here and now

editor curtis worth fentress

preface

Never in the history of the School of Design has the Student Publication presented an issue that was devoted entirely to student projects. This issue is devoted to things, objects, activities, and experiences undertaken by students of the School of Design: it is an attempt to communicate current student involvement *here and now*.

The School of Design is a dynamic learning environment that offers academic freedom for students of a conglomeration of many disciplines—painting, sculpture, urban design, architecture, landscape architecture, and visual design. Within this creative atmosphere there is a spontaneous flow of ideas and activities. *here and now* is an effort to bring to the eye and mind a glimpse of these activities. The wide range of student work that appears in this issue, however, is in no way meant to show everything that happens at the School of Design, but rather, to give a cross section of the diversity of activities, experiences, and involvement of the students. *here and now* consists of twelve sections that vary from work done by individuals in a single discipline, to group work done in multi-discipline studios—ranging from basic design to graduate levels.

Curtis Worth Fentress.
Editor
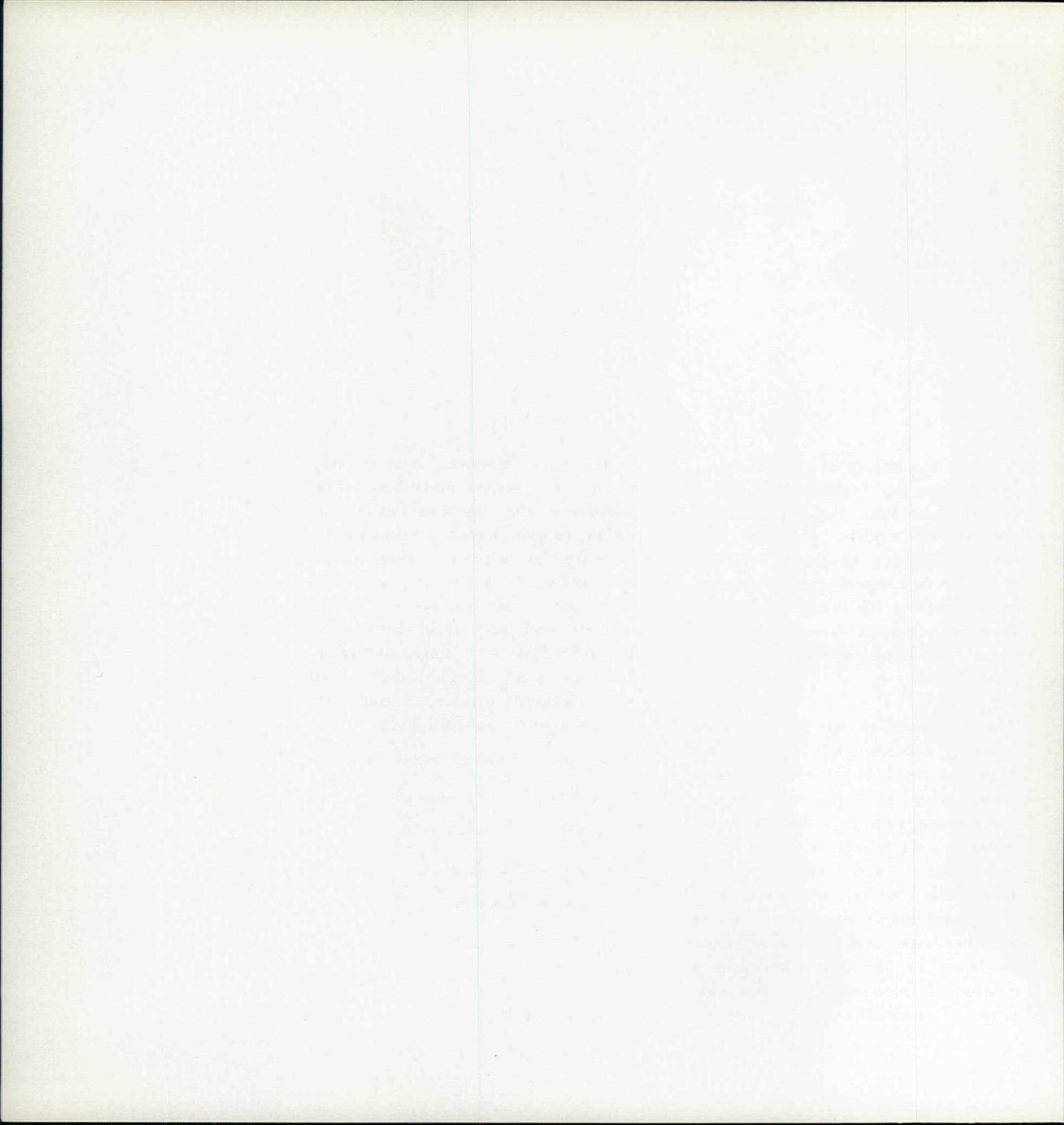
table of contents

joy in therapy

the design of toys for exceptional children

arnold j. aho, assistant professor architecture

The feet of man on the Earth
tread but on a small space, but
going on to where he has not trod
before, he traverses a great
distance, easily, His knowledge is
but small, but going on to what he
does not already know, he comes
to know what is meant by . . . the
Great Unity . . . making his
knowledge complete.

(Chuang Tzu, *Book XXIV*)

Currently, a quiet but significant revolution is occurring in the field
of care and treatment of exceptional children. It was not too long
ago that retarded and severely handicapped children were withdrawn
from active roles in society and committed to institutions which did
little more than sustain life and breath. Throughout this century, the
"dark ages" in the treatment of exceptional children have been
dispelled in the light of new therapy and teaching methods. These
new programs focused on the dual relationship of teacher and child.
Currently, a new revolution centers around the recognition that there
is yet another indispensable relationship needed in programs for
developmentally disabled children. This relationship occurs between
the child and his ENVIRONMENT.

Toys in their most abstract sense form a significant part of the child's
environment, and it was in this realization that one of the second
year Environmental Design Studios in the School of Design
undertook a program to investigate the design of toys especially for
exceptional children. The study was intended to directly
complement research programs developed at Ellisville State School in
Mississippi, under the direction of Dr. Paul D. Cotten, with the
results of the toy design study to be shared also with Western
Carolina Center in Morganton, North Carolina.

Incorporation of available standard toys into active play situations of developmentally disabled children is hindered by their design. For example, the common pull-toy is of little value since it requires a child to walk backwards in order to see its operation. A physically and mentally handicapped child is sufficiently challenged walking forward safely not to mention attempting to do it in reverse; yet if the toy cannot be seen in operation, attention is lost, and it is soon discarded.

There is also a danger in the protectionist approach to design in which any attractiveness of character that a toy might possess for a child is distilled out in the cause of safety and abstract theraputic value. Toys to be designed for these children must not only provide everything that normal toys do, but they must go BEYOND them, providing greater safety, functional clarity, and availabilities in many types and levels of play. In other words,

> A toy for an exceptional child must not be
> any LESS of a toy; it must be MORE of a
> toy!

Early in the design experience it was recognized that single function and look-a-like toys could be incorporated in only a limited number of play situations, with design directed to a particular intellectual level. As a result, creative toys of more abstract forms and multiple functions were developed, since they possessed a greater potential for adoption by children at many levels. Abstraction (in this sense: expressing forms and functions of toys without needing to encase them in familiar shapes) also applies to their operation. Hidden gears and mechanisms belong up a magician's sleeve, not on a playground of children in the process of discovering themselves and understanding their environment.

Creative toys must emphasize multiple-sensory stimulation. Textural, auditory, olfactory, as well as visual qualities were studied for each design. The results seem to be suggesting a new breed of modular, constructable, or musical toys—toys equally stimulating for children with multiple handicaps, including deafness and blindness, or both.

A MUSICAL CART
Charles Smith
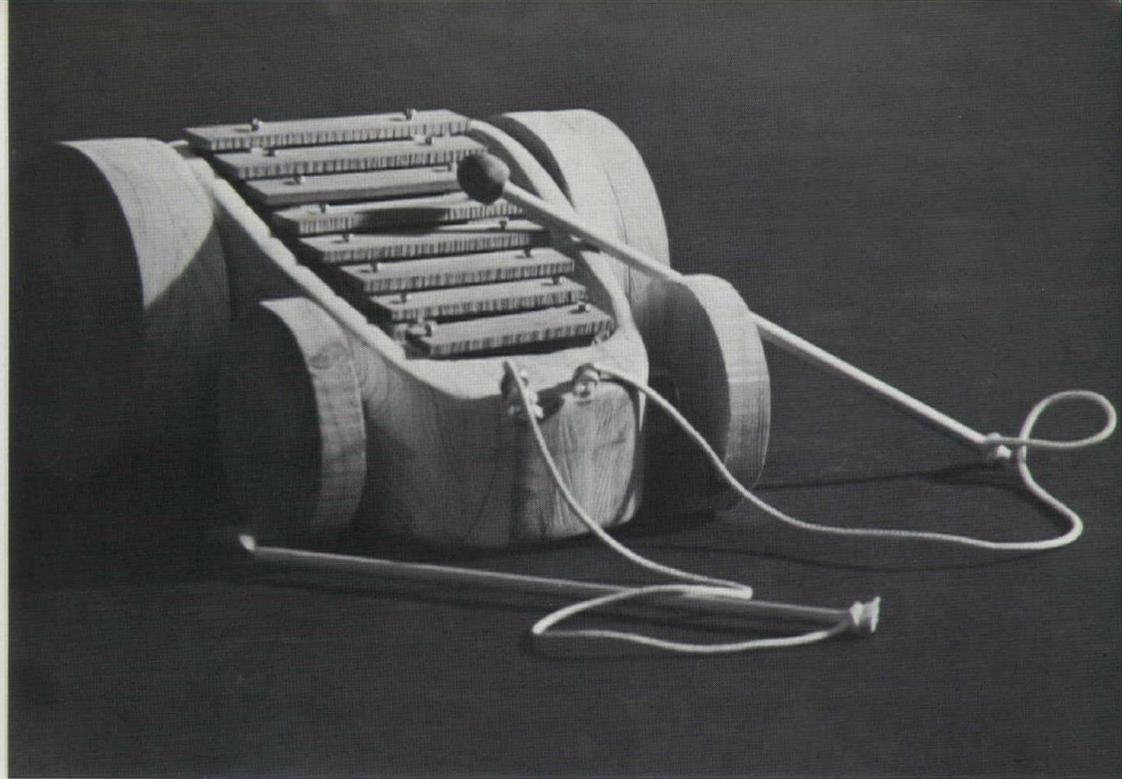
**MODULAR BLOCKS
AND CART**

Ralph Belton
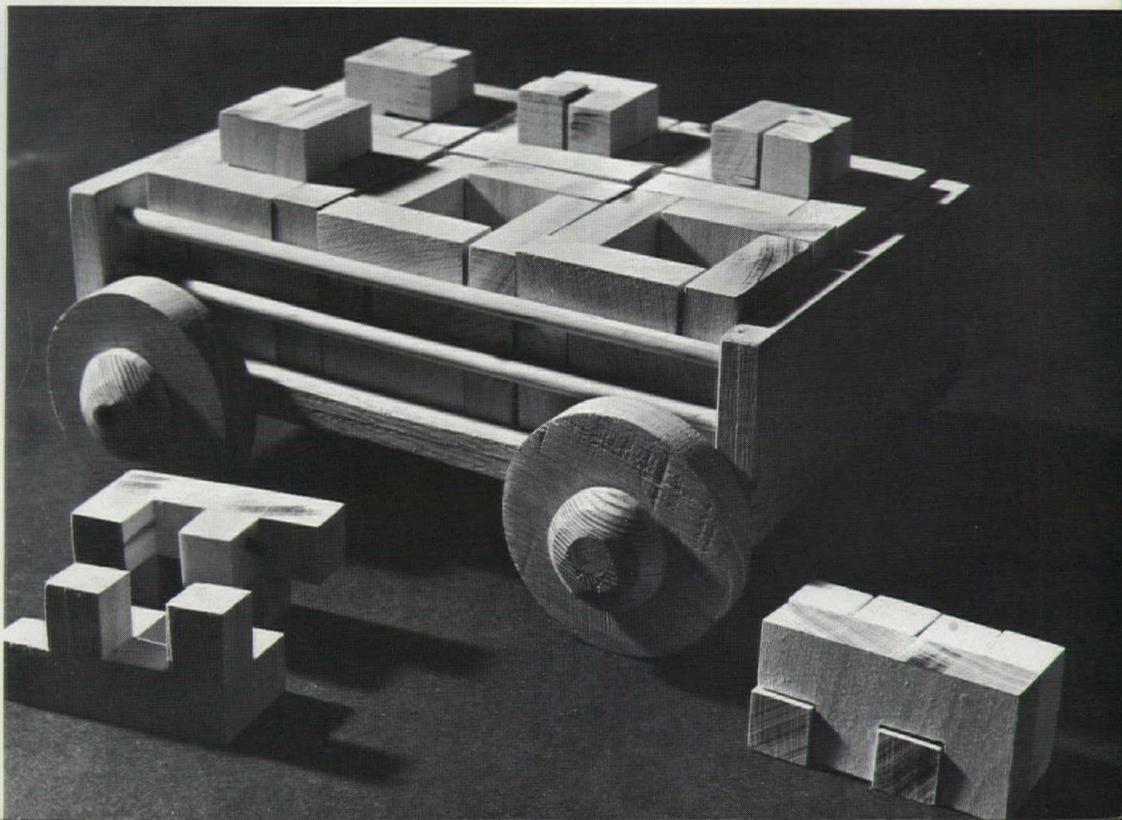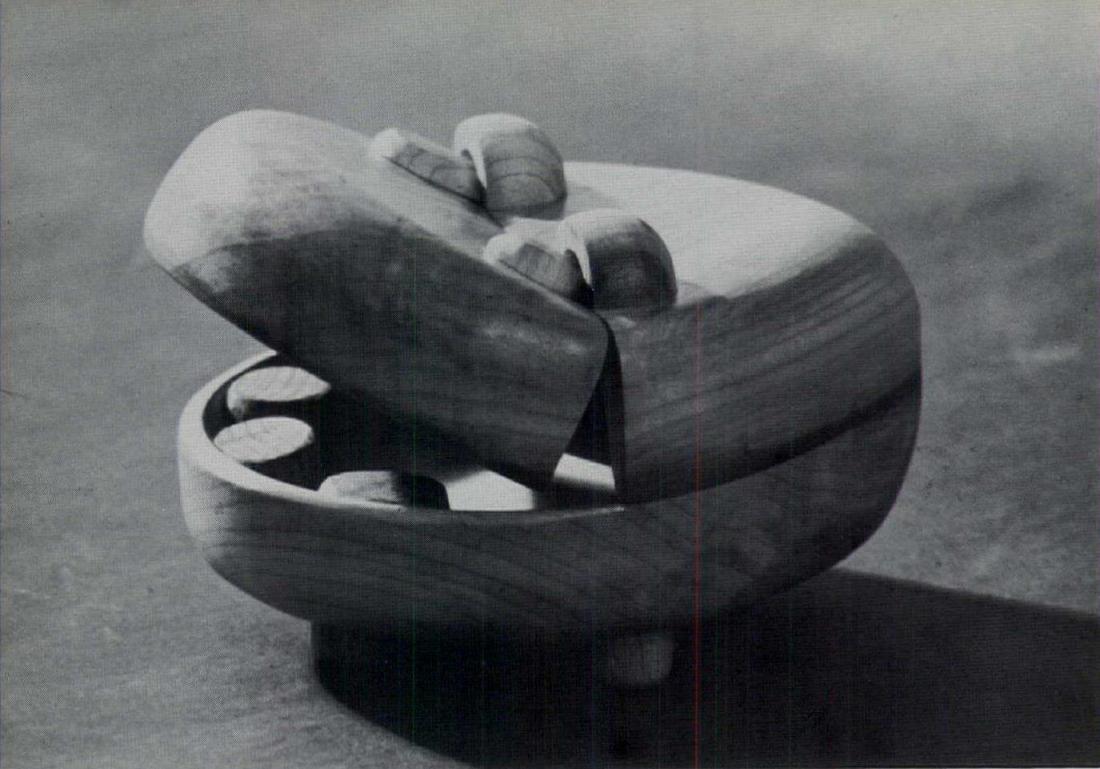
THE MOUTH
Steven Schiller
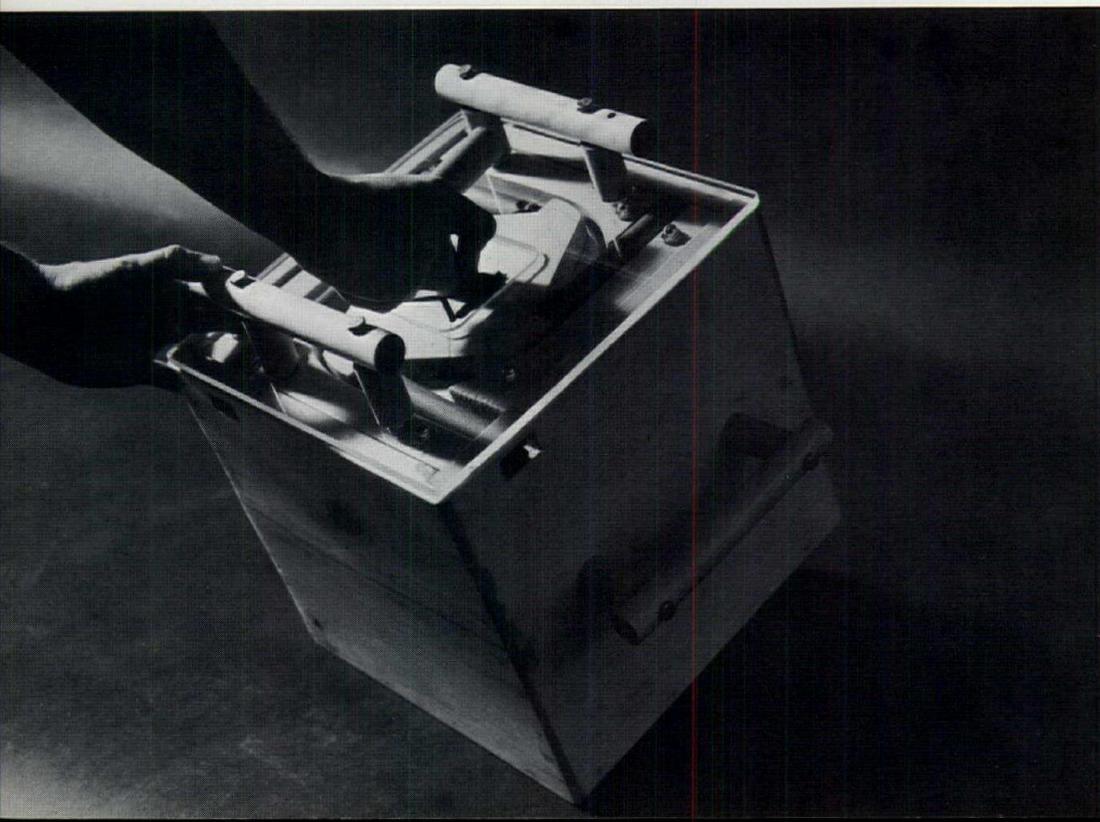
BANK VAULT (A TOY BOX)
George Lasley

These toys are viewed to have specific therapeutic value: first of all, they must stimulate fine motor coordination, and secondly, they must also encourage greater social interaction among the children (this was no small task, especially considering that some of the children who would use these toys were deaf-blind, physically handicapped, mentally retarded individuals).

Most of all, however, the toys must be FUN to play with! It is in this respect that the toys are presently undergoing "tests" by the children of Ellisville School. As one of the students expressed it: "In the final analysis, it will be the children themselves who make the toys or break them!"

Through the use of video tape facilities both at Ellisville and at the School of Design, we will be able to share directly in the "final analysis."
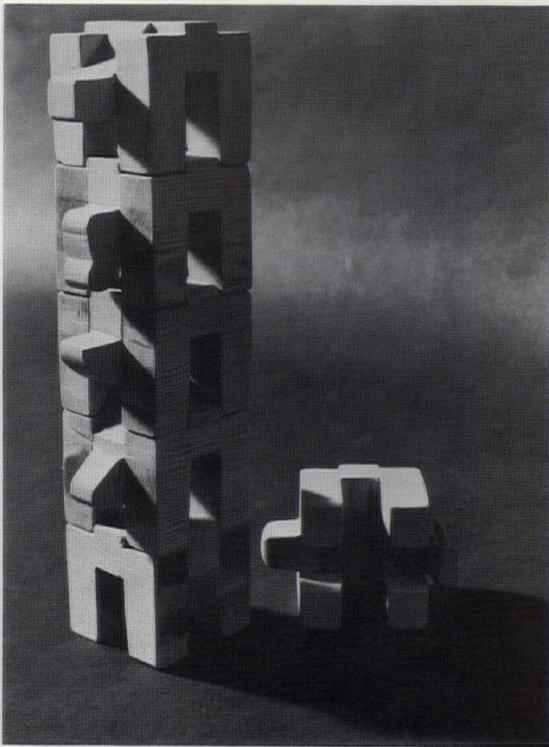

MODULAR ANIMAL BLOCKS
Eugene Montezinos

Students who participated in the toy project:

William Barnwell, Jr.	Stephen Mays
Ralph Belton	Eugene Montezinos
William Burgin	Kathryn O'Shea
Frederick Fonville	David Polston
Charles Francis	John Ritchie
Kenneth Harkins	Steven Schiller
Ponglerd Kooaroon	William Sliger
George Lasley	Charles Smith
Lesley Love	Daryl Suther
David Mayfield	William Watkins, Jr.

the image of a latin american town
search for form determinants in the design of transitional
environment for guajiro

raul r. sotolongo, fourth year architecture student

Concept

reality
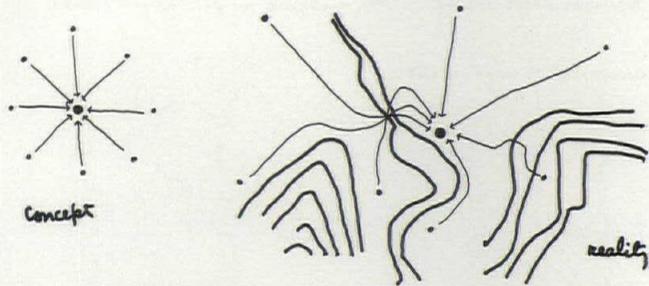
human settlement in Latin america's countryside follows a casual order fashioned by the natural elements of the environment. in the countryside, especially in the mountains, the straight line is not a measure of order because it is not a natural movement

P_2 and P_3 are equivalent to P_1 and P_4 in terms of degree of energy consumed to get to C, although they might appear closer to C
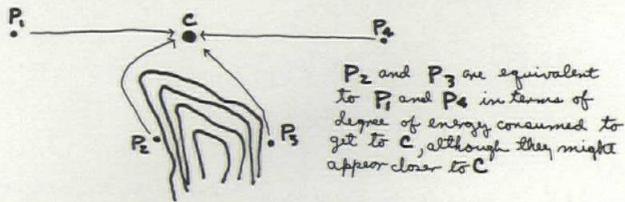
thus, while a particular settlement might appear to follow a casual or disorderly pattern, this might be due to the deforming influences of the environmental elements.


pattern unaffected by environmental circumstances

same pattern as affected by environmental circumstances
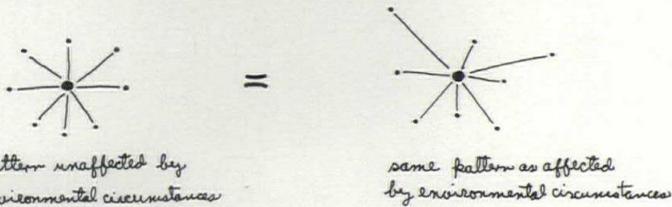
thus, while in concept there exists a pattern, perceptually it is non-existent. the guajiro is a perceptual thinker, he orders his life as he perceives his environment. For the guajiro the environment conforms to a casual order and so too he sees his settlement pattern.

perceptual reality

different

conceptual pattern
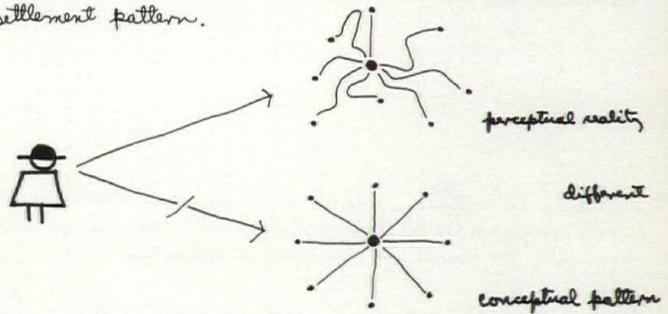
the urban environment is less affected by the environmental circumstances. a city tends to ignore the ground on which it was built, so that the conceptual pattern is transfered unaffected into reality. in this sense, the urban settler becomes a conceptual thinker, because he perceives concept.


perceptual reality

one and the same

conceptual pattern
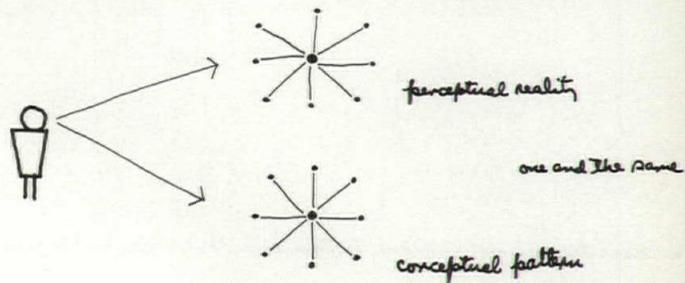
in this project we want to design a transitional environment for the guajiro who comes to the urban centers . we want to design an environment which the guajiro can accept, an environment based on the guajiro's perception of what an environment should be, and one which can function in an urban context .
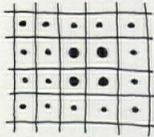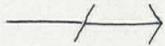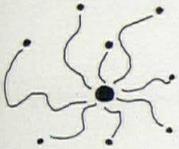
imposing an extraneous order of human settlement on the guajiro is not only oppressive but unfunctional . the guajiro will react negatively to such an unnatural situation .

the new environment has to respond to two main form determinant

the guajiro's perceptual needs
the guajiro's function within an urban situation
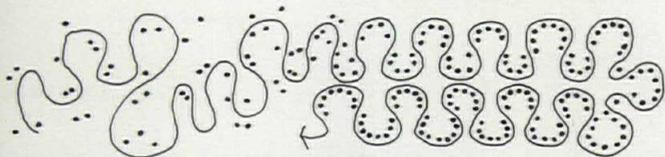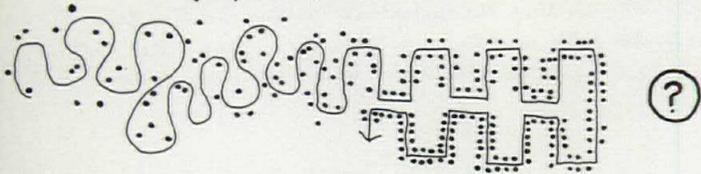
the transition is not intended to transform the guajiro but to accomodate him

an environment based on the guajiro's perceptual needs

environmental element needs

water

vegetation

in a natural arrangement

land
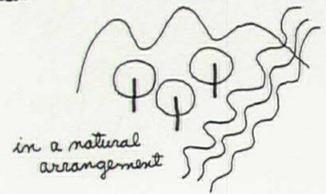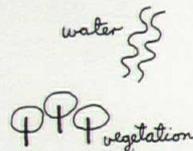
the guajiro's personal space is not limited by the walls of his house, it extends to the natural environment
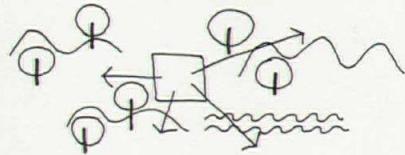
what we have to do is find out how does the guajiro responds to the various relationships of this environmental elements so that we can provide this stimuli in the new environmen

example,

if 👤 + 🌳 = 🌳🏠

≠ 🌳🏠

then 🌳

best living loc
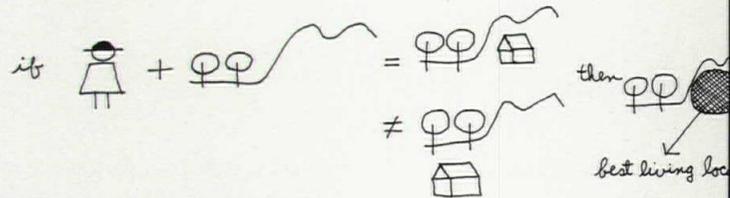
if the natural environment for the guajiro is his personal space,
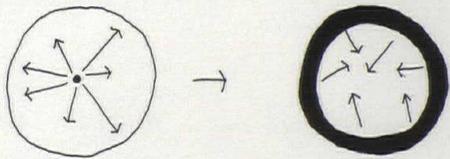
embracing this natural environment by settling around it could be a natural change.

this new tendency reinforces the notion of making the outside environment personal space
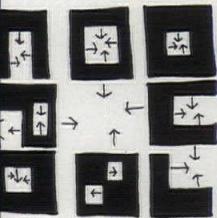
the spanish built with this attitude towards space, enclosing the "outside space" with their buildings.

this outside personal space grew smaller with increased density of human settlement. now it was not a whole area of nature which the settler had to himself but a patio

since the area of outside personal space was reduced, in order to keep this personal space just as valuable and strong as it was when larger, the elements that it had to contain would have to be arranged in a stronger manner to make them more effective
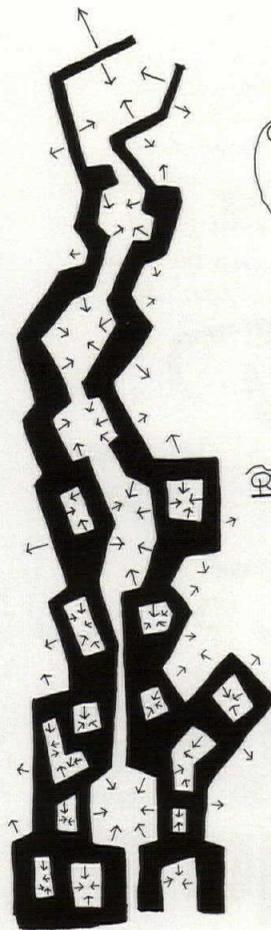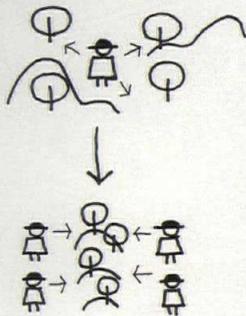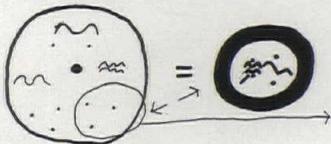
as density increases the outside personal space undergoes a transformation, becoming smaller in area but more substantial in effective power
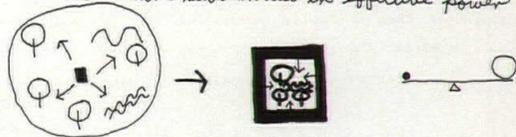
as density increases the outside personal spaces fall into a hierarchy of semi-personal, public spaces, the elements of each step in the hierarchy being different and their interplay different

personal	semi-personal	public
↓	↓	↓
garden	pedestrian	boulevard
patio	green way	mechanical transport
	court	park
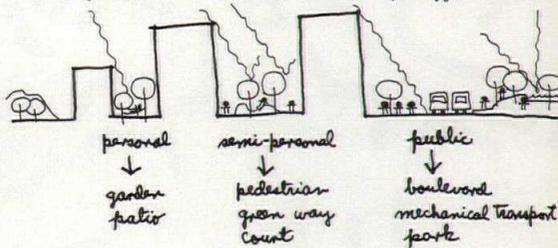
the transitional environment will provide these ranges of outside environments in such a way that contrast will be noticed between the ranges so as to make the transition be felt.
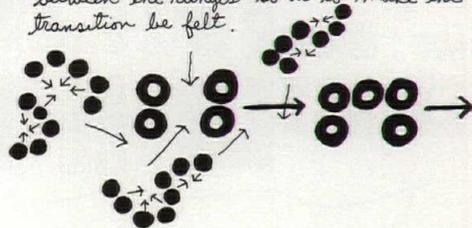
in creating the transitional environment we want to preserve
the guajiro's attitude towards his natural environment.
this implies an avoidance of forms that will make the
transition from rural perception to urban perception smooth.
this implies the search for forms that will make the
transition of what is rural and what is urban noticeable.

we want the guajiro to notice the change of rural form in an
urban context into urban form. this will prevent the guajiro
from being unconciously dragged into urban life ways.
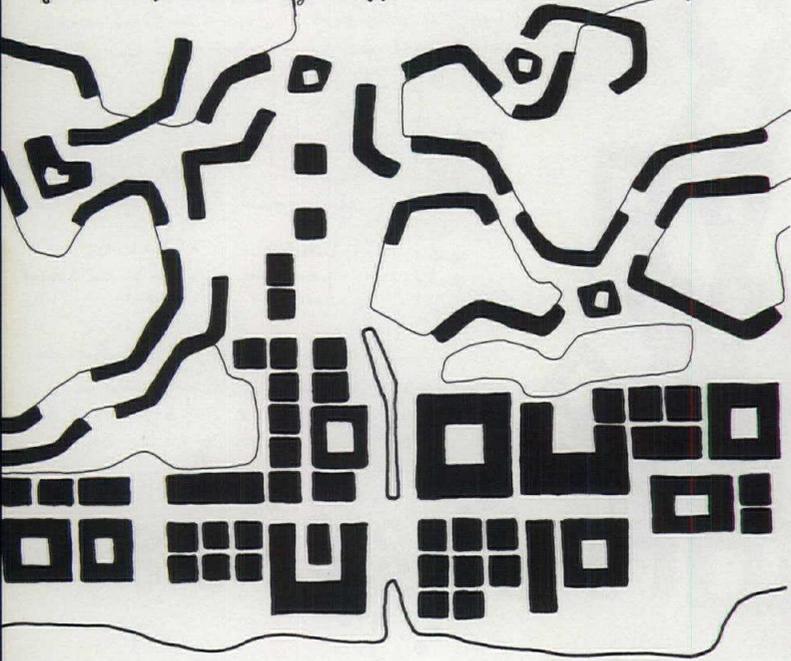
since we do not have the means to acquire the information concerning
the guajiro's specific needs and responses to his environment
we will invent these needs and responses

lets assume:

the guajiro will settle in that particular spot in the terrain which

has close access to water
   to a road
   to cultivating land
   sun and shade balance
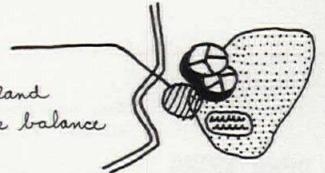
the transitional environment will strive to satisfy these needs even
when the density situation is high.
the idea is to find forms for these perceptual elements to function
efficiently in a dense situation.
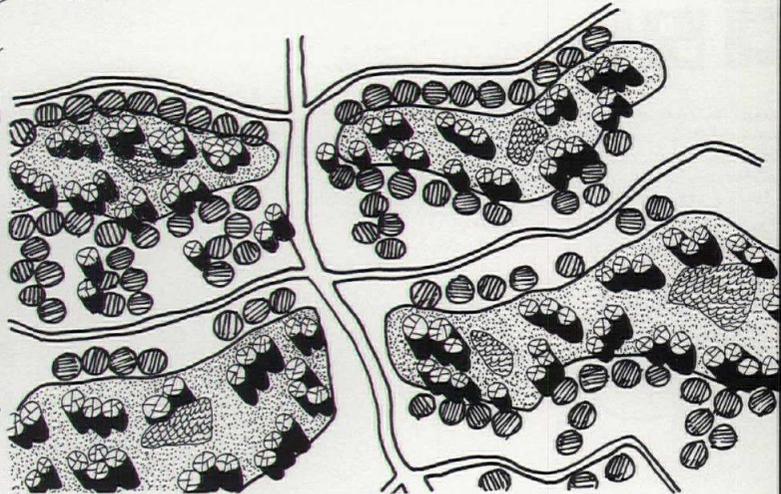
one problem which we have to face in the development of the transitional environment is that of the guajiro's learning to live in a community organization. the guajiro's isolation from community life during his life in the countryside makes it difficult for him to function efficiently in community life.
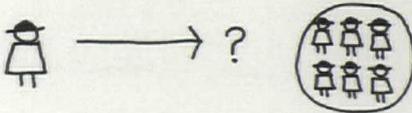
the urbanite has learned to channel his radius of activity into community accepted directions and the order of his settlement responds to this conventional direction
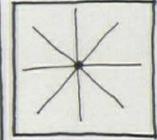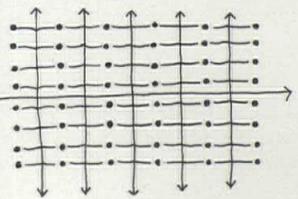
the guajiro's radius of activity in the countryside

no conflict
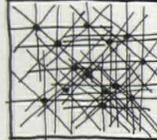
the guajiro's radius of activity in a community situation

conflict

thus, the guajiro that finds himself in a community environment needs a unifying element that will permit his identification with his community and his place within it
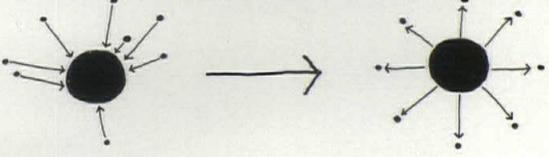
all primitive societies need a symbol, a totem, that binds them together. through this common symbol all members of these societies are able to recognize each other and thus coordinate their activities towards a common goal. this symbol of community is not only an element of order, it is also educational.

in almost all cases this symbol of community represents an ideal state derived either from a past when the people lived in perfect harmony or from a future ideal condition they strive for

ideal past ← → ideal future
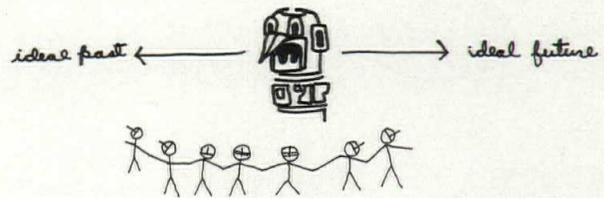
all societies order their settlement around their communal symbol

the indians around the totem

the medievals around their church

western man around money and the car
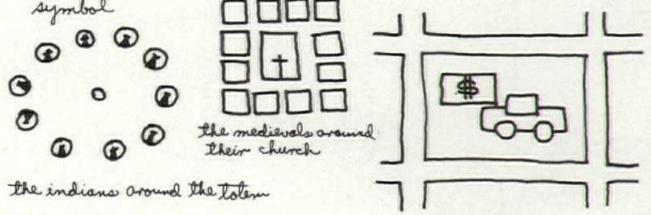
the community symbol gives form to urban settlement
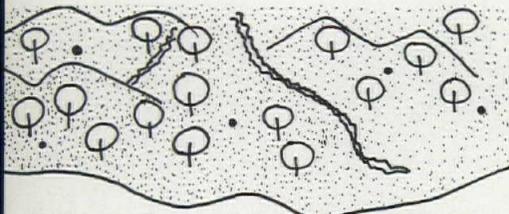
the guajiro surrounded
by the countryside, his
natural state
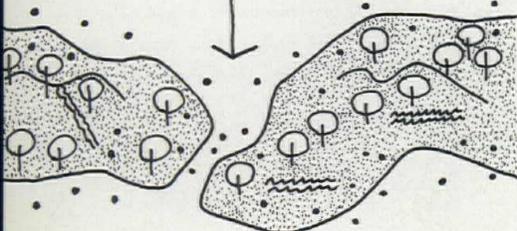
as the guajiro gets closer
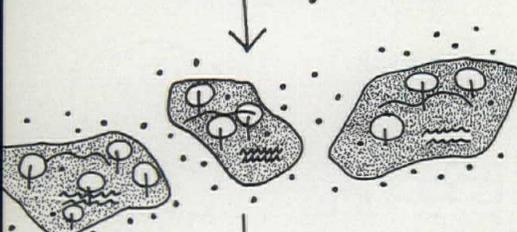
and closer to the urban
environment
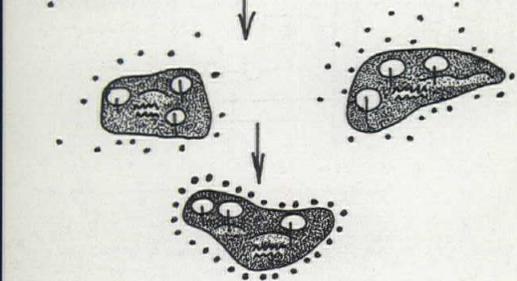
the countryside environment
becomes smaller and smaller

the elements of the countryside
environment in this smaller
patches have to become
arranged in such a way
that they will be more
effective in a smaller area

they become abstracted

they take on symbolic value

this small patches of countryside
environment provide the
guajiro with a symbol
that has the potential to fulfill
his need for his now lost nature

the symbol shall be designed with two main considerations in m
form determinants :

(A) it should be a careful abstraction of the countryside
environment, and an effective one. (**internal structure**)

(B) its form and location should be designed in such
a way that it will effectively influence the form
and order of the community (**external structure**)
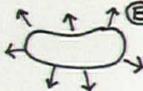
(A) **a study of the elements comprising the internal structure** :

list of elements :
1. topography (land form)
2. vegetation
3. water
4. sun & shade
5. animals
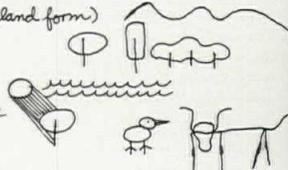
element (1) : land form
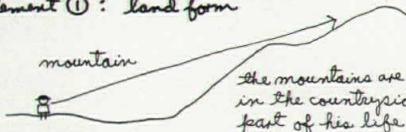
mountain

the mountains are an important perceptual element
in the countryside, one the guajiro has made
part of his life.

perceptual needs the mountainous land form fulfills :
1. visual relief ————→ provide visual variety an
2. curtain effect   entrigue (what is behind?)
3. exercise (climbing)
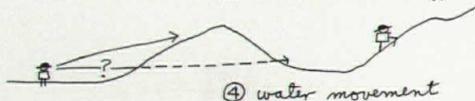
(4) water movement
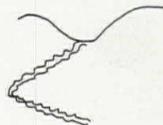
land form (continued)

plane terrain
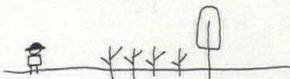
perceptual and functional needs it fulfills :

① cultivation

② animal raising

③ least energy compsumption

④ water reserve

rock formations

perceptual needs they fulfill :

① visual relief

② heat conservation

③ the fact they are present in nature (reality factor)

④ water movement , sound .

element ① land forms : implementation of the perceptual needs created by the elements of land form into the urban oasis (the transitional environ- ment's symbol).

fulfilling the needs created by the mountain :
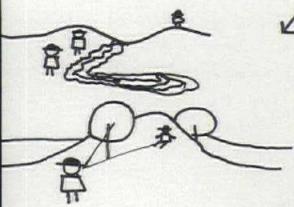
mounds ⟶ visual relief
curtain effect
exercise
water movement

vegetation ⟶ visual relief
curtain effect

visual relief through greenery

curtain effect through greenery
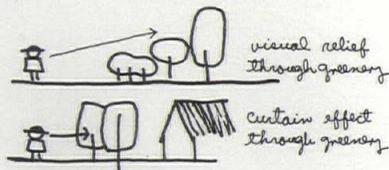
angles determined by : height desired length of mound possible

ual variety ; ded

---

land form (continued)

proportion of sloped (mound) area to plane area in the urban oasis and relative position of each :

some rules of proportion :

mounds will be used economically : only where perceptually needed

where oasis takes shape of long narrow bands, mounds will :
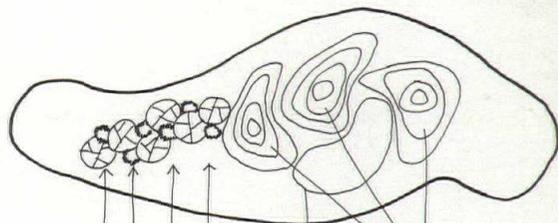
trees and low vegetation as visual curtains where band is narrower

accomodate themselves at widest spots of band, their direction breaking the direction of the band and enclosing a space of plane terrain of a size approximately one of the mounds'.
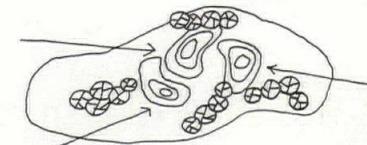
the mounds should be visually accessible from angles which run lengthwise along the oasis so that they can be seen from the most distant points along the length of the oasis . this will determine the position of tree screens in the oasis.
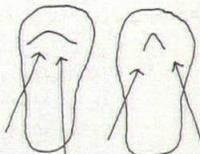
mounds shall be placed combining longest and shortest cross-section from the access angles for visual variety

variety of mound forms and their particular perceptions qualities
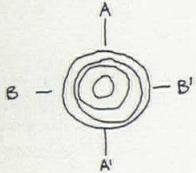
round : does not have space enclosing
qualities

has strong point location : emphasizing a
paticular location

A — A'

B — B'
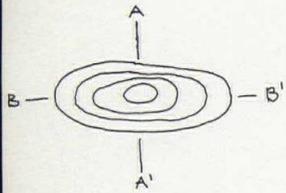
elliptical : has strong directional orientation
guides movement patterns along
its main direction
separates two areas
effective visual screen

A — A'

B — B'

A — A'

B — B'
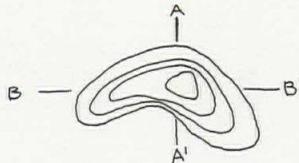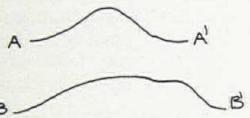
curved axis : space enclosing qualities
visual variety in one form
gives locational importance
to enclosed space
effective screen from more
than one direction

A — A'

B — B'

some different mound forms in relation to each other :
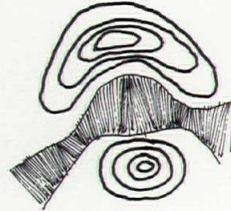
curved axis & round : enclose a space
variable height screen
giving visual clues at low po
between two high po
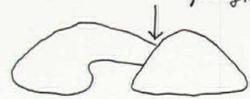
fast changing visual impressions

two curved axis :

force particular
movement changes

space enclosing
variable heigth sc

variable heigth screen

Can create through different relative
positions an innumerable variety
of spatial and movement conditions

elliptical and round :
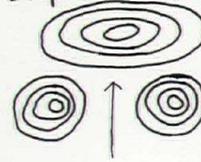
create an important
focus point perceptually

fast changing visual
impressions
variable screen

the elliptical mound is the least combinable o
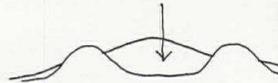
land forms (continued)

land depressions:
(- - - - -)

perceptual characteristics

provide a wide range of visual impressions
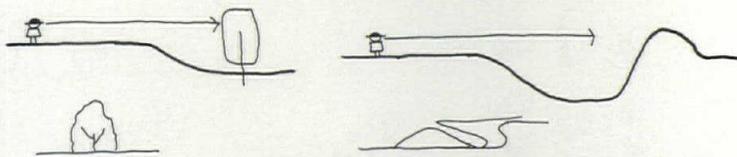
can make mounds look bigger as you get closer to them
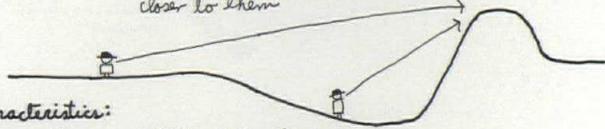
functional characteristics:

separate different areas of different functions

create water pockets and water movement
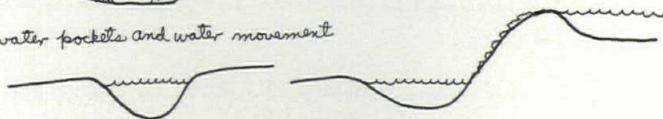
create visual screens and movement patterns

land depressions (continued)

their forms and strategic locations in the oasis

depression for water pocket

depression around well
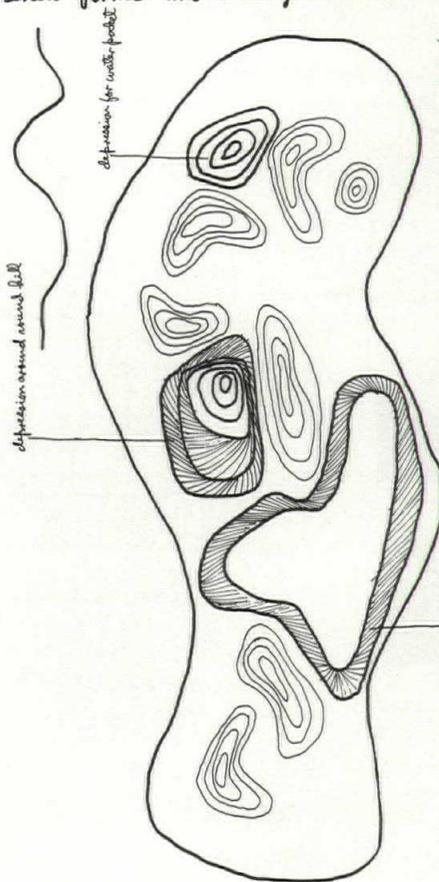
the form and location of land depressions will be determined by the already existing oasis form and mounds so as to augment the laters' effectiveness.

depression to separate large place area from the moving land forms. makes mounds look all higher when seen from anywhere in place area. screen effect created for place area and augmented for other area.

element ② : vegetation :

study and implementation of the perceptual
uses of vegetation forms into the urban oasis

some different tree forms and their perceptual uses:
(trees common to the naiguatá area of Venezuela)

① low, leafy,   ② medium, leafy   ③ medium   ④ tall, leafy   ⑤ tall, bare
wide spread   narrow spread   spotted foliage wide spread   curved or
                                    wide spread   free form   straight
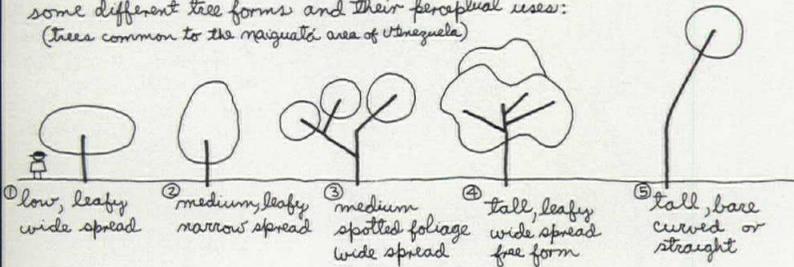
① low, leafy, wide spread

creates low ceiling effect for a feeling
of enclosure.

creates the third dimension of
space by contrasting under-the-
-tree effect vs. open sky effect

can create a pleasant pattern of
opening space and closing space
for perceptual variety

good visual screens
(a few trees can do the job for a
large area)

1   1   2

wide, dark shadow (simplification, actually, shadow gradually darkens towards center)
close to tree

vegetation (continued)

tree ① continued

this tree lends itself to make well defined
perceptual patterns in all three dimensions
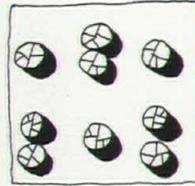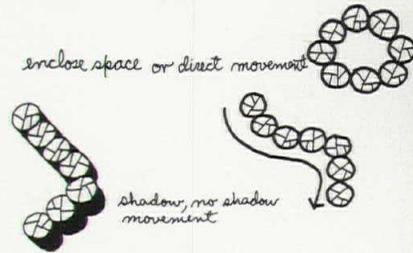
enclose space or direct movement

2 dimensionally

1   2   1

1   1   1
2   2

shadow, no shadow
movement

for the sake of simplification we will jump into a study of
tree #5 (tall, bare, curved or straight) and then into the possible
perceptual relationships that could emerge from the combination
of ① and ⑤

tree #5 (tall, bare, curved or straight) : the coconut palm
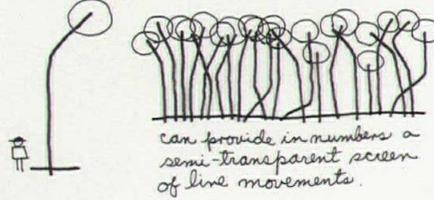
can provide in numbers a
semi-transparent screen
of line movements.
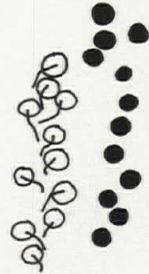
the shadow
are set apart
from tree
(at low sun
and create
spotted
movement

shadow very
in value

tree # 5 (continued)

the main play the coconut tree does with the sun is not one of shadow, but of eclipsing the sun momentarily, and create a strobe effect when the person moves parallel to a line of coconut palms with the sun behind the palms.

sun position   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
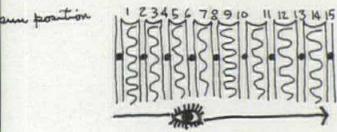
the effect can be very distracting and pleasing if one does not look directly at it but is merely aware of it.
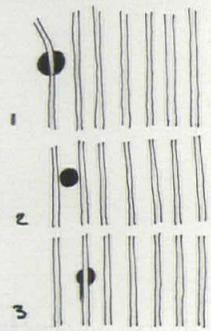
possible interplay of trees ① & ⑤
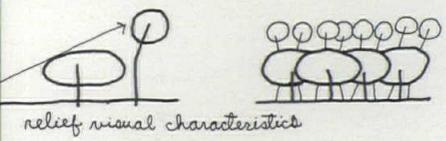
relief visual characteristics

movement   space perception

the possibilities are unlimited. knowing the perceptual potential of both trees is sufficient for now. combinations will arise when needed.

trees #1 and #5 : their strategic locations in the oasis

(first model)

rough example

rules : (from page 14)

① tree screens should be accomodated in such fashion that they will permit view of mound formations length-wise and act as screens to prevent view of the oasis' limits.

② use perceptual potentials defined in the tree studies whenever possible.
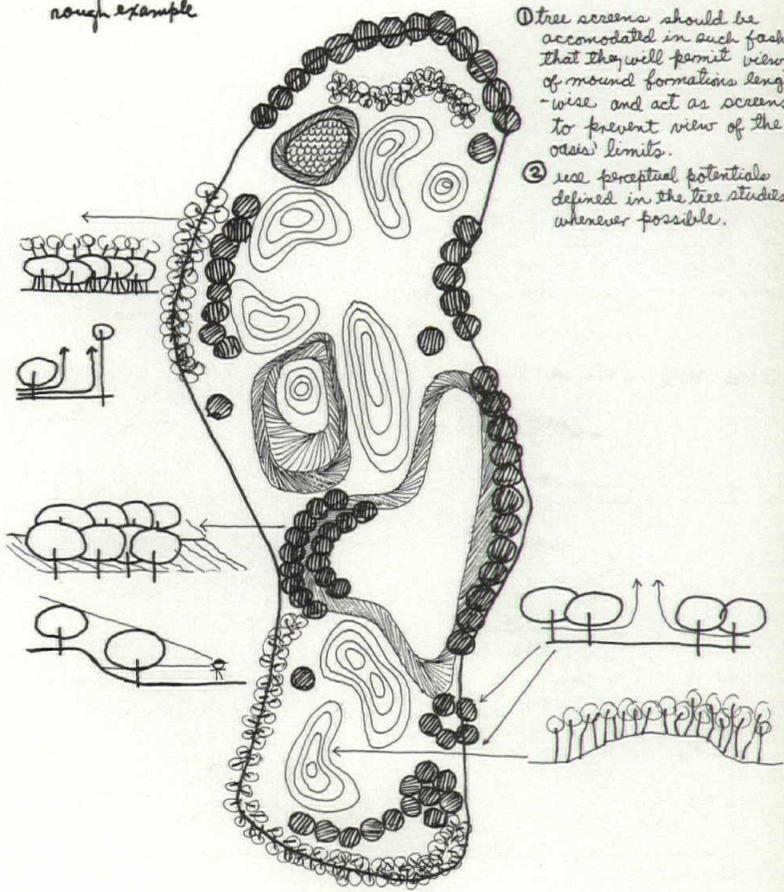
triad environmental center

tom stanford, fifth year architecture student

In 1966, a proposal was made to develop a Triad Park for the rapidly expanding population of the three-city area of Greensboro, High Point, and Winston-Salem: the triad region of North Carolina. That proposal fell by the wayside when the voters failed to support the project in a 1968 bond referendum.

Since that time, the Triad Environmental Center Committee, headed by Meade Willis, Jr. has revived the idea with the possibility of getting federal funds to help support the project. In September 1971, the fifth year and graduate architectural class of Professor Robert P. Burns, through the direction of the Urban Affairs and Community Services Center of North Carolina State University, undertook a study of the Triad Environmental Center as a semester project.

The semester was spent in an intensive study of the Piedmont Triad area. After visiting the site, the class, made up of 14 students, divided into four groups: 1) impact 2) political and financial analysis 3) site analysis and 4) facilities analysis. The impact group studied the needs for open space and made recommendations for the site. The political and financial group outlined various ways that adequate financial funds and political support might be obtained. At the same time, the site-analysis group studied the recommended site and produced information needed for planned locations of facilities. Lastly, the facilities analysis group outlined alternative concepts for development of the park and provided a list of goals and a program of building requirements for each of the recommended facilities.

IMPACT ON THE TRIAD

The formation of a Triad Environmental Park would have great influence on the three cities and two counties involved, necessitating forecasting and planning for the area to meet the needs caused by visitors from many regions. Within a 600-mile radius of the Triad live

24 million, and there is great potential for people from even more distant parts of the country to become acquainted with North Carolina.

Now, the population of North Carolina centers around this area. By the year 2000, the Piedmont Crescent and Triad will become more important as the economic, cultural, industrial, and educational center of North Carolina. The present make-up of the population in both economic and educational aspects indicates that wise guidance is available—especially when Triad citizens become more aware of their capacities to cooperate to preserve an open space in their midst.

If the park is in spirit a combination state park, national forest, and theme park, many more visitors can be expected. Six hundred thousand might visit in the first full year of operation. By the fifth full year of operation, a million per year will come . On the average, visitors will come in parties of two. Half of the visitors will be children. One-fifth will be from the Triad, and three-fourths will be from North Carolina. About one-fourth will be from out of the state.

Adequate advertising and proper planning and administration can insure a favorable economic impact on the area. If 600,000 tourists spend $6, the average expenditure per tourist per day, the total revenue from the first year will be $3,500,000. In addition, the state will gain by gasoline taxes, sales taxes, and income taxes from this amount. The multiplier effect of 1-2 signifies that the initial expenditure results in an increase of an additional $3,600,000 - $7,200,000 in retail trade and taxes. Such benefits may be internalized to the Triad Park if facilities to satisfy created demands are built—as gas stations, restaurants, and hotels. Of course, several hundred new jobs will arise, causing the local economy to grow by $2,000,000 annually directly. New homes and new schools will be built.

The educational impact is of prime importance. There are ten colleges and universities in the area, with over 16,000 students. It seems reasonable to hope that these institutions could aid in
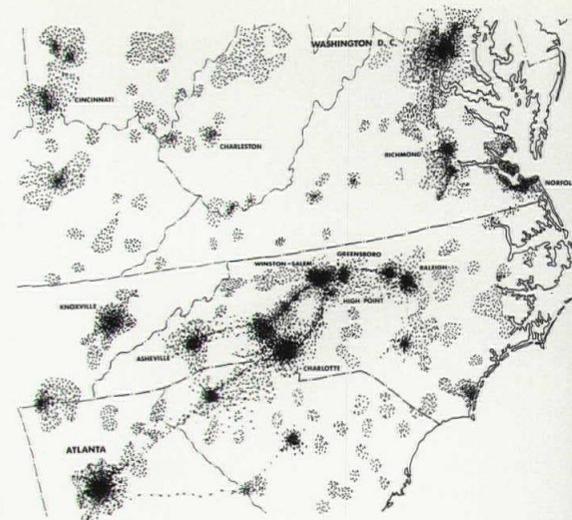
population
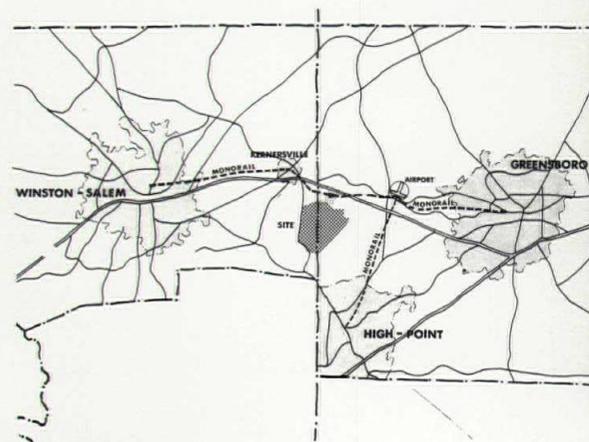
site

operating the environmental education program of the Triad Park. No one institution could support such an activity alone. Most significantly, the institutions would gain an opportunity to originate and participate in research.

The Triad, already liberally endowed with transportation networks, is ready to admit any number of people to its attractions. The Triad Park could make the area notable, not only for its environmental foresight, but for creating the setting for man to encounter man on a level such as he does in truly large metropolitan areas.

POLITICAL AND FINANCIAL FACTORS

Political support for the Triad Environmental Park will be very critical at first. Until the present, promotion of the Triad Park concept has come from the Piedmont Triad Committee. Because of its varied interests and responsibilities, the Committee cannot be expected to pioneer the drive for a park all alone. City and county governments in the Triad are faced with critical problems of their own and may not be able to divert much time and energy to promotion of the park. Thus, lacking direction, public support for the park could be weak and fragmented. Dependence on taxes and bond issues for funding could lead to some public opposition.

The Piedmont Triad Committee *can* attract support from the public and various interest groups by showing them individual projects that will benefit them. Then, an Ad-Hoc Committee for formation of the park could arise. This Committee can work to mobilize general public opinion for the park—if it is vigorously aided by civic organizations, state government, and federal agencies. After the project has begun, the supporters can determine an organization to govern the park permanently.

A governmental commission appears to be the simplest way to organize the park, since it would relate to the existing structures of government in the Triad. More citizen participation in the direction of the park would be assured. If public interest is not maintained at a

PIEDMONT TRIAD COMMITTEE | PUBLIC | CIVIC GROUPS AND ORGANIZATIONS | LOCAL INDUSTRY | FOUNDATIONS | STATE GOVERNMENT | FEDERAL AGENCIES

AD-HOC COMMITTEE FOR TRIAD ENVIRONMENTAL PARK

COMMISSION OR BOARD OF TRUSTEES OF TRIAD ENVIRONMENTAL PARK

TRIAD ENVIRONMENTAL PARK
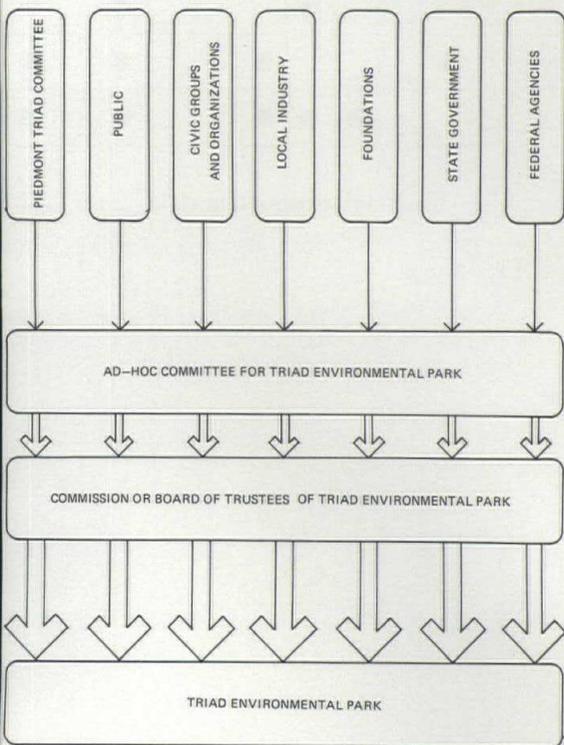
political support

high level, the danger is that neglect could result in failure to appoint the best leadership. The park commission could even find itself involved in local politics detrimental to the goals of the park.

On the lower "quasi-governmental" level—the control of the park itself—a private holding and development corporation seems sensible. The corporation would acquire more land than actually needed for the park to control development in the surrounding area. With the commissioners of Guilford and Forsyth counties, the corporation would appoint the members of the board of trustees of the non-profit Triad Environmental Park.

Financial support can come in three main ways: 1) gifts from foundations, civic groups, individuals, and industries, 2) matching funds from federal agencies, and 3) loans. Individual contributors will certainly share the park's benefits with the public. The innovative nature of the park should have widespread appeal to national as well as state foundations. Some aid can be expected from federal sources such as the HUD Legacy of Parks Program and the HEW Environmental Education Centers Program.

THE SITE

The proposed site for the park is just south of Highway I-40 near Greensboro, and is principally in Guilford County, but is contained partially in Forsyth County on the west. It is in the Higher Piedmont Ranges, and comprises part of the upper river basin of Deep River. The site elevation is approximately 895 feet, and the land, as a whole, is sloped at only 4 to 15 percent. As is most of the Piedmont, the site is rolling farmland and pasture land cut out of pine and hardwood forests. The stable, undulating ridges are the most suitable areas for development, and are of the deep, open soils covering most of the site. The next largest area is covered by alluvial soil, and, due to possible scouring by flood waters, is not as suitable for building or development. A small percentage of the site is seen as totally unsuitable for building because of high erosion potential. However, these areas could serve for open recreation.

SOURCES \ ELEMENTS	LAND ACQUISITION	THEME PAVILION	PHYSICAL SCIENCES COMPLEX	LIFE SCIENCES COMPLEX	ENVIRONMENTAL STUDIES COMPLEX	RECREATION	FINE ARTS COMPLEX	SOCIAL AND BEHAVIORAL SCIENCES COMPLEX	MAINTENANCE	OPERATIONS
LOCAL BOND ISSUES	●					●				
LOANS	●	●	●	●	●	●	●	●		
REVENUES	●	●	●	●	●	●	●	●	●	●
DONATIONS FROM INDIVIDUALS	●	●	●	●	●	●	●	●		●
INDUSTRY		●	●	●	●	●	●	●		●
FOUNDATIONS	●	●	●	●	●	●	●	●		●
DEPARTMENT OF INTERIOR BUREAU OF OUTDOOR RESOURCES	●					●				
HUD	●					●				●
HEW				●				●		●
APPALACHIAN REGIONAL COMMISSION	●				●			●		●
NATIONAL SCIENCE FOUNDATION			●	●	●			●		●

financial support matrix

hydrology analysis

PRIMARY RIDGE
SECOND. RIDGE
DRAIN. DIRECT.
EXISTING WATER
TRIBUTARY
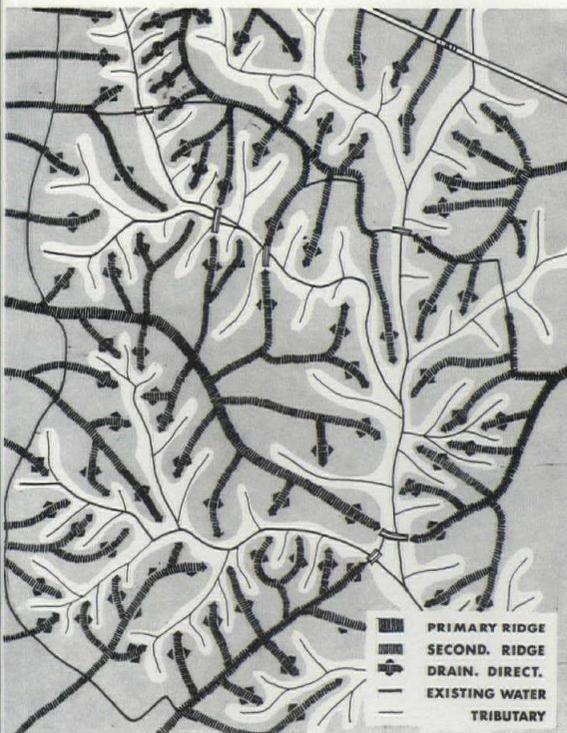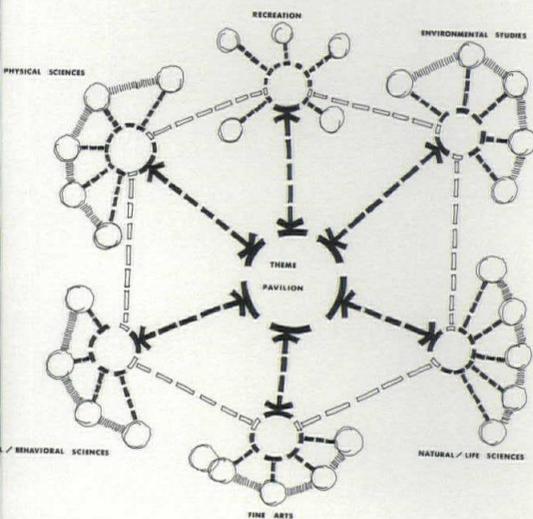
major activities

The chief guiding environmental concern for any site planning would be recognition that this area is in the watershed of High Point, and that Deep River is classified as A-II. The water must be maintained suitable for drinking, culinary, and food processing purposes. Flood prevention and flood damage control capabilities must also be maintained. With these considerations in mind, any planning for creation of a lake within the park for water sports must be made with great caution.

PLANNING THE FACILITIES

Acquisition of the space for the park, no matter what size at first, must be accompanied by projection of physical planning alternatives for now and for the future. Facilities analysis indicates that there exist two possible guiding concepts which would affect later form development: either with or without an initial theme. If the Triad should choose to develop the whole park about a central environmental education theme, "Man and His Relationship to the Total Environment," the physical facilities would be closely associated and functionally interlocking. Together, they would help to 1) disseminate environmental information to public audiences, and 2) research effects on the environment due to taking particular biases. One way such a theme could be effectively presented would be multiple usage of the same land area or other resources in the park.

With such an "environmental education" framework, the park might easily display a dynamic microcosm of the entire environment—showing existing and *potential* relationships. Through novel groupings of activities, the park could become a vibrant laboratory which might call attention to the way man improves and abuses the environment.

There would even be more immediate advantages with a unifying theme. A high level of quality control would be insured. Phasing would be predictable, and needless duplication of facilities could be avoided. The program of development, too, could have a built-in

flexibility answering to constantly changing issues and interests of surrounding communities. As such, the Triad Park would be unique in the nation.

Without the framework of a theme, the programming restraints would be determined only by particular recreational and leisure-time educational needs for the Triad. "Environmental education" would be just one of the several separate exhibition activities. This approach would be workable mainly because it allows single interest groups to contribute directly to a desirable project at any one time. However, an initial theme means that planners could maximize the potential of the site and of the citizens of Greensboro, High Point, and Winston-Salem. A non-thematic approach may yield quicker observable results, but a theme could offer more in both variety and quality.

The results of the study were published by the Urban Affairs and Community Services Center under the direction of W. G. Roberts and H. G. Walker. The last few weeks of the semester were spent in preparing proposals for park facilities by either individual students or teams of two. The five accompanying projects are proposals submitted by members of the class.

ALTERNATIVES

COMPLEX PHASING:
(special interest)
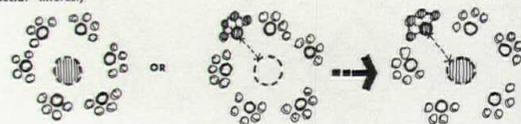
THEME PHASING:
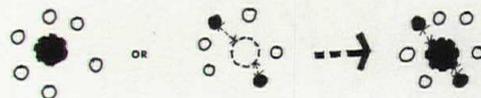
SUB UNIT-THEME PHASING:
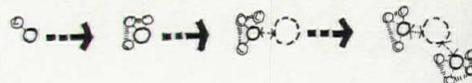
COMBINATION:
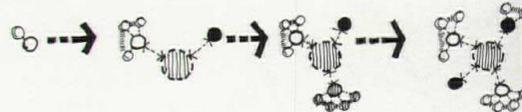
phasing alternatives

CREDITS

Faculty Advisor—Professor Robert P. Burns

William Brantley	Jerry McGinnis
Frank Dalton	Richard Nolte
John Daughtridge, Jr.	Rick Rice
Curtis Fentress	Thomas Stanford
R. Hampton Fields	Cecilia Wan
Charles Hill	John Womble
Richard McCommons	

THEMATIC APPROACH

John Daughtridge Jr.

PHYSICAL, SOCIAL & NATURAL/LIFE SCIENCES COMPLEX

Rick Rice
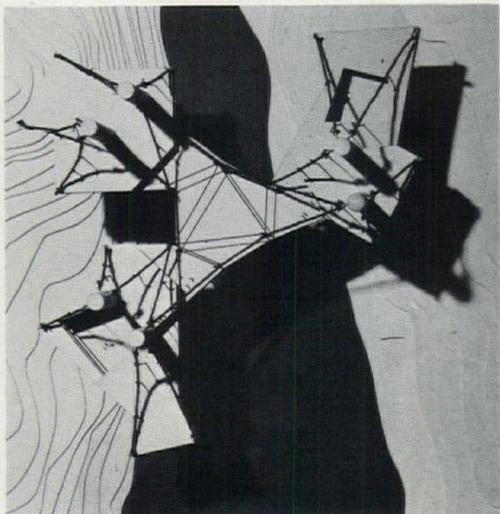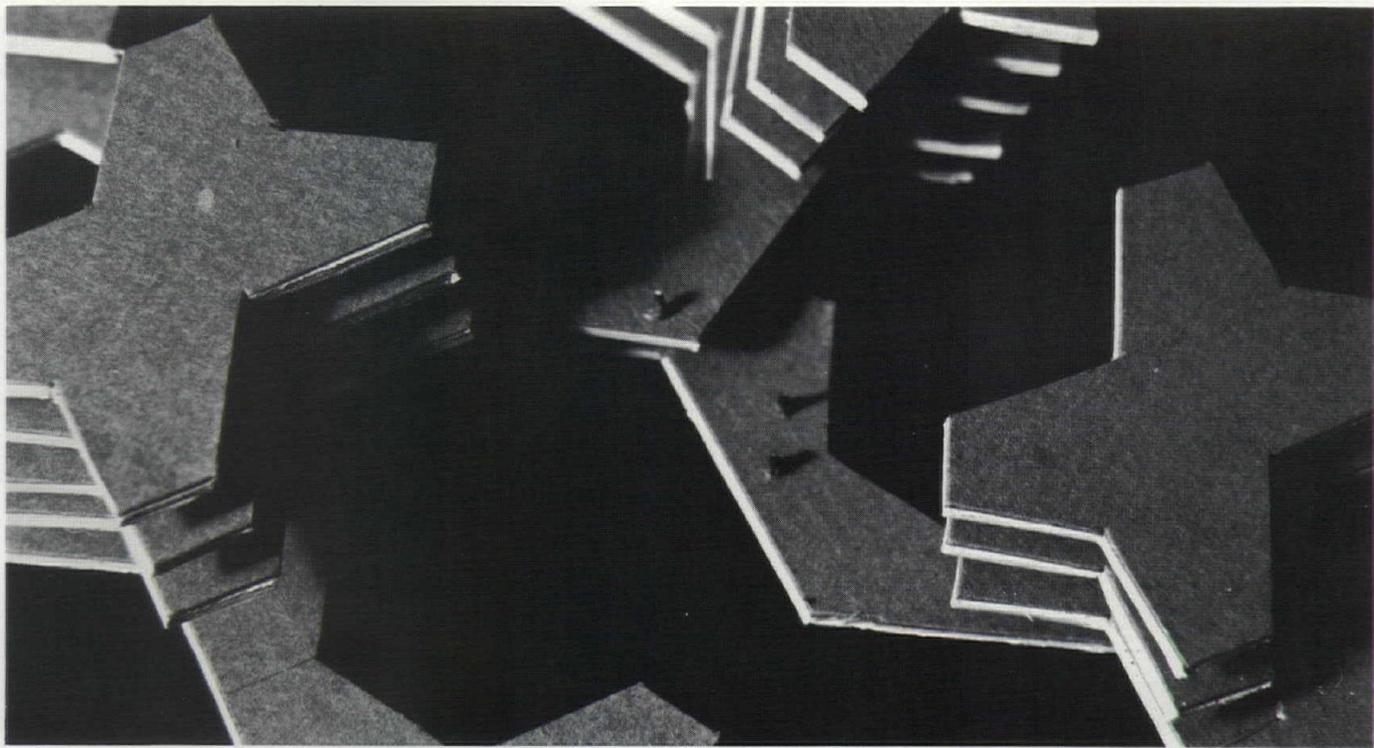
Tom Stanford
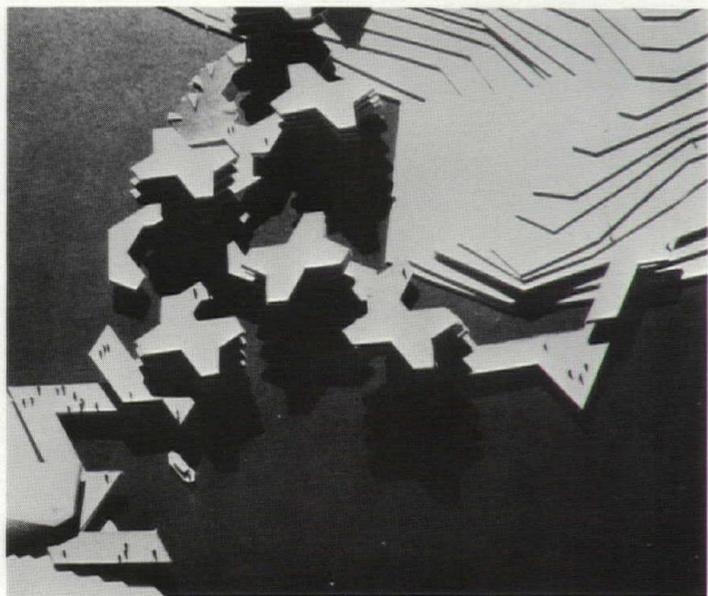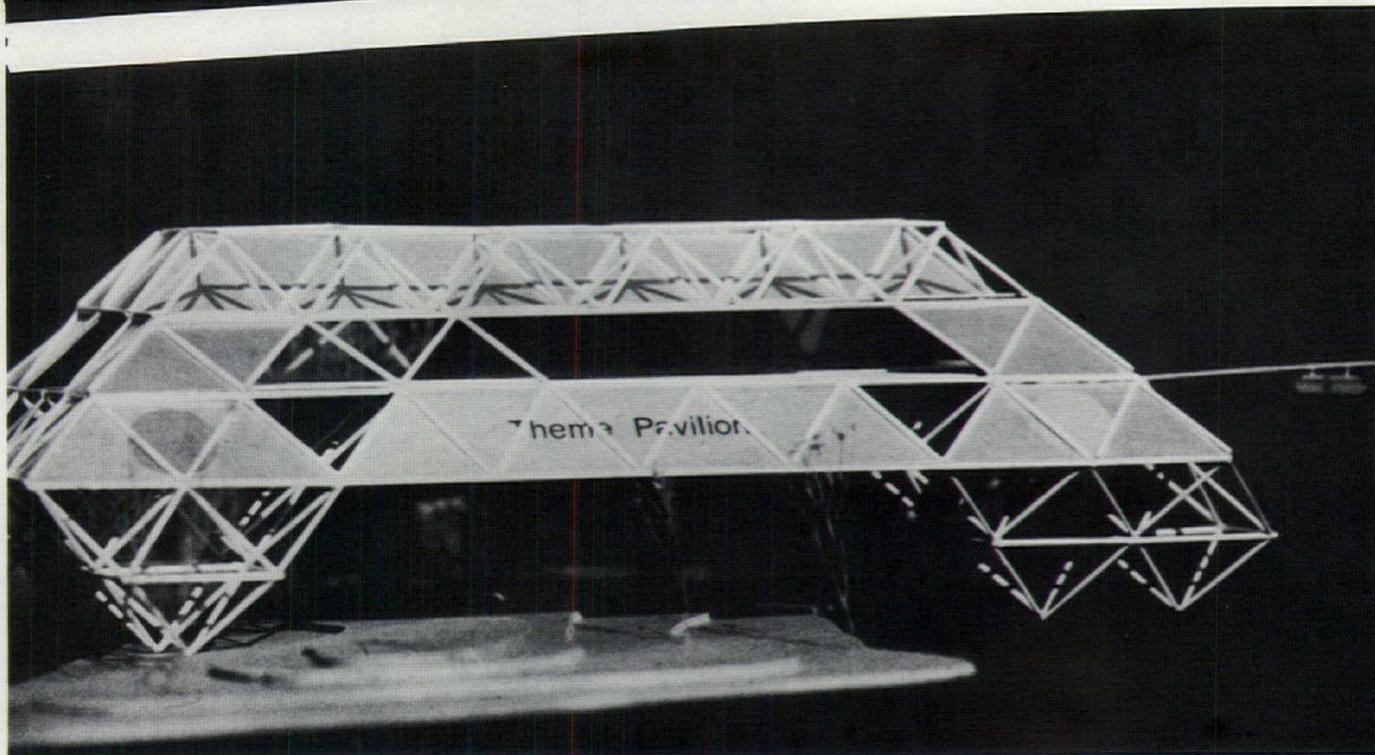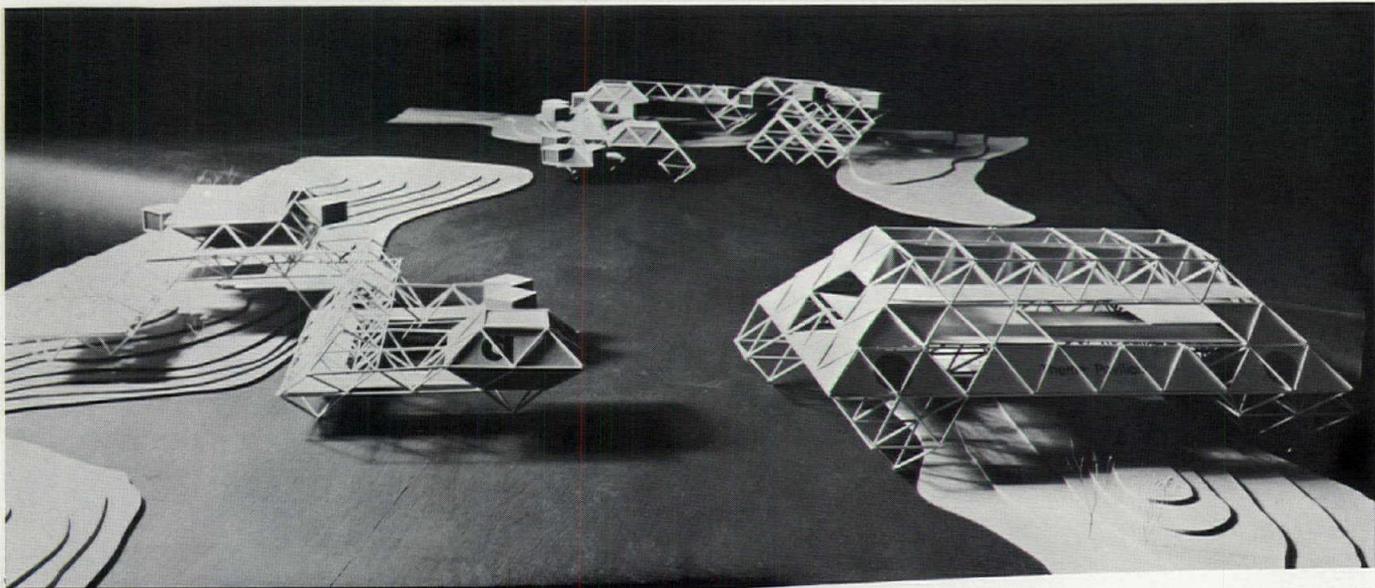
THEMATIC APPROACH   Richard McCommons & Jerry McGinnis
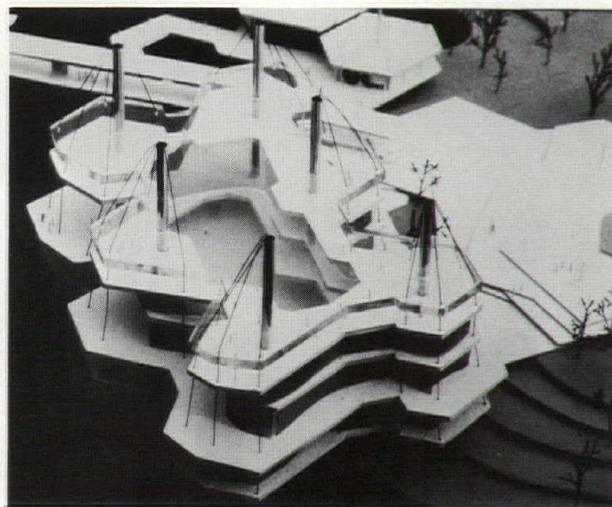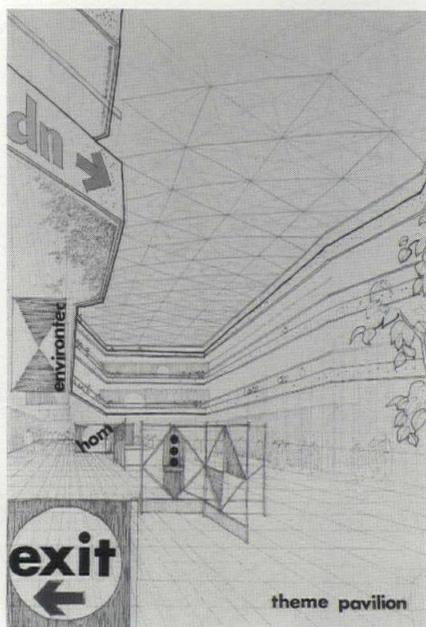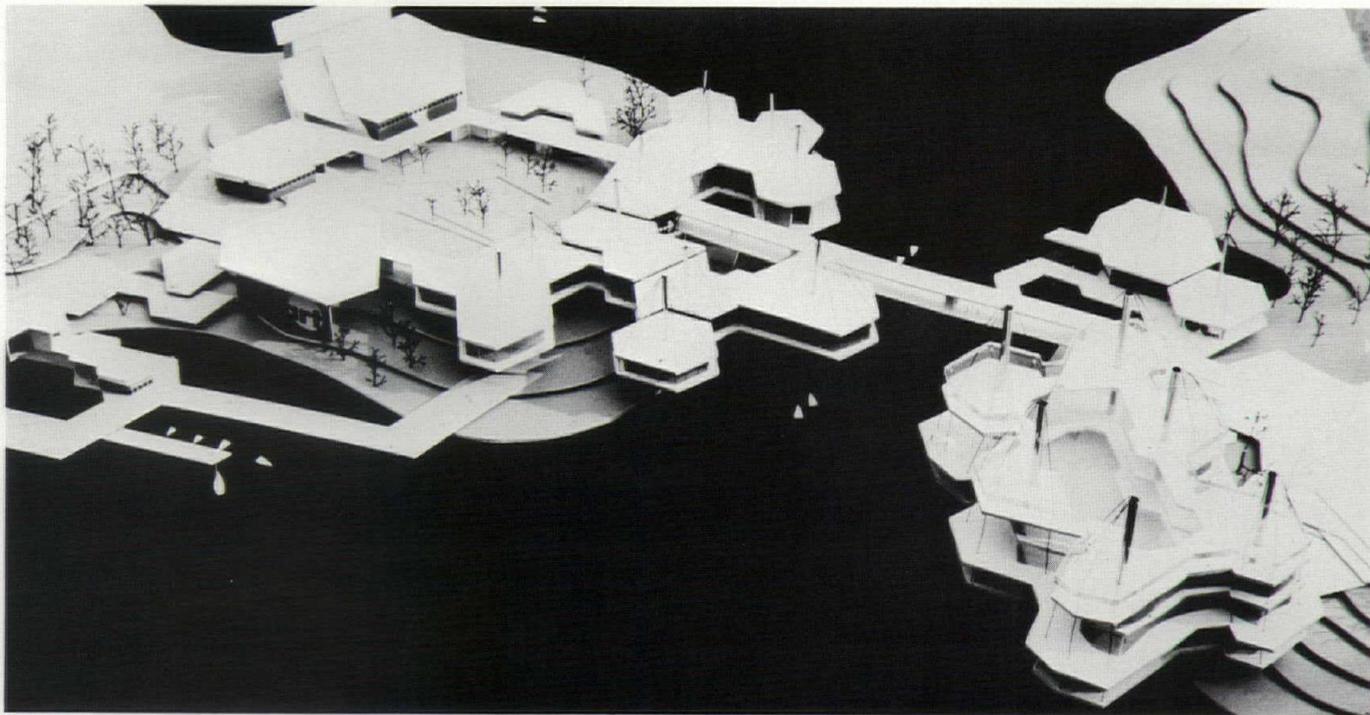
theme pavilion

THEME PAVILION & FINE ARTS COMPLEX

Curtis Worth Fentress & Cecilia Wan

yadkin river workshop

The "Yadkin River Workshop" is a design studio in the Landscape Architecture Department that, over a several year period, is focusing on the development problems of the Yadkin River Basin in an attempt to define methods for organizing and managing land use and development patterns. The studio operates with a belief that urbanization has reached a point where land use decisions should be based on their environmental impact, and not only on immediate economic needs. The workshop will emphasize the importance of making planning and design decisions based on the natural land system and on the effect that development will have on water quality. Because implementation of these objectives requires a reordering of the individual and community, emphasis is being placed on communication between students and residents of the Yadkin River Basin. The studio is open to all students in the School of Design and offers a wide range of individual projects that include: analysis of natural land systems; social and user preference surveys; land use and site design; and the preparation of environmental education systems and materials.

The Yadkin River Basin was selected as a study area because of a water quality crisis that caught the public's attention as a result of massive fish kills. On six occasions during the summer of 1970 an estimated 80,000 fish were killed by slugs of untreated sewage, according to a report by the North Carolina Board of Water and Air Resources. The Archie Elledge Sewage Treatment Plant operated by the City of Winston-Salem has a treatment capacity of 78,000 pounds of BOD (biological oxygen demand) a day, but the plant is overloaded, receiving over 80,000 pounds of BOD from the city plus an additional 80,000 pounds BOD which Schlitz Brewing Company feeds into the system in violation of city sanitation ordinances. Untreated sewage gets through the treatment plant to settle on the bottom of Salem and Muddy creeks, becoming septic from lack of oxygen. Heavy rains periodically flush these small streams, sending down the Yadkin the untreated slugs with zero dissolved oxygen content. These slugs absorb all available oxygen, killing fish.

David Springer, a Harvard Law graduate who owns and raises cattle on 800 acres of land bordering the Yadkin, believes "there ought to be a law" and as a riparian land owner has filed a $2 million suit against Schlitz Brewing Company for alleged contribution to the fish kills. The suit claims $500,000 in actual damages and $1,500,000 in punitive damages, the latter representing a sum thought sufficient to persuade Schlitz to guarantee that their operation does not contribute to future pollution. Since the Yadkin is a public river, Springer proposes that the punitive damages be placed in a public trust and used to restore and protect the river as a public amenity. [See "Landscape Destruction Value" proposal, LAQ, April '71.]

In response to the heavy sewage load, Winston-Salem is moving to build an additional $6,000,000 treatment facility, a $1,000,000 sewage line to primarily serve the Schlitz plant, and a $1,000,000 dome to control treatment plant odors. Before the Schlitz brewery was built, 85% of the processed sewage was industrial and 15% domestic, while domestic users paid $2.97 in treatment fees for every $1 paid by industry. This cost-user ratio is even more lopsided with the addition of Schlitz. In addition to his suit against Schlitz for the alleged Yadkin River pollution, Springer has filed a civil rights suit against the city of Winston-Salem demanding that industry pay its fair share of the cost of the operation and construction of existing and proposed sewage treatment facilities.

INTRODUCTION

The first project in the Yadkin River Workshop was a study that focused on the River and methods of preserving it as a natural amenity. The stretch of river involved extends for 35 miles from the Interstate 40 bridge near Winston-Salem to the Interstate 85 crossing at Salisbury. Although rapid urban growth is taking place in Winston-Salem—with the exception of a smattering of recreation facilities—there is little development along the Yadkin. Preservation of the river will become difficult as population on the piedmont increases. The quality of water in the Yadkin is already threatened. Winston-Salem offers a good example of how population is increasing

YADKIN WATERSHED MAP

in the Yadkin area. From 1950 to 1968 population increased 49%. This increase is also taking place in the rural areas. In the past few years 3,000 mobile homes have been placed in Davidson county. Within this urbanization that is creeping across the piedmont crescent, the Yadkin represents a waning opportunity to set aside natural open space for future urban dwellers of the Piedmont. The study is comprised of a physiographic analysis of the site, a watershed management case study, and a design proposal for a Yadkin River park. Together these categories represent a process that might be applied to the management and design of much of North Carolina's urbanizing landscape.

PHYSIOGRAPHIC ANALYSIS

The need for physiographic date is based on the assumption that the natural features that compose the watershed, the topography, soils, geology, vegetation and hydrology generally occur in a naturally compatible relationship, and that when development occurs without regard for these natural features an imbalance is created that leads to some form of environmental pollution. This study represents an analysis of the land and the natural dynamics of the watershed to produce a basis for determining the most appropriate uses of the various areas of the watershed in terms of preserving water quality while facilitating development.

Bluff | River | Natural Levee | Flood Plain | Rolling Hills | Valley Wall | Ridge

Recreation | Agriculture | Recreation | Urbanization
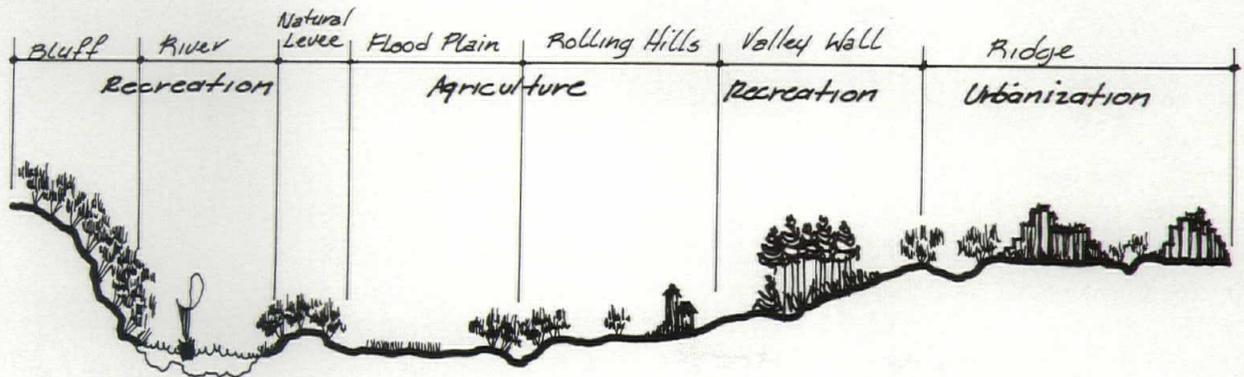
LAND SECTION

TOPOGRAPHY MAP

SOILS MAP
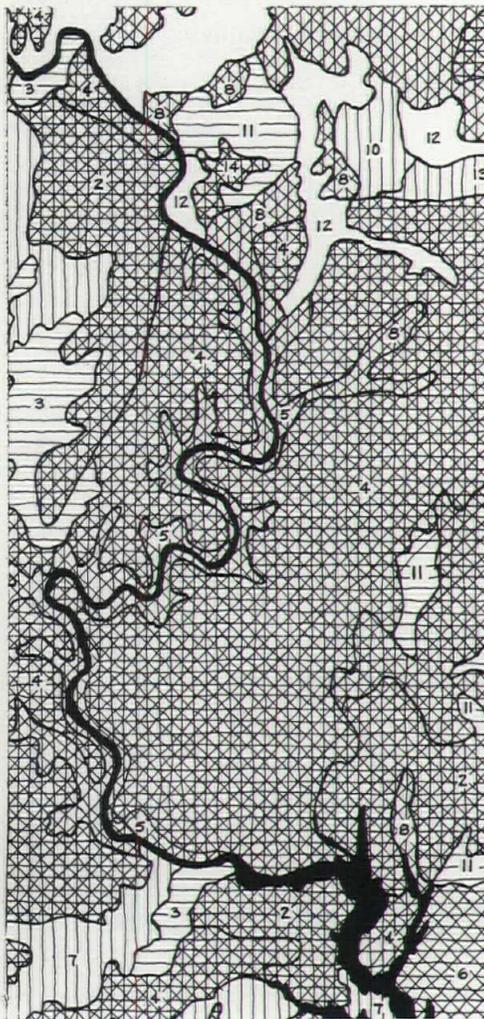
GENERALIZED LAND USE MAP

URBAN-RURAL TRANSITION

WATER RUN-OFF
QUALITY-QUANTITY TRANSITION

POSSIBLE POND LOCATIONS
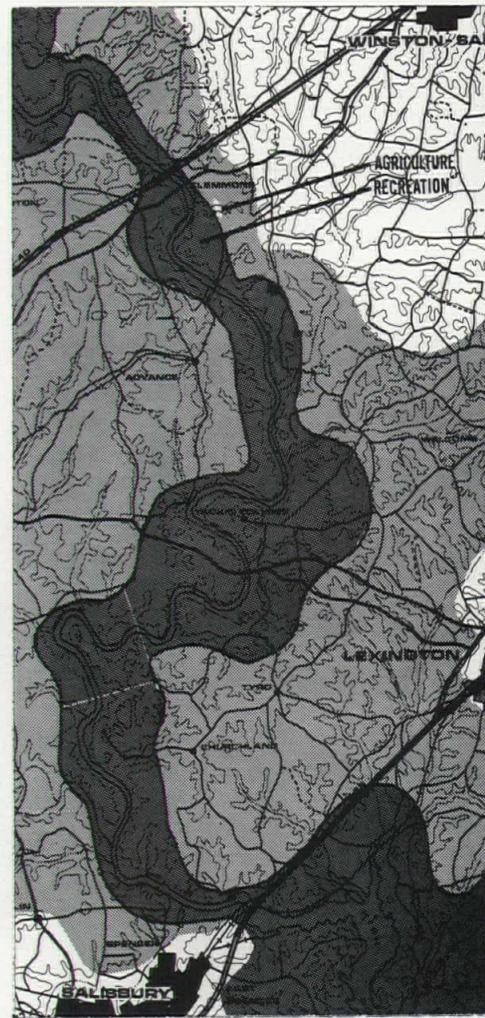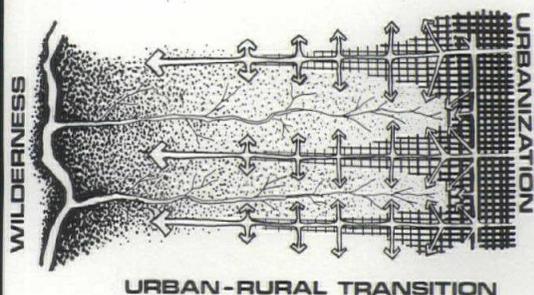
WATERSHED MANAGEMENT

Potentially the Yadkin River Basin can serve as a wilderness region existing strategically amidst a larger region of advanced urbanization. The concept of a gradual transition from the totally urbanized surrounding region to a completely natural Yadkin River region is proposed for the development of the watershed.

A very important difference in the characters of a watershed in an urban area and a watershed in a natural area is in the quality and quantity of water run-off within the area. In the city, concentrations of polluting industries and large paved areas cause the run-off to be low in quality and substantial in quantity. By contrast, in a natural area where there are no industries to pollute the environment and where the land is unpaved and therefore absorbent, the waters are of higher quality and lower quantity. For this reason, a transition from an urban region to a wilderness region is characterized by a transition in water quality and quantity.
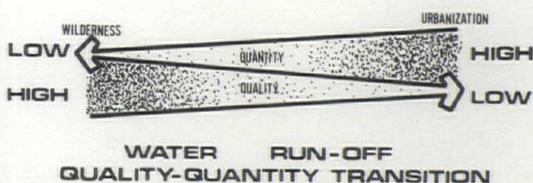
Public Law 566 is a potential tool for managing this urban-wilderness transition. The law provides that the federal and state governments can financially assist local public agencies who wish to control flooding, erosion and sedimentation in watersheds. By conserving, utilizing and disposing of excess water, the agencies can protect the land and water resources of their watersheds. Public Law 566 can help to implement watershed projects with many purposes. For example, the projects can provide facilities for flood prevention, for agricultural water management, and for municipal and industrial water supplies. Other projects can be oriented more toward recreation and fish and wildlife conservation. The means for development available to the agencies that utilize P.L. 566 are primarily soil and water conservation measures (land treatment) and structural measures (dams, levees, channels). Both conservation and structural measures can be instrumental in upgrading stream quality in a watershed.
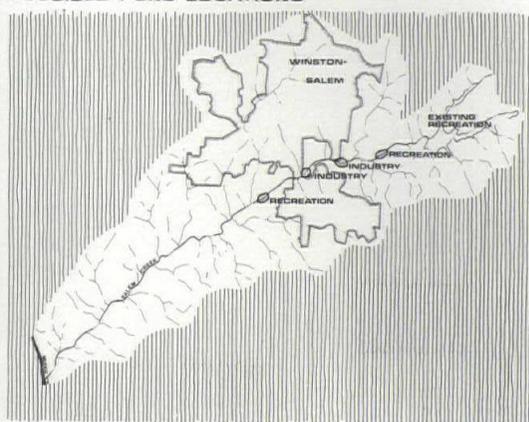
The reservoirs that can be created as a result of damming are a very important amenity for the development of a region. Such natural resources tend to encourage development around them. However, the purposes which the reservoirs are intended to serve limit the degree and type of development around them. For example, a reservoir set aside for industrial uses will encourage the clustering of industries in the area. Other reservoirs can serve to concentrate residential development. Still others can be maintained exclusively for recreational uses.

RESERVOIR TYPES

RESIDENTIAL

VISUAL
RECREATION
SEDIMENTATION CONTROL

Sediment Trap
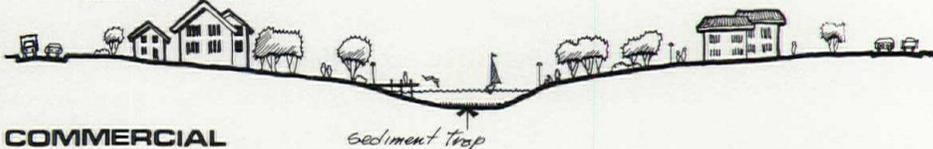
COMMERCIAL

VISUAL
PASSIVE RECREATION
SEDIMENTATION CONTROL

Pedestrian Pathway

Sediment trap

Pedestrian Pathway
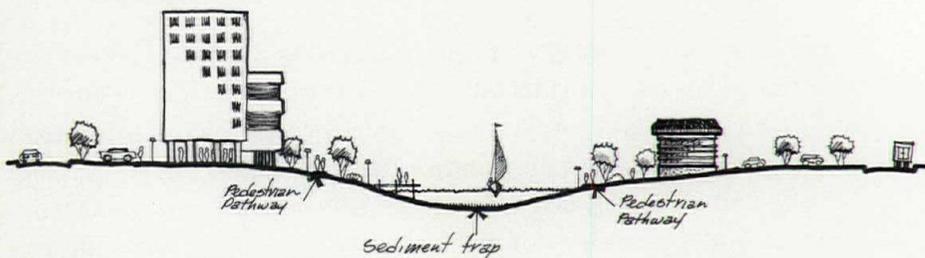
INDUSTRIAL

VISUAL
WATER TREATMENT
SEDIMENTATION CONTROL

Down Lighting

Down Lighting

Ha-Ha Fence

Shrub Screen

Outfall Pipe

Bubblers (for the aeration of water)

Ha-Ha Fence
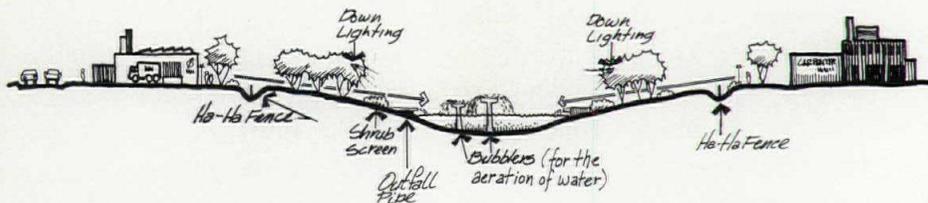
RESIDENTIAL POND

IMPLEMENTATION

It is not economically feasible to preserve the thirty-five miles outlined in the study by purchasing all of the land along both sides of the river. Instead, the implementation strategy is first to control the land that is not being used for anything else, i.e., the bluffs and river bank, and second to guarantee that good, existing floodplain land uses, for example agriculture, are maintained.

To promote the governmental policy required to implement and expand river preservation methods, students have presented the study at the State Legislature and to Roy Sowers, past Secretary of the State Department of Natural and Economic Resources. As a result the study was described to the State Parks and Natural and Economic Resources Board who adopted the concepts stated in the report as State Park Land Policy.

In an attempt to implement on the citizen level, students are trying to promote a positive dialogue between the political, agricultural, development, and preservation interests along the river. An environmental education program is also being developed which will establish a long term communication link between citizens of the Yadkin River Basin and the School of Design. Scores of civic, county and individual presentations have been made explaining the project and asking citizens:

> 1. Does everyone involved agree that the river should be preserved?
> 2. What should it be preserved for?
> 3. What are acceptable preservation methods?

The response has varied from excited commitments of cooperation to distrustful condemnation. However, at this point cooperation exists and it is becoming evident that the Yadkin River Environment will benefit from the student effort.

CREDITS

The "Yadkin River Study" was prepared by third and fourth year students in the Department of Landscape Architecture at the School of Design, North Carolina State University, Raleigh, North Carolina.

Faculty Advisor—Assistant Professor Joe A. Porter

Students
Donald d'Ambrosi
Richard Busse
James B. Carpenter
Joseph Gentili
Andrew Hensley
Kenneth Morris
Harris Ogburn

James Ratchford
Edward M. Schweitzer
Harold Senter, Jr.
Craig Smith
Alex Vare
Stephen Weaver

metropolis 80:

research into innovative new towns

peter batchelor,
associate professor of urban design

Metropolis 80 is a research project in Urban Design funded by the Carolina Power and Light Company. Begun in October 1971, the investigation has been split into two major phases. The first phase produced three prototypes based on widely utilized structural concepts: Cluster, concentric, and linear new towns. The second phase is based on a modification of one of these concepts, and is characterized by considerably more research into the social, economic, and physical variables of new towns design. At the time of writing, the research project is about three-quarters complete. Fifteen graduate and undergraduate students of urban design and architecture and three graduate students of city planning are currently conducting final studies on portions of a new town within a comprehensive planning framework. Phases I and II coincided with the fall and spring semesters of the 1971/1972 academic year.

The first semester provided the "underpinning" for a fully-detailed single new town design in which there was a full range of design tasks from housing design all the way up to community design. In the second semester the project is being managed in such a way that a core team of city-wide designers work in conjunction with individuals working in areas of special interest. Perhaps the basic difference between the semesters can be described in terms of learning activities: In the first semester small teams performed their own programming and design tasks on a specific new town, and were coordinated through a multiple team structure; in the second semester, and as a result of an evaluation of previous projects, individuals specialized in a variety of areas to suit their professional and academic objectives, but this has been done through a single team structure. Also, the Director of Urban Design took an active part in the second semester in the whole rationale of development, while the first semester allowed for considerable experimentation at the macro-environmental scale by individuals and teams.

PHASE I: THREE PROTYTYPE NEW TOWNS

An Overview: Students working in three teams of four or five persons each carried out a series of investigative and design tasks of such a nature that the results could be compared to each other. *The objective of the semester was to produce a complete set of analytical and design concepts for three new towns in North Carolina.* These concepts were completed at both the macro-environmental scale (the whole town) and the micro-environmental scale (urban physical components and systems). At the end of the semester the class had its work exposed to public officials and others for critical feedback. This feedback helped to shape the program for the second semester.

Team and individual responsibilities: In general, five specific areas were covered:
1. Movement Systems;
2. Residential Systems;
3. Recreational and Open Space Systems, and Institutional Systems;
4. Commercial and Industrial Systems; and
5. Integrated Urban Systems (overall design concept).

Each specific area had certain definite tasks—basic design concepts, space and facility programming, schematic plan concept, schematic perspective or three-dimensional concept, and a summary report. *This was one of the most important phases of the whole project; without a clear rationale, each scheme would have no utility as a viable new town.*

Three types of urban spatial structure were applied to a given site: a linear town; a cluster town; and a concentric town. The towns had populations of approximately 25,000 and were located in Wake County. The population structure resembled, as closely as possible, a cross-section of that of the Research Triangle region.
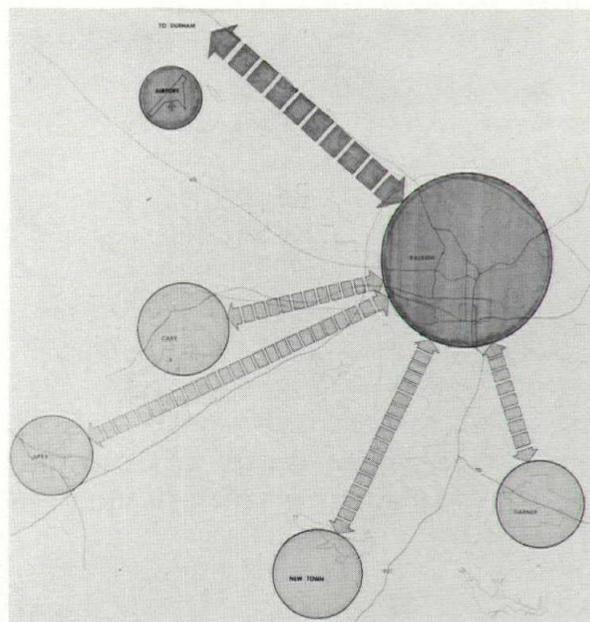
ASSUMPTIONS RELATED TO THE POPULATION:

A. GENERAL PARAMETERS

1. A migrant population of fixed proportion moved into the town during the first four five-year periods.

2. The normal losses which occur as age groups move from one level to another were compensated for by additional in-migration.

3. Survival rates were comparable to those of the region at the moment.

4. Housing was provided for couples in the age group of 40-44 and higher after the second five-year period in order to increase population at these levels.

5. The rate of development in 20-39 year age groups was slowed down after 20 years in order to bring local population characteristics into line with those of the region.
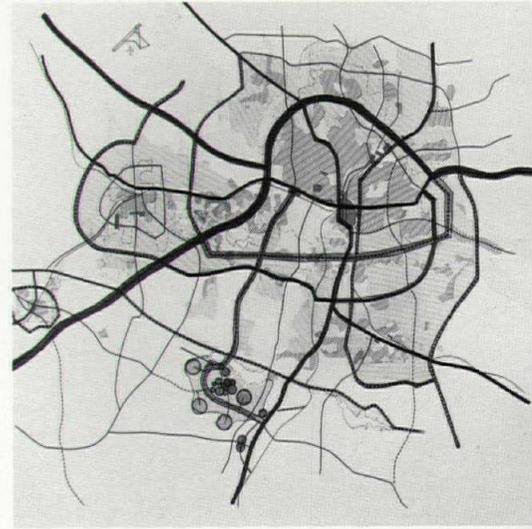
regional movement plan

B. TOTAL POPULATION BY AGE GROUP AND YEAR OF NEW TOWN DEVELOPMENT

Age GROUP	YEAR 1975	1980	1985	1990	1995	2000
5 or less	720	900	1100	1280	1460	1620
5 – 9	560	1280	1460	1840	2020	2400
10 – 14	350	900	1600	1780	1980	2200
15 – 19	180	520	1080	1780	1820	2000
20 – 24	280	460	800	1360	2080	2200
25 – 29	520	800	980	1320	1880	2260
30 – 34	580	1100	1380	1560	1900	2180
35 – 39	520	1100	1620	1900	2080	2240
40 – 44	460	980	1560	2080	2360	2440
45 – 49	240	700	1220	1800	2060	2300
50 – 54	140	380	840	1360	1640	1780
55 – 59	100	240	480	940	1200	1340
60 – 64	100	200	440	680	920	1060
65 – 69	80	200	400	640	760	840
70 – 74	80	160	240	400	520	540
75 – 79	70	160	200	240	300	320
80 – 84	20	40	70	130	210	300
85 +	0	0	20	50	70	100
TOTAL	4,980	10,080	15,400	20,960	24,980	28,120

C. EMPLOYMENT

Mining . . . . negligible
Construction 8%
Manufacturing and Industry 30%
Railroads 1%
Other transportation 2%
Communications, Utilities, Sanitary services 3%
Wholesaling 5%
Eating and drinking 2%
Other retail trade 13%
Business and repair services 2%
Private households 5%
Other personal services 3%
Hospitals 3%
Education 10%
Other professional services 5%
Public Administration 8%

$$\text{100\%}$$

D. LIFESTYLES

The research group assumed a continuation of current social and economic trends in the area of growing wealth, leisure, equality of opportunity, and social welfare. Goals were established for each of the three teams, and will be elaborated in the following text.

CREDITS

Cluster	Concentric	Linear
Henry Skokowski	John Rodgers	Charles Raine
Jacobus C. VanKlaveren	Richard Spina	Ron Wells
John Ramsay	James White	Mark Case
Samith Abid	David James	Richard V. Moore
Ken Burnette	Jeffrey Knox-Dick	Esa Piironen

the cluster concept

Concentrating on the integration of urban systems, coordination required having a working knowledge of the progress and state of development of the four areas of systems study—Residential, Movement, Commercial/Industrial, Community Facilities (open space, recreation, institutional).

Traditionally, movement systems and patterns are developed and then decisions are made as to ways of building towns or communities in relation to these systems. This teams' initial approach to the problem was different from the traditional approach. It was felt that the flexibility of the cluster concept would allow a new approach. As a result, the initial considerations were not of movement systems but of land uses and their relationships.

The use of cluster concepts has also been traditionally limited to the residential land use. Another objective of this development was to attempt to apply cluster concepts to commercial, industrial and community facility uses as well.

As the new town beame complete in terms of required land uses, the movement system was introduced. It was found to be relatively simple to adapt a more than adequate system of movement to the new town without disturbing any of the fundamental land use relationships. All of the residential, commercial, and industrial clusters were served with only minor alterations required. Community facilities were also found easily adaptable to the movement systems introduced.

Finally, while the individual systems were being developed to greater detail, a 25-year coordinated phasing of the growth of the new town was outlined.

LAKE WHEELER
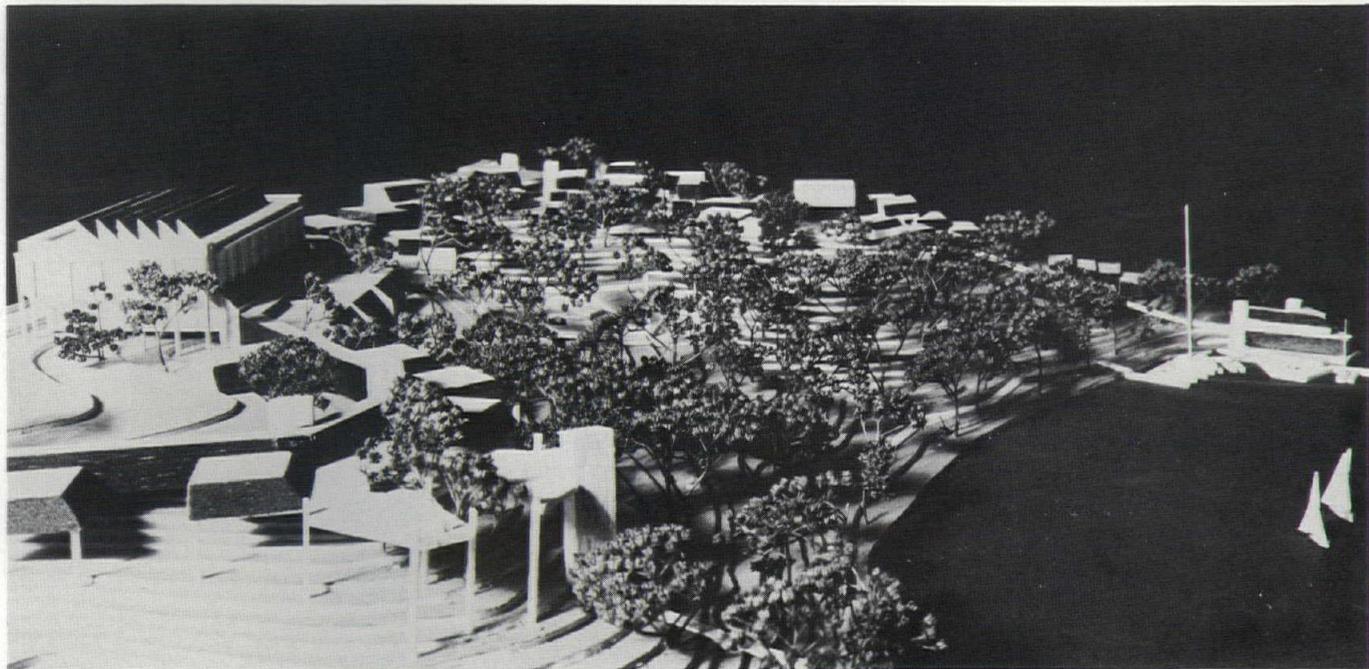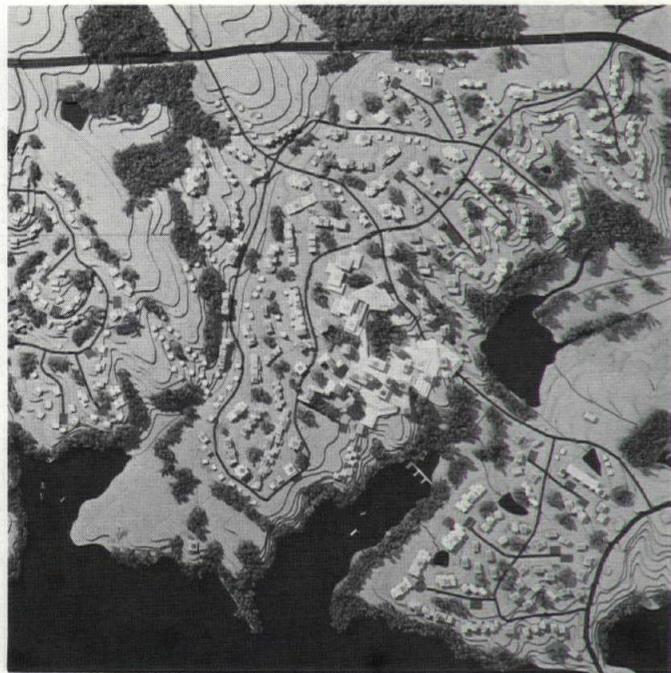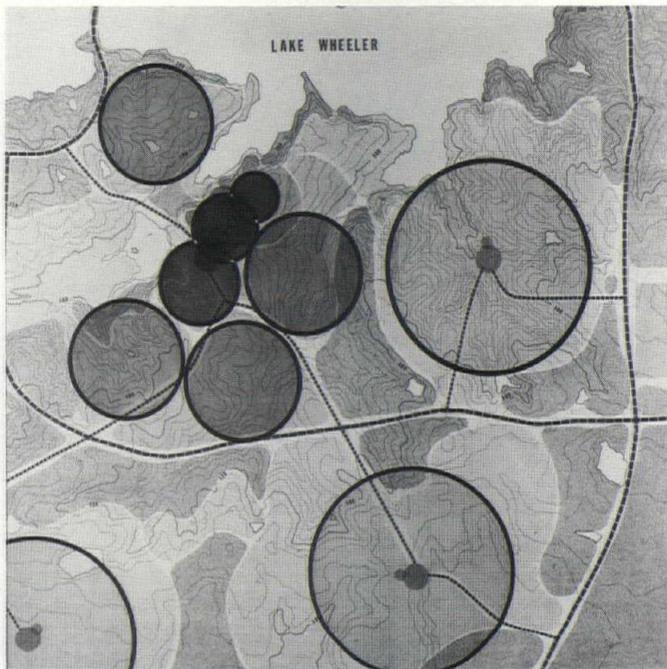
the concentric concept

Taking the basic theory of a concentric system, a team developed design concepts for each of the five categories. The overriding concept throughout the city plan was that of a central point around which radiated concentric clusters or nodes of development. Distance from center to various perimeter points was determined through convenience and frequency of movement. It varied from one quarter of a mile, an easily walkable distance, to one half, and to one mile—all measured from a central point to the residential developments. The overall scheme was also designed in a sector or pie shape pattern with one sector being non-developable land held as a communal open space. This open sector gave the city an orientation and a focus around which the CBD would develop. The sector plan also facilitated growth by permitting incremental development of successive pieces.

Residential alternatives are provided in the high density commercial-residential center as well as in medium and low density concentric clusters. Strongly influencing the design was the desire for a clear distinction to be made between vehicular and pedestrian traffic. This was accomplished by providing open space buffer zones between neighborhood developments as well as orienting the CBD towards a semi-enclosed raised pedestrian plaza. The provision of open space sectors allows for recreational space and pedestrian avenues at the same time with minimal intersection of vehicular routes.

The desire was to create a realistic living alternative for approximately 25,000 people. A definitely "urban flavor" was the goal, with the possibility of the CBD serving as a regional entertainment center. The geometric preoccupation of the plan must be interpreted only as a conceptual model and the symmetry as merely facilitating the allocation of space requirements. Once applied to the site, the plan will be modified to allow various areas to take on individual identities within a cohesive, comprehensive whole. Heterogeneity and maximization of choice are the dominant design criteria.
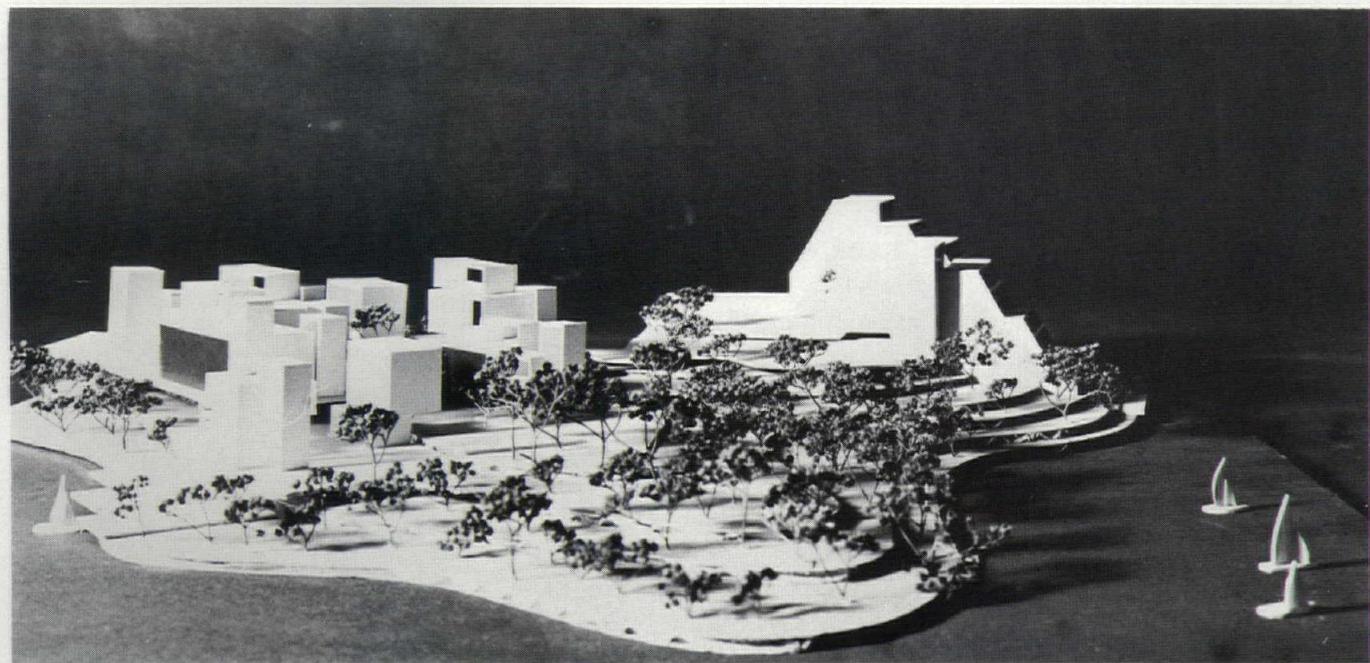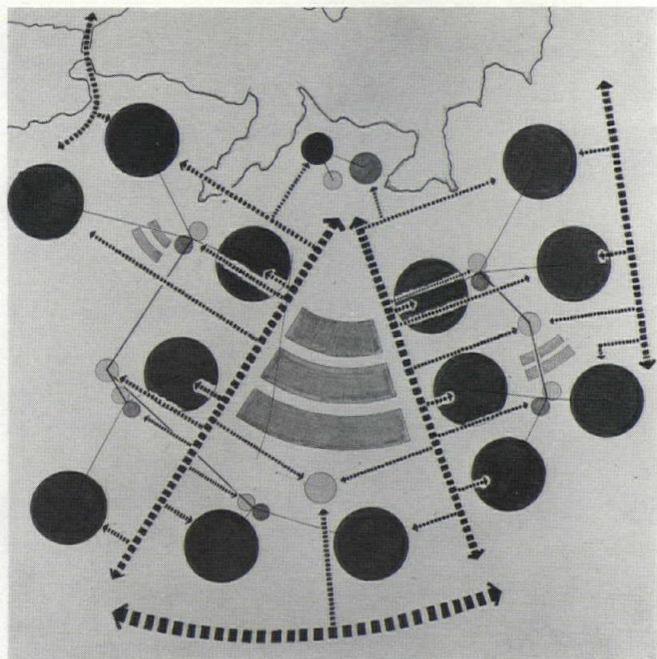
the linear concept

One of the basic historical underlying concepts of a linear city is that this form provides easy access to open land and that there is at all times unlimited expansion or growth.

Though earlier in the concept-developing stages many studies were done individually, all members of the team excluded vehicles within the core of the city (The Longitudinal Axis). This indicated an awareness for the potential that a linear new town has for becoming totally pedestrian-oriented (earlier schemes made attempts to keep privately-owned vehicles out of the city completely by placing parking at the outside edges of the city). Access into town was to be by foot, or by a highly flexible public transit system.

The handling of movement systems provided the structuring element of the city, but one other important element was the open-endedness of the city as a whole and the open-endedness of the core. To explain the latter, the major use of the longitudinal axis of the city—180 meters wide and running the full length of the city—is the core, which is commercial. The core also contains open spaces with institutional facilities and small commercial uses at the edge of the city. This provides available space for the core to grow in either direction without interruptions.

The program for the linear city was developed into three phases in periods of ten years each. In each phase, there is an incoming population of 10,000; in the end the population will be 30,000.

Through the process of development in each phase, the goal is to keep all facilities as near to the core as possible. In the second phase the city begins to spread linearly, and most of the street patterns are developed. The other important point about the development program is that in the first phase the majority of housing provided for the 10,000 people will be high density. The reason for this proposal was to provide a relative degree of intensified activity in the core area.
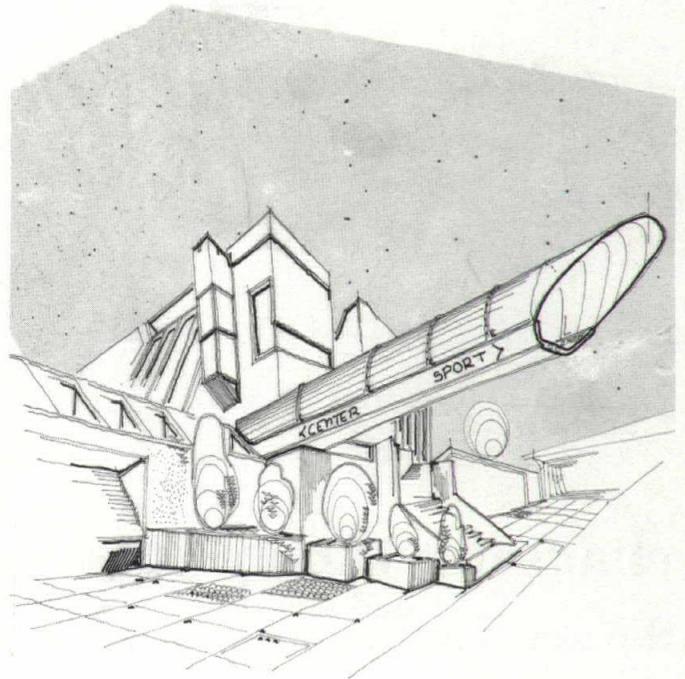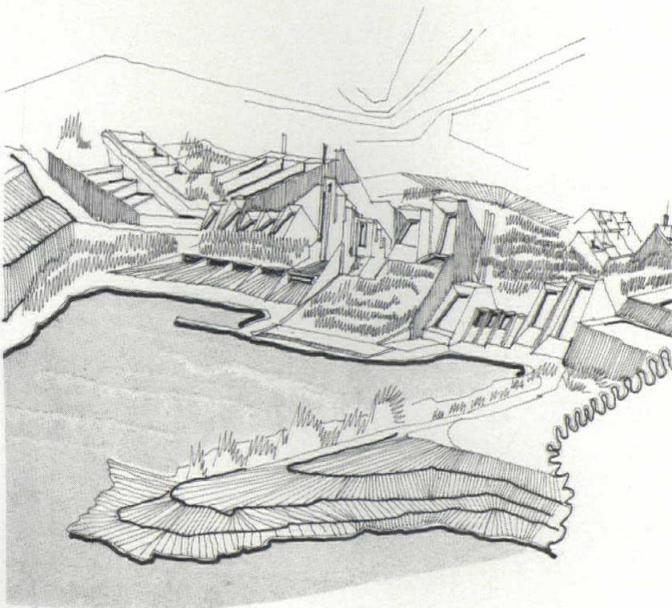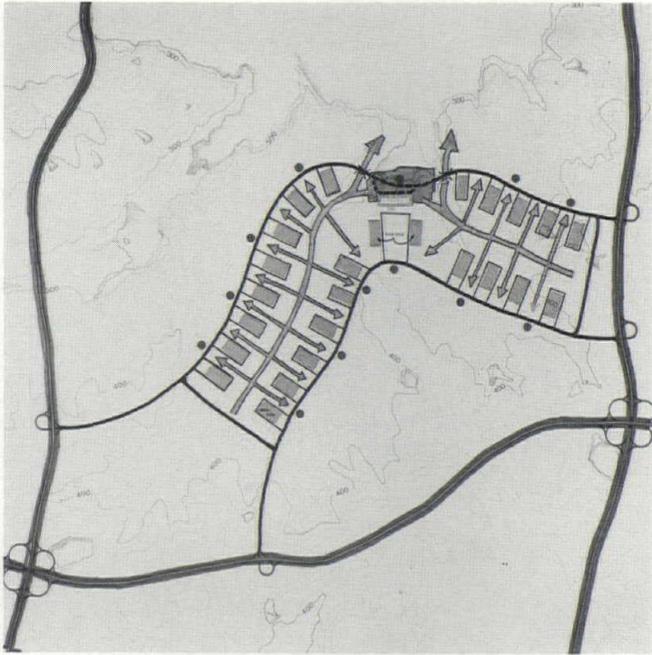
changing the system

the new landscape

ed schweitzer,   research assistant, landscape architecture

WHAT EVER HAPPENED TO "GRASS ROOTS" DESIGN?

"Representation"of the people was the principle which started and maintained the present system of government in the United States. Having "grass roots" representation in a hierarchical system of government in which decisions and information passed from the top of the system to the bottom and vice versa has kept public involvement and interest in the affairs of the country, and has been the main reason for the stability of the governmental system. As time passed, however, problems of the country outgrew the scale of the grass roots interests. The great economic growth of industry has had such a dramatic effect on our society, that as a result, both societal and environmental systems have become "over loaded". People are living on top of each other and anything that happens to get in the way, being the environment. "Grass Roots" representation has become passe; in the pyramidal structure, decisions are coming from the top of the system and diffusing to the bottom in a one-way communication. Information from the bottom of the structure has not been diffusing to the top; the "grass roots" has not been influencing decisions.

Government

Enterprises

People (Grass Roots)
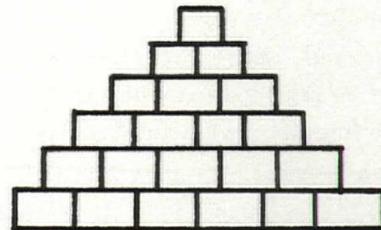
When the system does not allow units of society to be represented in the decision-making process, discontent is the product. Decisions and information must flow both ways; this assumption indicates an old but effective spatial form, the "circle". The circle indicates the exchange of information by interest groups on equal terms in equal positions of responsibility. The idea being that these interest groups have the tool or vehicle to articulate "wants and needs".
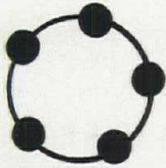
Interest groups such as the city government, county, State and Federal governments are organized to communicate their needs as are universities, industries and other private enterprises. The missing link in the system is the representation of the people in a way in which they can affect their environment in a direct manner. This idea assumes that people with common problems can organize and articulate their wants and needs to other interest groups, that these people have the expertise and experience to organize themselves and their ideas into an action oriented program. In many situations, community or neighborhood people do not have the expertise to communicate wants and needs that they define themselves, nor do they have the technical knowledge to carry a project to completion. A need for expertise in diverse fields is often needed by the people at the "grass roots" level.

THE "NEW LANDSCAPE"

At North Carolina State University, the Center for Urban Affairs and Community Services acts as a coordinator between the community and the expertise within the University. This organization is asking the community what expertise is needed to solve the community "wants and needs".
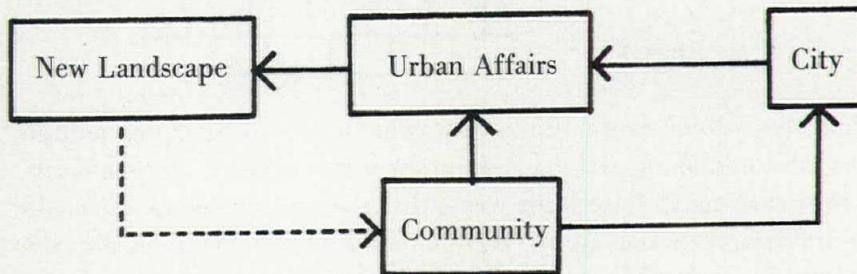
The New Landscape, a catalyst for "grass roots" design, is sponsored by Urban Affairs and Community Services. The group, comprised of

a City-University Coordinator, an Assistant, and twenty students in Architecture, Landscape Architecture, and the social sciences acts as an institutionalized advocacy team which aides neighborhood groups who have expressed a need for help to organize, articulate wants and needs, establish priorities and to design projects. The group works concurrently with the City Manager, the Recreation Department, and the City Planning Department in translating the neighborhood needs into funded programs. Expertise responding to real community need!

The over-riding assumption which the group operates on is that the design profession must evolve from design *for* people to design *with* people with the final goal being design *by* people. The "New Landscape" seeks to aid neighborhood groups in attaining the most socially suitable community environment, i.e., an environment that satisfied its wants and needs. In addition, the group views as goals the development of effective neighborhood leaders, the facilitation of intra- and inter-neighborhood communications and increased neighborhood education and control, all necessary aspects of grass roots design.

THE COMMUNITY DEVELOPMENT PROCESS

For the New Landscape practicing design as community development, the process is complicated by new aspects of the design process. *Whereas the landscape architect has generally served a private client with an established program, the New Landscape helps a public client establish community priorities and determine an action program* (See outline of Operational Process).

(A) Establishment of Community Priorities. Each neighborhood that contacts the New Landscape has encountered a problem—condemnation of their homes, lack of city services, bureaucratic unresponsiveness or inadequate recreation facilities. It is desirable that the neighborhood organize itself and define its needs prior to contacting the New Landscape. But in most cases the neighborhood spokesmen rely on the students as well as churches, O.E.O., and

Outline of Process

Establish Community Priority **Determine Action Program** **Implement Program**

Neighborhood 1 2 4 6 10 11 12 16

New Landscape 3 5 7 8 13 14 17

City 9 15 18

1. N organizes around problem
2. N defines wants-needs
3. N requests NL aid
4. N establishes priorities
5. NL commits self to N

6. N expands organization
7. NL inventories priorities
8. NL makes N social analysis
9. NL makes ecological analysis
10. NL presents alternatives
11. N defines plan of action

12. N communicates action
13. NL determines want-needs
14. NL designs program-site
15. C administers plan
16. N expands action
17. NL evaluates action
18. C constructs facility

key: N = Neighborhood NL = New Landscape C = City

⊖ New Landscape design process

⦀ Usual Landscape design process

word-or-mouth to organize the neighborhoods. The team has played a major role in defining want-needs and establishing priorities, with neighborhood groups. This requires the students to devise techniques for distributing information and involving all segments of the neighborhood in the design process. In the case of Apollo Heights, a Turnkey III Housing Development and the Southside Urban Renewal Area, citizens groups from each community requested help in acquiring recreation areas. In these two cases a clear priority had been established by the neighborhoods which could be explored by the New Landscape. Walnut Hill had yet another priority expressed to the New Landscape, a need for housing rehabilitation. The need for classes in basic plumbing, carpentry, roofing, and wiring on site were requested by the small black community which was being threatened by eviction by the City. With these priorities clearly established, the New Landscape could proceed to the next step in the Community Development Process, the development of an Action Program.

(B) **Determination of the Action Program**. To establish a plan of action, the New Landscape examines the social and ecological factors related to the preliminary neighborhood priorities. During this period more residents are involved, and the neighborhood organization is extended to include teenagers, small children, the elderly, and social deviants. The students first research and then present alternative priorities and strategies to this new community client—the expanded user group. Through a series of neighborhood forums the neighborhood determines the specific action program. This action may be sanctioned by the city and funded, i.e., a city appropriation for park construction or unfunded, i.e., a directive by the city for a policy change in location of public housing. In some cases the action may be unsanctioned by the city, i.e., a neighborhood demonstration against highway construction.

The Apollo Heights project was brought under a city-wide application to HUD under the Legacy of Parks program along with an application to the Bureau of Outdoor Recreation (BOR) to include other recreation sites in the Raleigh area. A total of ten sites were chosen, four under Legacy of Parks and six under BOR. The

Grantland Drive

Site

Location in Turnkey subdivision

Scale:
0 10 20 30 40 50

Key:
A   offices
B   community center
C   parking
D   swimming pool
E   construction play
F   fantasy play
G   action play
H   social play
I   basketball
J   tennis
K   baseball
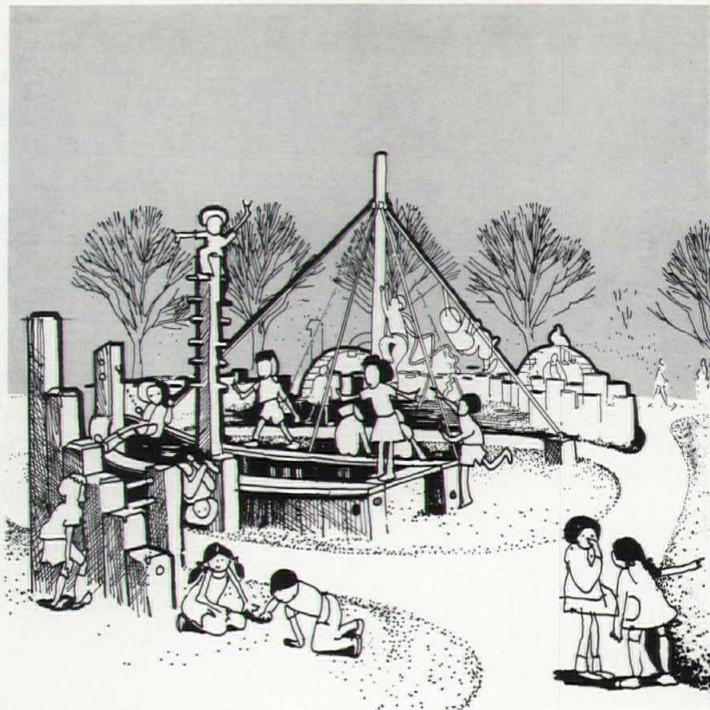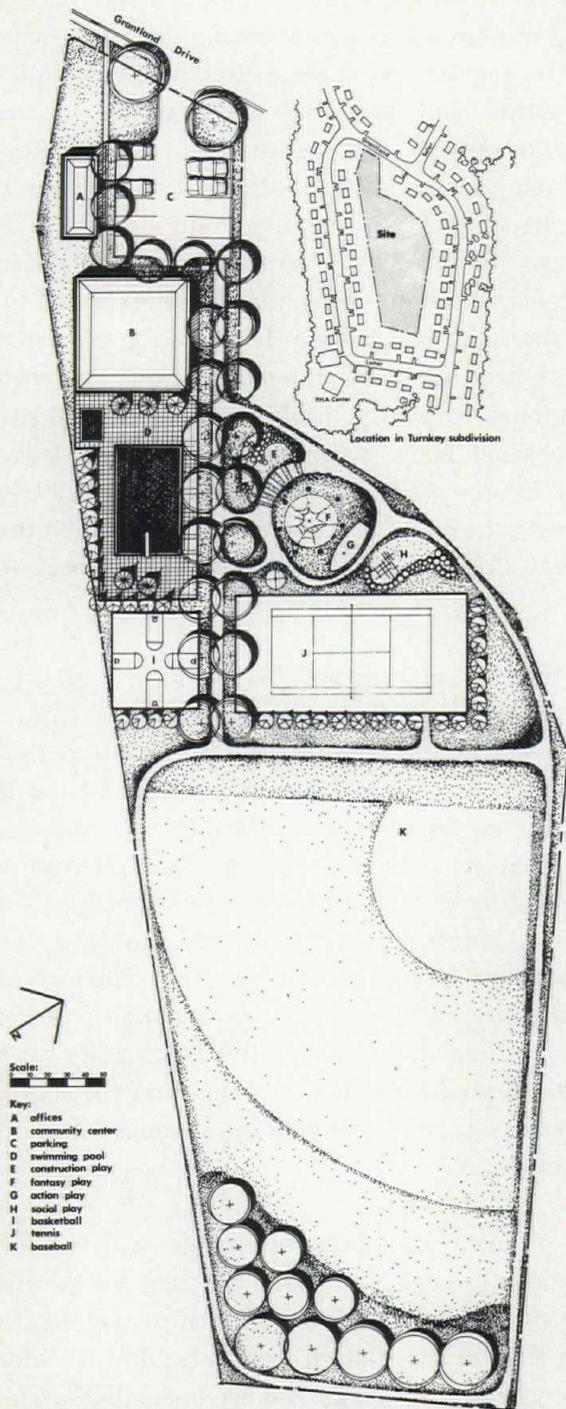
APOLLO HEIGHTS NEIGHBORHOOD CENTER

Southside Project encountered continued resistance from the renewal officials who were not willing to put money into a "temporary" tot lot, therefore; an unsanctioned program was undertaken by the community to construct the park themselves. Walnut Hill had better luck in obtaining funds and resources; a grant from HEW was obtained along with the assistance of a local contractor. With the action programs set, the implementation stage of the process was to begin.

(C) **Implementation of Program.** *It is necessary for the students to determine the specific want-needs of the neighborhood through participant observation, interviews, questionnaires, gaming, role playing, panels, neighborhood forums and petition signing.* From the specific want-needs the New Landscape develops alternative site plans or program designs, the former for the neighborhood, the latter for the neighborhood or the city. These plans are communicated to as many community residents as possible through the news media, fliers and face-to-face communication. Discussion of these plans within the neighborhood develops a final plan with technical assistance from the New Landscape. Working drawings and a plan for construction are devised for neighborhood parks and self-help efforts; the New Landscape assists the city and neighborhood in selecting a professional to develop a final plan in larger scale design problems. If the process has been effective, the construction fo one project will lead to expanded neighborhood action; *community development is a continuing process.*

A final plan was designed by the residents of Apollo Heights with the help of designers from the New Landscape. The final plan was incorporated into the Legacy of Parks application to be submitted this spring along with the designs of other recreation facilities. Southside proceeded with the design of the Tot-Lot with the help of the New Landscape and constructed the park in one weekend. The facility is so heavily used by the entire community that it has become a permanent public open space. With the grant in hand from HEW, and the help of the New Landscape and the contractor, classes were conducted and at the conclusion of the seminar, the residents helped each other in making the repairs to each house. The self help effort resulted in only one eviction and a revived neighborhood.

all purpose court

movie viewing

water spray

fantasy play

N
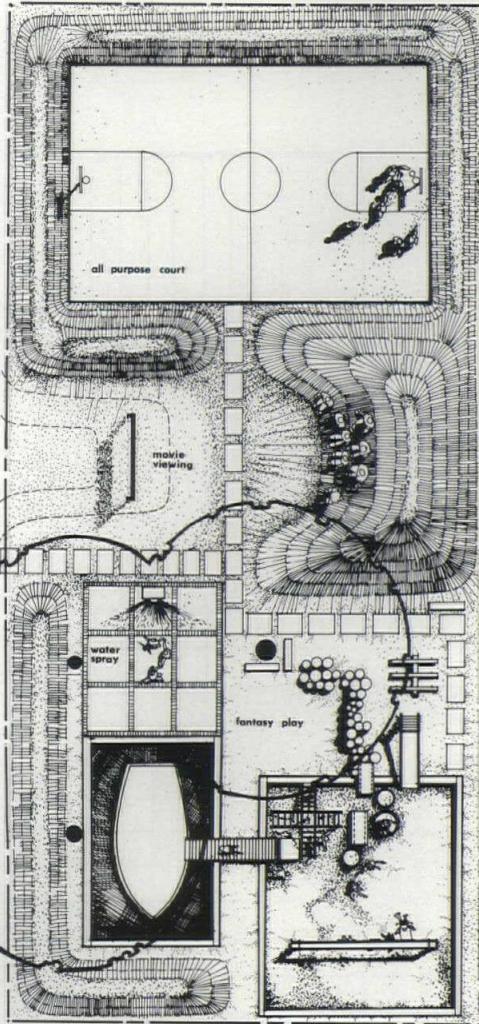
SOUTHSIDE PEOPLES PARK

WORK IN PROGRESS

PROCESS STEPS

1. Community Priority
   - Initial Comm. Contact
   - Comm. Self-Organization
   - Comm. Def. (Want-Need)
   - Priority of Want-Need
   - Client Request
   - Negotiation
   - Problem Anal.
   - Client Anal.
   - Problem State.
   - Commit. to Want-Need
   - Contract
2. Action Program
   - Inventory Priorities
   - Social Anal.
   - Ecological Anal.
   - Presentation of Alt. Priorities
   - Def. of Action Program
   - Sanctioned
   - Funded
   - Unfunded
   - Unsanctioned
3. Implementation of Program
   - Communication—Organ.—Mobilization
   - Determine Spec. Want-Need
   - Site or Program Design
   - Relate Want-Needs to Resource
   - Alternative Plans
   - Final Plan
   - Approval of Plan
   - Communication of Plan
   - Administration of Plan
   - Working Documents
   - Contracts
   - Approve Expenditure
   - Construction or Realization of Plan
   - Maintain Program
   - Evaluation
   - Expansion of Action

Work in Progress (rows):

- Legacy of Parks
- Public Housing Development
- Neighborhood Parks—Roanoke
- Neighborhood Parks—Kingwood Forest
- Neighborhood Parks—Southgate
- Neighborhood Parks—Jaycee
- Neighborhood Parks—Roberts
- Halifax-Pilot Mills Center
- Neighborhood Designs
- User Preference Methods
- Program Policy Evaluation

■ **Work between January and May 1972**

EVALUATION

How effective is the New Landscape? Although the group is in its infancy and the process is ongoing, preliminary evaluations may be made. In the past year, they have assisted eighteen neighborhood groups representing 15,000 people and more than 1.2 million dollars in funded projects. In these projects, the students have expanded the design process to include the determination of want-needs, the selection of sites for parks and community facilities, the procuring of funds and the programming of activities for the public sector. These activities have made a considerable impact on the Raleigh landscape. The impact of the New Landscape on official city policy towards land design will be of more significance in the long run. Two city policy changes should be mentioned: (1) in the future, neighborhood design will be done at the grass roots level with citizen input at each stage and (2) site selection of public facilities will be done professionally.

These changes have been possible due to the students' emphasis on complementing and collaborating with the city departments and decision makers rather than acting exclusively as an adversary force.

How do the students view the experience? Only advanced undergraduates and graduate students work in the New Landscape, because the student must be skilled in basic design to deal with the problems that arise. Students find their efforts to be relevant; most are convinced that landscape architecture cannot be separated from the social problems of the city. Solving social problems require working in interdisciplinary teams and learning political realities; the New Landscape provides these opportunities. Finally, the students are challenged by the possibility of working directly with the *User* group rather than public representatives. They are translating the concept of community development into social and land policy, and they can point to changes in the Raleigh landscape and to the democratization of the city's political process as evidence of their effort.

learning environments for children

community development group

Today's emergence of early learning in America is being advanced for two main reasons. One reason is that psychologists such as Bloom[1] and Deutsch[2] have demonstrated by their research that a child's intelligence is not fixed at birth, but in fact, can be dramatically affected by his experiences and environment during his earliest years. Secondly, the growing awareness of the influence of poverty and environmental deprivation on a child's intellectual development has given these findings an urgent practical application. These factors, coupled with the need to provide child care services for working mothers, place a major responsibility upon communities to integrate early childhood education with day-care.

The Community Development Group, directed by Henry Sanoff, is currently involved in the field of child development. A research and design team, including Andy Hensley, Henry White, Rick Kattenburg, Pete Knowland, Jim Heffner and Richard Busse, is producing significant information and ideas for the use of architects and educators in providing environments that are stimulating and responsive to the needs of children.

The work of the team is being collected into a publication, the objective of which is to furnish guidelines for creating learning environments for children's centers. The information can be a resource both for the creation of new centers and for the re-design of existing centers or remodelling of existing buildings for the use of children.

In order to clearly present environmental guidelines, each of the activity areas that can be contained in a center is described in terms of its educational objectives, design requirements, participants, and the children's molecular activities it accommodates. The objectives attempt to clarify the way in which the activities support and nurture the child's development. The design requirements state relationships for the appropriate functioning of the activity area. (However, activity areas can be organized in different ways in order to emphasize various educational approaches, such as free choice or highly structured programs.) The molecular activities describe a range of behaviors that can be expected in the activity area.

Diagrams are used to illustrate, but not determine the way in which activity areas can be organized. These diagrams, however, only suggest relationships between the participants and their physical environment.

Differing community needs, programs, and objectives will serve as criteria which will modify the manner in which these guidelines are employed.

Factors Within the Environment Which Foster Optimal Child Development

> The development of a young child is fostered by the deliberate provision of a learning environment that is both stimulating and responsive. The learning environment is conceptualized as encompassing the inter-personal, the experimental and the physical and spatial aspects of the child's world. There should be a great deal of clear and deliberate stimulation for learning; but at the same time, many opportunities are provided for the child to select experiences which he in some way needs or favors at any given moment.

> The development of a young child is fostered by an optimal level of need gratification. Teacher vigilance is the most critical element in identification at this level.

> The development of a young child is fostered by a positive emotional climate in which the child learns to trust others and himself.

> The development of a young child is fostered by an environment containing a minimum of unnecessary restrictions on his early exploratory attempts but a supply of natural
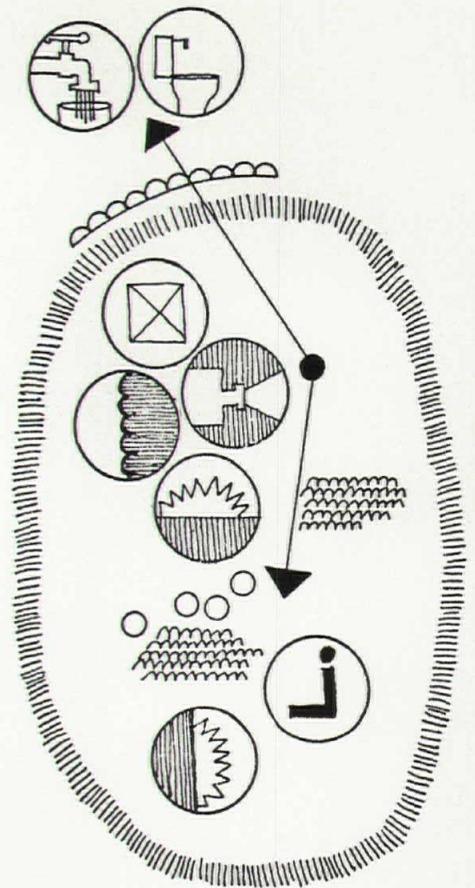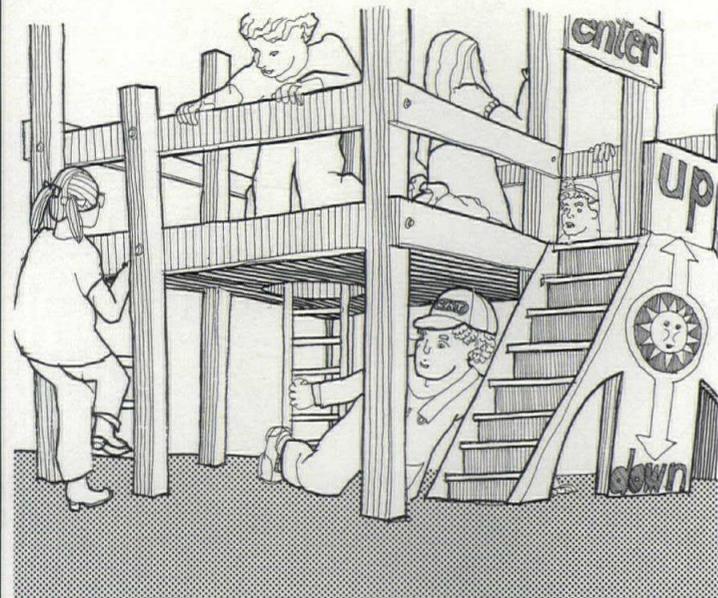
restrictions that provide valuable feedback data is helpful in retaining movements and actions.

The development of a young child is fostered by the provisions of rich and varied but interpretable cultural experiences. This aspect can draw upon people who function in various community roles to visit and demonstrate how they play their roles and trips are made to worthwhile places in the community.

The development of a young child is fostered by a physical environment that separates figure from ground and contains modulated amounts and varieties of sensory input, color, shape, texture, sound patterns, etc. The surroundings must be aesthetically pleasing. Maintenance of order is an essential aspect of the sensory environment and is crucial to help the child to distinguish figure from background, particularly for a child whose home environment may be somewhat crowded or chaotic.

The development of a young child is fostered by access to certain kinds of play materials.

The development of a young child is fostered by the introduction of new experiences that provide an appropriate match for the child's current level of cognitive organization.[3]

manipulative play

An area especially for manipulative toys is an important provision in a child development center. In this area, children can play with these toys and learn from them without being distracted by other activities in the center. Manipulative toys are intended to present discreet concepts to children. Usually they are designed to eliminate any variables that tend to interfere with their specific purposes. For example, if the concept of shape is intended to be associated with and discovered from a toy, then irrelevant factors such as color and texture are kept constant in the toy so that children cannot confuse shape with other concepts. Such simplification makes learning easy and enjoyable for children. Manipulative toys often require children to operate them manually and with some degree of precision. Puzzles, pegboards, and construction sets are familiar examples of toys that encourage somewhat complex operations. Children learn both about their physical manipulations, and about the relationships resulting from these actions. As a result they develop eye-hand coordination as well as perceptual skills and conceptual knowledge. A manipulative area functions best if it allows privacy for individually oriented activities.

Design Requirements:
1. Provide for quiet, individual play in the manipulative toy area.
2. Provide an open space for small group interaction in the area.
3. Provide a wide variety of manipulative toys.
4. Provide storage that displays these toys and makes them easily accessible to children.
5. Provide movable, comfortable, child sized furniture in the area.
6. Provide flooring in the area that encourages lounging.
7. Provide a high level of lighting in the area.
8. Provide protection from circulation and other activities.

Objectives:
concept formation
sensory and perceptual acuity
eye-hand coordination
visual discrimination
small muscle development

Participants:
children
teacher
teacher assistant

Molecular Activities:
handling   listening
arranging   grouping
stacking
ordering
combining
taking apart

dramatic play

Fascinated by the experiences of everyday life, children enjoy interpreting these experiences and re-enacting them. For example, children assume adult roles in dramatic play and recreate a wide variety of behavioral situations involving role relationships. Among many common dramatic activities are housekeeping, shop keeping, and transportation play. The importance of dramatic play lies in children's development in understanding themselves and others and in their gaining confidence that they can be whatever they wish to be. Experiences are widened when children are allowed to act out new roles and situations they encounter. Also, dramatic play encourages development toward sophistication in oral expression. This activity usually is group oriented. However, it is necessary that a space for dramatic play provide some degree of privacy.

Design Requirements:

. Provide for a wide range of dramatic activities by keeping a large variety of props and toys available to children.
. Provide materials to allow children to create their own props for special activities.
. Provide an area that can function as a stage for dramatic presentations.
. Provide a full length mirror so that children can see themselves in role oriented costumes.
. Provide storage for dramatic equipment that is easily accessible to children.
6. Provide a ceiling system that permits the hanging of lightweight props.
7. Provide lighting that can be directed toward the area specifically for dramatic presentations.
8. Provide flooring that reduces noise in the dramatic area.
9. Provide protection from circulation and other activities.

Objectives:
positive self image
language development
role enactments
orientation in fantasy and reality

Participants:
children
teacher
teacher assistant

Molecular Activities:
dress up
puppetry
household
fire station
grocery store
hospital
special activities
setting up props
making special props
dramatic presentation
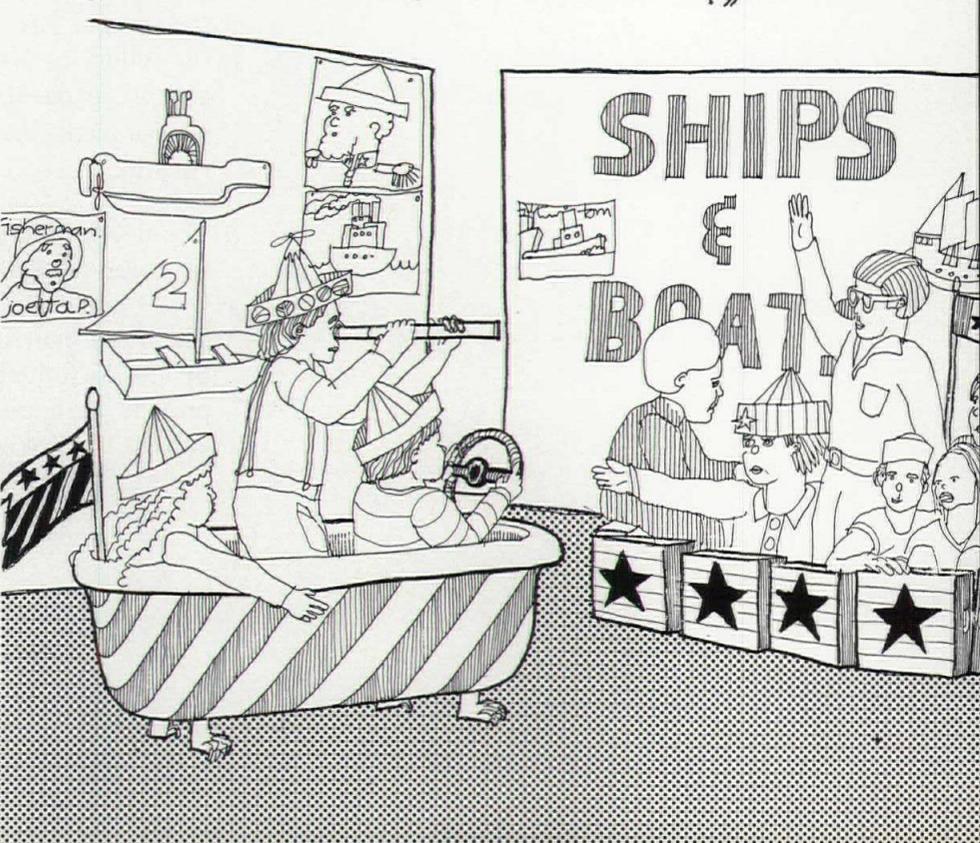
open outdoor play

Vigorous exercise and social interaction characterize children's activities in an outdoor open space. This outdoor play is essential for the development of large and small muscles and the coordination of eyes and body parts. Primarily a group activity, outdoor play is important for social development. Children learn to cooperate with one another when they play together as a group. Outdoor play also offers valuable opportunities for nature study. Many different activities occur during outdoor play. For example, children run, jump rope, climb, and swing. Playground equipment that requires different levels of movement skills is usually provided in the area. Children choose the level of difficulty they want and gradually progress to more complex activities. In this way, they gradually increase their coordination and muscular skills. In order for outdoor areas to become effective extensions of the indoor learning environment, it is necessary that children have free access to these areas at any time during the day.

Design Requirements:
1. Provide for a wide variety of activities in the open outdoor play area.
2. Provide a wide variety of playground equipment that requires different levels of movement skills and that is safe for children to use.
3. Provide sequences of different activities that require quick changes in muscle use.
4. Provide spatial variety in the open outdoor play area.
5. Provide at least 100 sq. ft. of open area for each child in the center.
6. Provide several different kinds of playing surfaces such as grass, soil, and concrete in the area.
7. Provide soft ground cover around the playground equipment to prevent falling accidents.
8. Provide child sized seating in the open area.
9. Provide a wide variety of planting in the area.
10. Provide adequate and lockable storage space for movable playground equipment.
11. Provide a means of enclosure for the area so that children will not wander away.
12. Provide for adult supervision of the area.
13. Provide easy access to toilets and drinking fountains.

Objectives:
concept formation
sensory and perceptual acuity
large/small muscle development
positive self image
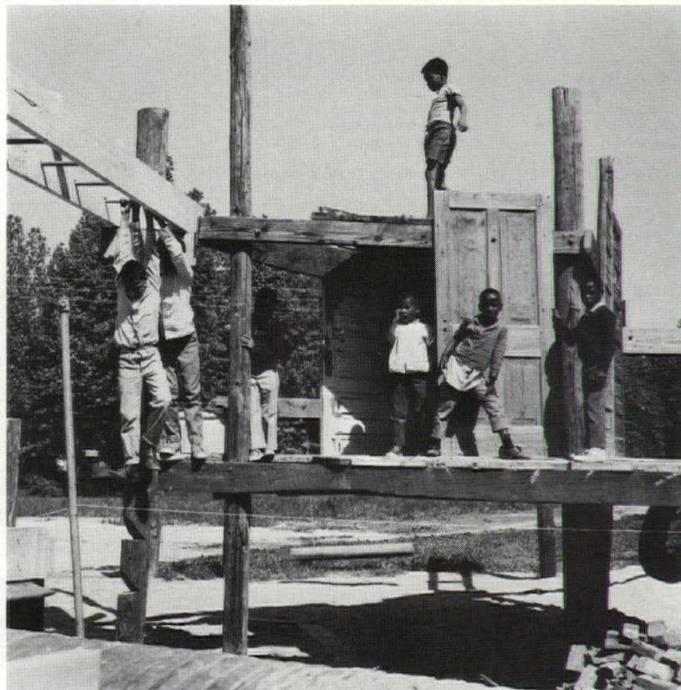
References

1. B. Bloom, *Stability and Change in Human Characteristics*, John Wiley & Sons, New York, 1964.

2. M. Deutsch, *The Disadvantaged Child*, Basic Books, Inc., New York, 1967.

3. J. Sanoff, A personal communication, "Child Development Program," 1969.

**A Child Development Center for Koinonia Partners**
Anderson C. Hensley

Basing upon their research in child development, members of the design team are working individually to create various environments for children. Architectural solutions vary in scope. For example, projects range from the re-design of church basements to the design of new centers for children and their parents.

At this time, the most complete project is a child development center for Koinonia Partners. Located on a farm near Americus, Georgia, Koinonia is a long-range experiment in Christian communal living. The community is set up as a partnership in farming, industry, and housing.

A representative of the group contacted CDG early in 1972 and requested a design for a day-care and community center. She expressed a need for a facility to accommodate sixty children ranging in age from infancy to six years. In addition, the building must serve as an educational center for the adults of Koinonia Village.

The preliminary design for the center is now complete. Generally, the building consists of four inter-related parts. (1) An administrative, kitchen, and entry area serves the entire building. (2) The major portion of the building is the learning environment for approximately forty older children. (3) A separate wing accommodates approximately twenty infants and toddlers. (4) On a second floor, adult activities such as meeting, sewing, and reading take place.

The next phase of this project will be the production of working drawings for the building. The Koinonia Partners expect to begin construction in June.

MEZZANINE LEVELS
400 sq. ft.

SECOND FLOOR
1000 sq. ft.

GROUND FLOOR
3400 sq. ft.

SCALE
2 5 10 20

N

outdoor play

climbing

blocks

storage   wraps   wraps   storage

reading   reading
writing   cubbies   writing

down   down

science   up   up   up   up   manipulative

water
play

art

housekeeping

cooking   health

dramatic   cubbies   toddlers   art

group   laundry   listening

music   infants   dramatic

director   manipulative

entry

up

outdoor play

water play

wraps

Mezzanine labels:

blocks

math   listening   up

up   concept   manipulative

up   up

Second floor labels:

observation   office

storage

staff
community

women   men

sewing

down

mechanical

storage

kitchen

landscape technology

wayne maynard,

assistant professor of landscape architecture

Processing information has always been a part of a landscape architect's task. Information processing becomes a part of landscape technology when appropriate tools are developed and integrated into procedural methods for applying them. Tools for gathering data, processing data, techniques for using tools in a systematic fashion are becoming available for land analysis and user preference problems. Filter mapping, quantitative models, and game simulation offer techniques that landscape architects must explore and learn how to use as environmental problems become more and more complex and information handling becomes a problem in itself. With the advent of electronic data processing, the potential for considering many variables simultaneously was realized, but with this potential, another realization occurred: that the precision of the instrument must be backed up by the precision of the user. For landscape architects, the technology of decision-making aids is in its infancy, and in order to effectuate its potential, an educational program for landscape architects must include maximum exposure and use of these aids.

This article describes one technique for aiding designers in making decisions. It is an example of game simulation, which has been used by social scientists and planners since the late fifties to model social environments. The game, called Minipug, and several others have been prepared within the Department of Landscape Architecture.

DEVELOPMENT

The problem of determining user preference, combined with the problem of communicating an abstract and complex design concept to a user group, led Guy Angster, a fifth-year student in landscape architecture, to develop a user oriented game that would simulate the design of landscape spaces.

Because its original application was for small parks, it was called Mini-Park Users Game (MINIPUG). The concept of the game is to

provide participants with objects that simulate the color and scale of surfaces creating three-dimensional spaces and the process of defining an activity program, preparing a two-dimensional arrangement of horizontal surfaces, then introducing vertical barriers, overhead planes, and facilities witl. a specific space, cost budget.

The theory, it was felt that users could make rational and creative design decisions if:

1. Factual information was available when they needed it.

2. They could apply factual information in an experiential way (i.e. that abstract qualities of spaces would be simulated).

3. They could use a decision process that allowed incremental design decision in an orderly sequence, and recycle these decisions as needed.

4. They could express personal information (facts, preferences) directly as it would affect the physical form.

5. They could use conflicts within the group as forces for creative solutions.

6. They could evaluate the product of their decisions in a direct and experiential way (a three-dimensional product), and that these decisions were based on an open flow of information between the designer, the users, and other involved agencies.

APPLICATION

The first trial run of Minipug was for the Apollo Heights Homebuyers Association in 1971. A student from the Department of Landscape Architecture was attempting to help organize and motivate the Association to require the Raleigh Housing Authority to act on a new community park development, and also to prepare a design proposal for the park. It was decided that the Minipug game might best facilitate community organization and planning of the facility.
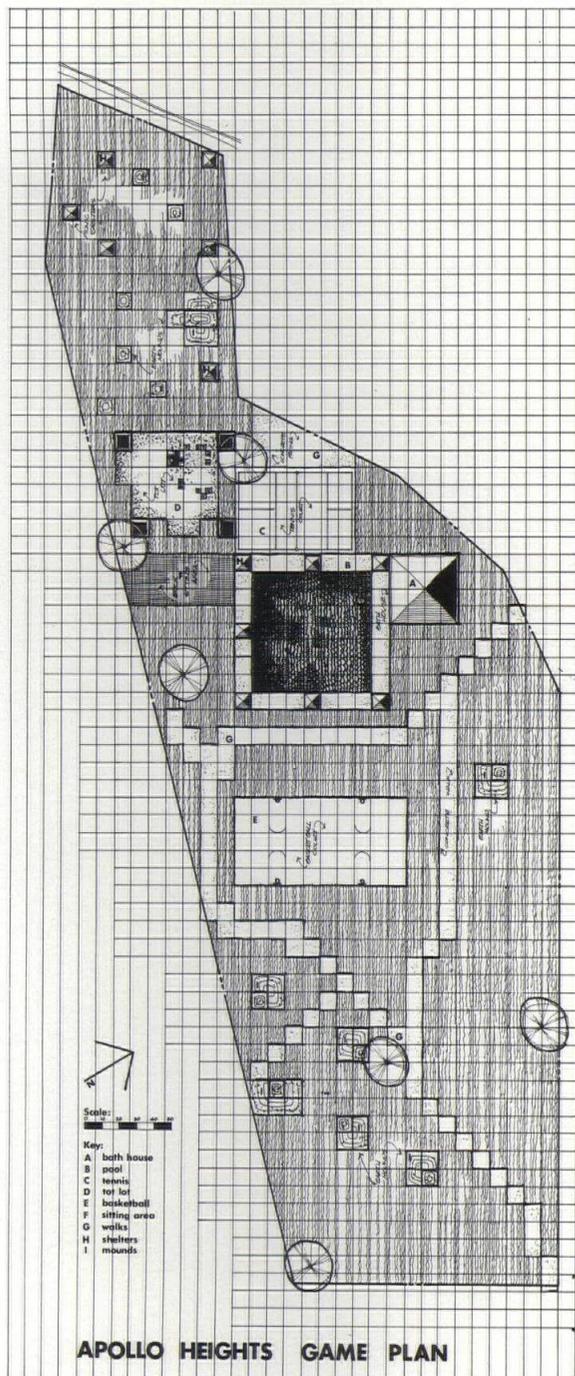
APOLLO HEIGHTS GAME PLAN

Grentland Drive

Site

Location in Turnkey subdivision
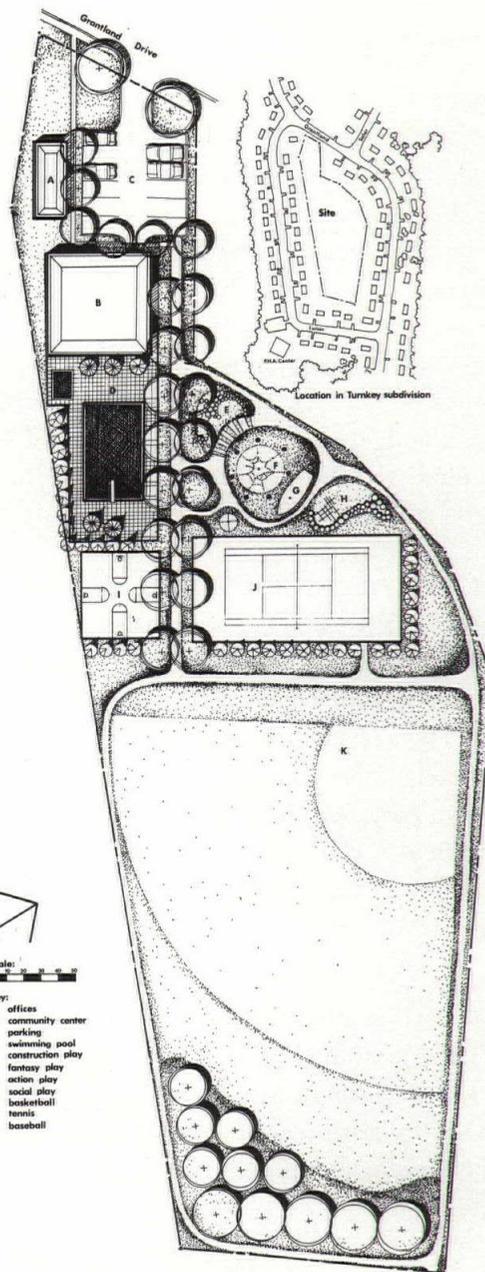
APOLLO HEIGHTS NEIGHBORHOOD CENTER

The game was set up in the Apollo Heights Community Center with a game board sixteen feet long and six feet wide to simulate the two and a half acre site. It had been decided to have a series of three sessions in order to reach small children, teens, and adults to engage them in the decision-making process. Representatives from previous sessions would participate in following sessions to promote the flow of information.

The sessions were begun with an orientation to the game and to group-decision making. A group decision-making exercise was run. Although a budget of $110,000 had been set for development cost, it was decided to allow each participant to play without budget constraints and simply tally the results at the end of the evening.

The first night, no adults attended; the ages of the participants were from three to fifteen. They were divided into six groups by age, and a design student met with each to help with the group exercise and the gaming. A spokesman represented each group during the game session. The level of movement and noise was incredible. Unfortunately, the session had to be halted after a few rounds because the participants were enthusiastically climbing on and under the game board, chewing on the chips, wrestling each other to reach decisions, etc. We decided the game was quite successful in promoting involvement, but that we needed some adults present.

The next two nights were more successful in reaching final game plans. The combined adult/child preferences produced a dance shelter, hot dog stand, swimming pool, bath house, basketball court, children's play area, a walk for roller skating, and many discussions about the kind of community play area needed.

The second use of Minipug was for the design of a children's area within Jaycee Park. It had an $8,000 development budget and was approximately one half acre in size. It was felt by the student

EXISTING SHELTER

EARTH MOUND WITH TUNNEL
FOR CHILDREN'S ENTRY

POLE SWING

CLIMBING STRUCTURE

CLIMBING STRUCTURE, SLIDE,
STORAGE, LOOKOUT

SAND

EXISTING
PARKING

TOY SCALE
ANIMALS

SAND

WOOD WALK

LARGE SITTING AREA (FOR TENNIS)

TENNIS FENCING

EXISTING TENNIS COURTS (6)
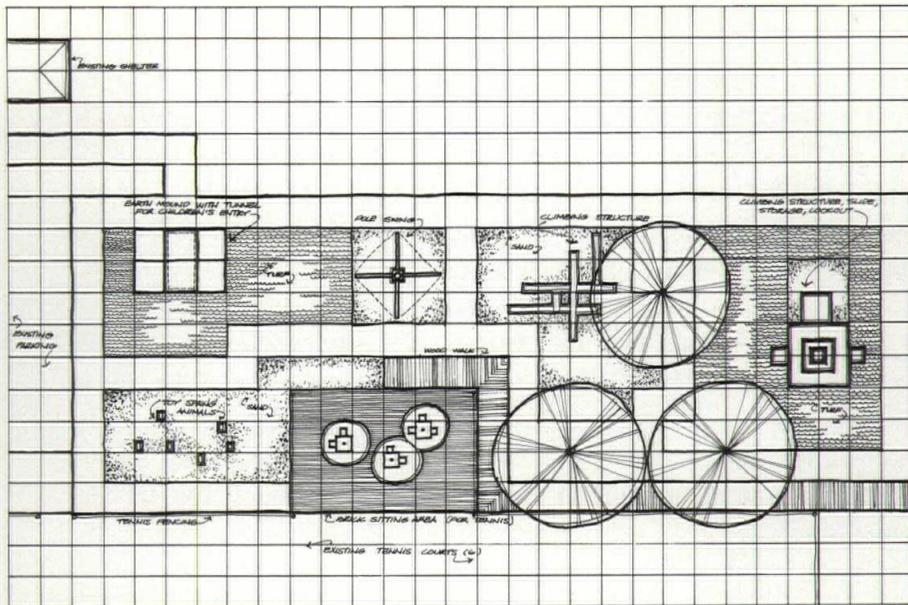
"GAME PLAN" **JAYCEE PARK** NORTH
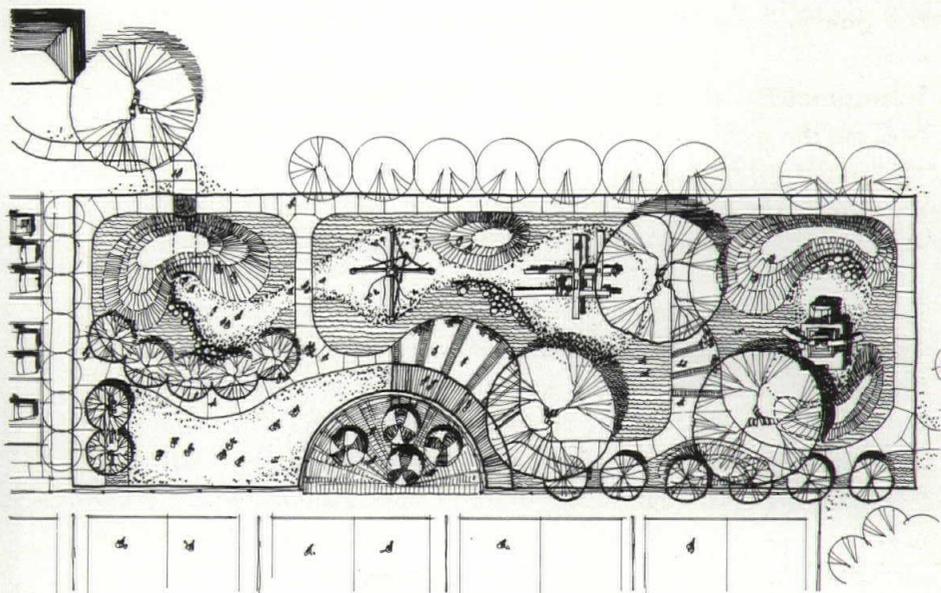
0 5 10 20 30 40

"PROPOSED PLAN" **JAYCEE PARK** NORTH

0 5 10 20 30 40

designer that the game would help the community express their preferences regarding the planning and design of the children's facility, and a series of group meetings were organized. As apposed to the Apollo Heights experience, the neighborhood was primarily white, middle income, and highly transient. The turnout for the meetings was light, even though there appeared to be high interest in the park development.

It was decided that for this session, the student designer would prepare a slide presentation on the functional and physical aspects of play before the game was initiated. This would be followed up by three-dimensional concept sketches and plans at the game's completion, and possibly a fully simulated model for a later presentation.

One of the participants in this game was the City Recreation Director, acting as an adviser on funcitonal and maintenance questions. An interesting development in the game was a change on his part from reluctant participation initially to enthusiastic helpfulness by the end.

The few neighborhood participants that did attend completed the three-dimensional development in an hour. They produced, through discussions with the student designer and the Recreation Director, a functional and attractive proposal. The final plan, submitted to the City, follows the Minipug results quite closely.

The technique selected for determining neighborhood preference in Apollo Heights and Jaycee Park combines elements of game theory which uses mathematics to describe payoffs for potential choices, and simulation models which are formal analogies for real systems. Gaming carries the theory and simulation one step farther by including live participants. The two concepts, gaming and simulation, provide a situation where neighborhood residents, acting within a prescribed framework, attempt to meet certain objectives, and during the course of the game, act out values, preferences, and can observe in the "moves" of game pieces, the results of their actions. Thus,

game simulation provides designers with a technique that can inventory user preference and that can also educate users about the effect of their preferences when space and cost limit choice.

EVALUATION

Evaluation of the Minipug game has yielded the following observations:

1. It is enjoyable to play.
2. Participants, young and old in low and middle income levels, seemed to be able to interpret the abstract pieces satisfactorily.
3. It appears to provide dependable data on user preference.
4. The plans produced are functional and well ordered depending on how well functional information is input by designer and advisers.
5. The success of the final design depends on how well the participants are facilitated in making decisions, and how well professionals can articulate functional requirements.
6. The participants become better decision makers as the process goes on.
7. Sketches by the designers, supporting presentations on objects related to the activity under consideration, and a final model are necessary for the participants to fully realize the consequences of their decisions.
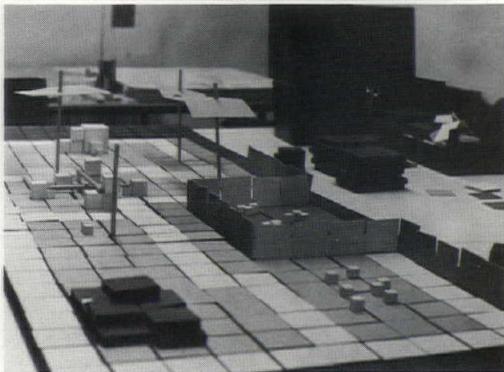
Along with these community applications, the Minipug game has been used in Basic Design classes, introductory landscape classes, and in professional workshops to present basic gaming concepts and landscape principles. Minipug and other games prepared within the departments appear to be effective ways of modeling environmental change, both for determining and studying change variables. They can, with little background required, provide an introductory awareness to complex environmental problems, and with the addition of valid theoretical frameworks provide means for exploring solutions which include user perceptions.

universidad simon bolivar

Initially, as decreed by the government, there is the need for a technical university in Venezuela. This university is to be used by 10,000 students and to be located in a mountain valley, thirty minutes drive south of Caracas.

A group of students in the fifth year architectural studio of I. M. Zubizarreta, a visiting associate professor, tackled the problem. The following is a brief capsule of four student's analysis and proposals.

Pondering on the normative nature of a university and the physical isolation of the valley site from supporting urban areas, further implications of the task materialized. If mere educational facilities were provided at the university, commuting would flourish, and the students, faculty, and staff would be encouraged to consider the facility an 8:00 a.m. to 5:00 p.m. occupation. The university's nights would exist in dormancy.

As Venezuela continues to advance, the trained personnel must continue to learn and to visualize a total interweaving and dependancy of life styles. The complexity of society's problems will require each person and each university program to combine their energies and viewpoints with others. This new university must now offer each student, faculty, and staff member the opportunity to explore many areas of study, to test many individual values, and to structure many goals. Today's university is no longer just the high mark of the education process; it is a manner of living, learning, and maturing. The obligation is far above the mere distribution of facts and skills.

From the community it serves, a university should attempt to be interwoven with its engulfing community. The town-gown distinction must be dissolved. While living within this community, non-academic as well as full time academic, the inhabitants must be aided in inter-linking their educational and experiential maturation. The physical design must foster this interaction between factors.

If only university facilities were constructed, there would eventually arise other outside developments to support all concerned either by necessity, time, or convenience to the site. Planned growth is vital, since any uncoordinated growth outside the sphere of the university would effect the quality of the institutions as well as the site itself. Planning the non-university elements, therefore, is a second factor of consideration; the project is expanded into a university-town.

The traditional planning of universities today follows a somewhat isolated existance from the community it should serve. Education should be responsive to the entire community, and there should exist a symbiotic relationship between all entities of such a university-town. Any design proposal expanding on this concept of the integration of activities would expand upon educational opportunities. The non-academic inhabitants can share the benefits of the university facilities and events while the students can experience the reality of community-town-living.
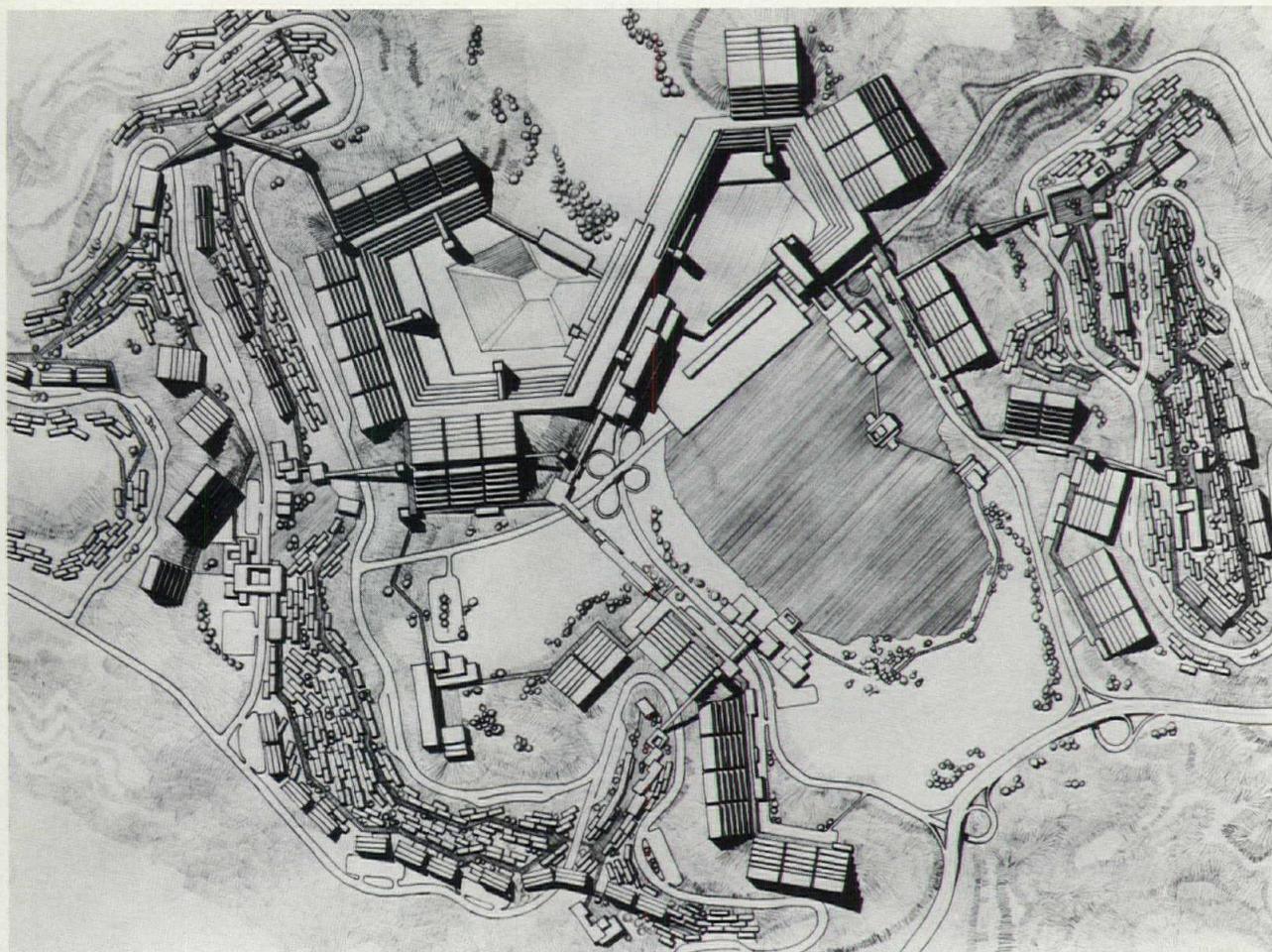
extension of the hill

Owing to the nature of the project, and the selected site, this solution of the problem is primarily concerned with the landscape. The scale and openness of the valley was re-organized and maintained without sacrificing the urban quality of the new town. Urban areas are located in such a way that they become extensions of the hills, instead of extraneous boundaries to the land. Because of the steep slopes, the usable land on the site is basically two plateaus and the hills and the valley separating them. In order to unite them, the town-center-university was designed to act as the converging point of all the elements.

Gustavo E. Mibelli

MAJOR PEDESTRIAN WAY

MAJOR UNIV.-TOWN ROADWAY

CULTURAL ZONE PLAZA

AUDITORIUM - COMMUNITY ZONE
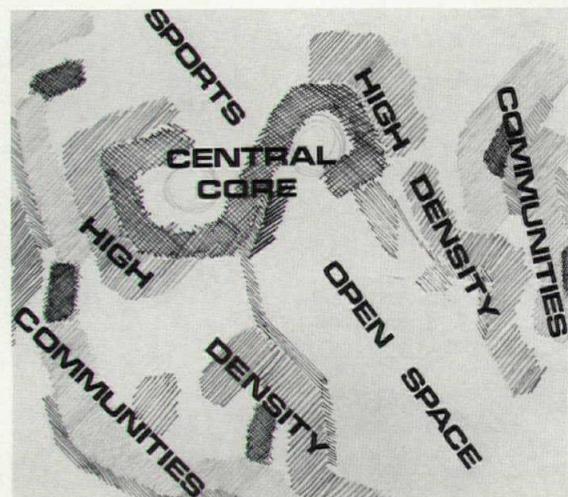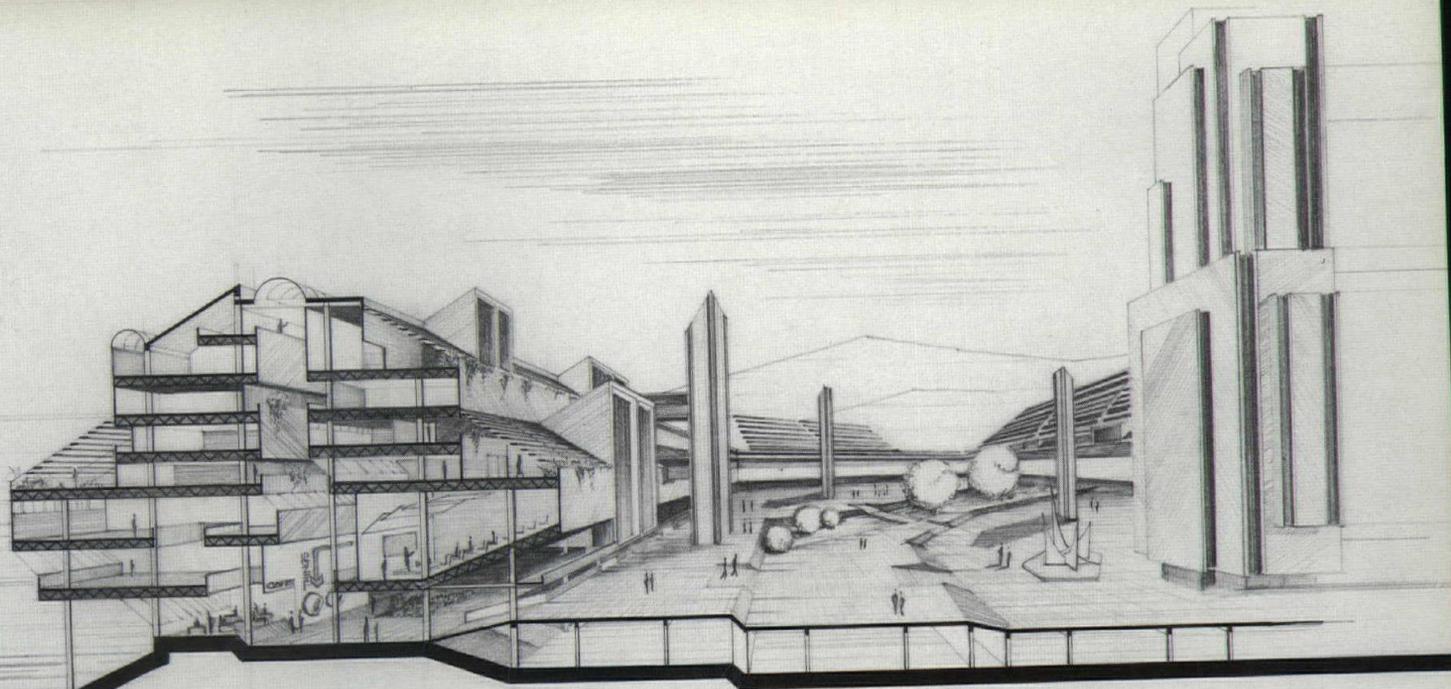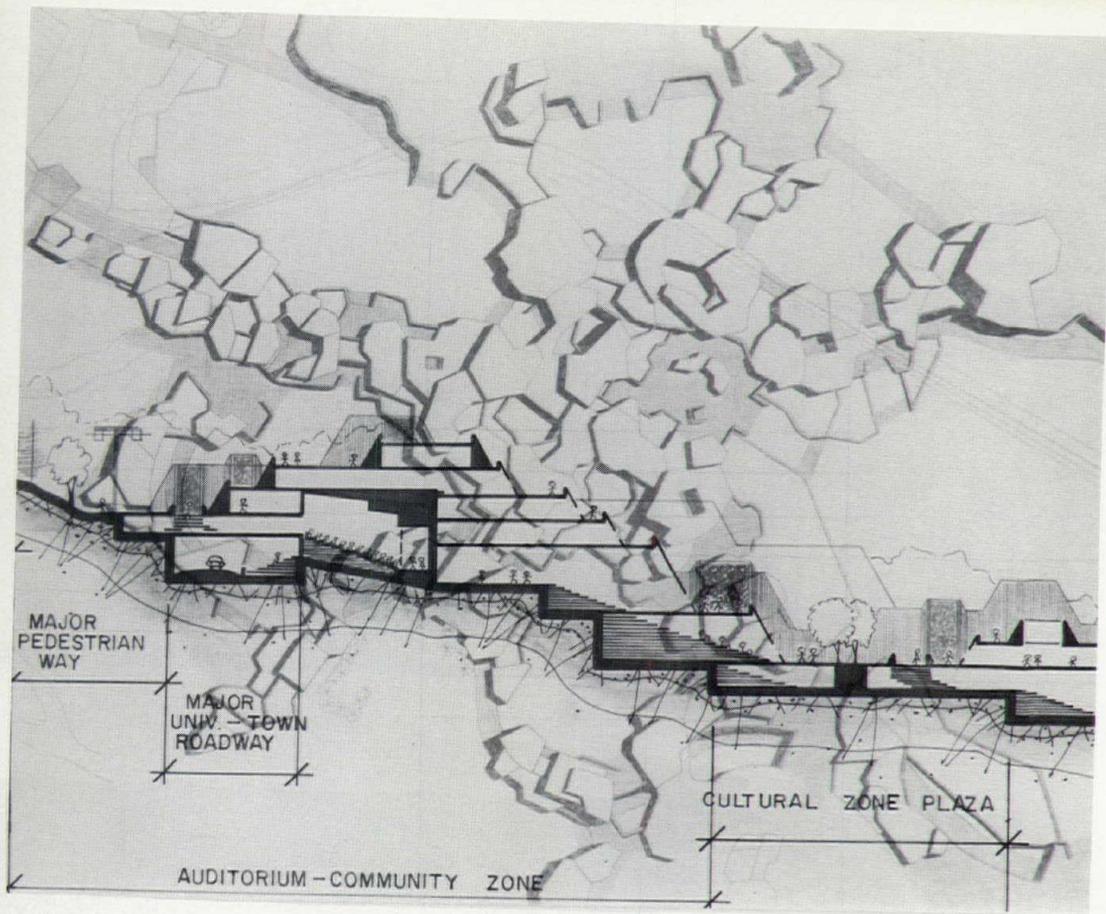
oneiro-organism

The university town . . . an oneiro-organism living within a Venezuelan mountain valley . . . the physical embodiment of this organism attempts to allow each resident the full spectrum of social interaction . . . from solitude to ubiquity. This university-town germinates from a dual purpose core . . . here is the commercial center of the town enclosed within the university-town social nodes . . . branching out from this core, the university-town facilities provide many-layered pedestrian bridges between the town core and the mountainside residential neighborhoods. In contrast to the hustle of nearby urban Caracas, this contemplative village provides the setting for complementary interaction of individuals and their thoughts.

RESIDENTIAL
DISTRICT
RECREATION PARK

COMPLEMENTARY
EDUCATION

THEATRE

INNER-TOWN
ATHLETIC FIELDS

UNIVERSITY
EXTENSION

PROGRAM
NODE

GYMNASIUM

LIBRARY

HIGH SCHOOL NEIGHBORHOOD

UNIVERSITY
NODE

INTRA-TOWN RECREATION PARK

AUDITORIUM

PROGRAM NODE

N

SCALE: 1 M. = 2000 M.

JUNIOR HIGH SCHOOL

UNIVERSITY
COURT

UNIVERSITY - COMMUNITY PLAZA

COMPLEMENTARY EDUCATION

MAJOR UNIV.-TOWN ROADWAY

GENERAL CURRICULUM ZONE

AMPHITHEATER SOCIAL ZONE

RECREATION

fabric plan

This plan investigates two major points. First the university and town are viewed as a gradual overlapping of new areas and the blending of the spectrum of different activities throughout the site. The intent is comparable to a fabric in which the many colored threads contribute to the quality of the finished weave. In this respect the university and town are seen as a three-dimensional blending of activities, spaces, and people.

The second major consideration in the plan is a respect for the site itself. The sheer quality of the landscape demands attention and the realization that no man-made structures can impose upon the magnitude of the mountains and expansive vistas beyond. There must be careful consideration to enhance and embrace the natural features of the site.

Daniel Gunter Smith

|			
———	Vehicular Circ.	• • • • • •	Pedestrian Circ.
XXXXXXX	Hi. Den. (slope) Hsg.	c⊱	Community Center
h	Hi. Rise Hsg.	▦▦▦	University Bldgs.
▨	Lo. Den. Hsg.	⌇⌇⌇	Open Spaces
o	Commercial		
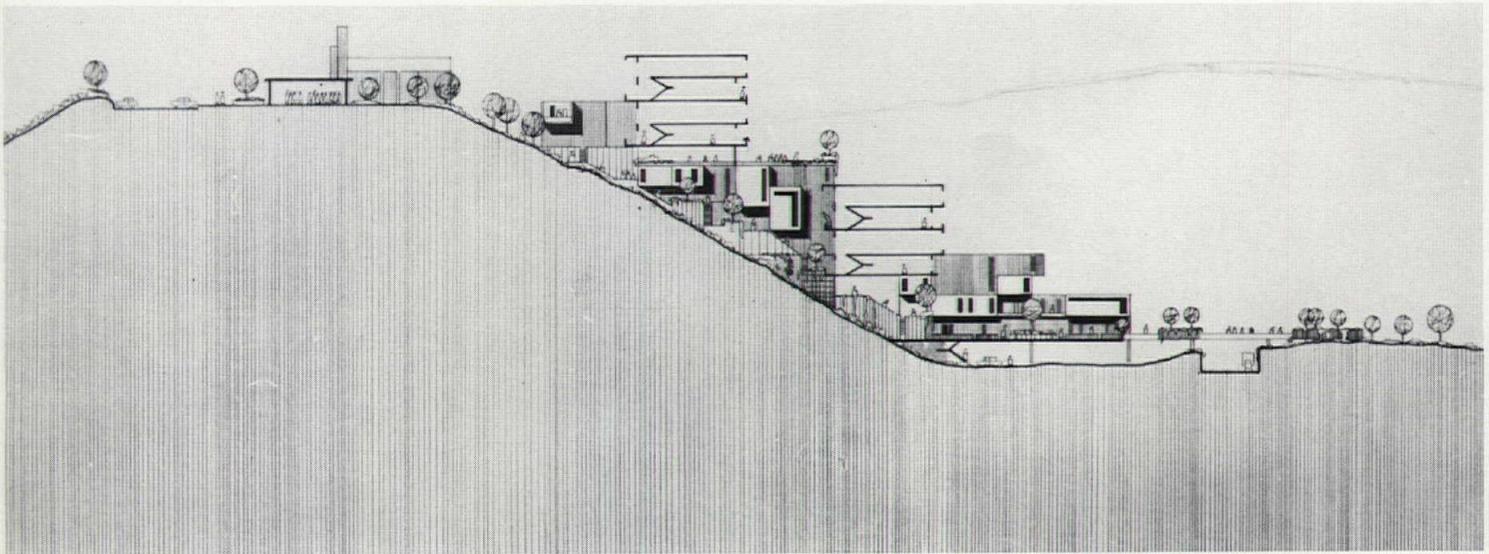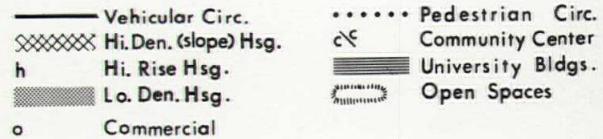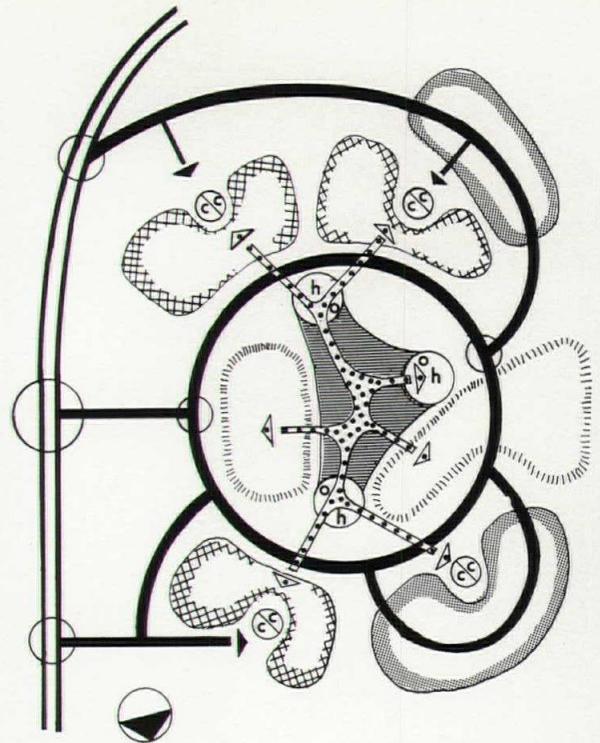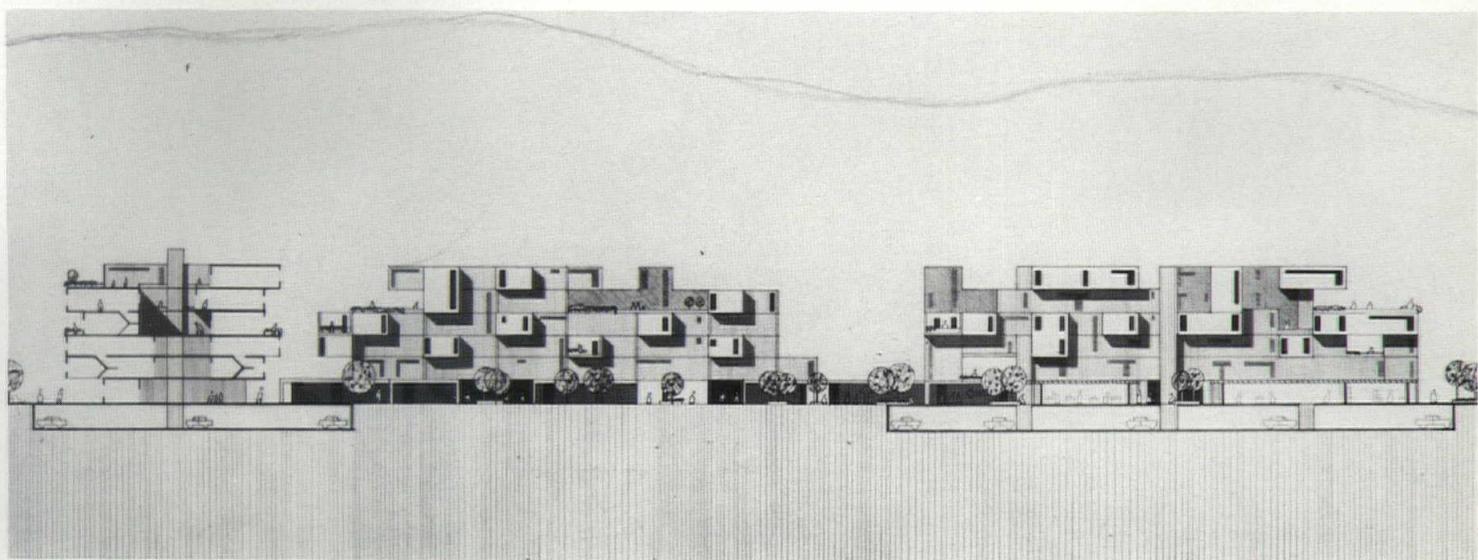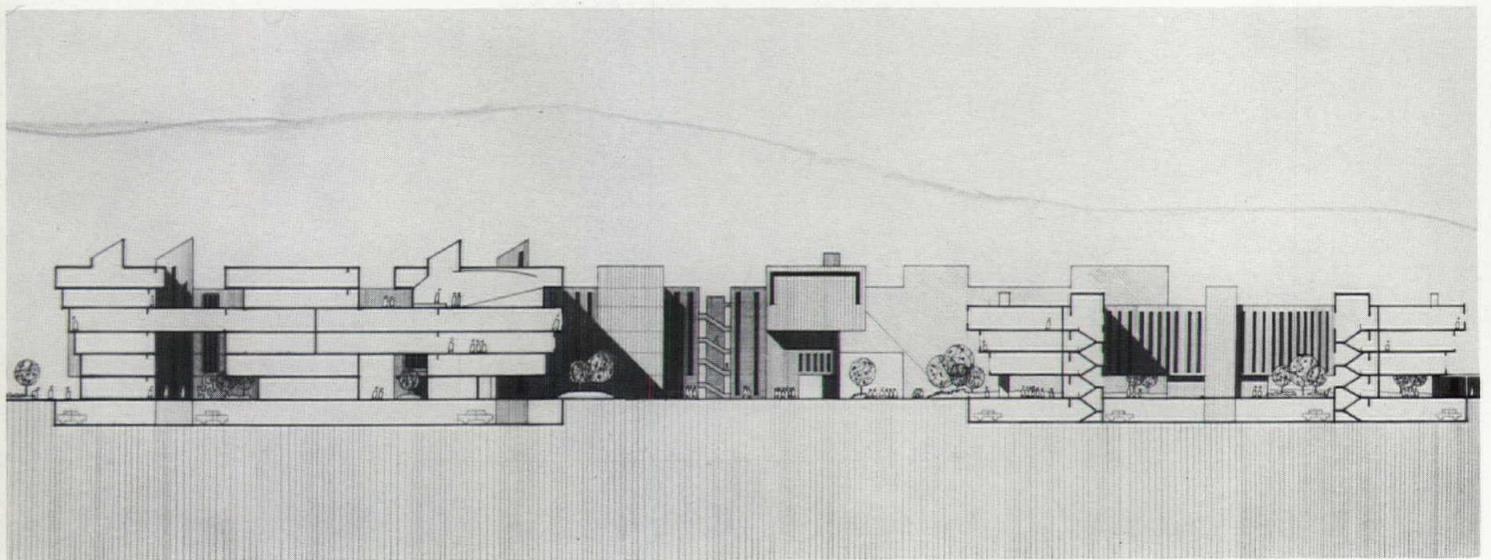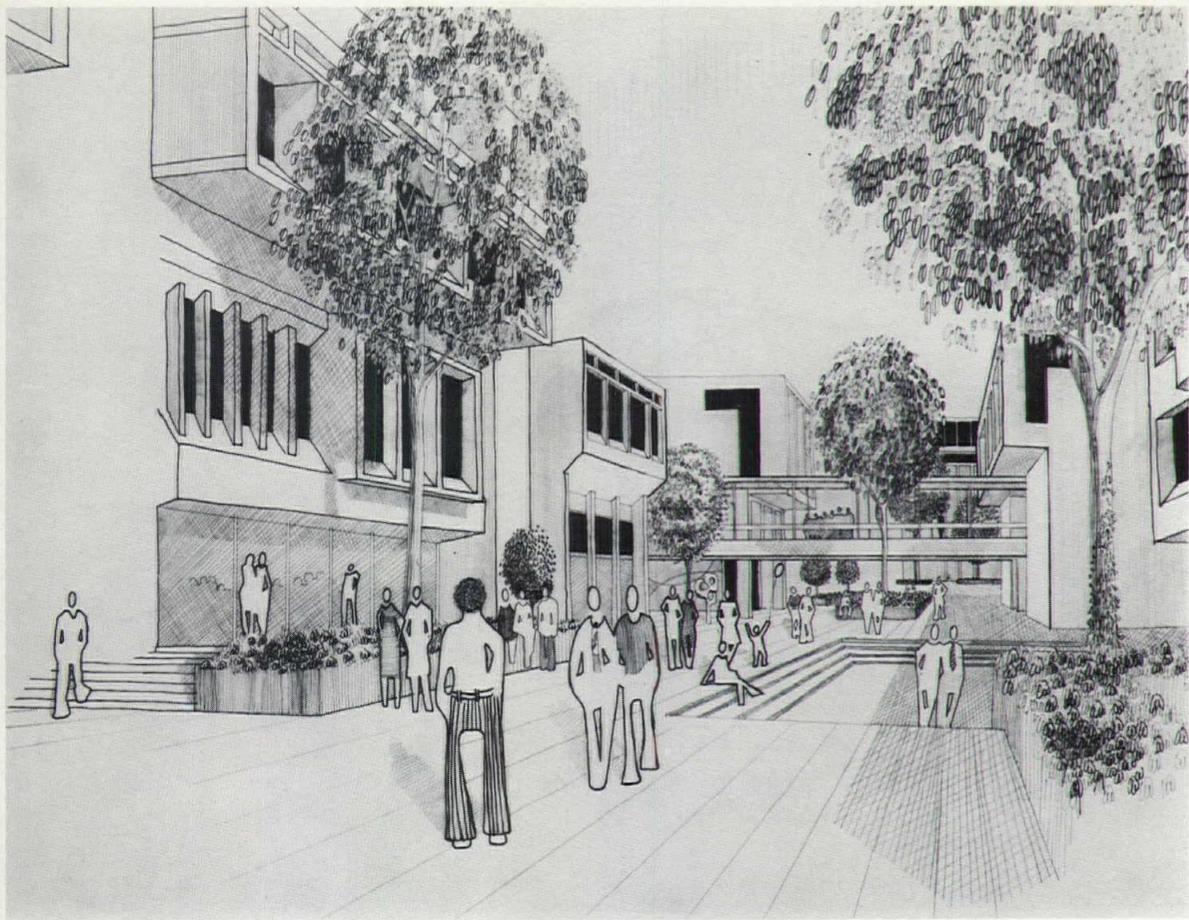
concentrated plan

The lake was introduced for several reasons. The presence of such a focal point helps reinforce orientation from the surrounding mountains. It also opens up recreational opportunities for both the community and the region. Aesthetically, the lake gives relief and contrast from the highly developed university-town center. In addition, it gives the university-town a reason to exist on this particular site rather than another one a mile away.

The university-town center is actually two overlapped centers that reflect their distinct academic and commercial functions. The overlapping and the development of social facilities throughout ensures "round-the-clock" activity in both areas. The high degree of urbanization came about to prevent the relative isolation and departmentalization in most of the universities of today. This plan allows the university and town to function as one environment and to possess a life of its own.

Steve Taynton
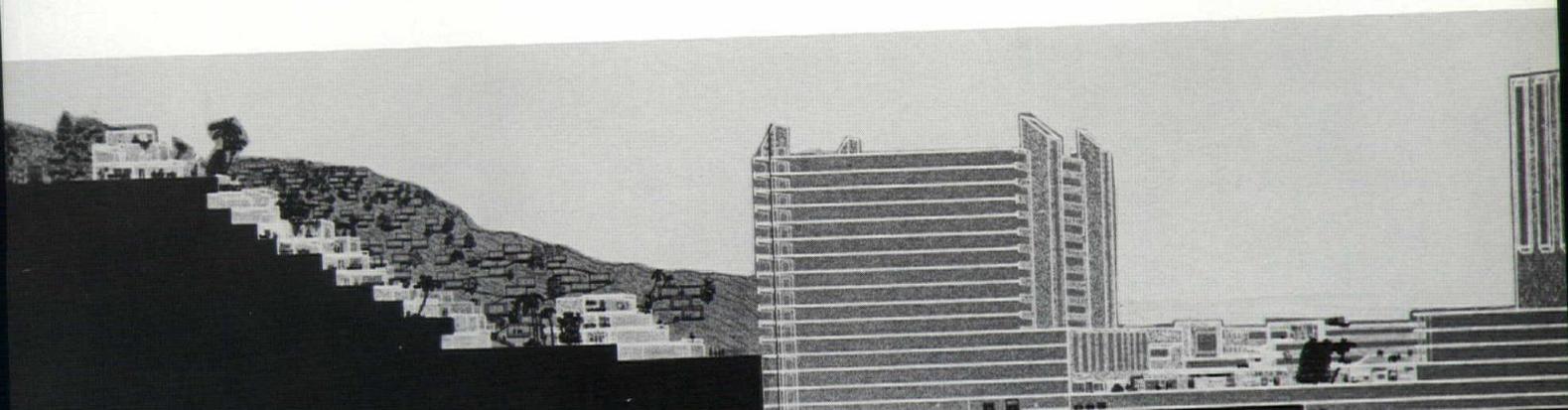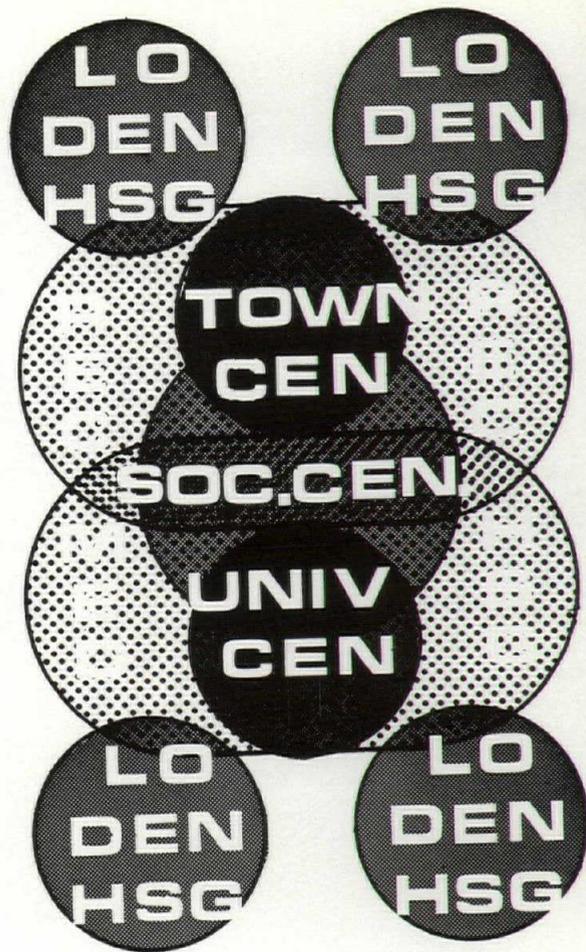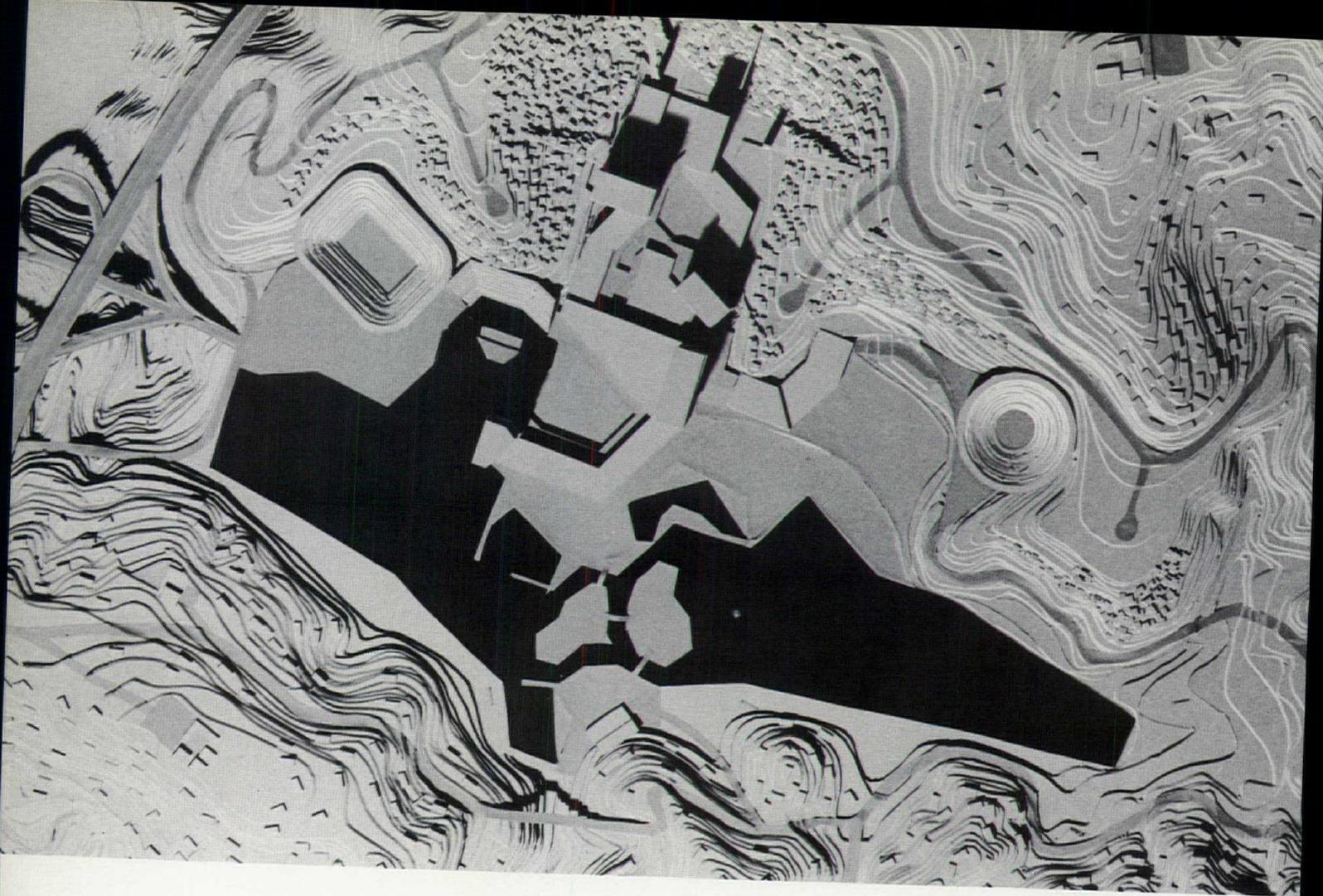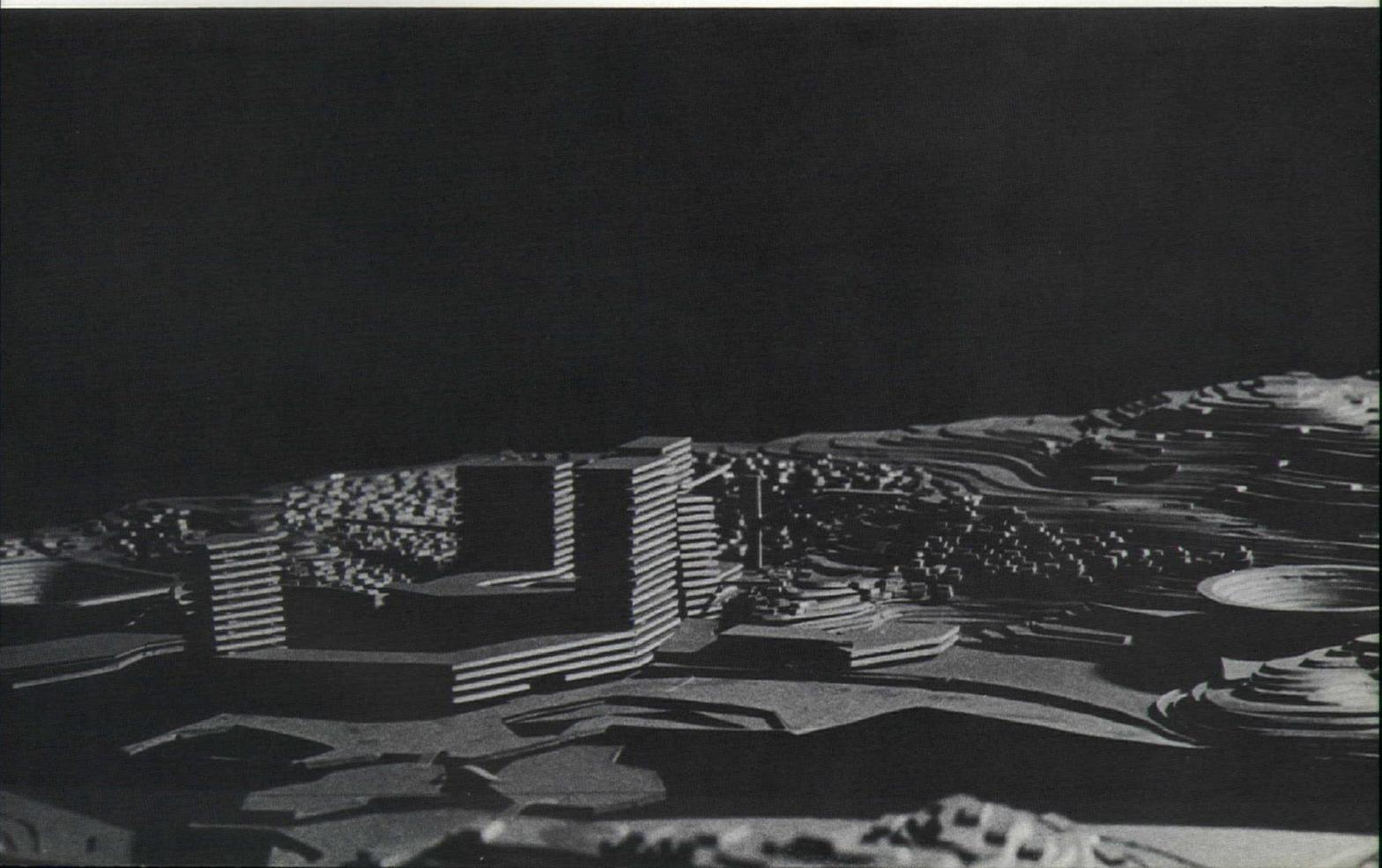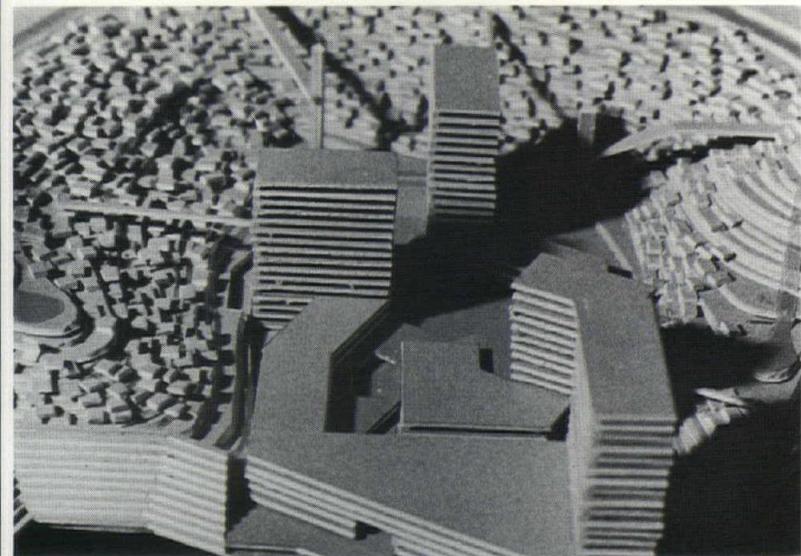
franklin street:
chapel hill vending project

PD 400
FRANKLIN st
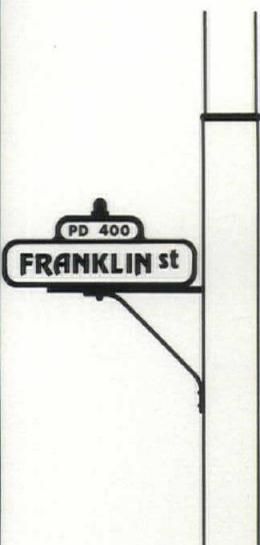
**CHAPEL HILL
VENDING PROJECT**

Spring 1972

armand cooke,

visiting assistant professor of product design

It was 2 p.m. on a Friday afternoon and the automatic vending machine guarding the entrance to Exhibit Room 125 Brooks Hall had had its glowing facade effectively subdued by a strategically placed black panel. Inside the adjoining entranceway, precisely spaced white letters on a softly glowing blue panel triumphantly announced — "Chapel Hill Vending Project": the type of vending to be depicted obviously would brook no automated upstaging.

Inside on the flood lighted white rear wall, a thirty foot mural of a Franklin Street business area in Chapel Hill had been meticulously executed, and against this backdrop on low brick colored platforms stood spotlighted two tubular aluminum supported brightly colored cabinets, under equally colorful fabric canopies. It took little to conclude that these were some sort of dispensing or vending stands and what the exhibit was all about. Against an opposite wall a lightly stained wood framework suspended ten colored renderings depicting a variety of similarly scaled structures, and on an accompanying shelf lay, almost apologetically, two booklets titled *Vending Project, Program Proposal* and *Vending Unit Construction Manual*.

But not quite all: the directing entrance panels had been placed to create a secondary space in which had been installed a sixteen foot scale model depicting in miniature a quantity of the vending units as they would appear along the bricked and landscaped stretch of Franklin St. proposed by the Chapel Hill Town Planning Board.

On and about the vending unit display bases sat, or more exactly, drooped, nine students; the third year Product Design class, PD-400. Were it not for an accompanying air of accomplishment, the appearance of the group could only have conveyed a feeling of complete exhaustion. It has been one of those night-long stands particularly prevalent in schools of design.

6

CHAPEL HILL VENDING UNITS

Construction Manual
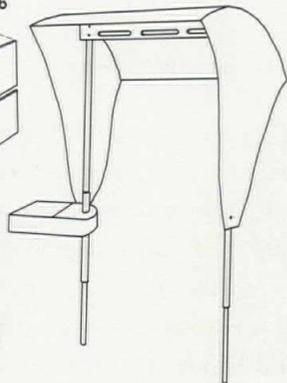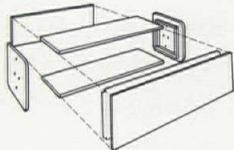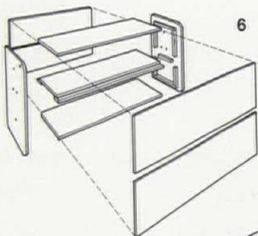
(above) Clothing stand variation

(top left) Exploded view of standard box
(above) Exploded view of jewelry box variation showing
plexiglas viewing panel

Except for the subsequent transferal of the exhibit to Chapel Hill Municipal Building, the four-month long project had reached its culmination.

To the initiated Design School observer yet another student work exhibition was about to commence.

What makes this student project worth reviewing and analyzing? The scope and complexity of its structure was well within that normally undertaken in the various departments of the School of Design and the physical design problem itself no more challenging. However, there was an uniqueness that bears examination and evaluation for future consideration for it broaches the question: can the educational process with its intended value to the student also provide at the same time a service of value to the community? Can the student energies be utilized to assist not only in the solving of projected or theoretical social problems but also those existing and urgent problems of the immediate community?

Such was the project undertaken experimentally by the Department of Product Design but not without a degree of trepidation on the part of the faculty.

Historically, street vending in Chapel Hill had existed for some time in the form of "Flower Ladies" and was generally accepted and even considered a colorful part of the local scene. Over the past few years, however, local and transient vendors of other items such as jewelry, candles, leather goods, etc. had appeared on the streets displaying their wares on blankets, tables, and from vans, as would so often be seen in larger cities.

To many citizens this type of vending was another matter and the community became split on the desirability of allowing its continuation. The ultimate result was the town-enforced suspension of all street vending, though the Flower Ladies continued to operate on privately provided property.

Members of the Town Council favoring the resumption of vending, in conjunction with the Town Planning Board, felt that the problem could be resolved by demonstrating that the purported objections to vending could be overcome by creating an organized and esthetically attractive area for such activities and through the design of attractive and functional vending stalls to be approved by and required of participating vendors.

It was in relationship to this latter design problem that the Product Design Department was contacted by the Town Planning Board: could student designers undertake as a class project the determination of parameters for such a vending unit and ultimately propose workable design solutions? The projected design activities involved seemed to match very closely the learning activities which the third-year student would be undertaking during the year. Thus, Town Planner Mr. Berger and Councilwoman Mrs. Welsh were invited to the PD 400 class to outline the problem and to discuss the form of student input that would be most effective. The possibility of participating in this type of design activity was greeted with a high degree of confidence. This was their first year of exercising their major option and suddenly they were having the "real thing" dropped in their laps.

A Project Program was jointly outlined by the class with the first phase being the determination of parameters in detail. Functions, flexibility, size, weight, cost, fabrication methods, and appearance among other considerations were discussed and evaluated until it was felt that exploratory sketches could be intelligently undertaken. The resulting initial rough sketches were discussed with Mr. Berger and ultimately transformed into presentation renderings, each student depicting his own design solution. The group was then invited to give a public presentation at a Town Council meeting for an appraisal by the council members and attending interested vendors. This was accompanied by an additional meeting with the vendors, and by the time the sessions were over a, clearer picture of desired features had emerged. A unit that would plug into an installed ground socket received overall favorable reaction, as it would
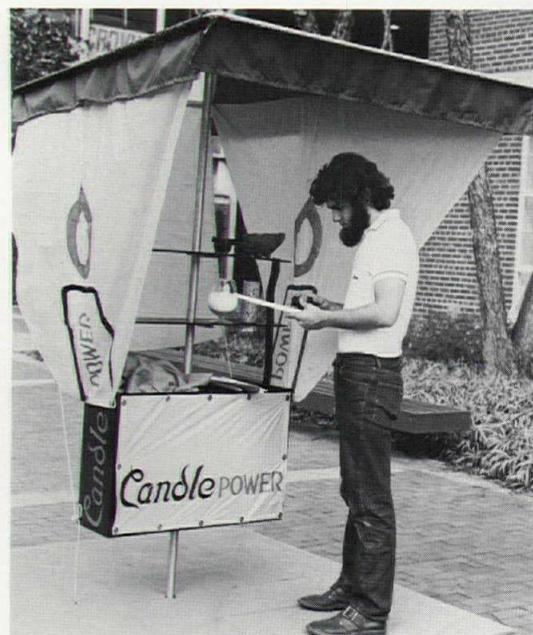
determine definitely unit locations and grouping organization as well as eliminate much weight from the stall that would otherwise be required to assure stability.

For the next phase of development the class split into two groups: one to explore a double pole supporting structure, the other to design around a single pole support. As the results of this phase were to be the final graphic presentation and the basis on which a selection was to be made, construction and materials cost were given heavy consideration. These renderings, along with exploded construction drawings and a pair of models thrown in for good measure, were taken to Chapel Hill; this time to be received also by the Town Appearance Commission. The reception was enthusiastic and the decision a stalemate: it would be very nice to have two full-scale prototypes constructed for demonstration to the City Council for field testing and for possible subsequent use by community groups. All the program required now was the appropriation of an estimated $200 to build the units and supporting display along with assembling a construction manual for projected use by vendors.

Appropriations came slowly and the students itched to get on with the project. With the assurance that the money would be approved, materials started to collect in the classroom and shop. When the appropriation did come, an Action Committee had in the meantime decided on two variations of the one-pole system which seemed to be most preferred by the vendors. This came as a disappointment to the one group, but all had been prepared for an ultimate decision. It was decided, however, that on the basis of the primary educational aims to proceed also with the one-pole unit. The extra expenditure was minimal as the excess material for building the one unit provided most of the needed components.

And so the final phases of the project got into full swing, with each group undertaking their protytotype building. However, the prototypes occupied only part of their time. There was the construction manual to be laid out and written up and the detailed

illustrations to be drawn up. It was also decided that a complete exhibit could be set up to demonstrate the prototypes and that the exhibit would contain a 1" = 1' scale model of one block of the proposed Chapel Hill location. This would better demonstrate how a number of the units (16 in fact) would appear in the street scene.

Though each member of the class was assigned a primary responsibility, it was only to see that the tasks were coordinated time-wise. All were charged with the responsibility of seeing all the exhibit completed in every detail, and this they responded to with magnificent intraclass cooperation.

And so another exhibit was completed and now resides in the Chapel Hill Municipal Building on public display and awaiting the final Town Council Meeting that will determine its future.

It would thus seem that indeed student efforts can be effectively utilized to assist in local problems: the original trepidations seem to have been unfounded. It was in fact, however, a situation where all the plus factors mercifully fell in line, and all the pitfalls of experimentation avoided.

What factors should then be considered when such a problem is confronted?

First there should be the acknowledgment on the part of both parties that the overriding consideration is the project's value to the students' education. Secondly it must be recognized that the student group is overall only contributing and not responsible for the ultimate results. An awareness must exist that it will be student work demonstrated and not the manual exercise of instructor's direction; for often the education process is better served by letting the student make mistakes to test his conviction. Obviously this quality of student work will fall in a range from amateur to professional.

There can also be problems of scheduling and financing, and these

should be fully explored before such mutually cooperative projects are undertaken.

And there is one last consideration not to be overlooked. Can students be expected to assume and maintain the degree of responsibility such projects entail?

If the normal class reaction is generally similar to that of the PD 400 group that undertook this extensive project, and the highly professional atmosphere of group interaction and responsibility prevails elsewhere, it can only be said of the students, They're there.

Primary Exhibit Responsibilities

Bill Cotton, Construction Manual Drawings
Walt Shaw, Street Scene Design & Construction
Mike Helms, Street Scene Design & Construction
Herman Efland, Exhibit Layout & Coordination
Joe Prefontaine, Special Effects
Bill Russell, Exhibit Construction
Mike Lovejoy, Construction Manual Layout
Frank Banks, Materials Acquisition
Pete Westafer, Graphic Coordination

language as a medium for architecture

alfred f. platt, graduate student, architecture

Some time before his death in 1908, Ernest Fenollosa, an American student of Japanese and Chinese culture and language, wrote an essay called "The Chinese Written Character as a Medium for Poetry," which was edited by Ezra Pound and published through his efforts in 1936. This essay is referred to by Pound as "a study of the fundamentals of all aesthetics,"[1] and, disregarding the likelihood that Chinese scholars would quibble with the basis of his theory, it affords a number of interesting comparisons with some statements of Frank Lloyd Wright about organic architecture. And, too, reading Fenollosa's essay in light of Wright's ideas about architecture offers some fresh insight into the nature of architecture, particularly according to Wright's conception, and puts so-called "classical architecture" into somewhat clearer focus. To demonstrate, let me briefly present Fenollosa's ideas and align some of Wright's statements about organic architecture.

Fenollosa's intention was to encourage Western respect for Chinese poetry by pointing out how clearly Chinese poetic language reflects the process of nature, understood as "successive . . . transferences of force from agent to object."[2] And by demonstrating the immediate relationship between natural order and Chinese writing, he throws considerable light on any system which seeks to build upon and within the order of nature.

Wright says that "the law of organic change is the only thing that mankind can know as beneficent or actual."[3] To begin to understand "organic change," consider Fenollosa's illustration of the natural change reflected in a simple, vivid Chinese sentence. Thinking, therefore language, he notes, is successive, not "through some accident, but because the operations of nature are successive."[4]

> In speech we split up the rapid continuity of this action and of its picture into its three essential parts or joints in the right order, and say:
>
> Man sees horse.

It is clear that these joints, or words, are only three phonetic symbols, which stand for the three terms of a natural process. But we could quite as easily denote these three stages of our thought by symbols equally arbitrary, *which have no basis in sound*; for example, by three Chinese characters:

人 見 馬

... But Chinese notation is something much more than arbitrary symbols. It is based upon a vivid shorthand picture of the operations of nature. In the algebraic figure and in the spoken word there is no natural connection between thing and sign: all depends upon sheer convention. But the Chinese method follows natural suggestion. First stands the man on his two legs. Second, his eye moves through space: a bold figure represented by running legs under an eye, a modified picture of an eye, a modified picture of running legs, but unforgettable once you have seen it. Third stands the horse on his four legs.

The thought-picture is not only called up by these signs as well as by words, but far more vividly and concretely. Legs belong to all three characters: They are *alive*. [5]

But the significance is more than simply pictorial. What are apparently pictures of *things*, in Chinese, are actually, in large measure, pictures of processes, and "carry in them a verbal idea of action."[6] That is, most ideographs are actually operations rendered in shorthand. Thus, the ideograph for "to speak" is a mouth with two words and a flame coming out of it. Similarly:

The sun tangled in the branches of the tree sign = east.

"Rice-field" plus struggle = male.[7]

東 男

And, as Fenollosa points out, this applies equally and importantly to our grammatical category of nouns—things (persons, and places) are to be understood as processes. The sign for spring is the sun underlying the bursting forth of plants. In fact, Fenollosa goes on to say, "a true noun, an isolated thing, does not exist in nature. Things are only the terminal points, or rather the meeting points, of actions, cross-sections cut through actions, snapshots."[8] Contrast this with Wright's statement that "we can only know that all things are in process of flowing in some continuous state of becoming."[9] Building things, then, means cross-sectioning natural actions. "The eye sees noun and verb as one."[10]

The sentence form is built upon these verbal units. It exists because it reflects the natural order of transference. "All truth has to be expressed in sentences because all truth is the transference of power. The type of sentence in nature is a flash of lightning. It passes between two terms, a cloud and the earth. No unit of natural process can be less than this."[11] The form of the transitive sentence in Chinese corresponds to the universal form of action in nature; "the normal and typical sentence . . . consists of three necessary words:the first denoting the agent or subject from which the act starts, the second embodying the very stroke of the act, the third pointing to the object, the receiver of the impact."[12] And in Wright's own terms:

Plan. . . . . Solution. . . . Subject from which the act starts
Elevation. . . . . . . Expression. . .Very stroke of the act
3rd Dimension. . . .Living Space . Receiver of the impact

Clearly, now, I am suggesting the appropriateness of the metaphor of Chinese poetic language, of discovering a relationship between a language-method for expressing literal meaning which recognizes the

natural origin and order of that meaning and an art which attempts to use the language of material, form, line, plane, space, color, and time to accomplish a physical function, reflecting in its expression the processes which give it existence in the natural world. Fenollosa's essay is a basic investigation into the relationship between natural order and the order of man-made systems, such as the one Wright was after. "Always the desire to get some system of building construction as a basis for architecture was my objective—my hope. There never was, there is no architecture otherwise, I believe."[13] And it seems to me entirely appropriate to refer this to a culture and tradition as well as a language which has attempted to maintain and reflect the wholeness of man and nature.

> You must read the book of nature. What we must know in organic architecture is not found in books. It is necessary to have recourse to Nature with a capital N in order to get an education. Necessary to learn from trees, flowers, shells—objects which contain truths of form following function. If we stopped there, then it would be merely imitation. But if we dig deep enough to read the principles upon which these are activated, we arrive at secrets of form related to purpose that would make of the tree a building and of the building a tree.[14]

Having established the analogy, or attempted to do so, between organic architectural efforts and Chinese characters and sentences, the fullness of the analogy ought to be suggested, perhaps, by some examples of the method.

Language, Chinese or otherwise, leads directly to the question of grammar, and word classification. Fenollosa suggested that the grammatical categories of Western language "have been unfortunately invented by grammarians to confuse the simple poetic outlook on life,"[15] by demonstrating how, in Chinese, a part of speech "is only what it does. Frequently our lines of cleavage fail, one part of speech acts for another. They *act for* one another

because they were originally one and the same."[16] This can be understood as the natural outcome of a system of *words* whose verbal (natural) idea of action continues to operate within their expression, even when they are acting as nouns, or things, understanding things as points of processes. So, grammatical categories are present, but particular words are not permanently assigned to them. Chinese "is not exclusive of parts of speech, but comprehensive; not something which is neither noun, verb, nor adjective, but something which is all of them at once and at all times."[17] I take it this is what Wright means when he says " . . . there is no possible transfer of the same grammar from one genuine building to the other."[18] Traditional grammar is based on the categorization of the elements (words). If the words of architecture are line, form, plane, etc., any attempt to restrict their meanings, classify their functions, and standardize their usage is to disallow their organic growth and change, and to deny their common origin—in the process of repeating and reflecting the operations of nature. "Nature herself has no grammar."[19]

So-called "classical architecture," then, might be understood as the imposition of grammatical categories upon architecture. *Class*ifications give rise to *form*alisms. In Chinese, when we supposedly apprehend adjectives, intransitive verbs, conjunctions, we are really encountering some form of verb. To forget this and to deny these parts of speech the freedom to perform all their natural functions is necessarily a weakening of one's language. In architecture, then, formalized building elements are weakened, abstracted, barely usable traces of some once-living process. I am not here discussing true classicism. (As Ezra Pound says: "A classic is a classic not because it conforms to certain structural rules, or fits certain definitions (of which its author had quite probably never heard). It is classic because of a certain eternal and irrepressible freshness.")[20] Rather, I am referring to the after effort to be "classical" by men who are not making anything new (that is to say, true. ("It (architecture) always begins at the beginning."))[21] If we consider "classicism" in architecture as grammatical differentiation, classification, and formalization of architectural elements, then

Fenollosa describes the moment when architecture returns to life:

> Few of us realize that in our own language these very differences once grew up in living articulation; that they still retain life. It is only when the difficulty of placing some odd term arises, or when we are forced to translate into some very different language, that we attain for a moment the inner heat of thought, a heat which melts down the parts of speech to recast them at will.[22]

Formalism separates thing and action. But actions obey the law of organic change. Chinese words remain alive because they are not formalized, abstracted, but represent things as actions, actions as things. Formalism in architecture abstracts things from the actions of which they are cross-sections. The weakness is apparent. "We import into our reading (making) of Chinese (architecture) all the weakness of our own formalisms. This is especially sad in poetry (arch.), because the one necessity, even in our poetry, is to keep words as flexible as possible, as full of the sap of nature."[23]

As a final illustration of this comparison, consideration of the adjective in Chinese provides a particularly rich, it seems to me, statement about organic architecture.

An obvious weakness in language is the reliance upon adjectives to do the job of verbs. Good verbs communicate vividly, directly, and concretely—transitively. Weakened language uses intransitive, or worse yet, copulative verbs and adjectives—abstracted "qualities"! The active process of nature, transference of force, survives as a bloodless statement of a condition of being. The sky is red. The sky reddens itself. When the verb is kept strong, and when, as in Chinese, every verb is also an adjective, then the adjective may be properly used as a qualifier—a way of describing the power of action. If one's metaphorical aim is to make architecture actively, naturally, verbal, then might one not say that the quality of architecture is an inflection of its expression, a mood of its primary fact?

REFERENCES

1. Ernest Fenollosa, Ezra Pound, ed., *The Chinese Written Character as a Medium for Poetry* (San Francisco: City Lights Books, 1968), p.3.
2. *Ibid.*, p.7.
3. Edgar Kaufmann, ed., *An American Architecture: Frank Lloyd Wright* (New York: Bramhall House, 1955), p.44.
4. Fenollosa, p.7.
5. *Ibid.*, pp.8-9.
6. *Ibid.*, p.9.
7. *Ibid.*, pp.10,38.
8. *Ibid.*, p.10.
9. Kaufmann, p.44.
10. Fenollosa, p.10.
11. *Ibid.*, p.12.
12. *Ibid.*, p.13.
13. Kaufman, p.231.
14. *Ibid.*, p.260.
15. Fenollosa, p.16.
16. *Ibid.*, pp.16-17.
17. *Ibid.*, p.18.
18. Kaufmann, p.51.
19. Fenollosa, p.16.
20. Ezra Pound, *ABC of Reading* (London: Faber and Faber, 1951), p.13.
21. Kaufmann, p.19.
22. Fenollosa, p.17.
23. *Ibid.*

BIBLIOGRAPHY

Fenollosa, Ernest, Ezra Pound, ed. *The Chinese Written Character as a Medium for Poetry*. San Francisco: City Lights Books, 1968.

Kaufmann, Edgar, *An American Architecture: Frank Lloyd Wright*. New York: Bramhall House, 1955.

Pound, Ezra, *ABC of Reading*. London: Faber and Faber, 1951.

visual design

In the 20th Century we have found that the science of communication returns man to his world through the study of his interaction with external events. The raw material for such interactions reaches man through his perceptions and the preponderant mass of such perceptions are visual. Within recent history an almost incredible expansion of communications media have created a demand for people with operational knowledge of the various forms of visual communication. One set of these demands has to do with people able to carry out activities which have come to be known as Visual Design.

The history of Visual Design is one of separate skills and crafts which have only recently merged into a coheisve field of study. Working through a broad range of visually creative experience, the student develops an understanding of elements and principles of visual organization common to all visual communication.

The following pages represent the exploration of problem solutions that aid the student in moving from a state of knowledge to one of knowing.
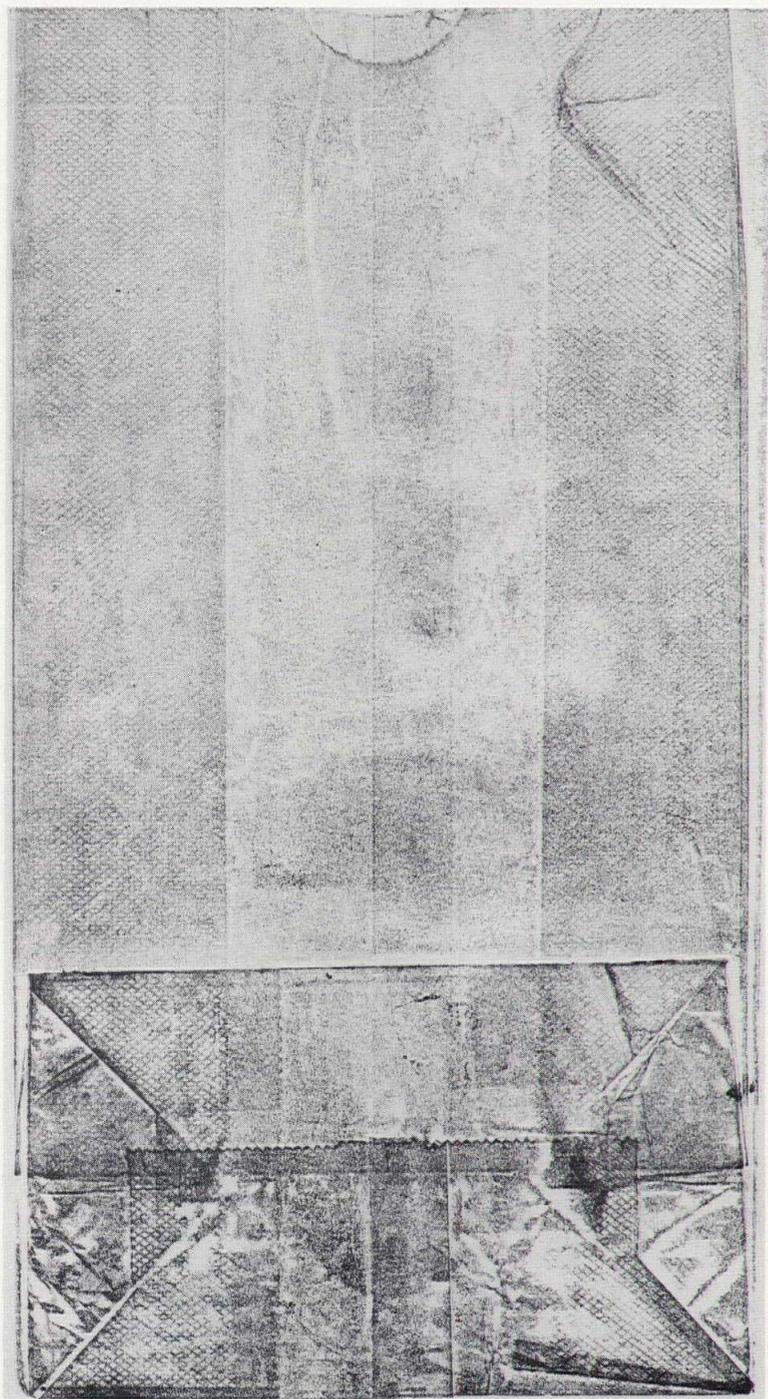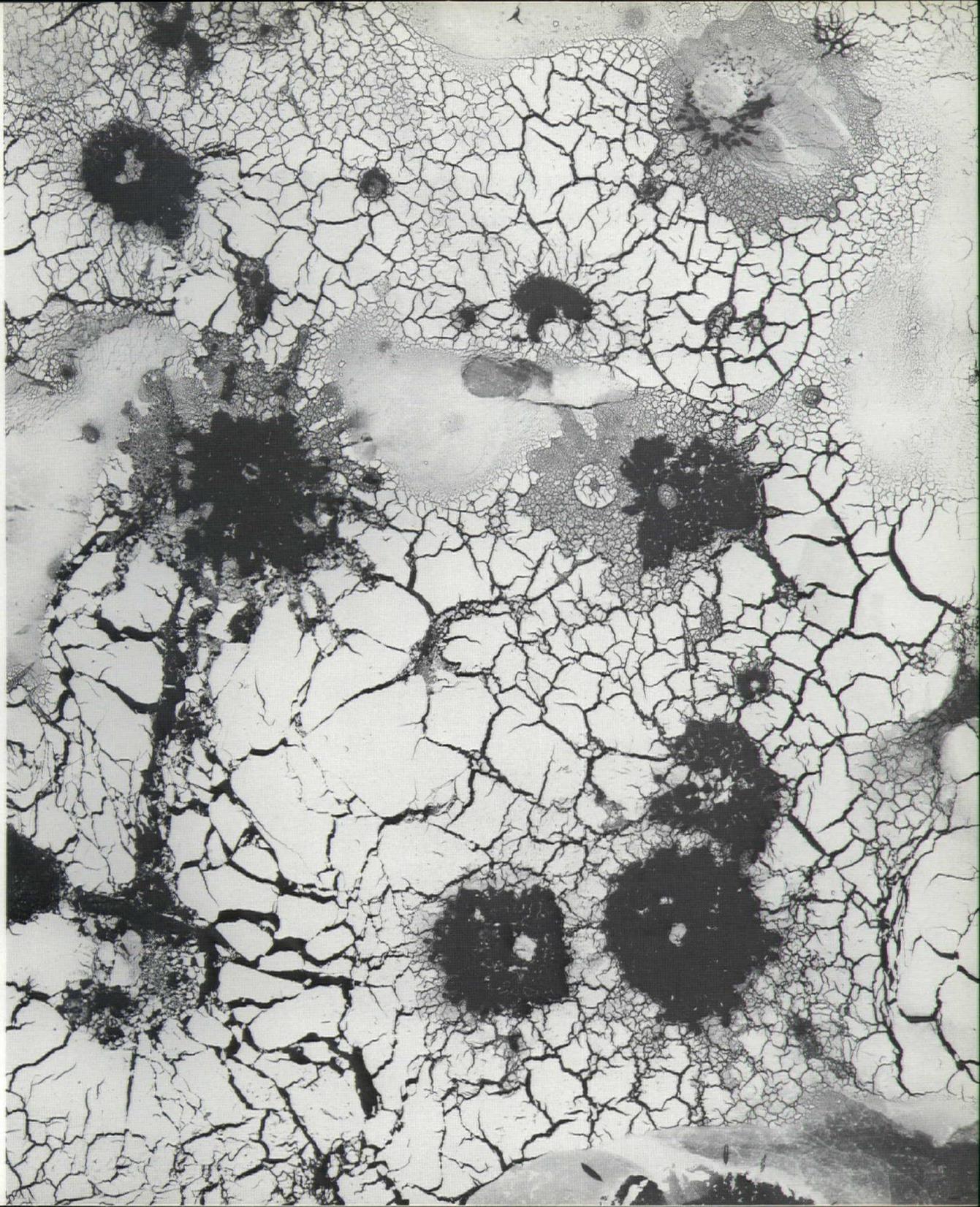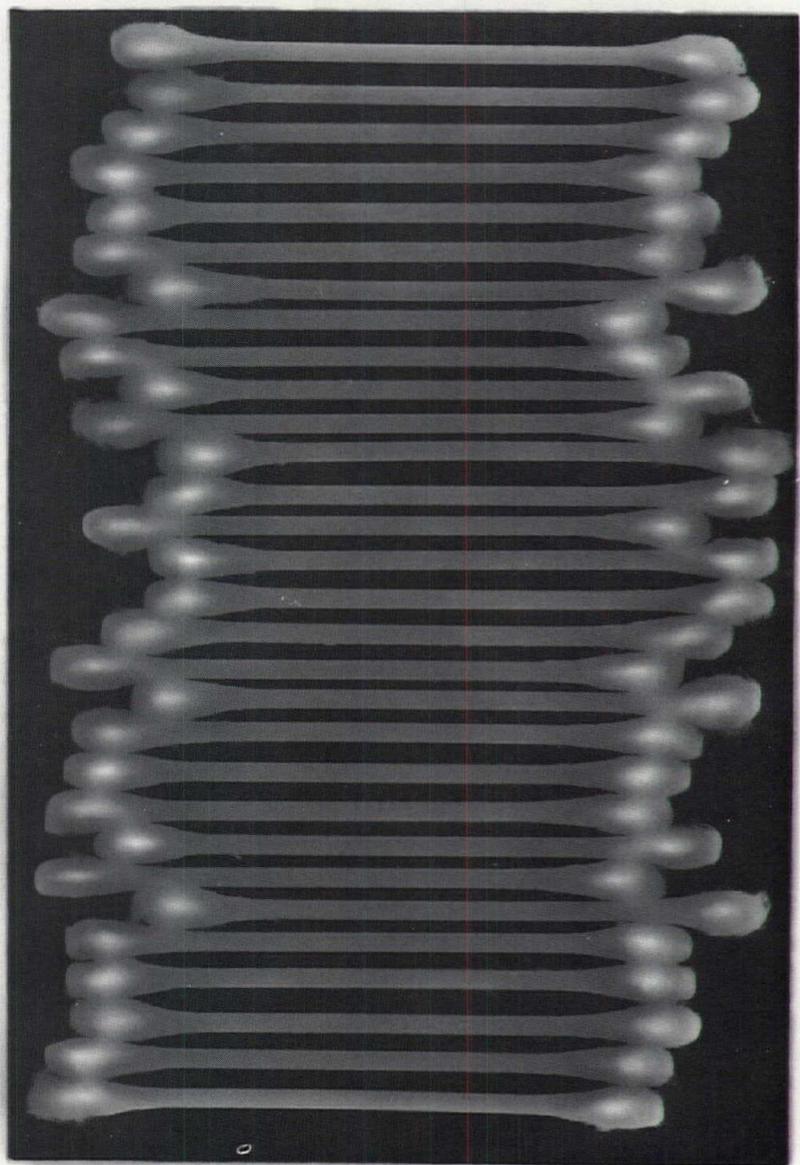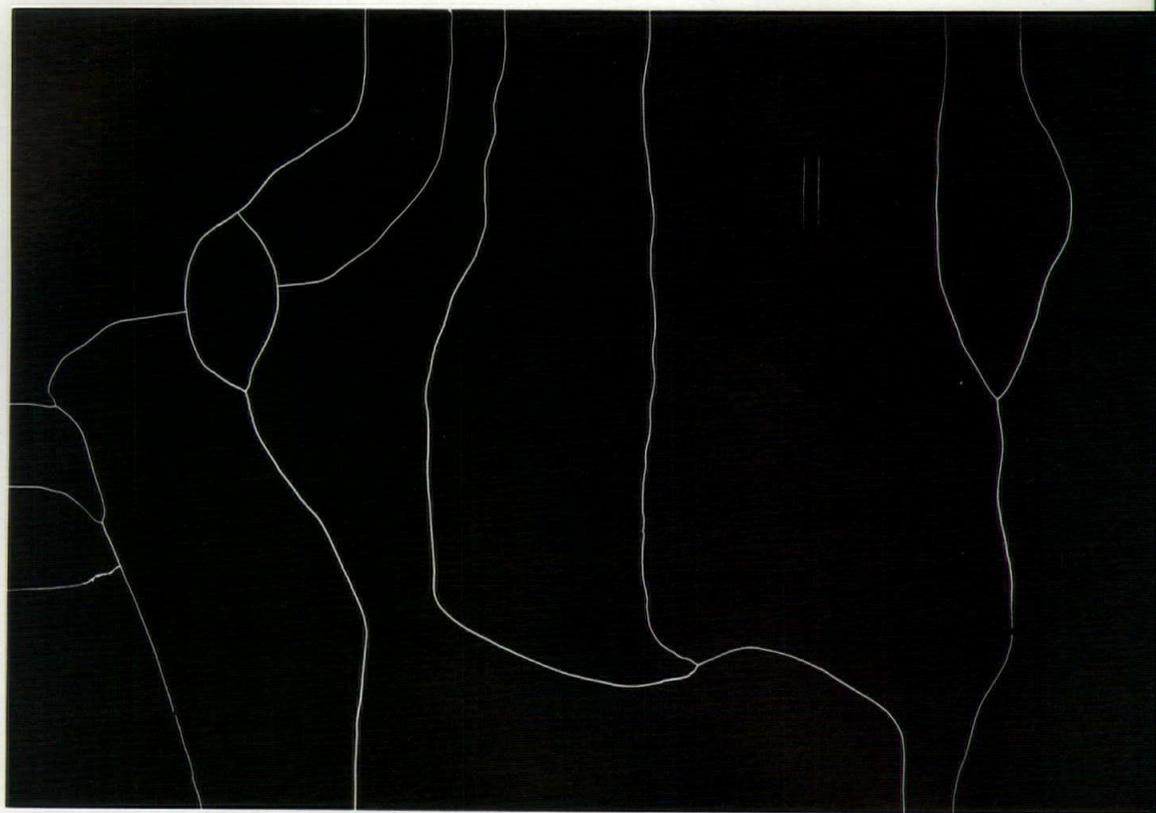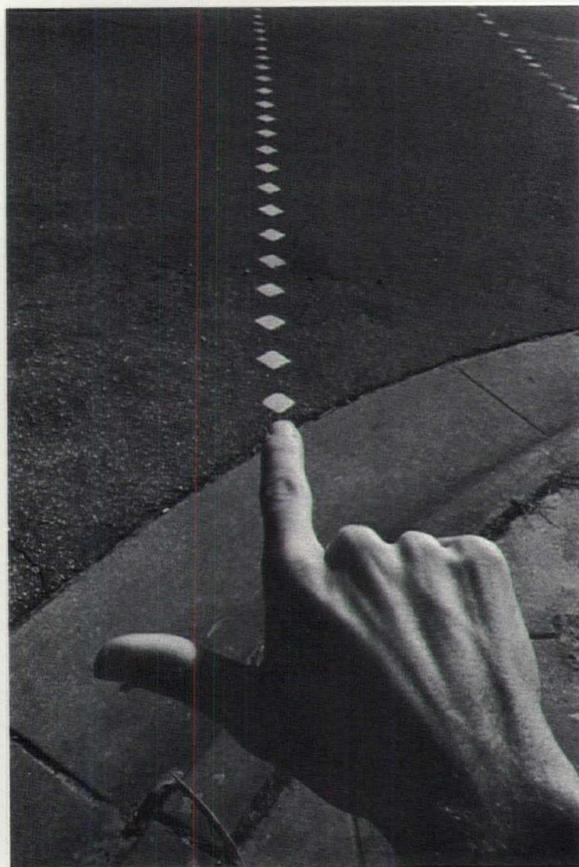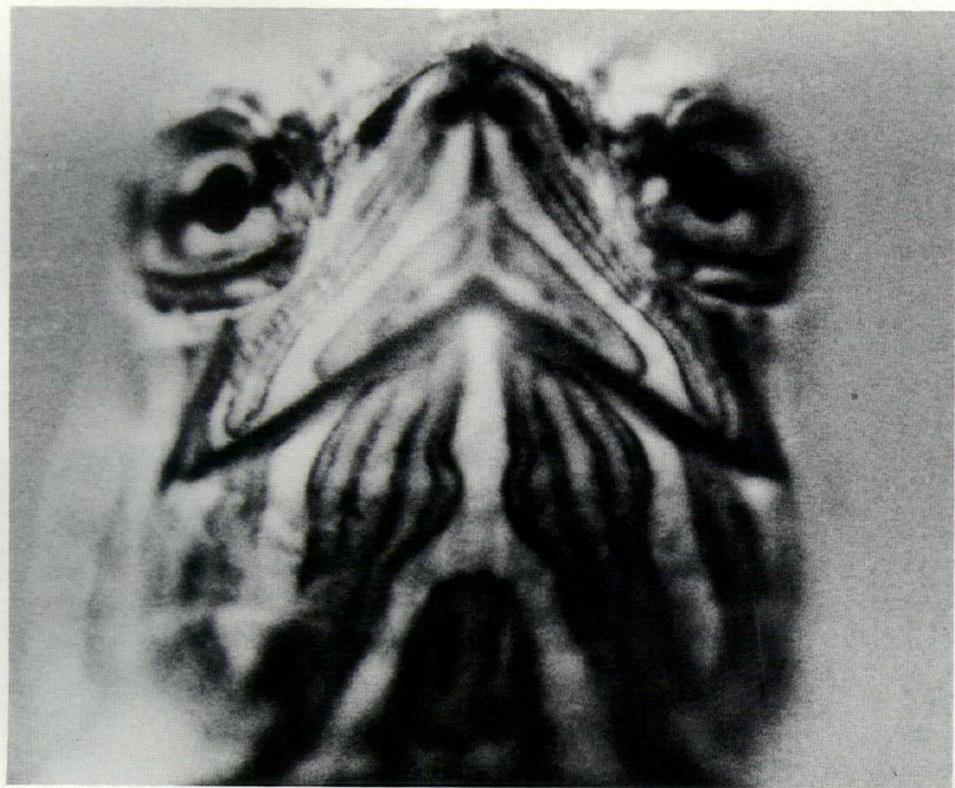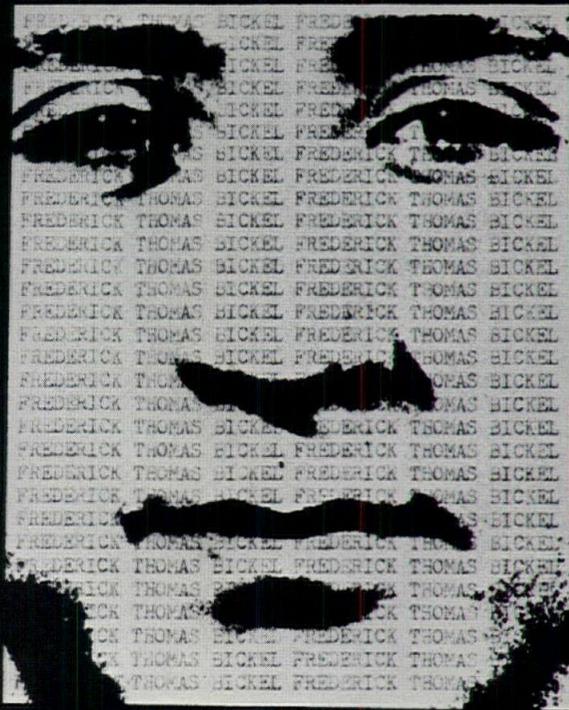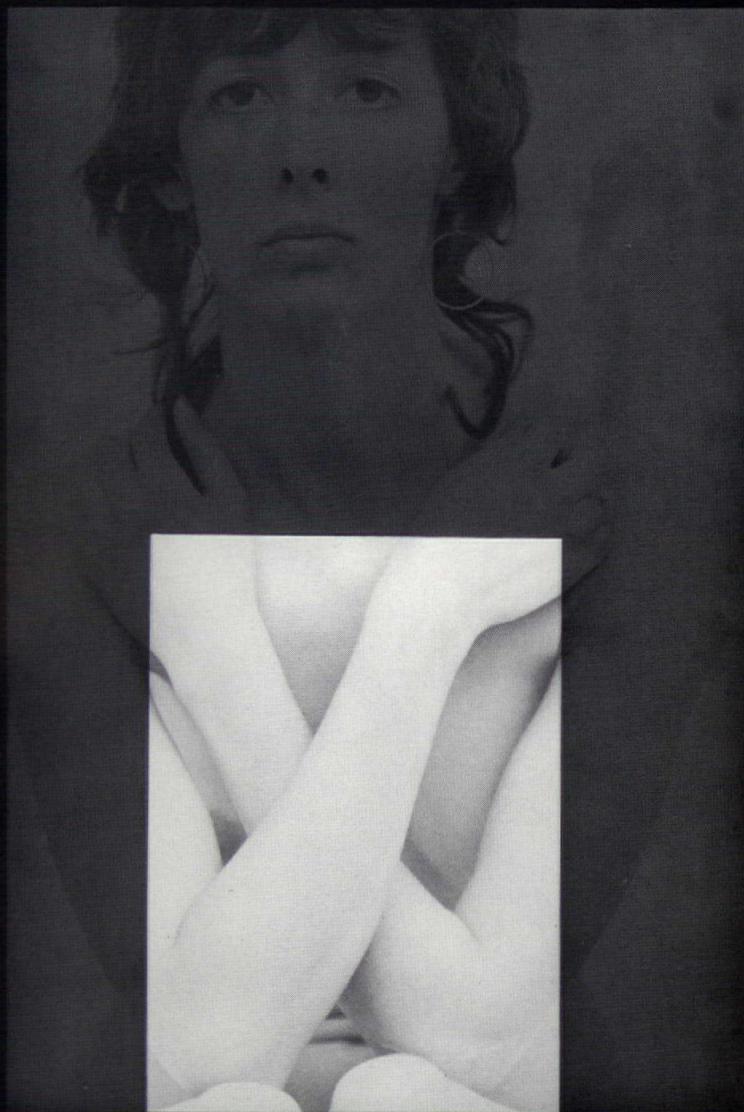
1234
22234
3334
4444

FIRST IN THE SCHOOL OF DESIGN LECTURE
SERIES, WHEN THE ARTIST MEETS THE BEHAV-
IORAL SCIENTIST, DR. ROLLOFF, MARCH 29,
8:00 PM, WILMINGTON AUDITORIUM, NORTH
CAROLINA STATE UNIVERSITY AT RALEIGH,

NEW YORK CITY

NEW YORK CITY

MIAMI BEACH

MIAMI BEACH

MIAMIBEACH

winter's beach

PHOTO-PHASES

CROOK

bill crook's
photo-phases

1 duotone
2 halftone
3 tone-line
4 line negative
5 posterization **processes**

4

5
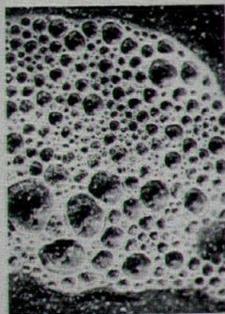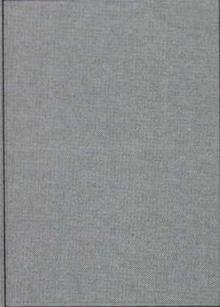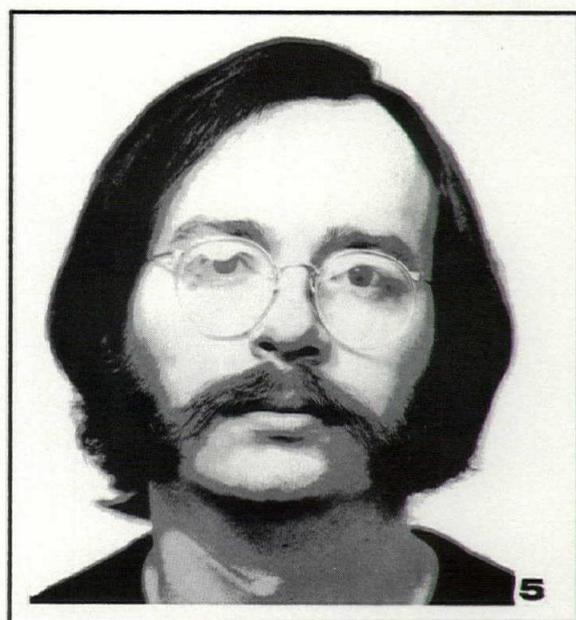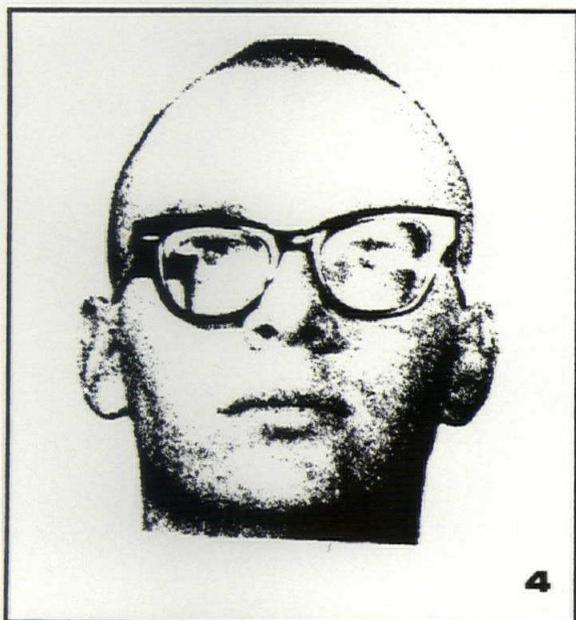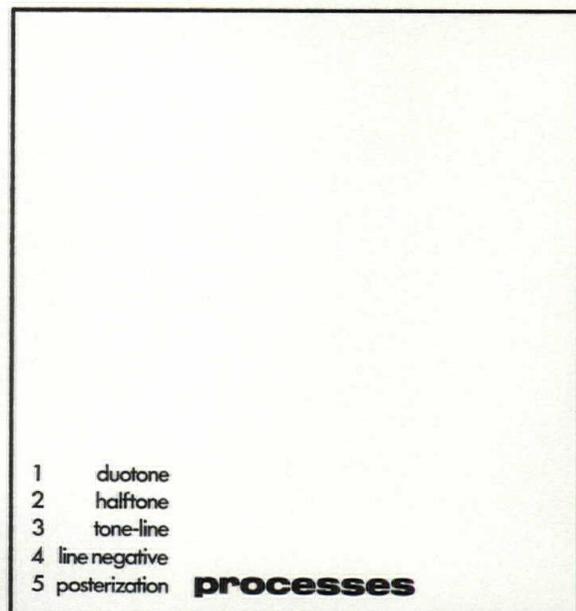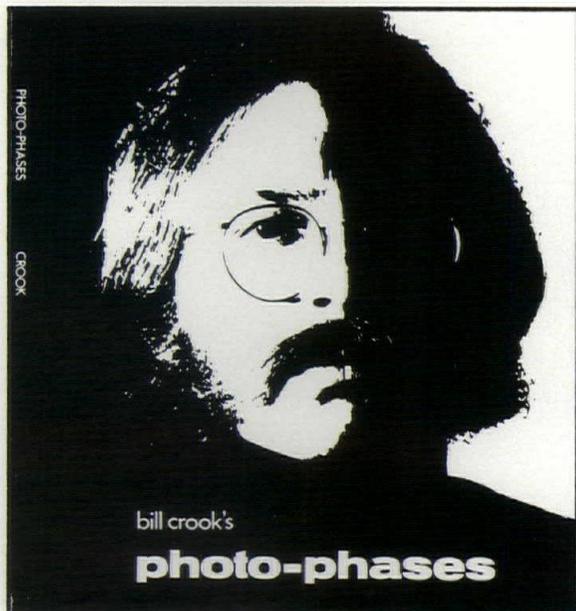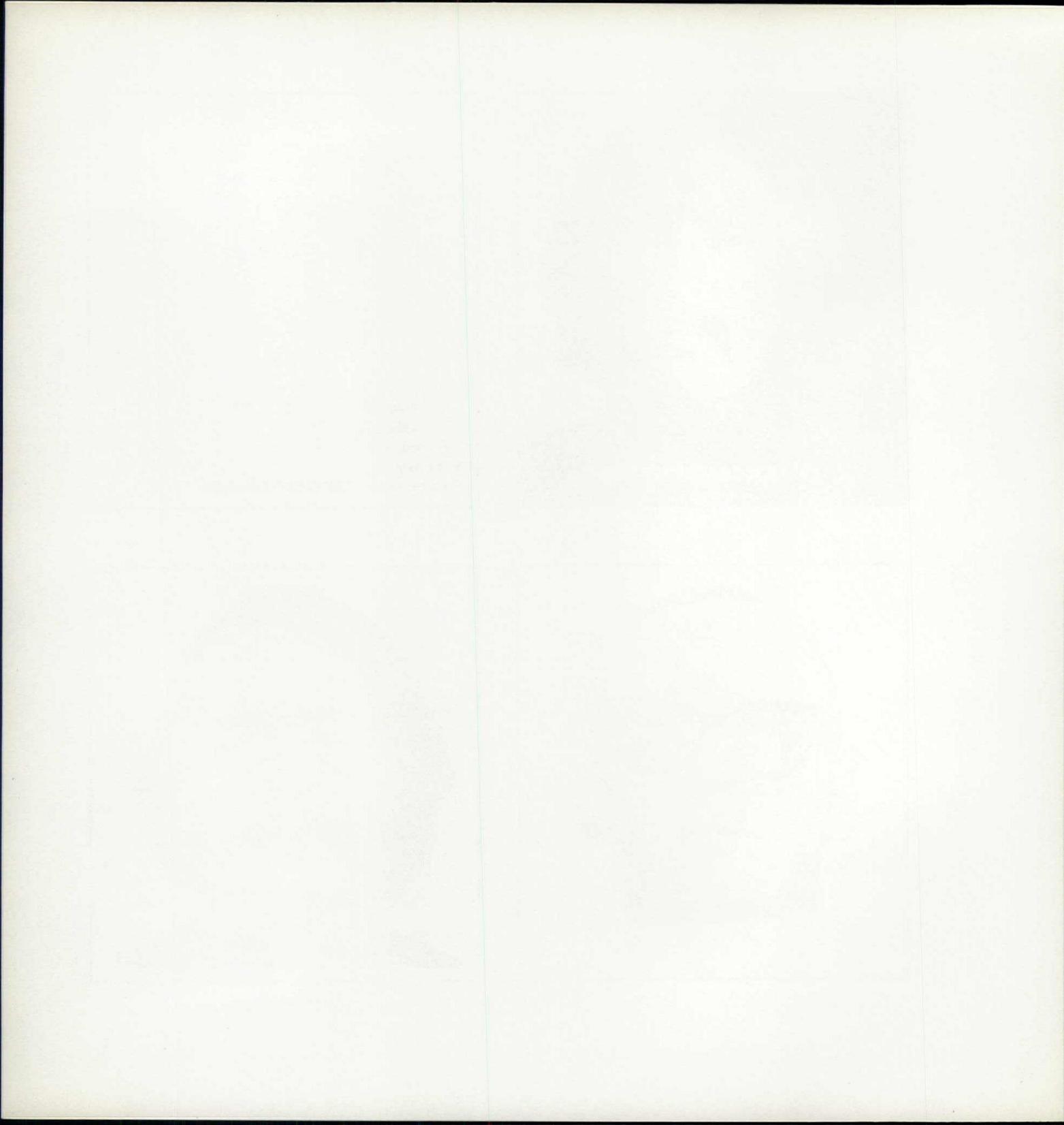
CREDITS

Studies in the generation of visual images through exploratory investigation of various materials and processes with emphasis placed on the individual students perception of environment.

Dale Williamson —Direct print
Bill Alberti —Photogram
Geoffrey Lardiere —Direct object print
Kelley Ray —Cracked emulsion print
Jerry Galliher —Photograph
Geoffrey Lardiere —Portrait
Hege Russ —Drawing

Studies in visual organization as a communication tool.

Kelley Ray —Photographic print
Fred Bickel —Photographic image with type
Bill Crook —Photographic print

Principals of basic graphic design as related to specific problems in two and three-dimensional contexts.

B.A. Farrell —Announcement
Wallace Colvard —Computer print-out

Advanced problems and concepts in graphic design. The related use of photography and typography as a means of visual communications: synthesis of word, image, and context.

Geoffrey Lardiere —Book design
Bill Crook —Book design

SECTION DESIGN—BILL CROOK AND GEOFFREY LARDIERE

The Student Publication of the School of Design, established in 1950, is maintained by student fees, the sale of issues, and donations. All phases of Publication work—collection of material, editing, design, and circulation—are managed by students. Editors are encouraged to continue a tradition of relevance and quality but are otherwise unrestricted. Such an attitude has resulted in the presentation of a variety of topics of interest to professionals, educators, and students in design-related fields. Circulation is worldwide.

The Student Publication of the School of Design is available by mail order. The price of regular issues is $2.00. Double issues cost $4.00. Back issues, Volume 9 and earlier, are $1.50; many of the earlier volumes, however, are no longer in print.