A DESIGN APPROACH

TO FACILITATING THE VILLAGE POLYTECHNIC IDEOLOGY

IN KENYA

A Thesis

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Master of Arts

by

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ABSTRACT

    The Village Polytechnic Programme (VPP) in Kenya, one of
the non-formal educational programmes designed to solve problems
of illiteracy, unemployment, and rural development, has been
in existence since 1966. The programme's focus is on
primary school leavers (graduates) who were unable to pursue
a higher education and had no skills to sustain themselves.

    The basis of the ideology of the programme is self-reliance.
Self reliance is achieved through the trainees' developing
skills which are useful and applicable to their communities.
Skills required for the development of one community may
differ from those required by another. To encourage local
development, the VPP has to be flexible and adaptable to
local situations.

    The potential of the Village Polytechnic (VP) ideology
has not been fully realised. Part of the problem is in how
VPs are perceived. The tendency is for communities to view
the VP as a school for formal education. The misconception
of the VP as a formal school interferes with the ideology's
objectives.

    It is suggested in this study that the misconception of
the VP is due in part to the inability of the VP to present
an image consistent with its own ideology and objectives.

This misconception of the VP may be partly resolved through the facility and its design - considered here in the broad sense, with emphasis placed on who the design is made for as well as on how the facility is designed. Conventional architectural design and planning involves one person making all decisions regarding a design. This design approach is not workable with VPs, as their philosophy of self reliance is to allow for wide participation by members of the society. Therefore, designing for the VPP requires a style and approach that complement the development of the VP.

This study employs anthropological, cultural, and historical concepts to develop an appropriate design for the VP. Alexander's Pattern Language concept is used to develop criteria which relate the VP ideology, the programme, and the facility. These criteria are illustrated hypothetically by applying them to a Village Polytechnic in Ukambani, a region in Kenya.

The design approach described in this study is yet to be tested in an actual rural community within Kenya. It appears to be an approach which will result in more appropriate facilities hopefully enabling the VPP to achieve its ideals and objectives within each community.

BIOGRAPHICAL SKETCH

The author was born on September 6, 1959, in Machakos, Kenya. Prior to 1982, she received her education in Nairobi, Kenya; she attended University of Nairobi in 1978, where she received a Bachelor's Degree in Design. She entered the Department of Design and Environmental Analysis in the School of Human Ecology at Cornell University in 1982, where she majored in Interior Design and minored in Human Environmental Relations.

Besides Design, the author has had an interest in Dance, which she started at the age of three years. Since then, she has danced ballet, modern dance, and jazz, both in Kenya and the USA. She also performed and taught Afrikan Dance at the South Side Community Center in Ithaca, N.Y.

She received her Master of Arts Degree in Design from Cornell University in June, 1985.

DEDICATION

To Mom, Dad, and the home.

Ndáñúka mbɔ̀là eìsáá ɔ̀mɛlìa
(He who chews slowly will ultimately swallow)

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INTRODUCTION

The Village Polytechnic Programme (VPP) is a low-cost
community-run youth training programme in Kenya, with the aim
of improving the quality of life in rural areas. It is a
concept that is based on a non-formal education ideology.
This concept is at odds with the approach to education that
came to Kenya with the missionaries from Europe beginning in
the early 19th century--formal education. In 1889, at the
Berlin Conference, the formation of colonial territories
began, based on the location of missionaries in Afrika.
Kenya was one of the newly formed territories. As the
influence of the colonial territories grew, so grew the
dominance of formal education. By the time Kenya gained its
independence in 1963, the primacy of formal education was
established. Government policy and educational structure
were synonymous. With this educational heritage came the
colonial definition:

> formal academic instruction which takes place in
> stone buildings (more recently concrete) and leads
> to mastery of an abstract body of knowledge which
> is measured by examination. [Court, 1972]

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Stone buildings! The built environment was a physical symbol of formal education. This study deals with design and the built environment for education. Design is defined in the broad sense and the appropriateness of its implementation. The introduction of any design into a community impacts the norms of that society which therefore requires appropriateness of design. Appropriateness is defined here as the ability of design to enhance the philosophy and aspirations of that community. It is beyond the scope of this study to give specifics. However, the study gives guidelines to facilitate the development of appropriateness in design.

The hypothesis is that the characteristics of the facilities associated with formal education in Kenya are not relevant to the VPP concept. The hypothesis is based on two assumptions, both of which are founded in research done by architects and behavioural scientists and are aimed at the effort to make built environments more humane: first, that the built environment is the three-dimensional embodiment of a culture, and second, that the built environment is a physical representation of human functions [Alexander, 1977].

Assumption 1. Culture: Everything that human beings do is associated with the experience of space. "Nothing occurs, real or imagined, without a spatial context, because space (along with time) is one of the principle organizing systems for living organisms" [Lang et al., 1974:19]. The educational

facility is an arrangement of culturally defined categories of space, where each category defines an activity or place or thing and its association with human learning behaviour. A built environment always organizes social institutions, since the activities which define each social institution are themselves always anchored in space [Alexander, 1977].

Assumption 2. Function: The architectural environment functions in three ways:

1. it maintains the physiological states necessary to sustain behaviour;

2. it provides the necessary behaviour settings;

3. and it supports psychological states through the use of symbols. [Lang, et al., 1974]

In each of these functions there is a perceptual, and cognitive, and an action component. Not only must the environment be perceived as being potentially capable of supporting the required behaviour, but the user must realize this and know how to use the environment; and most importantly, the environment must actually support the required activity [Lang et al., 1974].

If these assumptions are a priority in the minds of educational planners, then:

1. Cost-effectiveness through adequate functional spaces can be developed for the activities required for the

Village Polytechnic Programme ideology of self-reliance in relation to rural development.

2. Channels for communication can indirectly be opened between instructor and trainee, Village Polytechnic and community.

3. And finally, the VP can develop a sense of identity for the immediate and the national community.

With reference to schools, Probst, of the EEF, comments:

> To some it will seem that the building - the place - the environment of education - is peripheral to the central issue: education itself. But the behavioural sciences, and life itself, provide ample evidence that learning and growth are deeply affected by the environment in which they take place. Viewed in that light, the content of a child's education is made up of everything that happens to him from the moment he enters the school house to the moment he leaves. [Probst, 1972:9]

It seems logical that in order to enhance the change of attitudes toward the VPP in Kenya, a study of the cultural and behavioural context for this nonformal education concept is necessary to create an appropriate "school environment" for the VPP.

Chapter I describes the development of the VPP concept, how it evolved, its goals and objectives. The second chapter looks at evidence that indicates a dissonance between facilities for formal education programs and the VPP ideology. The third chapter defines an approach to identifying the appropriate criteria for the design of the

physical environment for a Village Polytechnic. The fourth

chapter demonstrates the application of the design criteria

formulated in Chapter III to a VPP in Ukambani. If the

approach to the development of a VPP facility is to result in

an appropriate environment, the approach must be tested.

Chapter V reflects the possibilities of the design methods

presented.

CHAPTER I

AN OVERVIEW OF THE VILLAGE POLYTECHNIC PROGRAMME

1.0.0. Introduction

The Village Polytechnic (VP) was the first programme to deliberately confront the "gap" between rural areas and the urban areas created by formal education. The VP began as an experimental program to try and improve the standard of living in rural areas. It was motivated by the fact that a large majority of the Kenyan population are youth, aged twenty and below. Of these, 90% of them live in rural areas and therefore are the key element in planning for development [Sheffield, 1960].

The programme started as a result of a paper published in 1966 by the National Christian Council of Kenya (NCCK)—After School What? This report addressed the rapid development of serious and increasing unemployment among the primary-school leavers (those who graduate), corresponding with the sharp increase in population. At the time, out of each year's 150,000 primary-school leavers, some 40% would neither be able to go on to secondary school nor to find employment [Sheffield, 1967]. Later that year the report was endorsed at an International Conference on Education, Employment and

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to task was whether formal education was alone adequate for
national development in newly independent countries
[Sheffield, 1967]. S.R. Ominde, the chairman of the
Education Commission at the Conference concluded:

> The structure of our education system . . . began
> as a cultural imposition, in an attempt to solve
> the problems which our society presented to the
> colonial authorities . . . . It was not a result
> of a modification of an earlier established system,
> not the outcome of a carefully prepared plan of our
> total social and economic development . . . . The
> structure had developed at a time when ideas of
> administration authorities were distorted by emphasis
> not on rural development but on the island of the
> European economy which had been created in the
> country, and which needed an assured source of
> cheap manpower . . . . It was assumed that basic
> factors in planning education were finance and
> opportunities for employment, the structure was
> unrelated to the population factor and the true
> long-term manpower needs of the country [S. H. Ominde,
> in Sheffield, 1967:289].

The plan, the assumptions and the structure of formal
education were therefore not geared towards an independent
Kenya; a realization of the conference that was to be one of
the reasons for the formation of the Village Polytechnic
Programme (VPP).

1.1.0. The Development of the Village Polytechnic Programme

During the late 1950's and into the 1960's, a large
portion of Afrikan countries gained their independence from
their colonial predecessors. In the case of Kenya, this was
the first time a diverse group of people were under one
umbrella - a national government. Although government policy
was first to provide universal education at a primary level.

umbrella - a national government. Although government policy
was first to provide universal education at a primary level.
Two factors influenced the government to search for another
approach to education. First was the rapid increase in
unemployment, and second was the expense of providing and
maintaining the formal education system, particularly when
the system was not paying off in jobs [Sheffield and
Diejomaah, 1972]. This led to the introduction of non-formal
education in the late 1960's which aimed to meet the
following needs:

1) as an alternative for those who lacked the oppor-
tunity to acquire formal schooling;

2) as an extension of formal schooling for those who
need additional training to get them into productive, employment
(or to become self-employed);

3) as a means of upgrading the skills of those already
employed [Sheffield and Diejomaah, 1972:xi].

Non-formal education covers a broad spectrum of nearly
all instruction and skilled training. A detailed presentation
of its structure is given in Fig 1.1.

As Kenya is an agrarian country, it became apparent that
the exploitation of agriculture within the rural areas would
be a more effective strategy to curb unemployment and
encourage national development than would be the case in
expanding the modern industrial commercial sector. The

Non-Formal
Education

Industrial
and
Vocational
Training

Multi-Purpose
Training
Programmes

Training
Programmes

Pre-
Employment
Programme

On-The-Job
Skill
Upgrading
Programme

Out-Of
School
Youth
in
Rural Areas

Adult
Population
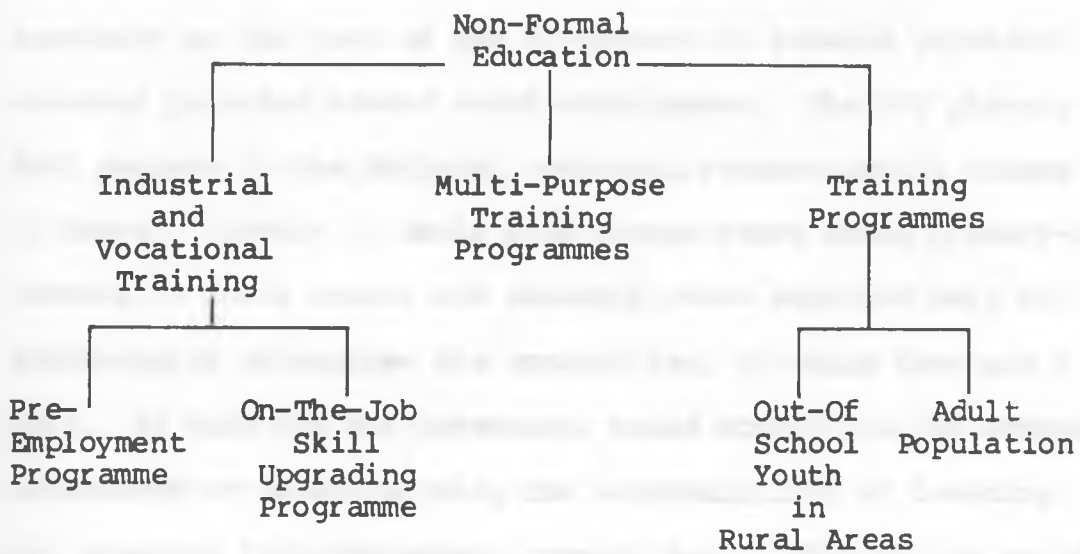
Figure 1.1.   The Different Types of Non-Formal Education.
[Sheffield, 1972:i]

basis of the Village Polytechnic Programme (VPP). This
chapter will discuss the VPP, its ideology and aims,
objectives and constraints.

1.2.0. The Village Polytechnic Programme

The Village Polytechnic Programme is administered by
the Ministry of Social and Cultural Affairs, through
the Department of Youth Services. The programme indicates
anattempt on the part of the government to reverse previous
colonial policies toward rural development. The VPP plays a
dual purpose in the National, economic reconstruction scheme
in Kenya. Firstly it deals with unemployment among primary-school
leavers in rural areas; and secondly those employed help to
economically strengthen the communities, of which they are a
part. In this way the government would attain its new overall
objectives of decentralizing the responsibility of learning
and creating "interdependent communities." This policy would
contribute to national development at the macro scale.
Additionally, with the VP concept communities tend to be in a
position to choose their mode of development. This reality
is very important when one considers, "the very different
social, economic and ecological conditions which exist in the
various districts of Kenya, and the very different patterns and
levels of development that have been established" [Anderson,
1970].

In each community, the VPP is primarily concerned with the preparation and employment of youth after finishing standard seven.* The preparation involves, in addition to skill development, the socialization of the trainees to appreciate the informal approach to education, a process whereby living and working are a part of each other. It is hoped that the socialization would contribute to the trainees' confidence to be productive and creative informally, without feeling the need to have a white or blue collar job. As a whole it may reinstate the dignity traditionally attributed to manual work; by improving the community and family for no fee, and make employment economical, productive and a satisfying activity. Anderson in his document of 1971 recognized the informal learning and task development within traditional societies and suggested there high potential of being a mode of integrating the relevant, practical and innovative knowledge required for the ideology.

Informal education, however, has not yet been related or integrated into the national structure of employment. Therefore formal education, with its "selectivity and exclusion," has been considered as the only way to gain socially acceptable status [Anderson 1970, Court 1972]. The belief in

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* In 1985 the primary school level will be changed from seven to eight years, with the last two years teaching skills, in addition to regular classwork, according to Weekly Review, March, 1984.

this opinion is strong, despite the limited potential for

formal education to accommodate everybody.

1.3.0. The Village Polytechnic Ideology and its Aims

The VPP will have long term significance in Kenya.

It represents the beginning of a new educational ideology.

As one observer put it:

> . . . an aspiration to break away from conventional
> national concepts of academic schooling and to
> develop a type of training which is rooted in
> local needs and which contributes to the achieve-
> ment in localities of a sense of individual purpose,
> community consciousness and economic improvement
> [Court, 1972:2].

A more specific description of the Village Polytechnic ideology

was to be given by Ed Wanjala, one of the people to present

the original idea at the Kericho Conference. In his words

this is:

> An ideology which demands a complete reversal
> of the conventional attitudes towards education.
> It is no longer education first and then we shall
> know how to solve our problems. It is the other
> way round; we first plan the development of the
> community and then train the young people in such a
> way that they will be able to contribute to the
> nation's development.*

What this meant was that the concept of self-reliance

was to be developed on the basis of reviving old traditional

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*   Comte, Marie-Christine, "Harambee: The Village
Polytechnic Represents a Novel Approach to Education,
Self-Determination and Self-Reliance," Ceres
Vol. 10, No. 57, May-June, 1977, p. 36, quoting a speech
made by E. Wanjala at Ekalakara, Mechakos District.

values and transforming them to suite a new situation.
For this reason the programme has usually been referred
to by most researchers interested in the programme, as
an ideological movement; versus an institutional one. Its
slogan was, "TRAINING ALONE DOES NOT CREATE JOBS" [Wanjala,
1978].

As a result of the ideology the VPP is structured to
be fully integrated into the community. The community should
provide:

-     land, money, supplies and labour to help build the
  Village Polytechnic,
- trainees from the surrounding area,
- people for the management committee,
- contracts for the trainees and a market for the
  trainees' products,
- money-making opportunities for VP leavers.

But in so doing, the VP should provide in return:

-     products and services that local people need and
  want,
- new ideas for rural development for school leavers
  and for local people through extension work,
- a centre for community activity and growth,
- local businessmen (VP leavers) who will help to
  economically develop the community [Handbook for
  Village Polytechnic and Youth Instructors, 1972:6].

For this reason the effectiveness of the VP is based
on its ability to be a living part of its community; a notion
which is contrary to that held by planners, who until recently
have had little of no understanding of the social and economic
attitude of rural people [Anderson, 1970].

1.4.0. Village Polytechnic Programme Objectives

The implicit objective of the VPP is in the broad sense,
overall community education.

1.4.1. Community Education

In order for the ideology to take effect, trainees,
instructors and managers,in addition to the teaching and
learning skills, are assigned an additional responsibility.
They are expected to provide "economic education" to their
communities--an education which makes apparent the importance
of:

- land   (natural resource),
- people (man-made resource),
- tools (man-made resource),

in helping a community to be self sufficient and to achieve
its basic needs, (food, shelter and hygiene) [Handbook for
Village Polytechnic and Youth Centre Instructors, 1972].

In addition to this, there is a need for an expectation
of mutual benefit between the community members and the
trainees. The community should also assume the responsi-
bility of making use of the trainees' newly acquired knowledge.

This way, the new education would be relevant, practical and related to specific environmental situations, more so than formal education.

The VPP has been considered as being close to an apprenticeship type of training. A type of training that is informal in character is thought to be the simplest and most effective way of acquiring knowledge [Alexander, 1977]. The potential of this type of training is that of learning through contact with people of all ages, professions and experiences [Alexander, 1977]. As there is participation by a wide range of members of the community, trainees are in a better position to see the role they can play in improving their societies.

As there is no model for the VP Programme, a major part of its responsibility is to further introduce a new range of educational symbols to rural communities. In addition to skill training in individual enterpreneurship and in community development, the new symbols indicate that educational training can be inexpensive and immediately applicable. This can be achieved through having smaller institutions, simple buildings and closer student-teacher contact and cooperation. The three symbols will act as guidelines in developing criteria for an appropriate VP facility.

1.5.0. Constraints

The relevance of the ideology and its approach to community
education can be fully appreciated once put into the context
of its constraints. There are three basic functional constraints;
environment, technology and cost. The Village Polytechnic
Programme has resolved the three constraints through the
decentralization of the programme and through communal
interdependency of the communities. Skill training and
knowledge are encouraged to be unique to a given region. The
unique development is in response to the diversity of the
environment and climate in Kenya; the technology and
materials used to construct the facilities are localized. As
a result rural communities are able to build their own
facilities; and in so doing, availability of education
is generally increased for the general populace. The use of
local knowledge, technology and resources provides a basis on
which new ideas may be introduced to improve existing
conditions. However, the need to make the programme
localised appears to respond to another constraint, one that
is different and more complicated--the community perception of
the Village Polytechnic. Studies of the programme foresee
the success of the VP to depend on the way trainees and
parents perceive them.

There appears to be a lack of understanding of the aims
of the VP by both trainees and parents. This lack of

understanding by trainees and parents towards the aims of the VP has been demonstrated by their insistence to formalize the programme.

Unfortunately the three basic factors of environment, technology and cost partly contribute to the attitude which the communities have towards education. Anderson introduces this point in his report of 1970:

> The striking relative differences in material conditions in society, reinforced by corresponding differences in prestige, in the quality of life, in geographical areas . . . are closely tied to formal qualifications, linked to the certification of the education system . . . one unfavourable side effect is the widespread belief that substantial differences in economic qualifications rewards are justified by differences in educational qualifications. As a consequences, individual and local efforts are focused on the attainment of formal qualifications, symbols of doubtful relevance to the social and economic development of the country [Anderson, 1970:20].

In the past the inherent tribes within Kenya culturally developed in close accord with their habitat. However, the introduction of formal education and the formation of Kenya based on an agrarian economy introduced new values. The presence of resources, more advanced technology than the local technology, fertile land and good climate, assured a community more wealth. The lack of these elements implies less recognition of the community.

Among rural communities, the conventional school building is considered as a national yardstick to measure a community's development. The "modern school" symbolizes

progress and prestige. Fertile regions have more conventional school facilities and consequently consider less fertile regions backward. Therefore in Kenya, rural communities struggle to carve their identity in the new social structure of Kenya as a country, and have often used education and the school facility as the tools to do so. It appears that the goals of development as defined by the government seem to conflict with what society considers development.

This conflict has become apparent in the problem facing the Appropriate Technology Research station in Nairobi [Eileen Opoti, personal communication with the author]. The station is to provide appropriate solutions for rural development which programmes like the VP disseminate to their communities. However, what has been considered desirable based on traditional, cultural artifacts, has not necessarily turned out to be applicable to the communities which they were to serve. The reason may be as Harvey Brook, in Hannon and McGinn [1981:37], suggests:

> The process of creating technology for the first time (in today's context), is quite different from the process of specifying it, so that it can be reproduced by others, . . . for technology to be appropriate it has to evolve in close relationship with a society or community and not be a sudden change.

This necessitates a re-examination of what is required by the different programmes serving different areas and cultures [Wanjala, 1978]. This phenomenon is best described

by Amos Rapaport as "the level of technology a culture permits." It defines what can and what cannot be done; what is more important is to know what cannot be changed [Wanjala, in Rapaport, 1969]. He further states that "primitive" cultures:

> . . . generally work right up to the techno-
> logical ceiling of their culture, but well below
> the aesthetic ceiling demonstrated by their other
> buildings . . . the most decorated parts may have
> symbolic meaning [1969:47].

Insofar as cost is concerned, the VP criteria to use local resources is effective, but it would appear that to divert community interest from acquiring formal symbols may be interpreted by the communities as hindering progress, in terms of attaining equal national economic rewards.

Cost can also dictate terms of development and technology. The Kenyan planner, faced with high costs, for example, has been left with no alternative, except to find new ways of solving the existing rural problems. For example, recently there have been indications of cataloguing the available elements of different cultures [Andersen, 1972].

But more important, as Oliver [1971] suggested, cost rein-forced by the difficulties faced by the Appropriate Technology Research Station may further encourage planners and designers to find reasons why cultural materials are deployed and the needs within the society which they meet in the realization of building form and organization. In so doing, planners may

create a new appreciation for local technologies within
traditional communities. Furthermore the contact between
community and planner in doing research of the local technol-
ogies would create a communication that would assist in
innovative ways to transform old values to a new situation
which meets social and cultural needs. Chapters III and IV
demonstrate some ideas and considerations of transforming
traditional ideas to improve the VP facility.

1.6.0. Conclusion

Ed Wanjala in his NCCK report [1978:3] summarised the
progress of the VPP. He stated: "Today the Village Polytechnic
is the most progressive programme contributing to education
the rural youth in non-formal education, despite limited
resources." The programme has developed from having little
or no support from parents and children [Anderson, 1970] to a
point were parents fully encourage the children to attend.
The programme is increasingly becoming popular, approximately
300 are scattered all over the country and every year
approximately 30 more are added [Eileen Opoti, personal
contact with the author].*   The latest development of the
programme is to integrate it with a nutritional programme,

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*   Eileen Opoti is Officer in Charge of Appropriate
        Technology Centre of Research and Training, Village
        Technology Unit - Ministry of Cultural and Social
        Services, Box 30276, Nairobi Kenya.

Family Life Training Programme (FLTP), as they are both geared to try and improve rural life. But unfortunately the primary goal of encouraging creative, innovative, youth to enhance development, is unfulfilled as is mentioned in reports and observations of the VPP [Anderson, 1970; Ford, 1975; Migot-Abdholla and Owiro, 1981]. This could be due to the lack of information and sensitivity to the extent situational behaviour has on one's perception of place and opportunity. Chapter II discusses how the situational patterns inherited by the VP from the conventional school are incompatible with the VP ideology.

CHAPTER II

CONFLICT BETWEEN THE CONVENTIONAL SCHOOL AND THE VP IDEOLOGY

2.0.0. Introduction

The success of the VP depends, to a large extent, on
the way the trainees and the communities it serves perceive
the programme [Court, 1971]. However, research on the
programme reveals that the VP ideology does not appear to be
recognized for what it is, as documented in one report: "Not
just another school . . . not a College with sophisticated
equipment and high powered staff . . . . Not aimed at
certificates," but a type of apprenticeship scheme in rural
areas, at a village level, to meet local needs, by knowing
what to train for versus just training alone [Wanjala, 1973].

There is a tendency for trainees to perceive the VP
"as simply another type of school, equating the manager
with the headmaster and the instructor with the school
teacher," [Ferguson and Barker, 1979:3] or "as second best, and
that regular formal education is better" [Comte, 1977:36]. The
need for trainees to have the sensitivity and ability to see
possibilities and exploit them, with the skills and knowledge
learnt, from these establishments appears to be lacking.
Court confirms this in his statement:

> . . . the relatively small proportion of leavers
> who have achieved successful self-employment
> confirms that this is an extraordinarily difficult
> role requiring an enterpreneurial flair, imagi-
> nation and energy which are not likely to be in
> large supply among those who for the most part are
> the self-declared rejects of the formal system [Court,
> 1974:226].

Therefore it would appear that the programme may be providing the "cart without the horse," and would not necessarily achieve the economic progress required for its long-term development [Anderson, 1971].

The purpose of this chapter is to suggest that the conventional school facility is partly the cause of:

1)   the misconception of the VP image and

2)   the lack of imagination in the non-conventional
     modes of thought that are required to improve
     the effectiveness of the VP.

This chapter is divided into three parts; first, a description of the conventional school facility; second, the negative influence of the conventional school on the VP ideology; and third, a possible approach for countering this influence.

2.1.0. Historical Background and Description of the Conventional School

Figure 2.1 gives a chronological development of the concept of education in Kenya. The concept is culturally based. For example, the "quarternity" nature of conventional school buildings has persisted through time. However,

Anthropologists have often described what happens to a primitive society when its spiritual values are exposed to the impact of modern civilization. Its people lose the meaning of their lives, their social organization disintegrates, and they may themselves morally decay. [Jung]

INDIGENOUS

Forms of primitive or vernacular buildings are less the result of individual desires than of the aim and desires of a unified group for an ideal environment. They therefore have symbolic values. Since symbols serve a culture by making concrete ideas and feelings. [Amos Rapaport]

Mosie (family, home) basic family unit . . . a very basic institution which carries out the vital functions of human development, it is a composite of many institutions (education, religion, adaptation to the environment). Each member of the extended family contributes to the welfare of the mosie according to his or her experience, age, wisdom, skill, vitality. [Ndeti]

Mosie - homestead educational facility

In Africa the house is primarily spiritual, a link among man, his ancestors, and the earth, and the principal inhabitants of many houses are the invisible, extranatural and supernatural beings. [Rapaport]

Thoma, formulates the area where wisdom, history, social structure are related.

The Akamba's concept of mondo (human being) is not the mere physical bipedal being which we encounter daily. He is a physical representation of the dead, the living and the unborn. Thus, mondo is a community incorporating three principles--life, spirit and immortality. Each of these principles must work in unison according to the Akamba if man wishes to avoid chaos and meaninglessness in human life. [Ndeti]

The tetragonal house is today used for prestige--economically and educationally. [Ndeti]

WESTERN

Christian origin...the God who really consists of four gods coming from the "four corners...." The quaternity (or element of "fourness") itself is a strange idea, but one that plays a great role in many religions and philosophies. In the Christian religion, it has been superseded by the Trinity.... It is an idea that was once fairly familiar among students of the Hermetic philosophy in the Middle Ages, but it petered out with the beginning of the 18th century, and it has been entirely obsolete for at least 200 years.

Cold   Fire   Earth

Warm   Cool

Air   Hot   Water

Four Elements and Sub-Elements

Cardinal Sign

EDUCATION

Socrates instructed students gathered in the shade of an olive tree--the methodology of formal education has remained remarkably unaltered. It has remained consistent almost invariably of a single teacher instructing a group of students. [John R. Kurtz]

ENVIRONMENT

In climates where a need was felt to provide a sheltered environment for this activity, it was natural to simply provide a room large enough to contain the teacher-student group. In this way the famous stereotypical school classroom has evolved. [Basil Castaldi]

An education system was considered to be based on religion . . . religion meant conformity and education was instruction [Propst, R.]

Anthropologists have encountered phenomenal absolutism in man's finding to perceive and value other cultures in terms unconsciously based upon his own but phenomenal expenditure as absolute and universally applicable. Widely used to describe this naive attitude is the term ethnocentric. [Segal]

"Phenomenal absolutism is the observer's assumption that all other observers perceive the situation as he does and that if they respond differently it is because of some perverse willfulness rather than because they act on different perceptual content. [Segal]

Time of Independence [Olson]
The national government considered education and communication as basic tools for development--government policy to provide school to promote universal education. The traditional primary education acted as a "form of rite to passage" through which pupils would transfer from rural area to the formal employment market in the cities. [Court]

The majority of them (schoolhouses) were still structures without architectural character. Many looked like large boxes. At that time, these nondescript schoolhouses undoubtedly represented the best architectural answer . . . but as Roth points out, neither architect nor educator had a clear understanding of the tasks to be accomplished. [Basil]

Introduction of non-formal education
Almost every culture with exception has buildings of religious or social significance often both at the same time which possess greater symbolic value and content than the ordinary dwellings. Most of these tend to be more affected by high culture for existence within most pre-industrial and peasant cultures than the others.

?

CONCLUSION

Such cultural symbols nevertheless retain much of their original numinosity or "spell." They are important constituents of our mental makeup and vital forces in the building up of human society. [Jung]

When the medical psychologists takes an interest in symbols, he is primarily concerned with "natural" symbols, as distinct from "cultural" symbols. The former are derived from the unconscious contents of the psyche, and they therefore represent an enormous number of variations on the essential archetypal images. In many cases they can still be traced back to their archaic roots--i.e., to ideas and images that we meet in the most ancient records and in primitive societies. The cultural symbols on the other hand, are those that have been used to express "eternal truths," and that are still used in many religions.

Today more and more architects are turning to vernacular architecture for inspiration, not because they wish to repeat the structures they find-- the social orders, materials and technology they have to deal with are quite different--but because it is recognized that these structures obviously satisfied their communities' psychological needs far better than most modern suburban settlements do. [Denyer]

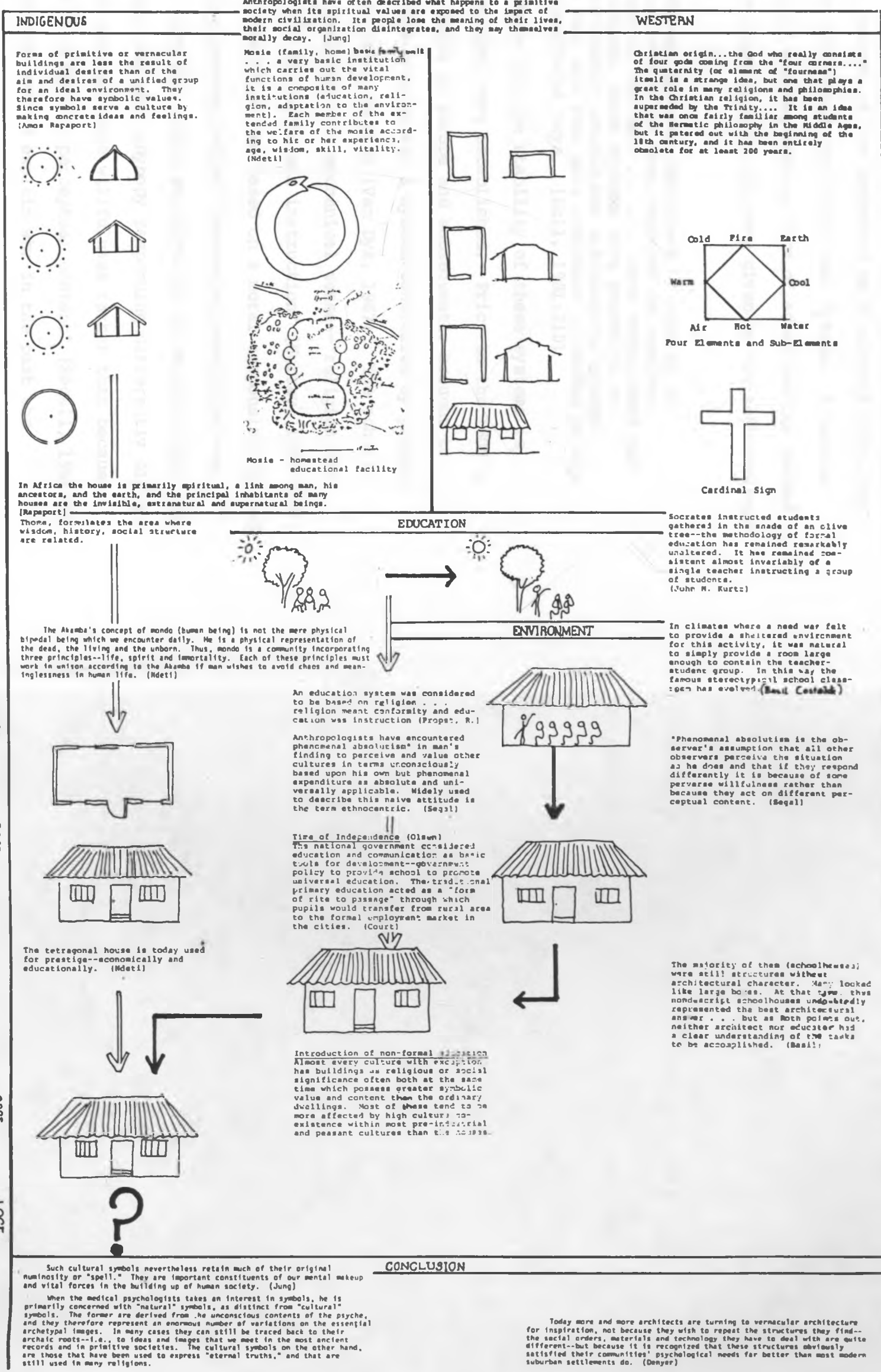399<470 BC   0   1900 AD   1963   1966   1984

Figure 2.1. Chronological Chart of the Development of Education.

the cyclic thought of the homestead as a cultural form, has
not equally influenced the educational system. A partial
explanation of why the western form of education has tended
to dominate other systems has been given by the anthropologist
Hall:

> Educational systems regardless of country or
> culture have often been exported as complete
> packages in the past . . . . Once established and
> functioning, these systems have proved to be
> extraordinarily stable and difficult to change
> . . . they are even more resistant to change in any
> but superficial ways. [Hall, 1981:210]

The reason for the stability of these systems is
based on how they were established. Prior to the 1800's
the school based in Europe and subsequently brought to
Africa by missionaries was a system controlled by profes-
sionally religious peoples [Van Dyk, 1967]. The school
system was executed in a mechanical sense--"religion was
conformity and education was instruction" [Murray, 1967:234].
Thus formal education was based on a moral responsibility and
resulted in a concept called "phenomenal absolutism"--an
assumption that all people perceive the situation as did the
missionaries, and that anybody responding differently did so
"because of some perverse willfulness rather than because
they acted on different perceptual content" [Segall, 1966:5].

The concept should explain why in the past the
missionaries practised "an unconscious form of cultural
imperialism which they imposed indiscriminately on others"

[Hall, 1981:20]. At this level of unconsciousness, education and culture can be considered synonymous.

2.1.1. Conventional School Definition

Several authors [Castaldi, 1977; Hall, 1981; Illich, 1971; Kurtz, 1928; and Rodhe, 1972] have described schools as rectangular repetitive structures often built as monuments to glorify the communities they represented; and to maintain a status quo (societal values) from generation to generation. These monotonous structures "were spatially organized to accommodate the functional requirements to keep these values; whereby the teacher taught and the student learnt the basic skills of reading, writing and numbers" [Court, 1971:3].

Only recently have educational facility planners observed the strong relationship the school building has with what it represents. It has become apparent that the facility within which the formal education takes place is more than learning in an architectural structure; it is a representation of the culture it originated from. Rapaport summarizes this concept more clearly:

Creation of the ideal environment is expressed
through the specific organization of space, which
is more fundamental than the architectural form and
is closely related to the concept of ETHNIC
DOMAIN. This can be defined as the ideal
environment made visible; it is basically
nonphysical in inception and is given manifest form
through buildings [Rapaport, 1969:49].

Unfortunately, the cultural origin of the conventional
school is such that its characteristics do little to
encourage innovative thinking or real life problem solving,
contrary to what the VPP ideology stands for [Hall, 1981].

The symbolic nature of the conventional school is
visibly inherent in the persistence of the current usage
of the rectangular form by the VP (see Figure 2.2). Such a
persistence may be explained by the strength of the
religious basis of education.

2.2.0. Current Facility

The current VP facility tends to physically conform
with the conventional school. Examples of a "missionary
school," a government supported school, and a typical VP
image that is being strived for have been portrayed in
Figures 2.2, 2.3, and 2.4. An eminent characteristic of the
three educational facilities is their rectangular nature
which has been consistent through time (see Figsures 2.1-2.4).
There is a cultural component of the conventional school
which goes along with the physical facility, and which has been
inherited by the VP (see Figures 2.5, 2.6, 2.7). This
unidimensional concept of education whereby one can only be
educated as a result of enrollment in an institution
coincides with the conventional pattern of the classroom.
Court has described the situational character of the classroom:

> The classroom consequence of this desire to imitate
> is the familiar pattern of organizational
> arrangements in which pupils of similar age are
> contained in groups of between thirty and fifty for
> a major portion of each day in a classroom where
> they are under the authority of a certified adult.
> They are subject to a regular rotational sequence
> of daily and weekly activities and at the end of a
> year are promoted to the next level of activities.
> The classroom is a place of public performance and
> collective sanction where they are differentiated
> in terms of their academic achievement [Court, 1972:4].

However, as shown in Figure 2.8, the systems of education

reveal different characteristics. The nature of the VPP

seems to require very different patterns and facilities

than the traditional school The facilities need to

complement the programme's evolving character and de-

centralized mode of learning. Firstly, the VP needs more

flexible buildings and equipment to accommodate the

diversity of programmes and the way these programmes have

been approached. Secondly as the VPP is designed to

infiltrate different cultures and communities, there is

also need to provide adaptable facilities.

The VP ideology was introduced as being based on what a

community needs (see Chapter I). Therefore flexibility of

the VP facility is essential (flexibility is defined as the

physical ability of the VP facility to provide physical space

for the changing programme needs). For example, trainees at

Ekalakara VP are taught rotational dry farming for two

reasons: first, to provide a means of providing food for the

surrounding community, within the climatical constraints of a

Figure 2.2.   A Church Turned into a Missionary School, 1847
              (Exterior). [Source: (Fedders and) Salvadori,
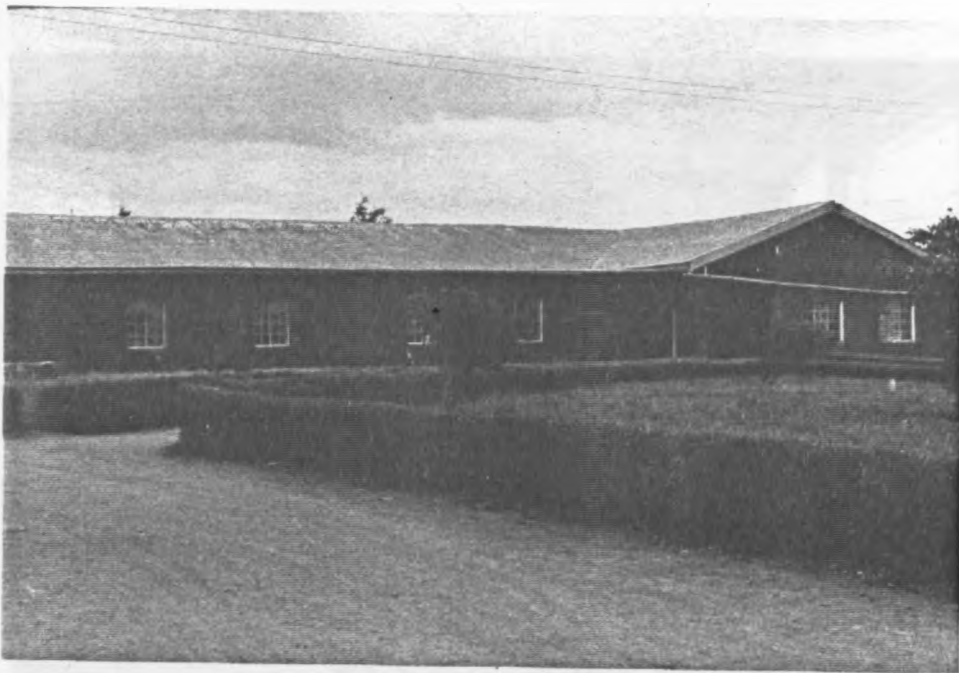   1982:150]

Figure 2.3.   A Government Supported School, Kitui.
              [Source: Collection of the Author]

Figure 2.4.   Village Polytechnic in Kitui (Exterior).
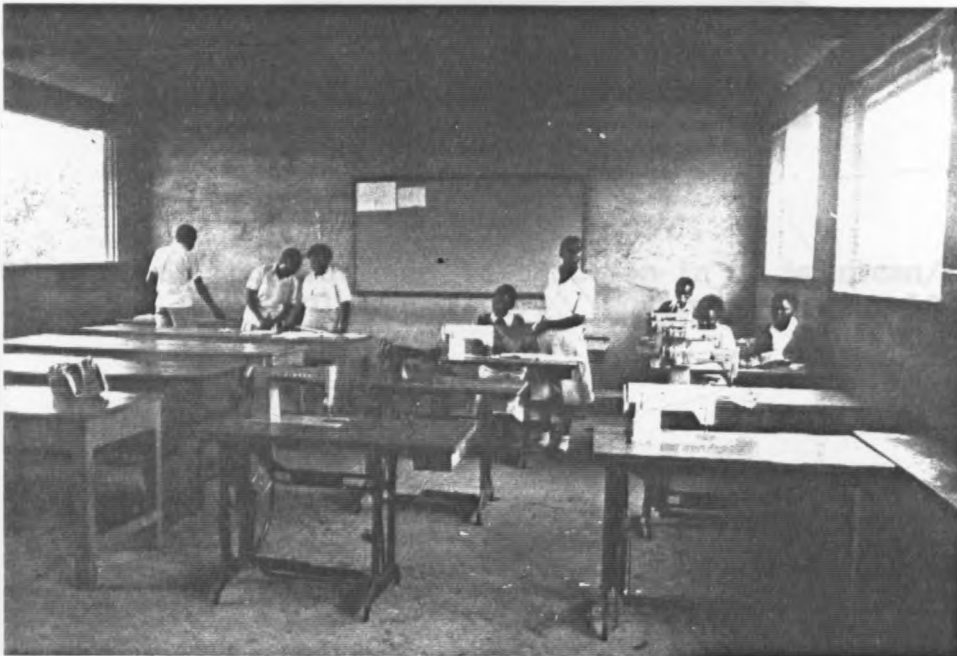[Source: Collection of the Author, 1984]

Figure 2.5.   Village Polytechnic in Kitui (Interior).
[Source: Collection of the Author, 1984]

Figure 2.6. Conventional Instruction in an American/European
School (Interior). [Source: Probst, 1972:13]

Figure 2.7.   A Government Supported School, Kitui (Interior).
[Source: Collection of the Author, 1984]

ELEMENTS OF AN ALTERNATIVE IDEOLOGY

Contrasts in Educational Ideology in Kenya

Dimension	Formal Secondary Schooling	Village Polytechnic	Indigenous Education
Objectives of training	Short term; graduation to next level; long term; wage employment in modern national economy.	Local self employment and family improvement	Identity, in being a part of the community. Ordering of chaotic reality.
Catchment and service area	National	Local	Community/Clan
Recruitment criteria	Formal qualification and ability to pay	Interest	Birth
Capital facilities	High-cost institution	Low cost minimal	No-cost participation
Curriculum	Standardized and group-oriented	Unbounded and individualized	Hierarchical and communal
Medium of instruction	English	Vernacular or Swahili	Vernacular
Standards	National certification	Self and local demand	Live according to cultural expectations
Form of instruction	Classroom teaching	On-the-job learning	Traditional society-guidance
Leadership	Authoritarian	Participatory-communal	Unquestioned traditional values
Organization	Inflexible	Flexible	Cultural/ biological changes
Time period	Chronological sequence	Time necessary to master skill in question	Circular - lifetime commitment
National administration	Centralized - hierarchical	Local autonomy	Communal, "symbiosis"
Responsibility for leavers	Vague societal	Specific community	Humanization- how to face and accept the challenges in life

Source: Court, D., 1974; Ndeti, K., 1972; Rapaport, A., 1969

Figure 2.8. The Village Polytechnic in Contrast with Formal Education, and Compared with Indigenous Education.

semi-arid climate; second, the programme was developed with
consideration of the changing nature of the community
involved from being only pastoralists to mixed farmers. For
the programme to continue to be of use to this community, it
has to provide new subjects for newly recognized needs and
discontinue subjects taught for old or well-attended needs.
(The type of subjects VPs tend to accommodate is listed
in Appendix I-A.)

Flexibility for the physical facility is required
for another reason: because of the uniqueness of the
programme, it has no model to follow. For this reason the VP
committees that develop the programme decide what charac-
teristic the VP programme and facility is to take in
order to provide skills and services for the trainees and
the community. Studies have revealed that there are
three kinds of approaches. Highly centralized, partly
centralized, and decentralized (see Figure 2.9). Most of the
VPs have taken a partly centralized approach. The definitions
of these three programmes are elaborated in the Appendix. The
suitability of an approach may change with time, new
priorities, and new programme developments.

In addition to flexibility the VP facility needs to
be adaptable. The effectiveness of the VP depends on its
ability to be a living part of its community [Freeman, 1977].
Most of the communities the VPs work along with are

Highly Centralised	Partly Centralised	Decentralised
Activities mainly based in the institution/ students come to staff.	Activities partly based in the institution/ students and staff come to one another.	Activities based mainly outside the institution/ staff go to students.
Institution tightly organized and controlled. Strict control by senior staff.	Some degree of organisation and control.	Activities based largely on member's own initiative Assistance given when required. Very little staff control.
Student initiative related largely to the need of the institution as prefects, house leaders, dormitory cleaners, etc.	Student initiative related to the institution's needs in some roles, but also to their own concerns, e.g., providing own food and bedding, running own hostel committee, etc.	Student initiative related almost entirely to their own needs in work and in normal home life.
Timetable and curriculum laid down and strictly adhered to. Opportunities for learning outside the curriculum given little authority.	Timetable and curriculum laid down, but only loosely followed and opportunities for outside activities given greater priority.	Opportunities for useful activity found first any training therefore takes place largely as part of an occupation which the student finds for himself.
Complete provision made for students, e.g., uniforms, boarding facilities, food, tools, recreational equipment.	Some provision made for students.	Students make as many of their own provisions as possible.

Figure 2.9. Methods of Administration.

multi-occupational. The different types of occupations and
how they are attended to (in relationship to the type of
learning and money-making opportunities) are shown in
Figure 2.10 [Anderson, 1970]. In this respect the facility
should be in a position to adopt one or more of the
approaches alongside with social and cultural developments
within the immediate community. As a result adaptability
would refer to the ability for the VP facility to provide
the necessary behavioural settings for social, cultural and
technical activities that the VP may possibly have to facilitate.

Nevertheless, the conventional physical appearance
of the VP has influenced the way the polytechnic is
perceived. For example, the negative sentiments towards
the formal school are transferred to the VP [Court, 1974].
Another example is in how the programme has been perceived by
some communities in Kenya [Wanjala, 1973]. As one observer
puts it: "A community which opens a VP may think that the
establishment of the institution alone will solve all the
problems" [Wanjala, 1973:105].

Thus a community having experienced the inadequacies
of the formal in educating the youth, tends to see the VP
as a second best way in fulfilling its obligation.

Today, the VP is measured according to the formal
school standards. This kind of measure tends to overshadow
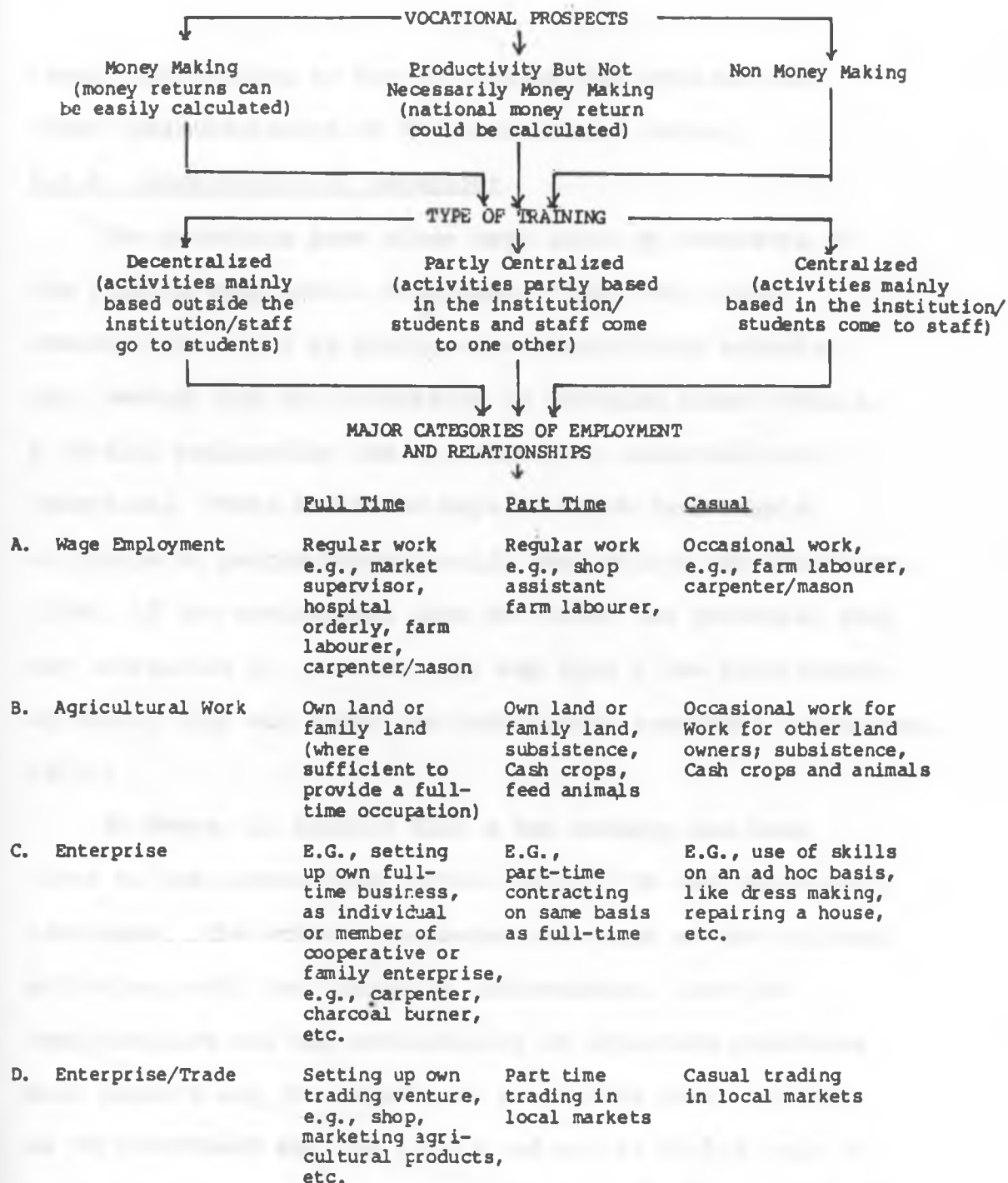the VP objectives and it appears that this situation will

VOCATIONAL PROSPECTS

| Money Making (money returns can be easily calculated) | Productivity But Not Necessarily Money Making (national money return could be calculated) | Non Money Making |

TYPE OF TRAINING

| Decentralized (activities mainly based outside the institution/staff go to students) | Partly Centralized (activities partly based in the institution/ students and staff come to one other) | Centralized (activities mainly based in the institution/ students come to staff) |

MAJOR CATEGORIES OF EMPLOYMENT AND RELATIONSHIPS

		Full Time	_Part Time_	_Casual_
A.	Wage Employment	Regular work e.g., market supervisor, hospital orderly, farm labourer, carpenter/mason	Regular work e.g., shop assistant farm labourer,	Occasional work, e.g., farm labourer, carpenter/mason
B.	Agricultural Work	Own land or family land (where sufficient to provide a full-time occupation)	Own land or family land, subsistence, Cash crops, feed animals	Occasional work for Work for other land owners; subsistence, Cash crops and animals
C.	Enterprise	E.G., setting up own full-time business, as individual or member of cooperative or family enterprise, e.g., carpenter, charcoal turner, etc.	E.G., part-time contracting on same basis as full-time	E.G., use of skills on an ad hoc basis, like dress making, repairing a house, etc.
D.	Enterprise/Trade	Setting up own trading venture, e.g., shop, marketing agri-cultural products, etc.	Part time trading in local markets	Casual trading in local markets

Figure 2.10.   Relationship Between Vocational Prospects, Type of Training and Money-Making Opportunities.

remain for as long as the VP retains the physical and
other characteristics of the conventional school.

2.3.0. Socio-Cultural Behaviour

Two questions have often been asked by observers of
the Village Polytechnic Programme: first, why these
communities insist on having conventional-type schools;
and, second, why the resistance in changing these schools.
A partial explanation can be related to socio-cultural
behaviour. There are three ways in which individuals
or groups of people behaviourally deal with a new situation:
first, if the environment does not offer the potential they
may reorganize it; second, they may find a new environment;
or third, they may learn new behavioural responses [Alexander,
1974].

In Kenya, it appears that a new meaning has been
given to the conventional school along with new behavioural
responses. The school integrated into most of the cultural
societies, with the coming of independence. New job
opportunities and the availability of important positions
made parents see the importance to educate their children
as an investment for the future and not to wholly rely on
traditional approaches [Olesen, 1980]. The school seems to
have also inherited all the cultural and symbolic charac-
teristics related to traditional buildings and places of
social importance. For example, on one hand, observers

of the VP notice the tendency for local management commit-
tees of the polytechnics to put up unnecessarily expensive
buildings in the name of progress, development and pres-
tige; while on the other hand, the VP ideology is trying
to reduce the cost of facilities as a major criterion in
order to provide more facilities to educate more children.

The conflict between the community ideals and those
of the planners of the ideology are apparently deep-rooted.
Rapaport suggests that the symbolic meanings used to
solidify communities dominate over utilitarian priorities,
he writes:

> Even at the more advanced level of peasant
> societies, ceremonial is still of prime impor-
> tance, and all social relations are more than
> utilitarian and always surrounded by symbolism.
> The omnipresent ceremonial must be paid for
> in labor, goods, or money, and the "ceremonial
> fund" in a peasant village may be very large
> compared to other aspects of the economy. The
> emphasis on ceremonial varies in different
> cultures. Its importance is related to its
> function in underlining and exemplifying the
> solidarity of the community; it also presents
> an ideal model of the social mechanism. This
> reflection in the attitude taken toward posses-
> sions which are never seen in their economic
> context alone [Rapaport, 1969:53].

Therefore according to these communities the school
is ranked highly and serves a purpose of symbolic represen-
tation within a larger perception of life and progress
[Castaldi, 1970]. There is a tendency therefore to allocate
too many resources toward quality of the buildings instead of
other facilities needed for the VPs.

The resistance to change and insistence to have a conventional-type school is influenced by the "mental organization" of these communities. The cyclic mode of thought encourages communal activity and "shared image of the good life" (see Appendix II). Within this context the school has inherited a different interpretation. It appears to symbolize an underlying concept of solidarity, with which the communities are to conform. Therefore it represents and end versus a means to an end, which conflicts with the basis of the VPP ideology--self reliance. Its symbolic value dominates its utilitarian value.

2.3.1. Conflict Between Perception and Spatial Behaviour

Anthropologists have observed that symbolic buildings are vulnerable to foreign influences. This is a result of their character representing the consistent and changing factors of their community [Rapaport, 1969]. If one takes the view that the conventional school represents western culture, (linear thought) and that the Village Polytechnic incorporates the aspirations of rural life (cyclic thought), it would appear that the patterns encouraged by the school environments, do not complement the socio-cultural patterns within the rural communities in Kenya. A detailed account of the differences between linear and cyclic thought are given in Appendix II. Several differences between the two

types of thought may enhance the conflict in perception
and cognitive organization towards the VP:

In cyclic thought, there is a strong link between culture
and form; communication is non-verbal and depends upon
the cultural pre-programming of the receiver. Cyclic
thought views life from a wholistic point of view, in
which all factes of life are inter-related and interdependent;
interaction is of prime importance. In contrast, linear form
is characterized by verbal communication, which is not
dependent on pre-programming; any link between culture and
form is coincidental. Linear thought views life from a
fragmented and specific viewpoint, in which individuality
(rather than interdependence) is encouraged.

These two schools of thought presently exist in school
environments in Kenya. Integration of these two cultural
ways of thinking tends to inhibit self-expression and
creative thought - both requirements of the VP. There is
apparent difficulty in one system of thought being wholly
experienced in the vent of another. This difficulty is
as a result of lack of familiar patterns which assist an
individual to coherently perceive an environment. Lack
of familiar patterns appears to result in the incorrect
reading of the environment the individual is within,
which leads to conflicting behaviour and attitudes.

Court has studied the attitudes of VP trainees and
primary school leavers. He found that at least half of the
people he questioned had an "exaggerated faith in the
power of the VP" [Court, 1971:6]. The lack of recognizable
symbols appears to have enhanced an incorrect reading of the
VP ideology and has created a dissonance within the trainees
and the primary school leavers. Most of them tend to have
expectations which are not within their means, as Court
noted:

> The tendency to look first for an outside
> solution to any problem is manifested too among
> some in a determinism which sees an external
> Deity as a very real dispenser of opportunities in
> the face of whom the individual can do little to
> influence his own destiny. Thus among this group
> of respondents one finds a demand for such
> trappings of the academic school as uniforms,
> libraries, buses, servants, meals, boarding
> facilities, and there is above all a demand for
> government assistance or take over [Court, 1971:6].

Most of the trainees are influenced by sensory
images rather than functional, realistic impressions of
both town life and employment [Ferguson and Barker, 1979].

"There is a group of trainees who regard the VP as a
conventional school but see it as a part of a traditional
academic educational system" [Court, 1971:6]. A tendency
among this group is to think primarily in terms of what
the VP can do for them if facilities were augmented by
outside aid or government take over, rather than what

they can do for themselves (self-help) by way of exploiting local resources.

In sum, the Village Polytechnic has not been perceived in its true spirit, and appears to have failed in achieving most of its objectives.

2.4.0. Summary

The conflict between the type of attitude and situational behaviour expected of the VP trainees and the symbolic nature of the "school" seems to require an understanding of what is consistent, i.e. how things are done versus what is done, for as stated by Herbert [1972:31], "the environment is what one perceives, it is not the objects within it." The misconception of the VP and lack of innovation is more complex than defining a new range of symbols. These new educational symbols have to be ingrained into the communities, societies and cultures, with which the VPP is to be in contact with. Ndeti [1972:64] refers to this:

> It seems inconceivable that a new order can be
> fully established in an old culture unless the
> newcomers grasp the fundamental principles and
> logic underlying the old culture or visa versa.

In order to explain the fundamental principles and logic of the cultural situation which the VP has to accommodate, the consistent factor of time seems to hold well as a basis. For this factor is both situational and cultural dependent. It is a basic mode of communication

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and expression, combined with being a primary organizing
factor of culture. Time puts all functions of life and
form into context, revealing the constant and changeable
elements within a given culture. Therefore, based on time
one may develop a new language for a new situation, based on
familiar physical symbols and patterns--situational frames.*

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*   Situational frames are the smallest viable unit of
      a culture that can be analyzed, taught, transmitted
      and handed down as a complete entity [Hall, 1981:129].

CHAPTER III

THE APPROPRIATE CRITERIA FOR THE VILLAGE POLYTECHNIC FACILITY

3.0.0. Introduction

The aim of this chapter is to illustrate design criteria
for a facility that supports the VP ideology. The design
criteria are presented in the form of a pattern language.
The pattern language was developed and described by
Christopher Alexander [1968, 1977] and is an approach to
planning, designing and building physical environments.
Behavioral and functional considerations characteristic of a
wide variety of built environments have been recorded by
Alexander. Each characteristic is termed a pattern and each
is described both verbally and graphically. While designing
a facility, the user of·this approach selects from Alexander's
list the patterns that are relevant. Beyond these patterns
the user identifies other new and uniquely relevant
patterns. This composite set of patterns serves as the
program for the design of the new facility. The benefit of
this approach is that it tends to ensure the responsibility
of a building to the specific users.

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In the course of designing facilities for VP Programs which are rooted in ideologies of self-reliance and community development, the pattern language approach is clearly applicable. It will clarify the inappropriateness of the formal school building model and ensure stronger links to the current community and to the cultural past for the VP. As the community members, in a user participatory manner, add to and delete from the illustrated list of patterns, they will describe a design program that is clearly relevant to their climate, resources, social patterns, culture and all other factors that make their community unique.

3.1.0. Assumption

The design criteria in this chapter are based on the assumption that perception is influenced by the way a person mentally organizes information. Just as the eyes have the ability to enable people to see in different ways [Hall, 1981], so does man experience and respond in different ways to stimuli in his specific world [Hall, 1981, quoting Jung]. These stimuli organize the way one sees life, and thinks; and leads to the hidden assumptions about the family, state, economic systems and oneself [Hall, 1959]. These same stimuli influence the ideal for the built environment which man strives to formulate. This ideal environment implies, as summarized by an observer, that:

> Man may build to control his environment, but
> it is as much the inner social, and religious,
> environment as the physical one that he is
> controlling [Rapaport, 1969:60].

Several authors have described Afrikan perception as
involving a mutual compatibility among all disciplines
[Adensanya in Ndeti, 1972; Denyer, 1978; Ndeti, 1972;
Rapaport, 1969]. The understanding of the social forces
within Afrikan culture and sub-cultures requires familiarity
with disciplines, as one author [Ndeti, 1972:113] writes when
describing the Akamba: "To the Akamba, and to many traditional
African societies, witchcraft, medicine, religion, science and
art form a unit that must be understood. . . ." Therefore,
for the design criteria of the Village Polytechnic, care will
be taken to involve as many disciplines as possible to give a
total experience of the environment.

3.2.0. Present Situation

The subtle influences of perception and mental organization
that affect form and the way one behaves imply that no
universal solution can .be found for any built environment.
The imposition of any standardized built environment
on a culture, community or setting may have undesirable
effects, as discussed in Chapter II.

Unfortunately in Kenya, the only relevant design criteria
to low-cost educational facilities, such as those of the VP,
have been primarily those developed for the formal educational
system. Either the emphasis has been on careful planning of

facility; but in keeping with the conventional buildings and equipment [Olesen, 1980], or on utility, suggesting simple, basic structures, and with the greater investment directed toward equipment [Marshall, 1972]. Both approaches have for the most part ignored the human cultural, psychological and behavioural needs.

Given the present community attitudes of non-acceptance of the Village Polytechnic, it may be of paramount importance to include a socio-cultural component of psychological and behavioural needs in creating any learning environment for such polytechnics.

3.3.0. The Village Polytechnic Ideology in Context

The Village Polytechnic Programme is structured to be a part of the immediate community. It appears that the community is as much a significant consideration of the programme as are the stated users - primary school leavers, old trainees, instructors and manager. VP programmes, however, appear to have a problem of communication, first, with their immediate communities, and second, with the national community [Anderson, 1970, 1971; Court, 1971, 1972].

The VP's having the characteristics of the formal school still maintains the underlying missionary-introduced philosophy of not integrating education and "tribal life,":

> [There was] no possibility of integrating school with the tribal life, and missionary education prevented Christian converts from restoring the earlier unity of the tribe, and these differences

> had immediate effect upon the schools since
> these were under the direct control of the
> missionary. [Van Dyk, 1967:12]

To go along with the VP policies, which are in conflict

with the formal school, new design characteristics are needed.

It also appears that if the VP is to gain credibility,

and to be of equal standing with the formal school, the

Polytechnic firstly has to communicate effectively with its

own community, using culturally recognized patterns; and

secondly, the programme needs to create a representational

image of what the institution stands for in each location

(generally, self-reliance within a community).

3.3.1. Definition of Appropriate Criteria

It is clear that a solution to facilitating the VP would

depend on recognizing, first, that the problem the VP ideology

is facing is one of an unsuitable environment, lack of

communication and lack of identity; and second, that the learning

environment of each VP is specific to its location and/or culture.

The patterns developed in this chapter use the concept

of situational frames to facilitate the VP. Situational

frames are excerpts from a time continuum that are performed

within a given situation, usually determined by a culture

[Hall, 1981]. These frames correspond with the VP ideology

requirements in a number of ways. The situational frames can

be described as a cultural pattern; Hall [1981] defines them

as the smallest viable unit of a culture that can be

analyzed, taught, transmitted and handed down as a complete entity; they are the foundation of a culture, evolved over the years. They define how a culture is organized and how one learns in that culture; each of which, if applied, would contribute in creating a more appropriate VP.

The three units that make up the frames seem to correspond to the three problems facing the VP:

- situational dialects (style of talk), communication, recognizing that an environment can communicate;

- situational behaviour (the behaviour in an environment), including psychological state, time and space;

- material accessories (physical things to be identified by), encompassing expression of values that come from within man, to celebrate his existence and identity within a community.

Each unit is influenced by the surrounding environments, which are influenced by time, the psych and the way information is stored and transmitted. In Afrikan cultures, the total experience of the environment, using all senses, is more important than the visual experience. Therefore the situational frames would likely be influenced by and respond to an environment that is:

- High Context[*] - whereby the information is in the
  environment and the receiver of the message is only
  able to do so if he is programmed within the culture;
- Polychronic - a time frame that organizes a
  situation where more than one thing is done at a
  time. The time frame seems to relate to an
  informal behavioural setting;
- Cyclic - another aspect of time that sees life in
  term of its beginning, usually the beginning of the
  existence of the culture in mythical terms.
  Therefore rituals that recognize these archetypes
  (beginning symbols) are important.

It seems logical that the VP design should be based on
familiar Afrikan settings to encourage broad participation of
target communities. One way of achieving this is to design a
VP such that it also acts as a community centre, whereby the
trainees and management of the VP could interact with the
community.

The application of the frames to the patterns would be
done by identifying the situational frames of the Afrikan
culture setting in relationship to the characteristics of
settings required by the VP. Once the settings are defined,

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[*] Appendix III-B defines some of the general characteristics
expected to be found in High Context cultures.

a design criterion is suggested, which would translate the cultural setting to be applicable in the VP.

3.4.0. Criteria for the VP Educational Facility

The three major patterns generated for the design criteria are developed in response to the three units of the situational frames defined above. These three units correspond to the problems that affect the development of the new educational symbols introduced by the VPP. Each major pattern is broken down to a generic pattern, which defines the design criteria.

The three major patterns are Environmental, Communication, and Identity patterns. The Environmental Patterns are based on achieving a more familiar/friendly environment in terms of psychological and physical comfort and well-being. The Communication Patterns try to identify settings of cultural activities that would encourage interaction and effective communication. The Identity Patterns are based on the finer details of the VP image. These patterns could easily be perceived by an individual as his contribution to his society—to demonstrate solidarity and support of the community and to celebrate his existence. The patterns aim at defining design criteria for each of the new educational symbols the VP is trying to introduce. Diagrammes are used with each major pattern to clarify the written information and to illustrate concepts and settings supporting the information.

3.4.1. Pattern Development Based on Situational Frames

The major patterns are ordered according to their size of application. They are further subdivided into sub-patterns or generic patterns which state the criteria. Each generic pattern is translated in terms of spatial patterns suggesting how the criteria may be physically applicable to the VP facility. The generic patterns allow for localization through consideration of climate and through situational frames and cultural symbols of a specific community.

ENVIRONMENTAL PATTERN I: THE VILLAGE POLYTECHNIC PROGRAMME IS BASED ON A NON-FORMAL EDUCATIONAL IDEOLOGY.

The experimental approach to non-formal education which the VP is practicing aims at integrating new technical skills with old cultural values. The approach taken is by socializing trainees to appreciate an informal approach to education whereby the trainees can value and apply their skills without feeling the need for formal certification. The VPP therefore should recognize the settings of informal indigenous methods of education so that through those settings trainees can begin to see the relationship between their newly acquired knowledge and its application in a traditional situation.

Among Afrikan cultures, most of which are High Context, the controlling social mechanism is the homestead. Within the homestead, the informal patterns are learned and

developed by the insider since childhood, but are unknown to
the outsider. For the VP and the technology to be accepted
it has to be put into context of informality within the
culture as a whole.

Most High Context cultures are highly creative, but only
within the context of their culture. For example, the
craftsmanship in the intricate detail of Afrikan carvings
cannot be compared with that of square buildings introduced
by the missionaries found within the same cultural groups.
Carvings have meaning in relationship to the whole historical,
social, and cultural structure of Afrikan communities.

The square building is inherited. It has no history
in relation to the culture, except through education and
economic wealth. Therefore its structure does not seem to change
because it is symbolic, of these activities. The carvings,
on the other hand, may change, since they are representative
of a culture's development, which does change. Therefore the
VPP is attempting to introduce appropriate technology. The
new ideas introduced have to emerge from the roots of the
culture so as to be given meaning [Hall, 1981]. The
homestead seems to be a significant part of most Afrikan
cultures; therefore the effectiveness of the attempt of the
VP to become a part of the community depends on how well the
VP's training fits into the behavioural development of the
homestead, and how well the skills and technology cater to

the needs within the homestead. The training may have to
cater to all age groups because of the importance placed on
the intricate humanization process within the homestead (see
Figure 3.1).

The homestead is planned to include the character and
biological development of each physical and psychological
change of the body within a particular age group (humanization).
This process aims at developing a balanced individual, giving
him a sense of belonging which enables one to face and accept
challenges in life. The homestead is a miniature model of
the village and has a unique meaning to Afrikans. As one
observer puts it:

> . . . the African has his own concept of form and
> space, which more than is the case with any other
> race, is directed towards man and his needs [Chesi,
> 1978:97].

Afrikan communities have developed on an informal basis,
whereby the form of communication has ". . . no senders . . . no
receivers and no readily identifiable messages" [Hall, 1984].
In other words, the communication system has developed
through the ages and is mainly non-verbal. The architecture,
the social norms, and the symbols were all developed for, and
were a part of, the communal structure, which was "communally
worked out over several generations" [Denyer, 1978:4]. The
patterns and social norms still are visible in the homestead
today, in the form of symbols and social activities, even

Ogol has all the traits of a typical, genuine Dogon village. It is laid out from north to south in the form of a man stretched out on his back. In the diagram the menstruation houses can be seen as the hands while the *Toguna* and the forge represent the head. The homesteads of the families in the centre of the village are the breasts and the stomach; the altars in the south of the village are the feet, and the millstones embody the sex organs in the form of a vagina. The phallic symbols which should have been set up next to them were arranged outside the village walls in deference to the women. Thus the figure of man becomes the religious expression of Dogon architecture.
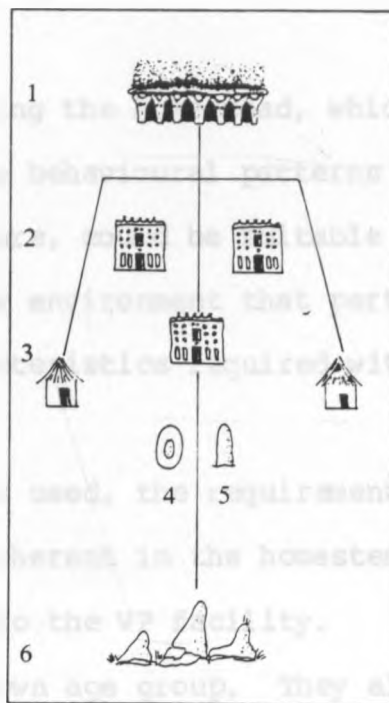
1 *Toguna* (assembly hall)
2 *Ginna* (homestead of the families)
3 Menstruation houses
4 *Lannea* (millstone)
5 Founding altar
6 Altars

Figure 3.1. A Dogon* Village Showing the Concept of Man.
[Source: Chesi, 1978:115]

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* Dogon are a tribe in West Afrika.

though the built structure may be changing or evolving [Anderson, 1976]. In all cultures, these basic informal behavioural patterns may be taken for granted, but being a part of the primary level of any culture, their influence to make life a pleasure or a burden is powerful.

GENERIC PATTERN

Therefore: It appears that using the homestead, which seems to incorporate all the behavioural patterns within a given Afrikan culture, could be suitable in creating a familiar environment that pertains to the informal characteristics required within the VP facility.

                     If the homestead is used, the requirements of the whole life cycle inherent in the homestead should be incorporated into the VP facility.

People need the support of their own age group. They also need an understanding and verification of different biological stages in the cycle in order to develop as balanced individuals and feel a sense of self-pride. In incorporating the needs of each age group within the life cycle, it enables the community and its individuals to know how, when and where these individuals can participate in their development [Alexander, 1972]. In Figure 3.2 the life cycle characteristics and the type of space they require are defined.

STAGE	IMPORTANT SETTINGS	RITES OF PASSAGE
1. INFANT *Trust*	Home, crib, nursery, garden	Birth place, setting up the home . . . . out of the crib, making a place
2. YOUNG CHILD *Autonomy*	Own place, couple's realm, children's realm, commons, connected play	Walking, making a place, special birthday
3. CHILD *Initiative*	Play space, own place, common land, neighborhood, animals	First ventures in town . . . . joining
4. YOUNGSTER *Industry*	Children's home, school, own place, adventure play, club, community	Puberty rites, private entrance paying your way
5. YOUTH *Identity*	Cottage, teenage society, hostels, apprentice, town and region	Commencement, marriage, work, building
6. YOUNG ADULT *Intimacy*	Household, couple's realm, small work group, the family, network of learning	Birth of a child, creating social wealth . . building
7. ADULT *Generativity*	Work community, the family town hall, a room of one's own	Special birthday, gathering, change in work
8. OLD PERSON *Integrity*	Settled work, cottage, the family, independent regions	Death, funeral, grave sites

Figure 3.2.   Life Cycle.
[Source: Alexander, 1977:144]

SPATIAL PATTERNS

With regard to the criterion defined by the generic
patterns, some suggested zoning considerations intended to
create the appropriate space include:

o... placing complementary age groups adjacent to one
    another, e.g., the aged are good with young
    children. The psychological need for the old to
    sit and work while reminiscing over their lives,
    complements the curiosity of the age 6-7, who are
    willing to learn. Both age groups need to be close
    to cooking and nursing areas--intermixing both age
    groups with the active age groups in the community;
    youth, young adults, adults (see Figure 3.3);

o... making areas where all realms meet into a meeting ground
    for communal activities; i.e., meetings, dances,
    etc. A lot of seating, which is important for
    viewing the activities, needs to be provided for.
    These areas should include cooking spaces, working
    areas, gardening and child care facilities, to
    accommodate the different community activities that
    come with VPP activities;

o... providing spatial clusters that allow the same age
    groups to mix. Clusters to accommodate 6 > 12.
    The group sizes have been considered the ideal size
    for effective communication [Hall, 1981].

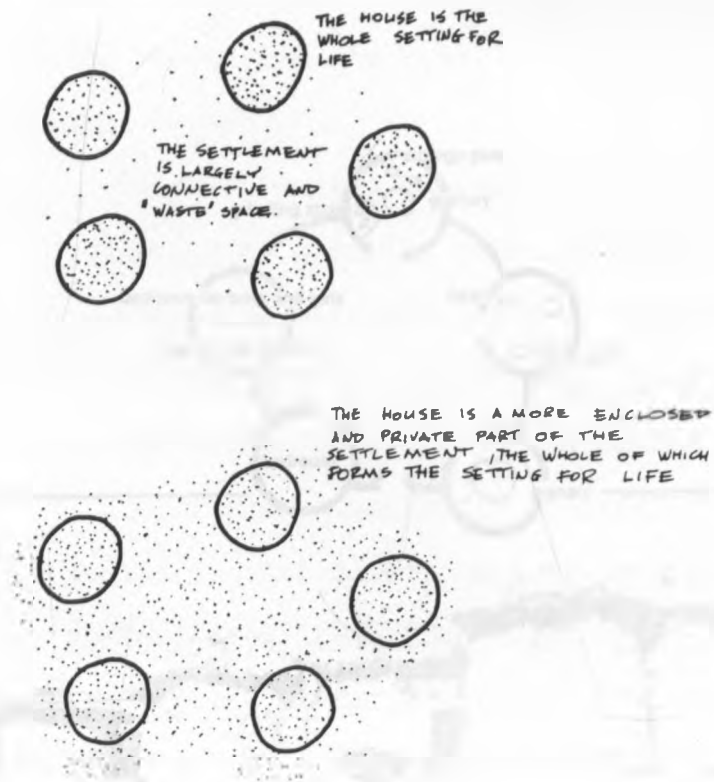ENVIRONMENTAL PATTERN II: THE VP IS A LOW-COST PROGRAMME

In order for the VP to be affordable to its communities,
the VP should plan on reducing cost through effectively use
of a combination of indoor and outdoor spaces for the programme
curricula.

Afrikan communities are usually subsistence communities
which are closely linked to their environments. They often
consider the outdoors as a part of the indoor space. Most
Afrikan communities are going through a time of change,
caught between old mythical values and new physical values.
Rapaport describes the situation as a "pre-industrial" state.
Pre-industrial* communities regard "man and nature . . . in a
state of balance, and man regards himself as responsible to
God for nature and the earth and as a steward and custodian
of nature" [Rapaport, 1969:75]. The effect of these beliefs
has influenced the homestead (see Figures 3.3 and 3.4). The
additive formation is the approach which has often been taken
by the communities above. The Additive formation is where
the house is the more enclosed and private part of the settlement,
while the whole formation makes the setting for life.

_____

*   Pre-industrial: a greater, though still limited, number
        of building types, more individual variation of the
        model, built by tradesmen. [Rapaport, 1969]

THE HOUSE IS THE WHOLE SETTING FOR LIFE

THE SETTLEMENT IS LARGELY CONNECTIVE AND 'WASTE' SPACE.

THE HOUSE IS A MORE ENCLOSED AND PRIVATE PART OF THE SETTLEMENT, THE WHOLE OF WHICH FORMS THE SETTING FOR LIFE

There have generally been two traditions of concentrated settlement. In one the whole settlement has been considered as the setting for life, and the dwelling merely as a more private, enclosed, and sheltered part of the living realm. In the other the dwelling has essentially been regarded as the total setting for life, and the settlement, whether village or city, as connective tissue, almost "waste" space to be traversed, and secondary in nature. This distinction is stated here in extreme form and is greatly simplified. Between the two types described is a whole range with differing amounts of use of the outside space—but the general distinction does hold.

Figure 3.3. Two-House Settlement Systems
[Source: Rapaport 1969:71]
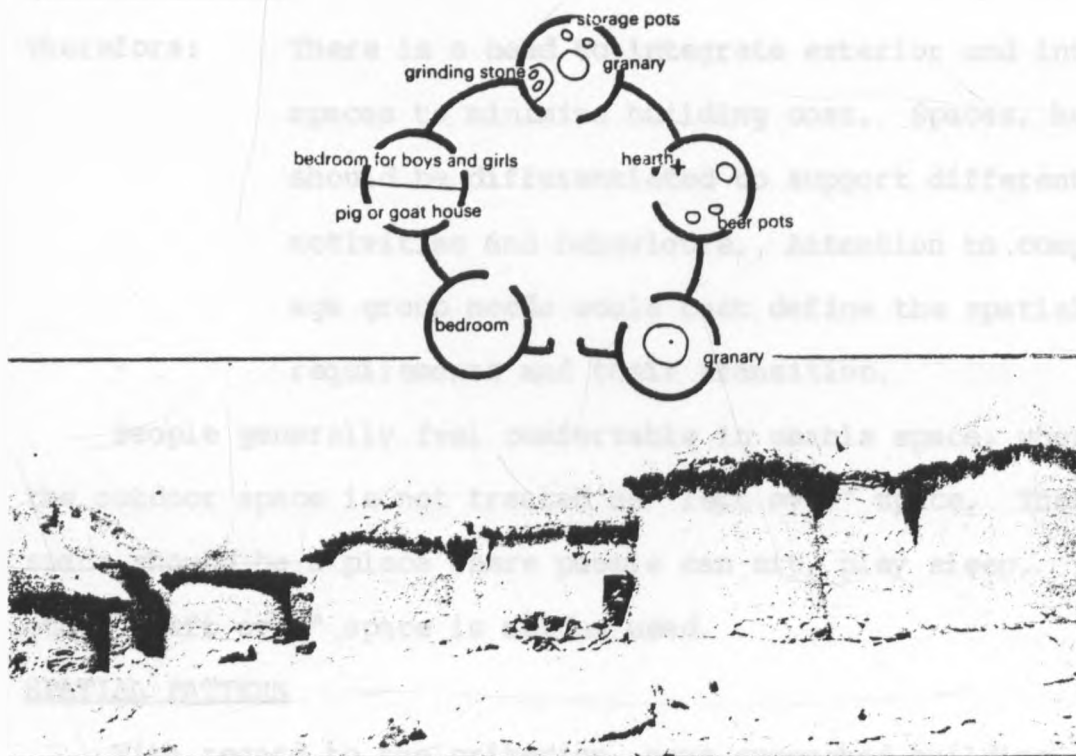
21 *Plan of Mesakin house, Nuba mountains, southern Sudan, about 1945.* Young unmarried girls or boys slept on a raised mud platform in one half of the pigsty. A small round circular hole halfway up the wall gave access to this sleeping platform.

Figure 3.4.   Plan of Mesakin House, Nuba Mountains.
             [Source: Denyer, 1978:12]

In Afrika the functional use of the outdoor space of the additive formation is partly due to the long dry periods. During these periods most activities were carried out in a "domestic space" surrounded by a low wall to protect from the winds and under the shade of a tree.

GENERIC PATTERN

Therefore: There is a need to integrate exterior and interior spaces to minimize building cost. Spaces, however, should be differentiated to support different activities and behaviours. Attention to complementary age group needs would best define the spatial requirements and their transition.

People generally feel comfortable in usable space, whereby the outdoor space is not treated as "left over" space. The space should be a place where people can sit, play sleep, etc. "Left over" space is seldom used.

SPATIAL PATTERN

With regard to the criterion, some suggested building considerations to create appropriate space use include:

o... designing the facility as a kind of thoroughfare to invite loitering and curiosity in order to draw the community together;

o... defining the shape of the outdoor space with some

degree of enclosure using buildings, vegetation,

shaded walls to help with the formation;

o... covering areas such that light can penetrate from

two sides, so as to remove the shadow on individuals

and therefore encourage freer interaction, because

the expressions of those interacting are clearly seen;

o... connecting indoor spaces to the outdoor through the

use of paths, terraces and steps at the edge of the

building. This encourages ambiguity of the

boundaries so that the division between the end of

the building and the beginning of the earth is

indistinguishable.

ENVIRONMENTAL PATTERN III: THE VILLAGE POLYTECHNIC IDEOLOGY
IS SELF-RELIANCE

For the self-reliant concept to succeed, there has to be
innovation. Innovation can either be enhanced or discouraged
by the immediate environment. In creating a familiar
environment innovation increases.

The appropriate environment for High Context cultures,
in which intense transactions play an important part in every
day life, is an enclosed space that separates the high
involvement and activity within public spaces (the public
domain) from the familiar setting of the intimate domain of
the home, office or eating place. The intimate domain needs

to have a characteristic of freedom and openness, like the courtyard, for example.

People within High Context cultures, when interacting, expect a lot more from one another in terms of physical contact and attention. More importance is placed on finishing a transaction than on scheduled transactions.* The bond created in this intense participation of High Context people creates an immediate distinction between the insider and outsider. Recognition and respect for this cohesive activity was inclusive in the village and homestead setting. Denyer describes these settings:

> The village was conceived as a group of people not buildings, and the buildings were the physical expression of the social structure of the people . . . . [Denyer, 1968:60]

and was consciously planned so. She goes on to say that

> the territorial boundaries have no meaning without the invisible and social force recognized by the inhabitants [Denyer, 1968:60].

The link between behavior and environment has generally been accepted as two fold; Rapaport [1969:16] gives the two as:

> . . . first, in the sense that an understanding of behavior patterns, including desires, motivation and feelings, is essential to the understanding of form, since built form is the physical embodiment of these patterns and second in the sense that forms, once built, affect behavior and the way of life.

---

* A finished transaction has no time limit; it ends when it naturally ends; whereas a scheduled transaction is limited by time.

Hall [1984] in his study of native Americans in a learning environment observed two important aspects: 1) the teacher set the pattern of the classroom and 2) once the children were familiar with the patterns they settled down to learn. This therefore reconfirms the need for familiar patterns as the consistent element in the physical environment.

Hall [1981] further suggests that the nervous system works on negative stimuli. In order for the brain to construct meaning, the brain has to "perceive and adjust everything in terms of context" [Hall, 1981:44]. In this respect familiarizing the environment provides the context to which new elements can be incorporated. The result being that alternatives are perceived in relation to their expected environment and innovation can occur.

GENERIC PATTERN

Therefore: The VP facility should provide activity pockets
               of open spaces for intense interaction and private
               spaces for privacy when required. Behavior is
               goal directed and to enable goal achievement the
               issue of motivation becomes important to designers;
               motivation here is defined as "the process of
               arousing action, sustaining activity in progress and
               regulating the pattern of activity" [Young, 1955:].

Most instructors who would be teaching in the VP facility would have generally come from a formal education

experience. If these instructors are put in a formal setting
they would immediately take up formal patterns. It would
be important to remove these formal signs (unless they are
for a purpose) so that new patterns would encourage the
instructors to find new methods and approaches to and within
the new environment, further influencing the trainees.[*]
However, if the spaces within the facility are to be the most
effective, instructors should attend training sessions to
assess themselves, so they will know how to adapt their ideas
and techniques to the apprentice-type programme and
environment.[**] The instructors ultimately hold the responsibility
for creating the character of the polytechnic [Freeman, 1977].

SPATIAL PATTERNS

With regard to the criterion defined by the generic
pattern, some suggested construction considerations to create
the appropriate space include:

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[*]   An observer, Mr. Paul Fordham, Dean of Adult Studies,
        University of South Hampton, noticed that the Village
        Polytechnics with local materials tended to have more
        creative trainees, possibly as a result of their
        being in a familiar environment.

[**]   Programmes to adapt educational ideas and techniques
        to new programmes like the VPP were encouraged (or
        considered) at the Kericho Conference of 1966 by
        Mr. Kyale Mwendwa, then the chief education officer.
        Today the Ministry of Social and Cultural Studies
        sponsors local instructions to these programmes [Eileen
        Opoti, personal communication with the author].

o... that the planning and construction should take an
evolutionary approach to complement the slow transition
of community development; defining a new image
characteristic of important and familiar settings
(i.e., the homestead) for the VP and its community
[Alexander, 1970; Hall, 1981, 1984; Lang et al.,
1974; Rapaport, 1969];

o... that the facility plans should be loose so that the
instructors, trainees and builders from the
community have a chance to contribute in creating
the physical structures;

o... that the physical facility could enhance motivation
through the texture and use of local materials that
have a life--a beginning and an end--a concept
which human beings can psychologically identify
with and be stimulated by.

COMMUNICATION PATTERN I: VPs ARE TRYING TO BUILD INTERDEPENDENT
COMMUNITIES

In order for the VP to facilitate the self-reliance
concept--reviving old traditional values--of communal work
and interdependency--and to transform communities to fit the
new technical situation, it should inherit the multi-activity
time system that already exists in these communities for
defining behaviour in a new situation.

The primary level of culture in Afrikan communities was based on informal patterns. The learning process was defined according to age-group and was achieved through observation and live examples.

The pre-programming and knowledge of the past were subconsciously and actively ingrained in an individual from the time he was born. The knowledge of what to do, where, when, and how, in what situation and cultural context, were knitted into the growing experience of an individual. The informal method of learning involves doing more than one thing at a time (multi-activity) and includes a high level of mental involvement, thus observing polychronic* charac-teristics whereby many different activities are done by several different people at one time (see Figure 3.5).

Hall [1984:198] further suggests that the informal patterns learned have "an incredibly fluid, organic quality. . .as though the personal envelope, which normally separates people, could be expanded so that when things go well with others, we are for the moment a single organism."

The High Context communities did everything to encourage conformity based on socio-cultural requirements to keep that "single organism" alive, tying the individual to the group see Figure 3.8).

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* Polychronic time and monochronic time represent two
   variant solutions to the use of both time and space
   as organizing frames for activities (see Appendix III).

GENERIC PATTERN

Therefore: The VP programmes, the facility, and the users need

to be geared towards the enhancement of inter-

relationships in the social structure and physical

environment. In so doing, the situational environment

could possibly encourage participation as well as

provide the feedback which the VP needs to be

effective.

Hall mentions that: "People generally learn in Gestalts -
complete units - which are the contexts in a situation and can
be recalled as wholes" [Hall, 1981:131]. The best known way
to encourage learning instead of teaching, is based on the master-
apprentice relationship, where students learn not only from the
master, but also through helping one another.

SPATIAL PATTERNS

With regard to the criterion defined by the generic
patterns, some suggested zonal considerations to create the
space include:

o... two levels of clustering for small work groups and

larger gatherings. These clusters should also

Figure 3.5. An Example of Multi Activity - An Adult Watching Over Everything. [Source: Struik, 1980:20]

accommodate recreational activities, which are

important at this age, for character development;

o... a mix of instruction and manual jobs, desk jobs,

craft jobs, selling and so forth. The jobs and

instruction should be grouped together according to

how they function together throughout the VP.

These job activities may help break the barrier

between trainees and instructors, and between the

genders--make men and women understand the requirements

of the opposite sex, and be able to provide for them;

o... a communal space to tie all the individual workshops

and activities together, to create a sense of

togetherness within the individual subjects;

o... allow trainees to play an active role in the VP

activities, as well as to feel free to seek advice

and interact with adults for further knowledge on social

roles and disciplines;

o... having offices and work spaces half open to other work

groups, i.e. comfortable sitting space as one enters

the door, with the actual work space further away.

COMMUNICATION PATTERN II: THE VPP IS A YOUTH TRAINING PROGRAMME.

The VP facility should be planned to support trainees

from age 16 and over. The VP aims at making the trainees

sensitive to their communities. Since the VPP was established

for this age group--primary school leavers--the facility
would best take on a characteristic of a mini-community to
help build this sensitivity.

Afrikan cultures recognize the complications and sensitivity
of the adolescent child in the passage from childhood to
adulthood. Rituals and rites were performed to assist an
individual to know when one role ends and a new one begins.

Within a High Context culture, a lot of time is spent on
preprogramming (the teaching of culture values and expectations);
but once social norms and expectations are structured, the
non-verbal questions get a faster, more effective response from
the individual or community. However, if the preprogramming
is not fully established, then a breakdown of communication
becomes inevitable [Hall, 1981]. Preprogramming took many
forms in the Afrikan culture. The process always considered
the psychological state of the individuals at each stage.
Among most Afrikan cultures, preprogramming for the adolescent
often took the form of music, song and dance. The logic
behind this approach was based on the psychological need of
this age group. The need to work together, compete, and
prove their worth in a healthy atmosphere and finally to
discipline and appreciate their bodies which would be going
through a series of chemical changes. The dances, music, and
song were usually vigorous, energetic, and often sensuous, to
complement the chemical changes (see Figure 3.6).

The art forms were often to express the recognition and awareness of the actual change. Due to its sensitivity to physical change, this age group was always under the supervision of a knowledgeable, gifted adult, who was highly ... the psychological preparation of this age group. At this point an individual could face his new role and responsibility as an adult.

Figure 3.6.   Akamba Dancers.
            [Source: (Fedders and) Salvadori, 1982:114]

The art forms were often to express the recognition and awareness of the sexual change. Due to its sensitivity to physical change, this age group was always under the supervision of a knowledgeable, gifted adult, who was highly respected by the community. A major ritual was often performed to end the psychological preparation of this age group. At this point an individual could face his new role and responsibility as an adult.

GENERIC PATTERN

Therefore: The VP facility should take on a characteristic of a mini-community, combined with the "thoroughfare" atmosphere. A miniature work community would acknowledge the trainees age group. An age group which involves the passage between childhood and adulthood. An atmosphere of group activities in a community feeling free to observe, give suggestions, or wholly participate with the activities. The trainees would then feel as part of the community, and be able to assess their own worth.

The pattern further supports the "market place" concept of Communication Pattern III, which complements the adolescent stage of development, a time when teenagers prefer to make their own groups, as well as examine the adult world.

SPATIAL PATTERNS

With regard to the criterion defined by the generic patterns, some suggested building considerations to create the appropriate space include:

o... spaces that are adaptable, to encourage trainees to form their activity groups. The spaces should support behavioural activities characteristic of the age group; for example, recreational activities must be given more attention, since these activities will greatly contribute to the trainees' confidence and character;

o... a facility with spaces for trainees to practice their apprentice skills and training, e.g., have furniture and equipment that is easily moveable; provide shops for trainees to sell their own products, as well as learn about salesmanship. The nutritional department may change into a restaurant for the community, which would also help the trainees to learn managerial skills;

o... spaces that should correspond to important natural social groups and be connected by narrow extension so as to allow light to enter in and increase visibility. Good visibility encourages people to communicate better, because one can see the others' expressions to confirm their understanding;

o... spaces for activities should be kept small.

COMMUNICATION PATTERN III: THE VILLAGE POLYTECHNIC PROGRAMME
AIMS AT IMPROVING THE QUALITY OF LIFE IN RURAL AREAS

The VP facility needs to be multi-purpose to accommodate
and invite community activities and to provide for the
multi-occupational nature of these communities. It should
take on the characteristics of a market place wherein Afrikan
cultures for the most part transact and communicate orally.
The market-place is where most local information is disseminated.
The communication is best made oral, considering a large
portion of these communities are illiterate.

The essence of High Context cultures is that of involvement
with one another. Work activities and art forms are all used
to create a communal cohesive unit, which is considered
important for the spiritual and physical survival of the
community. The reason behind this appears to be the belief
that no individual can contain a total awareness of society
[Ndeti, 1972], a fact which may also explain the need for
oral communication. The informal activities of loitering,
sitting, chatting and selling are characteristic of this
setting (see Figure 3.7).

Non-verbal communication plays an equally important role
in High Context cultures. Hall [1984] found that in non-verbal

human interaction, three main factors were apparent for

effective communication:

1) conventional distances were maintained with incredible

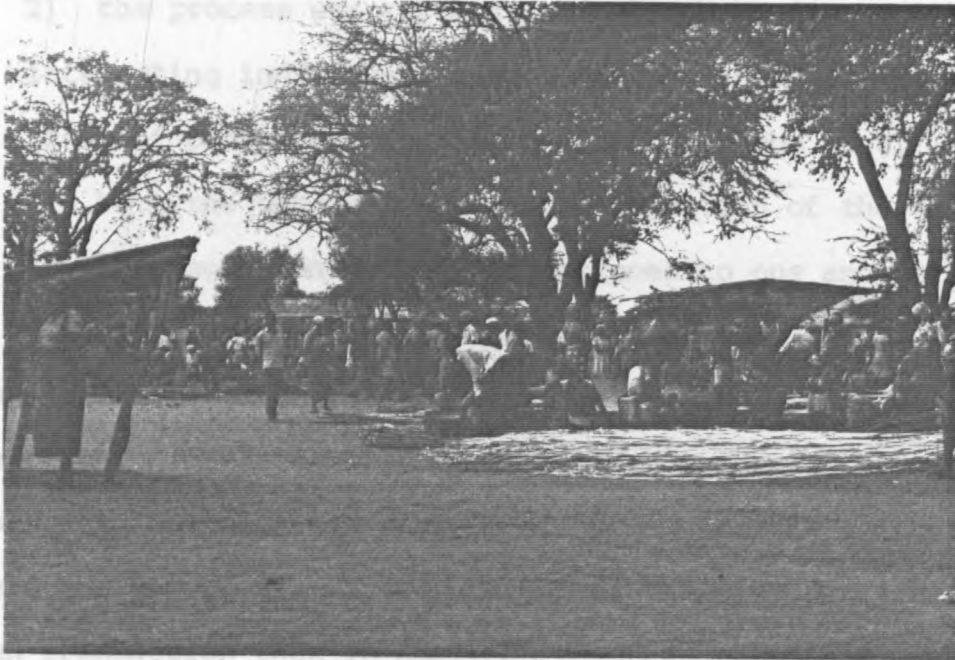accuracy;

2) the process

Figure 3.7 A Market Place in Ukambani.
         [Source: Collection of the author, 1983]

human interaction, three main factors were apparent for
effective communication:

   1) conventional distances were maintained with incredible
   accuracy;

   2) the process was rhythmic whereby the bodies of the
   interacting individuals respond to one another, like a
   group of people dancing together to a common tune;

   3) both the physical and mental attention of the
   interacting human beings were attuned to one another and
   functioned almost totally outside awareness.

If any of these three factors were broken, then there was a
breakdown in communication. Hall further suggests that this
unconscious character is more conscious in Afrikan cultures,
"where the people are more conscious of the microdetails of
human transaction than in American-European cultures" [Hall,
1984:154].

GENERIC PATTERN

Therefore: In order for the VPs to encourage more interaction
                with their communities, the facilities need to
                be partly able to contain a "market place
                characteristic," where information and people
                flow freely.

     The space should resemble a public out-door room--partly
closed, partly opened space with partial or full shading--i.e.,
canopy, roof, shade of tree.

SPATIAL PATTERNS

With regard to the criterion defined by the generic
patterns, some suggested construction considerations to create
the appropriate space include:

o... building columns without walls, or columns and
vegetation, or partial walls to sit on so as to
enhance a sense of openness;

o... making the outside edges of the structure a place with
volume to accommodate human activity--to sit, to
learn;

o... placing rooms so that they are shaded and open to
summer breezes, so that they face activities, and
are where people naturally pause and get
involved. [Alexander, 1977; How to Start a VP, 1971;
Ndeti, 1972]

IDENTITY PATTERN I: THE VP IS TO BE INEXPENSIVE AND APPLICABLE.

In the past, labour was part of the ceremony involved in
creating a place or artifact. Work was considered dignifying
and highly respected. The VP needs to re-encourage this
attitude to replace the need for money as a sole means to
giving a place social status.

The cultures and communities of concern discussed here
viewed life as wholistic, in that mutual compatibility of all
disciplines was important. Figure 3.8 demonstrates the wholistic

Figure 3.8. The Annual Ritual of Coating the Mosque with Earth, Mali. [Source: Dethier, 1981:66]

role labour played in construction of a structure of social importance. Song was often used to synchronize the work and strengthen group bond [Hall, 1981].

The art forms—music, dance and song—alongside labour were also used in the re-enactment of primordial order. In other words, art forms were used to keep in touch with one's existence.

The rhythmic characteristics of some art forms were a basis of unity and cohesion in these communities. Art forms played a role in rituals, initiations, character development, spiritual expression, and therapeutic treatment. The activities strengthen the bond between members of the community, social expectations and livelihood. The strength of rhythmic development in Afrikans may be as a result of what Schaefer describes:

> . . . rural Africans live largely in a world of sound - a world loaded with direct personal significance for the hearer - whereas the western European lives much more in a visual world which is on the whole indifferent to him. . . . Sounds lose much of this significance in western Europe, where man often develops, and must develop, a remarkable ability to disregard them. Whereas for Europeans, in general, "seeing is believing," for rural Africans reality seems to reside far more in what is heard and what is said. . . . Indeed, one is constrained to believe that the eye is regarded by many Africans less as a receiving organ than as an instrument of the will, the ear being the main receiving organ [Schaefer, 1977:11].

Rhythm has been defined by Hall as being ". . . the very essence of time, since equal intervals of time define a sequence of events as rhythmic of which synchronizing is a development in that sequence of events matched within the social activity environment" [Hall, 1984:153]. Hall further goes on to say

that rhythm is nature's way to communicate and co-exist. It is the core and binding force between all levels of nature, a powerful communication tool. The development of rhythm in interpersonal communication is the synchronizing of bodies and mind while interacting. Hall further elaborates on synchrony as a concept and suggests that:

1. The way in which people handle synchrony is both rooted in biology (bio-basic) and modified by culture.

2. Synchrony or lack of it is an indication of how things are going and can be an unconscious source of great tension when synchrony is low, absent, or of the wrong kind.

3. On a practical level, disturbances of synchrony can interfere with work and any group activity.

4. Music and dance, by extension transference, are looked upon as activities that are produced by artists and are independent of the audience. The data on synchrony strongly suggest that this is not so. The audience and artist are part of the same process. Synchrony has played a large role in the communication of African cultures. [Hall, 1981:79]

Figure 3.9 demonstrates Imenti* elders performing a ritual dance before giving judgement. The ritual may be a way to use synchrony as a link between the conscious level and the metaphysical [Hall, 1984]. The logic behind the spiritual development was to prepare elders to be at a level of consciousness whereby they would make fairer judgment.

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* The Imenti are a tribe located in the east central part of Kenya.

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Figure 3.9.   An Imenti Elder Dance.
              [Source: (Fedders and) Salvadori, 1982:130]

GENERIC PATTERNS

Therefore: The VP should encourage cooperative and group

activities, as well as communal, group and

individual expression. These activities seem to be

essential to build communal cohesion. Physical

work should be used as a cohesive force. The work

should be informalized so as to make the work

pleasurable, as is the case in the cultural

setting. The informalization of the work means

that workers/trainees are free to converse, sing,

move, laugh, etc.

Among most Afrikan cultures art forms are considered
inseparable from everyday life. The art form plays an
important part in cultural and personal identity [Ndeti,
1972]. The rhythm and the interpersonal synchrony appears to
be a major form of communication, a characteristic of High
Context cultures, which communicate mostly non-verbally. In
Low Context cultures art forms have little meaning [Hall, 1981],
the reason being that communication is verbal. The methods
of communication between the two types of culture implies
that spaces suitable for one culture may not be good for the
other.

SPATIAL PATTERNS

With regard to the criterion defined by the generic patterns, some suggested building and detail applications to create the appropriate space include:

o... that the facilities should be adaptable to provide places and pockets of space in which expressive activities, crafts, music, dance etc. can be either exhibited publicly, shared, or have some privacy if intimacy is required;

o... providing flexible space to incorporate incoming researched designs.* If the incoming designs are demonstrated in their relationship to VP developments and local technology, the designs are likely to be appreciated and used by the community. The other alternative is that the trainees can see which research designs are more successful by the response of the users--the community [Alexander, 1977; Hall, 1981; Ndeti, 1972; Schaefer, 1977];

o... provision of equipment and space that allow trainees the flexibility to demonstrate their skills, i.e. mat flooring, tapestry panels, reed

---

* The Appropriate Technology Research Station in Karen, Nairobi, along with UNESCO, carries out research on local technologies within the country. The objective of the station is to improve the quality of the technology so as to be applicable back within the rural communities, to improve their standard of living.

interior walls. In so doing, the trainees may be
in a position to assess their results and learn how
and what to improve. Furthermore, the community
can see and appreciate the aim of the VP, a reality
that may make members of the community willing to
invest their energy to make the VP grow.

IDENTITY PATTERN II: THE VP NEEDS TO BE IDENTIFIED FOR WHAT
IT IS: A COMMUNITY-RUN, YOUTH TRAINING PROGRAMME IN KENYA
WITH THE AIM OF IMPROVING THE QUALITY OF LIFE IN RURAL AREAS
BASED ON NON-FORMAL EDUCATIONAL IDEOLOGY

The VP needs to find combined physical symbols and
characteristics that define a VP as a group facility that is
unique to the area. The pattern language is a method of
collecting this data so that planners in the government,
working with local experts, are sensitized. The prototype
would include the social and cultural requirements for each
community. But the meaning given to the facility has to come
from the labour and expression of the community.

Afrikan cultures in the past used symbolic ornament to
define places of social and psychological significance which
further expressed the moral, pride, and solidarity of the
people. Among High Context cultures, it is hard to distinguish
between ornament and symbols. Ornamentation is usually

symbolic in identifying the existence of a community.* The
use and misuse of these symbolic forms spoke. The ornament
was used to communicate clearly the significance of a "place"
and further avoid any stress or embarrassment as a result of
ambiguity [Denyer, 1978] of the place. Although ornamentation
is an entity in itself, ornamentation was also used to
integrate all aspects of the environment into a whole. They
represented a unity-in-unity characteristic. Most Afrikan
communities still have ornamentation (the amount of symbolism
is not quite known), in places of intense social activity,
mainly bars and restaurants, where the informal characteristics
are still practiced. Figure 3.10 gives an example.

GENERIC PATTERN

Therefore: Ornamentation should be used to bring the element
               of informality into the VP facility. The environmental
               symbols representing the past should be incorporated
               to make the connection with the past. The ornamentation
               would bridge the gap and represent the change.
               Ornamentation is more flexible and adaptable to
               change since it does not affect family or social
               structure.

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*   Ornamentation was usually symbolic, but symbols
              were not always ornamental.

Figure 3.10. Ornament on a Club in Kitui.
              [Source: Collection of the Author, 1983]

Symbolic ornament may be placed within the facility of the VP, depending on the strength of its symbolic value. It may be in the form of texture, colour on the walls or plants and vegetation incorporated indoors and outdoors.

SPATIAL PATTERN

With regard to the criterion defined by the generic pattern, some suggested construction applications to place in the appropriate space include:

o... incorporating the ornament to identify the VP and community symbolically as one, as well as make the facility aesthetically pleasing; places of consideration for ornamentation are places such as floors, boundaries and edges, holes for ventilation, connecting doors, and outdoors;

o... ornamentation taking the characteristic of those found on homestead entrances, or entrances of other sacred, ceremonial, or community buildings, i.e., carved entrances;

o... placing ornamentation in common places and places where materials meet; other traditional places for ornament, are at points of stress like the apex of the roofs.

3.5.0. Summary

The combinations of patterns presented in this chapter
are only the beginning of defining a more effective learning
environment for the VP. The facility is defined more by
social spaces than strictly by the functional construction
requirements of the building. If these patterns are applied
the result may be that the VP will begin to lose the alienated
character inherited by the formal school. A more humane and
familiar environment may be created. The architectural
environment may better support the activities making the
users comfortable and willing to learn and to create. Below
there is a summary of all the Generic Patterns and Spatial
Patterns discussed in Chapter III.

ENVIRONMENTAL PATTERN I: The Village Polytechnic Programme is
based on a non-formal educational
ideology.

GENERIC PATTERN: .   should incorporate the homestead
behavioural patterns; should be
based on age cycle; should create a
familiar environment with informal
characteristics.

SPATIAL PATTERNS: .   Complementary age groups adjacent.

(Zonal)   .   Communal space where all the
different zones meet.

. Spatial clusters of same age group; clusters 6>12.

ENVIRONMENTAL PATTERN II:The VP is a low-cost programme (homestead concept).

GENERIC PATTERN: . Integrate exterior and interior spaces.

SPATIAL PATTERNS: . A thoroughfare facility.

(Building) . Create positive outdoor spaces by shaping them.

. Create ambiguous boundaries between outdoors and indoors.

ENVIRONMENTAL PATTERN III:The Village Polytechnic ideology is self-reliance.

GENERIC PATTERN: . Create experiential open spaces, activity pockets.

SPATIAL PATTERNS: . Gradual plan development.

(Construction) . Loose planning to allow for people's participation.

. Use of texture and light to create a motivating environment.

COMMUNICATION PATTERN I: The VPPs are trying to build interdependent communities.

GENERIC PATTERN: . Encourage social and physical inter-relationships.

SPATIAL PATTERNS: . Two types of clusters: small

(Zonal) groups, large gatherings.

. Instruction and jobs wholistically grouped.

. Use of communal space to bind wholistic groups.

COMMUNICATION PATTERN II:The VPP is a Youth Training program.

GENERIC PATTERN: . A microcommunity with all its functions--a real life environment.

SPATIAL PATTERNS: . Recreation spaces for trainees'
(Building) psychological and behavioural needs-- character development.

. Adaptable spaces for trainees' skill training and apprenticeship development.

COMMUNICATION PATTERN III:The VPP aims at improving the quality of life in rural areas.

GENERIC PATTERN: . Market place concept for communication exchange.

SPATIAL PATTERNS: . Define space with colour, partial
(Construction) walls, vegetation.

. Make walls useful, to accommodate human activity.

. Shade spaces, facing the breeze for ventilation.

IDENTITY PATTERN I: . The VP is to be inexpensive and applicable.

GENERIC PATTERN: .   The VP should encourage cooperative
                       and group activities.

SPATIAL PATTERNS: .   Multipurpose spaces for recreational
(Building)   groups and community social activities.

                   .   Demonstrative space for using local
                       technology introduced.

                   .   Realistic display and sales of
                       trainees' products.

IDENTITY PATTERN II:. The VP needs to be identified for
                       what it is: a community-run youth
                       training programme in Kenya with the
                       aim of improving the quality of life.

GENERIC PATTERN: .   Ornamentation used to bridge the gap
                       between old and new.

SPATIAL PATTERNS: .   Community identity through aesthetic
                       expression.

                   .   Use ornament familiar to community.

                   .   Place ornament in places of stress,
                       where materials meet, culturally
                       common places.

In the next chapter the spatial patterns developed from
a generic pattern will be applied to an example cultural
situation.

CHAPTER IV

APPROPRIATE DESIGN CRITERIA

FOR A VILLAGE POLYTECHNIC IN UKAMBANI

4.0.0. Introduction

The aim of this chapter is to demonstrate the application
of the pattern language approach to a case study situation in
Ukambani.

The process of creating an appropriate VP facility in
Ukambani consists of elaborating on and applying the generic
patterns defined in the previous chapter. The resulting set
of patterns will describe a VP facility that is unique to
this region.

This chapter is divided into three sections:

Section 4.1   is a description of the climate and history of

the Ukambani region and of the cultural

development and socio-cultural values of the

Akamba people who inhabit the region. A series

of symbolic patterns which represent the

Akamba socio-cultural values will result.

These will be followed by a series of

"climatic patterns" (patterns generated by

climate) that define the environmental context

within which an Akamba VP must exist.

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Section 4.2   is the identification of VP educational
               patterns that are relevant to the Ukambani
               region and the Akamba people. One example of
               an educational pattern will be used to
               illustrate this section of the process.

Section 4.3   illustrates the synthesizing of the array of
               patterns relevant to the Ukambani region. An
               example is given of the type of space that
               could result from the application of the
               pattern language process.

OBJECTIVES OF THE VP
Location Specific
Low Cost
Improve the Standard of Living

CASE STUDY
VP in Ukambani

SET CRITERIA	**BACKGROUND INFORMATION**	**CONSTRAINT**
From VPP	Social Values	Climate
Local Materials	of the Akamba	Resources
Apprenticeship		Technology

ENVIRONMENTAL PATTERN II
A Thoroughfare Facility
Create Positive Outdoor Spaces by Shaping Them
Create Ambiguous Boundaries Between Indoors and Outdoors

SUMMARY
The Combination of Symbolic Patterns and
VP Low Cost Educational Patterns
Example of Application

Figure 4.1. The Process of Creating an Appropriate VP.

This figure is a diagram of the process, illustrated in this
chapter, of creating a VP facility for the Akamba.

The following is a list of pattern types found in this chapter.
The Generic Pattern is the design criterion, the foundation
        on which all spatial patterns are formed. The
        objective of this pattern is to suggest the most
        effective way to meet the VP ideology requirements.
The Spatial Patterns suggest the way design may be implemented
        physically. They act as guidelines to implement the
        localized patterns.
The Localized Patterns are created based on cultural values
        and climate conditions, available technology and
        materials. The localized patterns are divided into two
        categories: symbolic patterns and environmental patterns.
Symbolic Patterns are based on socio-cultural values and aim
        at creating a psychologically sound environment.
Climatic Patterns are based on climate conditions and aim
        at creating physiologically comfortable spaces.

4.1.0. The Case Study - The Akamba Heritage
4.1.1. The Climate and Historical Background

        The Akamba are a group of people situated in the South,
Central part of Kenya, in an area called Ukambani. Ukambani
is divided up into two districts, Masaku and Kitui. Both are
districts within the Eastern Province of Kenya (see Figure 4.2).
Most of Ukambani lies within the Savaanah zone, which
suggests there are two rainy seasons, March to May (the long

rains) and October to December (the short rains). On an
average, the annual rainfall is less than 30 inches, thus
defining the region as being a part of the drought-stricken
area in Kenya [Ndeti, 1972].

In historical terms anthropologists have no general
agreement on where the Akamba originated from. [Fedders and
Salvadori, 1982; Lindblom, 1920; Ndeti, 1972; Nzioki, 1982]
However, it is generally accepted according to tradition and
research that the Akamba had settled around Mt. Kilimanjaro
approximately in the 1400's, maybe earlier. Nevertheless,
due to their migratory lifestyle of hunting wild animals and
gathering fruit, they continued to move toward the north
until the early 19th century, when they began to settle in
the area they live in today. According to tradition [Fedders
and Salvadori, 1982], the migrations were influenced by two
factors: drought conditions and the tribal conflicts with
the Maasai.

The Akamba culture may be described as having been in a
"state of flux" (see Figure 4.3).

During the 19th century, the nomadic, pastoral life pattern
among the Akamba changed to mixed farming. As the population
began to increase, the clan (Mbae) system began to develop
to preserve natural resources [Fedders and Salvadori, 1982].
Along with this change trading began, firstly within the

Map I   The position of Ukambani in East Africa.

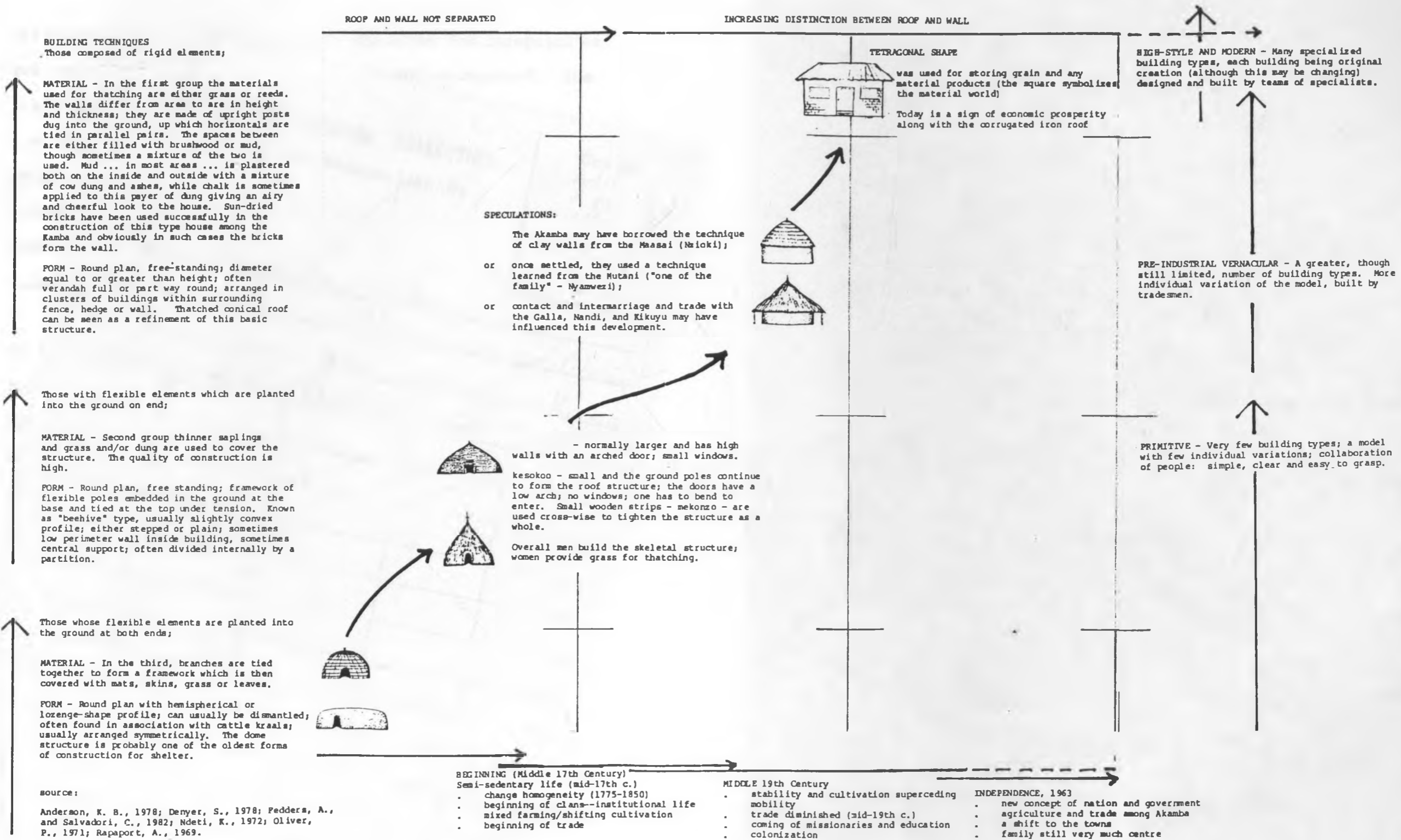Figure 4.2.   Map of Kenya and the Position of Ukambani.

ROOF AND WALL NOT SEPARATED → INCREASING DISTINCTION BETWEEN ROOF AND WALL

BUILDING TECHNIQUES
Those composed of rigid elements;

MATERIAL - In the first group the materials used for thatching are either grass or reeds. The walls differ from area to area in height and thickness; they are made of upright posts dug into the ground, up which horizontals are tied in parallel pairs. The spaces between are either filled with brushwood or mud, though sometimes a mixture of the two is used. Mud ... in most areas ... is plastered both on the inside and outside with a mixture of cow dung and ashes, while chalk is sometimes applied to this layer of dung giving an airy and cheerful look to the house. Sun-dried bricks have been used successfully in the construction of this type house among the Kamba and obviously in such cases the bricks form the wall.

FORM - Round plan, free-standing; diameter equal to or greater than height; often verandah full or part way round; arranged in clusters of buildings within surrounding fence, hedge or wall. Thatched conical roof can be seen as a refinement of this basic structure.

Those with flexible elements which are planted into the ground on end;

MATERIAL - Second group thinner saplings and grass and/or dung are used to cover the structure. The quality of construction is high.

FORM - Round plan, free standing; framework of flexible poles embedded in the ground at the base and tied at the top under tension. Known as "beehive" type, usually slightly convex profile; either stepped or plain; sometimes low perimeter wall inside building, sometimes central support; often divided internally by a partition.

Those whose flexible elements are planted into the ground at both ends;

MATERIAL - In the third, branches are tied together to form a framework which is then covered with mats, skins, grass or leaves.

FORM - Round plan with hemispherical or lozenge-shape profile; can usually be dismantled; often found in association with cattle kraals; usually arranged symmetrically. The dome structure is probably one of the oldest forms of construction for shelter.

source:

Anderson, K. B., 1978; Denyer, S., 1978; Pedders, A., and Salvadori, C., 1982; Ndeti, K., 1972; Oliver, P., 1971; Rapaport, A., 1969.

TETRAGONAL SHAPE
was used for storing grain and any material products (the square symbolizes the material world)

Today is a sign of economic prosperity along with the corrugated iron roof

SPECULATIONS:

The Akamba may have borrowed the technique of clay walls from the Maasai (Naioki);

or once settled, they used a technique learned from the Mutani ("one of the family" - Nyamwezi);

or contact and intermarriage and trade with the Galla, Nandi, and Kikuyu may have influenced this development.

- normally larger and has high walls with an arched door; small windows.

kesokoo - small and the ground poles continue to form the roof structure; the doors have a low arch; no windows; one has to bend to enter. Small wooden strips - mekonzo - are used cross-wise to tighten the structure as a whole.

Overall men build the skeletal structure; women provide grass for thatching.

HIGH-STYLE AND MODERN - Many specialized building types, each building being original creation (although this may be changing) designed and built by teams of specialists.

PRE-INDUSTRIAL VERNACULAR - A greater, though still limited, number of building types. More individual variation of the model, built by tradesmen.

PRIMITIVE - Very few building types; a model with few individual variations; collaboration of people: simple, clear and easy to grasp.

BEGINNING (Middle 17th Century)
Semi-sedentary life (mid-17th c.)
. change homogeneity (1775-1850)
. beginning of clans--institutional life
. mixed farming/shifting cultivation
. beginning of trade

MIDDLE 19th Century
. stability and cultivation superceding mobility
. trade diminished (mid-19th c.)
. coming of missionaries and education
. colonization

INDEPENDENCE, 1963
. new concept of nation and government
. agriculture and trade among Akamba
. a shift to the towns
. family still very much centre

Figure 4.3. The Development of the Built Form in Relation to the Akamba Life Style

different clans, and later on with the Arabs and Europeans at the coast, for which the Akamba became well recognized. The trade had some influence on the Akamba arts and crafts, i.e. the use of beads to decorate. Today the Akamba are still mixed farmers. They are well recognized for their crafts in the tourist trade; they are also recognized for their dancing ability and entertainment.

4.1.2. Akamba Building and Cultural Development

In Figure 4.3, the development of the Akamba life style is illustrated as having been consistent with their choice of building techniques and materials. The Akamba building appears to be an example of vernacular architecture, which depends more on the availability of technology and resources and on the way of life of the culture than on chronology. Therefore it appears that the introduce any technological skills of new material development among the Akamba, the change would depend on the availability of alternatives acceptable to the community, rather than on planning new material use and technical skills outside the community [Rapaport, 1969]. The choice of materials and form seem to have been well-suited to the Savaanah climate, which has temperatures of approximately 25° to 30° C during the day and 12° to 16° C during the night. The Akamba used grass thatch on the roofs and mud walls. Both materials are good for expanding and contracting in extreme weather conditions.

Another interesting feature illustrated in Figure 4.3 is
that the Akamba appear to be willing to learn new building
techniques (that may assist them in their changing life-style).
For example the backing of mud on walls may have been learned
from the Maasai or Nyamwezi. The Akamba had a lot of contact
with both tribes. However, the choice of form seems to be
consistent with social values. For example, the Akamba have
inherited the rectangular building and used it to symbolize
education.

4.1.3. Socio-Cultural Values Within Akamba Culture

In the eyes of the traditional Akamba existing is a fact
of life that does not need to be questioned or explained
[Ndeti, 1972]. What is of utmost cultural importance is
keeping in touch with the beginning of time, giving respect
to creation and its creator. As a result, the influence of
archetypes on Akamba life is significant. Archetypes are
symbols that evolved with the beginning of time. Their
influence is visible in the·formation of the homestead and in
the main symbolic features that continuously express the
re-enactment of the primordial order, founded within the
Akamba myth of the beginning* (see Appendix IV). Nevertheless
one begins to realize that changing a part of the cultural
structure would mean changing the entire network [Oliver, 1971],

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* The myth represents the natural evolution of creation.

a factor which should be a major consideration when introducing a new social--or, in this case, educational--plan.

The use of symbols to express the multi-dimensionality of the rites, customs, etc., within Afrikan cultures is not immediately noticeable in most villages. Akamba villages are no exception [Denyer, 1978]. Symbols are used in the simplest of structures, the hut and the furniture, and are expressed with the simplest medium, i.e., vegetation. Though the symbols may have changed in appearance in recent times, they still communicate meaning to today's users. They are relevant developed symbols.

Chesi describes Afrikan architecture as one that

. . . not only incorporated all the basic elements which involved innumerable mythical and symbolic systems, as well as the spheres of power of various age groups, the economic and political systems, and overlapping of new religions, but it also reflected even the smallest unit of Afrikan society, such as the family. [1978:97]

The mosie (homestead) stands as a good example to illustrate the comprehensiveness described by Chesi (see Figure 4.4). The homestead experience is multi-dimensional. It is spiritual, biological and physical. The term mosie literally means "family" and "home;" it is very different from the word numba, which means "house." The house is usually represented by the rectangular building symbolizing education and prestige, a very simplistic concept, compared with the homestead, which represents life.

(The concept of the homestead will be further elaborated in the following section.)

4.1.4. The Development of Symbolic Patterns

The logic behind reviewing the symbolic meanings and creating patterns is based on two reasons:

First,   archetypes are an important part of Akamba life;[*]

second,   with reference to Hall's [1983] definition,
          "that the use or misuse of symbols speaks," one
          should be aware of what one is non-verbally
          communicating.

Figures 4.4, 4.5, and 4.6 will illustrate the symbolism within the homestead which constitutes the genre-de-vie of the Akamba culture. Figures 4.7, 4.8, 4.9, and 4.10 further demonstrate a few detailed symbols that constitute the homestead concept. Finally, the end of this section will conclude with an array of patterns that give meaning to the symbols and demonstrate how they can be translated into physical form.

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[*]   Archetypes are symbols that were created with the
       beginning of time/culture. These symbols define an
       associated activity which is continually practiced
       thereafter. These symbols are the basis of the
       situational frames.
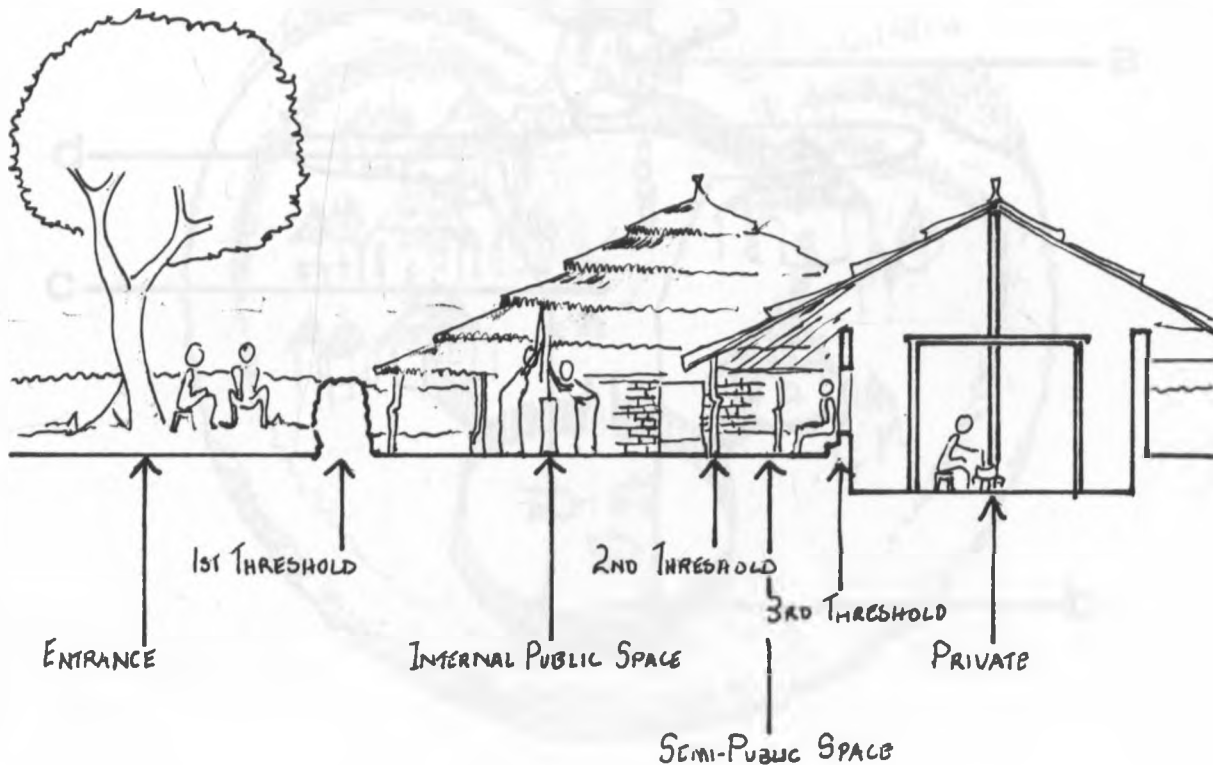
Figure 4.4. The Homestead.

Definition   The Homestead symbolizes the cosmos - the
                 multi-dimensions of human life - the physical
                 and the spiritual.

The homestead had an entire array of spaces, each of which
used symbols to define the activity. There were clear
thresholds that defined where and activity started and when
it ended.

Solution: The use of clear, yet subtle thresholds to
                 frame activities.
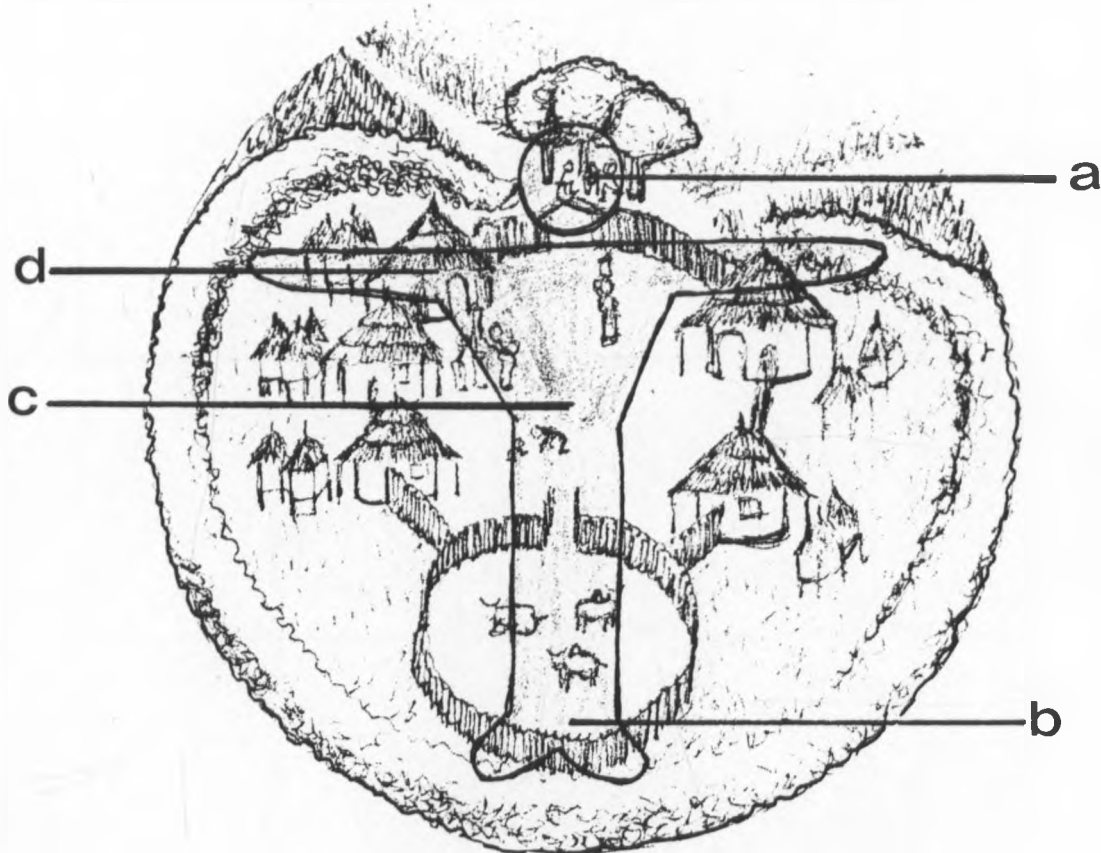
a Thome/head

The place that defines the beginning and the end.

It is also the place the symbolizes knownedge.

The important symbol is the tree, sometimes described as the "tree of life." The thome acted as the place that secured the homestead both physically and spiritually [Ndeti, 1972].

b Herd of cows and goats/feet

The foundation of livelihood and economic transactions.

The choice

Goats and cows, the use or misuse of one animal or the other or none, signified different transactions; i.e., cows were used for dowry ; a hundred goats was the equivalent.

The color of goat slaughtered after a child was born symbolized the child's sex [Penwill, 1979].

c Stomach/main compound

The heart of activity

The compound was usually empty for domestic chores, but well protedted from strong winds and any harmful interference.

The women and children used this area, and they needed to be protected, since they were the future. [Lindblom, 1920; Ndeti, 1972; Penwill, 1979]

d Arms/food and Provision

The women and children were considered to be the labour force of the economic structure of the homestead.

The women were usually given a piece of land which they tended; they stored the food in small storage huts, to feed the family (extended family was usually included). [Anderson, 1978].

Figure 4.5. The Mosie - Symbolic of the Cosmos.

Diagram labels: AGE-CYCLE, MBAE, MOSIE (Basic Unit), STRUCTURE, FUNCTION, KINSHIP; positions a, b, c, d, e, f, g, h, i, j, k, l.

a MOSIE (Basic Unit)	b 3 Gamic - Relationships	c	d
Meaning: home, family (homestead) Nos: few several hundred Reason for existence: Learning to live with other people and to live in one's own environment	monogamy polygyny extended family	represents human knowledge, the triniterian concept holy alliance through ritual to live clean life in the totality of the Mosie	.stablizing factor economic alliance includes basic institutions vital to human development and survival
e MBAE	f Sympatric Group	g	h
Meaning: clan Nos: (thousand several thousand Reason for existence: Symdiatric groups function as the means of regulating and utilizing the environmental resources and are adapted and applied knowledge from mosie	major minor based on a hero; mythical father characterized by totem (sometimes has religious aura)	Paradigmatic character of Akamba existence based on codes and meaning of social life control among its members benefactor - age group assist one another decisions binding and final	an ecological system no territorial claim i function of existence based on characterization of the founder ii or historical means of livelihood
i AGE-CYCLE	j Life-Cycle	k	l
Meaning: a complete circle start as a child and end as one Nos: Whole tribe Reason for existence: Ordering of chaotic reality The symbols not only establish a reality from chaos, but also give a functional meaning based on human experience	biological cultural koiea (naming system)	Conceived for the power and capacity for the moizamba to participate fully in Akamba life (culture) therefore Akamba humanization	the function that one must discharge in ones life-span for his own and others welfare

Figure 4.6. The Mosie as a Social Structure.
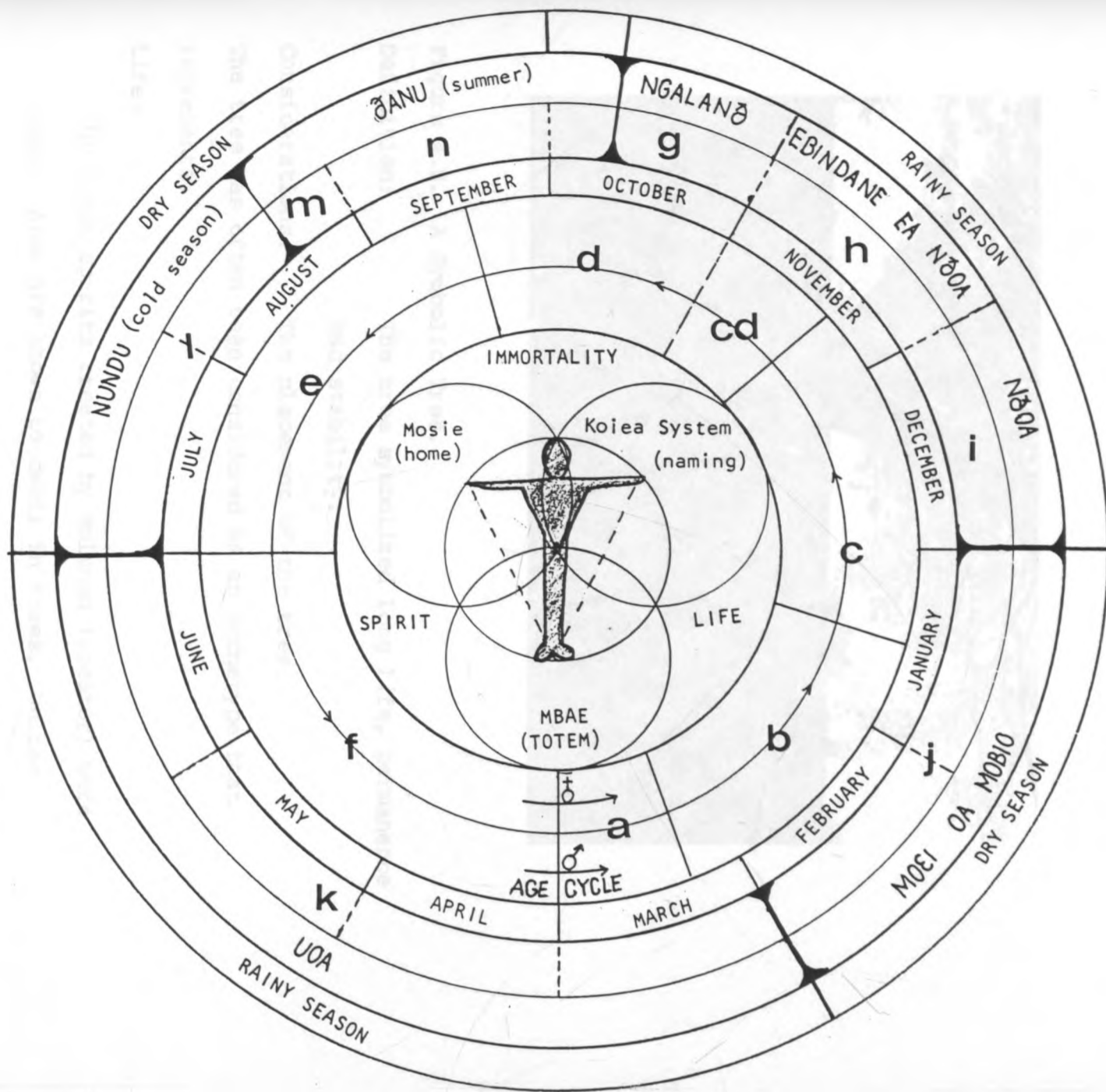
Figure 4.7. Concept of Mondo — The Foundation of Akamba Culture.

age cycle

a OKENGE	b KANA KO KELETU	c KELETO	cd MOEETU	d MOEETU OA OAOI	e KEPETI KIA MOIKA	f MUKANGO
6 months-2 years	3-6 years	7-13 years	14-16 years	17-28 years	29-49 years	50 years and over
about 2 years duration	3 years duration	6 years duration	2 year duration	11 years duration	20 years duration	
	KANA KA KABESI	KEBESE	KEBESE	MOANAKE	NOELE	MUTUMEA

climate and rituals

g sacred period waiting for rain NGALAND (only women worship)

Belief women have the sexual power to mediate rain (sperm of from the heavens) falling to mother earth

h short rain

Molungu returns to mother earth

i Activity
weeding
no dancing
economic activities
shambas and lifestock
(Christmas added and means celebration of the first crop)

j Short dry period

weeds die and sometimes the crop which would cause draught

k MꝺEMBꝺ - an offering given to god for thanks

Dance restricted to
KELUME - married people, noe le and IBETISIA Molka prevculent

activity - reparing granaries for ripened maize

(men build, women store)

l Molungu dies/or leaves the earth and takes life with him

Severe cold

relative draught

no activity at all

m serious draught

n MOLUNGU (god) is dead away from the earth activities
ꝺ a ꝺi dance curcumcision both girls and boys

young adults write songs and choreograph dance
no economic activity

Figure 4.8.   A Symbolic Tree.

Definition: The tree symbolized long life, permanence
                     and stability.

Considerations: The placement of the tree.

The tree has often been considered as an archetype that

represents:

Life:

    The first spirits created by Molungu (creator) were

    Aimo. Aimo are known to dwell in trees. Unlike

    spirits of the dead, Aimo go back to the beginning -

    therefore, they are a part of the re-enactment of

    the primordial order (see Appendix IV).

Source of Knowledge:

Within Akamba tradition, the elders sat beneath the
main tree, within the thome (the receiving space of
the homestead) and challenged one another with
riddles and proverbs in order to build one's wisdom.
The wisdom and ability of the elders to pass judgment in
times of need ensured the stability and positive
development of the community [Lindblom, 1920]. The
elders were considered as community libraries.

Renewal:

The conversational pastime of the elder was a kind of
preparation to start a new life after death.

The Beginning:

The shade of the tree was also a place for communal
activity, a place to prepare food and for rituals and
rites which either defined a new beginning of the age
cycle or a re-enactment of an old custom. The
Akamba believe an individual starts a child and
ends a child [Ndeti, 1972; Lindblom, 1920].
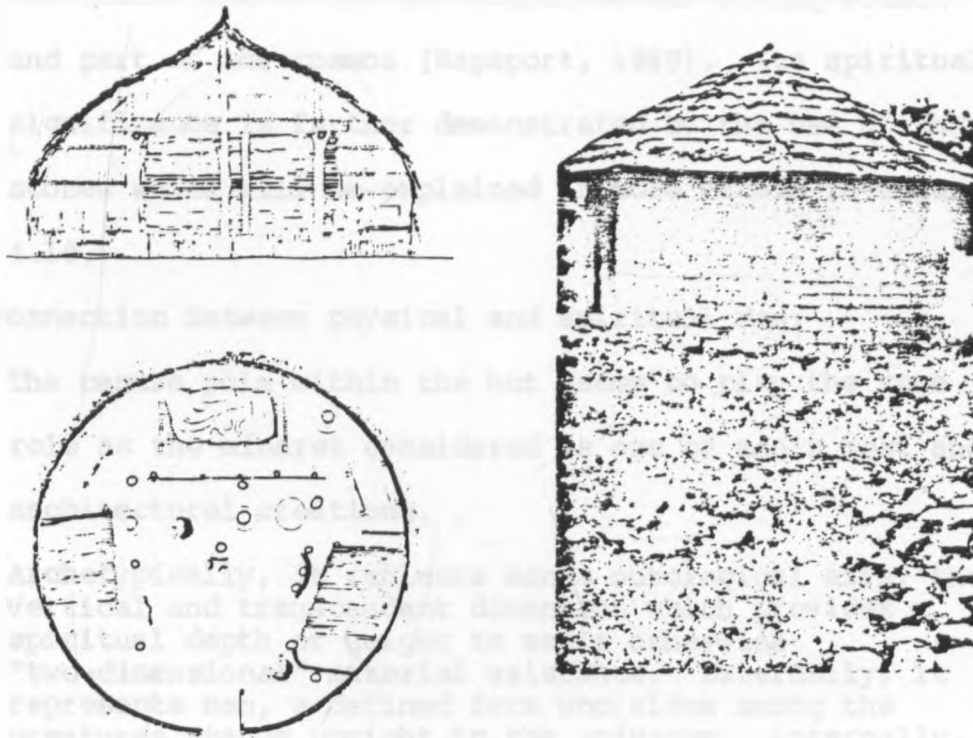
Figure 4.9. A Hut.

Definition: The hut form symbolized the spiritual
                      values of the Akamba community, as was
                      illustrated in Figure 4.3. The built
                      structure changed form as education
                      gained social status (the tin roof and
                      earthen bricks are part of this
                      symbolic change).

Consideration: The choice of form.

The hut was considered to represent:

The cosmos:

> The round form of the hut signifies man living within
> and part of the cosmos [Rapaport, 1969]. Its spiritual
> significance is further demonstrated by the use of three
> stones which will be explained in more detail in Figure
> 4.10.

The connection between physical and spiritual man:

> The centre pole within the hut seems to play the same
> role as the minaret considered as one of man's most ancient
> architectural creations.

> Archetypically, it reflects man's ontological axis, the
> vertical and transcendent dimension which provides a
> spiritual depth or height to man's otherwise
> "two-dimensional" material existence. Externally, it
> represents man, a defined form who alone among the
> creatures stands upright in the universe: internally,
> it recalls the soul of man yearning to return to its
> primordial place of origin. [Ardalen and Bakhtiar, 1979:73]

The home:

> Usually the fire which is at the base of the minaret
> signifies continuity and warmth (originally within an
> Akamban home the fire never went out).

> The smoke from the fireplace at the base of the minaret
> seems to signify the spirit rising from earth to heaven.
> [Lindblom, 1920]

Connection between man and existence:

> Within the Akamba culture, the Aimo pay visits to the
> living, sometimes in the form of Moaki (fire). Aimo are

the mediators between the living and Molungu (creator),
since Akamba's originally did not conceive Molungu as a
personal god [Ndeti, 1972]. Molungu was a universal power.
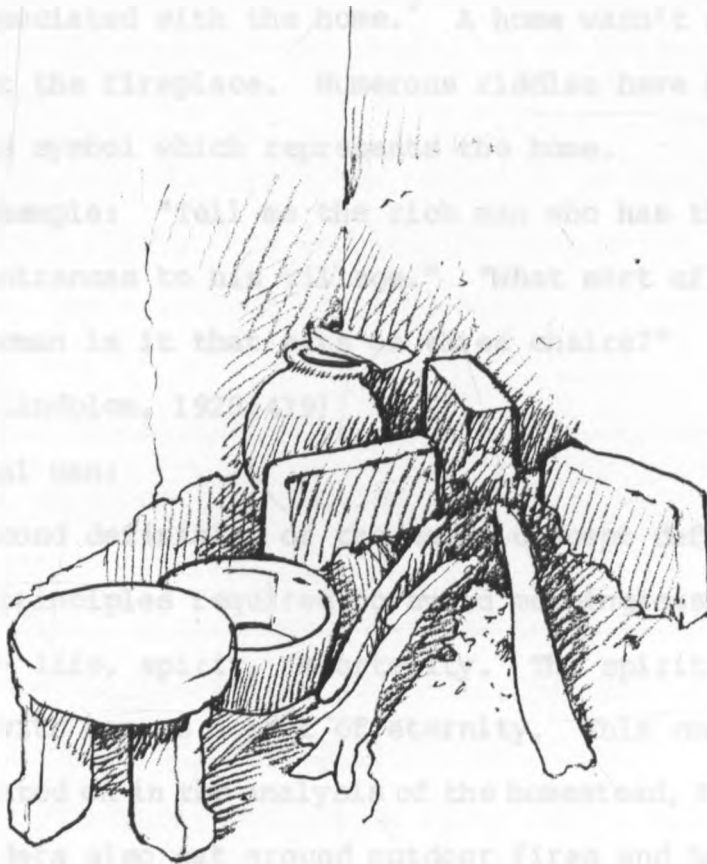
Figure 4.10. A Fire Place and Stool.

Definition: The fire symbolized a place of transaction
                    and repose.

Consideration: Placement of the fireplace and stool.

The fireplace and stool symbolized:

The physical man:

> The concept of mondo symbolized by the three stones is
> defined in relation to the physical human being who
> needs food to live [Ndeti, 1972]. The physical human
> was associated with the home.* A home wasn't a home
> without the fireplace. Numerous riddles have been based
> on this symbol which represents the home.
>
>> Example: "Tell me the rich man who has three
>> entrances to his village." "What sort of a little
>> woman is it that sits on three chairs?"
>>
>> [Lindblom, 1920:439]

The spiritual man:

> The second definition of the mondo concept defines the
> three principles required to avoid meaninglessness and
> chaos - life, spirit, immortality. The spiritual concept
> dealt with man as a part of eternity. This concept is
> elaborated on in the analysis of the homestead, Figure 4.8.
> The elders also sat around outdoor fires and had free
> intellectual exchange (Ndae) to test the sharpness and
> concreteness of each one's experience.

---

* The place where the mortal was conceived, lived and died.

The trinity:[*]

    The fire place within the Akamba hut is defined by three stones.[**]

    The fire place dominates the centre of an Akamba hut [Andersen, 1978], thus emphasizing that mondo, the physical and spiritual representation, are central to Akamba life.

    The three stones appear to symbolize the trinitarian concept of mondo (human being).

The stool represents:

    The trinity. Elders and women use the stool a lot. The women, in their huts or out in the open, while cooking would discuss the happenings in the community or far away places. The stool often went along during these informal times.

---

[*] The three principles of Akamba life seem to correspond with the Christian concept of the trinity - Father, Son and Holy Ghost.

[**] The three stones seem to represent the three principles of Akamba life—immortality, life, and spirit. These three principles combined make up the concept of mondo.
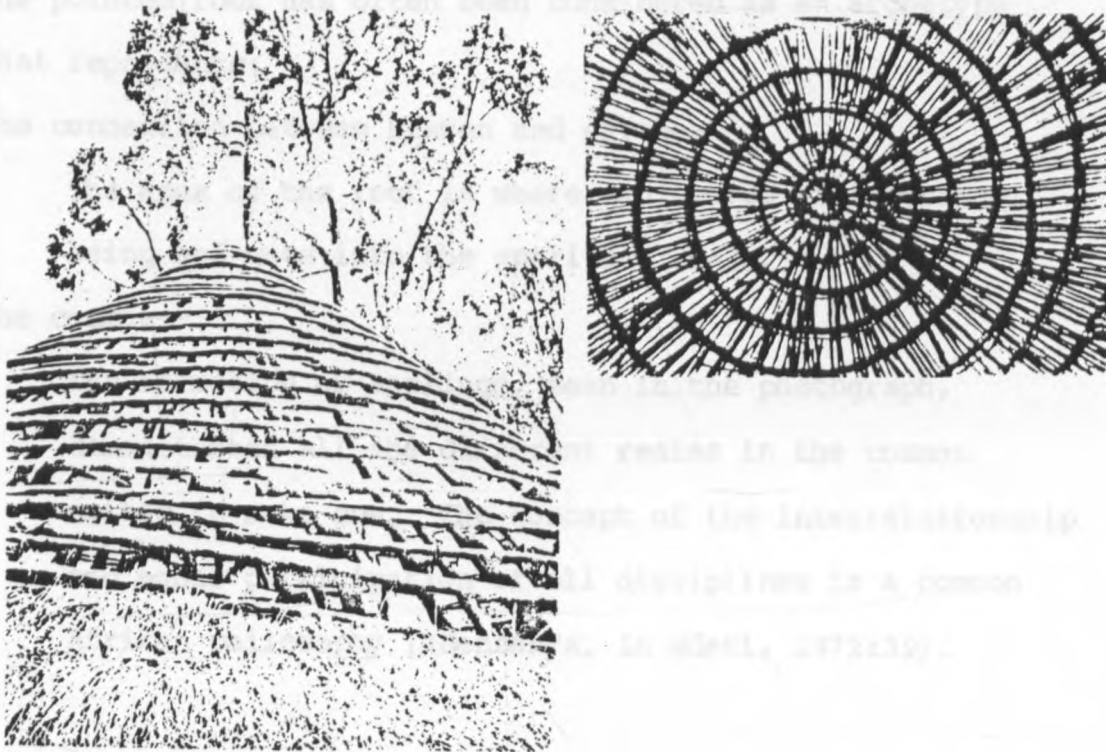
Figure 4.11. Roof Construction of a Hut. [Source: Denyer, 1978]

Definition: The construction of the roof symbolizes unity
                   in unity.

Consideration: The choice of material used on the roof.

The pointed roof has often been considered as an archetype
that represents:
The connection between heaven and earth--

The apex of the roof is where man leaves his physical

being and gets into the spiritual realm.
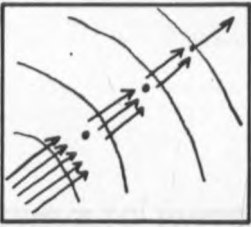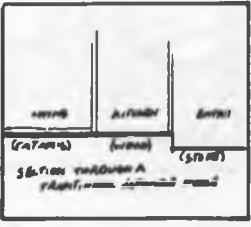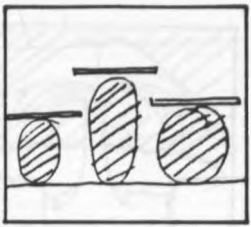
The cosmos--

The formation of saplings, seen in the photograph,

demonstrates all the different realms in the cosmos

united to make one. The concept of the interrelationship

and equal participation of all disciplines is a common

Afrikan philosophy [Adensanya, in Ndeti, 1972:39].

4.1.5. Summary of the Symbolic Patterns

SPACE PATTERNS (Homestead)

* **Intimacy Gradient**: The way spaces are laid out should be from the most public space to the most private - i.e., the entrance usually is the most public - to the place of personal or religious importance, which is usually the most private.

* **Floor Sympodial**: The floor levels and material on the floor would appear to provide the notable differences in territorial zones. A change in material and/or level would indicate a change of zone; e.g., hard floor in the most public area; a different material or level in the intermediary space; and a "soft" material in the private zone.

* **Ceiling Height**: The use of narrowing space, vertically and horizontally, is a good indicator of thresholds into a new domain, to define a new activity or to indicate what is required of someone when they enter. Ornament is often used at these points. In terms of indoor/outdoor, the change may come about gradually from completely vegetation to a complete structure.

* **Zoned Seating**: seating depends on the territorial domain. The degree of enclosure indicates the

* Pattern is consistent with Alexander's [1977] patterns.

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amount of privacy or publicity; i.e., formal
space is a completely enclosed space, a room,
whereas corners of a building or outdoors tend to
be more informal. The arrangement of seating
goes with the intimacy grid.

SYMBOLIC PATTERNS (The Tree)

Permanence: If the tree is to communicate a
permanent activity, the tree should be either
outstanding in size, unusual in shape, or
otherwise generally noticeable.

A Landmark: If the tree is to communicate a
place of gathering, the height of the tree and
its spread are important.
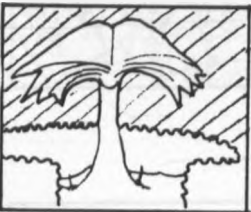
A Learning Tree: If the tree is to communicate
interaction and exchange, it needs to use some
other vegetation or some construction to separate
the space from the public - controlling the flow
of traffic entering the private domain (polychronic
space).

Outdoor - Room: If the tree is to be for the
VP's use, which can be for instruction or student
entrepreneurship, a tighter use of construction
or vegetation than the previous pattern would be

---

* Pattern is consistent with Alexander's [1977] patterns.

required. The tree should be a part of the construction.

BUILDING PATTERN (The Hut)[*]

The Rectangle: confined space - the focus being ....

The width walls - authoritative.

The rectangle symbolizes linear thought - formal education.

The Circle: a comprehensive form that encourages togetherness - no focal point. Stands for informality.

Symbolizes cyclic thought.
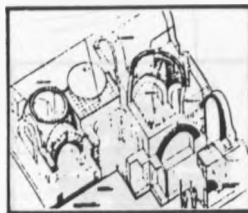
Hidden Dimension:[**] Combines both formal and informal spatial characteristics - focus is toward the circle (the communal space) - non-formal.

Symbolizes a new philosophy - cross-cultural.
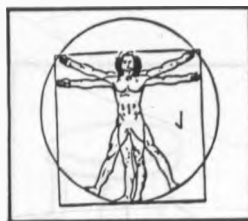
Unity in Unity: (Squaring of the circle) A square space - no focus; this form portrays a sense of equality, yet it is confined. Interior arrangement of seating (i.e., circular seating, rounding of walls) defines the character - non-formal.

Symbolizes old philosophy with new dimension.

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[*]   The Appendix demonstrates how this came about.

[**]   Hidden Dimensions stands for all the new possibilities that may be created, but which are unknown right now.

INTERIOR PATTERN (The Fire)

Home: The fire correlates to the mosie/home/ family; it can be used to familiarize an environment by creating a home environment which is representational of an informal space.

A Binding Force: The fire draws people toward it; it can be used to combine private and social space [whether] in the triangle form of a type of oven (which would be good during the cold season).
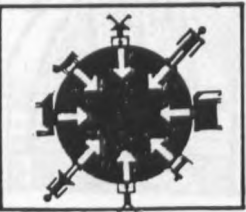
Connector: The fire may act as a cognitive connector between the home and VP. To make this connection means the trainee uses the knowledge learned in the VP at home.
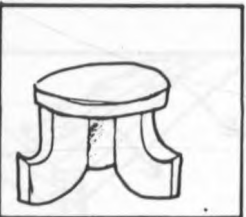
Three-Legged Stool: Moveable, and good for rough ground, can be used indoors or outdoors. Allows for people to make their space active.*

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*   Traditionally these stools sometimes have a cord to put over one's shoulder, so that they can be carried.

DETAILED CONSTRUCTION (Roof)

(The roof is a sensitive spot in terms of material usage. It is what people see from near and far.)

Immerger:* One may combine the use of metal for symbolic value of education and thatch for climatic reasons, therefore reintroducing practical materials. If this approach is to be applied, an open roof top would be required to ventilate the space.
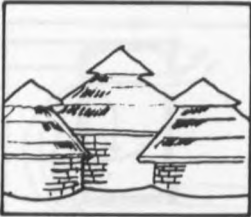
Roof height: The roof may be used to indicate the most important building. (The pattern is consistent with Alexander's [1977] patterns.)
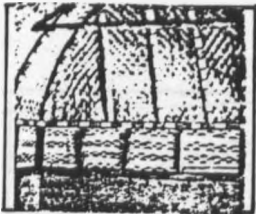
Motivational Space: Possibility of using reed mats or woven materials. Texture in an environment motivates (or stimulates [Lang et al., 1974]) the user; the environment could be aesthetically pleasing (trainees could possibly make the mats or whatever is decided).
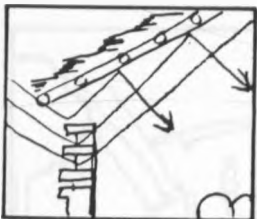
Reflective Ceiling: Use a material that can be reflective on the roof, i.e., painted reed mat, to reflect light into the interior for better ambience. Light reflected from the roof also gives an airy atmosphere.

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* Immerger is used to define the combination of materials that have both symbolic meaning and are well acclimatized.

4.1.6. Summary of Climatic and Geographic Patterns

CLIMATIC PATTERNS (Patterns generated by climate)
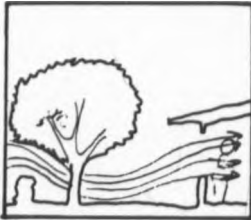
Vegetation Wind Guides: Air movement must be through the comfort zone if it is to cool people. Placement of vegetation and recognizing their characteristics can enhance the correct direction of air movement; i.e., the shrub is put before the tree - otherwise the wind would be directed over the building.
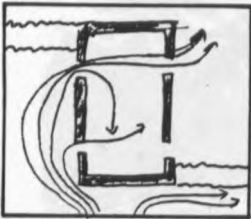
Vegetation Wind Directors: Cross-ventilation requires a way for the air to get in as well as to get out. Place vegetation according to the direction of the wind; use the vegetation to catch the wind and direct it into the building.
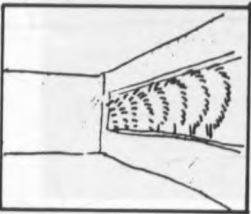
Glare Shield: Array shrubs from small to tall to reduce glare in trainees' field of vision. Euphorbia and bougainvillaea are common plants and are easy to manipulate. They can be shaped and trimmed to size.
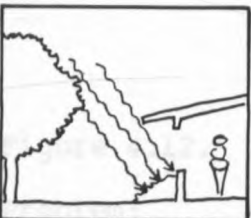
Vegetation Carpets: Grass, shrubs close to the windows reduce the amount of glare and radiation that would be reflected from the ground. Bougainvillaea is also good for this purpose, since it is a creeper. It has a large array of different coloured flowers that would enliven the site and buildings. [Evans, 1981; Hooper, 1975]

Figure 4.12.   Patterns Generated by Climate.

Problem: Discomfort from high temperatures; glare.

Solution: Use vegetation. (Trainees in VPs have been known

               to view arranged plants as a sign of betterment)

               [Court, 1971].

PATTERNS GENERATED BY LOCAL MATERIALS

Figure 4.13. Square and Round Construction with Burnt Bricks.

Problem: Concrete blocks or semi-concrete blocks are considered as a symbol of prestige, education and development.

Solution: Use burnt bricks.

The Akamba are good with burnt brick construction. The soil is idea for making the burnt bricks; the bricks are appropriate to this climate.

PATTERNS GENERATED BY CONSTRUCTION IN THIS GEOGRAPHIC REGION

Burnt Brick Multi-Use: Daylight and view do not always go together. Burnt Brick construction (leaving openings) can control the amount of light reflected in as well as allow for a view; e.g., the building may be curved or the bricks may jut out of the wall. Furthermore, the building can be ventilated; all depends on exploring brick formation (which could be a part of masonry programme).
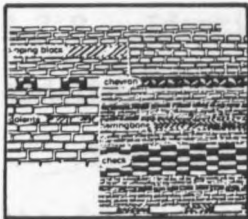
Ornamentation: Burnt brick may act as a way of giving the VP an identity. The exploring of brick patterns may provide the cohesive excitement of exploring among trainees and instructors, and through investing with their labour, they may begin to have a sense of pride in the VP.
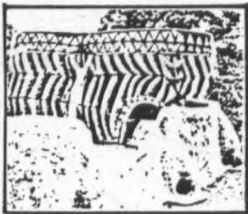
Soft Walls: Plastered brick acts as a buffer to noise as well as giving the space a pleasant home-like atmosphere. The walls may be whitewashed, left alone, or bolstered. Plastered walls may act as another medium to familiarize the environment. It has ornamental potential, i.e., making patterns in the plaster before it dries, or plastering some walls in contrast to revealing the brick.

Building Edge: The structured walls may act
as outdoor seating or indoor seating, reducing
the amount of furniture required. This type
of seating needs no security, so the seating
space can be open to the trainees and public
use. If outdoors, place overlooking activity
in the sun, facing toward the breeze. If
indoors, stepping the seating could act as a
way to informalize the instruction.

4.2.0. Identification of the Relevant VP Educational Patterns and The Development of the Design Criterion (Generic Patterns)

The single generic educational symbol chosen to demonstrate
the development of the spatial patterns suggested is:

Environmental   The Village Polytechnic is a Low-Cost Programme.
  Pattern II:

Design Criterion: The integration of exterior and interior
                      spaces.

Spatial patterns: Thoroughfare concept. Shape outdoor
                      space with buildings, vegetation, shaded
                      walls, etc. Connect indoors and outdoors
                      with paths, terraces, steps, etc.; create
                      ambiguity between outdoors and indoors.

Implication: Climate and materials need to be considered
                      so as to know what type of shelter is
                      required, what available vegetation exists,

what possible construction techniques can be
used, and what materials are available.

Objective: Reduce the amount of built structure as much
as possible. The structure would be defined
according to storage, security of equipment
and (second to the social requirements) type
of instruction.

The reasons for choosing the generic pattern are:

.   Low trainee/instructor ratios for teaching skills
and technical equipment make the VP almost as
expensive as the formal school [Wanjala, 1978].

.   In areas where there is limited environmental control
and weak technology, climate is a strong influence on
the generated-form [Anderson, 1970; Rapaport, 1969].
The climatic constraint of this region intensifies
the expense of providing education, due to a lack
of resources.

However, it needs to be made clear that the choice of
how many VP educational symbols that one wishes to combine,
and integrate into the VP facility depends on the setting,
resources, and the builder. Nevertheless, only one pattern
has been chosen in this case study, so as to simplify the
demonstration of the design process. The choice of one
pattern further illustrates how many localized patterns can
be generated to portray the chosen characteristics of the VP
ideology.

4.3.0. A Summary and Application of Patterns

This section illustrates the synthesizing of the patterns developed and described in the previous two sections. This is the heart of the pattern language approach; taking the array of patterns and enabling them to be moved toward a solution.

DEVELOPMENT OF THE TYPES OF VP SPACES (Refer to Figure 4.14)

The Learning Tree   symbolizes an outdoor space. The space is and defined as a public communal space that can be used by trainees and the community. It is a space that encourages loitering, informal discussion, exhibiting products, and recreational activities.

The Outdoor Space   The tree is used as an outdoor room, which has a type of fireplace to appeal to people, for example, a stove. Vegetation is used to direct the wind to ventilate the space. The vegetation is also used to define the space in a circular shape. The shape is to enhance a sense of togetherness and therefore encourage more interaction among users, which should encourage the exchange of knowledge between trainees and instructors, VP and community. The stool would be appropriately used in this area since it is secure on rough terrain.

<u>The Home</u>	Symbolizes informal space. The space is used to make the connection between home and the Village Polytechnic, so that the knowledge from the VP would be applied in the home.
The Semi-Outdoor Space	The space is defined partly through the use of the edge of the built structure and vegetation. The walls are low so that they can be sat on. Another fireplace is put within this space so as to define it as an informal covered communal space. The form is left up to the users of these patterns. Ornamentation is used on the walls. The walls are used to define a threshold into a new domain which identifies the VP facility. These walls are good for experimentation in the formation of bricks, because the walls are not load-bearing. The walls are also low and are easy to reach. They can be broken down and put together again.
The Semi-Indoor Space	The type of seating and walls define this space as a little more private. People are not so visible to the public, and the space is more enclosed. The walls begin to be more structured, but plastering is used to remove the rigidity of the environment so as to keep the home-like atmosphere. The roof at this

point may be used to define the importance
of the building, and the floor begins to
distinctly define a transition from a
public, open space to a more private,
enclosed space. The floor prepares the
individual for what is expected.

The Immerger   Uses materials that symbolize progress, as well
as local materials that are physiologically
hygienic.

The Indoor Space   The space may have a more formal appearance,
to indicate privacy. The walls are full-
height but simply ornamented, for ventilation
and visibility to the outside. The ornament
may be used to remove the conventional
formality from the indoor space environment.

The trees outside are used to reduce the
amount of glare, and the roof is used to
increase the light within the space by
reflecting the light in the ceiling. Since
the space is enclosed, methods of texturing,
plastering and whitewash, etc., are welcomed
within the space so as to make the space
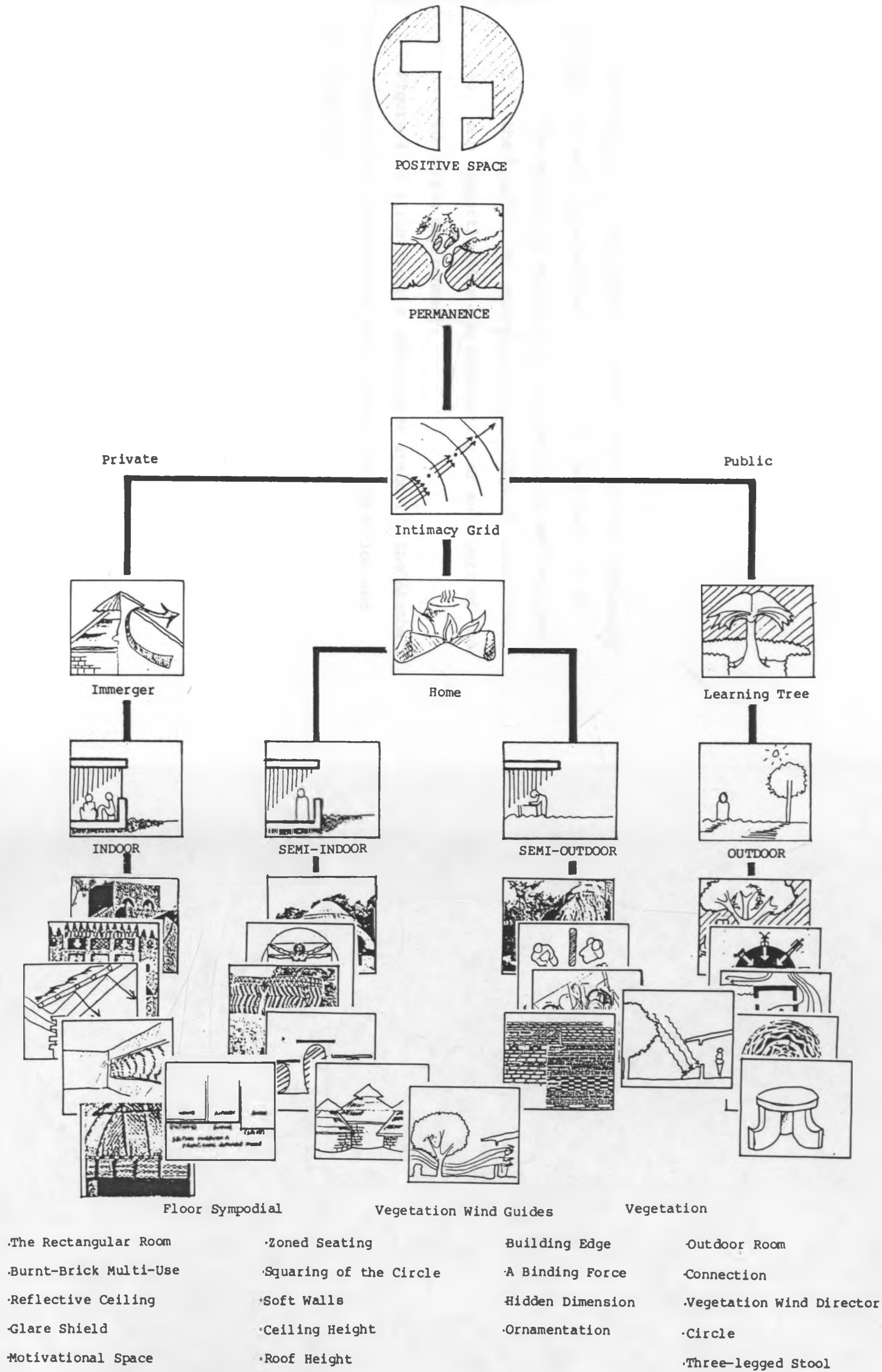motivating.

POSITIVE SPACE

PERMANENCE

Private   Public

Intimacy Grid

Immerger   Home   Learning Tree

INDOOR   SEMI-INDOOR   SEMI-OUTDOOR   OUTDOOR

Floor Sympodial   Vegetation Wind Guides   Vegetation

·The Rectangular Room	·Zoned Seating	·Building Edge	·Outdoor Room
·Burnt-Brick Multi-Use	·Squaring of the Circle	·A Binding Force	·Connection
·Reflective Ceiling	·Soft Walls	·Hidden Dimension	·Vegetation Wind Director
·Glare Shield	·Ceiling Height	·Ornamentation	·Circle
·Motivational Space	·Roof Height		·Three-legged Stool

Figure 4.14.   Form and Image of the VP.

The merging of the types of spaces, that are now culturally appropriate, with type of learning involves consideration of:

1. The content of and type of instruction for each subject;

2. the location and procedure for each type of instruction;

3. the supportiveness and familiarity of each part of the education environment.

Figure 4.15 illustrates a semi-indoor space for the Akamba that results from instruction which focuses on nutrition and food preparation.
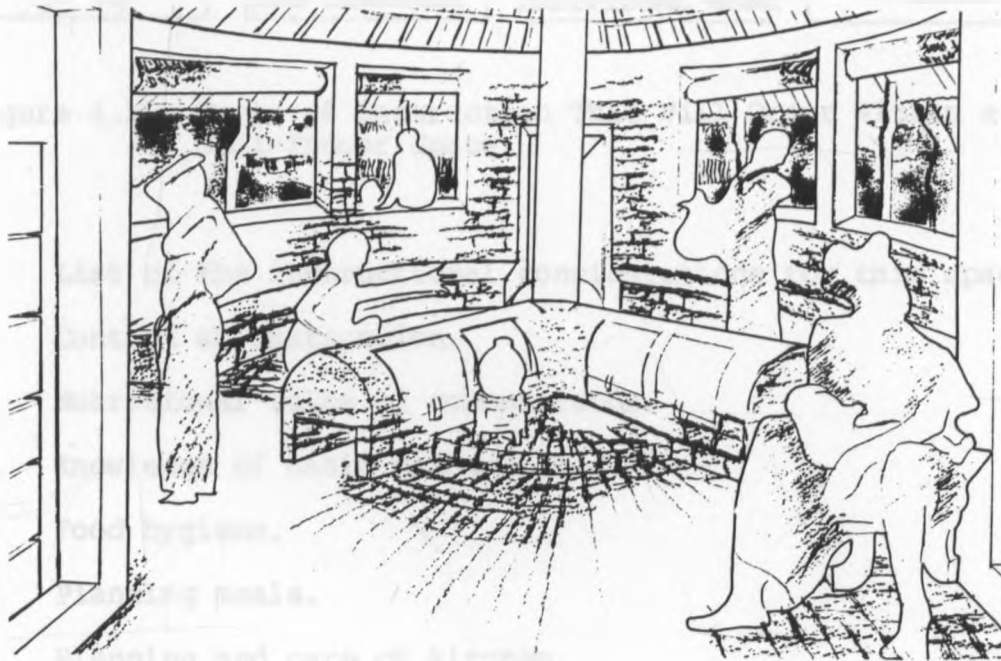
Figure 4.15. A Semi-Indoor Space for Instruction of Nutrition
              and Food Preparation.

The chimney symbolically represents the learning tree. The
window seats encourage loitering and informal discussion. The
space can function as a type of restaurant as well as an
institutional facility. It can in part play the role of a day
care center. The space would become both a symbolic and
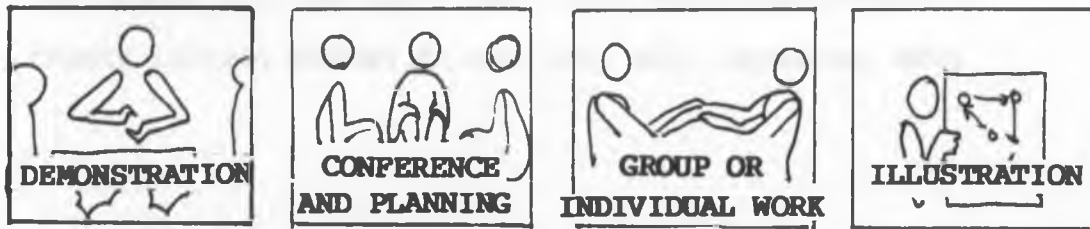functioning part of the Akamba community.

Figure 4.16   Types of Instruction That Will Occur Within a
              Semi-Indoor Space.

List of the instructional considerations for this space:

1.   Content of instruction.

2.   Nutritional value of common foods.

3.   Knowledge of basic methods of cooking.

4.   Food hygiene.

5.   Planning meals.

6.   Planning and care of kitchen.

7.   Serving of food.

Instructional activities or functions with this space:

1.   Group method of teaching.

2.   Students are put into "families" (units of 4-6 students).

3.   Students are involved in planning, preparation, and serving
     food.

4.   Experimental work with certain foodstuffs - tasting.

5.   Sufficient space for demonstration.

Consideration - There must be adequate security for the equipment, but the space must also encourage people to freely loiter, wander in and out, sit, converse, etc.

CHAPTER V

SUMMARY AND CONCLUSION

An approach to designing an appropriate Village
Polytechnic facility has been presented. Appropriate is
defined as being able to design in accordance with the VP
ideology. The implication of the definition is that the
design has to accommodate the reintroduction of some of the
old cultural values to a new situation of education and
western life style.

In Chapter I the objectives, symbols and constraints of
the Village Polytechnic ideology and programme are described.
In Chapter II the problem concerning the VP programme is
stated as being one of misconception. In Chapters III and
IV, a pattern language approach to solving the problem is
formulated and then applied to a case study in Ukambani, to
demonstrate the possibilities of the resulting design criteria.

The objective behind the pattern concept is to adapt the
design process to support and facilitate:

1.   the Village Polytechnic's skill training program; and

2.   the Village Polytechnic ideology of improving the
      standard of living in rural areas, through exchange
      of knowledge.

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The process of formulating the design criteria attempts
to accommodate two goals of the programme: first, the
physical (spatial); and second, the psychological and
behavioural goals.

The intent is to illustrate an approach that could be
employed by residents in any rural community in Kenya seeking
to introduce and integrate a VPP into the community. Neither
the approach nor the patterns that have been described have
been tested in an actual VP. Both constitute a hypothesis at
this point. The validity of the hypothesis depends on three
factors:

1. The users' willingness to accept and try the
   pattern approach.

2. use of the approach as intended and demonstrated.
   Another way of stating this is "proper use" of the
   approach.

3. The effectiveness of the resulting facility.

For the pattern approach to be implemented, the initial
requirement is for it to gain acceptance from the communities.
However, the design process implies use of visual images
along with written descriptions. Therefore, the process of
recording and communicating the patterns is important. But
for rural communities, a challenging question is, How does
one accomplish the same achievements of recording information
in a literate community, within an illiterate community? The

answer lies in the community itself. In the past, information was usually recorded in an intricate system of proverbs, riddles, dance, song, and music. The whole range of expressions and experience using all the senses was used to record information. It is suggested that these methods of recording patterns for the VP be understood and applied where possible.

Another question which relates to acceptance of the pattern approach is: Will the communities take on the full initiative to implement the approach or will they prefer that the initiative come from somewhere else? This question is beyond the scope of this study, but has to be answered to ensure the proper application of the design approach. It is important that the design approach be applied correctly in order to gain the full benefits of the approach. This depends on innumerable variables that have to be considered when applying the pattern to a community. For example, if a different community than the Akamba were to apply the patterns developed by the Akamba, two variables would have to be considered by that community: first, whether the Akamba values are the same as theirs, since values form the frames of the patterns; and second, if their values are the same, whether they are expressed the same way. The homestead is a secondary variable which illustrates the variation of the values. Although a homestead demonstrates consistency of a

home unit as a controlling factor in most Afrikan cultures,
different formations of the homestead indicate that the
communities have different priorities and interpretations.
Therefore, the patterns suggested for the Akamba community
may have different results in, and may not necessarily be
appropriate to, another community. Fortunately, the patterns
approach is open-ended and allows for the development of new
patterns or alteration of existing ones.

If the approach is accepted and used as intended its
true benefit can only be assessed by observing the effectiveness
of the facility. The effectiveness can be observed by
answering a number of questions:

. Does the facility allow for trainees and management to
  observe improvements?

. Is there any increase in trainee creativity?

. Do trainees take the initiative to implement their creations?

. Is there an increase of community participation in the VP?

. Are the skills of the students used more by the community?

. Are homesteads implementing the products and suggestions
  from the VP?

This list is by no means exhaustive. The questions
listed above are some of the questions which relate to the
objectives of the VP ideology. Through this method of
assessing the effectiveness of the VP, the patterns are not

only criteria for the design of the facility, but also assess the consistency of patterns within the communities.

Underlying the hypothesis is the opinion that this approach will not only ensure a more culturally appropriate facility, it will also ensure a unique solution for each community.

Further, as the old Akamba saying goes, _meika iemoe maingnasia ose_ ("those of the same age cannot help each other across the river"), which implies interdependency among different categories of people: the approach would allow for a joint participation by planners and, most importantly, the communities themselves.

APPENDIX

APPENDIX I-A

SUBJECTS THAT MAY BE TAUGHT IN A VILLAGE POLYTECHNIC

Craft/Skill	Number of VPs
Carpentry	12
Masonry	7
Tailoring (Male)	7
Tailoring/dressmaking (Female)	2
Domestic Science, including baking and some dressmaking	5
Typing (Male and Female)	1
Bookkeeping (Male)	4
Bookkeeping (Female)	1
Signwriting	1
Tanning	1
Tractor driving (Special course, 3 months)	1
Poultry keeping (Special course, 3 months)	1
Tinsmithing	1
Tinsmithing/bicycle repairing (Optional in the evening)	1

Agriculture	
Agriculture (Male and Female)	10
Animal Husbandry	1

Academic Subjects	
English	11
Mathematics	10
Technical Drawing	3
Science	1
Hygiene (Female)	2
Civics	5
Religious Knowledge	7
Swahili	1
Recreational	8

On the Job Learning (Soy and Karima)
Carpentry and Quarrying (at Karima)

Beekeeping	)
Well digging	)
Baking	)
Carpentry/Beehive making	)
Tinsmithing	) all at Soy
Poultry keeping	)
Agriculture/Vegetable growing	)
Masonry	)
Rabbit keeping	)

source: Anderson, 1970.

APPENDIX I-B

ELABORATION OF THE MONEY MAKING OPPORTUNITIES

Money Making (money returns can be easily calculated)
  a)   permanent wage employment
  b)   part time or casual wage employment
  c)   employment in a co-operative or family enterprise
        for monetary profit
  d)   self employment for monetary profit

Productive But Not Necessarily Money-Making (national
money returns could be calculated)
  a)   development and maintenance or resources on a
        communal basis (e.g., road building)
  b)   development and maintenance of resources on a
        personal or gamily basis (e.g., digging pit
        latrines)
  c)   subsistence farming, usually on a family basis

Non Money Making Besides the more specifically vocational
activities, to which economic value in terms of money
might be attached, there are also a range of activities,
related much less directly to production in the economic
sense, which occupy time constructively and in less
tangible ways help towards communal and personal develop-
ment.   Such activities include:

  a)   Everyday family and personal chores and errands;
        e.g., washing, fetching water and shopping.
        These involve a knowledge of hygiene or simple
        budgeting, etc.
  b)   Improving general knowledge, e.g., reading,
        listening to the radio, etc.
  c)   Peer group activities, e.g., recreational and
        educational associations involving discussions,
        dances, games.
  d)   Creative activities, e.g., modelling, guitar
        playing, etc.
  e)   Visiting other areas to extend horizons. Often
        this is linked to visiting and working for
        relations or looking for work.

The list of activities covered under these three headings
is by no means exhaustive, but does serve to show the
variety of directions in which pre-vocational youth
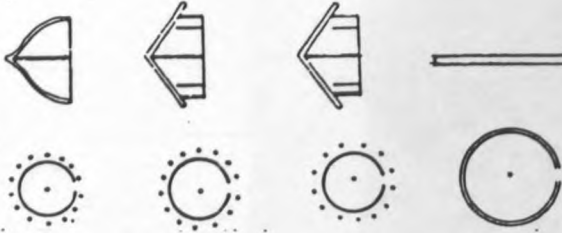training might be directed [Anderson, 1970].

APPENDIX II

A DETAILED ANALYSIS OF CYCLIC AND LINEAR

INDIGENOUS (Spiritual)

TIME

- Cyclic time – re-enactment of the paradigmatic charter of the primeval order... keeping in touch with the beginning
- Cosmological man –
  - begins with primordial order
  - archutypes are the paradigmatic order, instituted in the beginning – mythical time is the only real time and cosmological year is the re-enactment of mythical order
  - instinct/feeling
  - emphasis on consistency

BEHAVIOR

- Polychronic time –
  - unity or compatibility among all disciplines
  - collective activities/several operations
  - high involvement/close contact
  - completion of transaction
- Communal living –
  - part and parcel of society sees reality in the unity of the cosmos, nature inclusive
  - humanization, the giving of identity
  - clear hierarchy, organized through a system of cultural/biological phases, interrelated
  - long term relationships/slow to make them
- Communication –
  - comprehensively/wholistically perceived
  - sync/rhythm–non-verbal
  - high context
  - constancy/conformity
  - high criticality--slow change

SPACE

- Architecture –
  - strong link between culture and form
  - home is a social control mechanism
  - vernacular
  - open space
  - circular

MODERN (Material)

- Linear time –
  - historicity and progressive betterment...a set future goal is made
  - stress on change and novelty as being the essence
- Technological man –
  - profane time, begins with man
  - assumes there is order in the universe, and man needs to discover and create intellectual models that reflect it
  - rigid, logical deductions
  - man (logically mid) the sacred into something rational/control, thinking
- Monochronic –
  - institutionalization and specialization of disciplines
  - analytical
  - compartmentalized/segmented/scheduled (one at a time)
  - low involvement/less contact
  - promptness
- Individualistic –
  - individual ability to gain material success gives life meaning and security
  - dehumanization/economic man, removed from nature
  - a need for identity/security
  - pluralistic and not well-defined expectations
  - quick and temporary friendship
- Communication –
  - fragmented/compartmentalized
  - language verbal
  - low context
  - change/innovation
  - low criticality (fast change)
- Architecture –
  - weak link between form and culture
  - destroying the house doesn't necessarily destroy culture
  - modern
  - divided space
  - rectangular

Anthropologists have often described what happens to a primitive society when its spiritual values are exposed to the impact of modern civilization. Its people lose the meaning of their lives, their social organization disintegrates, and they may themselves morally decay. [Jung]

INDIGENOUS

Forms of primitive or vernacular buildings are less the result of individual desires than of the aim and desires of a unified group for an ideal environment. They therefore have symbolic values. Since symbols serve a culture by making concrete ideas and feelings.
(Amos Rapoport)

Mosie (family, home) basic form, unit ...: a very basic institution which carries out the vital functions of human development, it is a composite of many institutions (education, religion, adaptation to the environment). Each member of the extended family contributes to the welfare of the mosie according to his or her experience, age, wisdom, skill, vitality.
(Ndeti)

Mosie - homestead educational facility

In Africa the house is primarily spiritual, a link among man, his ancestors, and the earth, and the principal inhabitants of many houses are the invisible, extranatural and supernatural beings.
[Rapoport]
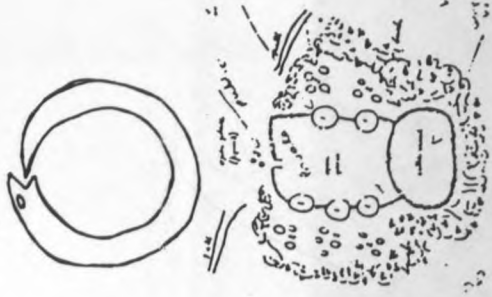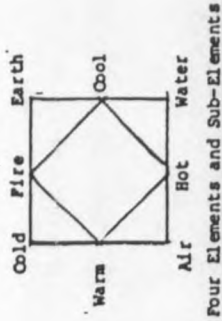Thome, formulates the area where wisdom, history, social structure are related.

EDUCATION

WESTERN

Christian origin...the God who really consists of four gods coming from the "four corners".... The quaternity (or element of "fourness") itself is a strange idea, but one that plays a great role in many religions and philosophies. In the Christian religion, it has been superseded by the Trinity.... It is an idea that was once fairly familiar among students of the Hermetic philosophy in the Middle Ages, but it petered out with the beginning of the 18th century, and it has been entirely obsolete for at least 200 years.

Earth
Fire
Cold   Cool
Warm   Hot
Air   Water

Four Elements and Sub-Elements

Cardinal Sign

Socrates instructed students gathered in the shade of an olive tree--the methodology of formal education has remained remarkably unaltered. It has remained consistent almost invariably of a single teacher instructing a group of students.
(John M. Kurtz)

APPENDIX III-A

TIME AND COMMUNICATION IN A CULTURE

Culture is communication and communication concerns culture [Herbert, 1972:13]. What has changed, what has evolved and what is characteristically man--in fact, what gives man his identity no matter where he is born--is his culture, the total communication framework:

- words, actions, postures, gestures, tone of voice, facial expression;

- the way he handles time, space and materials;

- the say he works, plays, makes love and defends himself. [Hall, 1981]

Time is a core system of cultural, social and personal life. In fact, nothing occurs except in some kind of time frame. Time is treated like as language, as a primary organization for all activities, synthesizer and integrator:

- a way of handling priorities and categorizing experiences;

- a feedback mechanism for how things are going;

- a measuring rod against which competence, effort and achievement are judged, as well as

- a special message system revealing how people really feel about each other and whether or not they can get along. [Hall, 1984:3]

APPENDIX III-B

COMPARATIVE DEFINITION OF HIGH-CONTEXT AND LOW-CONTEXT

High Context (Consistency)

Overall
- o Actions rooted in the past
- o Slow to change, highly stable, permanent
- o A lot of time spent in preprogramming--
    economical, fast, efficient, satisfying
- o If programming incomplete, communication
    breaks down
- o People, home oriented
- o Greater distinction between insider & outsider
- o Expect more of others (CNS)
- o Based on feelings

Organization
- o Personal and full of authority, responsibility
    for actions of subordinates down to
    the lowest man.
- o Explosion comes without warning when boundaries
    overstepped to a point of no return
- o Boundaries high elasticity because of bonds
- o If breakdown who is involved and what the
    human consequences of taking remedial
    action

Art
- o Creative and innovative; the limitations of
    cultural structure
- o Highly limited with new ideas
- o Use of art forms frequently used for
    communication
- o They act as a unifying, cohesive force and
    longlived
- o Good art (original art work)
- o Symbolic (forms are important their use and
    misuse speaks?)

Language Use
- o Take a point leaving interlocutor to place
    keystone--so not to violate interlocutor's
    identity

APPENDIX III-B, continued

Low Context (Change)

Overall
- o Actions rooted in the present
- o Quick to change, unpredictable, temporary
- o Open to manipulation, need to be spelled out, inefficient, slow
- o As mass increased becomes unwieldy, no need for complete programming
- o Technology (extensions) office oriented
- o Emphasis on individual
- o One has to achieve to prove to others
- o Based on thought (brain)

Organization
- o Responsibility difficult throughout the system and difficult to pass down. "The system" is supposed to protect member.
- o Easier to foresee trouble; no bonds; away tendency to move away or withdraw when things not going well
- o No boundaries because fragmented
- o When action needed to change things = look into procedure

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Art
- o Limited creativeness with the old system
- o Quite creative and innovative with the new
- o Art forms not necessarily used to communicate
- o Not unifying, change easily, novel
- o Use of extension i.e. phone, car, computer, etc.
- o Fashionable art (reproduction of art work)
- o Signs (the actual message is perceived; what is not made obvious is unimportant)

Language Use
- o Take nothing for granted, and feel the only natural and effective way to present ideas by means of a Greek invention called logic

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[Source: Hall, 1958, 1981, 1984.]

APPENDIX III-C

THE MENTAL ORGANIZATION OF PRIMITIVE CULTURES

Genre de vie *	"Primitive" Conceptual Influences of an Indigenous Culture
Culture - the total equipment of ideas and institutions and conventionalized activities of a people	Polychronic cyclic time - comprehensively, wholistic - unity and compatibility among all the disciplines
Ethos - the organized conception of the ought	Cosmological man - archetypes are the paradigmatic order, instituted in the beginning - mythical time is the only real time and cosmological year is the re-enactment of mythical order
World view - the way people characteristically look out upon the world	Re-enactment of the paradigmatic character of primeval order - keeping in touch with the beginning
National character - the personality type of a people, the kind of human being which, generally, occurs in the society of concern	Communal living - shared image of good life and its values

*   Genre de vie, or ideal environment: Rapaport, 1969.

APPENDIX IV

THE AKAMBA MYTH

The myth has been translated by Ndeti [1972:29]:

In the beginning [nothingness], Molungu, the Supreme Being, created spirits first [existence]. Then He created man and woman [the physical man], whom He tossed to the earth from Heaven. They landed on Nzaui Mound [the tree]. Later, they were followed by livestock from Molungu. The prints can be seen on a huge rock in Nzaui, where these creatures landed.

Molungu allowed heavy rain to fall until the earth was filled with Mithimbi (ant hills) [reproduction]. Through them came another man and woman. These first people were known as 'Mbai ya Aimu' (Clan of the Spirits) and Molungu liked them infinitely. The couple from Mithimbi had daughters and the couple from Heaven had sons. The children of the couple from Heaven paid Mgasia and married the daughters of the couple from the earth [they mixed and multiplied]. They procreated and became numerous, as did the livestock. Molungu loved them very much. The rain and the yields were good, and they offered sacrifice in Ithembo. They obeyed all the commandments of Molungu. However, one year they let pass without offering sacrifice to Molungu. This act of forgetfulness caused great anger to Molungu [the grave sin that separates man and God]. He refused to allow the rain to come, and there was a great famine. Many clans migrated to distant places. Some became Meru and Kikuyu, and others became Maasai. Those who remained became Akamba and retained the original language, and 'Mbai ya Aimu'.

APPENDIX V

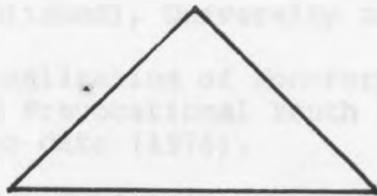THE CULTURAL MEANING ATTRIBUTED TO BASIC GEOMETRIC FORMS

-Cyclic thought   -Primitive architecture
-Polychronic time   -Indigenous
-Cosmological man   -Informal education

-Linear thought   -Modern architecture
-Monochronic time   -Christianity
-Technological man   -Formal education

-Mondo   = Indigenous
-Trinity = Christianity
         = Contemporary   Equality-combined
              Afrikan   and working
                                 in unison =
-Architectural environment   order, gestalt
   funcitons in three ways:
       -maintains physiology
       -provides setting
       -supports psychological state
          through symbolism

Perception, Cognition and Spatial Behaviour = Environment

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