# FOREST IN THE CITY

by

KATHERINE MICHELLE ISAAC

B.A., The University of British Columbia, 1998

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF LANDSCAPE ARCHITECTURE

in

THE FACULTY OF AGRICULTURE

(Department of Landscape Architecture)

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

April 1996

© Katherine Michelle Isaac, 2003

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of LANDSCAPE ARCHITECTURE

The University of British Columbia
Vancouver, Canada

Date OCT 3/2003

DE-6 (2/88)

## ABSTRACT

The goal of this project is to design an urban place which incorporates the power of the forest, specifically water, canopy, green and light. The site chosen is an area proposed for residential development, a site which is presently functioning as a parking lot in the 'Mid-Campus' section of the University of British Columbia. The area of concentration is the area proposed as open space and its connections to the community centre and the surrounding neighbourhood. In order to create a place of powerful experience, I chose phenomenology and associated strategies as a method, working through stages of 'landing', pattern articulation and precedent exploration. These qualitative elements were combined with site structure and program analysis to produce a final design which incorporates three main spaces: Main Mall Plaza, Thunderbird Centre and a reflection pool and rehabilitated forest area. Main Mall Plaza joins the rest of campus with this site, also serving as a social hub and place of prospect over the ocean. Thunderbird Centre provides space for many of the ammenities needed by this new communitity, and is designed with a terraced pool plaza which accentuates the presence of the forest beyond the plaza edge. Numerous walks then wind through the forest and into an existing second growth wood, where the experience of canopy, green and light is accessable.

**TABLE OF CONTENTS**


Abstract . . . . . ii

Table of Contents . . . . . iii

List of Figures. . . . . iv

CHAPTER I: PROJECT OVERVIEW . . . . . 1

1.1 What . . . . . 1
1.2 Why . . . . . 1
1.3 Where . . . . . 2
1.4 How . . . . . 4

CHAPTER II: DISTILLING PATTERNS . . . . . 7

2.1 Forest Patterns . . . . . 7
2.2 Site Patterns . . . . . 11

CHAPTER III: SITE STRUCTURE . . . . . 13

3.1 Principle 1: Main Mall Through-Space . . . . . 13
3.2 Principle 2: Forest Terminus . . . . . 15
3.3 Principle 3: Campus Sub-Centre . . . . . 17
3.4 Framework Plan. . . . . 19

CHAPTER IV: DESIGNING SPACES . . . . . 20

4.1 Master Plan. . . . . 20
4.2 Main Mall Plaza . . . . . 21
4.3 Thunderbird Centre. . . . . 36
4.4 Reflection Pool & Forest . . . . . 43
4.5 Site Plan. . . . . 54

Bibliography . . . . . 56

## LIST OF FIGURES


Figure 1: Midcampus and Proposed Neighbourhood Openspace Site 3

Figure 2: Forest Experience 9

Figure 3: Forest Experience: Distilled into patterns 10

Figure 4: Site Experience: Distilled into patterns. 12

Figure 5: Historical campus plans showing importance of axial Main Mall. 13

Figure 6: Main Mall campus connections. 14

Figure 7: Historical progression of forest clearing. 15

Figure 8: Potential of site to act as a forest terminus & gateway to PSP. 16

Figure 9: Location of site in proposed dev't. 17

Figure 10: Site potential to fill need for amenity space 18

Figure 11: Framework Plan 19

Figure 12: Master Plan: Main Spaces 20

Figure 13: Main Mall Plaza: Master Plan 21

Figure 14: Main Mall Plaza: Analysis 22

Figure 15: Paley park 23

Figure 16: Main Mall: Perspective 24

Figure 17: Main Mall Plaza: Perspective 25

Figure 18: Main Mall Plaza: Planting Plan 26

Figure 19: Main Mall Plaza: Prospect Perspective 27

Figure 20: Main Mall Plaza: Retaining Wall Detail 28

Figure 21: Main Mall Plaza: Grading Plan & Sections 29

Figure 22: Main Mall Plaza: Paving Detail 30

Figure 23: Main Mall Plaza: Forest Walk 31

Figure 24: Main Mall Plaza: Forest Walk Section 32

Figure 25: Main Mall Plaza: Drainage Plan & Section 33

Figure 26: Main Mall Plaza: Stairway 34

Figure 27: Main Mall Plaza: Bread Garden 35

Figure 28: Thunderbird Centre Master Plan 36

Figure 29: Thunderbird Centre: Analysis 37

Figure 30: Thunderbird Centre: Precedent 38

Figure 31: Thunderbird Centre: Perspective 39

Figure 32: Thunderbird Centre: Section 40

Figure 33: Thunderbird Centre: Front Section 41

Figure 34: Thunderbird Centre: Front Threshold 42

Figure 35: Thunderbird Centre: Pool Terrace 43

Figure 36: Thunderbird Centre: Analysis 44

Figure 37: Bloedel Gardens 45

Figure 38: Thunderbird Centre: Pool Terrace Section 46

Figure 39: Thunderbird Centre: Pool Terrace Cafe 47

Figure 40: Thunderbird Centre: Pool Section & drainage 48

Figure 41: Prospect 49

Figure 42: Prospect Sections 50

Figure 43: Main Mall to Stadium 51

Figure 44: Forest Walk 52

Figure 45: Rehabilitated Rhododendron Wood 53

Figure 46: Site Grading 54

Figure 47: Site Progression 55

## CHAPTER I: PROJECT OVERVIEW

### 1.1 What

There seems to be a stark contrast between the experience of things like rain and colour in West Coast forests and the experience of rain and colour in West Coast cities. In forests, rain mists down from leagues above and intense green strikes the eyes. In cities, rain and the growth it brings are drained away, paved over and generally silenced to the point that they are not experiences of power and chaos but nuisances to be endured. In the end it feels as if we are smothered by our own order. In its unchallenged commonality, one can end up feeling nothing anything at all. Patrick Condon suggests that the order that we impose on nature to domesticate it, is "the part that we see all too well, so well that we seldom experience directly the sublime nature that it suppresses" (Condon 1991, 93). The goal of this project therefore became designing an urban place which incorporates the power of water, canopy, green and light.

### 1.2 Why

We need to create urban places which do not extinguish all other forms of life. This seems to be an important goal as we need to sense ourselves in the presence of the unfamiliar, chaotic presence of nature for the sheer power of experience it provides. The presence of non-human nature startles us out of what David Seamon terms the 'life world' or the taken-for-granted everyday realm where we are very rarely conscious of the living world around us (Seamon 125). Romantic era designers such as Olmstead recognized this and designed urban spaces which allowed the direct experience of nature, "believing that these experiences had a therapeutic function for the park user and by extension had a similarly therapeutic effect for the culture at large" (Condon 1991, 7).

## 1.3 Where

I chose to work with a site proposed for residential development, a site which is presently functioning as a parking lot in the 'Mid-Campus' section of the University of British Columbia. Over the next five years this development includes a mixture of faculty, staff and student family housing, densities averaging 1.5 net FSR with a estimated total of 1,000 units. A centre for commercial and community facilities is proposed and a parcel of 2.56 hectares has been allotted for neighbourhood open space. As highlighted in Figure 1, I have decided to concentrate on the design of the open space, and its connections to the community centre and the surrounding neighbourhood.

As can be seen from Figure 1, on one side of the site lies the edge of Pacific Spirit Regional Park (763 hectares of forests) and on another stands a puzzling remnant patch of forest, named Rhododendron Wood. The vicinity of these wooded areas pose interesting opportunities for the creation of an urban place that recognizes the presence of forest life.

Indeed Vancouver exists in a similar 'rainforest' zone to that of the coastal forests and was only 100 years ago covered with the same towering conifers filtering rain into mist. In discussing this dynamic of the site I was made increasingly aware of the bioregionalist implications that might arise. However I am not looking to a bioregionalist justification for the reestablishment of 'native' forests, rather I suggest that the presence of these existing forests might be incorporated into the design of this place for the pure experience of the forest.

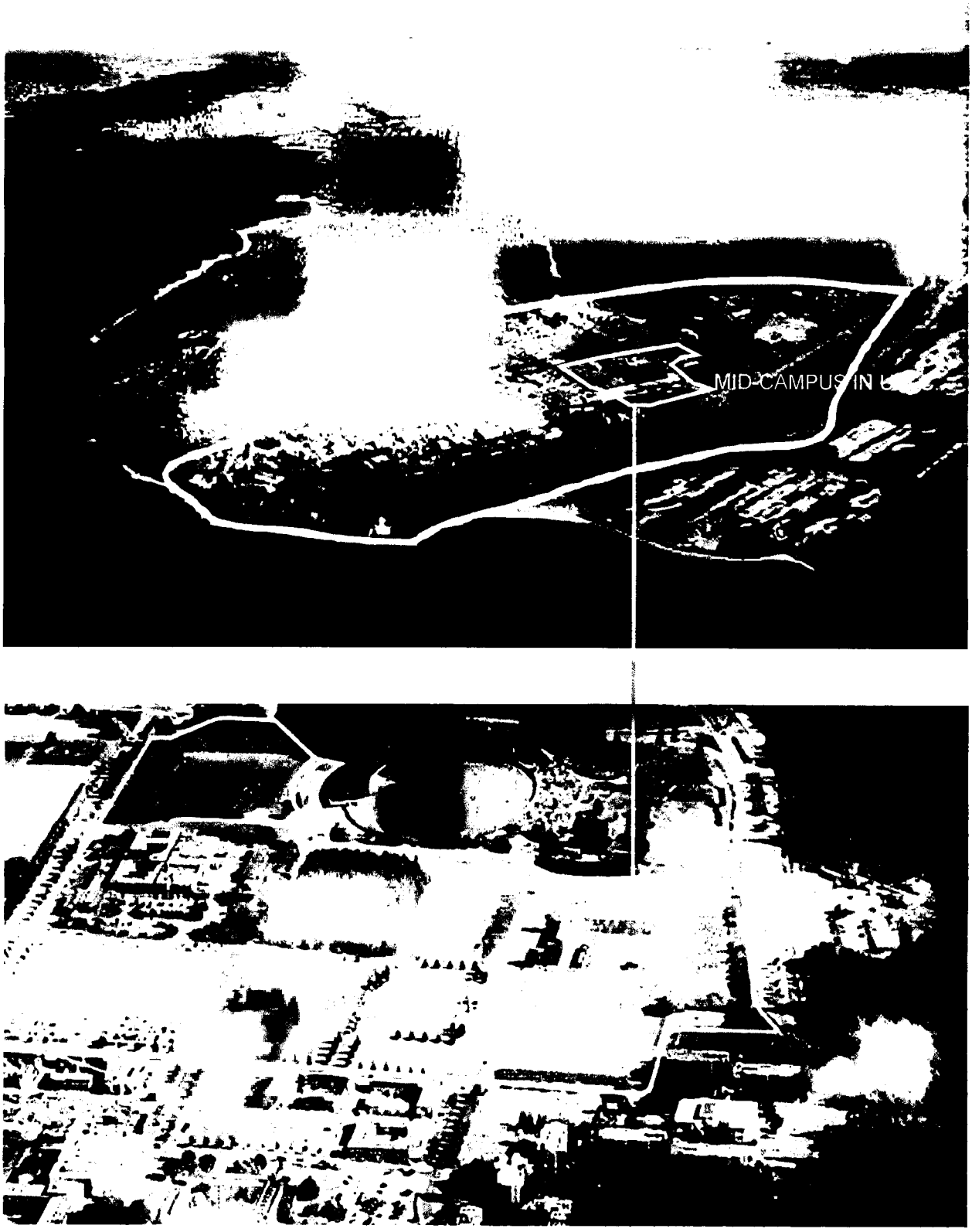



Figure 1: Midcampus and Proposed Neighbourhood Openspace Site

## 1.4 How

As my goal is the creation of a powerful experience, I chose phenomenology and associated strategies as a method, for they draw on actual landscape experience as a source of design and discuss how to design places which are rich in experiential qualities. Experientially rich design was not going to arise solely from a concept or a scientific principle. Rather I needed a method which utilizes the designer's ability to experience the world and then express and articulate this experience. Phenomenology might be described as an approach whose "base of descriptive generalization is the sphere of concrete human events and experiences" (Seamon 120). Following this approach, I went through three main stages of design:

1) Distilling Patterns: I first endeavored to record my experience of both the forest that inspired this project and the site chosen for the creation of an urban place. I drew on Christopher Girot's practice of 'landing': "an extended period in which one may simply discover what already exists, most of which will not be obvious or quickly ascertained" (Girot 65). Girot argues that:

> "The introduction to a site project has all too often been reduced to systematic and quantitative formulas for analyzing the site from a distance. By contrast, trace concepts enable designers to come to grips with their intuitions and experiences of place, allowing these impressions to direct the unfolding of the project." (Girot 65).

The emphasis is then, as Seamon has explained, not on "the pre-definition-of theories, assumptions, hypothesis, concepts, terms", but rather on "discovering the thing in its own terms, being open, letting the thing tell what it is, what its parts are, how they fit together" (Seamon 121).

I then attempted to articulate these findings into patterns for design. As explained by Seamon, " a major goal (of phenomenology) is to seek out within the uniqueness of concrete phenomena more general experiential structures, patterns and essences" (Seamon 121). A language or vocabulary, or what might be termed a 'typology', can then be developed and drawn upon during the design process, both as a way of making

explicit the sources of my design and to retain the visceral, experiential qualities throughout the design process, which seem easily lost during the 'rational' master plan stage.

Girot states that "landing requires a particular state of mind, one where intuitions and impressions prevail, where one feels before one thinks, where one moves across and stalks around before full disclosure and understanding" (Girot 61). However I found that there were some obstacles to existing in such a state. Firstly, I found that some days it took a full hour to revive my ability to listen to the things around me. Secondly, despite the power of my experiences, there were times when I had was still plagued by my own lingering rationalist and post-structuralist biases. It was helpful to look to writers such as Eliade, who states that "the completely profane world, the wholly de-sacralized cosmos, is a recent discovery in the history of the human spirit"(Eliade 13).

Such articulation is a vital process in a contemporary design environment where form is allowed to arise the immaculate conception of either bio-technical determinism or avant-guard intuition. Proponents of rationalist bio-technical determinism argue that design is an unconscious process which cannot be communicated. Post-structuralist avant-guard argue that there is no external truth beyond our own subjective realms and therefore the development of a language external to ourselves is inherently suspect. Typology achieves what bio-technical determinism and post-structuralist avant-guard cannot: the development of a language that makes the origins of design explicit, a shared understanding of the spaces that are powerful in our world.

B) Site Structure: The second stage involved a slightly more rational approach to the evaluation of the site's structure. This involved looking at the site spatially and programmatically, as well as listening to several experiential elements ascertained during the landing on the site regarding the larger site structure. I distilled three major structural principles to be maintained throughout the design: 1) the site as a through-space of Main Mall; 2) the site as a gateway to Pacific Spirit Park; 3) the site as a major amenity for surrounding user groups and as an urban site within proposed and existing development. These principles, along with an analysis of the proposed development for the site, allowed me to create a framework plan which maps out the location of three main spaces within the project site: 2 amenity/gathering spaces and one neighbourhood open space.

C) Designing Spaces: I first analyzed each proposed space in terms of experience, spatial definition and program. Spatial definition was very important as there seemed to be a severe lack of spatial definition on the site. As Patrick Condon explains, much of our urban environment has cut so many rooms out of nature that we no longer feel ourselves within the 'natural' world, rather we feel ourselves floating through a one dimensional environment. I therefore tried to create outdoor 'rooms' such as allees and clearing which create clearly defined spaces. I then tried to design for the experience of forest and rain by mentally walking through the days and months of people who might live, work and visit in this area. After some initial design ideas I investigated precedents of similar spaces built by others, in an effort to find out if others were also moved by similar types of things. I proceeded to design each space based on these precedents, the analyses and the design patterns distilled during the landing stage.

## CHAPTER II: DISTILLING PATTERNS

### 2.1 Forest Patterns

The first 'landing' was a visit back to the West Coast forest which inspired this project, in an effort to sense what exactly was eliciting such a strong response and hopefully incorporate these things into my design. Within minutes of entering the forest I was struck by the enormity of the vaulting canopies, the softness of the mulch and the myriad of textures, sounds and movements happening all around me. I tried to record these things in the lens of my camera, illustrated in Figure 3. The main design patterns I distilled out of this landing were: green, canopy, filtered ocean view, visible water and threshold.

Green: Perhaps the strongest thing to strike me in the forest was the intensity and intimate green. Suddenly one is engulfed in a sea of green leaves, in front and above filtering light, emitting the most intense colour of green. This experience is made possible by the direct access to forest life, something not usually provided in urban environments where trees and growth are separated into 'planting beds'. This pattern is therefore emphasized as 'accessible' green in order to remind of the importance of designing accessible life at the scale of human interaction.

Canopy: Towering conifers always seem to dizzy with the sheer scale of the sky. This might be termed immediacy, as Gordon Cullen explains: "we long for the direct contact of immediacy, whether it be the edge of water or the edge of height" (Cullen 61). Canopies also act as filters for light and rain, something which Cullen argues we should incorporate into our human-fashioned canopies: "a little ingenuity in our bad-weather-fighting apparatus (will transform) rain and cloud and gleam of sunshine-not to mention the mist and fog that brought Monet and his Impressionist friends flocking to London to wallow in its effects" (Cullen 162).

Filtered ocean view: Descending through a West Coast forest, one is constantly aware of the presence of the ocean, as the occasional sound of vastness filters up through the trees. Finally a ridge is ascended, the last ridge before the descent to the sea. Moist salt air and the hollow echoing of a vast space sweeps past the skin. High limbed firs break the long line of the ocean meeting the horizon, an infinitely vast space beyond. This view is even more powerful when 'filtered' through the vertical trunks of the firs, as filtered views are said to emphasize the near and the far. Cullen suggests that "towns that live by the sea should live on the sea in the sense that the visible presence of the ocean should be apprehended from as much of the town as possible. (This doesn't mean always a full view of salt water but maybe the glint of reminder or even a chasm of space closing the vista at the end of a street)" (Cullen 190).

Visible Water: Walking through the forest rain descends in small sounds that descend in mist that touches your skin, beads in points of light on the ends of needles and the tips of ferns. For days after, water drips to the earth and carves its way through streams in a constant rushing sound, before welling up in the sand to go back to the ocean. Thomas Merton records a similar experience:

> "The rain surrounded the cabin...with a whole world of meaning, of secrecy, of rumour. Think of it: all that speech pouring down, selling nothing, judging nobody, drenching the thick mulch of dead leaves, soaking the trees, filling the gullies and crannies of the wood with water, washing out the places where men have stripped the hillside...Nobody started it, nobody is going to stop it. It will talk as long as it wants, the rain. As long as it talks I am going to listen." (Abrams 73).

Threshold: Part of the power of arriving at the ridge overlooking the ocean is the contrast between the feeling of total enclosure of the forest and the sudden realization of vastness beyond. The final gully of dense forest before the ridge acts as a sort of threshold through which one passes before reaching the edge.

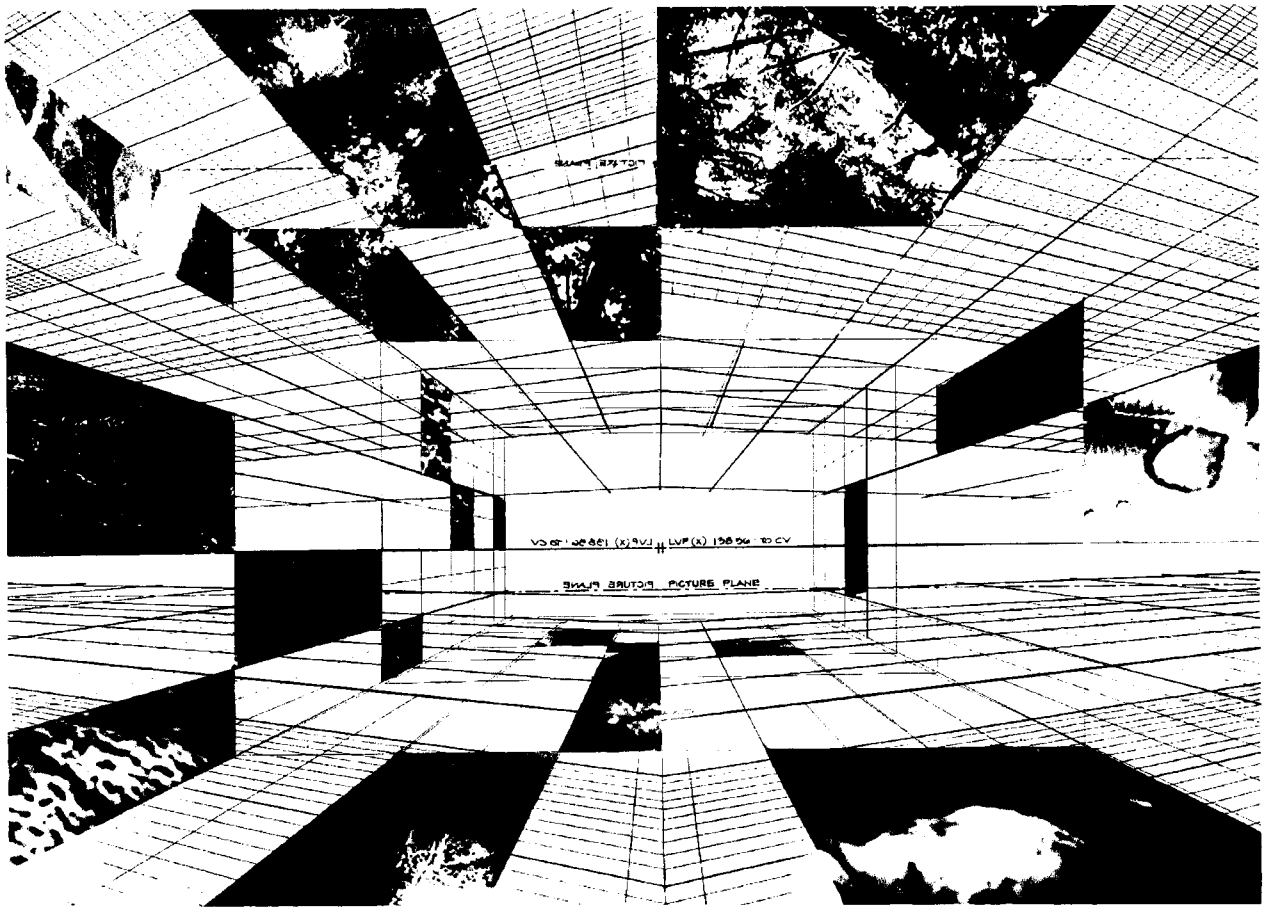


Figure 2: Forest Experience

Figure 3: Forest Experience: Distilled into patterns.

## 2.2 Site Patterns

The second landing I performed was on the site, which is currently a parking lot with the starting of residential development in one corner and a strangely left-over grove of second growth conifers at its edge. I found this landing to be far more difficult. Almost two hours passed of wandering around the site before things struck me, such as the vibrant colour of moss on a median or the tension between the dendritic cracks in the pavement and the rectilinear parking spaces.

Tension: The tension between dendritic cracks in the pavement and the rectilinear parking spaces struck me as strangely powerful. Robert Smithson describes this tension in his "Dialectical Landscape" aesthetic theory as the juxtaposition of human order and the chaos of nature, producing what Patrick Condon has termed an "aesthetic 'charge'" (Condon 1994, 81). Hopefully this kind of challenge to the seemingly immortal expanse of human order can be emphasized to create strong experience.

Shine: Light reflecting off damp pavement was striking in many places. This suggested the possibility of using different types of paving which might shine during rainy seasons. One precedent might be the flagstone pavers used in another part of campus, outside Koerner Library, pavers which do shine in sun and moonlight, especially after a recent rain.

Forest: A dominating element of this site is the Rhododendron Wood, a tall stand at the edge of the parking lot. It is a strange wall of trees that is not necessarily impressive unless seen through a screen such as prunus branches, providing a contrast with the dark coniferous boughs. This might suggest the framing of the wood within a more disciplined form, to provide enough contrast that the wood strikes one as a towering grove of living trees, not an abandoned wood at the end of a parking lot.

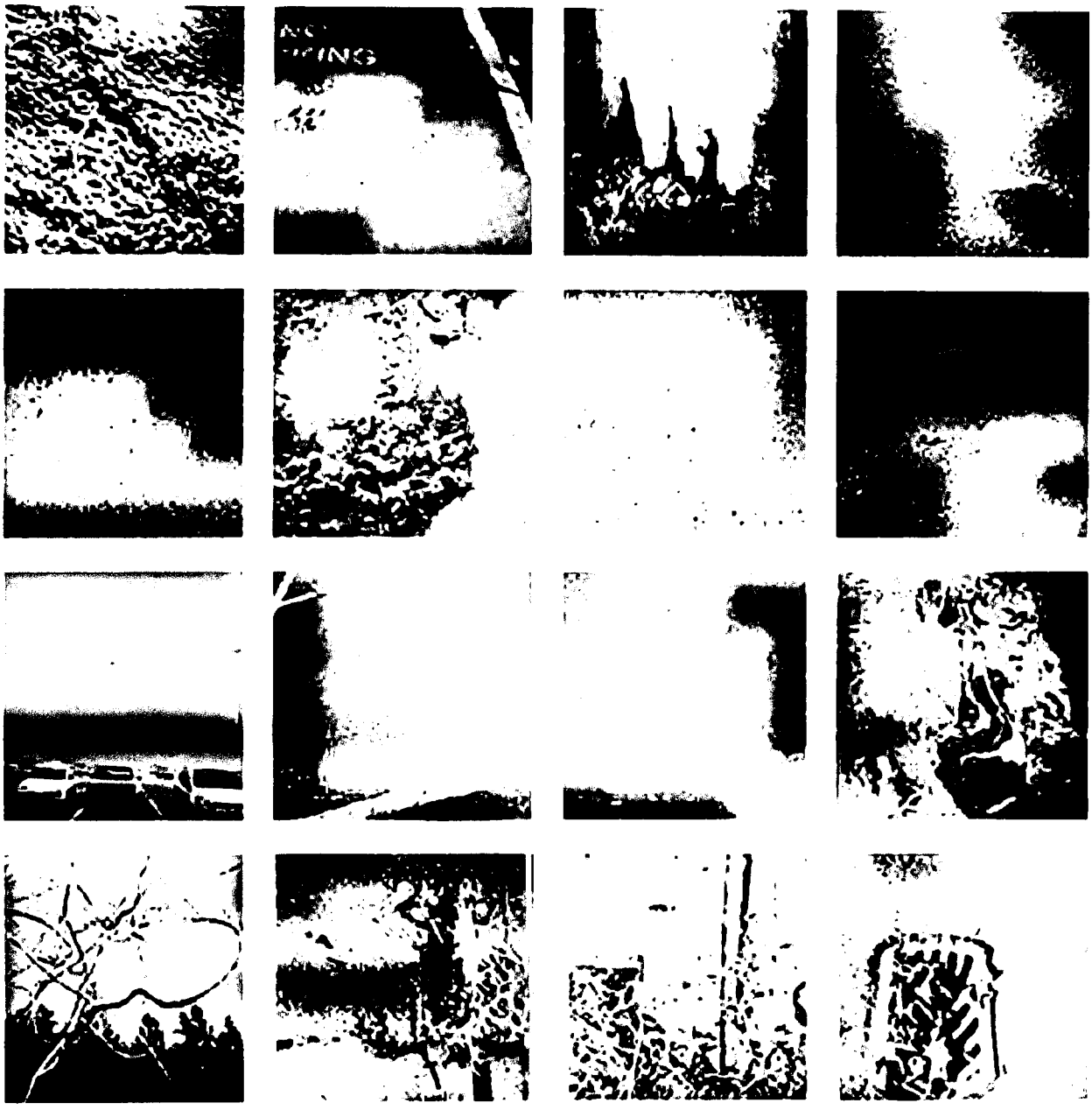


Figure 4: Site Experience: Distilled into patterns.

## CHAPTER III: SITE STRUCTURE

### 3.1 Principle 1: Main Mall Through-Space

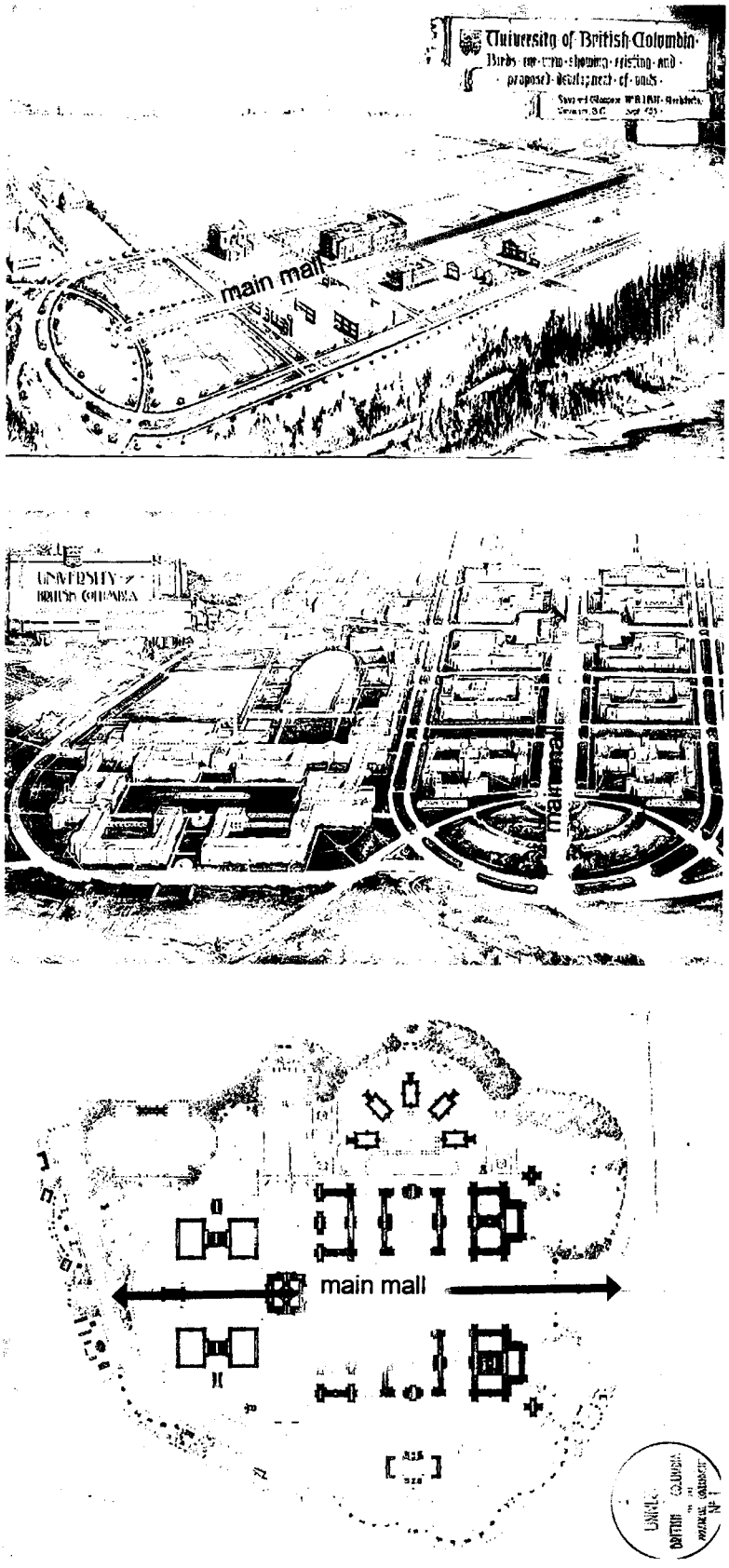



Figure 5: Historical campus plans showing importance of axial Main Mall.

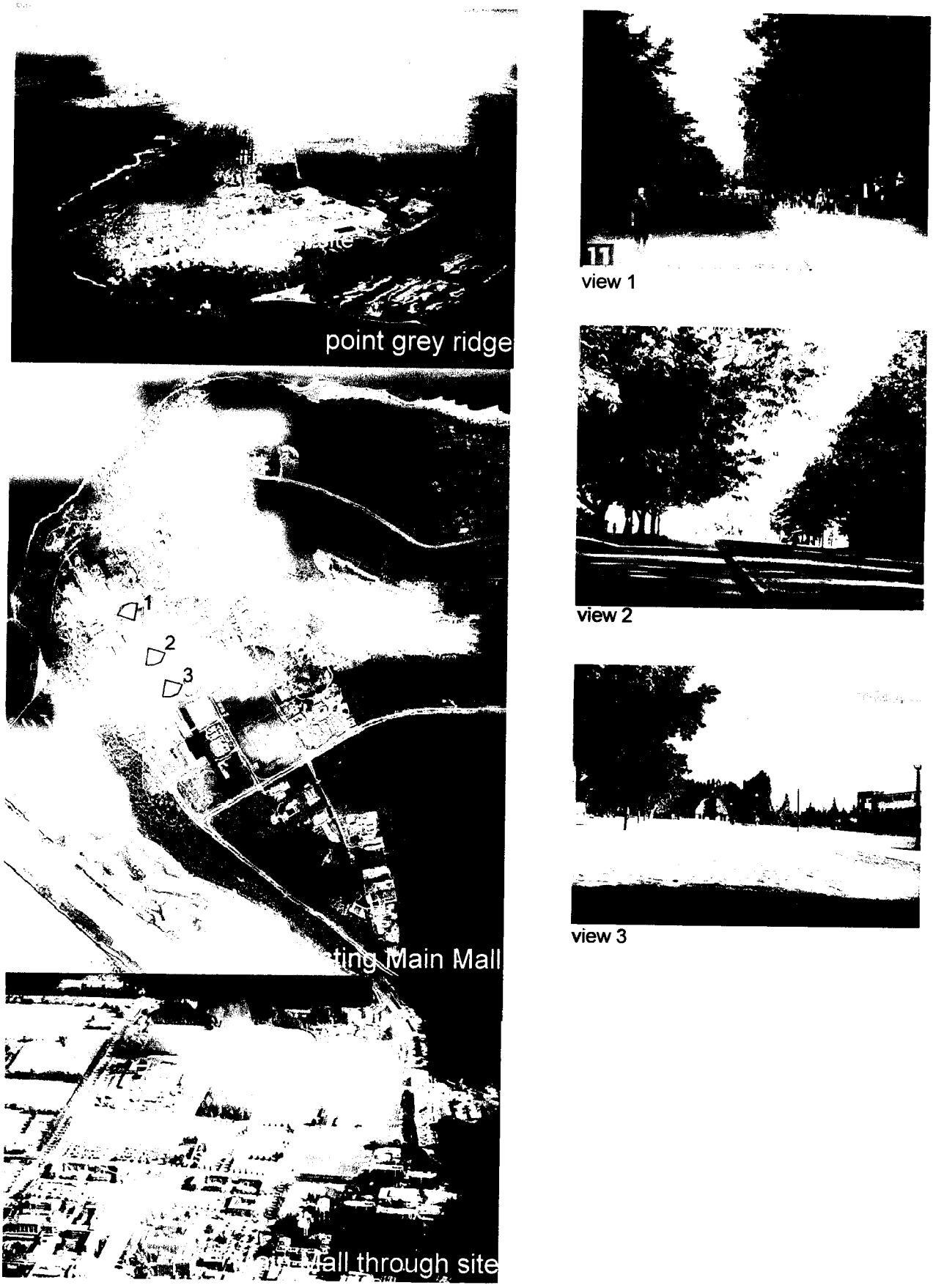



Figure 6: Main Mall campus connections.

## 3.2 Principle 2: Forest Terminus

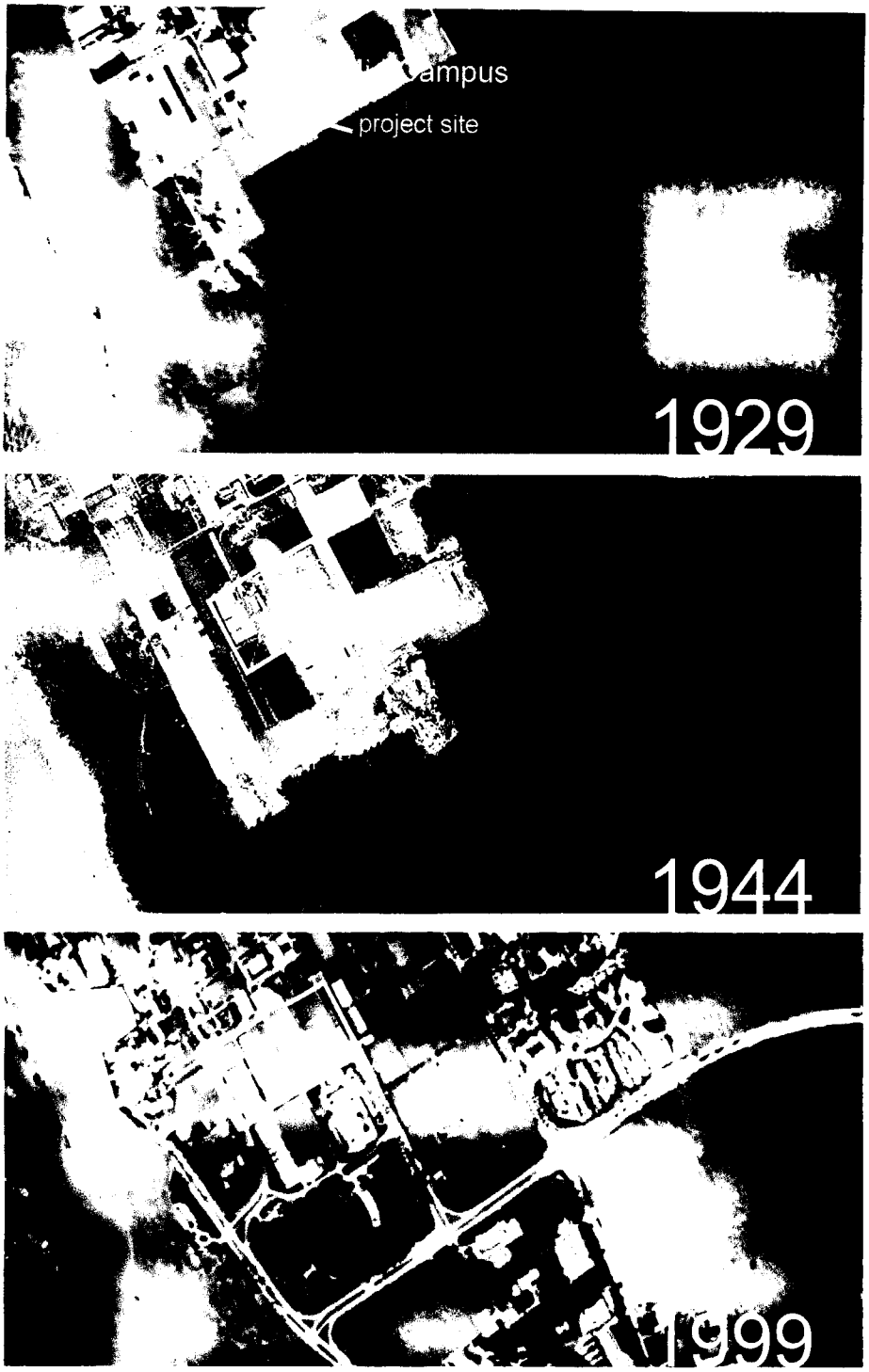
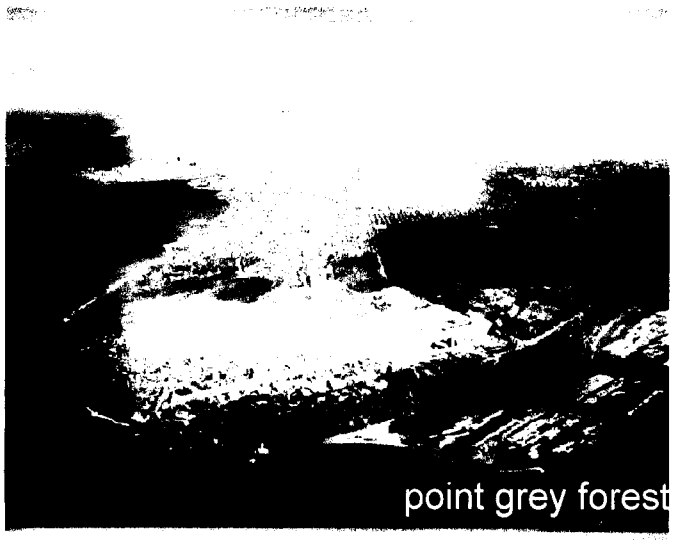
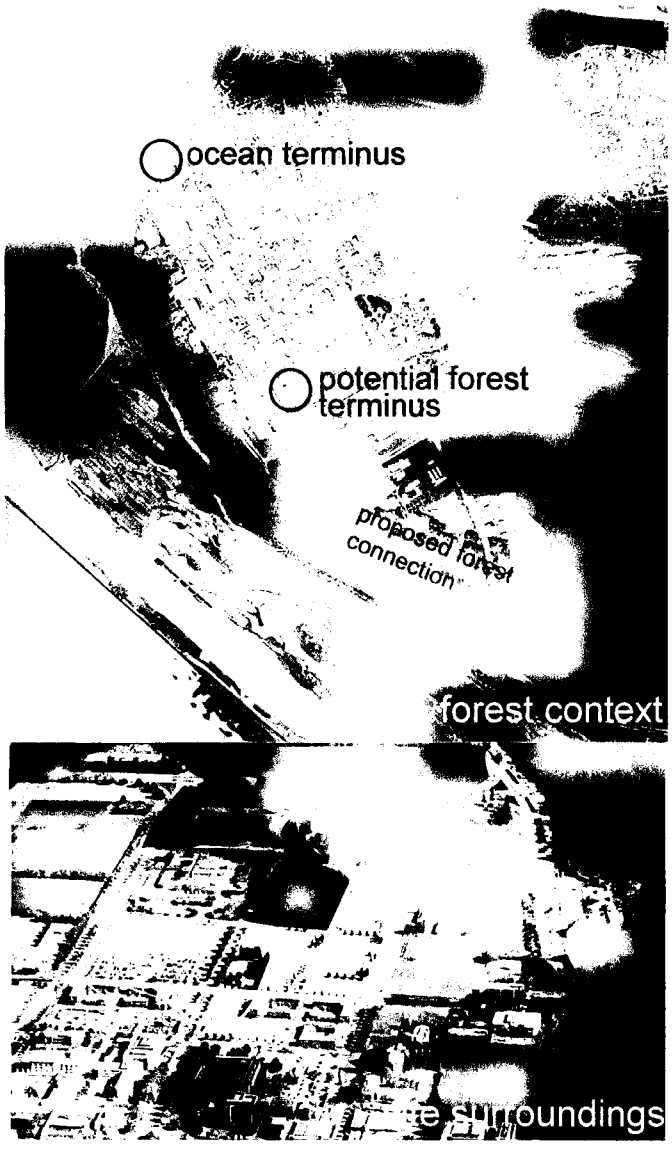
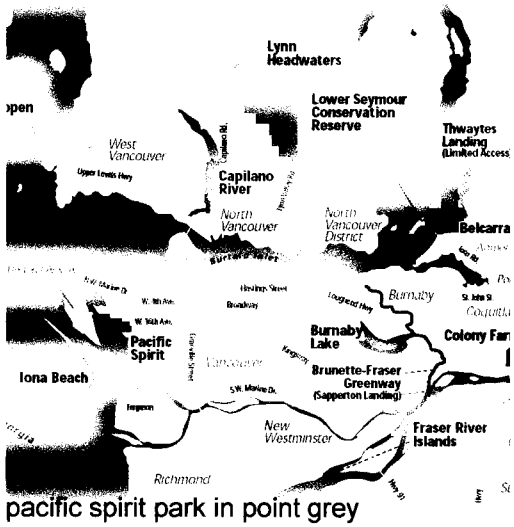



Figure 7: Historical progression of forest clearing.

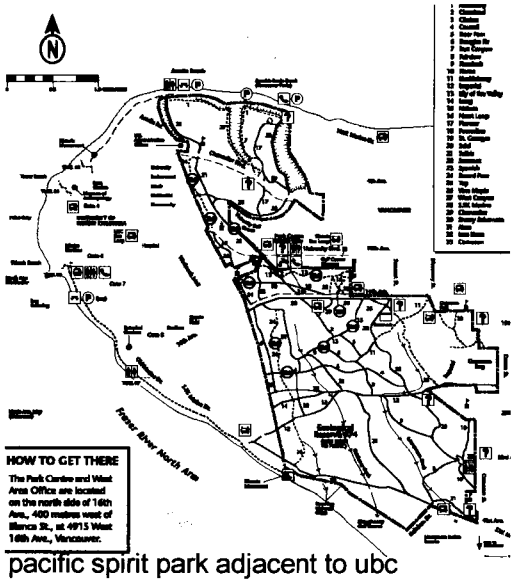


view: Main Mall through site to forest



pacific spirit park in point grey



pacific spirit park adjacent to ubc

Figure 8: Potential of site to act as a forest terminus & gateway to Pacific Spirit Park. 

### 3.3 Principle 3: Campus Sub-Centre

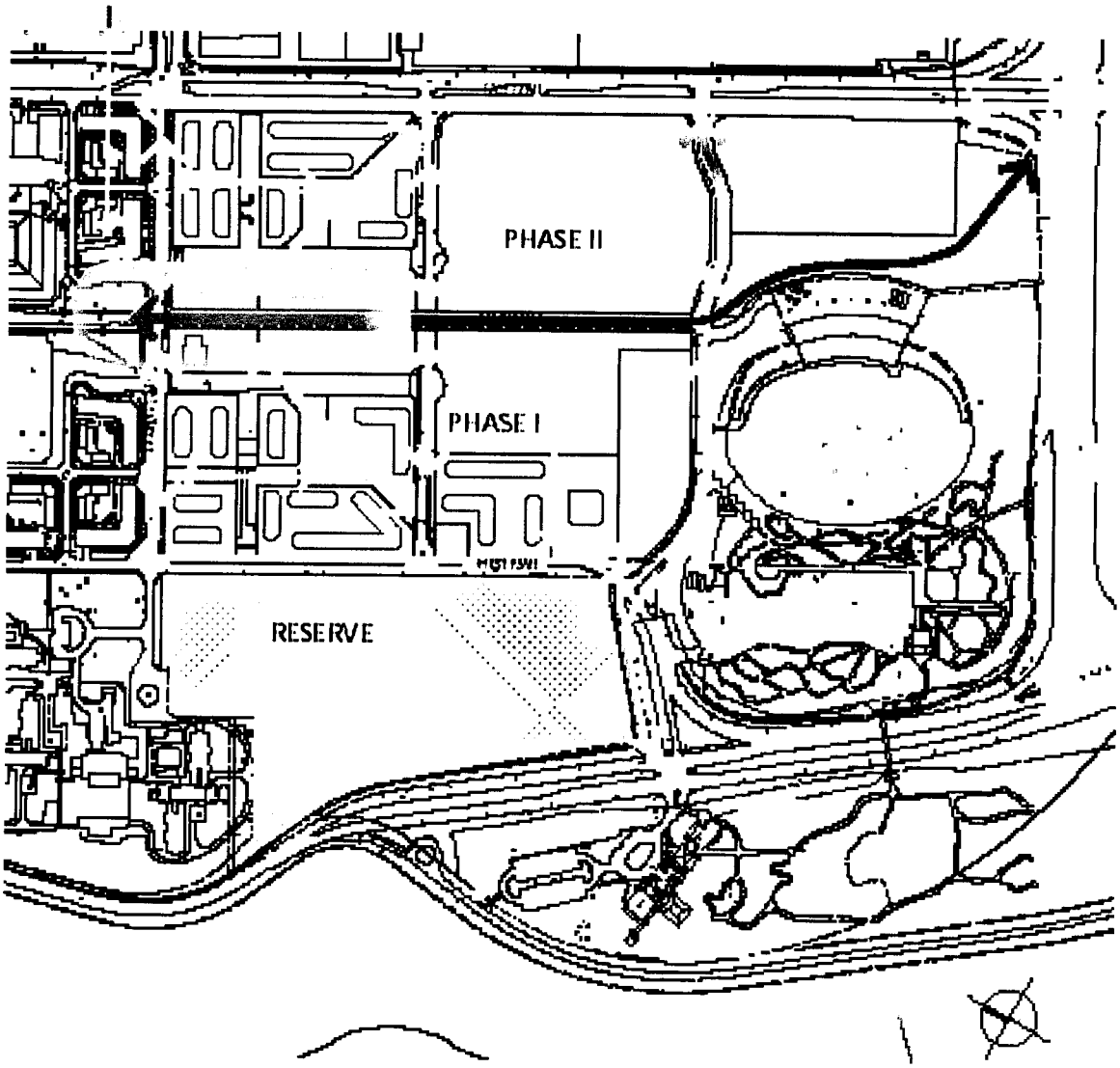
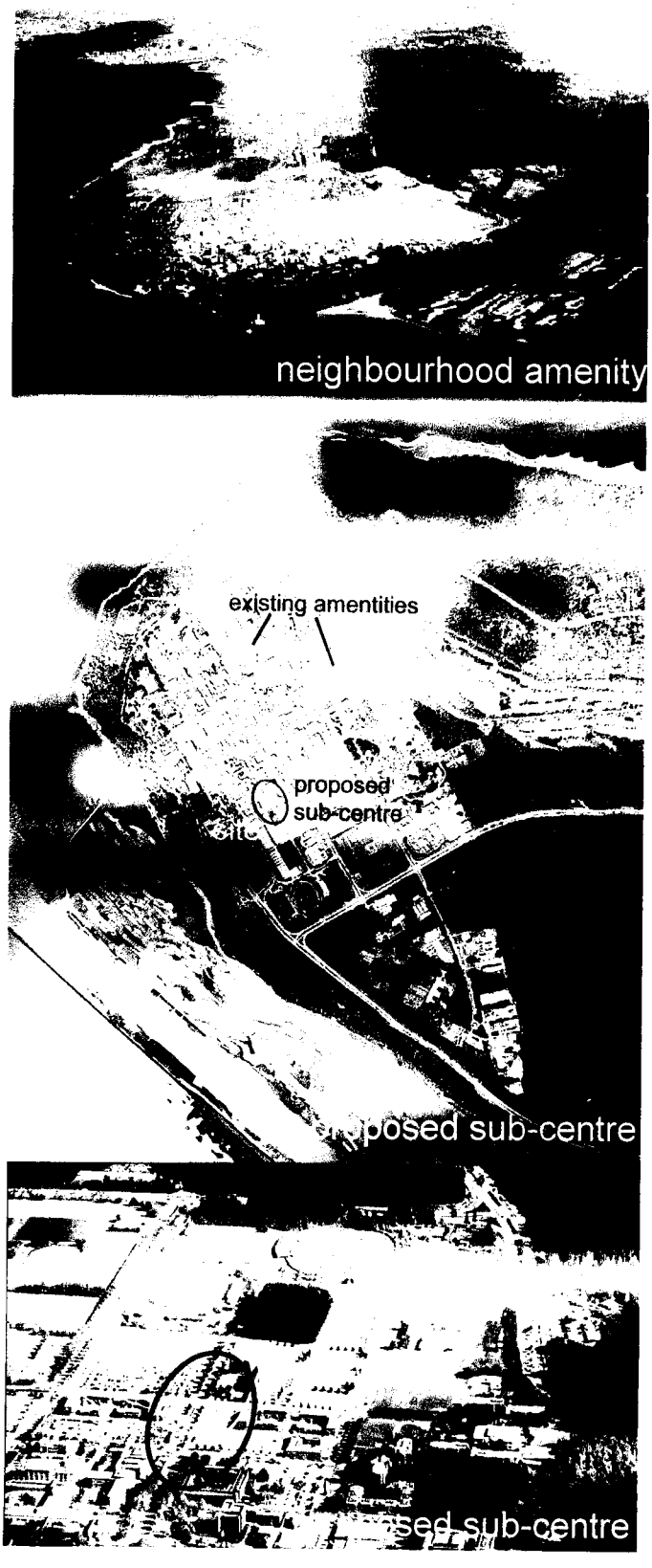
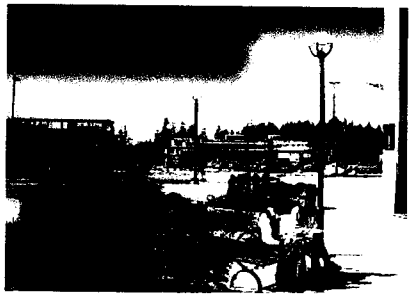



Figure 9: Location of site in proposed dev't. (Mid Campus Neighbourhood Plan)

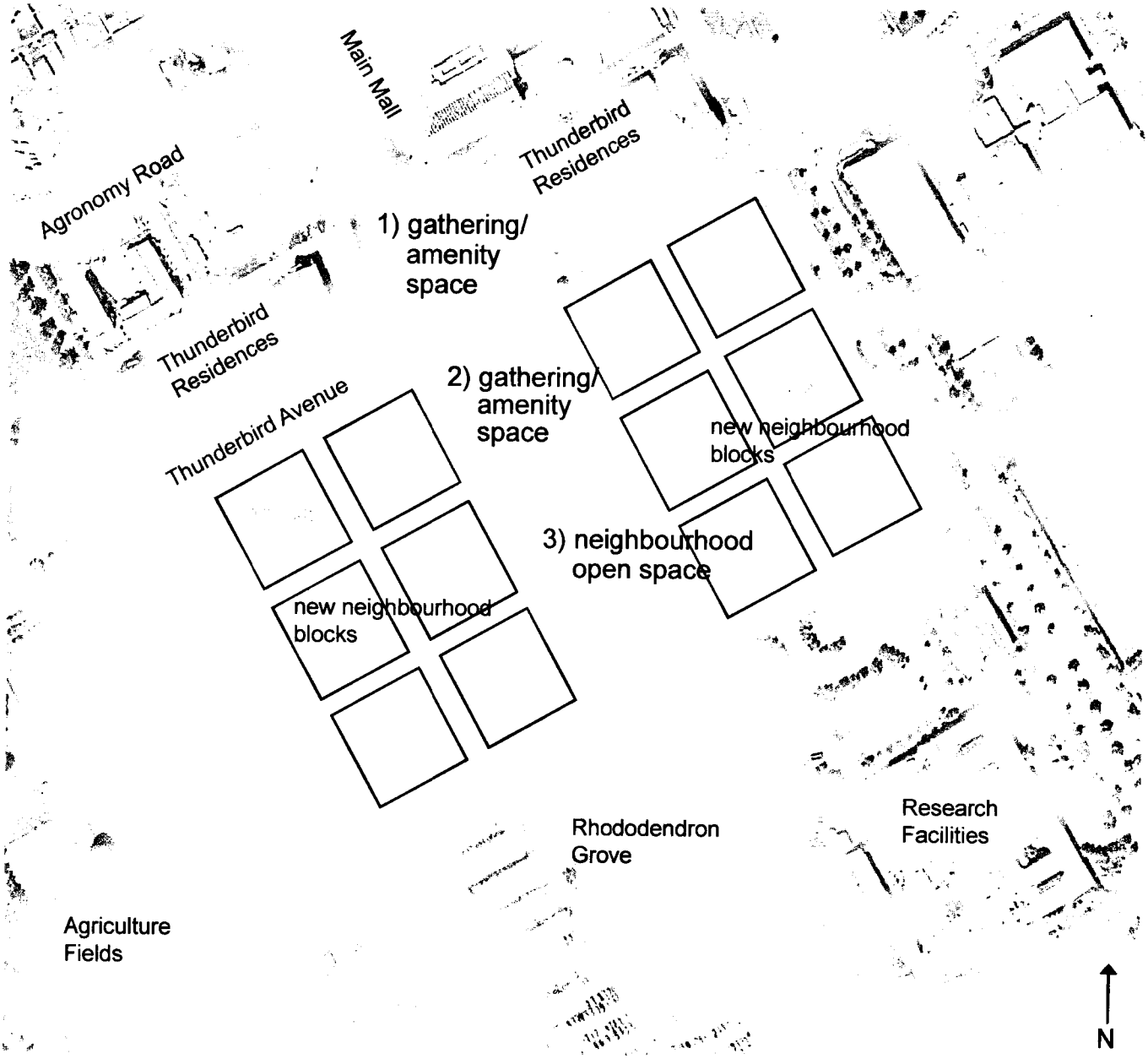


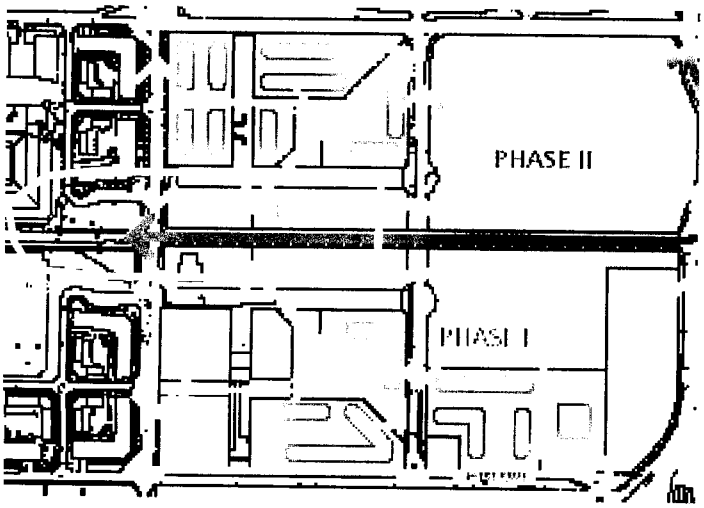


Pictures of existing amenity space, in need of upgrade in light of proposed neighbourhood and already existing Thunderbird Residences. (Top 2 photos taken from Mid Campus Neighbourhood Plan Document).

Figure 10: Site potential to fill need for amenity space for mid & south campus.

## 3.4 Framework Plan




For the purposes of this project, a basic building layout for new neigbourhood blocks will be provided. It will mirror Thunderbird massing and also use the Mid-Campus Neighbourhood Plan building layout shown at left (excluding two buildings planned for the green space). There are two types of structures to be planned for, two-storey townhouse structures aimed at family and faculty residents and four to five storey apartment buildings to be built for faculty/staff and students.

Figure 11: Framework plan detailing 3 main areas to be designed.

## CHAPTER IV: DESIGNING SPACES

### 4.1 Master Plan

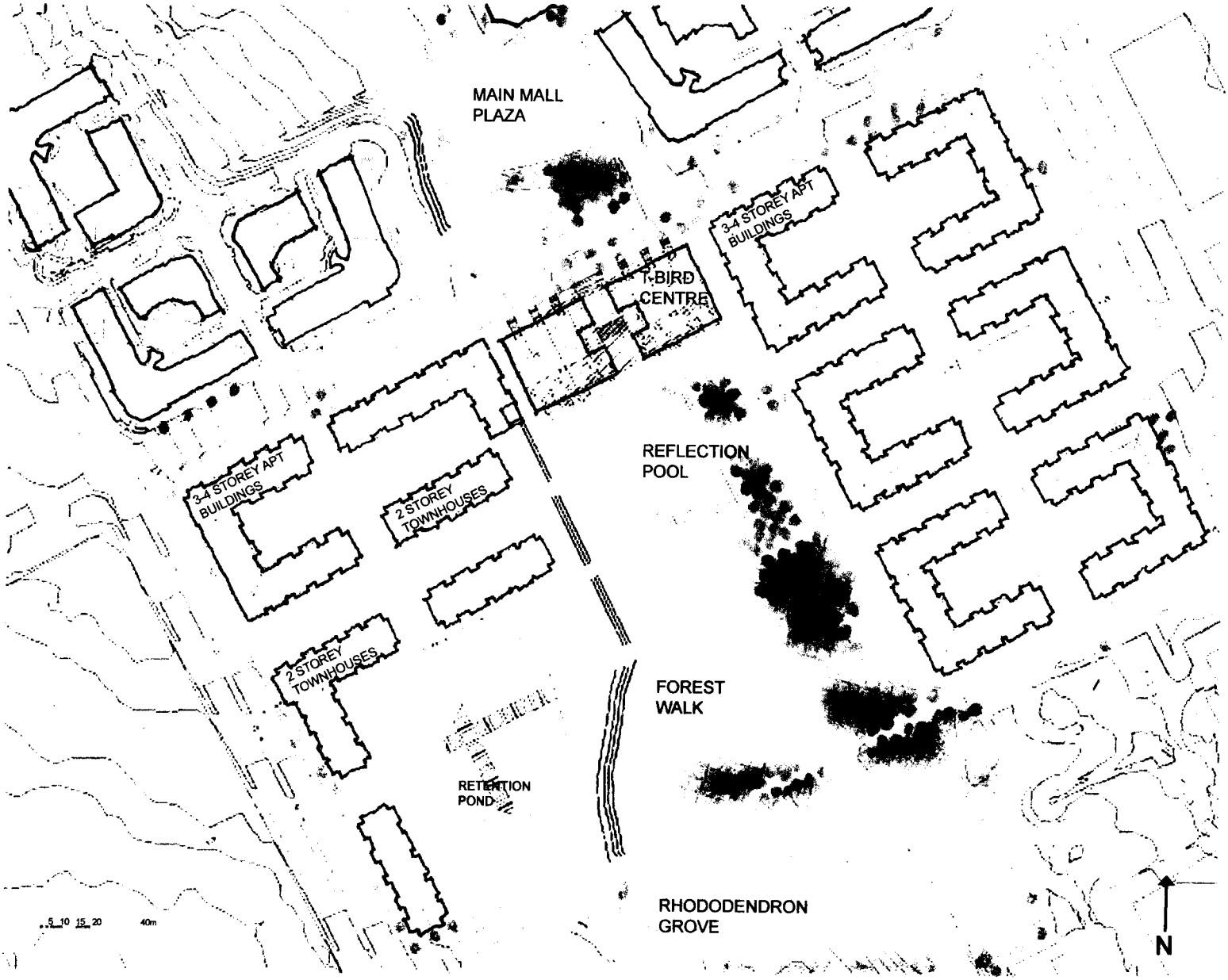



Figure 12: Main spaces: Main Mall Plaza, T-Bird Centre, Pool & Forest Walk.

## 4.2 Main Mall Plaza

MAIN MALL PLAZA
[illegible] plan

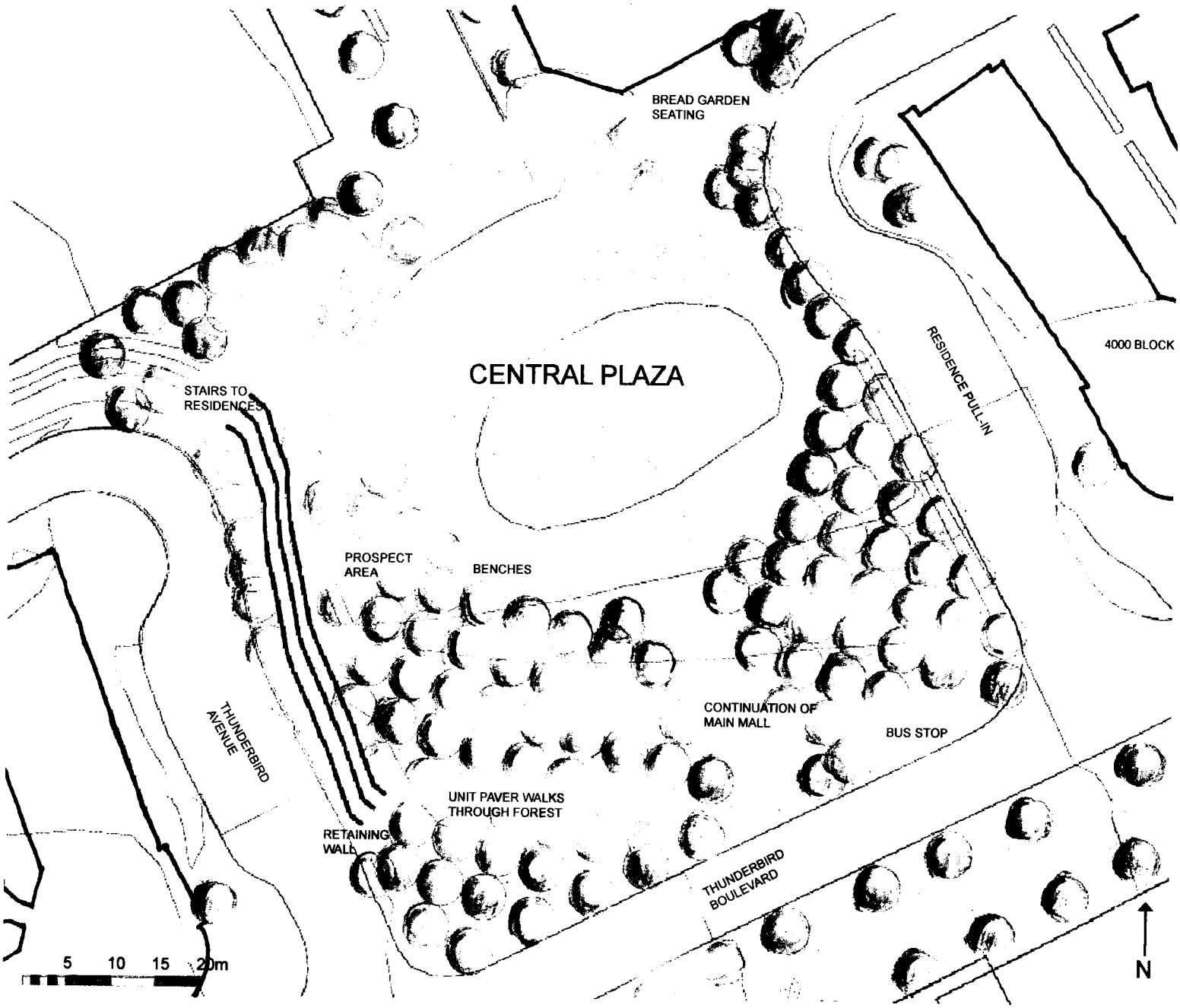
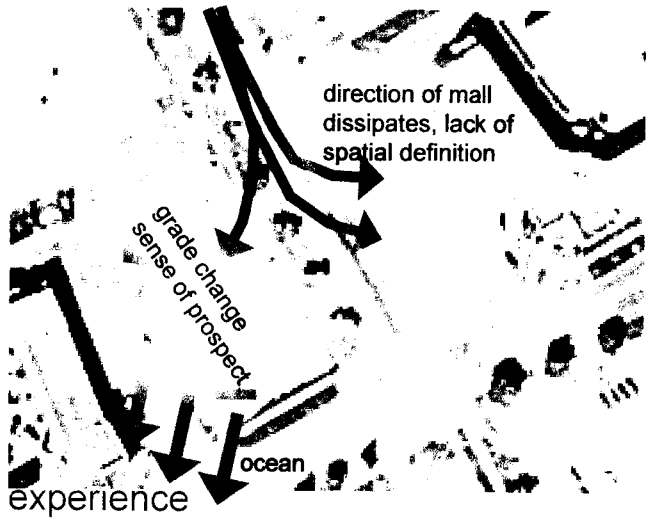
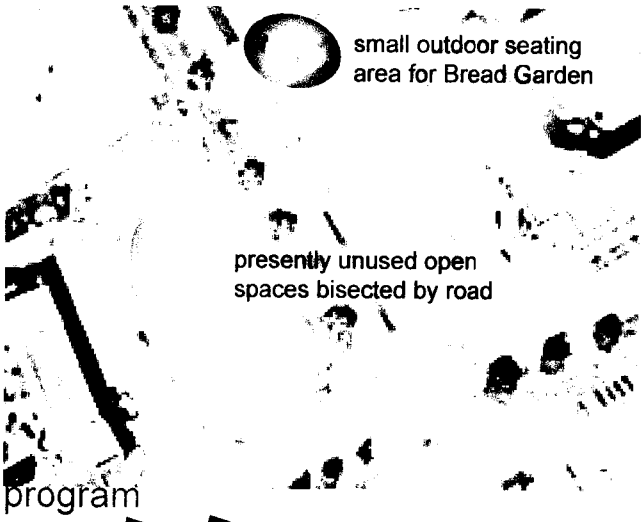


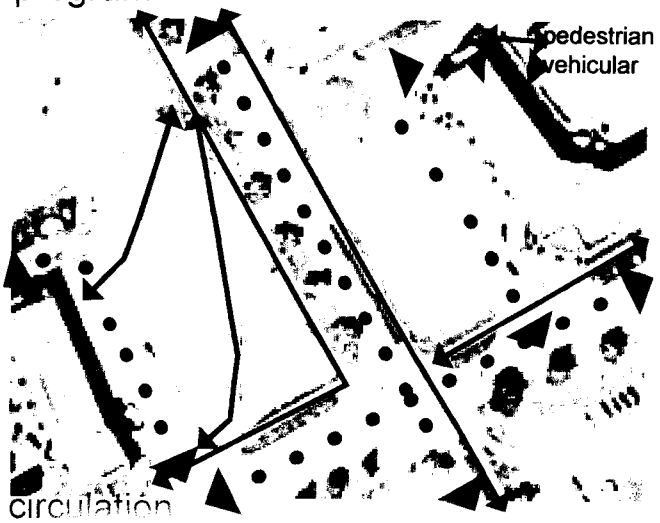

Figure 13: Main Mall Plaza: Master Plan

MAIN MALL PLAZA
analysis

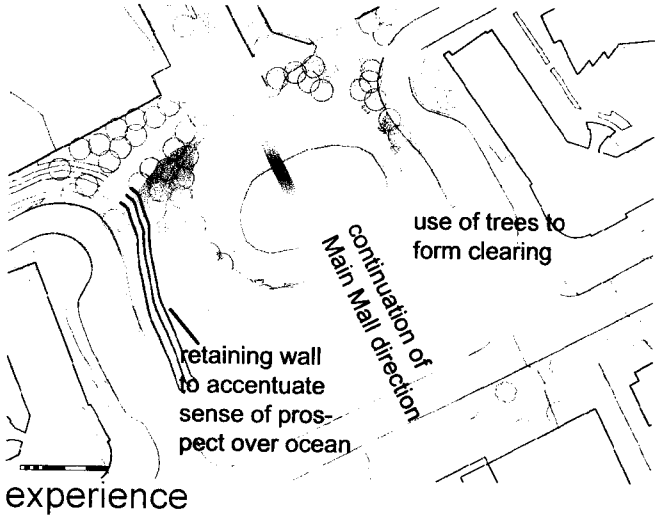
existing

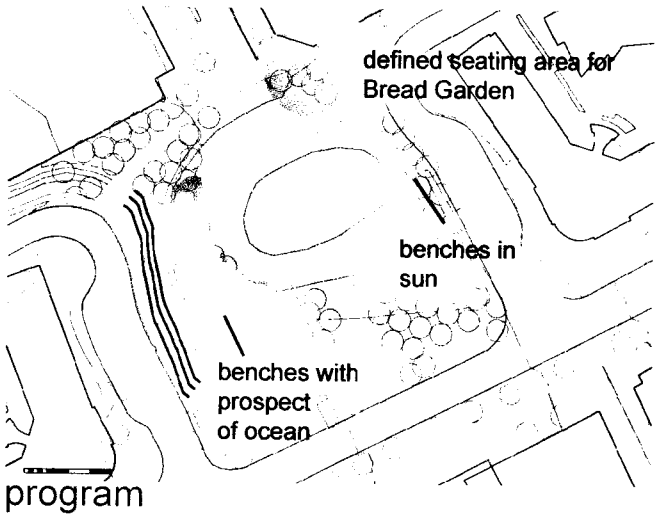



proposed



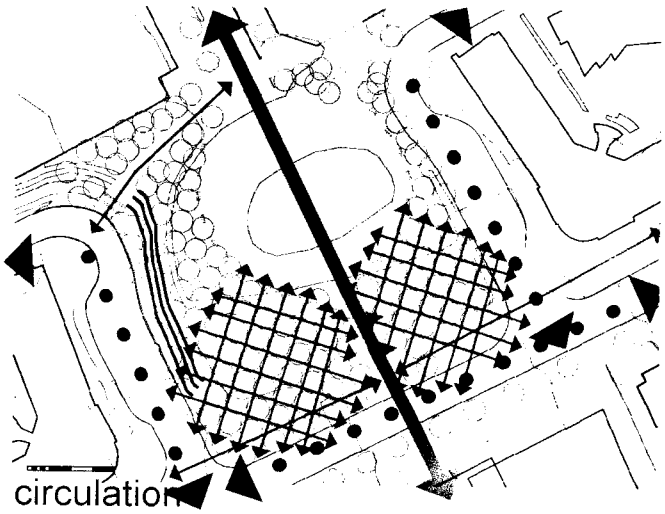




Figure 14: Main Mall: Analysis

# MAIN MALL PLAZA
precedents

Paley Park, New York, as shown on bottom left, is "an extraordinary small urban space providing shade, filtered light and canopy with Honey Locust Trees" (Arnold 103). The trees are spaced 4m on centre in a staggered grid pattern. Honey Locust trees have been incorporated at 5m on centre into the Main Mall Plaza to provide a similar filtered light. The location of this plaza on a promontory with sun exposure will allow the Locust branching patterns to be cast onto the plaza pavers.

Figure 15: Paley Park

MAIN MALL PLAZA

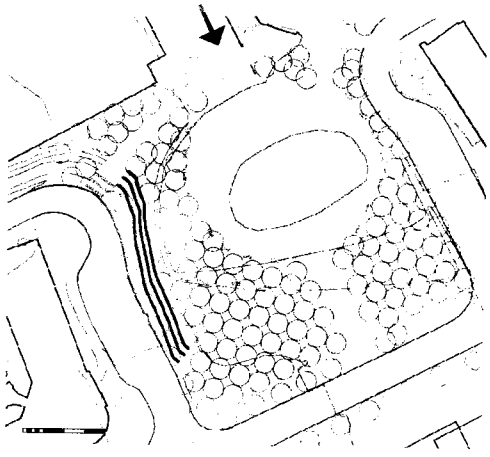
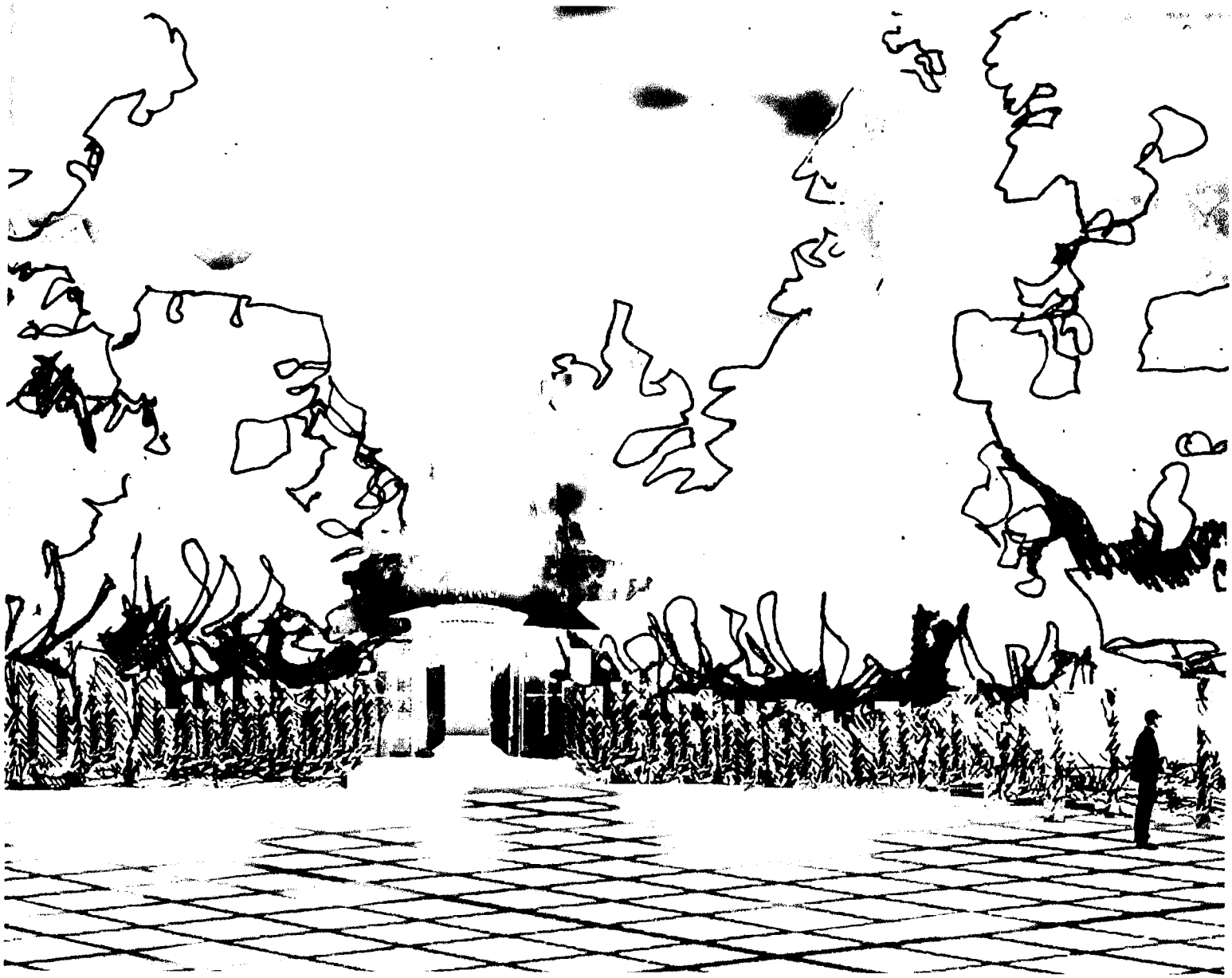
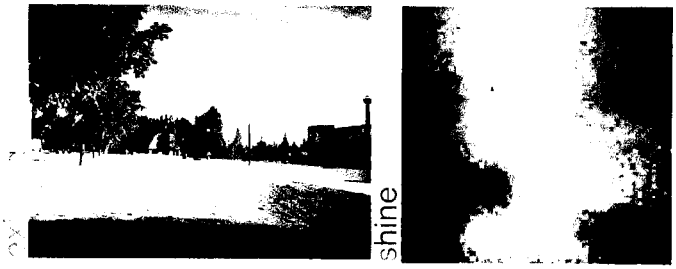


Figure 16: Main Mall: Perspective

MAIN MALL PLAZA





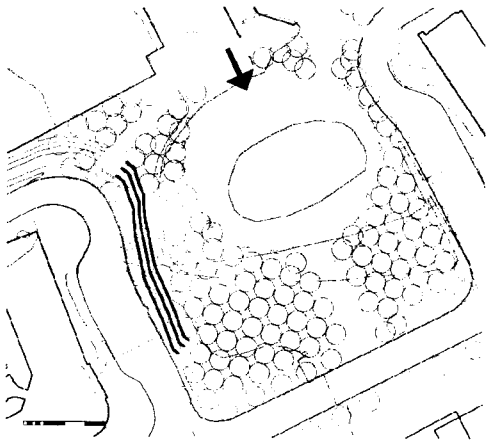
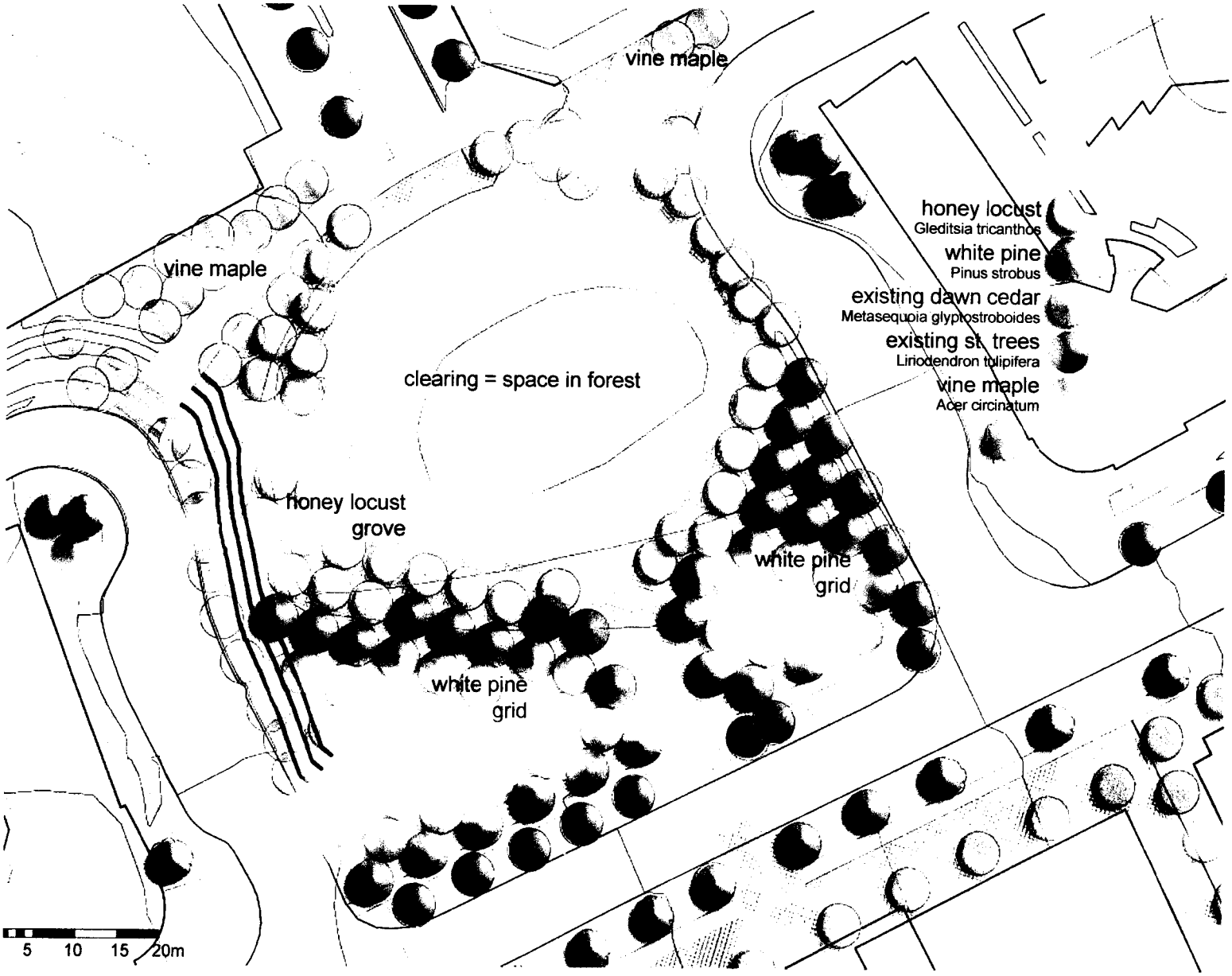
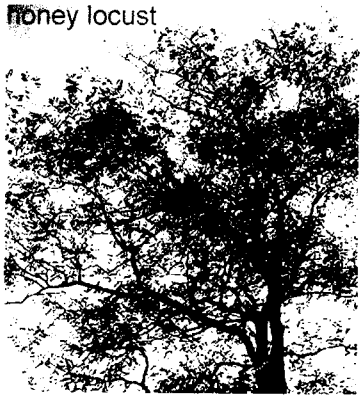



Figure 17: Main Mall Plaza: Perspective

MAIN MALL PLAZA
planting plan




honey locust



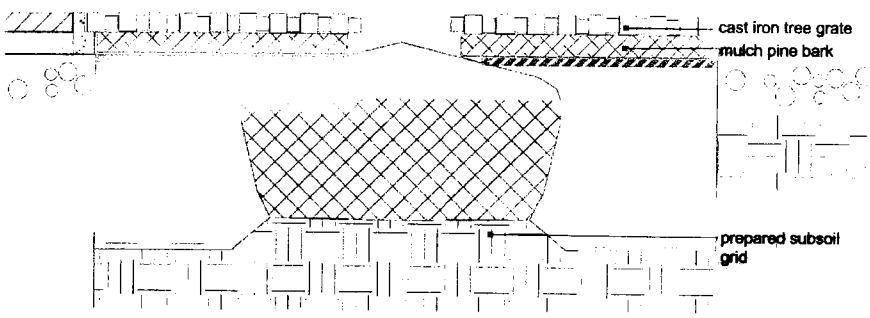



Figure 18: Main Mall Plaza: Planting Plan

MAIN MALL PLAZA
prospect

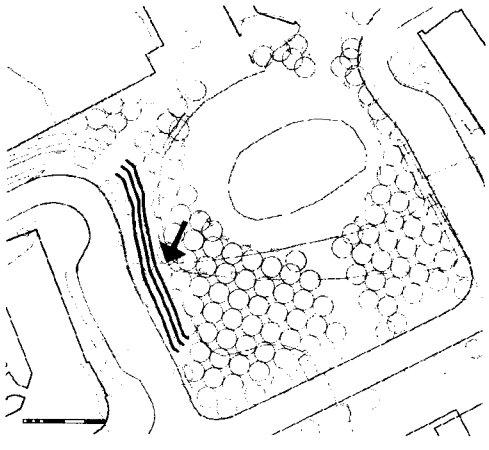


Figure 19: Main Mall Plaza: Prospect Perspective

MAIN MALL PLAZA
prospect

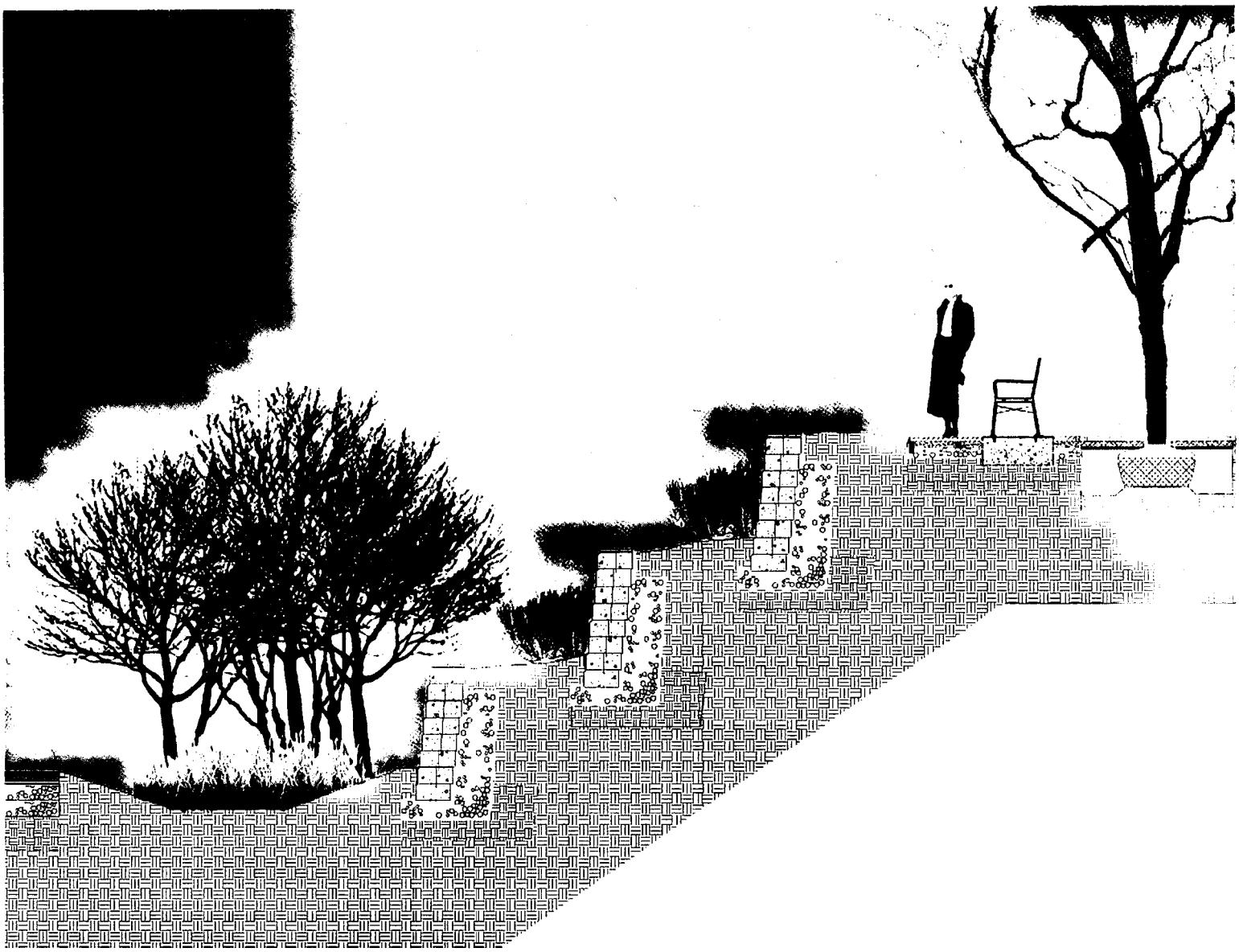


Figure 20: Main Mall Plaza: Retaining Wall Detail

MAIN MALL PLAZA
grading plan & sections

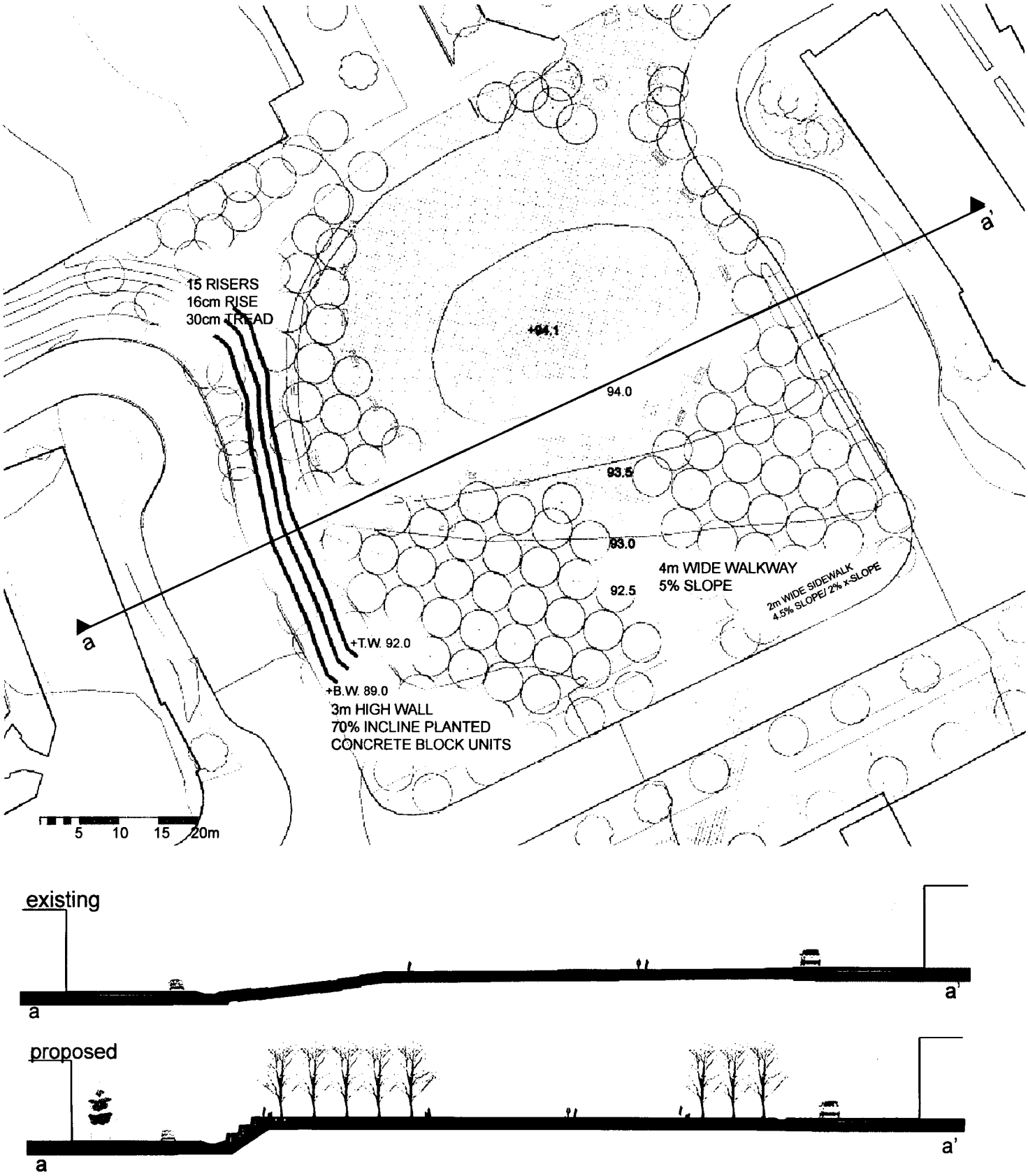
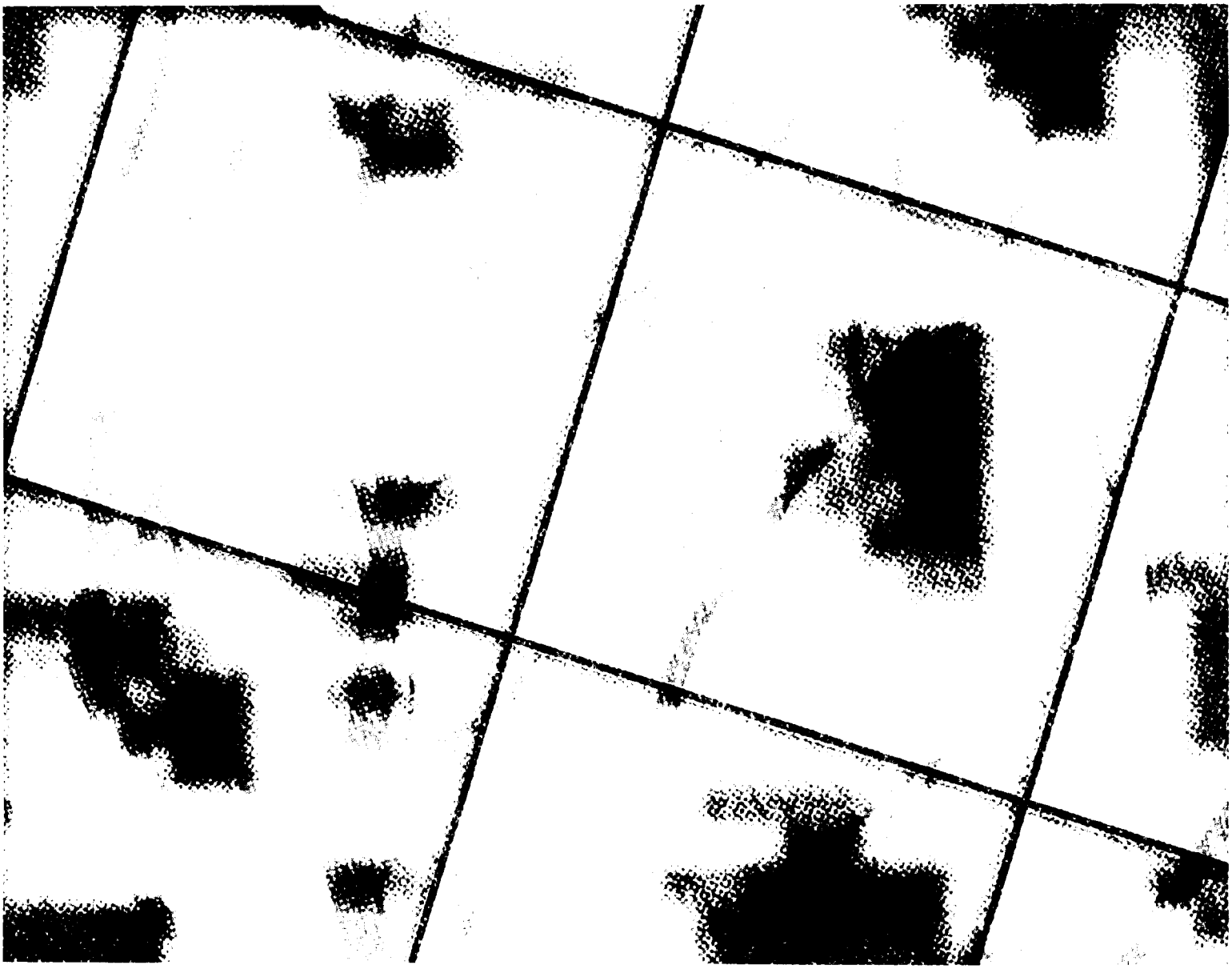
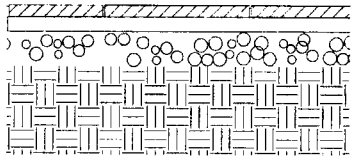



Figure 21: Main Mall Plaza: Grading Plan & Sections

MAIN MALL PLAZA
paving detail





.5m x .5m RIGID UNIT PAVERS
SET IN 25mm MORTAR SETTING
BED ON 100mm CONCRETE
BASE AND 100mm AGG. BASE
150mm AGG. BASE

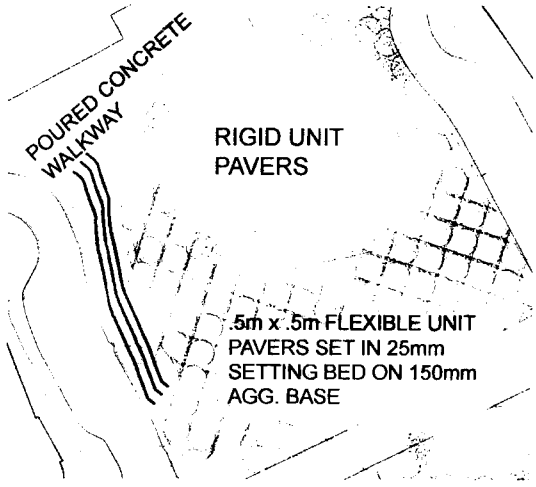



Figure 22: Main Mall Plaza: Paving Detail

MAIN MALL PLAZA
forest walk

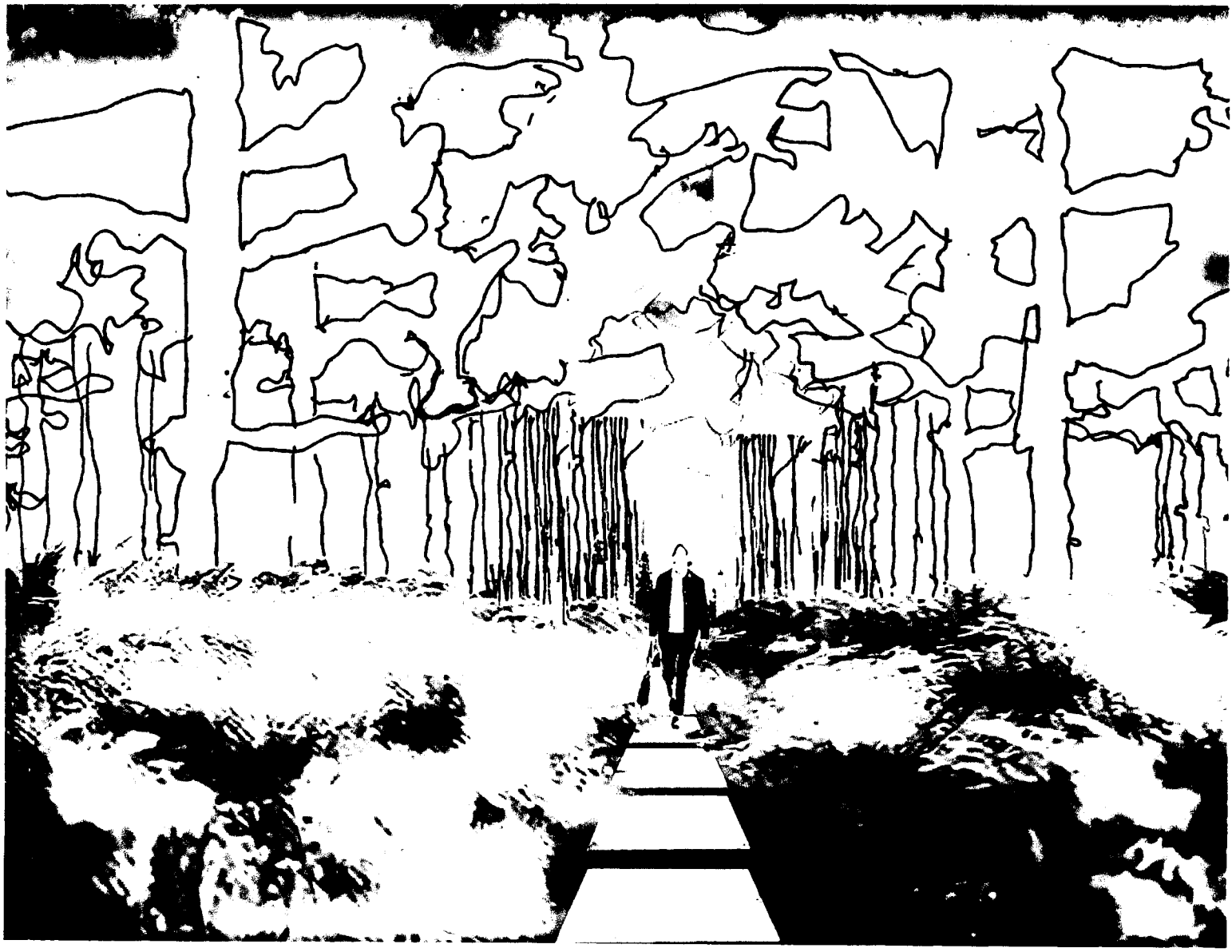
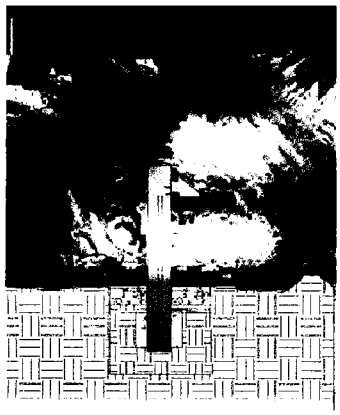


Figure 23: Main Mall Plaza: Forest Walk

MAIN MALL PLAZA
forest walk



UNIT PAVER WALKS THROUGH HIGH-LIMBED PINES

.5m x .5m FLEXIBLE UNIT PAVERS SET IN 25mm SETTING BED ON 150mm AGG. BASE

Figure 24: Main Mall Plaza: Forest Walk Section

# MAIN MALL PLAZA
## drainage plan & details

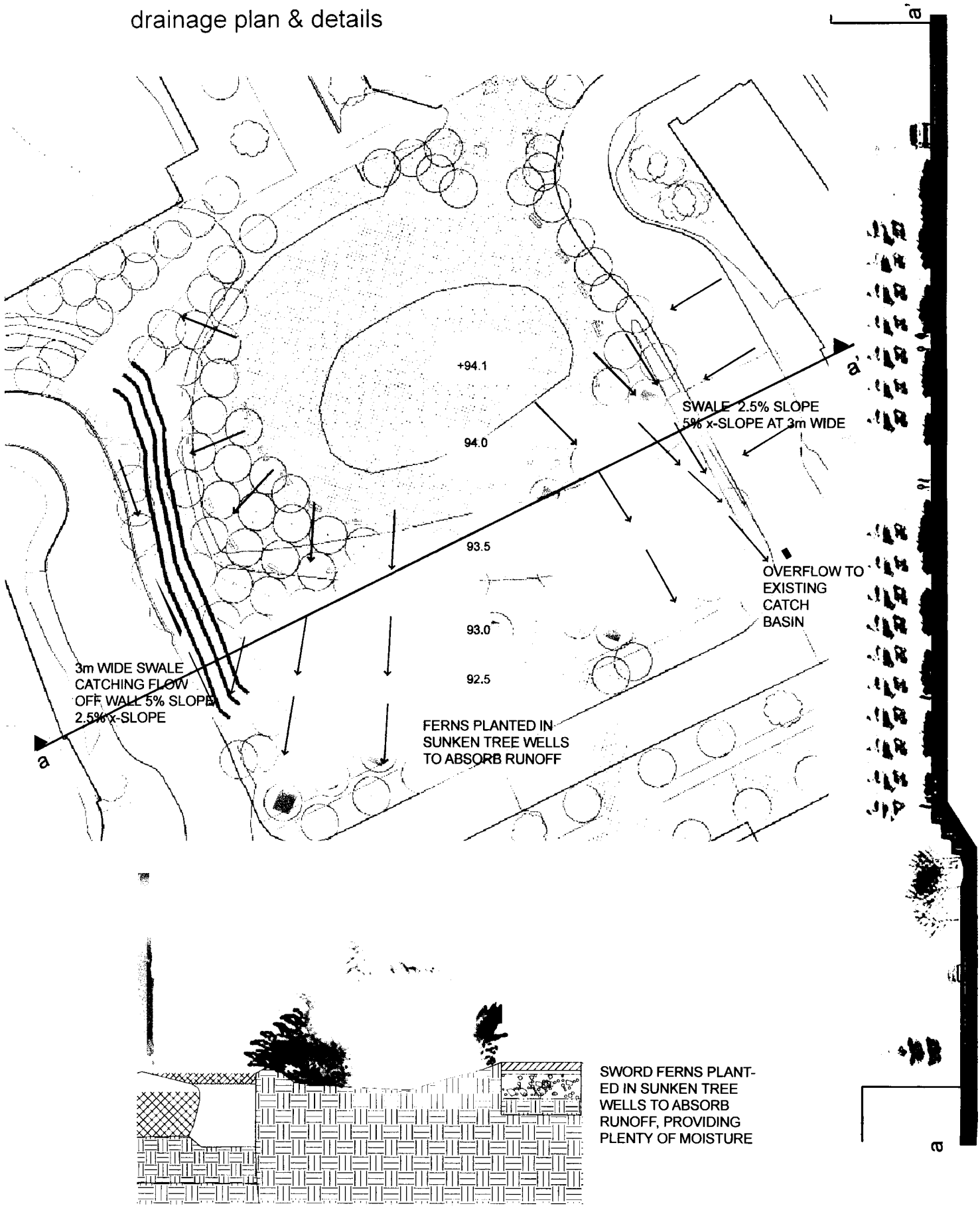



Figure 25: Main Mall Plaza: Drainage Plan & Section

MAIN MALL PLAZA
stairway to residences

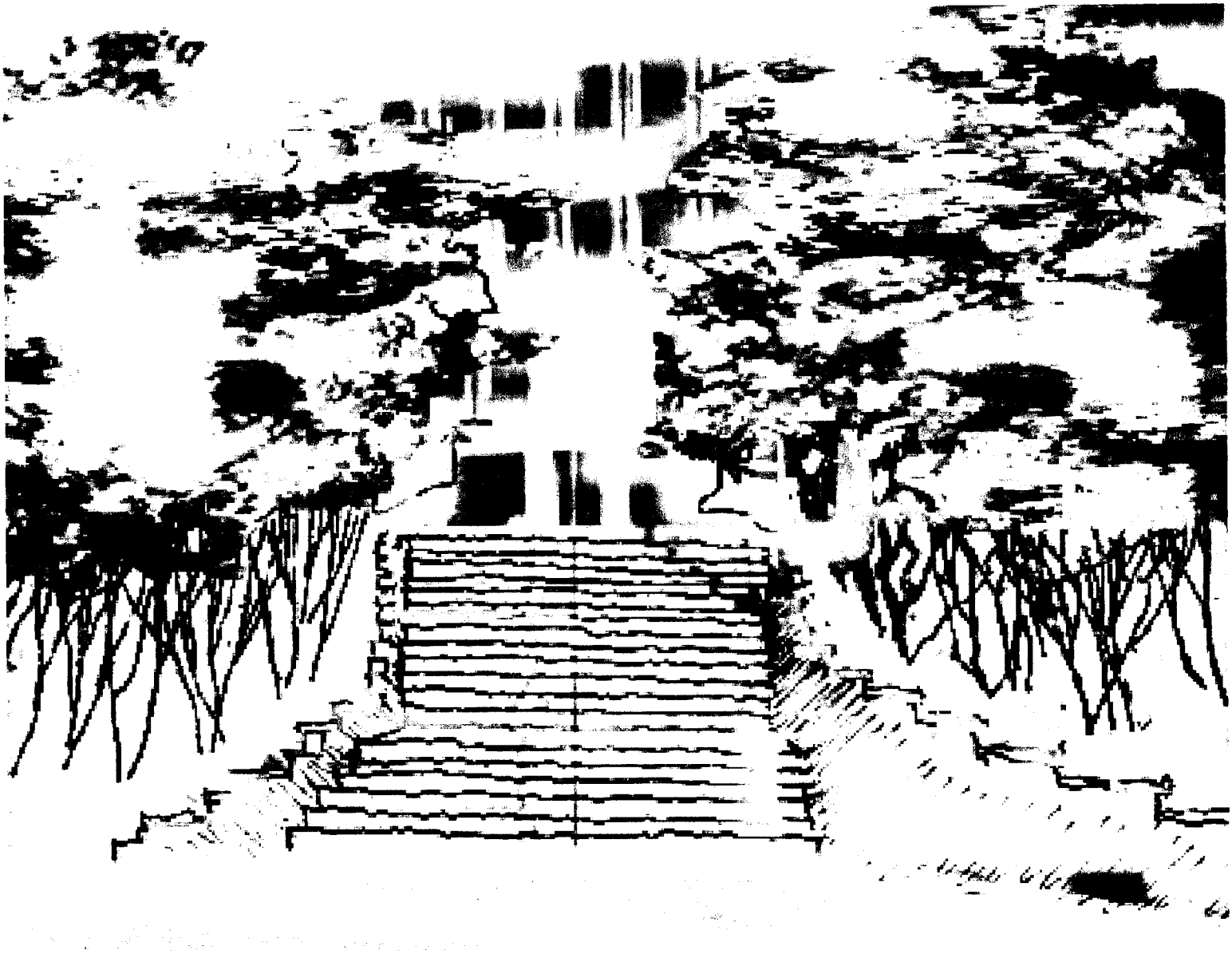


Figure 26: Main Mall Plaza: Stairway

MAIN MALL PLAZA
bread garden seating

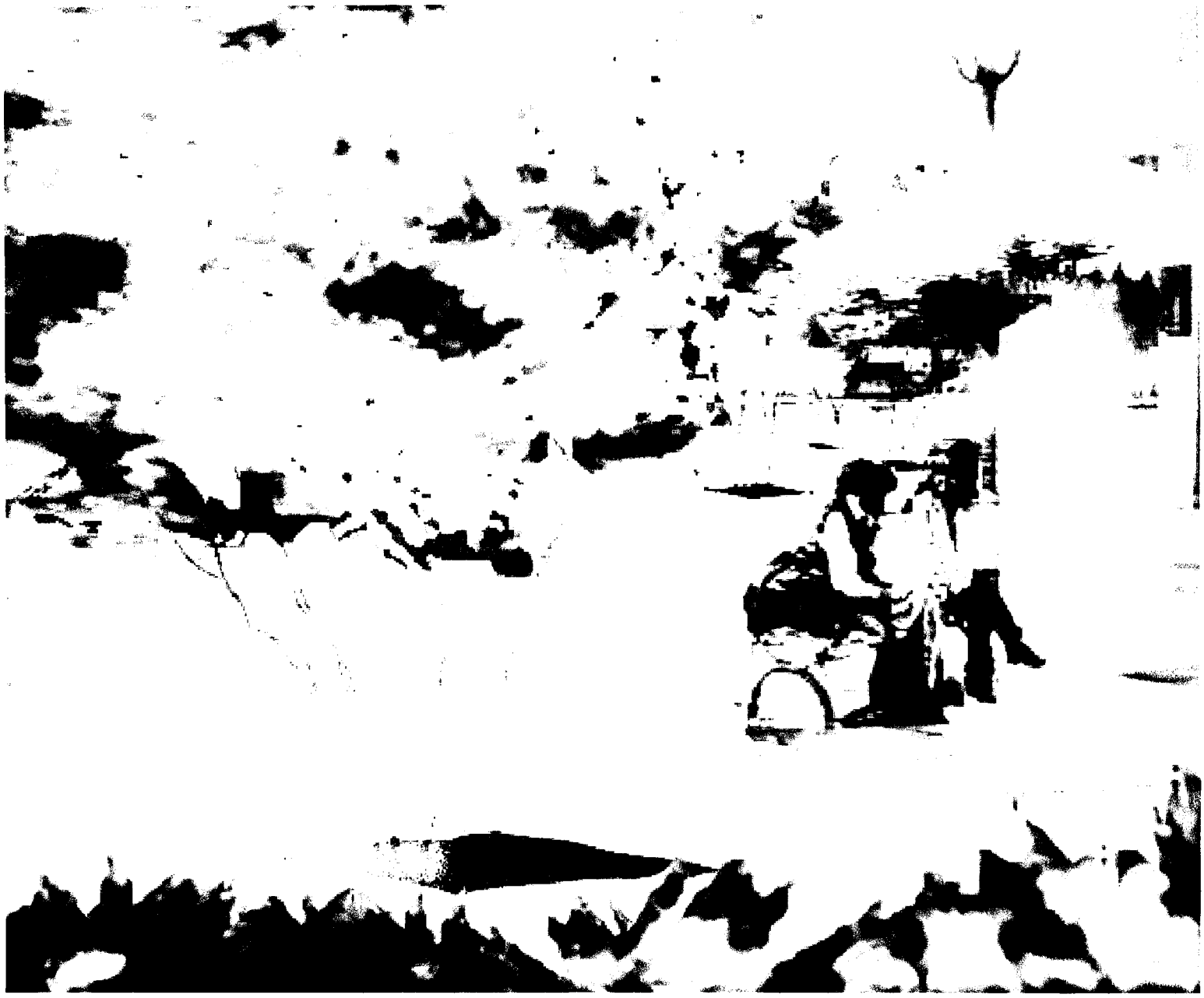


Figure 27: Main Mall Plaza: Bread Garden

## 4.3 Thunderbird Centre

THUNDERBIRD CENTRE
master plan

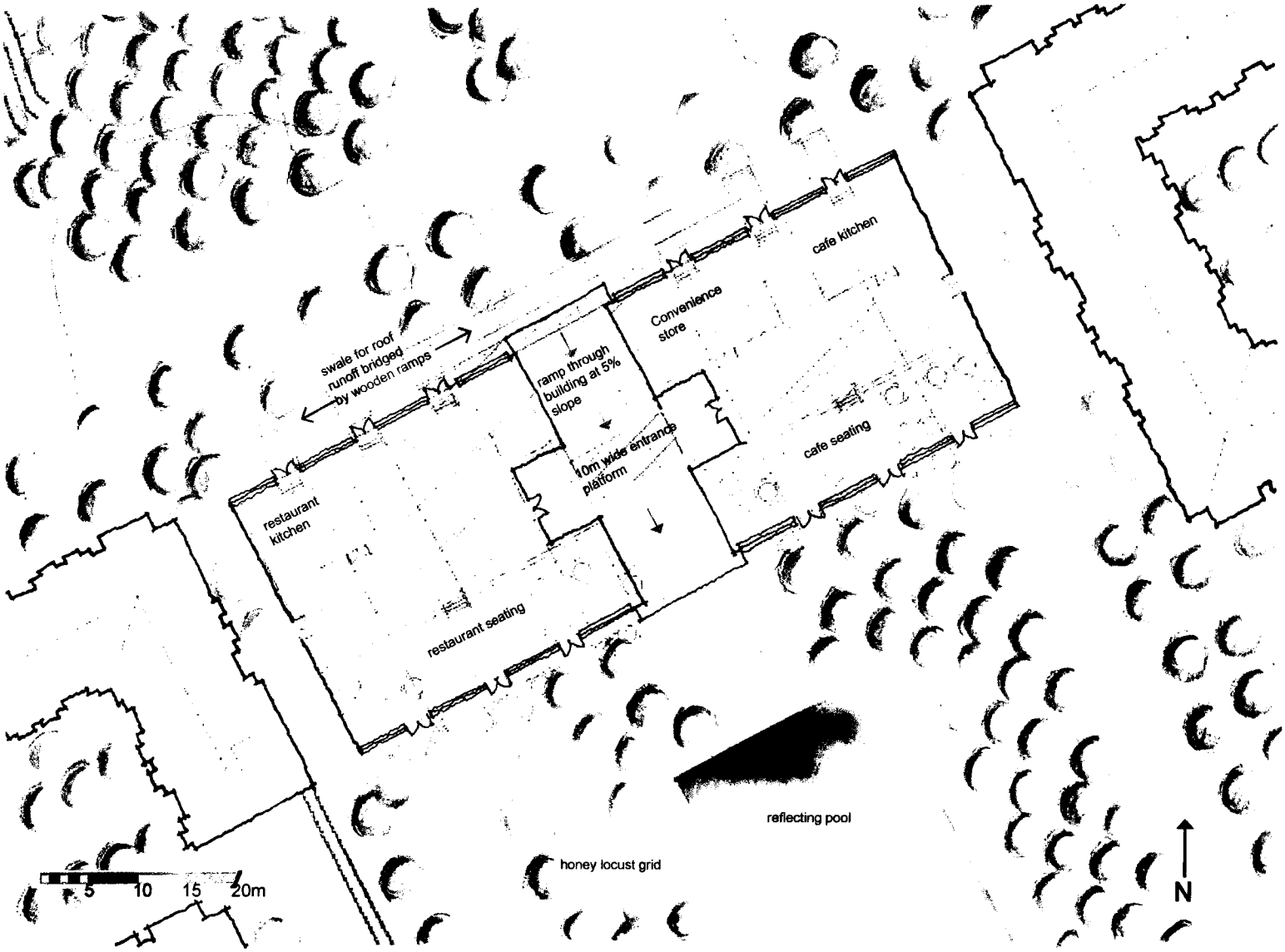



Figure 28: Thunderbird Centre Master Plan

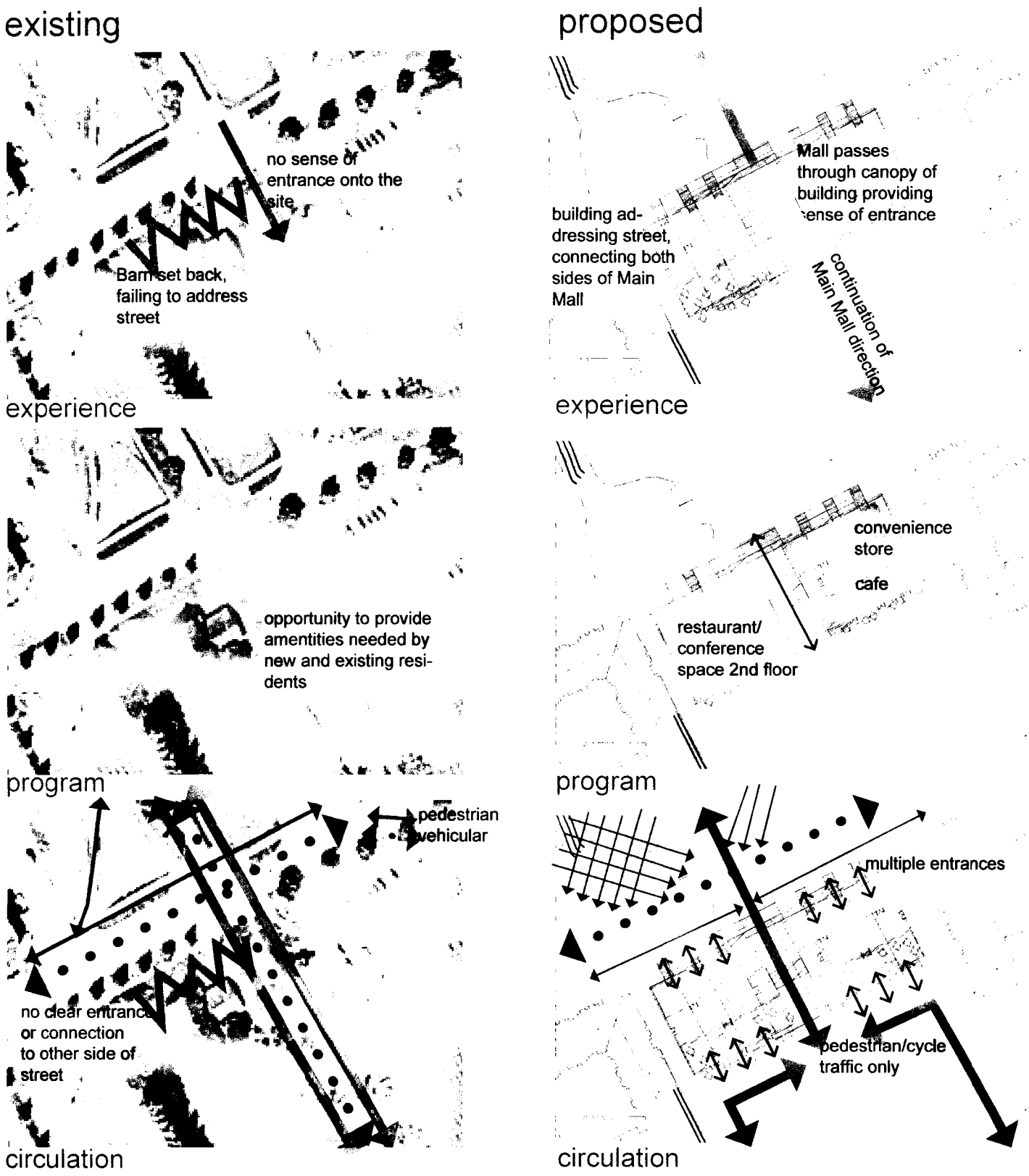



Figure 29: Thunderbird Centre: Analysis

Arthur Erikson's buildings, such as Koerner Library, U.B.C. and the Waterfall building, provide examples of a powerful structures which respond to the experience of space. I have modelled the Thunderbird Centre structure on these buildings as they offer a sense of scale and weight to what I have termed the unofficial second terminus to Main Mall. They also provide multiple entrances and ample space for various amentities as outlined in the Thunderbird Centre Plan.

Figure 30: Koerner Library and Waterfall Building

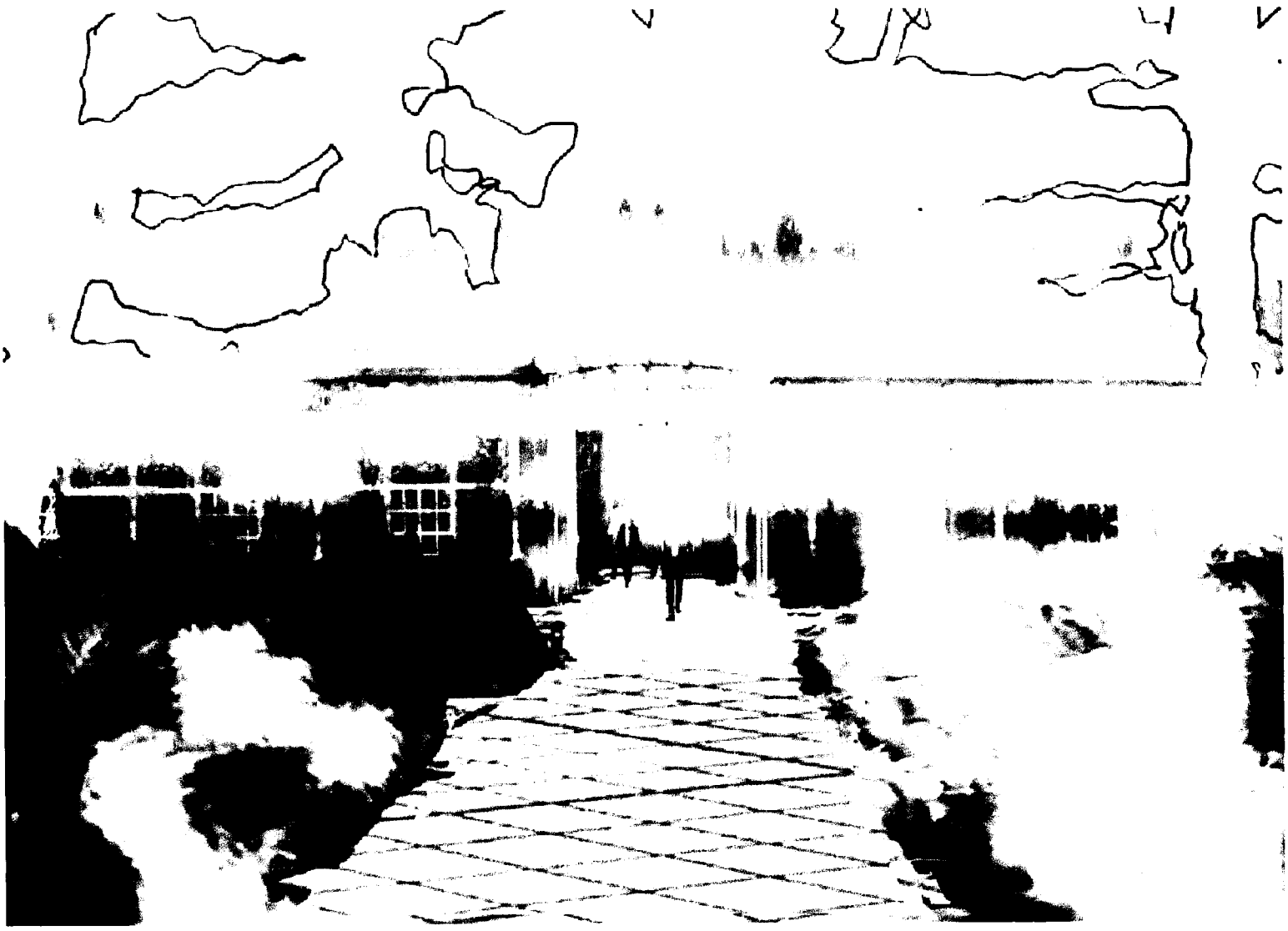


Figure 31: Thunderbird Centre: Perspective

THUNDERBIRD CENTRE
building section

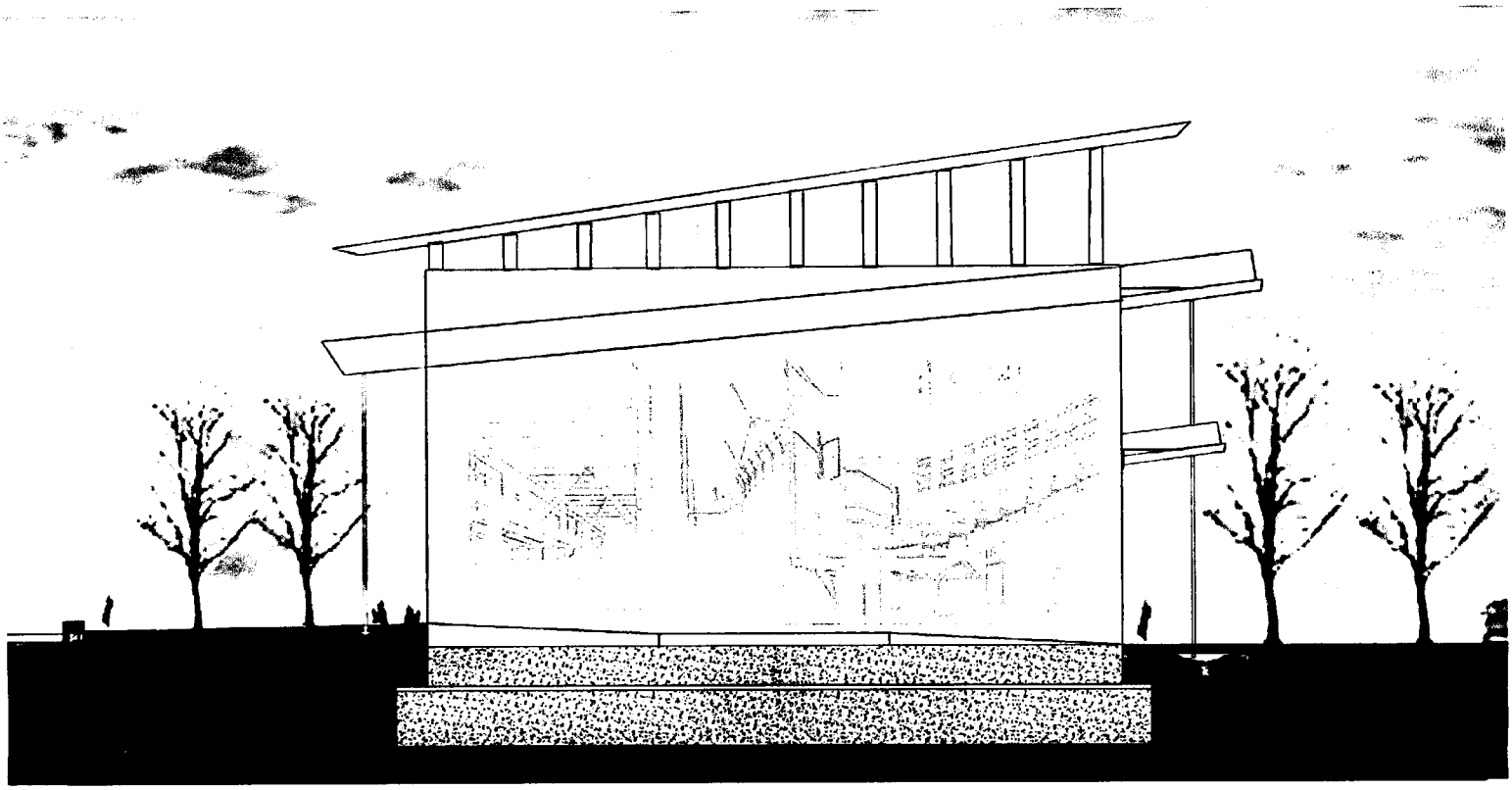
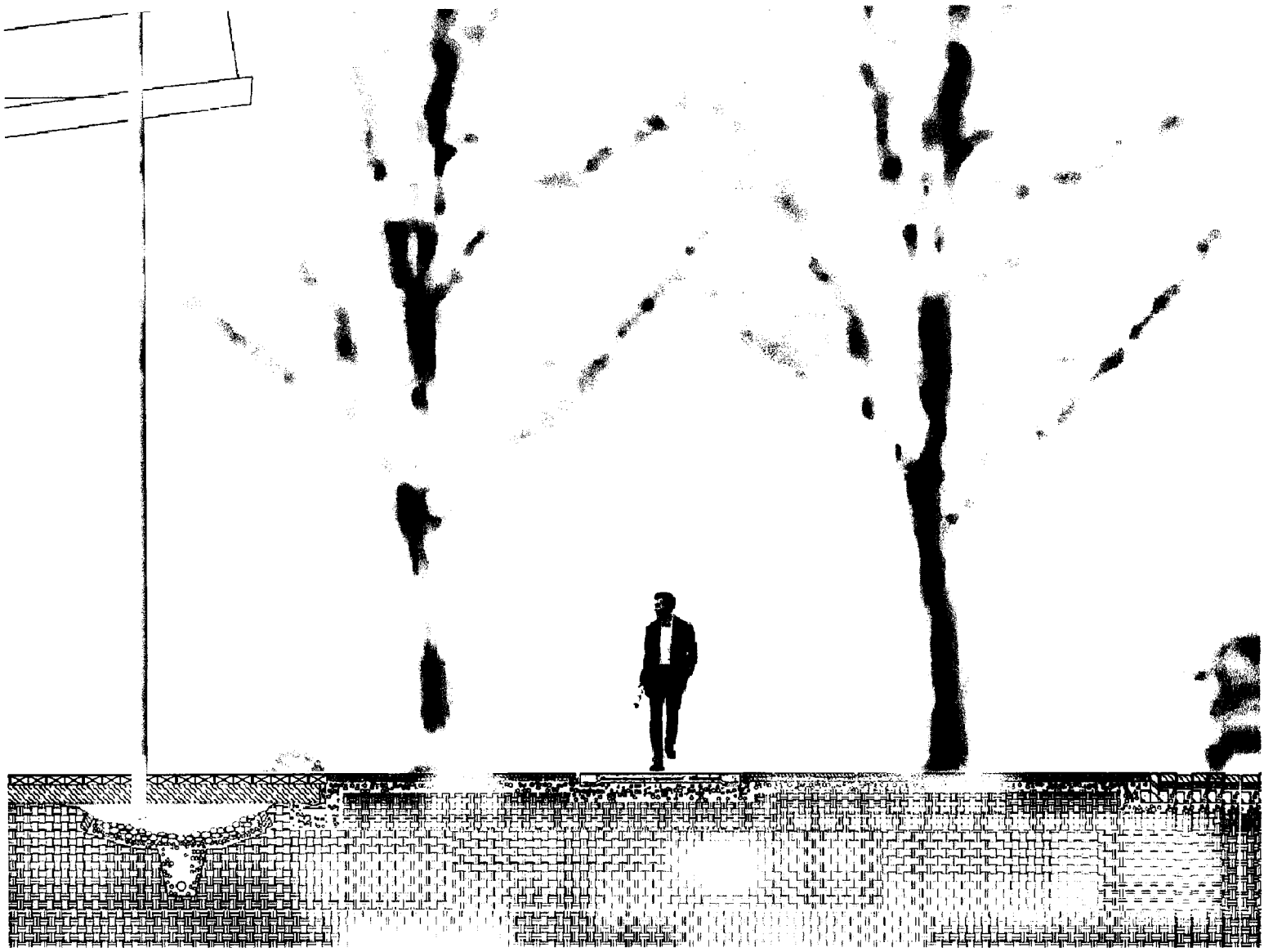


Figure 32: Thunderbird Centre: Section

THUNDERBIRD CENTRE
building entrance



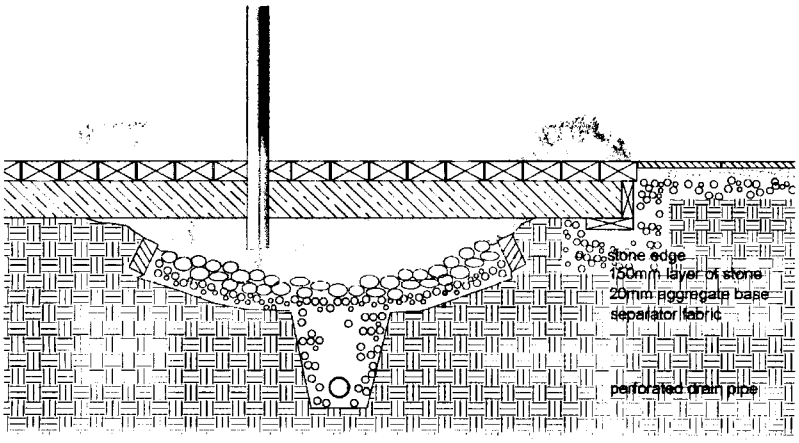



Figure 33: Thunderbird Centre: Front Section

THUNDERBIRD CENTRE
building entrance

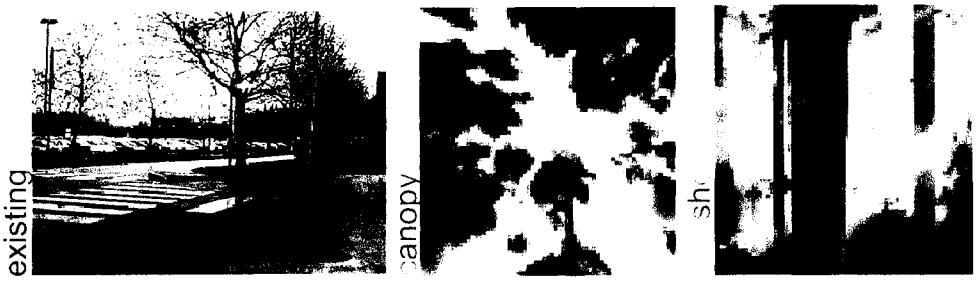



Figure 34: Thunderbird Centre: Front Threshold

## 4.4 Reflection Pool & Forest

REFLECTION POOL & FOREST

pool terrace

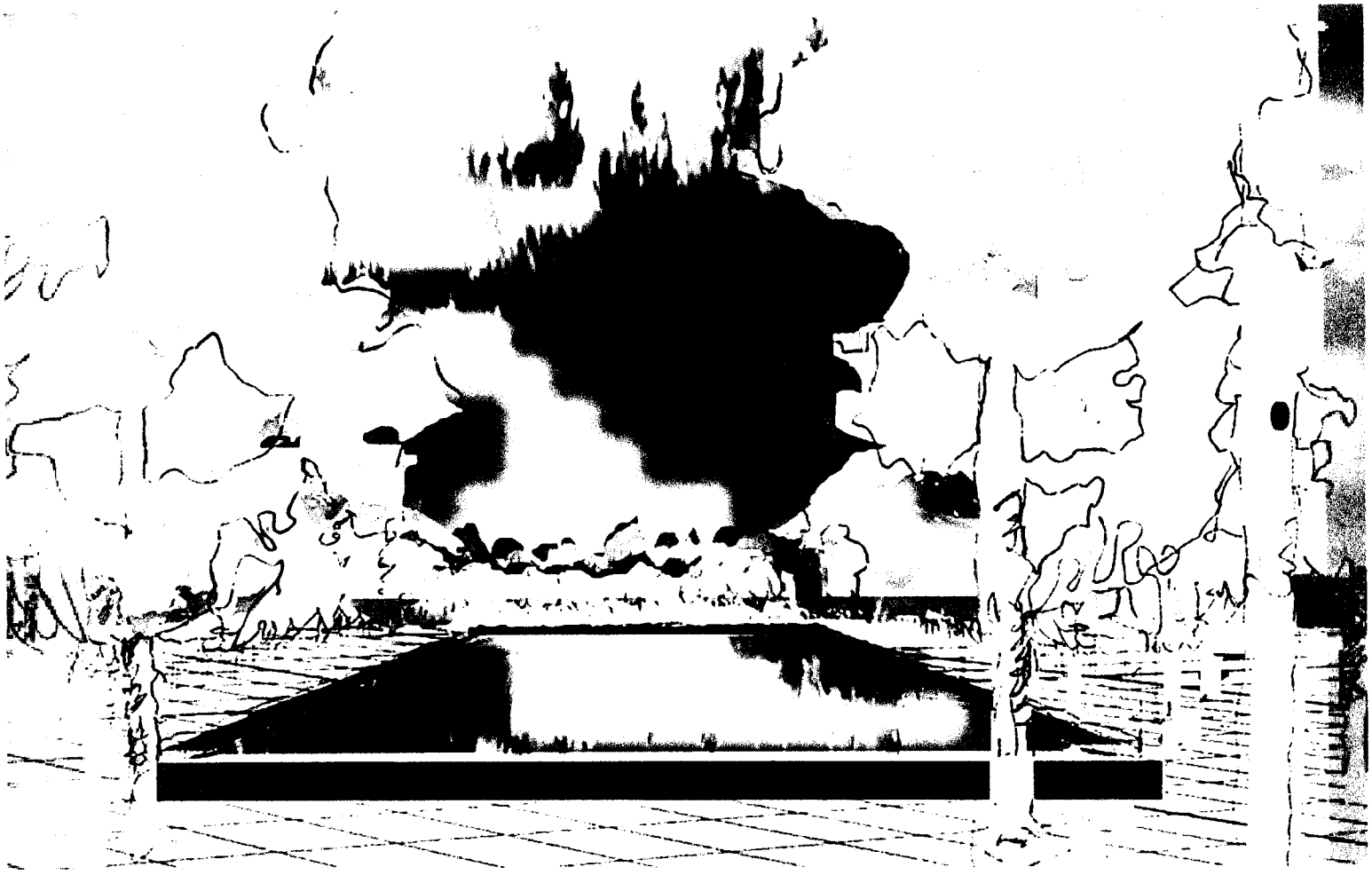
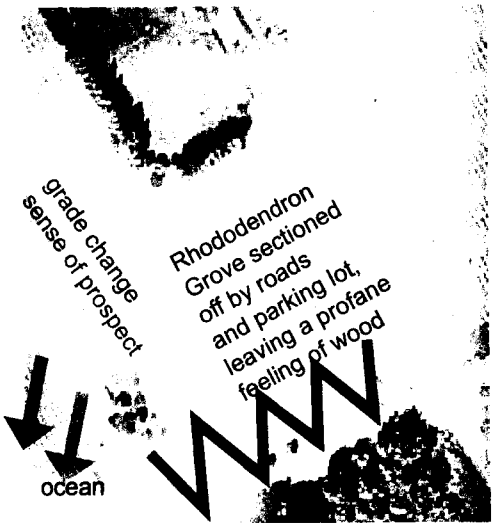
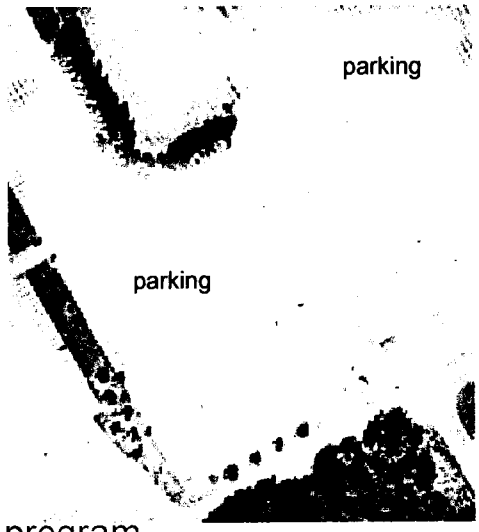


Figure 35: Thunderbird Centre: Pool Terrace

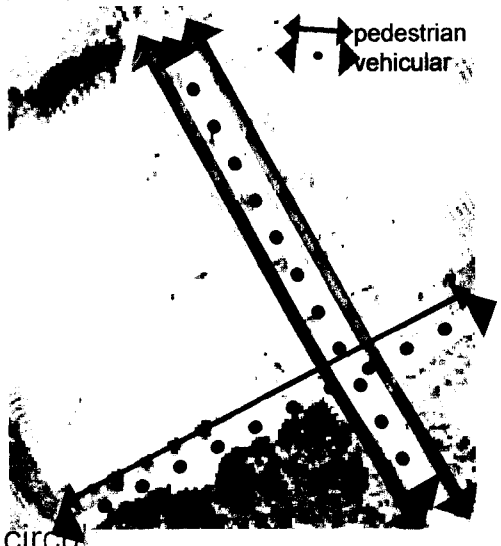
REFLECTION POOL & FOREST
analysis

existing

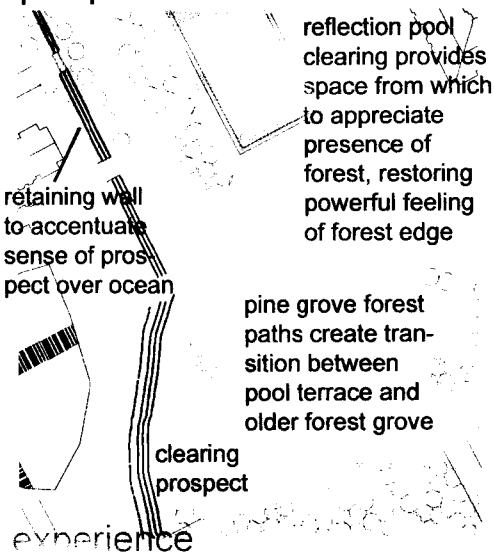


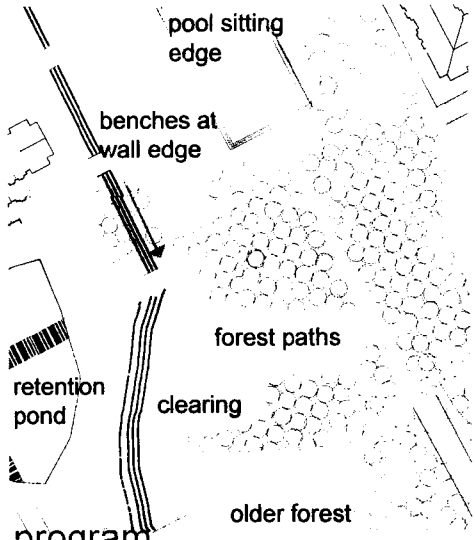




program




proposed




program

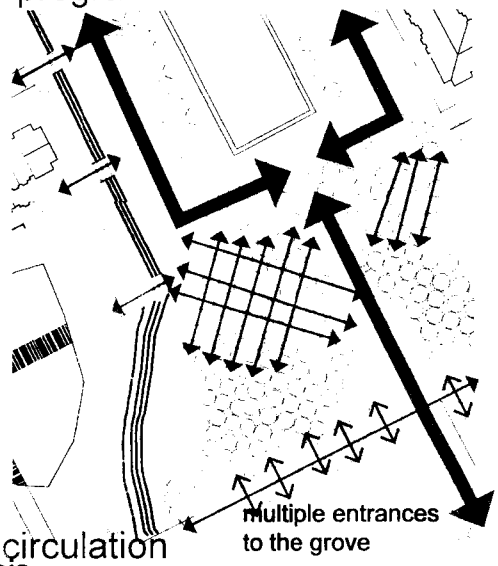


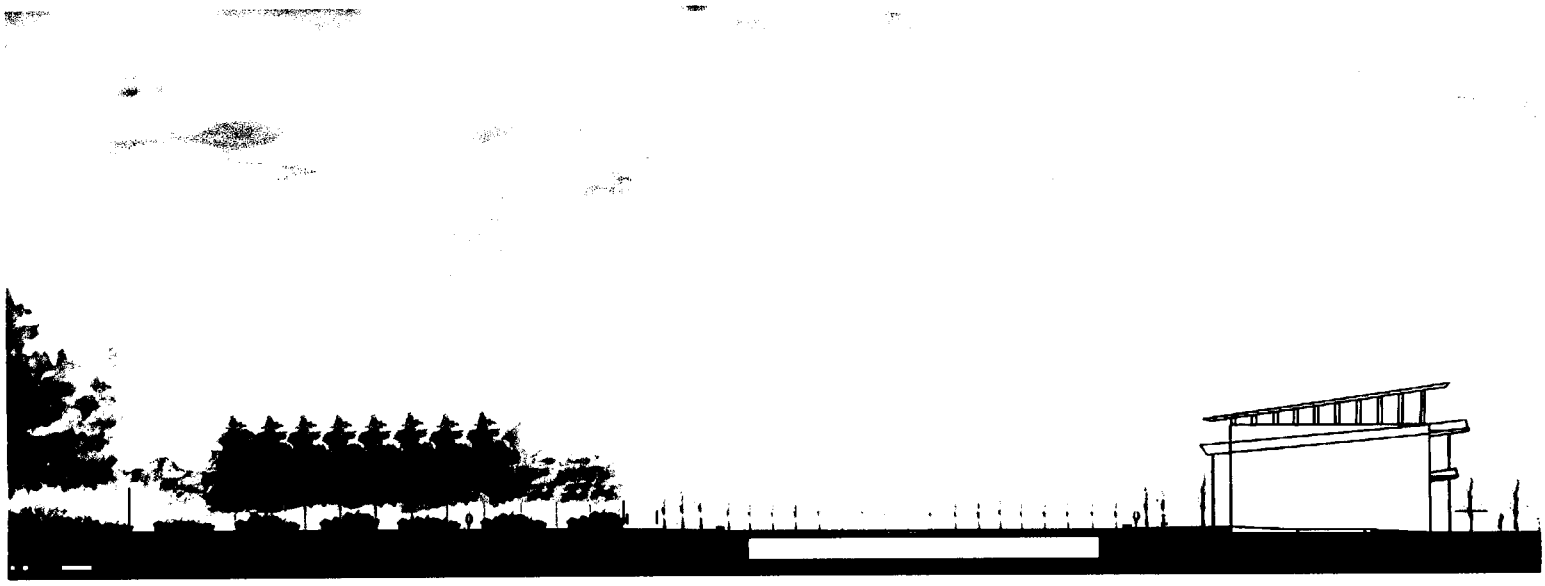

Figure 36: Thunderbird Centre: Analysis

Figure 37: Bloedel Gardens

Richard Haag's design for Bloedel Reserve, shown at top and middle left, illustrates how the creation of a clearing can enable the appreciation of the forest edge. In space typology terms, "making the clearing makes a room in the unrelieved immensity of the forest...The forest edge appears, a dynamic and productive place." (Condon 1994, 83). The reflection pool included in my design is intended to provide the same effect, resulting in the experience of Rhododendron Grove as a sacred place, instead of a leftover stand of trees as is presently the case.

At bottom right is Potsdamer Platz by Herbert Dreiseitl, providing a precedent for a reflection pool which also functions as a retention area for rain water. Overflow would drain to storage areas below structures, which can use harvested rainwater.

REFLECTION POOL & FOREST
pool terrace section



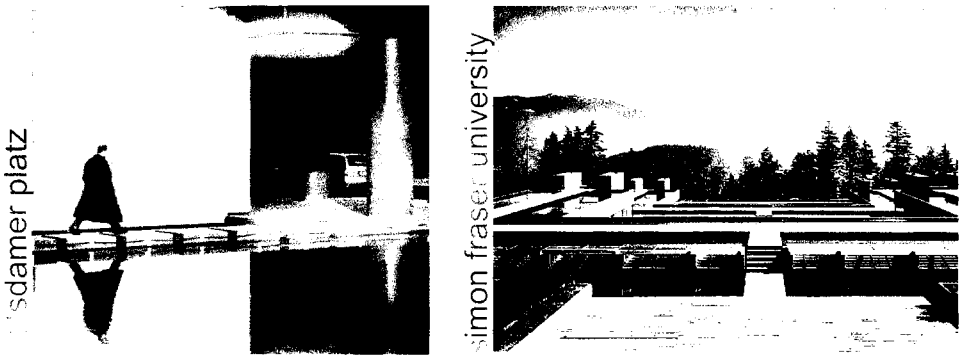
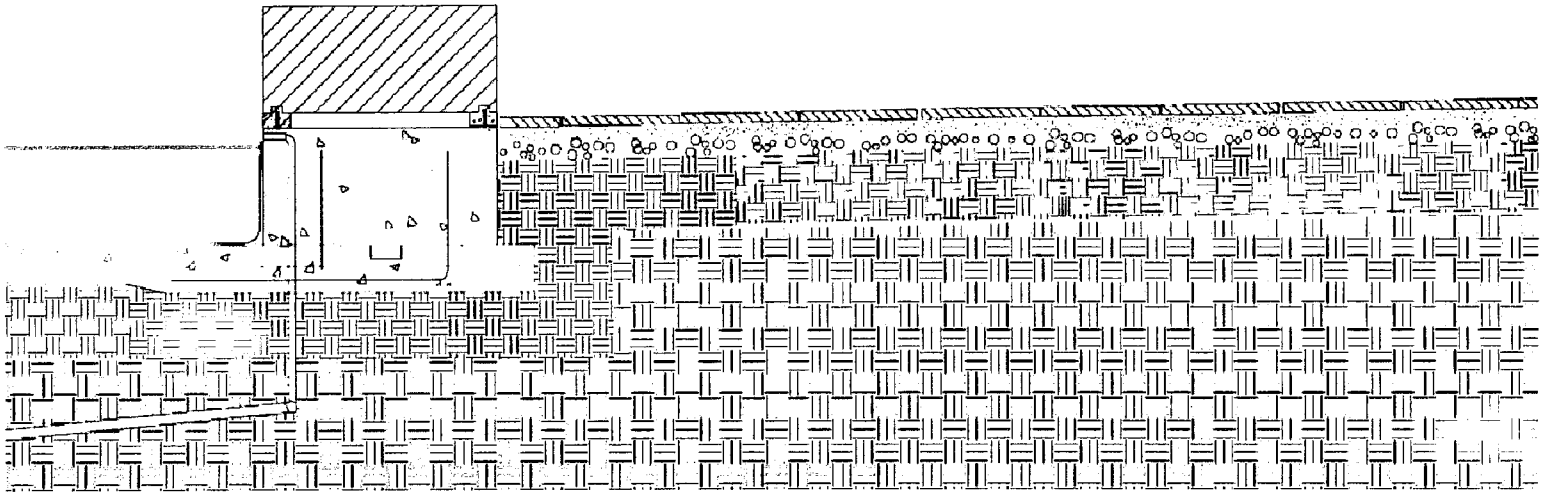



Figure 38: Thunderbird Centre: Pool Terrace Section

REFLECTION POOL & FOREST
pool terrace cafe

Figure 39: Thunderbird Centre: Pool Terrace Cafe

REF POOL & FOREST
p drainage



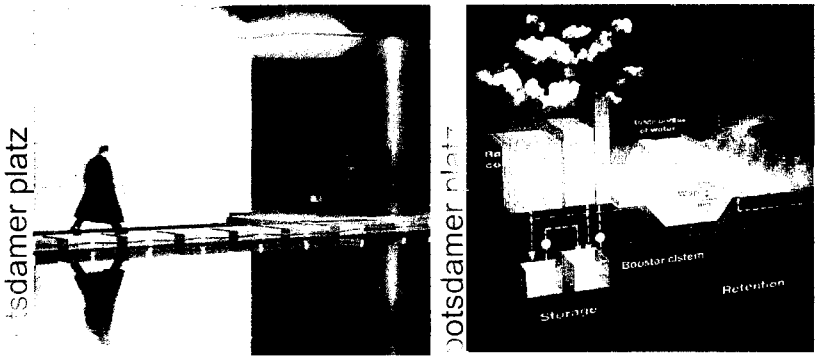



Figure 40: Pool Section & drainage

REFLECTION POOL & FOREST
prospect

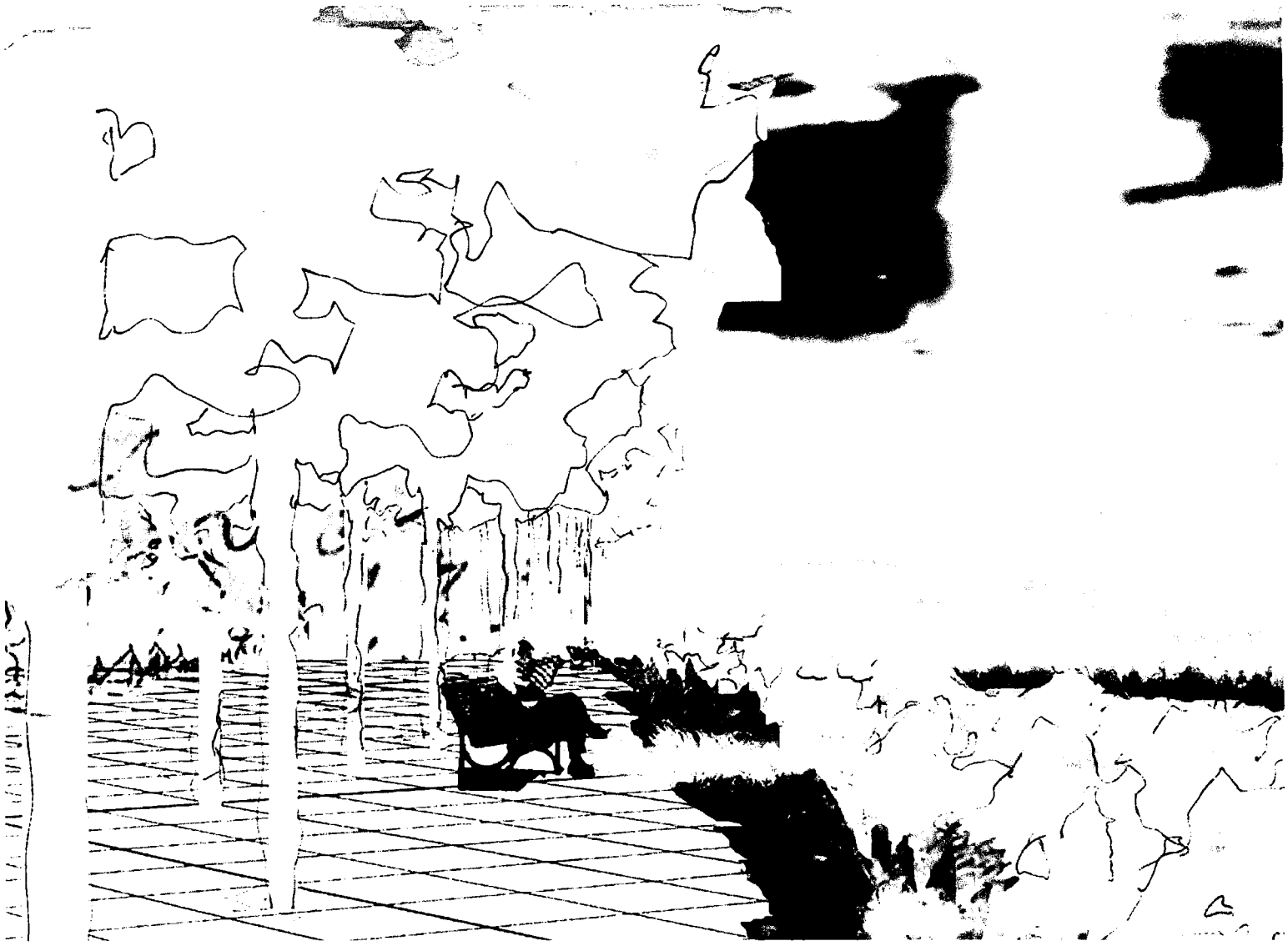


Figure 41: Prospect

REFLECTION POOL & FOREST

prospect

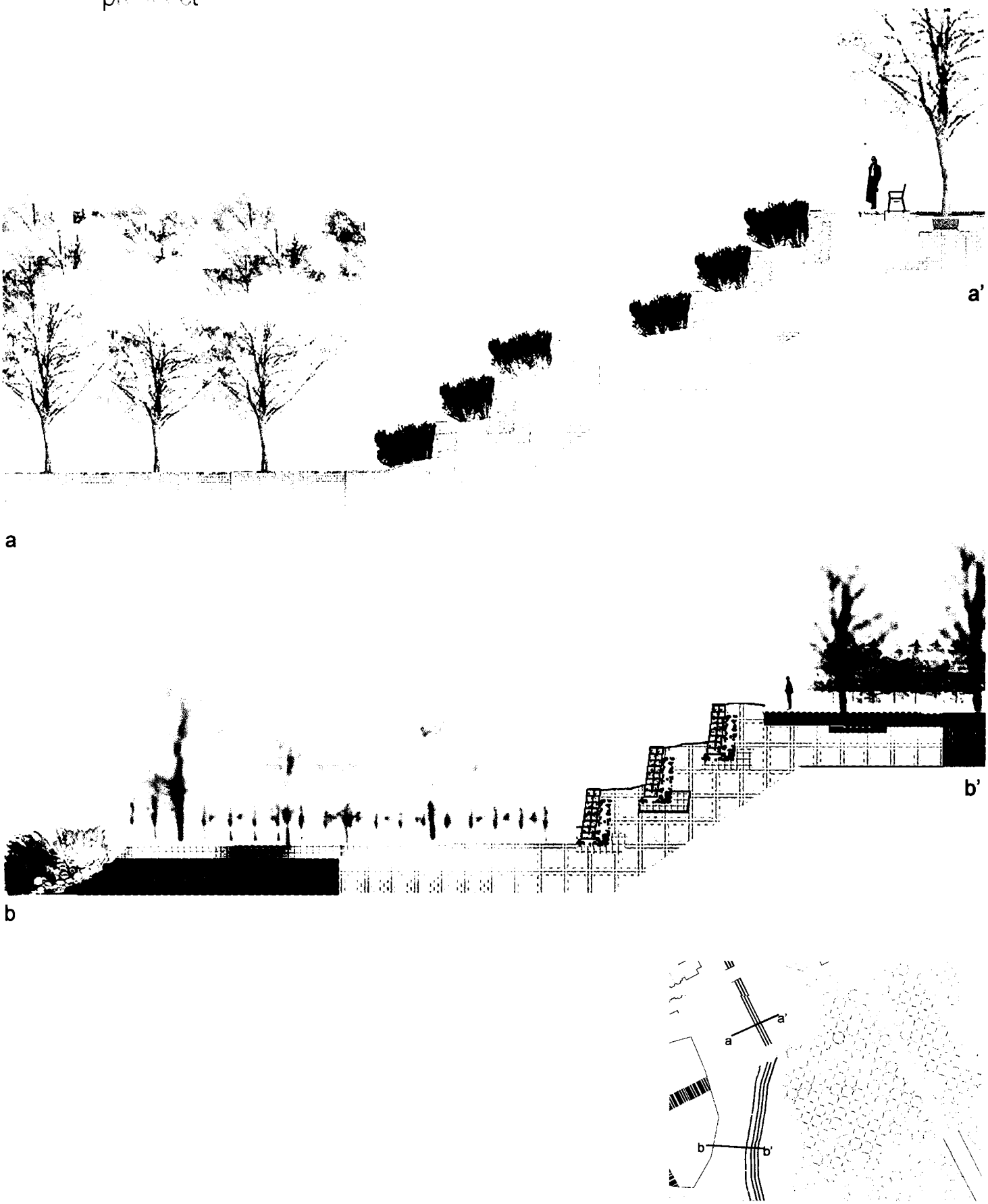
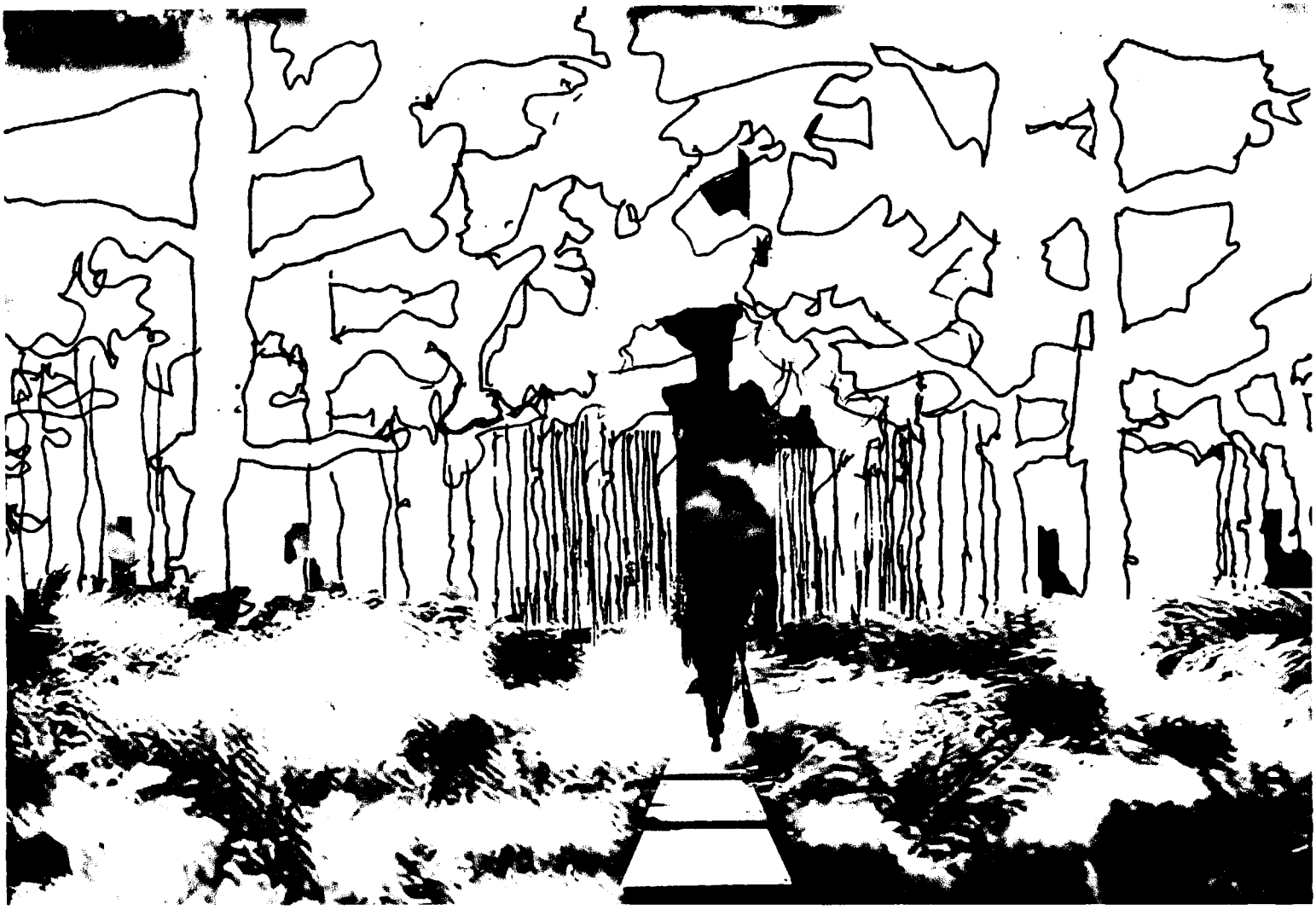



Figure 42: Prospect Sections

existing

Figure 43: Main Mall to Stadium



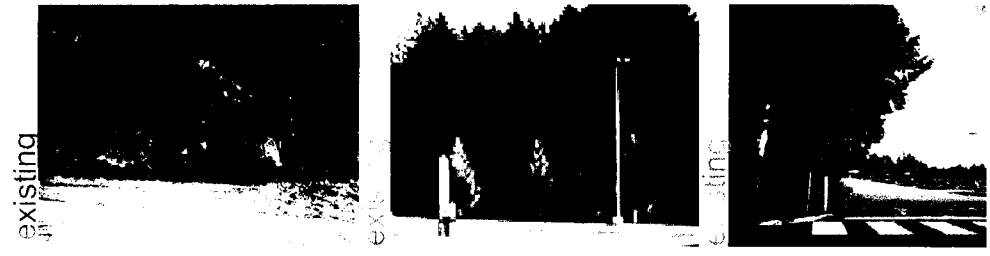



Figure 44: Forest Walk

Figure 45: Rehabilitated Rhododendron Wood

## 4.5 SITE PLAN

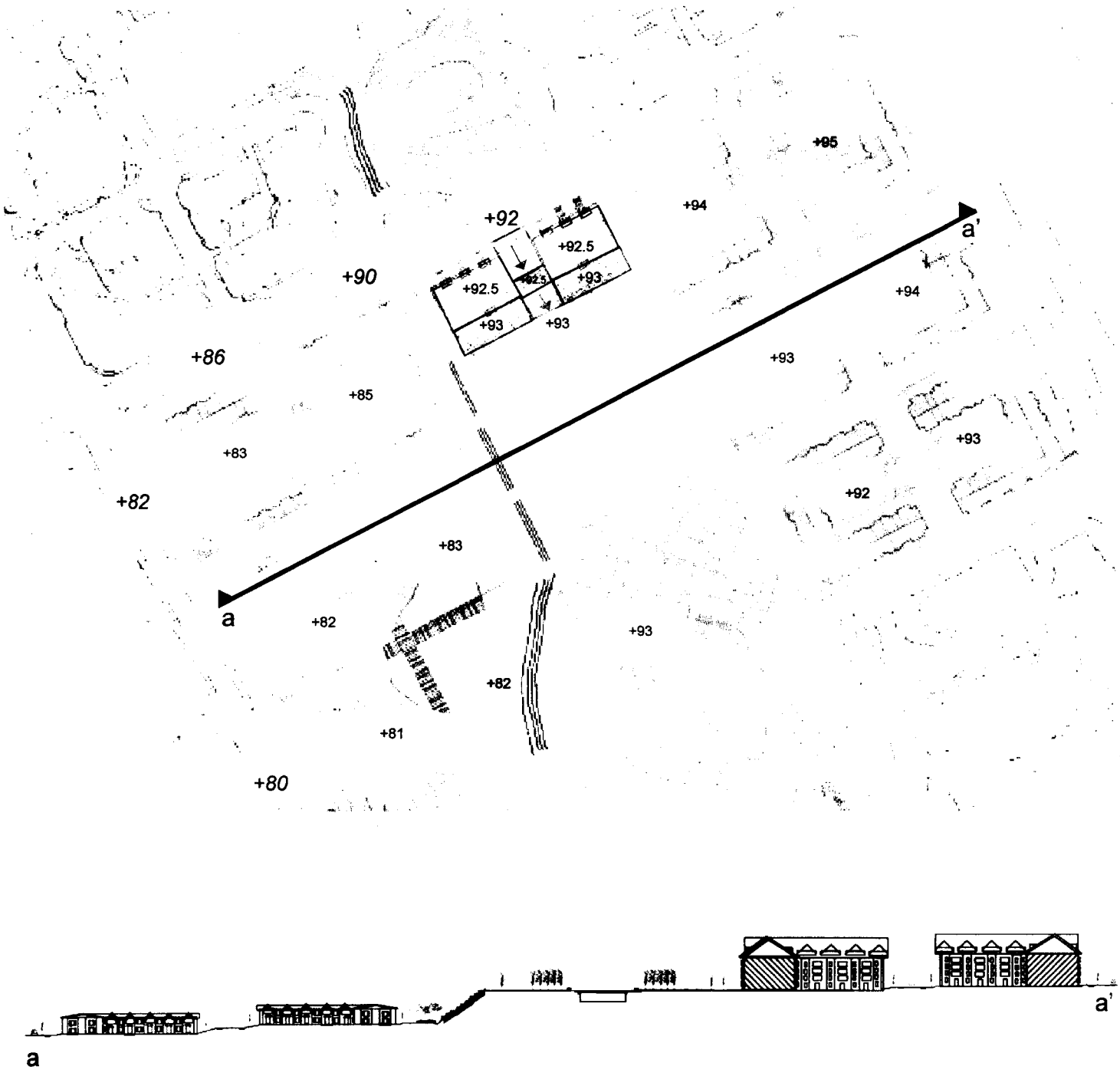



Figure 46:Site Grading

Figure 47: Site Progression

BIBLIOGRAPHY

Abrams, David. The Spell of the Sensuous. New York: Pantheon Bks, 1996.

Arnold, Henry F. Trees in Urban Design. London: Van Nostrand Reinhold Co., 1980.

Condon, Patrick M. "Zen and the Art of Garden Design: The Three Linked Gardens at the Bloedel Reserve". Ed. William S. Saunders Richard Haag, Bloedel Reserve and Gasworks Park. Princeton: Princeton Architectural Press, 1998.

Condon, Patrick M. "A Designed Landscape Space Typology, The Language of the Land We Live In". Ed. Karen A. Franck, Lynda H. Schneekloth. Ordering Space: types in architecture and design. New York: Van Nostrand Reinhold, 1994.

Condon, Patrick M. "Radical Romanticism." Landscape Journal, Vol. 10, No. 1, Spring, (1991): p. 3-8.

Cullen, Gordon. Concise Townscape. New York: Butterworth-Heineman, 1995.

Eliade, Mircea. The Sacred & Profane. San Diego: A Harvest Book, 1957.

Girot, Christopher. "Four Trace Concepts in Landscape Architecture". Ed. James Corner. Recovering Landscape. Princeton: Architectural Press, 1999.

Seamon, David. "The Environmental Contribution to Environmental Psychology". Journal of Environmental Psychology. (1982): 119-140.