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Technical Report  
RP/1979-80/4/7.6/03

# THE REPUBLIC OF KENYA

Development of infrastructures  
for the conservation  
of cultural property

## Conservation of the Joseph Murumbi African Art Collection, Nairobi

by Alexandra Trone

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THE REPUBLIC OF KENYA

CONSERVATION OF THE  
JOSEPH MURUMBI  
AFRICAN ART COLLECTION,  
NAIROBI

by Alexandra Trone

Report prepared for the Government of  
the Republic of Kenya by the United  
Nations Educational, Scientific and  
Cultural Organization (Unesco)

U N E S C O

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Introduction and acknowledgements

1. At the request of the Government of the Republic of Kenya, the Director-General of Unesco arranged, under the Organization's Regular Programme for 1979-1980, for a consultant to visit Kenya for two months (from 4 January to 4 February and from 4 March to 4 April 1980) with the following terms of reference:

Assist the Kenya National Archives with drawing up plans for the establishment of a conservation laboratory at the Joseph Murumbi Africana Collection, Muthaiga, Nairobi;

Advise the above-mentioned authorities on the scientific equipment and materials to be installed at the laboratory;

Advise the above-mentioned authorities on the training requirements in the field of conservation.

2. The Joseph Murumbi Africana Collection was the personal collection of Joseph Murumbi, Kenya's first foreign minister and second vice president, and before Kenya's independence in 1963, secretary general of the Kenya African Union. The collection, which was bought by the Kenya National Archives on 1978, is at present housed in Mr. Murumbi's former residence at Muthaiga, a salubrious suburb some eight kilometers by road from the centre of Nairobi, and far from the polluting industrial area. It consists of a library of about 6500 volumes of Africana and a large number of papers, in addition to the collection of African art, of which there are 1100 items: about 400 Kenyan ethnographic objects; about 500 ethnographic objects and carvings from other parts of Africa, including many items from West and Central Africa; about 100 modern paintings, drawings, water colours, prints and photographs, mostly from Kenya and other parts of Africa; a few pieces of modern sculpture, mostly East African; the rest are an assortment of Middle Eastern, Indian and European objects.
3. It is with the conservation of the ethnographic and art objects that I am primarily concerned. A specialist in archival conservation was due to arrive in Nairobi from New Delhi just as I was leaving, to advise the Kenya National Archives on the conservation of all their archival material, including that in the Joseph Murumbi Africana Collection.
4. I should like to thank Dr. Maina Kagombe, Director of the Kenya National Archives, for extending facilities that made my mission possible, and Mr. David Lyle, Deputy Director of the Kenya National Archives, for his help in organizing supplies and transport; Dr. Anne Thurston at the Kenya National Archives for her general help and support; Mrs. B. Ongoma, Secretary General of the Kenya National Commission for Unesco, for her help in extending the training programme for the month of March and for her later kindness to me in adversity; Chief O. Ibukun, Director of the Unesco Office, Nairobi, Mr. Derrick Dean and Mr. Christopher Kibirige of the Unesco Office, for their help and support throughout the two months I spent in Nairobi; Mr. Charles Sekintu of the National Museum, Nairobi, and the staffs of the museums at Meru and Kisumu, for their kindness in arranging visits to the museums at Meru and Kisumu for the staff of the Murumbi African Art Collection and me; Mr. Muhia, the County Clerk of Muranga District, for kindly arranging our visit to Mukurweini Wa Nyagathanga; and Mr. George Vamos

for kindly giving me permission to reproduce his plans of the Murumbi House and the Kenya National Archives Pavilion. I should also like to express my thanks to Dr. A.D. Baynes-Cope of the Research Laboratory of the British Museum for his guidance in matters relating to microclimates and the control of fungal and insect attack. Last but very far from least, I should like to thank Mrs. Rosemary Njeri Kanyoro, Miss Agnes Mueni Ndonge and Mr. Elias Murigi Kamama for the intelligent and enthusiastic effort they put into the work we did together, and for the unfailing cooperation and humour that made it a pleasure to work with them.

### The building

5. The Murumbi House in Muthaiga was built in the early years of this century. It is a single-storey house, originally built around three sides of a patio, but with later additions: a large hall at the end of the right wing, and a guest wing, now offices, that extend to the left of the original building (see Figure 1). At the left corner of the offices is a garage; round this corner towards the servants' quarters is a large roofed area, walled on three sides and open on the garden side. Most of the rooms, both original and later, have doors opening on the veranda that surrounds the patio on three sides or on that veranda which extends round two sides of the garden behind the offices, as may be seen on the plan. Most of the rooms also intercommunicate.
6. The house is somewhat Spanish in style, with small windows, some arched, and there are arches over some of the doorways. It is plastered and whitewashed inside and out. There seems to be some disagreement as to whether it is built of unbaked mud brick or of stone with mud mortar.
7. The tiled roof leaked badly in several places while I was in Nairobi, particularly in the main hall, the kitchen (the room to the left of the main hall on the plan) and the hall at the end of the right wing. The first two leaks were temporarily repaired in the beginning of March, but the last was still leaking when I left. As the kitchen was in many ways the most convenient room in the house to use as a conservation workshop, that is where, together with three members of the Kenya National Archives staff, I carried out such simple treatments as we were able to in the prevailing conditions and with such materials as we had. Until the leak was repaired just before I left Nairobi we had to move all objects that we were treating out of the kitchen before leaving the house every day, in case it rained during the night.
8. There are plans to take down all the tiles on the roof and to line the roof with a waterproof material under the replaced tiles. The sooner this is done, the better. I understand that in the past minor repairs to stop leaks in the roof were frequently carried out. However, new leaks appear to develop with monotonous regularity, and during a heavy rainfall the walls absorb water beneath each leak and do not dry out until some time after the end of the rainy season. Aside from any harm that this may be doing to the house itself, those pictures that have been hanging against damp walls are mouldy. It is possible that there is also rising damp, as the house is built into a hillside, and the ground seems to collect a lot of moisture when it rains. This will be difficult to ascertain until after the roof is made watertight, the long rains have then taken place and the walls have been given a chance to dry out in the following dry season.
9. While Mr. Murumbi owned the house, and before, the firm of Rentokil used to treat the foundations and roof of the house to protect it from insect (mainly termite) and fungal attack. They carried out regular checks and injected the foundations when necessary. I was told that since the present roof was put up and the roof

timbers were exposed some time ago, it has been impossible for Rentokil thoroughly to inspect these timbers. The planned major roof repair, when all the tiles are to be taken down, would provide an ideal opportunity for inspection and, if necessary, treatment of the roof timbers. A detailed inspection by a firm that specializes in this type of work should be undertaken without fail when the roof tiles are taken down, and a specialist firm engaged on a contract basis thereafter, to carry out regular inspections of the house for the sake both of the house and of the collections therein.

10. Two virtually unused storerooms form a basement beneath the end of the right wing where the hillside at the back of the house starts to drop away. They are not visible on the plan, which only shows the ground floor of the house. They are next to one another but not interconnecting; each has a door opening directly onto the garden below the goldfish ponds to the right of the house. They will be referred to here as Store A and Store B, Store A being nearer the end of the wing, Store B nearer the front of the house. It has been suggested that these stores hold the collection while the major roof repair is carried out, and are later used for the permanent storage of any items in the collection which will not be displayed.
11. While I was in Nairobi, it rained heavily on the night of the 29th-30th January. At 9.30 on the morning of the 30th January the relative humidity in Store A was 88%. This was after an odd night of rain; it may well be higher during the long rains (which had not yet started when I left Nairobi), after some weeks of daily downpours when the ground becomes thoroughly saturated. By 3.30 p.m. on the 30th of January the relative humidity in Store A had dropped to 72% - a fall of 16% since that morning; this was one of the higher diurnal fluctuations that occurred while I was in Nairobi, but it was by no means the highest fluctuation in the stores during that period (see table, paragraph 67). On the 11th of March the relative humidity in Store A dropped 19% between 9.30 a.m. and 3.30 p.m. It should perhaps be pointed out that the fluctuations quoted are not the total diurnal fluctuations: had a recording hygrometer been available to take constant readings for twenty-four hours each day, there is no doubt at all that the relative humidity in the early hours of the morning would be seen to be considerably higher than it is by 9.30 a.m.; Nairobi being at an altitude above sea level of 1161 meters, there is a great drop in temperature and therefore a commensurate rise in relative humidity during the night. The lowest relative humidity we recorded in the stores during January and March was also in Store A: 42% at 3.30 p.m. on the 20th of March. This is well below the recommended 50% lower limit (see paragraph 55) and below the 45% that begins the lower danger zone for organic materials. Taken with the 88% high in relative humidity in Store A on the morning of the 30th January, there is a minimum total variation in Store A of 46%. In Store B the situation was only very slightly better, as may be seen by reference to the table (see paragraph 67). Store B contains the boiler that heats the water for the bathrooms in the house above; thus water pipes run through this store. The possibility of flooding must always be taken into account where boilers and water pipes are present. Due to their low-lying position just downhill from the two fishponds it is also possible that these two storerooms might be subject to flooding from outside during the rains.
12. All things considered, Stores A and B are most unsuitable for the storage of any items from the collection, even for a short time. Due to the very great fluctuations in relative humidity caused by external factors from which the stores could hardly be isolated effectively, it is most unlikely that conditions within could be adequately controlled with a dehumidifier, as has been suggested; aside from anything else, the relative humidity sometimes drops below recommended levels. Also the very real possibility of not infrequent power cuts must be taken into account.

13. The best solution for the storage of the collection while the roof is being repaired would be to pack all items in the collection carefully, and then to move the African Art Collection into the library (the left half of the building) while the right-hand part of the roof is repaired. Then the entire collection could be moved into the right half of the house while the other half of the roof is repaired. Temporary shelving would have to be installed so that all items could be accommodated, and the garage could also be used for temporary storage. The collection should not be removed from the house while the roof is repaired, as has been suggested, as this would involve considerable risk of damage, breakage and to security.
14. The older part of the house, that is the half where the African Art Collection is now housed, has ceilings, some with rather attractive false beams. There has been a suggestion that these ceilings be removed, leaving the rooms open to the roof. The ceilings should on no account be removed; not only are they in character with the house - whereas, in my opinion at least, the rather stark modernity of exposed timbers under a pitched roof clashes with the Mediterranean style of the house - but, and from the point of view of conservation most important, the dead air space between the ceiling and the roof insulates the rooms beneath against changes in temperature, thus also against even more violent fluctuations in relative humidity than those which already occur.

#### The African Art Collection

15. At present the African Art Collection, which has been accessioned but not catalogued, is stored on tables, in a very few showcases, and on the floors of most of the rooms in the house (except for the offices in what was the guest wing which now house only the archival material.) It is in a sort of order: the jewellery is in showcases with other small metal objects, the masks and head-dresses are together, large food containers are together in one room, basketry is in another, shields are in the same room where the spears are stacked, etc. There is no shelving on which to store things more systematically; the collection is in a state of flux; no definite decisions have been taken as to where it will finally be housed (although it seems likely that it will remain in the Murumbi house), how it will be displayed, or what will be done with the objects while the roof is being repaired. It seems unlikely that any shelving will be provided until these decisions have been taken. Stored as they are now, the objects are extremely vulnerable to breakage; those not in showcases (by far the greatest number) also get very dusty - many are inaccessible for dusting, arranged as they are in row upon row on the floor near the walls. Only those objects that were cleaned and treated while I was in Nairobi have now been wrapped in tissue paper to keep them clean until they do go on display or into store. But they are still, perforce, stacked on any tables that are available.
16. There are some outside pressures to let in the public, or at least selected members of the public, to see the collection. These pressures should be resisted at all costs until the collection is ready for general display. I was told that a group of students were shown round recently, and that during their visit a few objects from the collection were knocked over and off tables. If members of the public are admitted while the collection is crowded onto tables and standing on the floor, such accidents are inevitable, and great, possibly irreparable damage could easily result.
17. A few of the objects are broken and need to be repaired by a skilled and experienced restorer with a well-equipped workshop. Such repairs could be undertaken in the conservation department of a large museum, but a collection of the



size of the Murumbi Collection does not warrant a conservation department on this scale: some expensive items of equipment, and some laboriously acquired skills of fully trained conservators might be used for the conservation of one object, both equipment and specialized skills being left to go rusty thereafter.

18. There are two skilled restorers working commercially in Nairobi, both of whom restore furniture, antiques and ethnographic material. Rosemary Njeri Kanyoro, Elias Murigi Kamama and I visited both of their workshops and came to the conclusion that, although both do very good work, of the two - Frank Daykin, who works in Karen, pays exceptionally close attention to the detail in his work. I therefore recommend that the following objects be sent to Mr. Daykin for repair, and that this be done as soon as possible so that the objects, which are in a fragile state, do not deteriorate further as a result of neglect:
- 11. Ivory bracelet - needs dowel
  - 33. Ivory figure - should be dowelled to base
  - 38. Ivory figure - rusty screws fixing figure to base should be replaced with stainless steel or brass screws
  - 56. Ivory and wood figure - needs third dowel
  - 71. Ceremonial scythe - brass wire should be rewound and its end fixed down; also the blade needs treatment
  - 81. Dagger - the felt covering the scabbard is so moth eaten that it should be replaced; the braid needs rewinding
  - 177) Pair of lions:  
178) - bronze sheet on wood - some breaks need repair, both tongues need to be re-attached, the bronze sheet needs to be fixed to the wood beneath in a few places and the bronze should be gently cleaned, but not polished.
  - 253. Samovar - hinge of lid needs repair, dents should be straightened
  - 258. Dagger - the end of the scabbard is broken off and needs to be replaced
  - 684. Bracket oil lamp - back needs repair which will involve making a missing piece
  - 721. Wooden figure from Nigeria - head of snake should be fixed in its original position
  - 733) Pair of Siyu chairs  
734) - should be restrung and restored
  - 747. Wooden icon from Ethiopia - the latch and the panels need repairs
  - 808) Pair of Lamu chairs  
809) - should be restrung and repaired
  - 874. Siyu bed - should be restored, replacing missing parts
  - 875. Lamu bed - should be restored, replacing missing parts

876. Chest of drawers, carved - wood behind mirrors breaking, should be replaced
- Siyu cradle (unaccessioned) - should be repaired to hang as designed
1028. Lamu table - needs restoration, missing parts should be replaced, but no attempt should be made to replace brass inlay where missing
- 1979/3. Writing box - needs some repairs
- 1979/5. Gateleg table - end of table top broken off, should be re-attached
19. Several of the musical instruments in the collection need skilled attention, preferably by a maker of musical instruments:-
451. Lute - the skin is insect-eaten and needs replacement
682. Drum - missing thongs should be replaced
707. Stringed instrument - break needs repair - and thereafter the strings should not be kept under tension as the ensuing stresses could cause further breaks with fluctuations in temperature and humidity
709. Drum - insect-damaged skin should be replaced, pegs need to be replaced and the nails removed should they prove not to be original
20. Two manuscripts in the African Art Collection need specialized attention. There appears to be nobody in Nairobi specialized in this type of work. Some of the earlier books in the Africana Library of the Murumbi Collection are also in dire need of specialized treatment. The manuscripts that have been accessioned in the African Art Collection should be sent abroad for conservation treatment and restoration together with the books from the Africana Library. The manuscripts in the Africana Art Collection are:
- 1978/5. Ethiopian illustrated Ms on parchment with leather binding and carrying case - the parchment and the leather are both deteriorating
- 1979/8. Quran - deteriorating very badly; in dire need of treatment
21. There are in the collection more wooden objects, or objects made largely of wood, than there are objects made of any one other material. Some of the wood is cracking due to dessication or to expansion and contraction caused by fluctuations in the relative humidity and temperature. So far this is not very disfiguring to many objects, and most of the cracks need not be repaired either for aesthetic reasons or to protect the objects from physical damage near the crack. However, the only way to prevent further cracking is by climatic control.
22. Some wooden objects have minor or easily repaired breaks. Mrs. Rosemary Njeri Kanyoro, Mr. Elias Murigi Kamama, Miss Agnes Mueni Ndonge and I repaired some of these while I was in Nairobi. Broken objects are especially vulnerable to further breakage; the longer a break is left unrepaired, the more likely the surfaces of the break are to wear and chip, making a strong and imperceptible repair later on more difficult.
23. Some old repairs to wooden as well as other objects have deteriorated; these repairs will eventually have to be replaced. However, traditional repairs of a type that are going out of use should always be retained; for instance, some of the stools

have old cracks that have been repaired with rivets and these should on no account be removed for a possibly neater repair with adhesives.

24. Many of the masks have in the past been hung from strings tied to screw-eyes screwed into the backs of the masks. Most of these screw-eyes are now rusty and should be removed before they split the wood of the masks. The masks should be displayed in such a way that no screws or nails need be driven into them. Some of the masks are decorated with powdery, fugitive paints. The greatest care must be taken in cleaning these, leaving them as is, if in doubt. After some training, the staff at the Murumbi House should be able to judge when and how to fix fugitive paint: the techniques for doing this are tricky, and it is only too easy inadvertently to alter a matt to a glossy finish when attempting to fix fugitive paint, so this should not be attempted by untrained staff.
25. Many of the wooden objects are suffering from insect attack, much of it active. While I was in Nairobi, the Murumbi Collection acquired some lindane (gamma BHC) concentrate, and Mrs. Rosemary Njeri Kanyoro, Mr. Elias Murigi Kamama and I treated about 20 objects with this insecticide just before my departure. The procedure was to continue with the remainder of the infested objects after my departure.
26. When museum objects are suffering from an infestation of insects, or when objects are acquired, it is a common practice to fumigate these before placing them with that part of a collection presumed insect-free. In the past hydrogen cyanide has been much used as a fumigant, but it no longer used due to its very high toxicity to humans. In northern climates ethylene oxide is now used. However, ethylene oxide is not generally available as a fumigant in the tropics, as it forms an explosive mixture with air and is therefore particularly dangerous to have about in the higher ambient temperatures of the tropics. Two fumigants are available in Nairobi, and there are firms who have equipment for fumigation and staff trained to do the work, even if not in the context of a collection of works of art. However, these fumigants, methyl bromide and phosphine ( $\text{PH}_3$ ), should not be used at the Murumbi Collection: methyl bromide forms evil-smelling compounds with protein materials such as leather, hair and feathers, which are present in many objects in the collection. Phosphine will not kill insect eggs before they hatch, according to the Pest Infestation Laboratory at Slough. As the eggs of woodworm (*Anobium punctatum*), for instance, take two to three weeks to hatch, it would be necessary to fumigate with phosphine for a period of at least three weeks to be sure of killing all the larvae when they hatch, otherwise there would be little advantage over injecting with insecticides such as lindane. It is not practical to fumigate with phosphine for this length of time, and moreover protracted exposure to phosphine will discolour copper, and many wooden and leather objects in the collection have copper or copper alloy chains and other decorations which are not easily removed. Also, to the best of my knowledge, phosphine has not yet been tried on museum collections. Until experiments are carried out in controlled conditions it would be unwise to expose the Murumbi Collection to unknown hazards.
27. There has been a suggestion that after the collection is open to the public, it might be fogged three times a year with DDVP (Vapona), room by room, with the showcases open. Fine droplets of Vapona are known to have corroded brass and made holes in carpets - which implies that other related forms of damage might well be caused; fogging with this insecticide is therefore not recommended.
28. In the circumstances it would be most practical to treat all objects suspected of having active insect infestations with lindane, to spray lindane carefully round the skirting and all corners and junctions of the floors with the walls of the

house, and to treat all exhibition cases with lindane before replacing objects in them. All new exhibition cases as well as any wooden shelving that may be installed for storage should likewise be treated before use unless, as is most likely, they are known to be made from treated wood. As lindane is persistent and has a long-term residual effect, this should prevent new infestations for some time to come, but it should perhaps be pointed out that spraying and injection of insecticides cannot reach all larvae or eggs within an object, and the first treatment will probably not be complete as a result. It would thus be a sensible precaution to treat infested objects about three times in the first year, and thereafter to remain vigilant and to treat objects, shelving and cases only as and when necessary. Should the infestation persist, an attempt should be made to catch a live insect or to collect an undamaged dead one, have it identified - perhaps by the National Agricultural Laboratory in Nairobi - and then to find a specific insecticide for that insect, one that will do a minimum of damage to the infested artefact, and whose human toxicity is within acceptable limits. As a last resort, fumigation with methyl bromide might have to be considered.

29. The wooden objects which, because of their size, are kept in the garden pose special problems. A wooden female figure about 8 feet tall stands on a concrete pedestal in the front garden. It appears to be made of termite-resistant wood - at least it has so far not suffered from termite attack. However it is in direct sunlight much of the time and has started to crack. Recently, an attempt was made to alleviate the dryness of the wood, and so to try to arrest the cracking as well as to improve the appearance of the surface - which looked grey and bleached - by applying furniture polish. By the time I arrived in Nairobi, the furniture polish, which had presumably penetrated into the wood when it was first applied, was leaching out onto the surface, forming an unsightly opaque white coating. The staff at the Murumbi House and I cleaned off the furniture polish with paraffin and applied uncooked linseed oil, which is used traditionally in Kenya on Coastal doors, and on other wood exposed out of doors in many parts of the tropics. More raw linseed oil should be applied before the beginning of each rainy season, and whenever the wood begins to look dry during the dry seasons. The Coastal doors and door-frames that are built into the house, as well as those at present stored in the roofed area beyond the garage (numbers 1979/7 and 1979/9), should likewise be treated with raw linseed oil when necessary, paying special attention to the deeply carved areas, cleaning these out with a stiff dry bristle, not wire, brush, and working in the linseed oil well with a stencil brush.
30. A wooden farm wagon also stands in the front garden. I am told that this was brought recently to replace a similar wagon that once stood in front of the house where it was destroyed by termites. Insecticides effective against termites are highly toxic to humans. It is therefore considered inadvisable to treat objects that are within reach, especially of children, with these insecticides. It remains to keep the termites at bay. The wagon could be raised on a concrete base to isolate it from the ground, or perspex blocks could be placed under the wheels for the same purpose. Perspex (polymethyl methacrylate) is, unlike many plastics, extremely resistant to termites.<sup>(1)</sup> The wagon and its base should then be inspected daily and any termite trails cleared away, their nests sought out and destroyed.
31. The front right-hand wheel of this wagon needs to be restored, preferably by a wheelwright; the metal parts are rusty - the rust should be cleaned off and all metal surfaces protected with grease or a protective coating, as appropriate: i.e. bolts and moving parts should be greased, parts that do not move should be coated. The type of coating used should be determined by finding out how the

metal parts of such wagons are treated when they are in use, or how they were treated when they were in use. Were they painted? - in that case they could be painted with an anti-rust undercoat and then painted in an appropriate colour. If the metal parts would not have been painted, they should be lacquered with a clear protective lacquer for iron.

32. A few food containers and other objects were hanging by their own straps from nails on the wall. This should never be done with museum objects, even though the straps were made for the purpose. If the strap breaks under the strain, not only is it broken, but the object which hangs by it may be badly damaged, if not destroyed. It may also fall on other objects, damaging or destroying these as well. It should therefore be a rule never to display or store an object hanging from its own or any other strap: objects should always be securely supported from below.
33. Perhaps this is as good a place as any to include a general warning not to nail objects to the backs of showcases. Stated baldly, the warning may sound superfluous, for it would seem that common sense should prevent such a thing ever being done; yet it is surprising how often one sees a fine textile hanging by a nail or two at the back of a case, the nail holes in the textile visibly enlarged from the weight of cloth concentrated on a tiny area. And not only textiles: unframed documents, drawings, prints - to name a few - all will suffer from such treatment.
34. Some of the oil paintings on plywood or other board have in the past been hung unframed from screw-eyes screwed directly into the back of the board on which they are painted. All the screw-eyes are rusty and should be removed. Many of the paintings, prints, drawings and photographs are deteriorating because their frames are badly damaged - either the glass is broken and its jagged edges are damaging the surface of the picture, or the frame is falling apart and the edges of the picture are getting knocked about, or both; most of the pictures in the collection are at present stacked on the floor against the walls of the hall at the end of the right wing.
35. Some pictures are mouldy - either under their glass or, more commonly, at the back or under the backing. In some cases water has soaked the backing and stained the pictures. Presumably these used to hang against damp walls. Some of the pictures have been attacked by insects. It would be advisable to remove from their frames all those pictures that are suffering from mould growth or insect attack. This should be done out of doors, so that any live insects together with their frass may be carefully brushed off with a soft brush far from the remainder of the collection. The frames should also be inspected and brushed paying attention especially to those parts that are inaccessible when the picture is in the frame. Frames and pictures should be left to dry in the air, but protected from strong sunlight, particularly the pictures. When they are quite dry, loose patches of mould may be very carefully brushed off with a soft brush. Those pictures that are easily replaced in their frames may then be put back; all others may be stored flat, separated from those above and below by interleaving with tissue paper, stacking paper with paper, and board with board, but stacking paintings on stretched canvas on edge if possible - also separated from one another, but by thick paper, to prevent damage to the surface of one painting from friction with the back of the next stretcher. Those pictures which are not framed are getting dirty and battered, and some on paper are getting badly torn. It would therefore be advisable to have them framed, if only to protect them. Any insect-eaten or mouldy pictures that it was not possible to replace in their frames could then also be sent, together with their frames, to the framers, along with pictures whose frames are damaged and those that need to be reglazed.

36. Among the pictures are two fine Ethiopian scenes, prints (lithographs?) by Salt, engraved in 1809 by D. Havell. Both are water-damaged and mouldy, and the glass on one is broken. It would be a pity not to have these professionally treated and restored, even if it means sending them abroad to someone skilled in the conservation of prints and drawings.
37. When they are hung for display, all the pictures should be hung on inside walls to prevent their getting wet in future, even after the roof is repaired - for when the outside temperature drops at night condensation may well form at the backs of the pictures where they touch the external walls. Those walls through which water and waste pipes run are also best avoided.
38. To prevent deterioration by ultraviolet light, it would be best to hang all pictures where direct sunlight does not fall on them and, as with the other exhibits in the collection, not to exceed the general light levels recommended by the Museums Association (London) (see paragraph 64). The above recommendations for the care of the pictures are equally applicable should the pictures be moved to the projected gallery in the old Kenya Commercial Bank building which the Kenya National Archives have taken over in the centre of Nairobi.
39. The ivory carvings are mostly in fairly good condition. However, there are four pieces (numbers 11, 33, 38 and 56) that need skilled attention (see paragraph 18). Two ivory bracelets (numbers 12 and 22) are beginning to exfoliate, number 12 badly; and four (numbers 10, 13, 23 and 24) are beginning to crack. The only way to prevent their condition from deteriorating is to keep them in controlled climatic conditions. I was told that a carved ivory tusk (number 31) was chipped either at the 1979 Nairobi show or on the way there or back. It has quite evidently been chipped very recently, and the chip - a large one - is missing.
40. There are very few textiles in the collection. The flat textiles should be rolled over rollers while they are being stored, they should never be folded. The rollers should be longer than the width of the textiles rolled on them, so that the ends of the rollers protrude and the rollers may be hung on racks by their ends. The applique cloth (number 1042) should be hung from a rigid pole stuck through its upper hem after the tear in this hem is repaired. A similar method of hanging should be devised for any other flat textiles that are to be displayed, making false hems at their upper edges if necessary. The garments should be hung on well-padded hangers until they are displayed in a manner that will cause no strains.
41. The basketry is fading from exposure to sunlight, and some of it has suffered from insect attack; most of these pieces have now been treated with lindane.
42. Nearly all the leather is very dry; some is insect-eaten. The leather food containers are especially prone to insect attack, as are food containers made from gourds.
43. The feathers on several of the headdresses are so eaten by insects that only the central quills remain. These feathers should be identified, if possible, and replaced (sometimes one or two feathers in a row of what would appear to have been identical feathers have a few barbs remaining by which they might perhaps be identified).
44. Most of the swords, ceremonial scythes, daggers, knives and spears are rusty. The leather of the scabbards is dry. By the time I left Nairobi Mrs. Kanyoro, Miss Ndonge and Mr. Kamama had mechanically cleaned the rust from all the spearheads and had waxed them with a protective wax. Some of the spearheads

have leather guards round their cutting edges; most of these guards were so dry that they were rigid and could not be removed from the spearheads until they were treated with a lubricant.

45. Most of the brass jars, jugs, etc. need polishing. This should be done with a very mild brass polish (such as Duraglit, which is available in Nairobi) and they should then be lacquered with a lacquer containing benzotriazole (such as Inctalac) to protect them against tarnishing for as long a period as possible.
46. The silver jewellery needs to be cleaned and this, too, should then be lacquered with a lacquer containing benzotriazole. Many textiles are treated during their manufacture with compounds that contain sulphur and later give off small amounts of volatile sulphur compounds, enough to tarnish silver. Some other lining materials, as well as some paints and lacquers that might be used in the show-cases may also give off enough volatile sulphur compounds very quickly to tarnish silver, even if the silver itself is protectively lacquered with Inctalac, which is sulphur-free. Therefore it is as well to test potential linings of cases, paints to be used in the cases, etc., by placing a polished piece of silver in contact with a sample of each of them, and leaving each piece of silver with its sample in a polythene bag, in a warm place, for about two weeks. If the silver has blackened perceptibly, the material in question should not be used in cases where silver is to be stored. The pieces of silver used in these tests may be quite small, perhaps one centimetre square, but if they are not well-polished to start with, it will be impossible to judge whether they are affected. Also, they should not be handled after polishing; they can be picked up with clean forceps, placed in contact with the sample that is being tested, and bagged without being touched.
47. The very large iron or steel statue that stands in the front garden appears to be in good condition. It is covered in a thick, heavily textured layer of resin or shellac which may be protecting the metal beneath. This textured surface is a feature of the sculpture. As the statue is about ten feet tall, there can be no question of bringing it under cover in the Murumbi House. In any case, it would look out of place indoors, except in a building and room of enormous proportions. As long as it does not deteriorate it may as well be left where it is, but it should be inspected regularly, and at any signs of rust, the resin cracking or peeling off, or signs of other damage, advice should be sought, from the National Museum in the first instance.
48. One of the rooms on the ground floor of the house, and not at basement level, should be used to store those duplicate objects in the collection that will not go on display. This room should be provided with shelving made of wood rather than metal, to provide a buffer against changes in relative humidity. Polythene curtains could be hung in front of the shelves to protect the objects from dust. The relative humidity in the store and, more particularly, the relative humidity behind these curtains should be checked regularly.

#### Conditions of display

49. The Murumbi House is not large enough to house both the library and the art collection if the books and papers are to be accessible to users and if most of the objects are to be displayed.
50. At the time the Kenya National Archives took over the house and the collection, Mr. Murumbi felt that the library and the art collection should remain together at the house, and that an African Studies Centre should be established there. The latest of several suggestions for housing the entire collection at Muthaiga

is to keep the art collection in the house, and to build a new building for the library on the site of the present servants' quarters (see Figure No.1). The plans for the library building would be drawn up with the advice of a specialist on archival conservation and would take into account the need for climatic control within the building.

51. The Murumbi House was built as a dwelling, and was lived in until it was taken over by the Kenya National Archives. The present arrangement of the rooms, with a kitchen and two bathrooms disposed among the other rooms, is more suitable for a dwelling than it is for a public building. The house - with many doors opening on the verandas, some of these doors with upper panels consisting of a sort of openwork that lets in air even when the doors are shut, with windows so small that the doors have generally been kept open to let in both light and air - is so open in character as to make it unusually difficult to control climatic conditions within. It would not be possible to seal most of the rooms for air conditioning without drastically altering the distinctive character of the house.
52. However, not all items in the collection are of equal value. It should be possible to close in and insulate the roofed area beyond the garage (the area at present walled on three sides only, where the staff of the Murumbi House eat their lunch) in such a way as to make possible control of the climatic conditions within, and a suitable air-conditioning system could be installed. The room should then be provided with a vestibule with two doors on spring-loaded closing mechanisms, one door leading from the garden into the vestibule, the other from the vestibule into the room. This will minimize the amount of outside air that is let into the room each time someone enters or leaves it. Efficient insulation would minimize the effects of outside conditions in this room when the air-conditioning system is shut down by cuts in the power supply. This room could then be used for the display of the most valuable and vulnerable items, including much of the West and Central African sculpture.
53. The rest of the African Art Collection could then be distributed in the other rooms of the house, displayed in well-sealed, well-buffered cases.
54. More than half of the collection consists of objects made of wood, ivory, textiles, leather, gourds, basketry and other organic materials, or of combinations of these; others - for example, some of the musical instruments and weapons - are made of combinations of organic materials and metal; and many of the wooden carvings and figurines have metal chains or wire or other metal decorations, as do many of the gourd and hide containers.
55. Ideally, metals should be kept in drier conditions than those which are optimum for organic materials. However, most displays are not organized by the materials from which objects are made, but by their function, provenance, period in history, or some such criterion. Also, many items in this, as in most collections, are in themselves composite. The recommended relative humidity for such mixed collections is 55%. 50% - 60% is considered safe. Above 65% mould growth is likely on organic materials, particularly if the ventilation is poor; also, adhesives weaken and metals are likely to corrode. At relative humidities of less than 45%, organic materials tend to become desiccated and embrittled. Fluctuations in relative humidity are even more harmful than adverse but stable conditions; fluctuations of more than  $\pm 5\%$  are not recommended. Organic materials take up or give off moisture as the relative humidity changes, and this causes them to expand and contract; as most organic materials are not homogeneous, the expansion and contraction is unequal and the resultant stress and movement within an object may eventually cause it to break up. It should be obvious that composite objects are particularly subject to unequal stresses: flaking paint is a common result of changes in relative humidity. (See Note at end of table, paragraph 67).



56. A well-sealed, properly constructed showcase that is not all metal and glass, but includes plenty of wood shelving, cloth lining, etc., buffers the objects within to a very great extent from changes in temperature and humidity outside. (But certain precautions should be taken with linings in showcases when silver objects are displayed. See paragraph 46). If the cases are closed when the relative humidity in the room is at the right level, it should then barely fluctuate, provided that the showcases are so placed that they are not in direct contact with the outside walls of the house (as condensation will form at the points of contact), or with any walls that have water pipes running through them (in case of leaks); and that the showcases are so placed that no sunlight falls directly on them at any time of day, as the rise in temperature brought about by direct sunlight will cause the relative humidity within a case to drop. It will also help to incorporate extra buffering material, such as cotton wool, in the design of the display in such a way that it is not seen, but is not isolated from the atmosphere in the case: for instance, the cloth that lines the back of the case may be stretched over a frame, or between uprights that will bring it an inch or so forward of the back of the case, and flat sheets of cotton wool from a roll may then be hung in the space behind the cloth, more or less filling this space. Cotton wool absorbs up to 21% of its weight in water from the atmosphere when the relative humidity is high, and gives it off again as the relative humidity drops; it may thus be used to help stabilize the atmosphere. If the relative humidity is high when the case is first closed, some shallow, open containers of silica gel should be placed in the case - perhaps concealed behind some of the exhibits - to bring the relative humidity down to 55%, replacing these containers with others of freshly regenerated silica gel the next day, if necessary, until the relative humidity is as near 55% as can be. (Silica gel is a re-usable drying agent. It is readily available with a built-in indicator: when it is dry it is bright blue, and when spent, it is pale pink and can then be regenerated by drying in an oven or even in a pan over low heat on an electric hot-plate.) Needless to say, the case should be opened and closed again as quickly as possible each time the silica gel is replaced, to let in a minimum of outside air; and this should be done at a time of day when the relative humidity in the room is below 55%, if possible. To avoid spilling silica gel particles in the showcase and having to keep the case open while sweeping them up, the silica gel containers should not be too full.
57. The relative humidity in the showcases should be monitored when the displays are first set up and at intervals thereafter: preferably for at least a week at a time with a recording hygrometer that does not depend on the power supply and that is regularly calibrated against a whirling hygrometer. These checks should be as long and as frequent as possible, depending on the number of hygrometers available. Ideally, each case should have at least a week's check in each dry season and another during each season of rains. Any necessary adjustments may then be made to bring the relative humidity to the correct level.
58. Although there are other, more sophisticated methods for stabilizing the atmosphere in showcases, their maintenance might well create problems at Muthaiga, and well-sealed, well-buffered showcases will probably prove the most effective means of creating stable microclimates in the prevailing conditions.
59. Because of the open character of the house, in which it would be extremely difficult, if not impossible, adequately to control climatic conditions, showcases rather than open displays are indicated. Showcases also provide far greater security than open displays. In a house of this type, with many small rooms and many doors to the outside, the public cannot be supervised effectively unless there is to be an attendant in each room at all times when the public are admitted, or unless the public are only allowed in in supervised groups, no stragglers being permitted. With the collection displayed in showcases, such extreme supervision of the public should not be necessary. Aside from the obvious danger of theft, the danger of vandalism should not be overlooked

nor should the temptation, apparently irresistible to many people, to touch any object on open display. Handling causes damage even to objects that are not obviously fragile: metal that is frequently handled will corrode through contact with chlorides on the surface of the skin; lacquers and waxes are only a temporary protection, and they will be worn away in places that are frequently touched. Objects on open display need to be cleaned far more frequently than do those in cases, because of dust, fingermarks left by members of the public, etc. Ideally, objects in museum collections should be kept as clean as possible and cleaned as infrequently as possible: cleaning, however carefully it is done, abrades the surface.

60. One exception to the rule of displaying in showcases might be the Kisii stone sculptures, which are too large and heavy to be stolen casually, and which will suffer less damage from being touched by the public than will any of the other objects in the collection. These sculptures, however, should be brought indoors or, at the very least, under cover on the veranda. The one at present in the garden (number 1054) has suffered from weather damage; ever since the sculptor's assistant filled the cracks the sculpture has been kept covered with a polythene sheet, which should protect the surface, but will not prevent further cracks. The cracks must have been caused by differential expansion and contraction. Standing in the hot sun, the sculpture gets far hotter on its surface than at its centre; the polythene sheet with which it is covered provides negligible insulation.
61. Another exception would be the furniture. The Coastal furniture (Lamu and Siyu beds, chairs, cradle), also perhaps the Abaluhra papyrus chairs which are unlikely to survive otherwise, should be displayed in the climatically controlled room, if possible.
62. There are the two very large sculptures and the wagon which stand in the garden and which are too large to be brought under cover. There is no alternative but to leave these out-of-doors and to do what is possible to protect them in the circumstances - which is discussed in the section on the African Art Collection, above.
63. And lastly, the Coastal door and the separate and unrelated Coastal doorframe that were bought by the Kenya National Archives after the Archives took over the Murumbi House. These could probably be accommodated in the air-conditioned room, should one be installed.
64. As for lighting, it should be borne in mind that light will cause damage to all materials except stone, metal and ceramics, and even some glazes on ceramics may be affected. The main forms of damage caused by light are fading, discoloration and embrittlement. To quote from the Museums Association Information Sheet Conservation and museum lighting:(2) "The following are recommended as values which should not be exceeded for the categories listed:  

Oil and tempera paintings, undyed leather, lacquer (Oriental and European). Wood, horn, bone and ivory (where surface colour is important)	150 lux
Costumes, watercolours, tapestries, furniture, textiles, prints and drawings, stamps, manuscripts, miniatures, wallpapers, dyed leather, many natural history exhibits	50 lux "
65. Where possible, ultraviolet light should be filtered at source; it causes more damage than all other wavelengths and is useless for illumination.

Materials and methods for filtering ultraviolet light are described in the above-mentioned Information Sheet, and it would be advisable to follow the recommendations therein when designing both the lighting and the show-cases for the collection.

66. As lights are also a source of heat, this fact should be taken into account in positioning them. The authors of the Museum Association Information Sheet recommend that no lamps be placed in exhibition cases. This is the ideal to be aimed at. However, should it be found necessary to light some of the cases from within due to the difficulty of lighting some awkward areas, Dr. A. E. Werner(3) suggests that, to keep heat output within the showcase as low as possible, cool fluorescent tubes should be used and that they should be installed so that their chokes are outside the showcase. The only fluorescent tubes that give off no ultra-violet radiation, and which are therefore now generally recommended for use in showcases and for the general lighting in museums, are Phillips Trucolor 37.

67.

RELATIVE HUMIDITY - per cent

	Store A		Store B		Room A		Room B		Room C		Room D		Outside	
	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm
16.1 W	65	57.5	65.5	57.5	62.5	53.5	63	51.5	63	52	61	52.5	67	51
17.1 Th	65	-	62	-	63	57.5	63	54.5	63	53.5	62.5	54	59	-
18.1 F	61	59	56.5	51.5	57	54.5	56	46	56	44	55	44	55	43
19.1 Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.1 M	57	46	53	43	55	38	54	35.5	53	36	52	36	49	34
22.1 T	56	-	54.5	-	55	45	54.5	44	54	44	52.5	44.5	55.5	43
23.1 W	59	-	53.5	-	52	43	51.5	41.5	52	41	51.5	41	54	39
24.1 Th	64.5	56.5	61	55.6	55.5	50	55.5	50	56.5	50	55	50	66	51
25.1 F	71	58	70.5	56	64	52	65	50.5	65	51	64	52	70	56
26.1 Sat	-	-	-	-	65	-	65	-	66	-	65	-	74.5	-
Some rain at weekend														
28.1 Mon	81.5	73	81	69	75	62.5	75	61.5	75	61.5	77	60.5	83	55
29.1 T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heavy rain all night														
30.1 W	88	72	86	70	75	67	77	65	78	64	78	65	91	64
31.1 Th	82	76	80.5	70	74	73	76	68	78	69	77	69	87.5	60
1.2 F	86	-	82	-	76.5	79	78	77	78	76	78	77	89	76
Heavy rain at night														
2.2 Sat	85	-	82	-	80	-	80.5	-	81.5	-	81	-	90	-
No readings taken during my absence in Kampala														
11.3 T	69	50	68	54	-	46.5	-	44	-	44	-	44	59	40
12.3 W	68	59	64.5	49	59	45	59	45	59.5	43.5	59	44	62.5	41
13.3 Th	62	48.5	56.5	47.5	56.5	40	57.5	41	58	42	57	37.5	61	36.5
14.3-16.3	Visits of inspection by African Art Collection Staff to Muranga and Meru													
17.3 M	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.3 T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.3 W	Visits by African Art Collection Staff to workshops in Dandora and Karen													
20.3 Th	49	42	50	44	50	33	50	34	49.5	34	49	32	59	27.5
21.3 F	59	53	61	52	57	43	59	42	60	43	59	43	61	39
22.3 Sat	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.3 M	71.5	59	73.5	59.5	65	53	66	49	67	48	66	48	79	50
25.3 T	68	64	70.5	62.5	69	54	70	53	70	54	69.5	54.5	69	52
26.3 W	59	-	57	-	65	-	65	-	64	-	64.5	-	69	-
27.3 Th	64	-	65	-	65.5	-	66	-	64	-	65	-	68	-
28.3 F	-	-	-	-	64	42.5	64	42	63.5	45	64	44	68	40

Notes

1. Readings were taken with a dial hygrometer calibrated weekly against a whirling hygrometer
2. The relative humidity was measured as soon as the doors were opened in each room at 9.30 a.m. and again at 3.30 p.m. The doors to the stores were shut and locked after the a.m. readings, but the doors of the rooms in the house (rooms A, B, C and D) were of necessity all left open during the day to simulate probable future conditions.
3. Lacunae in the table are due to: late arrival or peremptory departure of transport, unavailability of keys to stores, absence of staff on Saturday afternoons, and working visits to museums, workshops, etc. at weekends and occasionally otherwise by both the member of the staff responsible for taking readings and myself.
4. The highest relative humidity we recorded in any of the rooms in which the objects are at present housed and where they are to be displayed was 81.5% at 9.30 a.m. on the 2nd of February in Room C. The lowest was 32% at 3.30 p.m. in Room D. The greatest diurnal fluctuation was in Room B on the 28th of March when the relative humidity dropped 22% between 9.30 a.m. and 3.30 p.m. It may be surmised that the total fluctuation on that day (from the high point in the night to the lowest point during the day) was considerably higher (see p.3 and table, above).

Recommendations for a conservation workshop

68. A collection of the size (1100 objects) and scope of the Murumbi Collection does not warrant the installation of a full-scale, sophisticated conservation laboratory. Such a laboratory would be grossly under-utilized, as is pointed out in paragraph 17, and I have therefore suggested that the few objects which need skilled restoration be sent to a private restorer. Should extensive conservation facilities in future be established at the National Museum in Nairobi, it might be possible for the Kenya National Archives to come to an arrangement for the treatment by the National Museum of those few objects from the Murumbi Collection for the treatment of which no facilities were available at Muthaiga. The Kenya National Archives are in any case setting up a laboratory for the conservation of archival materials in the Kenya Commercial Bank building in the centre of Nairobi, where the Archives now have their headquarters. The prints, drawings and photographs from the Murumbi African Art Collection, even if they are kept at Muthaiga, could be sent to the archival conservation laboratory for any necessary treatment, as could the papers from the Murumbi Africana Library. At some time in future the archival conservation laboratory will presumably be equipped to deal with bound books, and possibly also with antique bound manuscripts on parchment.
69. A simple, well-equipped workshop geared to basic treatments of those ethnographic materials, carvings and sculptures that the African Art Collection possesses should, however, be installed.
70. The present garage could be converted into a workshop without disturbing the character of the house. The garage is 20 feet long by 14 feet wide, somewhat larger than the 12 foot six by 16 foot kitchen, which we used as a workshop while I was in Nairobi. The kitchen is in fact smaller than these overall dimensions - it is irregular in shape, and a massive and very attractive fireplace that stands against the wall on the right on the plan (Figure 1) takes up a lot of space. The kitchen is also unsatisfactory in other ways (see p.21), but we used it in preference to the garage in its present state.
71. If a permanent workshop is to be installed in the garage, the roof should be insulated to minimize fluctuations of temperature and thus of relative humidity within. Air conditioning should be installed. Windows could be cut in the long outside wall (on the left on the plan). These windows should be large enough to admit good background light to work by on a bright day. They should have Venetian blinds to control the direct sunlight entering the room; sunlight could thus be prevented from falling directly on objects being treated and from being disturbing to the eyes of the conservation staff while they work. The windows themselves should have close-fitting frames so that they will shut tightly should conditions in the workshop need to be closely controlled. The window sills should be at least a metre above floor level, in case it should be necessary in future to place workbenches against this wall, even if this is not done in the beginning. The garage door could be removed and the doorway walled up, a window being built into the upper part of the doorway, again with its sill at least a metre above the floor. If this is not done, the door and its frame would need to be well sealed. All these precautions are necessary in order to make it possible to keep the relative humidity in the workshop at a steady 55%  $\pm$  5%, that is, between 50% and 60%. Whenever objects from the collection are in the workshop, this relative humidity should be maintained for 24 hours a day. This will be most important when conditions of display are controlled: once the objects are acclimatized to this relative humidity, any sudden change will cause stresses and consequent damage.
72. A fume cupboard should be installed: it should be borne in mind that some conservation techniques produce corrosive fumes in sufficient quantity to require the installation of a fan that is proof against corrosive fumes; this fan should also be flameproof.

73. A sink is essential; for safety in handling objects that may be treated in it, as well as for the comfort and convenience of the conservator - on which this safety largely depends - the height of the upper edge of the sink should be about 90 centimetres above the floor, and the sink should be about 20 centimetres deep. It should be large, if possible one metre long by 40 - 50 centimetres from back to front (internal measurements). It should have a drainboard at least 60 - 70 centimetres long. It should be made of ceramic to withstand the effects of corrosive materials that may be used in it; its drainage system should be resistant to corrosion and should include traps that can easily be emptied of sediment. If there is no unsuspected impediment, the sink should be installed against the back wall of the garage (the wall that faces the present garage door and backs on the vestibule in front of the small store and toilet; - see plan, Figure 1) which appears to be nearest to the water supply; this will avert the possibility of having lots of water pipes running along the walls of the workshop, with a consequent increased likelihood of leaks. The sink and its drainage system, as well as the fume cupboard, should be installed only under the supervision of a person experienced in laboratory installation.
74. Good overhead lighting will have to be installed. Fluorescent tubes will probably provide the artificial light most closely resembling daylight; for the sake of the objects, Phillips Trucolor 37 fluorescent tubes should be used (see paragraph 66). A lighting engineer should be consulted to ensure adequate, well-distributed light at bench level. In addition, for each person working in the workshop there should be one adjustable table lamp of the type used by architects and draughtsmen. When I left there were only two Anglepoise lamps in the temporary workshop in which three and sometimes four people were working.
75. Laboratory-type benching should be installed along the walls of the workshop. Lengths of at least two metres per person working would be ideal (to accommodate such long objects as spears, and some of the larger carvings). Some units with drawers and some with shelves (to provide deeper storage) should be placed under the benches for the storage of tools and small pieces of equipment; adequate knee-holes (about 65 centimetres wide) should be provided at the centre of each two-metre unit. The workbenches should be covered in a durable laminate of a solid and neutral colour - patterns or intense colours are very distracting to those doing fine work. The staff who will be working in the laboratory should consider carefully the height of the benches, as this is most important for their comfort and hence also for the safety of the objects. The bench height must be considered in conjunction with the height of stool or chair to be used when working at the bench. Not all the benches would have to be the same height, and it might be advisable to acquire adjustable stools with backs, but these should be tried in front of various heights of table, bench or other horizontal surface before finally being selected.
76. Each unit of benching will need to have at least two electric power points, just above bench level, for table lamps, as well as for small vacuum cleaners and small power-driven hand tools that may be acquired in future and that will have to be used while the table lamps are illuminating the work in hand. There should also be two or three electric power points just above floor level.
77. For safety, organic solvents - all of which are more or less flammable - and insecticides - all of which are more or less toxic - should be stored outside the workshop; fortuitously, a small store already exists nearly opposite the entrance to the present garage. This store could accommodate a lockable steel cupboard in which such substances should be kept. Someone experienced in laboratory installation should be consulted when a cupboard is bought for this

purpose, to be certain of acquiring one that is suitable. Once acquired and stocked, the cupboard should always be kept locked, the keys kept in a secure place, and the cupboard opened and its contents dispensed by conservation staff only.

78. Chemical glassware is readily available locally; a small amount was bought for the workshop by the Kenya National Archives while I was in Nairobi. When setting up a workshop, it would be advisable to provide some shelving for a somewhat larger supply. To avoid risk of breakage, this shelving should not be below the workbenches; a few shelves at about eye level, near the sink, would be ideal.
79. The workshop will need some basic carpenters' tools, such as hammers, handsaws, screwdrivers, pliers, a vice. It would be as well to acquire these as and when they are required, since their use will be limited, a vast selection will not be needed, and in this way the right tools for particular types of job may be chosen. Carpenters' tools are readily available in Nairobi, as are decorators' paint brushes and large stencil brushes, which are also needed in the workshop.
80. Artists' brushes of good quality are not generally available in Nairobi, nor are small stencil brushes, sculptors' small steel spatulas or sculptors' small riffers. A selection of these will be needed by the workshop and will probably have to be ordered from abroad.
81. A small balance that will weigh up to 100 grammes is needed, mainly for weighing the solids - such as polyvinyl acetate crystals - that are used in solution.
82. The workshop now has a magnifying glass on a stand for fine work, and I do not think that a binocular microscope is necessary for any treatments that are likely to be carried out in the near future.
83. When I was in Nairobi, all supplies and equipments for conservation had to be bought with local purchase orders. It generally took several weeks for anything ordered in this way to appear. Whereas larger items of equipment would probably have to continue to be bought in this way, it would make the work of the conservation workshop infinitely more efficient if a petty cash float were provided for the purchase of small items such as tubes of adhesives, paintbrushes, the odd small hand tool, etc. ..., for which an unforeseen need may arise in the course of a treatment; otherwise the completion of the treatment may be delayed for weeks and this can be deleterious to the object.

84. Tools and equipment needed in workshop

Chemical glassware:

beakers 25 ml	.....	25
beakers 100 ml	.....	10
watchglasses to cover 25 ml beakers	.....	40
watchglasses to cover 100 ml beakers	.....	20
reagent bottles, 250 ml		
narrow necked	.....	12
wide necked	.....	6

Balance, weighing up to 100 grammes

Fine mapping pens	.....	30
Penholders for above	.....	4

Water colour brushes:

sable: No. 000	.....	6
No. 0	.....	6
No. 1	.....	6
No. 3	.....	6
Ox hair, flat: No. 4	.....	6
No. 6	.....	6
No. 8	.....	12
No. 10	.....	12

Oil painting brushes

sable, filbert shaped: No. 5	.....	6
No. 7	.....	6
No.10	.....	6
hog hair, square ended: No. 6	.....	12
No.10	.....	12
hog hair, filbert shaped: No. 6	.....	12
No.10	.....	12

Sculptors' tools:

Small plaster modelling tools

Double spatulas - an assortment of spatulas, from the very smallest (blade just over 1 centimetre long) to medium (blade about 3 centimetres long) - of each size selected .... 3 spatulas.

Rifflers, of the type used for stone, marble, as well as wood - an assortment of these in 6, 8 and 10 inch sizes

Training

85. Mrs. Rosemary Njeri Kanyoro is in charge of the African Art Collection. Working with her are Mr. Elias Murigi Kamama and Miss Agnes Mueni Ndongye. All three took part in the informal training programme that I was able to arrange as part of my mission.

Survey

86. The training programme began with a survey of all the objects in the collection, in order to assess their condition, to try to understand how and why the objects that were not in good condition had deteriorated, and to try to formulate methods of preventing further deterioration within the context of the Murumbi House. As Miss Ndongye only joined the staff at the Murumbi House on the 21st of January, by which time the survey was nearly completed, she missed this part of the programme.

87. While the survey was under way, we also set about acquiring those organic solvents which were needed both to clean objects in the collection and in the treatments which we later undertook; we also acquired glassware, lamps, and some other essential equipment. At this time also, we began taking twice-daily readings of the relative humidity in the rooms where the objects are kept and in the storerooms beneath the house (see paragraph 11 and table, paragraph 67).



### Workshop

88. We then set up a makeshift workshop in what used to be the kitchen of the Murumbi House (this kitchen is the room immediately to the left of the central hall on the plan, Figure 1). The room was chosen as it has running water, is larger than the bathrooms, and is near the objects in the art collection which are all in the right side of the house, the left side (the offices) being occupied by the archival material and the books. Although the kitchen has some worktop space, it was not possible to use this for workbenches, as none of the worktops is large enough to accommodate the larger objects in safety; also, there are kitchen units under the worktops which thus have no knee-holes. An enormous desk was placed in the centre of the kitchen, and three people sometimes managed to work at this desk at one time, although it was not possible for more than two to work at once on, for instance, spears. The desk took up so much space that one could barely move about the room: it was very difficult to open the doors and drawers of the kitchen units in which, perforce, we kept tools, supplies and equipment. Also, the room is very dark, and to work in the centre of the room we had to use table lamps as well as overhead lights; the table lamps were connected to electric points on the walls - we thus always had trailing electric flex, which is basically unsafe; great care had constantly to be taken not to collide with the flex and thus knock over lamps, objects, bottles of solvents and other chemicals, etc. The leak in the roof was another nuisance, as it made it necessary for us to move the objects we were working on out of the workshop every day before leaving (see paragraph 7).

### Treatments

89. As we treated various types of object, we discussed the general principles behind the treatment, possible alternative treatments where these might be appropriate, and which treatments that the staff of the Murumbi House might well hear or read about are no longer considered advisable, and why. The importance of keeping records was stressed, and records were kept on forms already at the Murumbi House - these had been designed by Kenya National Archives staff in consultation with curators from various museums abroad. We discussed the hazards inherent in the use of some of the materials that it is necessary to use in conservation - both to the objects and to personnel - and the precautions that should always be taken when these materials are used.
90. We began by treating some dry plaited leather ropes with a lubricant to bring back some flexibility, and cleaning some of the carved wooden headrests, which were very dusty; many were also covered in a whitish, opaque film - probably the residue from an insecticide or fungicide applied in the past.
91. Next we cleaned the rust off some daggers and spearheads and coated them with protective wax. This was at the very end of January. In February, I went to Kampala for a month and on my return found that Mrs. Kanyoro, Miss Ndonge and Mr. Kamama had treated all the 37 spearheads in the collection, as well as cleaning a number of headrests.
92. Some of the broken wooden objects were next repaired, and some of the masks cleaned. This proved difficult, as we had to work with a rather large vacuum cleaner with a cylinder and hose, a vacuum cleaner which is very awkward to handle and which could easily damage the objects if it were to knock into them. The Murumbi House has since acquired a hand-held vacuum cleaner which makes cleaning much safer and easier. It is essential to clean many of the masks very carefully with a vacuum cleaner, simultaneously brushing very lightly with a soft brush, as wiping them with a duster only ingrains the dust in the rather powdery paint they are decorated with. Even so, great care must be taken as in some cases this paint is fugitive.

93. The wooden objects, basketry and gourd and leather containers that appeared to have live insect infestations were taken out into the garden, placed on a polythene sheet at some distance behind the house and sprayed with a 0.5% solution of lindane concentrate in water. Those objects which had many old flight holes were first injected through these with lindane in white spirit at the same concentration. A very few that were fragile in places as a result of very heavy insect attack were then consolidated with polyvinyl acetate resin. Although lindane is less toxic to humans than are many other insecticides, the staff of the African Art Collection are well aware that one must be careful always to spray downwind and always to wear rubber gloves when handling objects that are being or have just been treated with insecticide. And that the gloves must then be washed under running water before being taken off. And, of course, to wear rubber gloves while diluting the insecticide and to wash all receptacles, spray bottles, pipettes and measuring cylinders thoroughly after use.
94. We also treated the large wooden female figure that stands in the front garden. The treatment of this figure is described in paragraph 29.
95. Some of the ivory figures were cleaned, and the raffia beard of a miniature ivory mask, which was tearing off, was re-attached.
96. Some breaks in pots and pottery figures were repaired, and lacunae made up.
97. We cleaned some corrosion off copper, polished some brass and silver objects, and lacquered all of these, trying to apply the lacquer very thinly, so that it is imperceptible. When we were cleaning metals, I impressed on the staff the hazards of some of the better-known quick methods of cleaning metals: for instance, the etching of the surface that will result from the use of acids.
98. All the objects treated were marked in Indian ink with their new accession numbers, which had hitherto been affixed on paper labels as a temporary measure. The original numbers, given by Mr. Murumbi and marked in Indian or white ink, were retained.

#### Tours of inspection

99. Mrs. Kanyoro, Mr. Kamama and I visited the Museum at Meru, north of Mt. Kenya. This museum was established fairly recently, the displays having been completed in 1976, although the building is of a much earlier date. We also visited the Museum at Kisumu on Lake Victoria, where the displays had only just been completed within a new, purpose-built building. Mrs. Kanyoro and Mr. Kamama were thus able to gain some idea of the possibilities of a small museum. Although both of the above-mentioned museums are specifically local and ethnographic museums rather than museums based on a private collection reflecting the tastes and interests of the collector, the only museum that either Mrs. Kanyoro or Mr. Kamama had previously seen was the National Museum in Nairobi which is on an altogether larger scale, and whose displays were designed some time ago. The temporary exhibitions at the National Museum, which are changed regularly, tend to favour open displays, which would not be suitable for the Murumbi Collection.
100. Mrs. Kanyoro, Mr. Kamama and I inspected the site of the Mukurweini Wa Nyagathanga to assess the condition of the homestead; for details, see Appendix III.

#### Recommendations for further training

101. In the two months that I was in Nairobi, I trained the staff of the Joseph Murumbi African Art Collection in a few of the simpler techniques of conserva-

tion, as well as giving them some idea of passive conservation: that is, providing an environment in which deterioration is minimized.

102. If they are to look after the collection as it deserves to be looked after, further training will be necessary. This should take the form of supervised practical experience: carrying out treatments to objects similar in type and composition to those in the Murumbi Collection. It may be possible to arrange a six-month training programme at an ethnographic museum in England for Mrs. Rosemary Njeri Kanyoro and Mr. Elias Murigi Kamama, or for two periods of three months in two such museums. It would be advisable for Mrs. Kanyoro and Mr. Kamama each to train for a period of six months if possible, and the training should be in an English-speaking country.
103. The training should cover all the materials in the collection. Perhaps Mrs. Kanyoro could concentrate on some materials, while Mr. Murigi works mainly on others.
104. The main emphasis of the training programme should be on:
  - i. The consolidation of powdery pigments.
  - ii. The treatment of ethnographic leather objects, including food containers permeated with ghee or other fat; the ligaments used to lash gourd containers, etc.
  - iii. The treatment of feathers
  - iv. First aid treatments for leather and parchment manuscript scrolls
  - v. Gaining some familiarity with simple methods of creating and maintaining stable microclimates in which to display and store ethnographic collections. Visits to the conservation departments of other museums, with explanatory tours round their stores and exhibition areas, would also be helpful in this respect.

#### Summary of Recommendations

##### The building

- 1) That a major, radical repair of the roof be carried out to make it water-tight.
- 2) That when, in the course of this repair, the roofing tiles are taken down and the roof timbers are exposed, a firm that specializes in the protection of buildings from attack by termites, other insects and fungi be called in to inspect and, if necessary, treat these timbers.
- 3) That a firm of the type mentioned above be engaged thereafter on a contract basis, to carry out regular inspections of the house and to carry out any necessary treatments.
- 4) That half of the roof be repaired at a time, and that both the African Art Collection and the Africana Library be stored in the other half of the house meanwhile, being moved into the rooms under the completed half when the work on the remainder of the roof is to begin.
- 5) That neither of the basement storerooms under the right wing of the house be used to store items from the African Art Collection or the Africana Library, not even on a temporary basis.

##### The African Art Collection

- 6) That no members of the public be admitted to the African Art Collection until after the roof is repaired, the Library permanently installed and the African

Art Collection is arranged for display, mostly in showcases and the house is officially open to the public.

- 7) That the objects from the Collection listed in paragraph 11 be sent for restoration to Mr. Frank Daykin in Karen.
- 8) That a maker of musical instruments be found to undertake the repair of the instruments listed in paragraph 19. It is possible that the same man cannot repair both drums and stringed instruments, and it may be necessary to find more than one man.
- 9) That the two manuscripts listed in paragraph 20, together with some of the earlier books from the Africana Library that need treatment, be given the necessary specialized treatment.
- 10) That all nails, screws and screw eyes driven into objects in the Collection (usually to hang the objects by) be removed, and that objects be supported securely from below for display; textiles may be hung as described in paragraph 33.
- 11) That neither of the two fumigants available in Nairobi be used to fumigate the Collection. Methyl bromide forms evil-smelling compounds with protein materials such as leather, hair and feathers; and phosphine ( $\text{PH}_3$ ) has not to my knowledge been tested on museum collections; also, as it does not kill insect eggs, it is unlikely to be completely effective if fumigation takes place over a few days only. Exposure to phosphine of even three days could cause discoloration to copper parts of objects.
- 12) That no fogging with DDVP (Vapona) be carried out, as has been suggested, three times a year in future as a preventive measure. Fine droplets of Vapona are known, on contact, to have caused damage to metal and to textiles.
- 13) That treatment of infested objects with lindane (gamma BHC) continue as outlined in paragraph 93 for as long as necessary and that lindane be sprayed round the skirting and all junctions of the floor with the walls of the house, paying special attention to corners. That all showcases and shelving be treated with lindane before objects are replaced; that new wooden showcases and shelving be treated with lindane unless they are known to have been made from treated wood, which would seem likely.
- 14) That the large wooden female figure in the front garden (number 1053) have applications of raw linseed oil before each season of rains and during the dry seasons whenever the wood begins to look dry.
- 15) That the farm wagon (1979/4) that stands in the front garden be conserved and restored as suggested in paragraphs 30 and 31, and that it be raised on a concrete plinth or on perspex blocks to isolate it from termite attack; that daily inspections take place thereafter and that any termite trails be cleared away from the wagon and its plinth or blocks; that the nests of termites building trails near the wagon be sought out and destroyed.
- 16) That the prints, drawings and photographs which have suffered from damp, mould or insect attack be taken out of their frames, dried and brushed before being reframed, professionally if possible. That all pictures whose frames are badly broken and those whose glass is broken be removed from their frames and carefully stacked until they are replaced in their repaired frames.

- 17) That the two 1809 prints of Abyssinian scenes by Salt (numbers 1005 and 1006), both of which are water damaged and one of which is in a frame whose glass is broken, be professionally treated and restored, if necessary being sent abroad for this purpose.
- 18) That, wherever they are hung for display, in the Murumbi House or elsewhere, all pictures be hung on the inside walls of the building to avert the likelihood of their suffering further damage from damp, mould or even water.
- 19) That the pictures be hung so that direct sunlight does not fall on them, and preferably not to exceed the general light levels recommended by the Museums Association (64).
- 20) That tests be made as outlined in paragraph 46 before selecting lining materials, paints, varnishes etc. to be used on the insides or any showcases in which silver objects are to be displayed or stored.
- 21) That provision be made in one of the rooms on the ground floor and not at basement level for storage of those objects in the Collection which will not be displayed, as there are many duplicate items. That adequate provision of shelving be made for this storage, and that this shelving be made of wood (rather than metal), as a buffer against changes in relative humidity in the store.

#### Conditions of display

- 22) To close in, insulate and air condition the roofed area beyond the garage as outlined in paragraph 52 so that the relative humidity within may be kept at a steady  $55\% \pm 5\%$ , and that the more valuable and vulnerable objects in the Collection then be displayed in this area.
- 23) That the remainder of the African Art Collection be displayed, with the exceptions mentioned in paragraph 60, in well-sealed, well-buffered showcases (see paragraph 56), for reasons of security as well as for the better preservation of the objects.
- 24) That all the Kisii stone sculptures be brought under cover if not indoors, as the differential expansion and contraction caused by the heating in direct sunlight of the outer surfaces of the sculpture that stands in the garden has caused it to crack in the past and will cause more cracking in future if it stays where it is.
- 25) That the recommendations in the Museums Association Information Sheet Conservation and museum lighting be adhered to in so far as possible when designing the general lighting in the Murumbi House (there is a copy of this Information Sheet in the files of the Murumbi House), and that, should it be found absolutely necessary to place lights in showcases, the precautions in paragraph 66 be taken.

#### Recommendations for a Conservation Workshop

- 26) That the present garage be converted into a conservation workshop as outlined in paragraph 70 with adequate insulation, lighting, air conditioning, running water in a large sink, adequate benching, storage for tools and equipment; a lockable steel cupboard for storing flammable organic solvents, corrosive substances and toxic insecticides - this cupboard to be kept outside the workshop; a fume cupboard, an adequate number of electric power points.

- 27) That a basic supply of tools and equipment be acquired by the workshop (see list, paragraph 84), and that the person in charge of the workshop be entrusted with a petty cash float with which to buy small items as the need for these arises.

#### Training

- 28) That a conservation training programme of six months be arranged at an ethnographic museum, as outlined in paragraph 101 for Mrs. Rosemary Njeri Kanyoro and Mr. Elias Murigi Kamama. It may be found easier to arrange two periods of three months in two museums. However, the Collection would benefit if both Mrs. Kanyoro and Mr. Murigi could have six months' training, due to the diversity of materials.

APPENDIX I

The Kenya National Archives Pavilion at the Nairobi Show

The Kenya National Archives has a pavilion built for the Nairobi Show of 1979 by Vamos & Partners, Architects (plan and elevation, Figure 2). The intention is for the Archives to exhibit in this pavilion annually at the Nairobi Show which takes place in October.

The pavilion is an attractive building, if possible even more open in plan than the Murumbi House. The exhibition areas are on the ground floor. A very high proportion of the external wall space consists of windows, louvred from top to bottom, all louvres on each window being opened and shut by one lever. The wall at the back of the central portion of the pavilion consists of open grillework to provide ventilation necessary for the large crowds that attend the Nairobi Show: 12,000 visitors came through the pavilion on each of the five days of the Nairobi Show in 1979. The steeply sloping roof is supported on uprights; between these, and under the eaves, the external wall does not meet the roof - there are gaps all round, also providing necessary ventilation. I was told that, nonetheless, the pavilion gets very hot during the show, and it is necessary to open windows. Towards afternoon the prevailing cold wind blows up from the back of the pavilion; the windows are then shut, but the open grillework faces into this wind.

The pavilion was built just before the 1979 Show and was not quite finished by October, when the Show took place. The flooring had not yet been laid, nor had the walls been plastered. There was thus a lot of building dust about, and the floors had to be swabbed down each morning with large amounts of water. This is thought to have raised the relative humidity considerably above what it would in any case be in the early morning just outside Nairobi. When the floors are laid and the walls are plastered, it may not be necessary to use quite so much water for cleaning, but with 12,000 visitors going through per day the floors will still have to be swabbed.

To accommodate large numbers of people in safety and in reasonable comfort is clearly near the top of the list of priorities in the design of a pavilion for the Nairobi Show. And as the pavilion is only in use for five days out of each year, this must be accomplished as economically as possible. Unfortunately, this does not make for conditions in which it may be considered permissible to exhibit museum objects, which must be regarded as irreplaceable.

Most exhibits in the Show are either dispensable, such as boards made up for the occasion with photographs and descriptive captions, or machinery and equipment which is not likely to suffer permanent damage from exposure to the ambient conditions.

In the section on Conditions of Display the conditions that may safely be tolerated by objects in a collection like the Joseph Murumbi Africana Collection are briefly set out. These conditions are incompatible with those conducive to the safety and comfort of large crowds of people moving through a relatively small space, where ventilation of necessity takes precedence over control of climatic conditions within specified limits. The crowds themselves affect the climatic conditions, which are so variable in the pavilion that objects from the Murumbi Collection should not be displayed there, not even in showcases. After objects have become acclimatized to conditions conducive to their preservation, a sudden change which upsets their equilibrium with their environment may well cause sudden and spectacular damage, such as large cracks suddenly appearing in wood, or a painted surface disintegrating in festoons of flakes. Other, less dramatic damage may also be started by a sudden move from one environment into a different one.

In 1979 a carved ivory tusk from the Murumbi Collection (number 31) was chipped either at the Nairobi Show or in transit. Until it is possible to ensure that no object is transported unless it has been packed to their satisfaction by the conservation staff at the Murumbi House, no objects should be let out on loan. The conservation staff should let objects out on loan only when they are satisfied that conditions where the objects will be exhibited will in no way be detrimental to them. They should also personally take charge of the packing for the return journey.



Equipment and Supplies at Murumbi House

A. Brought from England

Equipment

1. Tripod Magnifier
2. Fine Forceps with curved points, 1 pair
3. Sculptor's Spatula, 1
4. Scalpel Handle plus 25 blades
5. Artist's brushes, 4

Supplies

1. HMG Adhesive (cellulose nitrate), 6 tubes
2. Polyvinyl Acetate, solid, 500 g.
3. Carbowax 4000, 500 g.
4. Renaissance Wax, 230 ml.
5. Incralac, 500 ml
6. Pliantine Standard Leather Dressing, 500 ml.
7. ASAK ABP Leather Lubricant, 500 ml
8. Synperonic N non ionic detergent 1 l.
9. Plasticene, 500 g.

B. Bought for the Murumbi Collection by the Kenya National Archives

Equipment

1. Whirling Hygrometer in case
2. Precision Hygrometer, Dial
3. Anglepoise Lamps, 2
4. Spray Bottle for insecticides
5. Spray Gun for insecticides
6. Hypodermic Syringes for injecting insecticides, 2
7. Paint Brushes, 1 inch and 2 inch, 1 each
8. Stencil Brushes, 3 large
9. Beakers, 100 ml., 6
10. Beakers, 25 ml., 12
11. Reagent Bottles, narrow-necked, 6
12. Reagent Bottles, wide-necked, 1
13. Watchglasses, 20
14. Graduated Pipettes, 25 ml., 1  
10 ml., 1

15. Pipette Filler, 1
16. Litre Jug, graduated, 1
17. Small hand-held Vacuum Cleaner

Supplies

1. Distilled Water, 2 litres
2. Acetone, 1 litre
3. Industrial Methylated Spirit, 5 litres
4. White Spirit, 1 litre
5. Isopropyl Alcohol, 1 litre
6. Gammelin 20 Insecticide (lindane), 5 litres
7. Wire Wool
8. 3-in-One Oil, 1 small tin
9. Duraglit - wadding for cleaning brass, 1 tin
10. Duraglit - wadding for cleaning silver, 1 tin
11. Humbrol Enamel Paint, 5 very small tins
12. Fibre glass Mat, 2 square feet approximately
13. Polyester Resin, 500 ml. plus accelerator
14. Polyvinyl Acetate Emulsion wood adhesive, 1 small tin
15. Raw Linseed Oil, 2 litres

Mukurweini Wa Nyagathanga

Mukurweini Wa Nyagathanga, near Muranga town, is the traditional site of the home of the eponymous founder of the Kikuyu nation and of Mumbi, his wife. Until fairly recently it was kept up in the form of a traditional Kikuyu homestead, as a place of pilgrimage. The Director of the Kenya National Archives, on hearing that the site had fallen into neglect, suggested that Rosemary Njeri Kanyoro, Elias Murigi Kamama and I inspect it, with a view to the Kenya National Archives restoring Mukurweini Wa Nyagathanga and reviving it as a centre for education and tourism.

On the 14th of March we called on Mr. Muhia, the County Clerk of Muranga, who very kindly provided us with an escort to Mukurweini Wa Nyagathanga.

The site is at present in a sorry state of neglect. On it stand two concrete huts with corrugated iron roofs thinly disguised with thatch. These replace earlier traditional huts which were left to the mercy of termites. The present huts are empty shells, with no partitions, no furnishings, no implements - domestic or agricultural. They convey nothing of the life in a Kikuyu homestead. The compound, too, is in a state of disrepair. The fencing, of living hedge, needs to be replanted and reworked. Not one granary is left standing, there remains no enclosure for cows, no trough or saltlick for cattle.

If Mukurweini Wa Nyagathanga is to be reconstructed, it would be a great pity not to rebuild it as a fully traditional Kikuyu homestead, using traditional methods and traditional materials.

As the insecticides now available and effective for killing termites are all very toxic to humans, it would not be feasible to use these on a site that is likely to be closely inspected by members of the public and, in particular, by parties of schoolchildren. Maintenance staff would have to keep termites at bay by traditional methods, of which there are several.

Mr. Wachera Wanjao of the Oral Traditions Section of the Kenya National Archives has done research on the plan, structure and contents of the Kikuyu homestead. Mr. Charles Sekintu, the Display Officer at the National Museum, Nairobi, has experience in having huts of various tribes built by their respective tribesmen. These may be seen at the museums in Meru and Kisumu. These huts are built on traditional lines, and are fully furnished to give an idea of the life that would be led within. I feel sure that if Mr. Wanjao and Mr. Sekintu were to work on the project together, they could do an excellent job of reconstructing an authentic Kikuyu homestead at Mukurweini Wa Nyagathanga.

It has been suggested that an architect be employed on this project, but I cannot see that an architect would have anything to contribute to an undertaking of this nature.

Once Mukurweini Wa Nyagathanga is rebuilt, it would be necessary to appoint one or two full-time guardians to maintain the structures and their contents, to keep out termites and other vermin, to let in the public and show them round, and to liaise with the Kenya National Archives. The man in charge should be an elder - knowledgeable in the traditions of the Kikuyu and with practical knowledge of their building traditions. I am led to understand that only by appointing full-time staff is it possible to ensure that responsibility will be taken for maintenance. At present, someone is nominally in charge of the site, but this is not his main work - and the state of the site reflects this.

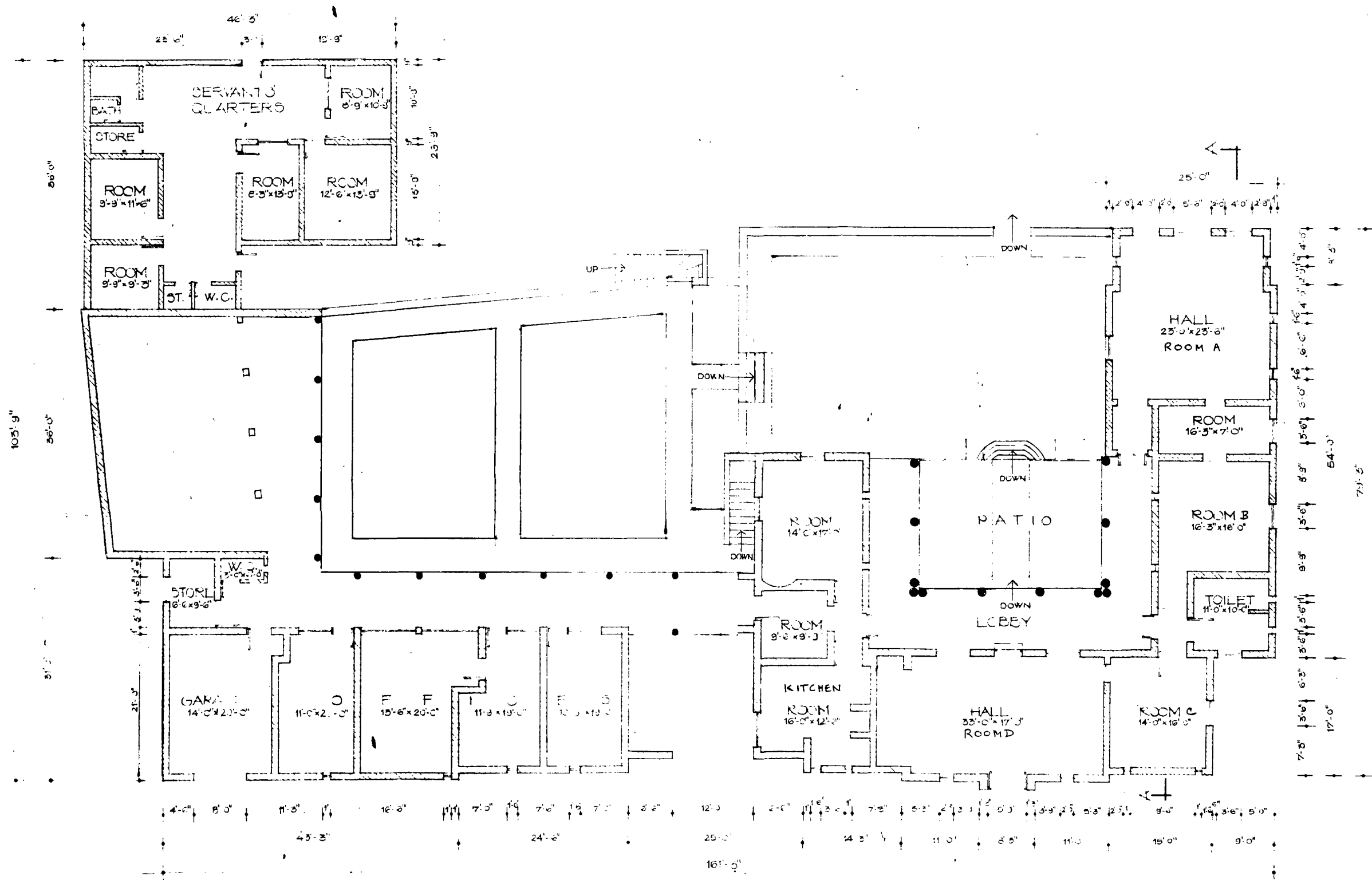


Figure 1.  
PLAN MURUMBI HOUSE

KENYA NATIONAL ARCHIVES  
 SURVEY PLAN  
 S.S. MUTHAIYA & CO  
 2001

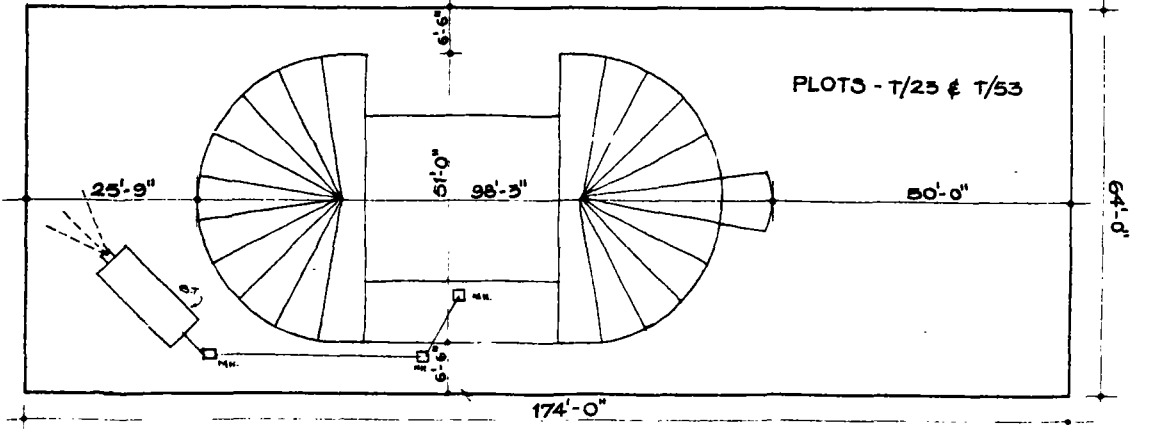
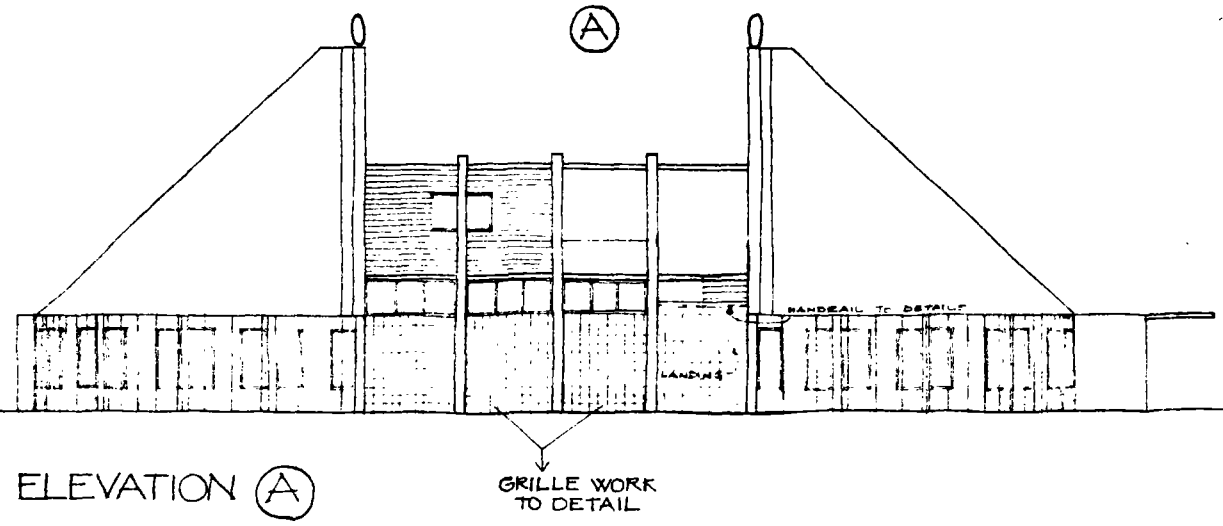
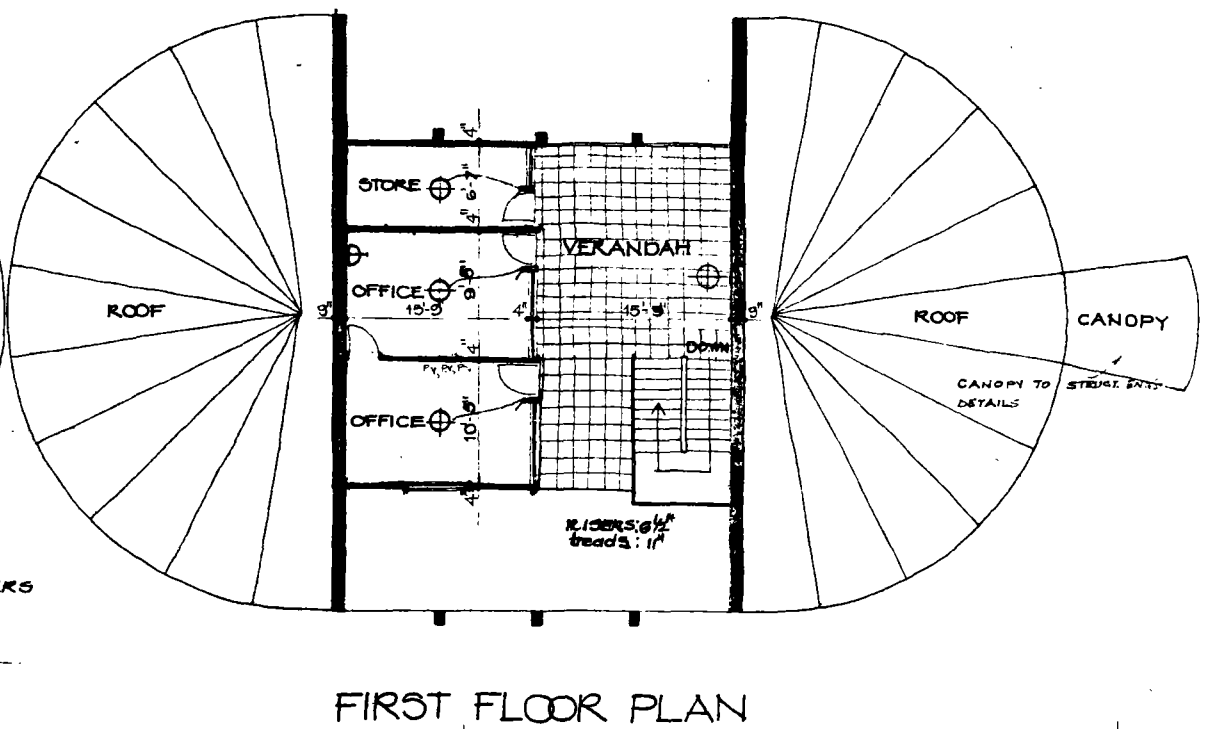
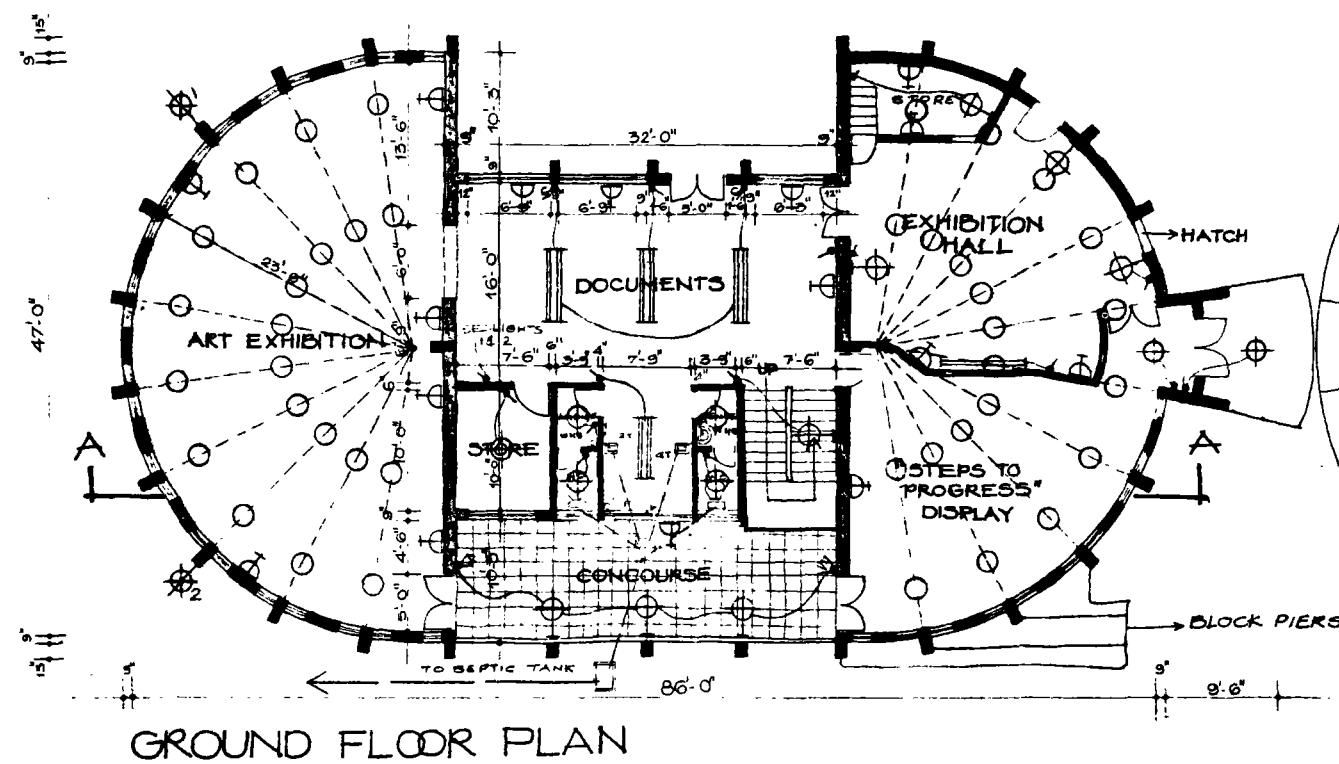
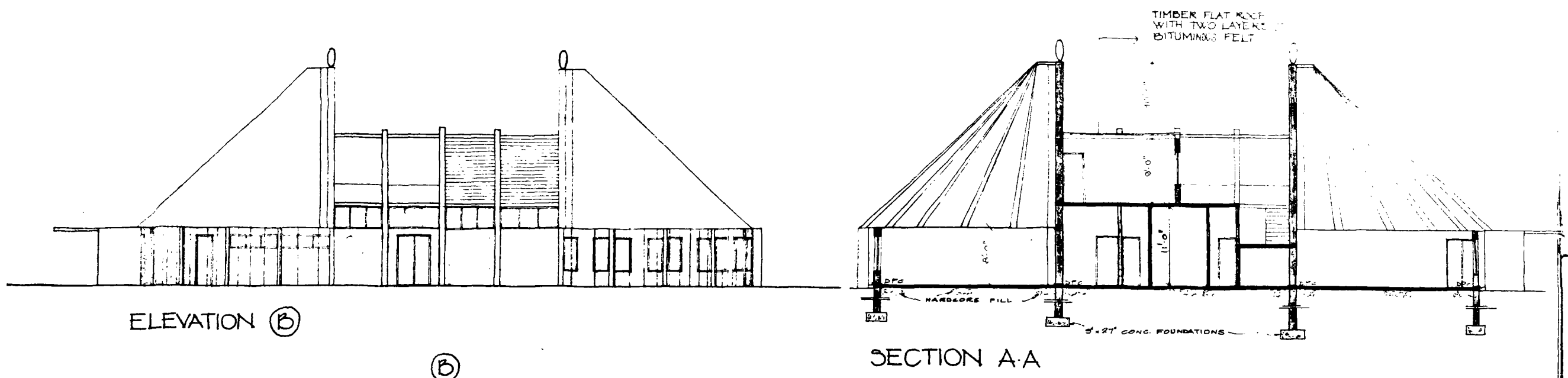


Figure 2. OFFICE OF THE ATTORNEY GENERAL - MINISTRY OF WORKS PROJECT

KENYA NATIONAL ARCHIVES  
 PAVILION  
 PLANS - ELEVATIONS  
 T/23 & T/53  
 1/8" = 1'-0"  
 27-7-79  
 S. AMIN  
 M 113/6

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