

Infill trees
A fifth type is an ‘infill’ tree type. Particularly it is planted to protect the ground against solar impact thus improving the microclimate.

Trees:  
- Cape mahogany (Trichilia emetica / Mgolimas, Muwamaji)
- Tecoma, Yellow elder (Tecoma stans / Mtekoma)
- African false wattle (Peltophorum africanum)
- Black-wood cassia, Ironwood (Senna siamea / Mjohoro)
- Bauhonia petesiana
- Jerusalem thorn (Parkinsonia akuleata)
- Acacia

Palms:  
- Royal Palm (Roystonearegea / Mnazi)
- Coconut palm (Cocos nucifera)

Hedges
Hedges have been proposed as part of the security concept, acting as a security barrier along the road on the southern side of the site and towards the sea. It is very important that it is dense and not possible to pass through but not too high. It needs regular care. Hedges can be combined with different small trees, shrubs and bushes with thorns and strong stiff branches.

Shrubs:  
- Cadab farinose (Kibalazi-mwitu)
- Sickle bush (Dichrostachys cinerea / Mkingi’iri)
- Euphorbia cuneata (Mchangoma, Mlimbilimbi)
- China tea bush (Camillia sinesis / Mchai)
- Madras thorn (Pithecellobium dulce / Mkwaju wa kihindi, Maramata)
- Nerium Oleander (Karinju) etc.

It is important to foresee the final size of trees, as some types preferably should remain of a more reduced size. For example in the local and private areas it is recommended to choose smaller trees. In the large public area trees can be planted which may become rather large like for example the mango trees at the theatre.

The master plan has as an aim to use planting to improve microclimate on the campus. It is important to check the types of trees which we have proposed as we cannot claim absolute knowledge in this field dealing with East African flora. The main aim is to find trees that give a high degree of shade combined with vertical root systems that do not damage closely positioned houses. Complementing these with existing trees the campus will become a pleasurable place and gain in terms of climate and character.
Removal and addition of trees

In order to permit the realisation of the master plan some trees must be taken down. The open areas have to be formed and some visual connections have to be established. Empty spaces in avenues must be completed wherever needed.

Most of the planting scheme can be carried out independently of the building. The sooner this is done, the better, as the trees need time to grow up. The communication space next to lower square requires new tree plantations. The housing area needs a completely new plantation. Still, some trees have to be cut in order to make space for either new buildings or newly conceived open spaces. Generally, trees should be kept as much as possible.

STUDENT HOUSING AREA

The layout of the student housing is developed in linear arrangements creating both intimacy and large open areas. The student dwellings are developed in slim buildings to maximize cross ventilation. The idea is that this area should not be closed off from the local community but be a natural part of it. The area is accessed via an internal street. All houses have verandas that address the entrances. In front of the central student service house is an open roof structure facing the sport field. It provides a shaded zone for spare time activities. The master plan proposes a planting scheme with trees to fit in between the future houses.

LOWER CAMPUS FACILITIES

The lower square is functionally linked to surrounding buildings and activities. The space can be used in different ways. It may be part of the activities of the flexible hall. It may be used together with the eastern stage for open-air performances. It can also be used as assembly place for the whole school. The communication space next to the classroom building is conceived as an outside study space, like a small park as a contrast to the large open lower square. Seating has been arranged under the trees and conditions have been created for studying and quiet dialogue between students.

DEPARTMENT BUILDINGS

The linear arrangement of the departments relate to the overall campus geometry and the existing buildings that form part of the row of houses. The comb like structure allows a visual transparency across the site. The arrangement allows for areas between the buildings to be used for different activities in relation to adjoining buildings. Covered walkways between departments protect users from sunlight and rain and create informal places to study or to rest.

The acoustic interference between departments has been discussed as a troublesome issue. The need for openness to make use of the breeze from the sea interferes with the need to reduce sound emissions that may disturb other more silent activities. At the moment the classes deal with this problem by arranging the timetable in quiet and busier periods. Enclosed music studio as in the theatre building will allow for ongoing music activity around the clock. Additional outside studying areas are shown in the plan. See ‘sitting steps’ arranged at the slope, allowing for shaded areas overlooking the campus. Teaching facilities for the future are arranged along the north western edge.
CIRCULATION AND TRAFFIC
No large areas within the campus should be allowed to become extensive parking areas. As little driving as possible should be made on campus. There is a parking lot for staff and visitors planned in the western side of the campus (20 car places). The car park is under visual control of the gatekeeper and neighbouring staff quarters. An additional VIP parking is placed next to the present administration that will later become workplaces for students (5 cars). Next to the principal’s house and to the guest house some more cars can be parked. At special events the sports and leisure area will be used for visitor parking during large events. This area will have a capacity of an additional 56 cars. The sport and leisure area shall be assigned as sport fields, football or two basketball fields. During the rainy season parking cannot be allowed on landscaped areas due to the damage it will cause. It is important to exactly define road and path surfaces from landscaped areas in order to clarify both the use and the specific role in the campus network. The different types of circulation areas depicted above diagram give an indication for their hierarchy and use. All streets must be reinforced and maintained in relation to wear, especially sloping roads must be given a more permanent surface. The miss match between master plan geometry and the present access road is depicted in the second diagram above. It is necessary to harmonise and adjust the general road layout according to the master plan.

MASTER PLAN LAYOUT GUIDES AND DIMENSIONS
The surveys given to us lack consistency in terms of measurements, so we cannot guarantee absolute precise measurements. Therefore it is important to follow the guiding principle of the plan. For example, that the new buildings are parallel/perpendicular to the boundaries of the site. The system of measurements is related to existing buildings. From these the geometry of the main axis is taken and defined. Before building activity starts it is of paramount importance to set up and fix the main plan features in terms of accurate measurements. A control survey was initiated in February 2010, which has shown some divergences. It is highly recommended to do a comprehensive new survey. The information from that survey needs to be transferred into the revised master plan drawing.

SECURITY
The security question is an important issue in the development of TaSUBa as an institution. The desired openness in the public spaces and in the contact with the public in general stands in contrast to the increasing risk for burglary due to the accumulation of expensive facilities and equipment. The various security aspects must be dealt with on different levels and individually analysed and solved. A separate document about building security gives a short summary of security aspects for each building on the campus. The list gives only an introduction. It is important to analyse the question further in order to develop individual security routines and responsibility plans for the campus as a hole.

Responsibility of the TaSUBa management
The TaSUBa management has the ultimate responsibility for all security issues for the whole institution. In order to address the matter a working group must be formed to take on the security issues for the institution. The group must be composed so that representatives from all entities of the TaSUBa are represented. For example: student representative, warden or matron, school management (academics), facility management (events manager), school management, etc. Outside persons might have to be called in depending on issue (for example insurance representative, electrician, etc) it’s necessary for the group to meet regularly and discuss/improve/assess security issues. It is important to work systematically (routines may/must be developed for different aspects). Some issues might have to be addressed and developed on a local level in the departments. The findings must be forwarded to the working group. All findings must be documented, assessed and implemented.

Security risks
Security risks are related to different user groups: the public in general/society, visitors/spectators, students, personal and TaSUBa guests. The nature of security risks is related to these groups in many different ways. The risk to persons is the most important of any security aspect. Burglaries of valuable items cause a relatively high material loss and may even affect the...
functioning of the school. Vandalism against interior and facilities may have equal severe economical consequences.

Accidents may happen during the daily work or during festivals. Especially the advanced technical facilities increase the possibility both for theft and for accidents. The main goal for all security is avoidance of personal injuries; material damage has also to be prevented. Exceptional incidents are emergency situations as fire and mass panic especially during bigger events. Escape ways and emergency plans have to be regularly discussed, checked and updated to make the use of the TaSUBa facilities save.

Functional safety
Beside these more obvious risks other aspects that may have large influence on the institutional functions may also be mentioned: The supply with fresh water, electricity other energy sources and also the Internet becomes more and more important in the modern society and it is essential for the functioning of the school. Disturbance caused by security flaws will have negative effects on working and living conditions and may also cause economical losses for TaSUBa in the long turn. Heavy rains, thunderstorms and natural catastrophes can demolish buildings and cause enormous costs. A maintenance plan and regular routines and reparations prevent serious damage and unnecessary economic losses.

SELECTED SECURITY ITEMS

Security guards/company: Detailed rules for campus security have to be set up. The security guard company must be introduced in the complexities of their task. The diversity of tasks must be made clear to each gatekeeper and guard. They must have clear instructions how to receive visitors, how to act in cases of emergency/burglary and how to handle valuable items/keys etc. The route in which the guard walk during the night must be established also the avoidance of too repetitive routines will be predictable.

User introduction and responsibilities: General instructions about security, escape and emergency plans, use of facilities, facility maintenance etc should be regularly given to students and be introduced to all new staff of the TaSUBa. The preventive measures are of central importance if they are sound many accidents and problems can be avoided.

Inventory list: All valuable items must be listed and categorized as to keep control over them; the lists must be continuously updated. Lend items can be identified and borrower made responsible. Thefts are made difficult, as items are numbers and listed. In order to get reimbursement from insurance an updated inventory list is paramount in addition to bills in original.

Valuable objects: Rooms containing valuables need to be secured. The quality of doors and grills in front of windows can be improved. A system of keys, which cannot be reproduced except by special arrangements, is a cheap and reliable measure. Lockers for valuable equipment such as music instruments, technical equipment and personal belongings are necessary as different kind of valuables can be stationed within the same room. Lockers for each student in the student housing area are a minimal requirement.

Computer and data security: The IT security should start with prevention of data loss; backup of all information must be done regularly. This is the responsibility of the IT-administrator. Valuable and classified information is contained in all hard drives of computers and laptops, CD’s and other storing media. This must not get into the hands of an authorized person. Therefore much care must be taken on hard drives containing banking, economical and other classified documents.

Security during events: Large responsibility and significant risk is involved with all large audiences. Routines for a heightened security must be maintained during events both inside and immediately outside the theatre building. All emergency exists must be opened (unlocked) before the event starts. A series of action plans for normal events and security situations must be set up and distributed to all personnel.
CAMPUS SECURITY BOUNDARY
The college campus is at present open to the surrounding sites, road and beach. Along the road some hedges create a barrier. When walking around on the campus outside people are often asked what they are doing there, so there is a basic functioning social control. Nevertheless some smaller incidents have happened along the beach. Slowly, when the institution is more established, these problems may increase. The relative openness in relation to the neighbouring community is inspiring and there is a mutual interest in keeping it relatively open. However, beside the motivation to keep this quality is a need improve security and to control the access to the campus. A concept for the type of the campus boundary has been developed. Accessibility and principles for the perimeter fence are shown in the schematic diagram left above. One single type of fence is no answer. The type of perimeter fence has to be adjusted to the security needs and the varying conditions around campus. The access gates are related to the central campus axis and respond to both traffic and pedestrian use. To facilitate the desired openness the entrance square may be open to the public during the day to make up the public interface. The backbone of the campus circulation and main activities are lying along the central zone. Main pedestrian movements is here encouraged through the layout to reinforce this. Campus public and semi-public zones are defined by building arrangement, and strengthened by the topography.

Few colleges are in possession of such amazing setting. By activating the beach it becomes a part of the school compound. The qualities are easy to perceive when coming from the outside. It may well be the case that at the school the beach is taken for granted. It is important to increase the presence of college students and staff on the beach rather than keeping off it. A watchman could be stationed at the bottom of site towards the sea during part of the day.

PERIMETER FENCE
The study of the specific requirements of the perimeter boundary has resulted into a differentiated set of fence constructions, each one responding to the local needs - see illustrations next page. The proposed gates do adhere to the same principal design and construction. The purpose of this is to strengthen the overall coherence. Note that the drawings illustrate not only the appearance but also suggest both foundation types and details to some extend.

The road side: The campus fence facing the public road is differentiated between the student dwelling area and the campus proper. However, the chain link fence on the dwelling site and the more elaborate and representative wall with iron grill on the campus site are harmonised by the way they are planted - see plan right above. As a result the portion of road passing the TaSUBa will signal the institute on both sides of the road.

The edges of the site: Towards the North West side there is the primary school and the German cemetery. This is planned to have a see-through wire mesh fence. Along the South eastern border the access road to the hotel, ’Millenium Sea Breeze Resort’, should preferably be shielded by dense vegetation in order to limit dust and noise from the traffic. A portion of 72 m at the lower campus starting from the beach upwards acts as a sound barrier to the noisy neighbouring café.

Beach: The erosion on the beach is on increase as clearly can be seen on the retaining walls of the neighbouring hotels. It is high time to start protecting and reinforcing the TaSUBa portion of beach. This can only be done by planting. The original coast line in Bagamoyo was held by Mangroves. It is important to collect expertise which type of plants, trees are most adequate and which requirements are needed for their successful plantation. The main longitudinal streets along the site reach the beach. In order to provide an access to the beach bridging the height difference a ramp has been designed. The adjoining slope is held by two parallel retaining walls, which can accommodate the unstable sand conditions.

TASĂNĂ SĂNAŢĂ ŞI UMBRĂDEOŞI BAGAMOYO - MĂSTER PLAN - PAGE 33
**Housing area:** Security risks are low in the housing area during the day and also at night time. This is due to the presence of large amounts of people milling around in the area. A low fence in combination with shrubs will clearly define the property border and stop uncontrolled passing of the area. The main purpose is to define the TaSUBa site and not to all costs exclude any pass through.

**SOCIAL CONTROL**

During Festivals and activities involving large amount of people special security measures should be taken. This may involve that some persons are put in specific position of control.

Further borders within the campus (for example at the theatre) will be established with security control for tickets etc. This will be developed further in the future. The master plan aims at defining architecturally/spatially where the public interface is and where the proper campus begins.

The presence of staff on campus increases the vigilance and sense of security on the campus. According to our interviews with students it gives the students a sense of security and if necessary a person to seek advice or help from.

FENCE TYPES, GATES AND COASTAL REINFORCEMENTS FOR PERIMETER BOUNDARY
SECURITY ASPECTS OF INDIVIDUAL BUILDINGS, RISK EVALUATION AND PROTECTION ADVISES

The list below gives an introduction and overview about individual security aspects for the TaSUBa buildings and the use of the facilities. The table should be used as a tool to enlighten and to improve security problems. The summary of aspects has to be continuously developed and adjusted to the individual requirements of each building.

Risk category for buildings
Each building is classified with a risk category. The classification is merely an illustration and gives a general indication of different security requirements. The coloured risk category can also be found at the illustration “TaSUBa – SITE PLAN, object security”.

The following risk categories have been used (see diagram: Object Security, General Categories):
1 - school facilities, very high security
2 - school facilities, high security
3 - school facilities, basic security
4 - private, high security
5 - private, basic security

Campus and general items

<table>
<thead>
<tr>
<th>Item</th>
<th>Risks and potential security problems</th>
<th>Routines and protection plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>- preparations for any situation</td>
<td>- responsibility plans, operational team</td>
</tr>
<tr>
<td></td>
<td>- communication scheme</td>
<td>- action plans for personal</td>
</tr>
<tr>
<td></td>
<td>- plan for information of affected</td>
<td>- prevention plans</td>
</tr>
<tr>
<td></td>
<td>- specific emergency plans, escape plans</td>
<td></td>
</tr>
<tr>
<td>Emergency situations</td>
<td>- fire</td>
<td>- general instructions differentiated for TaSUBa</td>
</tr>
<tr>
<td></td>
<td>- natural catastrophes, heavy storm etc</td>
<td>staff, students and guests</td>
</tr>
<tr>
<td>Technical failure</td>
<td>- break down of basic supply (water, electricity)</td>
<td>- plan for repairs, financing, replacement</td>
</tr>
<tr>
<td>Serious security accident</td>
<td>- robbery</td>
<td>- plans for personal protection</td>
</tr>
<tr>
<td></td>
<td>- social chaos</td>
<td>- plans for protection of TaSUBa values</td>
</tr>
<tr>
<td></td>
<td>- looting</td>
<td>- plans for urgent action/repairs to prevent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>damages etc</td>
</tr>
<tr>
<td>Health and personal accidents</td>
<td>- acute sickness</td>
<td>- description of first aid</td>
</tr>
<tr>
<td></td>
<td>- accidents with serious injuries</td>
<td>- organization plan for transportation to hospital</td>
</tr>
<tr>
<td></td>
<td>- epidemic</td>
<td>- organization plan for collaboration with medical authorities</td>
</tr>
</tbody>
</table>

SECURITY ASPECTS OF INDIVIDUAL BUILDINGS

<table>
<thead>
<tr>
<th>Item</th>
<th>Risks and potential security problems</th>
<th>Routines and protection plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-01 Main theatre</td>
<td>- General:</td>
<td>- special control plan for watchman</td>
</tr>
<tr>
<td></td>
<td>- the building houses different functions and technical spaces, access for people from different departments, several user groups, difficult to define</td>
<td>- opening hours for general access to the building</td>
</tr>
<tr>
<td></td>
<td>- roof terrace may be used of a large number of people</td>
<td>- limited access to special rooms, access only in company of a responsible teacher or student</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- special protection of valuable things (special locked rooms)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- emergency exits must be checked regularly</td>
</tr>
<tr>
<td>Stage / fly tower:</td>
<td>- expensive equipment which can not be individually and continuously controlled</td>
<td>- special security plan for the use of stage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>equipment/stage facilities</td>
</tr>
<tr>
<td></td>
<td>- high risk for accidents depending on the special kind of theatre equipment as hanging constructions, electrical facilities</td>
<td>- responsible persons have to take care about expensive facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- personal control, video surveillance of stage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- responsible persons must be defined, security</td>
</tr>
<tr>
<td></td>
<td></td>
<td>introductions for users depending on concern</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- plan for accidents with injured people</td>
</tr>
<tr>
<td>Auditorium</td>
<td>- General:</td>
<td>- special routines for rental</td>
</tr>
<tr>
<td></td>
<td>- public access during performances</td>
<td>- see also “Main theatre / general”</td>
</tr>
<tr>
<td></td>
<td>- technical equipment most valuable</td>
<td>- special security plan for the use of stage</td>
</tr>
<tr>
<td></td>
<td>- teaching/student activities every day</td>
<td>equipment/stage facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- personal control, video surveillance of stage area, special lock system for fly rails</td>
</tr>
<tr>
<td>Equipment:</td>
<td>- use of equipment needs special knowledge</td>
<td>- responsible persons have to take care about valuable facilities</td>
</tr>
<tr>
<td></td>
<td>- edge and skills</td>
<td>- care planes and routines for maintenance of equipment</td>
</tr>
<tr>
<td></td>
<td>- visitors close to technical facilities, risk for accidents, demolishment, theft</td>
<td>- special security plan for the use of stage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>equipment/stage facilities</td>
</tr>
<tr>
<td></td>
<td>- equipment in control room, at stage, at fly rails, partly in the audience</td>
<td>- personal control, video surveillance of stage area, special lock system for fly rails</td>
</tr>
<tr>
<td>During event:</td>
<td>- public access, risk for vandalism</td>
<td>- high degree of social control by visitors</td>
</tr>
<tr>
<td></td>
<td>- fittings may be target for theft</td>
<td>- guards / personal control absolutely necessary, responsibility plan</td>
</tr>
<tr>
<td></td>
<td>- large number of people, special risk in case of fire, panic etc</td>
<td>- special routines for emergency/escape plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- have to be developed</td>
</tr>
<tr>
<td>Every day use:</td>
<td>- students, teachers and may be onlooker</td>
<td>- responsible persons have to take care about expensive facilities</td>
</tr>
<tr>
<td></td>
<td>- free standing/hanging equipment in audience and at stage</td>
<td>- social control, personal control</td>
</tr>
<tr>
<td></td>
<td>- space is not totally closed, access over side road</td>
<td>- permanent light, video surveillance</td>
</tr>
<tr>
<td>Entrance area:</td>
<td>- public access, risk for vandalism</td>
<td>- responsible persons have to take care about expensive facilities</td>
</tr>
<tr>
<td></td>
<td>- shops at the entrance contain temporary merchandising products and cash etc</td>
<td>- social control, guards during event</td>
</tr>
<tr>
<td></td>
<td>- social control, guarding during event</td>
<td>- locking and personal responsibility</td>
</tr>
<tr>
<td>A-02 Flexible hall</td>
<td>- teaching/student activities every day /</td>
<td>- special routines for rental</td>
</tr>
<tr>
<td></td>
<td>- students, teachers and may be onlooker</td>
<td>- special control plan for watchman, permanent</td>
</tr>
<tr>
<td></td>
<td>- public access, risk for vandalism</td>
<td>control if valuable things are easy accessible</td>
</tr>
<tr>
<td></td>
<td>- very limited protection of valuable things in the hall because of glass perimeter walls</td>
<td>- opening hours for general access to the building</td>
</tr>
<tr>
<td></td>
<td>- fittings, free standing/hanging equipment may be target for theft</td>
<td>- special protection of valuable things, locked</td>
</tr>
<tr>
<td></td>
<td>- furniture (chairs etc) may be removed</td>
<td>rooms with limited access, access only in company of a responsible teacher or student</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- emergency exits must be checked regularly</td>
</tr>
<tr>
<td>A-03 Student community house</td>
<td>- open for students, but access is not limited for other persons</td>
<td>- personal control by member of student union</td>
</tr>
<tr>
<td></td>
<td>- interior may be damaged or stolen</td>
<td>(permanent present)</td>
</tr>
<tr>
<td></td>
<td>- risk for carelessness and vandalism</td>
<td>- social control</td>
</tr>
<tr>
<td>A-04 Student pavilion</td>
<td>- open access, no valuable things, limited</td>
<td>- set of house rules</td>
</tr>
<tr>
<td></td>
<td></td>
<td>risk for vandalism</td>
</tr>
</tbody>
</table>

TAASIN SANAA NA UTAMADUNI BAGAMOYO - MASTER PLAN - PAGE 22
### B - School campus, north

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Building</th>
<th>Risks and potential security problems</th>
<th>Routines and protection plans</th>
</tr>
</thead>
</table>
|     | B-01 Administration       | - school administration, offices with sensitive information and administration data for running the institution  
- risk of data loss through fire and theft  
- risk for leakage of data to unauthorized persons  
- safe and petty cash box | - individual responsibility for facility access  
- effective passive building protection  
- routines for data backup and safe storage  
- access only for authorized staff, safe with code/keys |
|     | B-02 Gate keeper house    | - central and for video surveillance, keys for all campus facilities  
- personal protection and presents | - personal protection and presents  
- effective passive building protection |
|     | B-03 Staff housing        | 4 - private households with personal property and objects of value  
|     | B-04                       |                                                                                                         |                                                                                          |
|     | B-05                       |                                                                                                         |                                                                                          |
|     | B-06 Cocking / fire place | 3 - cooking facilities and loose furniture  
- personal control of interior, locking time for dining hall  
- nonexclusive external furniture with TaSUBa sign | - adequate passive building protection  
- social control through “neighbourhood” |
|     | B-07 Dining hall / kitchen|                                                                                                         |                                                                                          |
|     | B-08 Teacher offices      | 2 - offices with computer and important data  
- information and teaching material with importance for department work | - individual responsibility for facility access  
- adequate passive building protection |
|     | B-09 Dept. of fine arts   | 3 - teaching material, student works/art works, department archive etc. – of practical and ideal value for students, department and school  
- instruments, tools, working materials etc of value | - adequate passive building protection  
- special protected rooms for valuable things  
- controlled access for students to TaSUBa owned study materials etc |
|     | B-10 Arts                 |                                                                                                         |                                                                                          |
|     | B-11 Dept. of drama       |                                                                                                         |                                                                                          |
|     | Music department          |                                                                                                         |                                                                                          |
|     | B-14 Department to        |                                                                                                         |                                                                                          |
|     | buildings (fu-            |                                                                                                         |                                                                                          |
|     | B-17 tune extension)     |                                                                                                         |                                                                                          |
|     | B-12 Principals and       | 4 see B-03                                                                                             | see B-03                                                                                   |
|     | guest house               |                                                                                                         |                                                                                          |
|     | B-13 Guest house          | 4 see B-03                                                                                             | see B-03                                                                                   |
|     |                            | - visitors need special information  
- introduction to house rules |                                                                                          |

### D - Student housing area

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Building</th>
<th>Risks and potential security problems</th>
<th>Routines and protection plans</th>
</tr>
</thead>
</table>
|     | D-01 Dormitories to D-19 | - carelessness and recklessness against campus facilities  
- trouble between students | - small safe/locker for every individual  
- rental agreement and responsibility descriptions  
- high degree of social control, contact persons, campus guards |

### C - School campus, south

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Building</th>
<th>Risks and potential security problems</th>
<th>Routines and protection plans</th>
</tr>
</thead>
</table>
|     | C-01 Art gallery, Café, internet | 1 General:  
- building is part of the public interface, public access to building  
- expensive electronic equipment and exhibition objects of ideal and/or material value  
- computers etc. may be target for theft  
- electronic equipment is sensitive for damage  
- permanent personal monitoring of computer pool users  
- passive safety of computers etc with (wire) locks, TaSUBa signs on equipment | - permanent personal monitoring of computer pool users  
- passive safety of computers etc with (wire) locks, TaSUBa signs on equipment |
| C-02 Shop | 2 selling products in shop are target for small thefts by customers  
organized robberies during day time  
targeting products and especially cash desk  
burglary during the night / closing hours | - permanent personal control during opening hours, mirrors and video surveillance for discouragement, practical control and evidence  
- system for intelligent money storage for minimal cash in the counter, larger sums in safe  
guards  
- adequate passive building protection, permanent lighting, passive infrared sensor, alarm |
| C-03 Mango tree theatre (and audiatorium) | 1 temporary equipment and valuable things  
- location is offside the main ways, limited social control  
- scene and auditorium totally open  
- responsible person/teacher/student during day time activities and events | - temporary equipment and valuable things  
- location is offside the main ways, limited social control  
- scene and auditorium totally open  
- responsible person/teacher/student during day time activities and events |
| C-04 Library, New Media | 2 collections of books and other media have a great value, economical, ideal and for the school function  
books are expensive and may be target for theft, especially by students, computer etc  
books are sensitive for moisture  
special risk of fire | - permanent personal presents of library staff  
- valuable books should be locked and only accessible for library personal  
- access to media and distribution must be controlled (library card for user, security system)  
- dehumidifiers / air condition  
- special fire protection |
| C-05 Guest house | 4 see B-13 | see B-13 |
| C-06 Office building | see B-08 | see B-08 |
| C-07 Classrooms at beach | 3 - low risk for theft | 3 - low risk for theft  
- standard passive building protection |
| C-08 Classroom building (future extension) | 4 see B-03 | see B-03 |
The overall sewage system must be analysed as the school keeps expanding. New roads, fencing, electrical, water, sewage and these building phases must be carried out together with all infrastructure that are needed at each stage. New roads, fencing, electrical, water, sewage and planting must be handled together with the building of these new facilities. The overall sewage system must be analysed as the school keeps expanding.

**BUILDING PHASES**

The building phases shown to the left have been suggested in the last stages of the master plan development in 2005. In the following five years several new buildings have been erected and some changes in the master plan have been done. Phase 1 has been successfully carried out and parts of phase 2, three student dormitory buildings, have been realised. In addition to this the canteen has been extended.

The previously drafted schedule should be a guideline for the future building activity. There is still a large need for student dormitories and also the common student facilities. Education facilities should be extended in relation to the growing number of student.

However, there is a wish to realise the buildings around the entrance square to bring through one of the most important innovations of the master plan: the completion of the central axis and the public interface.

The following stages have been previously discussed and recommended:

1) Renovation and expansion of the theatre, Flexible hall
2) Student dormitories, Student service house, Student pavilion, Principal house and reception
3) Student dormitories, Warden and matron (repositioned at the other side of the road), Expansion of dining hall
4) Department buildings, Covered walkway
5) Public interface, Staff houses
6) Student dormitories

Future extension:
7 and 8) Department buildings, Covered walkway, Classroom building

These building phases must be carried out together with all infrastructure that is needed at each stage. New roads, fencing, electrical, water, sewage and planting must be handled together with the building of these new facilities. The overall sewage system must be analysed as the school keeps expanding.
During a sunny day about 80 to 90 per cent of energy comes from direct sunlight. The global radiation consists of two main types of light: direct sunlight and diffused light. Both are relatively dependant on weather and time of the day. During a sunny day about 80 to 90 per cent of energy comes from direct sunlight. Especially around noon the impact of radiation energy creates big problems. In the morning and evening hours the atmosphere will partially absorb the light. Diffuse radiation has a significant influence on the visual perception, light ambient, contrast and colour appearance in the environment. During a cloudy day the energy volume of diffused light will increase considerably because of sunlight reflected by the clouds. Yet the total amount of radiation energy will still be low compared with direct solar radiation.

**SUN ELEVATION AND SUN SHELTER**

Looking at the sun elevation there are certain conditions, which are important for the building design as well as for the infrastructure planning. Usually all solar exposed parts of a building could cause heat gain problems. The energy absorption will be very high if a wall or roof is nearly perpendicular to the sunlight. If the angle is very small less light will hit the reference surface of one square meter. So it is easy to understand that east facing walls work as energy collectors in the morning, the roof over the day and west facing walls in the evening. North and south faced building surfaces are almost without direct solar radiation around the equator. These surfaces can easily be protected with a roof overhang.
OVERHEATING OF BUILDINGS
If a building is completely exposed to sunlight and if there are no construction or technical facilities acting against this, the radiation energy will heat up the building and create conditioning problems inside buildings. The characteristics of the material play an additional role: dark and rough surfaces absorb light and pale and smooth surfaces reflect light. Heavy walls tend to accumulate heat.

Another major low-tech improvement of climate is to take advantage of the continuous breeze coming from the ocean. This breeze is primarily moving parallel to the site, thus advantageous to the new campus geometry.

CONSTRUCTION RECOMMENDATIONS
The master plan recommends technical specifications, which can improve the environmental qualities in all new buildings to be built on campus. By building generous roof overhangs, protecting sun exposed elevations, using double/ventilated roof constructions and cold roof constructions, and last but not least making use of the ever-blowing breeze from the ocean, living and working conditions can greatly be improved. Planning must take into consideration the interplay between different means to improve the climate in buildings, as follows:

- Building technology (ventilated roofs, etc)
- Architectural design (roof-overhangs, verandas, etc)
- Choice of building material (reflective surfaces, etc.)
- Planting (shadows through conscious planning, etc)
- Double skin walls (heat is ventilated out in the void)
- Cold roofs (radiation heat from outer layer is stopped)
- Cross ventilation (subjects feel a lower temperature due to movement of air)
- Combination of vegetation and interior climate (see diagram on vegetation)
- Protection of exposed facades that absorb heat into the building mass.

SUN DIAGRAMS
A series of sun studies have been carried out with emphasis on improving the climate in all buildings and especially in the student dwellings. The planning diagram of the master plan has been analysed with the help of a sun study program and shading properties have thus been optimized. Existing trees have been completed with new-planted trees.

The studies show the different daylight and seasonal effects on the site and highlight the most exposed areas of sunlight. The main aim is to hinder to high solar heat exposure on buildings.
The optimum would be an overall planting of the site. However, this is not possible as many other aspects and functions must be catered for. The master plan envisages a series of outside spaces, which will give the college personnel, and the students useful outside spaces for different activities. For example the three large spaces, the dense rows of trees and the terraces with shade.

Every house should have a veranda to shelter the walls from sun exposure but also provides a place to rest in the shade of these and similar architectural elements. Observe the section discussing vegetation and landscape and the layout of vegetation and landscape spaces.

**Morning sun at 9.00 am during March and September;**
**Afternoon sun at 15.00 pm during March and September**

The main aim is to protect the part of the building that is exposed by vertical radiation that will result in overheating. The diagrams illustrate which part of the buildings that could be additionally protected by trees, bushes or by other means. The placing of trees in the master plan has been made considering the shading effect on the planned buildings. As a result the trees are positioned on the east and west sides of buildings.

**Sun at noon during December;**
**Sun at noon during June**

Bagamoyo lies somewhat south of the equator (6° 53’ south). As a result the sun exposure comes both from the north and the south. The most extreme situation is on the 21st of June (zenith 59,5° North) and the 21st of December (zenith 73,5° south). See environmental diagram: sun elevation. Both diagrams display the effects of shadow during these two extreme positions at noon.

The solar heating does not only have an effect in direct contact with the buildings but also in heating up the actual ground. During the other seasons the sun position is between these two extremes, i.e. the angle even increases until becoming completely vertical. In this case only a total coverage of the ground can protect the ground from sunlight. Surfaces exposed during all day should if possible be avoided. As some surfaces are needed for certain functions there will always be a compromise. There are needs for certain areas for, which cannot be protected from sun exposure.

The roof of buildings is totally exposed during the day. When sunlight exposure is from a lower angle, vegetation can play an important role to reduce heat from the sun. This should be taken advantage of.

*NOTE: BUILDINGS IN ILLUSTRATIONS ARE NOT UPDATED*
DOCUMENTATION OF FACILITIES

FACILITIES UNTIL 2004
The old facilities on the campus are structures dating from 1981 to the café addition and the ICT building that was finalised in September 2004. Two buildings are not in use due to their state of decay (previous principal’s and vice principal’s houses). Several other houses are in bad conditions. Some buildings are affected by water due to damage on roofs, others are partially inundated during the rainy season.

A higher degree of awareness is needed in order to avoid that buildings become inhabitable. Regularly maintenance routines can avoid several of these problems. Unfortunately, some of the structures may now be beyond repair. It is important to educate the school staff in order to make them understand that maintenance rules can save buildings from decay. This could avoid a continuing deterioration of the TaSUBa buildings. (See also Maintenance)

The old buildings were closely assessed together with Ministry staff in March 2004. See the list showing the condition of existing buildings diagram.

The old dormitories have non-efficient plan arrangements. The climate is another problem in the houses as they can not take advantage of the breeze from the sea. Sanitation facilities have been brought onto an acceptable standard during the first building phase of the master plan.

COLLECTION OF FACILITY DATA
Since 2004 several new houses have been built. It is important to put together a complete documentation over old and new facilities. This goes also for all infrastructure. The existing facilities have to be professionally examined to get an objective picture of the construction and condition. As part of that documentation of each facility must be compiled. It must contain general and detailed information as for instance construction type, month/year of last renovation etc. The material will be the base for maintenance planning and future economical decision. In the long term the documentation will be a tool to draw conclusions and make analyses of specific related problems.

SITE PLAN AND SURVEY
The base material surveys given to us contains contradictory information and as a result the master plan has inaccurate dimensions, levels and displaced features. It obliges us to mention a long list of deviations. Survey by Mvuoni B. T. S spring 2004 (?) and survey by ELIMU (no date) do not coincide at all (proportions, angles and position of site boundaries, positions of features, road network with deviations of several metres).
The road network, main road and campus paths does not match the site
• Some houses were either missing or too many, some were identified as
too small or wrongly measured.
• A large number of trees are missing. Several are wrongly positioned
• Height levels do not match the actual levels on the site
• Height levels not related to the global system
• The drawn levels indicate that the information predates the buildings on site (particularly visible around the student dwellings).

The lack of accurate surveys represents a problem for the master plan. Some items have due to doubts about the measured surveys been adjusted to information from updated photographs. Trees have been drawn by eye measure on the spot and corrected via information taken from panorama photographs. Corrections have been done as far as possible to improve these deficiencies. The houses have been re-measured by us and with the help of TaSUBa students.

A recent attempt to complete information has been the request to Mr Raymond Bagenda to make a new survey, which was made between the 22 and 26 of April 2005. This survey made the situation even more complicated as it in parts differs from the two earlier surveys. It is difficult to assess which one is right. The site seems more correct in the recent survey yet the buildings including the theatre are very rudimentary measured and partly wrong. Some individual measurements are considered doubtful.

The Ministry has approached the local planning authorities in order to get answers to the below mentioned questions yet with little results. Some questions remain from the initial survey made in the spring 2004:

1) The road as drawn in the town plan does not match the gap between
   the two sites of the college.
2) The position of houses of the campus seems to stand directly on the site
   boundary with no set back distance.
3) The drawing up of the adjoining sites and naming of the owner to be added
4) Control of the validity of a drawing showing a diagonal road cutting the
   housing area site.

A one day control survey was initiated in February 2010, to explore differences between the drawn master plan documents and the site. The investigation has shown some divergences, which would make it difficult to transmit the building guidelines from the drawing. Therefore it is highly recommended to do a comprehensive new survey and to revise the master plan dimensions.

**TaSUBa MAINTENANCE**

**GENERAL**

Buildings and other similar facilities are planned and built for certain functions and assumed lifetime. Environmental impact, usage, aging and other kinds of wear and tear will inevitably shorten the lifetime. However, a regular care and the attending to necessary repair have a positive influence on the life span of buildings and as a result to other gains also the long run considerable economic savings.

Any institution must have as its aim to care and entertain and swiftly repair damages and wear that occur regularly. At the same time, taking care of buildings and repairing them involve cost. It is therefore of interest to protect and maintain exteriors and interiors to keep the expense on running costs as low as possible.

**FACILITY MANAGEMENT**

A TaSUBa facility management has to take on the maintenance issues for the whole institution. The management is answering directly to the TaSUBa leadership. Regular meetings must be arranged with the chief executive, reporting and discussing the upcoming problems and the economic consequences.

Facility management means that a specialist with knowledge and building experience is assigned. The person will be given a wide range of tasks concerning care, coordination of maintenance, documentation, planning and preparation of repairs, all with the goal to preserve the built structures at the TaSUBa. The specialist must directly or indirectly be in contact with all facility users as departments, offices, etc.

It is important to work with these questions systematically. Routines for reporting must be developed for different buildings. An institution like the TaSUBa must have a deposited founds aimed solely for the maintenance, renovation and reconstruction of its built environment. The more new structures are built the more important becomes the task of a facility management.

**PERSONAL RESPONSIBILITIES**

Different user groups share many of the TaSUBa facilities: teachers, students, visiting artists and their teams, public and tenants, etc. These groups have varying public access to the different facilities. By assigning responsibility of specific areas to individuals a greater clarity and control can be achieved.

The different user groups have to be involved in protection/care of both equipment and the facilities they use.

It is therefore imperative to establish a facility management – where especially skilled personal can make use of their competence to the benefit of TaSUBa.

**GENERAL MAINTENANCE MANUAL (MoEVT)**

Detailed information about maintenance concerning different items such as buildings, building parts, roads, vegetation, infrastructure etc. can be found in the present document: DG (Development Grant for Secondary Schools), General Maintenance Manual (Guidelines for School/College Buildings and Surroundings) by the Ministry of Education and Culture. This document gives an overview about common problems, with a short description, maintenance recommendation and prevention maintenance advise.

**ORGANIZATION OF PREVENTIVE MAINTENANCE WORK**

The maintenance of environment has an important influence on the users/visitors. The ‘Broken window theory’ says that there is a relation between damages and the behaviour of people: a broken window (or other disorders/damages) will soon lead to carelessness and further vandalism. On the other hand has a well-kept surrounding a positive influence on working atmosphere and the identification with the institution, which is an important key issue. People will thus take more responsibility and care about the facilities.

In order to achieve a sufficient control over the maintenance work individual description/rules must be set up, for example:

**Reporting routines:** Any disorder that has become apparent must be reported.

But it is important to know who reports, what is reported and in which form this is made. Furthermore to whom the report is sent/forwarded to. If a well-made, timely sent report is forwarded to the wrong person it is of no value. The efficiency and clarity in all this communication, ensures that the upcoming problems are tackled professionally and within reasonable time.

**Documentation:** List of reporting (documentation of disorders or damages) – Every building or other facilities needs a ‘log book’ with essential information about the building/facility: drawings/plans, year of construction, construction type, building materials, technical installations, other building descriptions, etc. The history of all disorders or damages, repairs, changes, renovations, maintenance works etc has to be documented and continuously updated.

**Action plans:** Maintenance issues do not start with a newly discovered disorder or damage. Routines with action plans and controls must be an ongoing process in an institution of the size of TaSUBa. The action plans are based on building expertise but also on the evaluation of problems and documentation of mistakes, which have happened. The facility management must have regular meetings with selected school representatives about the development of the plans.
Finance planning of the maintenance: A long term and a short-term maintenance budget are required. The assessment of action plans, regular maintenance costs, planned repairs and improvements required a financial planning of different time spans. Ongoing finance plans for maintenance and long term financial plans for mayor repairs must be an integral part of the over all TaSUba economical plan.

Cleaning: Detailed rules for cleaning for the different facilities are an obvious necessity but it may vary for different buildings and/or special needs. Cleaning is generally believed to be a menial task that everyone can do. This is a wrong conception. It is a professional job. A building that is kept clean by professionals is going to be both cleaner and more durable. Tasks and routines for cleaning / maintenance must be pinned down in the contract with the gardening company working with these tasks. The usage of environmentally sound product must be guaranteed.

Renting: Persons and organisations from outside regularly use the TaSUba facilities. This involves special wear and tear on all the facilities involved. Damage and tear must be checked at the hand over and after usage of the facilities (from a simple cable to the hole flexible hall!) when the tenant is checking out. This involves regular routines. In order to handle this on a regular basis temporary rental contract must available and used. The signing of these forms is not only a security against damage but it also transfers responsibilities to the tenant, which makes minor her behave in a responsible way. It may also prove to be essential in case of severe damage like fire. A professional lawyer must check these contracts.

PRACTICAL MAINTENANCE OF BUILDING
Mistakes with consequences for maintenance may already arise during construction of buildings and infrastructure. Only professional planning and execution can avoid such problems that may cause future problems and imply costs. However for already built structures it may be important to have clear rules and routines to handle maintenance. As soon as problems arise these can be dealt with without delay.

Roof cover: Roofs need regular control & maintenance in order to protect the TaSUba facilities. Lack of maintenance result in corrosion and ensuing damages.

Roof drainage and zigzag roof: All roof water drainage systems need regular inspections and immediate elimination of fault in question to prevent ensuing damages. The path over the zigzag roof has not been executed! The building of this item is still to be installed in order to carry out regular inspection/cleaning of channels before/after rainy season.

Surface water: Surface water must be controlled to prevent infiltration in buildings. Ensure to clean gaps/distances between concrete panels at lower entrance to theatre.

Storm water channel: Regular cleansing of storm water channels must be carried out all along the channel until the beach.

Splashing water: The base of buildings must be secured to resist damages, for example splashing rainwater. Penetration of water is caused by rising damp and ensuing damages. Several building has been built without adequate protection of the base.

Insect infestation: Regular inspections of insect attacks and affected woodwork must be executed.

Maintenance of wood: Exposed wooden parts, windows doors louvers etc. have to be regularly treated.

Corrosion: All materials used for the fence must coated as the air is salty and agressive. Concrete must have enough cover to avoid reinforcement bars to rust inside.

Wear of floors: Highly exposed floors used by many people involves not only cleaning but also regular repairs in a necessary cycle in order to prevent deterioration.

Interior: In the interiors of buildings loose and fixed furniture represent a valuable stock of material well worth taking care of. Regular repairs and observation of weaknesses of products keep the running costs low.

MAINTENANCE OF THE CAMPUS/SITE
The Master plan has the aim to improve living conditions in the dwelling area by planting according to specific principles. The planting can also help to improve security by well-kept hedges. Planting at the beach may prevent erosion and damages at the seashore. The planting has many other assets not the least the sheer beauty of plants, flowers and trees, which spreads joy and pleasure throughout the natural environment. Therefore the gardening and planting represents an important asset to the TaSUba worth while investing in.

Water supply: Long term planning to ensure clean water supply, avoiding danger of getting dirty water in area of fresh water supply. Water consumption will in the increase, due to enlargement of Campus and improved living standards!

Gardening: Main principles for the plantation layout are given by the master plan. All cutting of trees must be in accordance with the landscape design. The gardening must be lead by a professional gardener. Detailed maintenance regulations for planting/ landscaping, are needed to maintain standards and upkeep. Many decisions, small and large to be made. For example: decisions where to have grass and where to have soil are not up to the unskilled workers but must be made by professionals.

Perimeter fence: Regular control of fences and walls has to be implemented. Occasional damages must be identified, analysed and eliminated. The planted parts of the fence must be given regular care.

Roads and surfaces: The network of roads established in the master plan must be defined. By making it quite clear what is road what is planted surfaces order can be kept on the Campus as far as vehicles are concerned. But these must be entertained. The slopes and streets at the TaSUba tend to be eroded by the rainy season. Maintenance of road, paths terraces and sports fields must be part of the maintenance plan.

Coastal protection: The TaSUba has a stretch of land at the seashore. The rising sea level and erosion of the beach requires not only securing the shore from erosion, but also securing and maintaining buildings close to the seaside. The most efficient way of controlling the seashore is by planting both larger trees mangroves and grass types with root systems, which prevent erosion. Controls must be made regularly.

SPECIAL ITEMS
Main stage: two pump holes are positioned at the lowest point next to the main stage must be regularly cleaned (with vacuum cleaner) as if flooding occurs the two holes shall be used to pump out the water.

Theatre equipment: Maintenance of special theatre equipment in the fly tower and auditorium are the responsibility of persons who have been specially instructed and are certified to operate the theatre mechanics. See separate report/instructions.

General dangers: All public buildings with large audiences contain hidden dangers, hanging elements, weak railings, electric appliances etc. Practical issues, potential problems must be identified, discussed and eliminated. Rules must be developed and applied for dangers that are related to the practical work. For example: the stability of the railing at the back of the audience. There may be a high risk that large amounts of spectators will push and may fall down due to the construction type and stability of the balustrade.
## Proposal for Organization Scheme, Maintenance and Individual Responsibilities

### Admin.

<table>
<thead>
<tr>
<th>Function</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of School, principal</td>
<td>Generally responsible for all facilities, coordination and delegation of maintenance work, directive, financing plans etc.</td>
</tr>
</tbody>
</table>

### Facility Management

<table>
<thead>
<tr>
<th>Function</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Maintenance</td>
<td>General responsibility for maintenance of all TaSUBa facilities; collection, documentation, evaluation and reporting of information about facilities, development of maintenance plans, supervision of general building care, initiation and coordination of renovations and maintenance work etc.</td>
</tr>
</tbody>
</table>

### Head of theatre and hall

<table>
<thead>
<tr>
<th>Function: Supervisor</th>
<th>Responsibilities: Coordination of facility issues in collaboration with the individual institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special: Facility rental needs special treatment and coordination with marketing unit</td>
<td></td>
</tr>
</tbody>
</table>

### Head of department or institution

<table>
<thead>
<tr>
<th>Function: Head of building</th>
<th>Responsibilities: simple control of facilities, reporting of damages and needs for repair etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: Some facilities as classroom buildings are common used. A responsible head of the individual building must be set in depending on the building function and in relation to a certain unit. This can be teachers, administration staff, the gate keeper etc.</td>
<td></td>
</tr>
</tbody>
</table>

### Head of general building

<table>
<thead>
<tr>
<th>Function: Head of building</th>
<th>Responsibilities: simple control of facilities, reporting of damages and needs for repair etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: The head of the department, library, kitchen etc should always be the head of the building.</td>
<td></td>
</tr>
</tbody>
</table>

### Private staff and families

<table>
<thead>
<tr>
<th>Function: Occupant</th>
<th>Responsibilities: simple control of facilities, reporting of damages, economically responsible for damages, which are not caused by normal use or aging.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal: Responsibilities are regulated in a rental contract</td>
<td></td>
</tr>
</tbody>
</table>

### Warden, Matron

| Function: Contact person, administration | Responsibilities: Coordination of student rooms/rental agreements, Student contact for facility problems, simple control of student rooms/dormitories, reporting of damages and needs for repair etc. |

### Faculty Management, individual tasks

| Function: Facility Maintenance | Responsibilities: Maintenance of general facilities, regular control of functions, small repairs, arrangement and coordination of maintenance work and repairs |

### Head of department or section, Head of festival etc

<table>
<thead>
<tr>
<th>Function: Head of section</th>
<th>Responsibilities: Responsible for rooms and technical facilities in the individual section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: Special competence and maintenance plans for special theatre equipment and facilities (Sound tech supervisor, Stage tech supervisor etc)</td>
<td></td>
</tr>
</tbody>
</table>

### Main theatre, flexible hall, mango tree theatre

| Facilities | Main theatre and auditorium, A-01 Flexible hall, A-02 Mango tree theatre, C-03 |

### Education facilities

| Facilities | Cocking / fire place, B-06 Dining hall / kitchen, B-07 Department of fine arts, B-09 Department of drama, B-10 Music Department, B-11 Art gallery, Cafés, Internet, C-01 Shop, C-02 Library, New Media, C-04 Department buildings (future extension), B-14 to 17 |

### Common/shared facilities, staff facilities, etc

| Facilities | Administration building, B-01 Gate keeper house, B-02 Teacher offices, B-08 (Principals and guest) house, B-12 Guest house, B-13 Office building, C-05 Classrooms at beach, C-07 Classroom building (future), C-08 |

### Staff housing

| Facilities | Staff housing, B-01, B-04, B-05 Principals (and guest) house, B-12 |

### Student facilities

| Facilities | Student community house, A-01 Student pavilion, A-04 Dormitories, D-01 to 19 |

### Campus facilities

| Facilities | Roads Drainage Security barrier/fence Vegetation etc |

### Technical service

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Function: Special competence, consultant, contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibilities: Maintenance and repair of infrastructure and technical facilities</td>
<td></td>
</tr>
</tbody>
</table>

### General service

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Function: Service personnel, gardener, caretaker, cleaners, security service etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsibilities: control and maintenance work in respective field of activities</td>
<td></td>
</tr>
</tbody>
</table>

### Technical infrastructure

| Facilities | Fresh water supply Sewage water Electricity Security systems |
### APPENDIX • APROX. AREA CALCULATION OF OLD FACILITIES

<table>
<thead>
<tr>
<th>z</th>
<th>Function / House</th>
<th>gross sq. m</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COLLEGE OF ART - SCHOOL FACILITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Large Theatre</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Theatre hall excl. theatre</td>
<td>116,2</td>
</tr>
<tr>
<td>27</td>
<td>Forestage / dance golf</td>
<td>116,2</td>
</tr>
<tr>
<td>28</td>
<td>Stage</td>
<td>25,7</td>
</tr>
<tr>
<td>29</td>
<td>Backstage</td>
<td>51,9</td>
</tr>
<tr>
<td>30</td>
<td>Audience</td>
<td>170,9</td>
</tr>
<tr>
<td>13</td>
<td>Classrooms at mango tree</td>
<td>86,0</td>
</tr>
<tr>
<td>19</td>
<td>Classrooms at beach (incl. arcade)</td>
<td>454,0</td>
</tr>
<tr>
<td>1</td>
<td>Administration building (incl. arcade)</td>
<td>303,0</td>
</tr>
<tr>
<td><strong>SERVICE FACILITIES AND OTHERS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dining hall (gas kitchen inside not used)</td>
<td>132,0</td>
</tr>
<tr>
<td>2</td>
<td>Fire wood kitchen</td>
<td>17,2</td>
</tr>
<tr>
<td>3</td>
<td>Bar (unused)</td>
<td>98,0</td>
</tr>
<tr>
<td>4</td>
<td>Toilets at kitchen (out of use)</td>
<td>45,0</td>
</tr>
<tr>
<td>5</td>
<td>Toilets at theatre</td>
<td>22,0</td>
</tr>
<tr>
<td>6</td>
<td>Toilets at administration b.</td>
<td>8,8</td>
</tr>
<tr>
<td>7</td>
<td>Storage</td>
<td>85,1</td>
</tr>
<tr>
<td>8</td>
<td>Storage beside theatre</td>
<td>3,2</td>
</tr>
<tr>
<td>9</td>
<td>Sun shelter, workshop sculptural school</td>
<td>92,0</td>
</tr>
<tr>
<td>10</td>
<td>Sun shelter small for sculptural School</td>
<td>17,3</td>
</tr>
<tr>
<td><strong>HOUSING AND SPARE TIME</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Rest house</td>
<td>65,0</td>
</tr>
<tr>
<td>12</td>
<td>Student dormitories</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>House 1</td>
<td>86,0</td>
</tr>
<tr>
<td>14</td>
<td>House 2</td>
<td>86,0</td>
</tr>
<tr>
<td>15</td>
<td>House 3</td>
<td>87,0</td>
</tr>
<tr>
<td>16</td>
<td>House 4</td>
<td>91,0</td>
</tr>
<tr>
<td>17</td>
<td>House 5</td>
<td>87,0</td>
</tr>
<tr>
<td>18</td>
<td>House 6</td>
<td>93,0</td>
</tr>
<tr>
<td>19</td>
<td>Principal</td>
<td>99,0</td>
</tr>
<tr>
<td>20</td>
<td>Vice principal (incl. arcade)</td>
<td>100,0</td>
</tr>
<tr>
<td>21</td>
<td>Drivers house</td>
<td>49,0</td>
</tr>
<tr>
<td><strong>SUMMARY SCHOOL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4249,6</td>
</tr>
</tbody>
</table>

Area calculation made by the Institute of Arts and Culture Bagamoyo, areas of the main theatre based on drawings from French & Hastings, Mango Tree Theatre measured by Mr. Alexis Pontvik.

### PROPOSED AREA CALCULATION BY MASTER PLAN BUILDING NUMBERS

**A - CENTRAL BUILDINGS**

<table>
<thead>
<tr>
<th>A-01 Main theatre (estimate before constr. - may be updated)</th>
<th>gross sq. m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building area gross ca.</td>
<td>1800,0</td>
</tr>
<tr>
<td>Open air ranks</td>
<td>289,6</td>
</tr>
<tr>
<td>Open air flat area</td>
<td>136,2</td>
</tr>
<tr>
<td>Open air stage</td>
<td>92,7</td>
</tr>
<tr>
<td>Indoor stage</td>
<td>92,7</td>
</tr>
<tr>
<td>Forestage</td>
<td>150,0</td>
</tr>
<tr>
<td>Public toilets</td>
<td>80,0</td>
</tr>
<tr>
<td>Circulation space</td>
<td>150,0</td>
</tr>
<tr>
<td>Passages (two)</td>
<td>82,6</td>
</tr>
<tr>
<td>1. Floor - toilets (incl. stairs)</td>
<td>151,3</td>
</tr>
<tr>
<td>2. Fl. - dressing r. (incl. stairs)</td>
<td>142,2</td>
</tr>
<tr>
<td>3. Fl. - roof gallery</td>
<td>130,9</td>
</tr>
<tr>
<td>Studio rooms (2 á 79 sq. m)</td>
<td>158,0</td>
</tr>
<tr>
<td>Studio rooms (2 á 38,4 sq. m)</td>
<td>76,8</td>
</tr>
<tr>
<td>Backstage area (2 á 38,4 sq. m)</td>
<td>76,8</td>
</tr>
<tr>
<td>Sum net</td>
<td>1809,8</td>
</tr>
</tbody>
</table>

**A-02 Flexible hall (estimate before constr. - may be updated)**

<table>
<thead>
<tr>
<th>A-02 Flexible hall (estimate before constr. - may be updated)</th>
<th>gross sq. m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area gross</td>
<td>454,4</td>
</tr>
<tr>
<td>+ terrace</td>
<td>147,4</td>
</tr>
<tr>
<td>Hall</td>
<td>370,0</td>
</tr>
<tr>
<td>Service space</td>
<td>30,0</td>
</tr>
<tr>
<td>Toilets</td>
<td>30,0</td>
</tr>
<tr>
<td>Sum net</td>
<td>430,0</td>
</tr>
</tbody>
</table>

**A-03 Student community house**

<table>
<thead>
<tr>
<th>A-03 Student community house</th>
<th>gross sq. m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area gross</td>
<td>221,0</td>
</tr>
<tr>
<td>+ terrace</td>
<td>72,1</td>
</tr>
<tr>
<td>Saloon</td>
<td>50,0</td>
</tr>
<tr>
<td>Reading room and TV-room</td>
<td>40,0</td>
</tr>
<tr>
<td>2 Visitor rooms (parents)</td>
<td>24,0</td>
</tr>
<tr>
<td>Office student union</td>
<td>12,0</td>
</tr>
<tr>
<td>Coffee bar</td>
<td>12,0</td>
</tr>
<tr>
<td>Toilets</td>
<td>12,0</td>
</tr>
<tr>
<td>Laundry</td>
<td>30,0</td>
</tr>
<tr>
<td>Storage / Cleaning facilities</td>
<td>20,0</td>
</tr>
<tr>
<td>Sum net</td>
<td>200,0</td>
</tr>
</tbody>
</table>

**A-04 Student pavilion, sun shelter**

<table>
<thead>
<tr>
<th>A-04 Student pavilion, sun shelter</th>
<th>gross sq. m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roof</td>
<td>221,0</td>
</tr>
</tbody>
</table>

**B - SCHOOL CAMPUS • NORTH**

<table>
<thead>
<tr>
<th>B-01 Administration building (from phase 5)</th>
<th>gross sq. m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area gross</td>
<td>193,2</td>
</tr>
<tr>
<td>+ terrace</td>
<td>64,4</td>
</tr>
<tr>
<td>Head of school</td>
<td>18,0</td>
</tr>
<tr>
<td>Principal</td>
<td>18,0</td>
</tr>
<tr>
<td>Vice Principal</td>
<td>18,0</td>
</tr>
<tr>
<td>Secretary</td>
<td>12,0</td>
</tr>
<tr>
<td>Meeting room</td>
<td>24,0</td>
</tr>
</tbody>
</table>

All areas in sq. m; room surfaces are net; room summary in net, total areas in gross.
## B-09 Dept. Fine Arts
- Area gross: 103.2
- + terrace: 34.4
- Workshops / Practice rooms: 60.0
- Teacher offices: 24.0
- Toilets: 6.0
- Sum net: 90.0

## B-10 Dept. of Drama
- Additional studios in theatre building, teachers in B-08
- Area gross: 88.2
- + terrace: 34.4
- Studios / Practice rooms: 60.0
- Teacher offices: 12.0
- Toilets: 6.0
- Sum net: 78.0

## B-11 Music dept.
- Area gross: 103.2
- + terrace: 34.4
- Practice rooms: 60.0
- Teacher offices: 16.0
- Instrument store: 8.0
- Toilets: 6.0
- Sum net: 90.0

## B-12 Dance Dept.
- Workshops, practice rooms in theatre building, Teachers in B-08 (future extension department)

## B-13 Dept. of Stage Technology
- Workshops, practice rooms in theatre building, Teachers in B-08 (from building phase 5 dept. in C-06)

## B-14 Dept. for Social Sciences
- Class rooms C-07, teachers in B-08 (from building phase 5 teachers and offices in C-06)

## C - SCHOOL CAMPUS • EAST

### C-01 Art gallery, Cafe
- Area gross: 193.2
  - + terrace: 64.4
  - Exhibition hall: 130.0
  - Storage: 16.0
  - Cafeteria: 20.0
  - Toilets: 8.0
  - Sum net: 174.0

### C-02 Shop
- Area gross: 128.8
  - + terrace: 14.8

### C-03 Mango tree theatre
- Area theatre building gross ca.: 61.3
  - Stage: 25.7
  - Backstage: 35.6
  - Audience: 179.9
  - Sum gross ca.: 232.2

### C-04 Library, New Media
- Area gross ca.: 94.7
  - + terrace ca.: 42.9
  - Library: 36.0
  - Office: 10.0
  - Computer: 16.0
  - Reading room: 12.0
  - Lockers: 4.0
  - Toilets: 8.0
  - Sum gross ca.: 86.0

### C-05 Guest house
- Area gross ca.: 65.0

### C-06 Prelim. Administration building
- Will later be reused for offices and teaching purposes
  - Area gross ca.: 223.0
    - + terrace ca.: 80.0
    - Head of school: 15.0
    - Principal: 15.0
    - Vice Principal: 15.0
    - Secretary: 15.0
    - Meeting room: 25.0
    - Administration: 12.0
    - Dean of Students: 12.0
    - Coordinator of Studies: 12.0
    - Accountant: 12.0
    - Secretary: 12.0
    - Secretary / Receptionist: 12.0

## D - STUDENT HOUSING AREA • SOUTH-WEST

### D-01-19 Dormitories (new houses estimated - to be updated)
- D-01 Terrace house, 12 stud.: 143.6
- D-02 Terrace house, 12 stud.: 143.6
- D-03 Exist. house - type I, 8 stud.: 85.6
- D-04 Exist. house - type I, 8 stud.: 85.6
- D-05 Exist. house - type III, 12 stud.: 82.2
- D-06 Exist. house - type I, 8 stud.: 85.6
- D-07 Exist. house - type II, 8 stud.: 96.3
- D-08 Exist. house - type II, 8 stud.: 96.3
- D-09 Terrace house, 12 stud.: 143.6
- D-10 Terrace house, 12 stud.: 143.6
- D-11 Terrace house, 12 stud. (area of one floor): 143.6
- D-12 Terrace house, 12 stud. (area of one floor): 143.6
- D-13 Terrace house, 12 stud. (area of one floor): 143.6
- D-14 Terrace house, 12 stud. (area of one floor): 143.6
- D-15 Terrace house, 12 stud. (area of one floor): 143.6
- D-16 Terrace house, 12 stud. (area of one floor): 143.6
- D-17 Terrace house, 12 stud. (area of one floor): 143.6
- D-18 Terrace house, 12 stud. (area of one floor): 143.6
- D-19 Terrace house, 16 stud. (area of one floor): 190.9

## Service Staff
- Storekeeper: 10.0
- Guards, Driver: 10.0
- Toilets: 18.0
- Archive: 18.0
- Medical room: 18.0
- Sum net: 204.0

## C-07 Classrooms at beach
- Rooms used from different departments.
  - Area gross: 189.0
  - + terrace: 65.0

## C-08 Classroom building - future extension
- Rooms used from different departments.
  - Area gross: 257.6
  - + terrace: 64.4

## New student apartment - standard plan
- Area gross ca.: 48.1
  - Hall: 8.8
  - Room 1 incl. locker: 13.8
  - Room 2 incl. locker: 13.8
  - Toilets: 4.0
  - Sum net: 40.8

## B-09 Dept. Fine Arts
  - Area gross: 103.2
  - + terrace: 34.4

## B-10 Dept. of Drama
- Additional studios in theatre building, teachers in B-08
  - Area gross: 88.2
  - + terrace: 34.4

## B-11 Music dept.
- Area gross: 103.2
  - + terrace: 34.4

## B-12 Dance Dept.
- Workshops, practice rooms in theatre building, Teachers in B-08 (future extension department)

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- Workshops, practice rooms in theatre building, Teachers in B-08 (from building phase 5 dept. in C-06)

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- Class rooms C-07, teachers in B-08 (from building phase 5 teachers and offices in C-06)