

Life and Landscape: Creating Spaces for Birth

by

SHANA JOHNSTONE

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Department of Landscape Architecture

The University of British Columbia-Vancouver, Canada

Date

August 27<sup>th</sup> 2003

## **Abstract**

The need for birth centres in British Columbia is the impetus behind this project that supplies a model for birth centre design. The project explores the design of a birth centre from an historical, programmatic and experiential perspective. The birth centre is located contextually as a concept resulting from the interface between the rising medical profession and the long history and current struggles of midwifery practice in the West. Issues of women's autonomy, concerning both midwives and women giving birth, are highlighted by this historical research, and the experience of birth is at the forefront of the design agenda.

British Columbia precedents for maternity care are examined for program, spatial requirements and character. The programmatic requirements of a birth centre are developed to support a midwifery model of care, and are expanded to include an outdoor program and a spiritual program that connects the experience of birth to the natural landscape. A set of criteria for site selection is provided to account for the selection of the project site, and to be used in the selection for birth centre sites throughout British Columbia.

Site analysis describes the opportunities and constraints of the chosen site, and details the physical elements of the site that the design responds to. The site design illustrates the types of spaces necessary for the birth centre program, their organization, and their experiential character. Design components include a main facility, separate birthing suites, a gathering area, ceremonial areas, and a circulation network.

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# **CHAPTER I      Project Overview and Context**

## **1.1 Introduction**

### ***Statement of Intent***

The intent of the project is to reconnect birth with the outdoor environment. Western birth culture, by using a medical model of health care, has made childbirth an indoor, enclosed, completely controlled and disconnected activity. By working from a midwifery model of care, the project develops an area of design as yet unaddressed by the design community in general, and landscape architecture in particular. The project locates and designs a birth centre with surrounding landscape that addresses the reintegration of the human childbirth process with natural landscape and with sacred spaces. The project recognizes the many problems associated with common hospital maternity wards – from site criteria and layout of facilities, to building/landscape relationships and the role of landscape in health and ritual – and redefines the forms and uses of spaces designed for assisting with the process of birth and the recognition of this activity as sacred.

### ***Project Goal***

To develop a birth centre complex for the Sunshine Coast community, that meets the needs of pregnant and labouring women and their families. Further, the goal is also to provide a holistic model for the design of birth centres that could be used by the province of British Columbia in its consideration of health care strategies.

### ***Project Objectives***

1. To determine a set of criteria for choosing an appropriate site for a birth centre.
2. To develop a health care program for the site using a midwifery model of care.
3. To design an emotive landscape for a birth centre.
4. To introduce spirituality to a health care setting.
5. To pursue a design process based on principles of equality and empowerment; to value and incorporate women's lived experience into design.

## 1.2 Historical and Present Contexts

### *Medicalization of Birth and the Maternity Hospital*

The rise and consolidation of medical dominance in the West was in part achieved through several hundred years of violence against women. The witch persecutions of the Middle Ages in Europe served to suppress female healers or midwives, who possessed medical and obstetrical skills; the second was to use punishment against these women as a means for male physicians to gain knowledge about the body. Women, as midwives and healers, were the only general medical practitioners available to treat the afflictions of the peasant population during the Middle Ages, yet their work was viewed by the Church as threatening for midwives relied not on faith to heal, but on empirical methods of trial and error. Furthermore, by healing the poor, women challenged Church doctrine that stated that sickness was a judgment passed by God on sinners. And perhaps worst of all, the midwife was a *woman* and a *nonprofessional* whose skills were more effective than those of professional male physicians. Her skills were attributed to magic (because surely *women*, as the embodiment of original sin, could not possess such medical knowledge) and were associated with evil and the devil; midwives were accused of witchcraft. The professionalization of medicine in the thirteenth century barred women from seeking medical training. It also charged with illegal practice anyone who practiced healing arts without recognized training. This of course meant that midwives, who were women without such recognized training, and unable to seek it because of their gender, could be brought before the court.<sup>1</sup>

During the fourteenth to the seventeenth centuries, the Church, State, and medical profession together campaigned to exterminate the “witches” whose activities threatened the authority of all three institutions. In witch trials the physician was called upon as “expert” in identifying witches, thereby gaining legitimacy for his profession. The Church further legitimized the profession by “denouncing non-professional healing as equivalent to heresy.”<sup>2</sup> Through witch trials, with their punishment of death, the practice of midwifery was nearly wiped out, leaving room for male physicians to take over those services which midwives had once provided, specifically support for pregnancy and childbirth.

In North America, the history of the maternity hospital reveals the sexist (as well as racist and classist) influences behind the design of hospital space. Before the existence of hospitals women gave birth at home with the help of other women. Midwives attended births in women’s homes, in spaces which women had relative control over. During the mid-nineteenth century, the rising male medical establishment actively sought control over the female processes of reproduction. To achieve this end, they outlawed the woman-centred profession of midwifery, and established maternity hospitals. Usually sponsored and run by businessmen, clergy, or community leaders, the maternity hospital functioned to provide both medical

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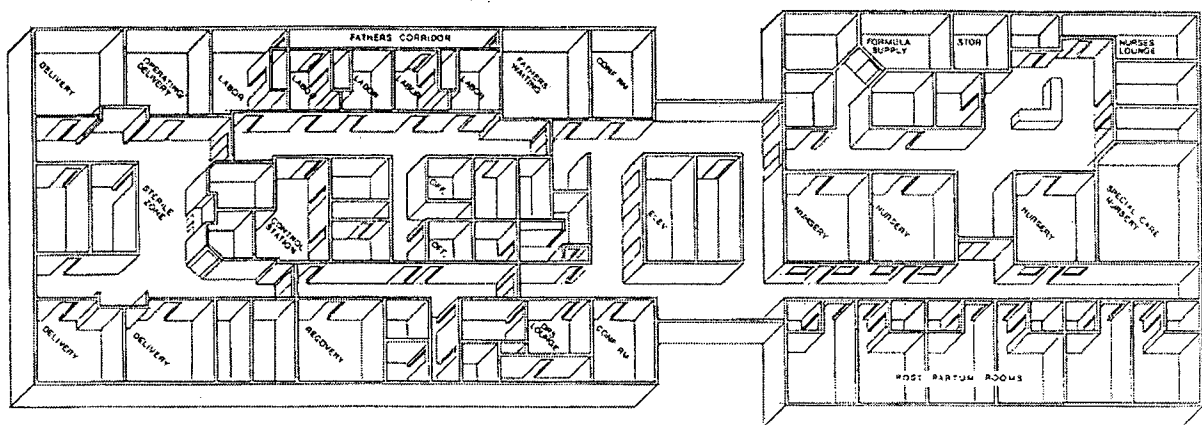
<sup>1</sup>Ehrenreich, Barbara, and Deirdre English. (1973) *Witches, Midwives, and Nurses: A History of Women Healers*. New York: The Feminist Press at The City of New York, 1-20.

<sup>2</sup>Ibid., 19.

treatment and moral reform. The male medical profession used these hospitals to remedy its own ignorance of female physiology and reproductive functions; since the patients were of low social standing and therefore reliant on the charity of the hospital to deliver their children, they were in no position to resist the examinations of doctors who wanted to use what they learned on poor or “fallen” women in the hospital to treat respectable women at home.<sup>3</sup>

The maternity hospital was promoted by the medical establishment as the safest place to give birth, and soon all women went to the hospital for labour and delivery. Though the hospital at this time was a breeding place for disease, and the home was by comparison a far safer environment for delivery, doctors promoted hospital birth in an effort to centralize medical care and gain control over their work space.<sup>4</sup>

The hospital, as a work environment, was designed to control and supervise childbirth (see Figure 1). Leslie Wiseman explains: “Like factories and office buildings, obstetrical units were spatially organized to operate efficiently. Specialized tasks and workers were separated in assembly-line fashion, fragmenting both the process of birth and the space in which it occurred into three “components”: the labour and delivery suite [comprised of three rooms - labour, delivery, and recovery rooms], the newborn nursery, and the postpartum nursing unit.”<sup>5</sup> Ideally, all components were located in a spatially contiguous relationship, though built floor plans show that often they were not. Work routines were developed for the convenience of staff, not for the woman and her family. Until relatively recently, patients were isolated from their families, and were moved around the hospital according to staff schedules and the location of equipment. “Like a product being processed in a factory, the childbearing couple was controlled and manipulated by the hospital’s rigid policies and overwhelming maze of spaces from the moment they entered the admitting office.”<sup>6</sup>



**Figure 1** The hospital maternity ward compartmentalizes the process of birth for efficiency and control. Not to scale.

<sup>3</sup> Weisman, Leslie. (1992) *Discrimination By Design: A Feminist Critique of the Man-Made Environment*. Chicago: University of Illinois Press, 49.

<sup>4</sup> Ibid., p.50.

<sup>5</sup> Ibid., p.52.

<sup>6</sup> Ibid., 52.

## ***The New Midwifery and the Birth Centre***

Within Canada, small groups of midwives have continued to provide midwifery care and attendance at home births to small numbers of women. These midwives were paid directly for their services by their clients. Midwives could not practise within the hospital, although with a labour that required emergency transport from home to hospital, they would often accompany the woman as a "labour coach."

Within the last ten years the profession of midwifery has been making a comeback, though Canada was the last developed country to recognize midwifery.<sup>7</sup> Canada's legislation is enacted separately in its different provinces. Of these, Ontario, British Columbia, Alberta, Manitoba and Quebec has begun the process of integrating midwifery into their health care systems, and Saskatchewan and Nova Scotia intend to do the same. In British Columbia midwives provide a community-based service. They typically own their own practices, though many work from their homes, and most have privileges to admit women under their care to hospital. The ratio of home births to hospital births is about fifty-fifty.<sup>8</sup>

The midwifery model of care requires midwives to provide continuity of care, which is seen as "the basis of the partnership between client and midwife, and as necessary for informed choice. A fundamental tenet of the philosophy of care is that a 'woman's caregivers respect and support her so that she may give birth safely and with power and dignity' (CMBC, 1997)."<sup>9</sup>

Because midwifery has not had a presence in the mainstream culture of British Columbia, there are many people who remain unsure of who midwives are, how they practice, and what place the profession should have within a modern medical system. Because of this, and because of the only recent reinstatement of the legal practice of midwifery, British Columbia and most of the country remains without birth centres. Birth centres provide an alternative to the hospital, and are run under the midwifery model of care to provide clients with optimal comfort and safety.

The birth centre is viewed by some as a response to the patriarchal, controlling, and isolating nature of the maternity hospital. The birth centre is designed to be "homelike" in order to provide a comfortable, autonomous environment in which women can express their autonomy through control over light, temperature, ventilation, furniture arrangement, meals, security, visitors, and movement (see Figure 2). The labour, birthing, and recovery rooms of the hospital happen instead in a single space in the birth centre, which is designed like a bedroom. Living room and kitchen space allow the woman and her family to be together, couches and chairs provide comfortable seating, and appliances allow for meals and refreshment when desired; clients are in control of their own needs and own space for the duration of

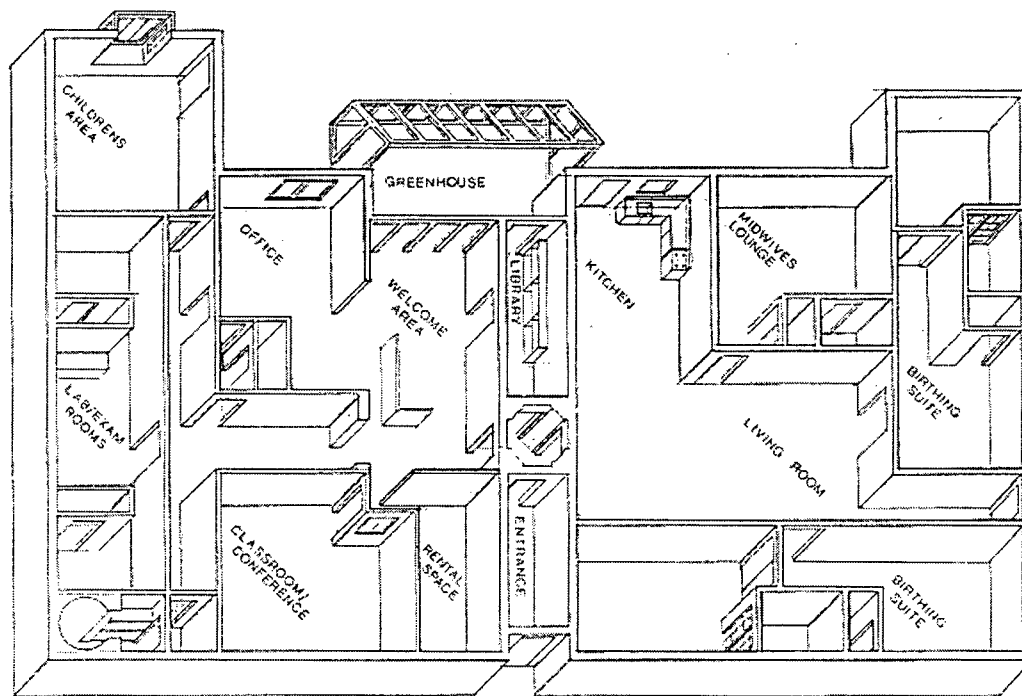
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<sup>7</sup> Page, Leslie. (2000) "Midwifery in Canada: A New Midwifery for the New World." originally published by the International Confederation of Midwives in *International Midwifery*, volume 13, number 6, Nov/Dec 2000, pp6-7. Referenced here from <http://www.bcmidwives.com/story.htm>

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

their stay. This “birthing suite” is an environment that can be manipulated by the woman to suit her needs, and can be personalized by bringing belongings to it such as photographs, sheets, and pajamas. Perhaps most important, the woman is free to move around as she needs to, rather than confined to bed and to particular rooms as determined by staff in the hospital setting.



**Figure 2** The design of one room for the entire birth process allows for continuity and control by the woman in labour. Other rooms provide for family members, midwives, staff, and prenatal clients. Not to scale.

The birth centre has clinical spaces and educational spaces for prenatal exams and classes, as well as a midwife's space and office space. It provides an autonomous workplace for midwives to demonstrate their professional competence. This alternative architectural setting seriously threatens the medical association's monopoly over childbearing activity and over women's bodies more generally.<sup>10</sup> In the birth centre professional work is been claimed by women as midwives, and women maintain control over their own bodies; the birth centre can be considered as an example of architecture that questions dominant ideologies and strives to achieve certain feminist principles. The idea of using architecture to challenge a male-centred

<sup>10</sup> Weisman, 62.

physical universe offers feminism an interesting and powerful venue for seeking political and social change.



## CHAPTER II      Method and Research

### 2.1 Methodology

Among the objectives for the project is one that relates to method: Objective #5 states, "To pursue a design process based on principles of equality and empowerment." Following some preliminary research, the methodology for the project focuses on the birthing experience due to the significance of the birth event in our lives. To this end, multiple means were employed to deconstruct this experience into the components that give it such powerful meaning. The methods ultimately allowed for the exploration of spatial form and size, aesthetic quality, the body, ritual, landscape context and the power of place.

To address this objective, research was undertaken to explore the experiences of women in a typical birth setting. A site visit to B.C. Women's Hospital in Vancouver, revealed the physical context in which the majority of women in British Columbia give birth – in a hospital environment. It should be noted that B.C. Women's Hospital<sup>11</sup> is considered by the medical profession to offer first rate facilities and expertise. Additionally, BC Women's Hospital offers low-risk patients<sup>12</sup> its single room maternity unit known as Cedar Square, which is configured differently from its regular maternity unit and offers some notable improvements in terms of patient experience. The hospital context revealed a wealth of inadequate spaces and forms, and a glaring lack of complimentary programming.

British Columbia does not have a birth centre, and so this experiential setting could not be research first hand. However, a visit to Pacific Midwifery Practice<sup>13</sup> was undertaken for several reasons. Though not a birth centre, Pacific Midwifery provides its clients with professional services including consultation, exams, and reference material. (A midwife will provide her support to her client at the time of birth in the hospital setting, or at home.) The program that occurs in this space was recorded for use in the design of a very similar program for areas of the project site. In addition, the very small area utilized by Pacific Midwifery Practice was useful in determining the space requirement thresholds and layout possibilities of the project. Further, the character of the space was documented by way of contrast to the hospital setting.

Birth Centre precedent was researched in hard copy and online publications to inform both program and spatial design.

To continue to address Objective #5, anthropometric studies were used to determine space requirements of labouring women. This included spatial needs for both labour

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<sup>11</sup> BC Women's Hospital is located at 4500 Oak Street, Vancouver, BC, V6H 3N1.

<sup>12</sup> The use of the term "patient" is consistent with the medical model of care, differing from the term "client" used in midwifery models of care. The terms indicate a variance in the level of autonomy held by the subject, and as such is relatively indicative of the subject's birth experience.

<sup>13</sup> Pacific Midwifery Practice is located at 680B Leg-in-Boot Square Vancouver, BC V5K 3J5.

and delivery, as well as for support people and for the possibility of emergency transport. The studies included ergonomic research into types of labour and birthing positions, in order to determine the physical requirements of the project design that would support labouring women.

Documentary video was viewed for insight into the body form and movement of the labouring woman. The video titled, "Birth Into Being: the Russian Waterbirth Experience," provided the invaluable opportunity to view birth in a landscape context. In this video women are seen to labour and birth outdoors, a sight which is completely unfamiliar to the North American population and which makes many people uncomfortable. The unquestioned association of birth with the indoor environment has restricted the design of maternity facilities.

Architectural precedent studies of structures that incorporate outdoor elements into the design were undertaken to inform building massing and building/landscape relationships, and also for material inspiration.

Birth rituals cross-culturally were noted for their requirements of form and materials, as well as for their contribution to the overall birth experience. This also contributed, to Objectives #3 and #4, involving emotive landscapes and spirituality.

The selection of the project site involved a detailed exploration of coastal properties along the Sunshine Coast. The area surveyed ranged from Roberts Creek, 13 km south of Sechelt, to Pender Harbour, 40 km north of Sechelt – a total distance of approximately 53 km plus the additional distance along the shores of Porpoise Bay within Sechelt. The project site was selected for its conformance to a pre-determined (by the author) set of criteria, as well as for its strong *genius loci*, or the spirit of place.

## 2.2 Research Findings

### ***B.C. Women's Hospital***

The hospital environment was found to impact the experience of birth in a number of ways:

*Arrival:* the hospital is located in an urban setting, with little distinction between the urban secular environment and environment of the hospital. Parking dominates the entrance (see Figure 3).

*Views:* no windows in the maternity ward, and no outside doors. Cedar Square single-room maternity unit has windows, and views are to other hospital and institutional buildings.

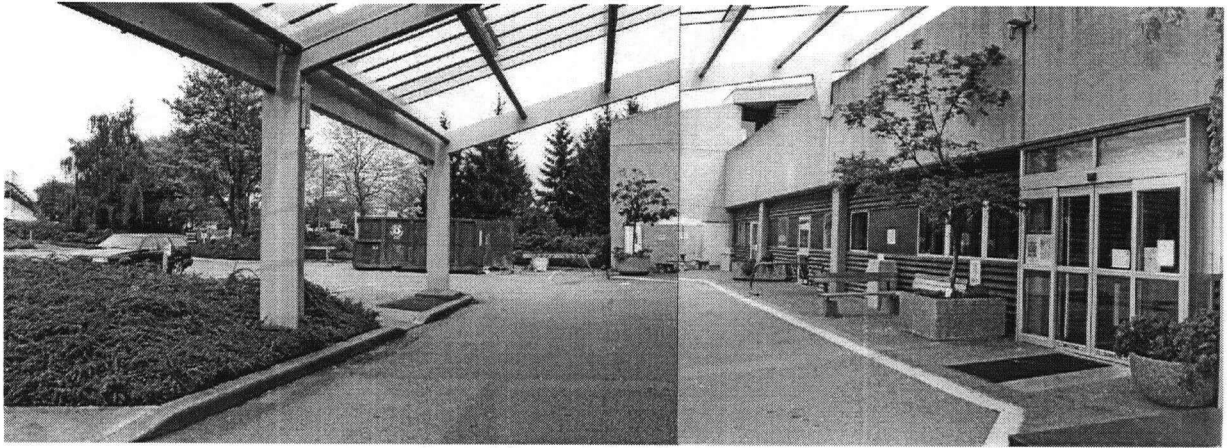
*Outdoor connections:* patios (in Cedar Square) are devoid of shade, plant life, and cover. Some patios are completely closed off to visitors and patients (see Figure 4).

*Circulation:* indoor pathways (hallways) are the only walking area provided for the labouring woman. Lack of landmarks makes wayfinding difficult, and walking is generally limited to within the ward.

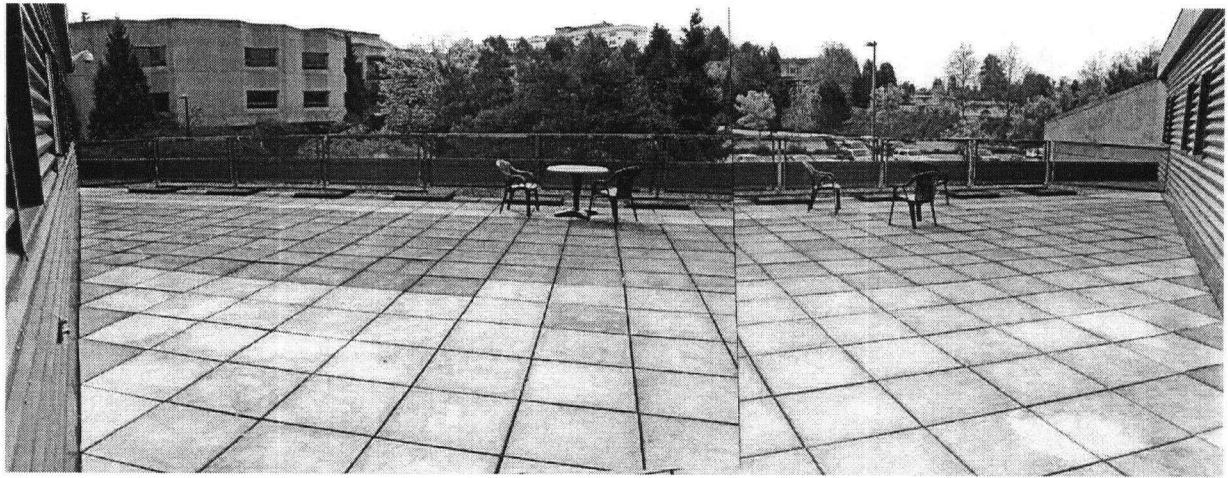
*Autonomy:* no control over space within the maternity ward. In Cedar Square there is some control over air temperature, some privacy with curtains at doors, and increased security through location and small size of unit within the hospital.

*Aesthetic quality:* maternity ward has no daylight, only fluorescent light. Walls and floors are devoid of colour, pattern and warmth. Hospital maternity beds are limiting (see Figure 5). Cedar Square is somewhat less sterile through the addition of ensembles, wood panelling on wall cupboards to hide medical equipment, and warmer colours (see Figure 6).

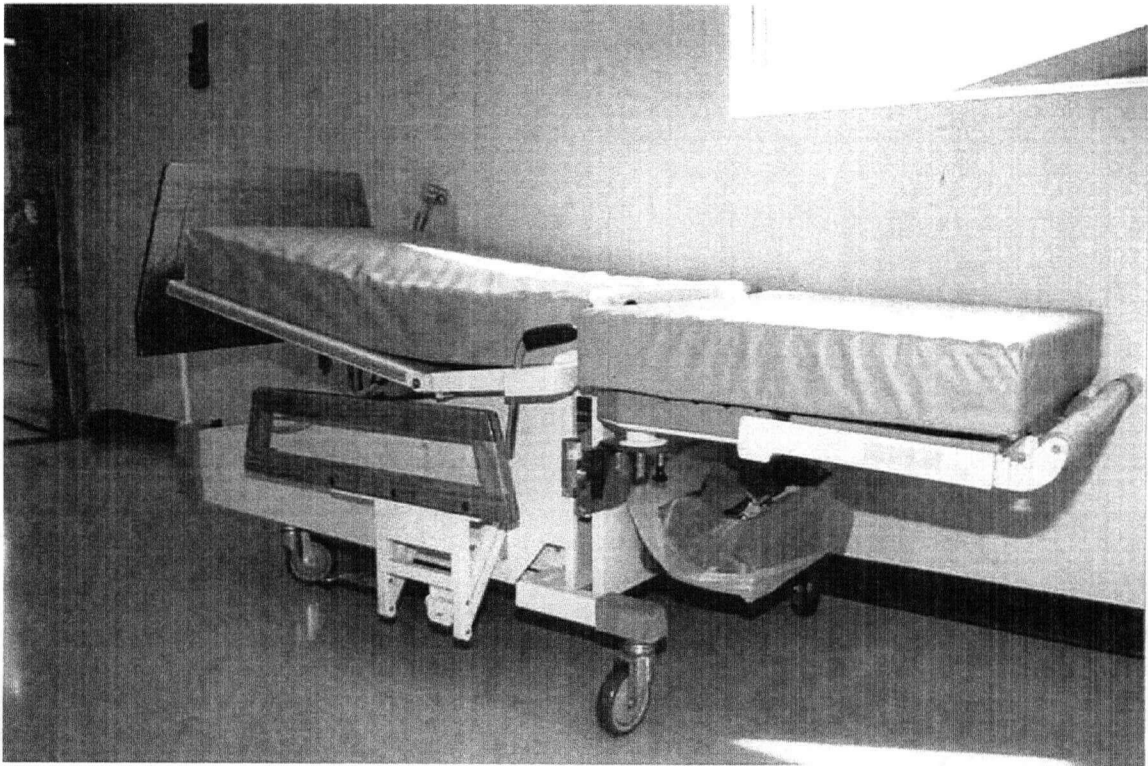
*Extended Program:* the maternity ward's only program is for the controlled delivery of infants, with separate rooms for labour and delivery, and very small "over-flow" rooms. Cedar Square has been designed for labour and delivery to occur in the same room, and this room is larger than those of the ward. Cedar Square also has the additional programs of a lounge/kitchen for client and family use (though this room is not particularly well designed for practicalities or user comfort), and patios (though again, these are not well designed as described above).



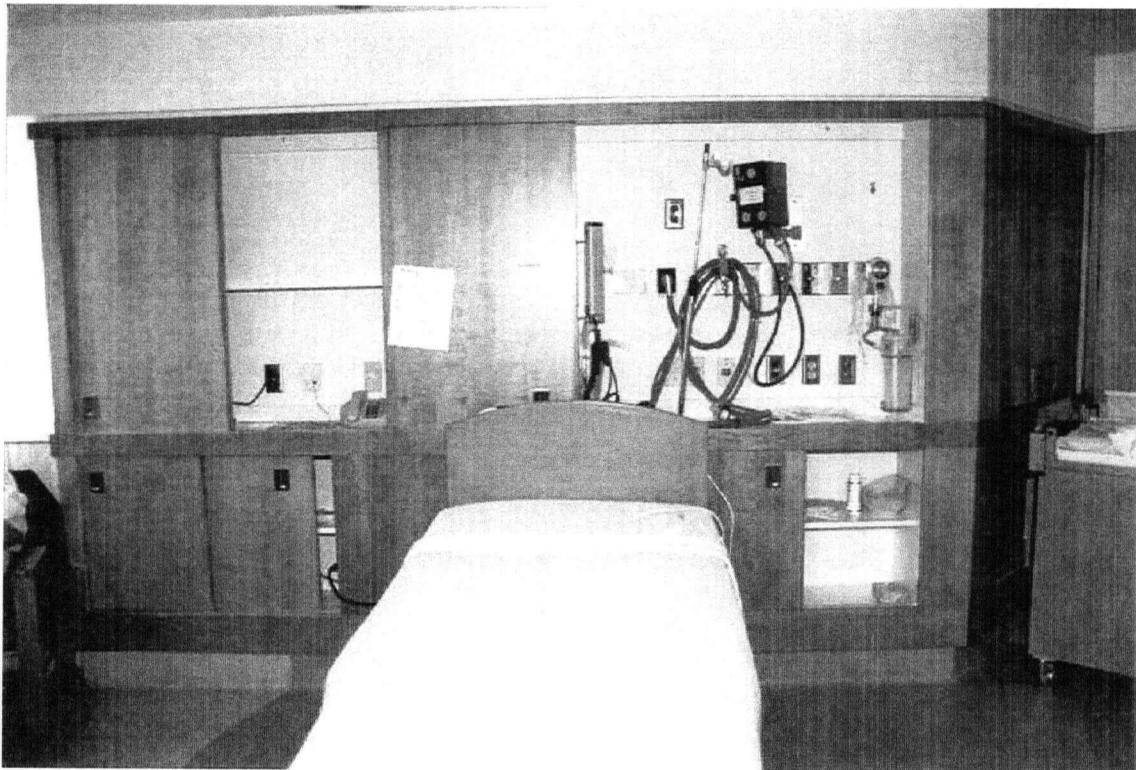
**Figure 3** Arrival at B.C. Women's Hospital. Design emphasis is on parking, cover, vehicle circulation, and asphalt.



**Figure 4** Patio at Cedar Square. Design is too large, barren, and uninviting.



**Figure 5** Hospital labour bed is too high to get out of with ease, and is too small to allow labour support person on the bed to assist.



**Figure 6** Equipment located behind bed in closets. Access to equipment by health practitioner is difficult, especially because equipment must be accessed from both sides of the bed. This requires the practitioner to continually be moving to either side.

### ***Pacific Midwifery Practice***

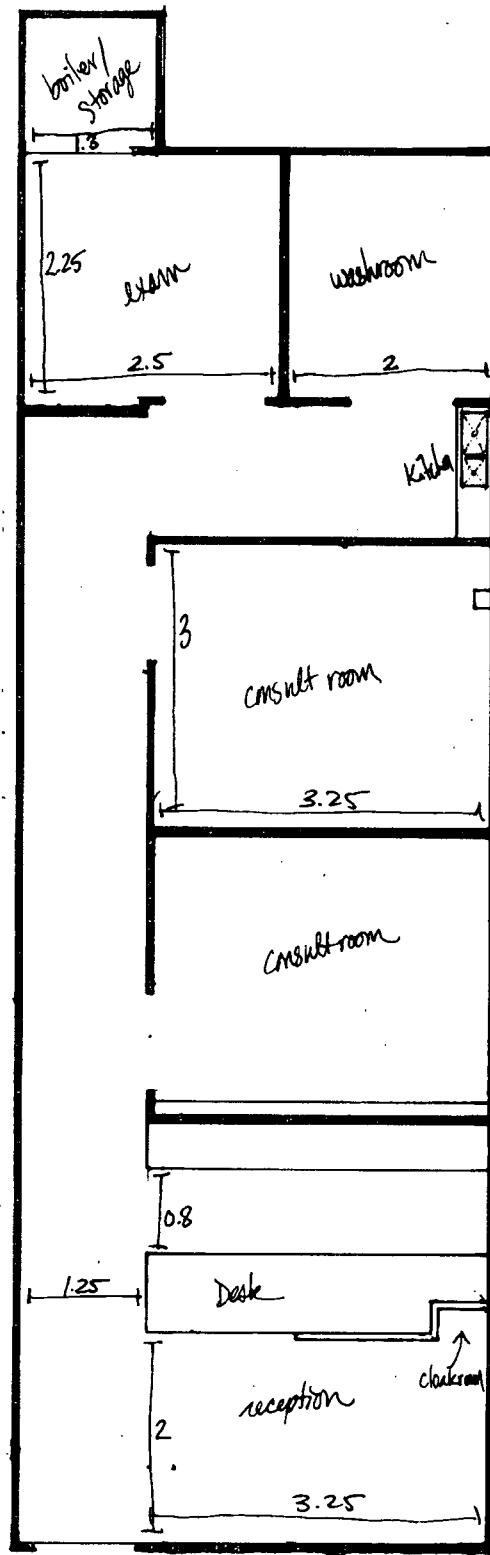
The size of spaces to accommodate program requirements were found to be examples of size thresholds (see Figure 7):

<i>Reception (client space)</i>	6.50 m <sup>2</sup>
<i>Consultation room</i>	9.75 m <sup>2</sup>
<i>Exam room</i>	5.63 m <sup>2</sup>
<i>Washroom</i>	4.50 m <sup>2</sup>

Some spaces were found too small to accommodate their intended use:

<i>Reception (staff space)</i> (see Figure 11)	5.85 m <sup>2</sup>
<i>Kitchen(ette)</i>	3.00 m <sup>2</sup> approx.
<i>Library</i>	shelves in reception
<i>Cloakroom</i>	<1.00 m <sup>2</sup>
<i>Storage</i>	<2.00 m <sup>2</sup>

Aesthetic quality of the spaces is in direct contrast to the hospital. The décor is “home-like” in its use of furnishings, textiles and personal touches, though it also conveys a professional feel. The reception area has pattern, cushions, and a view of False Creek (see Figure 8). Photographs, drawings, cards from clients, and mother-goddess imagery from several cultural influences fill the walls and ledges. Consultation rooms have couches and cushions, carpets, framed pictures and toys for children. Wood finishes give the feeling of warmth, and frosted glass provides privacy while still providing light (see Figure 9). The exam table features leopard-patterned fuzzy slippers where stirrups are usually found, providing a touch of whimsy and lessening the “sterility” and coldness of the exam room and equipment. A collage of photographs of newborn infants with their mothers covers the exam room wall (see Figure 10).



**Figure 7** Floor plan of Pacific Midwifery Practice. Space demonstrate minimum requirements.



**Figure 8** Reception area and "library."

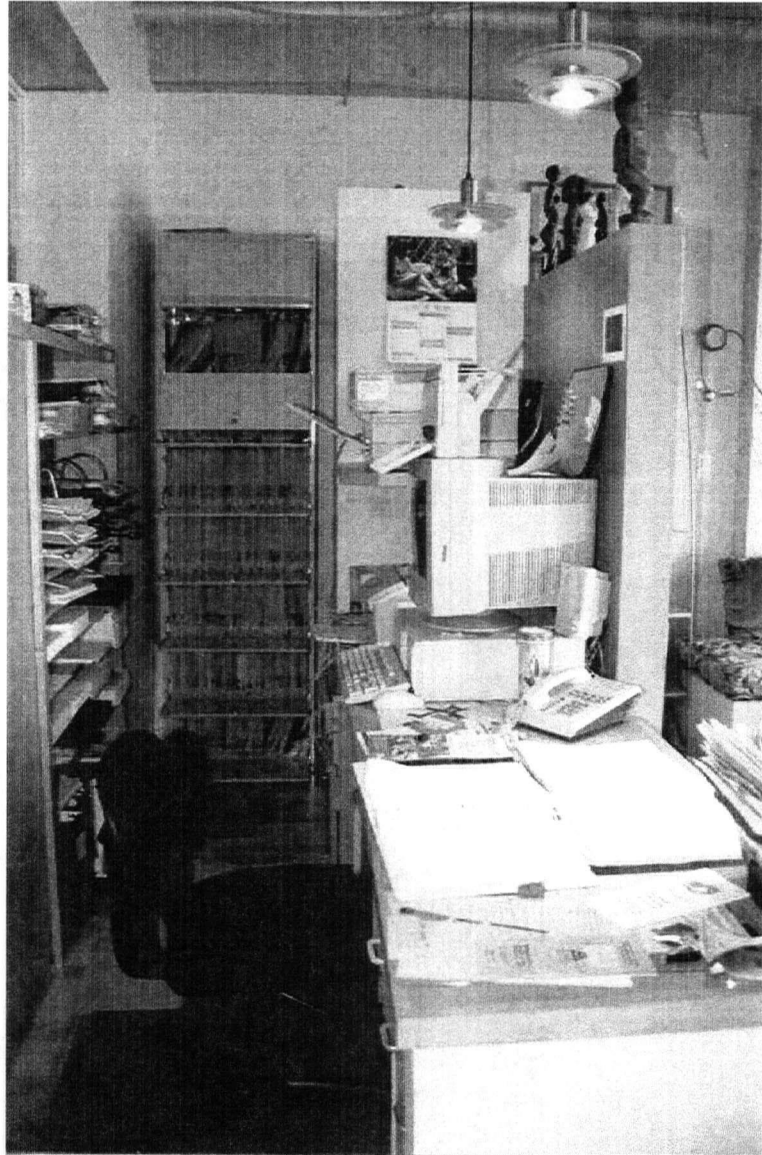




**Figure 9** Consultation room, with home-like décor.



**Figure 10** Exam room with phot collage, and exam table with slippers on the stirrups.



**Figure 11** Office area, with only 0.8m depth between desk and wall for staff member to work.

## ***Birth Centre Precedent***

Of the birth centres researched in North America, only one was found to be new construction, designed specifically for use as a birth centre, and it is modeled on the form of a house.<sup>14</sup> One birth centre in New Zealand was found designed in an alternate form, but the architecture was not particularly innovative nor comfortable.<sup>15</sup> Generally, existing houses or offices are converted to become birth centres. There is an overall lack of documentation on building form and spatial layout, but descriptions of general programs are prevalent. Birth centres typically have suites (to accommodate labour, delivery and recovery), reception, offices, exam and consultation rooms, washrooms, kitchen, lounge, and occasionally library space.

No examples of outdoor programs were found.

## ***Anthropometrics and Ergonomics***

### *Space Requirements*

- Heel space beneath benches for ease of standing
- 2m minimum width of paths for walking during labour. Width accommodates labouring woman, midwife, and additional support person.
- Paths require handrails or support structures for leaning
- Handrails rounded for gripping
- Body shape distances woman from support structure; design to accommodate
- Raised footrest to relieve back ache, at approximately 0.3m
- Double beds as minimum bed size to allow multiple labour positions and multiple support people
- Access to a minimum of 2 sides of the bed
- Access to a minimum of 2 sides of a birthing tub/pool

## ***Labour and Delivery Choreography***

### *Early Labour*

- leaning against something while releasing pelvis and hips during a contraction
- relaxation necessary for dilation
- access to food and drink
- exams

### *Active Labour*

- located near bed – fluid for drinking, massage oil, towels, heating pad, etc.
- squatting with each contraction, walking between contractions
- sitting cross-legged with someone behind for support
- hands and knees position with pelvic rocking to encourage rotation

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<sup>14</sup> Optimus Architecture Website. <http://www.optimusarchitecture.com/healthcare.html>

<sup>15</sup> The Waterford Birth Centre can be found at <http://www.riverridge.co.nz/waterford/index.php?ctnt=about.htm>

### Heavy Labour-Transition

- exams
- squatting, standing, kneeling
- laying out of instruments, equipment
- hot water

### Delivery Positions

- hands and knees
- semi-sit
- squatting with support
- lying on one side with leg raised

### Third Stage

- deliver placenta, cut cord

### Postpartum Watch

- observation

## ***Architectural Precedent***

Based on observations from architectural precedents (though not birth centre precedents), the following architectural strategies will contribute to the success of the birth centre's program:

### *Materials*

- wood structural members and finishes, particularly cedar and hemlock for their warm colour and presence on the site
- glass wall sections in direction of views; skylights, monitors or roof sections
- granite boulders for building foundation elements and in landscape design (material found on site)
- driftwood (large, non-split logs) for labour support (material found on site)
- rough-cut and polished granite detailing

### *Landscape/Building Integration*

- light wells
- place buildings around trees
- allow trees to pass through building structure
- forms of structures to mimic/respond to natural forms
- capture rainwater
- feature views
- use unprocessed natural material (from site where possible)
- enclosed gardens/natural areas
- clustering of smaller structures instead of one large structure
- interior plantings

## **Ritual**

The predominance in primitive and ancient societies of separate structures for birthing has multiple explanations, perhaps, but all such structures can be characterized as a warm, dry place. The degree of seclusion is often linked to the fear of blood, or fear of the spirits thought to close at such a time.<sup>16</sup> There is also a degree of secrecy that shrouds the work of women as birthing mothers and as midwives (or the cultural equivalent of the role).

The following are some cross-cultural examples of birth rituals that inspire the project design in terms of ritual content, materials, and spatial requirements:<sup>17</sup>

*In Siam, birthing women exposed their naked abdomens to a constantly-burning fire for 30 days as part of a **sacrificial purification**.*

*Huron and Iroquois women were secluded for 40 days in a small **structure outside of the village**. Holes were **dug into the floor** of the structure to receive the bodily discharges from birth. Birth beside a **stream** was considered a favourable spot, particularly to wash the newborn infant.*

*Women from the Brazilian Caraya tribe would **squat** during labour and **grasp an outdoor house post or tree**, while their husbands squat behind them and press their hands on the contracting womb. In other tribes, fathers **paint** the newborn with **red** and **black** pigment.*

*A **slow procession around the lying-in structure** would include the mother carrying her child while others rang bells and **shook palm branches**.*

*The Hebrew word for **birth stool** or chair is "ovnayim," which translates as "**two stones**."*

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<sup>16</sup> The issue of seclusion has been a matter for debate among anthropologists and among feminists, who disagree both within and across these disciplines as to the significance that seclusion has on women's social status. My intent here is to simply reference the physical separation of labouring women, and to explore how a small degree of separation can benefit the functioning of a birth centre and the experience held by women and their families.

<sup>17</sup> References extracted from Sumner, P. and Celeste Phillips. (1981) *Birthing Rooms: Concept and Reality*. St. Louis, The C.V. Mosby Company.

## CHAPTER III      Program for a Birth Centre

### 3.1 Main Facility

Administration	27 m <sup>2</sup>
Reception	25 m <sup>2</sup>
Offices	30 m <sup>2</sup>
Exam rooms (2)	28 m <sup>2</sup>
Library	18 m <sup>2</sup>
Lounge	30 m <sup>2</sup>
Classroom	56 m <sup>2</sup>
Exercise room	112 m <sup>2</sup>
Laundry room	18 m <sup>2</sup>
Washrooms (3)	20 m <sup>2</sup>
Staff area	27 m <sup>2</sup>
Kitchen	10 m <sup>2</sup>
Play space	20 m <sup>2</sup>
Mechanical room	20 m <sup>2</sup>
Sterilization area	10 m <sup>2</sup>
Storage	5-10% of total area

**Total** *approx. 400 m<sup>2</sup> minimum floor area*

Parking (24)  
Sitting garden/courtyard  
Herb garden  
Garden Shed  
Lawn area

### 3.2 Birthing Suites

<i>Midwife's Suite</i>	
Bedrooms (2)	24 m <sup>2</sup>
Office	25 m <sup>2</sup>
Lounge	35 m <sup>2</sup>
Kitchen	6 m <sup>2</sup>
Washroom	6 m <sup>2</sup>
Storage	5-10% of total area

**Total space** *105 m<sup>2</sup>*

#### *Birthing Suites Type 1*

Bedroom	35 m <sup>2</sup>
Tub/Pool room	10 m <sup>2</sup>
Washroom	6 m <sup>2</sup>
Kitchen	20 m <sup>2</sup>
Storage	5-10% of total area

**Total space (x2)    80 x 2            160 sq/m**

#### *Birthing Suites Type 2*

Bedroom/Lounge	90 m <sup>2</sup>
Pool room	10 m <sup>2</sup>
Washroom	6 m <sup>2</sup>
Storage	5-10% of total area

**Total space                            110 sq/m**

Meditation room	21 m <sup>2</sup>
Helipad/Lookout deck	256 m <sup>2</sup>
Parking (5)	
Labour Garden	
Reflection Garden	
Paths	
Focus points	

### **3.3 Outdoor Spaces**

#### *Community Gathering Area*

Large open area required for celebrations, community events, play.

#### *Ceremonial Areas*

Multiple areas required, accessible from delivery suites, with a strong outdoor presence. Different spaces conform to different ceremonies. Size varies greatly. Intended for both day and night use.

#### *Viewing platforms*

To provide views of the bay and of the "Sheltering Rock," for large or small gatherings. Requires high and secure railings.

#### *Park access*

Clear separation between private space of the centre and public park space; park entry must be accessible for labouring women.

#### *Paths*

Connecting main facility to separate delivery suites, meditation and ritual spaces, viewing platforms, and Sargeant Bay Provincial Park. Min. 2m width, with downcast night lighting.



#### Emergency Access

Vehicle access for fire trucks and ambulances to the main facility, gathering area and birth suites at grade.

#### Caretaker's Residence

Provision for 24 hour management of the Centre by on-site staff.

## **CHAPTER IV     Site**

### **4.1 Site Criteria**

In consideration of the programmatic requirements and the objectives of the project established at the outset, criteria for site selection was determined.

1. Birth center should serve a mid-size community (10,000 to 30,000 people), so as to develop a model suited to the majority of B.C. communities.
2. High degree of natural (undeveloped) area located both within and around the site to provide the experience of a natural landscape setting.
3. Demand for midwifery services, as determined by a community presence of midwifery, birth rates, the presence of practitioners of alternative therapies, and/or isolation or long distance from a hospital.
4. Immediate proximity of a provincial or regional park or reserve.
5. Direct access to water, preferably ocean.
6. Undeveloped (or mostly undeveloped) site.
7. Direct access to site along significant and maintained roadways.
8. Central location to serve surrounding areas.
9. *Genius loci* – site to have strong experiential or spiritual qualities.

The project site was discovered just north of Sechelt, on the Sunshine Coast, approximately 70 km north of Vancouver. The site meets all of the above criteria.

### **4.2 Physical context**

#### *Location*

The project site is 10km north of Sechelt. Highway 101 travels along the coast and is the primary connector through the area. To reach the site, follow Highway 101 north to Redrooffs Road. Follow Redrooffs Road west for approximately 1km, to site access road/driveway.

The site is on the waterfront of Sargeant Bay, adjacent to Sargeant Bay Provincial Park and a private property to the west, and undeveloped district land to the east.

There is currently shared access to the site and to the park via Kenyon Road. This is for secondary park access only, primarily for cyclists.

### Size

The site measures approximately 6 ha (14 acres).

### Vegetation

Site visits confirm the following species are present on the site:

Trees species consist mainly of red cedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*), red alder (*Alnus rubra*), and Douglas fir (*Pseudotsuga menziesii*). Site visits also revealed significant amounts of arbutus (*Arbutus menziesii*), and occasional Big-leaf Maple (*Acer macrophyllum*).

Understory species are numerous, and include salal (*Gaultheria shallon*), red huckleberry (*Vaccinium parvifolium*), black twinberry (*Lonicera involucrata*), snowberry (*Symphoricarpos albus*), nootka rose (*Rosa nutkana*), vine maple (*Acer circinatum*), deer fern (*Blechnum spicant*), sword fern (*Polystichum munitum*), Oregon grape (*Mahonia nervosa*), roadside rock moss (*Racomitrium canescens*), hoary rock moss (*Racomitrium lanuginosum*).

Less than 10% of the site has been cleared of vegetation, though for those areas that have been cleared, soil conditions make re-establishment of vegetation difficult.

Extensive plant species identification within the Park has been conducted by the Sargeant Bay Society.<sup>18</sup> Many of the species found in the lower reaches of the Park can be assumed to also be present on adjacent sites, such as the project site.

### Geomorphology

The rock of the Sechelt Peninsula originally formed in an offshore volcanic island arc. The movements of the Earth's tectonic plates carried this rock downward beneath the edge of continental North America. They melted under intense heat and pressure to recrystallize as the granitic rocks that now form the Coast Mountains, the Sechelt Peninsula, and much of the surrounding area.

Many variations in these rocks can be seen on the beach of Sargeant Bay. The bedrock exposed within the park and in adjacent sites, however, shows little variation. This bedrock is classified as diorite, one of a number of igneous rock types loosely referred to as "granite." It is comprised of medium-grained, interlocking crystals of the black mineral hornblende and greyish white plagioclase feldspar.

Where the project site is located, northeast of Colvin Creek, there are extensive outcroppings of diorite bedrock, with only a thin, discontinuous veneer of soil in pockets between outcroppings.

The wetland, located within the park adjacent to the beach and to the project site, is a product of eroded sediments from the bluffs west of the bay. Wave action carried the coarser material towards the head of the bay, where it accumulated to form a barrier

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<sup>18</sup> Plant species list for Sargeant Bay Provincial Park is available at <http://www.sargbay.ca/PlantList.pdf>

berm protecting a tidal lagoon. The build-up of gravel eventually sealed off the entrance to the lagoon and silt flushed down Colvin Creek was trapped behind the berm. Silting up of the lagoon allowed freshwater marsh vegetation to become established, creating a wetland ecological system that is unique on the Sunshine Coast.<sup>19</sup>

### *Topography*

The project site is moderate to steeply sloping (see Figure 12). Slope analysis reveals approximately 20% or 1.2 ha of the site has slopes of between 0 and 10%, 40% or 2.4 ha of the site has slopes of between 11 and 30%, 15% or .9 ha has slopes of between 31 and 50%, and approximately 25% or 1.5 ha has slopes of over 50%. The pattern of contours is drawn northwest to southeast across the site. There were no streams observed, but water was seen to weep from the base of large granite outcroppings.<sup>20</sup>

### *Climate*

Sechelt is characterized by mild, moist winters and relatively dry summers. Temperatures on the Sunshine Coast range from 0 degrees Celcius in winter to highs of 30C in summer. The annual rainfall is approximately 100cm. The Coast is sheltered from winds by Vancouver Island. Milder weather patterns also contribute to very light snowfalls in the region, often with no measurable snowfall at the lower altitudes.<sup>21</sup>

### *Areas for Remediation*

The lowest areas of the site, bordering the water, have been stripped of native vegetation and habitat value. There is an opportunity here for remediation that would continue habitat in this shoreline zone from the park to the undeveloped and undisturbed land to the east. This would contribute to both ecological values as well as aesthetic and experiential values.

### *The Rock*

The large granite rock at the southwest tip of the site is the dominant feature of the site (see Figure 13). The rock measures approximately 28-30m tall, and can be seen from anywhere on the site with an open view. Though climbable, the rock houses a sensitive and relatively rare "meadow" ecosystem,<sup>22</sup> particularly on the southwest side (see Figure 14).

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<sup>19</sup> John Newell, "Geology of Sargeant Bay Provincial Park." <http://www.sargbay.ca/geology.html>

<sup>20</sup> Topographical map provided by the Sunshine Coast Regional District.

<sup>21</sup> Sechelt Chamber of Commerce website. <http://www.secheltchamber.bc.ca/sechelt.html#CLIMATE>

<sup>22</sup> Information provided by the property owner Bev Miller.

### Views

There are significant views out from the site, at short range (the rock), mid-range (the park and bay), and long range (Vancouver Island). (See Figure 15)

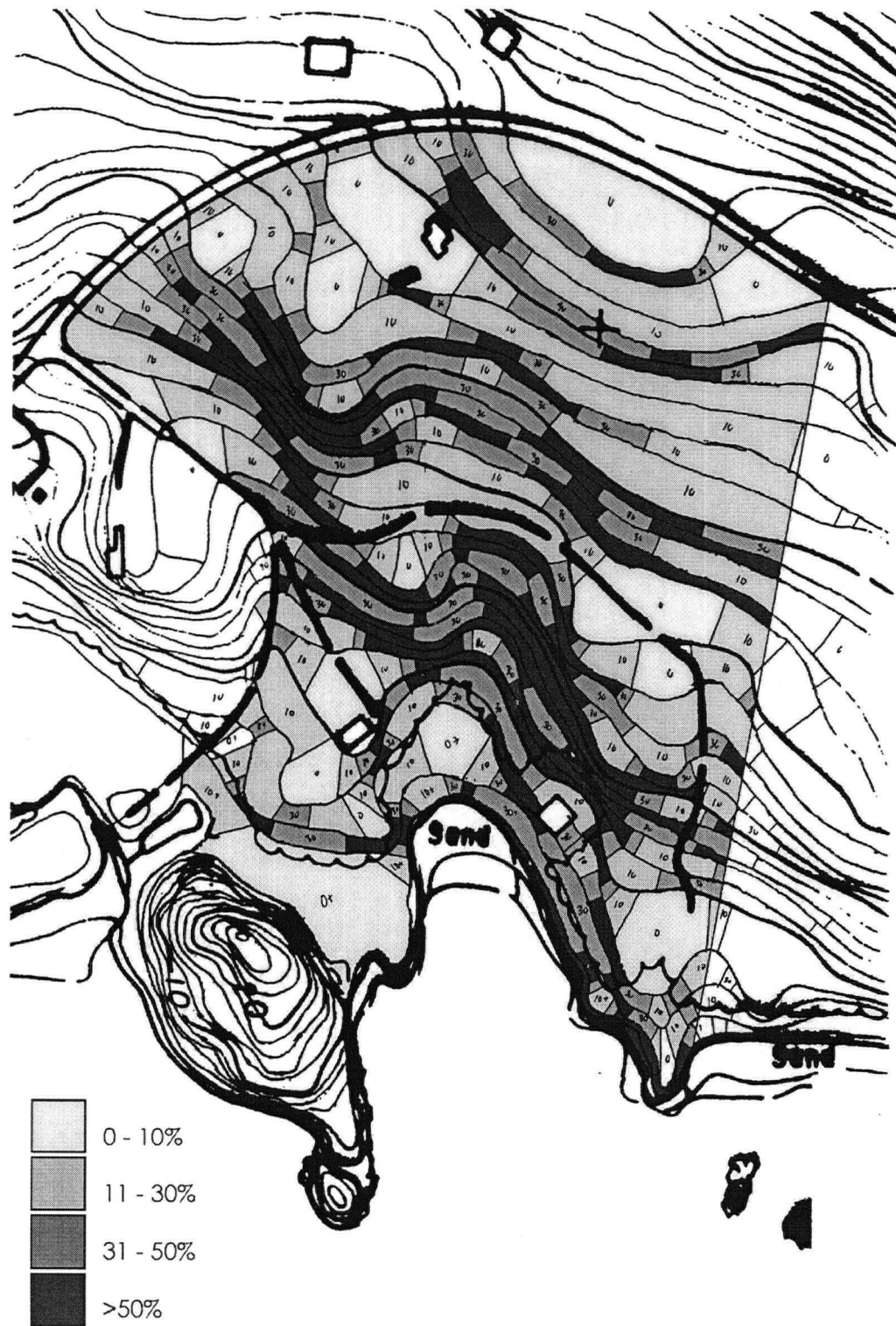


Figure 12 Slope analysis map.



**Figure 13** The Rock as viewed from the park.



**Figure 14** West side of Rock.

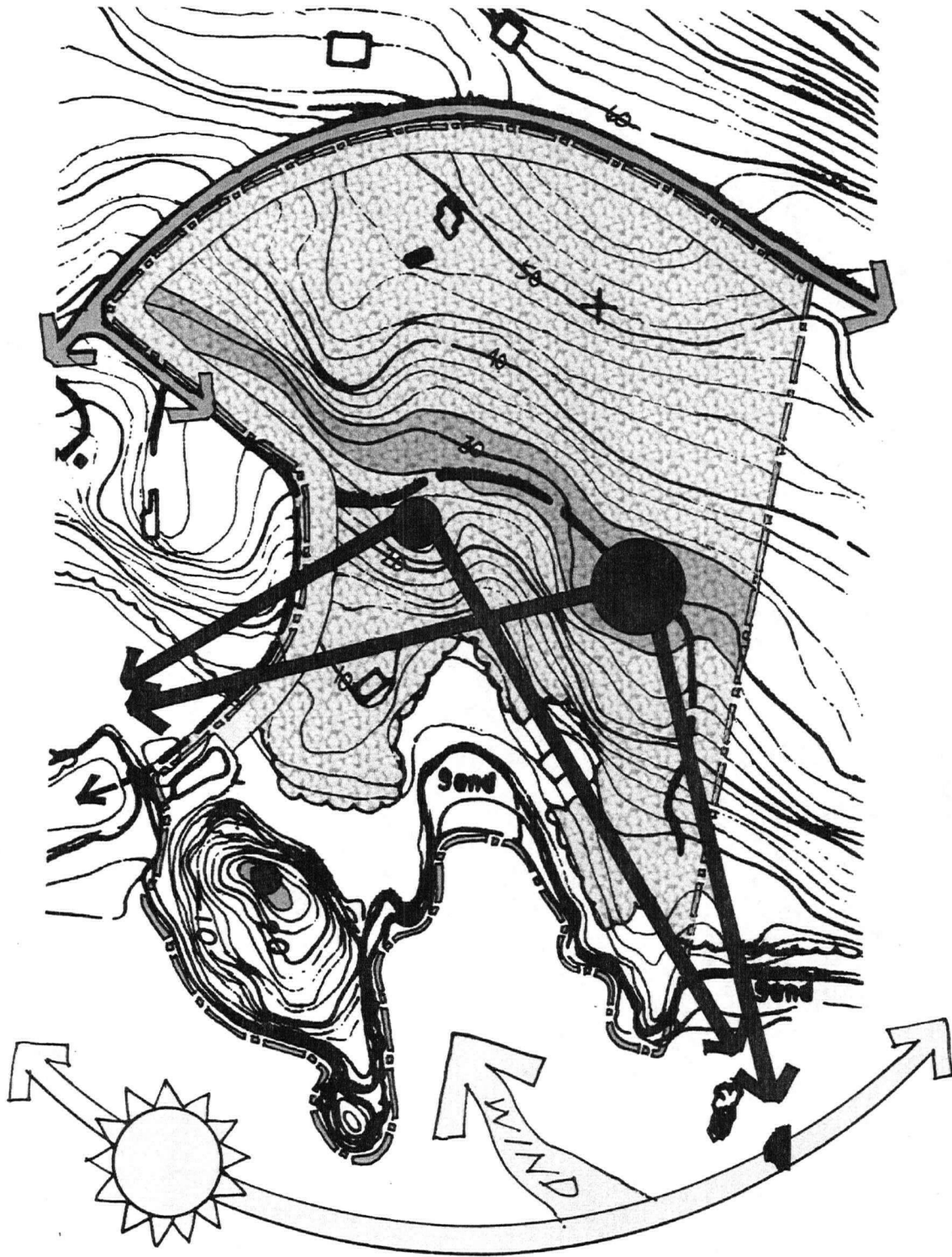


Figure 15 Vectors map.

## CHAPTER V     Site Design

To meet the building program specified for the project site, as well as to achieve Objective # 3 and #4 (to design an emotive landscape, and to introduce spirituality to a health care setting), a variety of landscape spaces were designated and designed. The following descriptions will explain the intent and purpose behind these areas, and how they work as a whole.

### 5.1 Site Organization (See Figure 16)

- 2-point access from Redrooffs Road allows ease of traffic circulation for both the main facility area and parking lot, and the Birthing Suites, ensuring that access to the Suites is unimpeded by events at the Main Facility. Both access points have signage. Secondary driveway to the Birthing Suites is gated, and managed by the caretaker.
- Caretaker residence on-site, to allow for 24 hour management of the Centre.
- Main Facility located adjacent to the public edge condition of Redrooffs Road, and visually present from the road. Provides the first point of contact for visitors to the Centre.
- Birthing Suites distanced from Redrooffs Road and from the park entry to allow for privacy. Rock plateau with moss cover provides a strong, existing view corridor to the Rock and the bay
- Gathering Area located at the centre of the site, between the Main Facility and the Birthing Suites. Access for visitors and clients via internal trails, wider pathways, or by vehicle from Kenyon Road.
- Ceremonial Areas located adjacent to the Rock at the southwest corner of the site, and also located at the southeast corner within a small clearing and with water access.
- Trails, boardwalks, and driveways connect areas internally.

### 5.2 Circulation Network (See Appendix I, *Circulation*)

#### *Vehicles*

- 2-point access from Redrooffs Road
- Indirect access from Kenyon Road to Gathering Area (back door park access)
- Parking at Main Facility for facility clients and staff (24 spaces)
- Parking at Birthing Suites for clients in labour and attendants

#### *Pedestrians*

- Path system for clients to explore and become comfortable with the site
- Paths connect building programs with landscape programs
- Ground paths and boardwalks respond to site character
- Labouring women have access to all paths, but other clients and guests do not have access to birthing suite paths



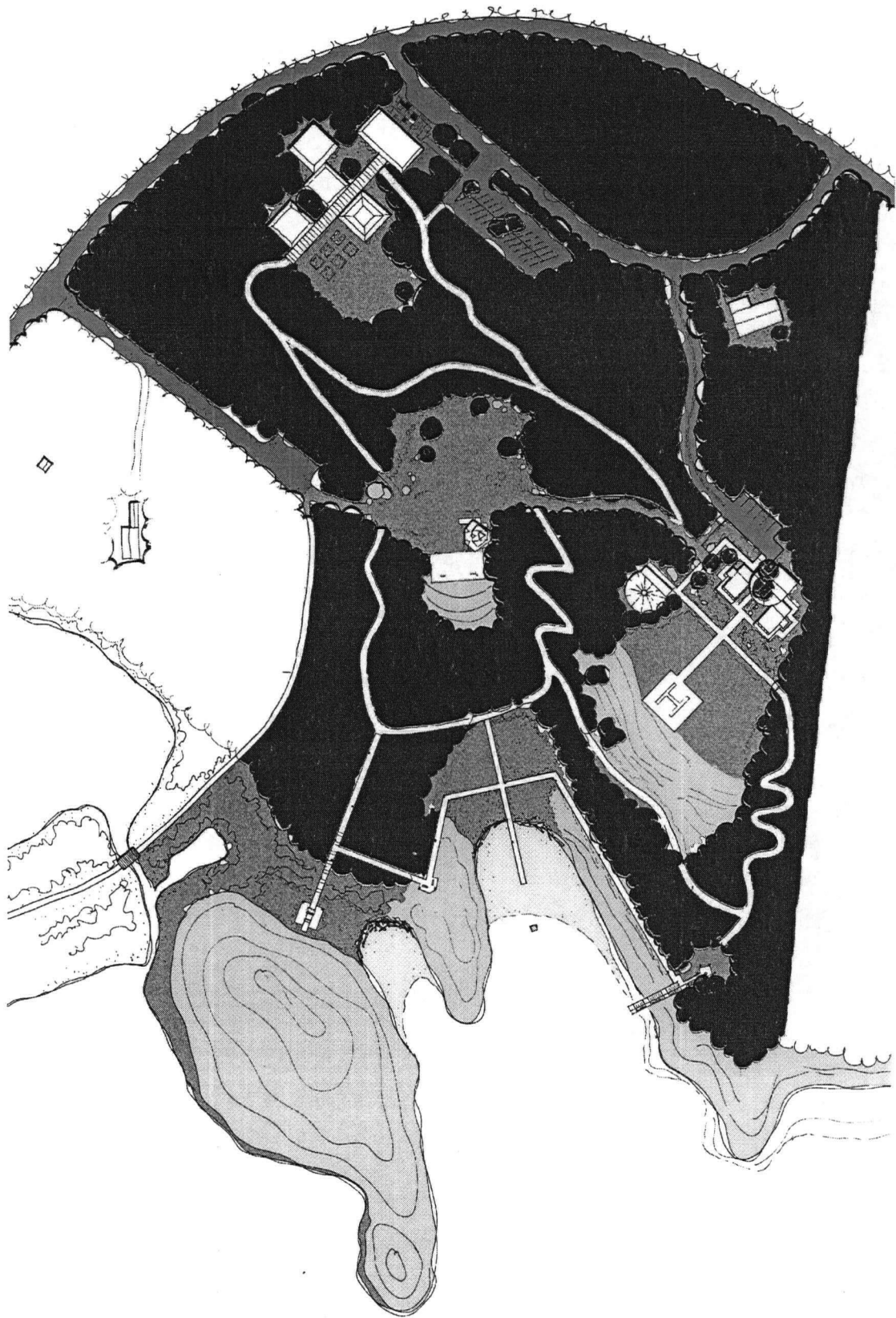


Figure 16 Site Plan.

### *Emergency*

- Emergency transport of clients in labour by Medivac to B.C. Women's Hospital in Vancouver (transport time approximately 20 minutes). The helipad requires a clear flight path and landing area with direct access to the Suites.
- Emergency vehicles (fire, police, ambulance) have 12 minute travel time from downtown Sechelt
- Emergency vehicle access to Gathering Area and Birthing Suites via Kenyon Road and fire lane through Gathering Area

### **5.3 Main Facility**

- Public presence
- Clustering of buildings to accommodate grade and to integrate landscape
- Classroom/exercise room/gathering room borders onto open lawn to allow for outdoor sessions and events
- Herb garden for practitioner use and client/visitor education
- Buildings in large clearing enclosed by forest
- Multiple connections to other areas

### **5.4 Birthing Suites** (See Appendix I, *Birthing Suites*)

- Inward-focused
- Midwife's Suite located above, for midwives, midwives-in-training, and client families
- Suites Type #1 with Reflection Garden, Labour Garden, Meditation Room, and boardwalks. Open to views. Roofs direct water to planted alcove of birthing pool rooms.
- Suite Type #2 with large, covered outdoor labour and birthing area with radiant floor heating and/or heat lamps, and access to Labour Garden and Meditation Room. Sunken room responds to topography and the typological form of the "nest." Enclosed by trees.
- Walking during labour accommodated by boardwalks, and nearby path and trails

### **5.5 Gathering Area** (See Appendix I, *Gathering Area*)

#### *Come Together*

- Community events
- Play and picnic area (hill slope good for play – rolling and tumbling down)
- Structure and deck both function as small stage or ceremonial area
- Structure captures rain water to use for a baptism or water ceremony
- Stone wall between Gathering Area and Birthing Suites celebrates each birth with the addition of a stone placed by the new parents

## **5.6 Ceremonial Areas** (See Appendix I, *Ceremonial Area*)

### *Sheltering Rock*

- Habitat restoration of low area through planting of native species found in park
- Boardwalk gives access to rock face
- Platform allows for small ceremonies (naming ceremony, wedding, prayer)
- Painting of rock face (non-toxic)

### *By Fire and Water*

- Area for naming ceremonies, baptisms, prayer, water and fire ceremonies
- Stairs give access to ocean for ocean baptism or for filling a water pitcher for the fount
- Cisterns capture and store rain water for ceremonial use or for dousing fire
- Fount and cistern tops double as fire bowls

## CHAPTER VI Conclusion

The birth centre in British Columbia has until recently been a theoretical project. Questions of what a birth centre would be like – its character, size, and program – have been answered only in the imagination. With the recognition of the profession of midwifery, and the implementation of a midwifery education programme,<sup>23</sup> there is now the support and demand for birth centres as an integral part of the province's maternity care strategy. This project is a step in the process of building much needed birth centres by progressing the idea from the realm of the imagination to that of the visual and spatial.

This project for a birth centre in Sechelt is designed as highly site- and community-specific. The program reflects the size of the community, the location of the site within the community, the natural features of the site, and the capacity of the site for an outdoor program. While many of the specific elements of this project may not be transferable verbatim to a birth centre design located on another site and in another community, the principles and intent behind the elements can be used as a model for birth centre design anywhere in the province. Of particular use is the development of criteria for site selection, the development of an outdoor program for spiritual and celebrational activities relating to birth, and the determination of spatial thresholds to accommodate particular program requirements.

The highly specific nature of the program and design of a birth centre is a requirement for the success of such a centre from the perspective of experiential quality. The experience of birth is a major event in our lives, and this experience deserves to be recognized through the design of appropriate spaces. Spaces in which to educate, assess, counsel, grow, commune, birth, worship, and celebrate are necessary to fully realize the possibilities of the birth experience. Further, the location of such spaces outdoors in a natural landscape setting allow for an experience that places the human birth process in the larger context and connectivity of all living things. In sum, the birth centre offers women a proactive space in which to assert their autonomy, a safe space in which to give birth, and an inspiring space in which to celebrate life.

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<sup>23</sup> This program is at the University of British Columbia, Vancouver, B.C. The program welcomed its first students in 2001.

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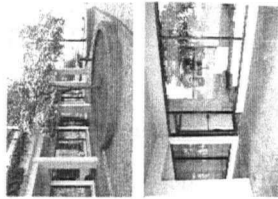
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## Appendix I

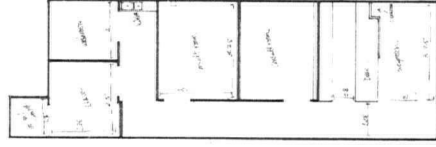
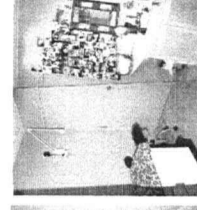
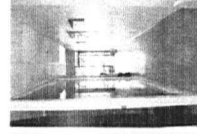
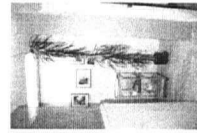
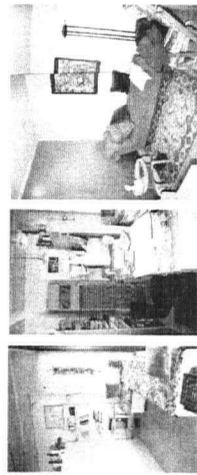


# BIRTH CENTRE

PRECEDENT

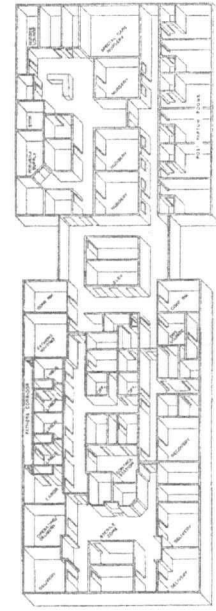
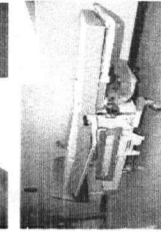
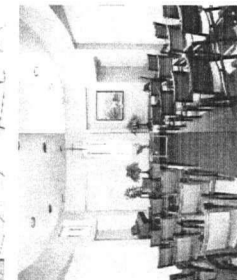
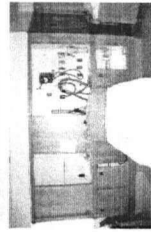
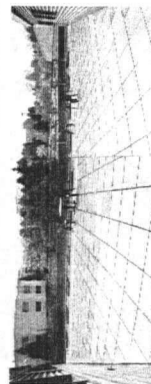
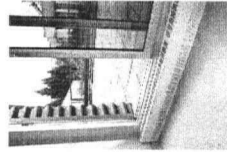
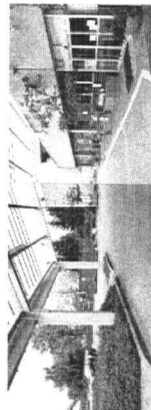


Pacific Midwifery Practice



Floor Plan 1:50  
Pacific Midwifery Practice

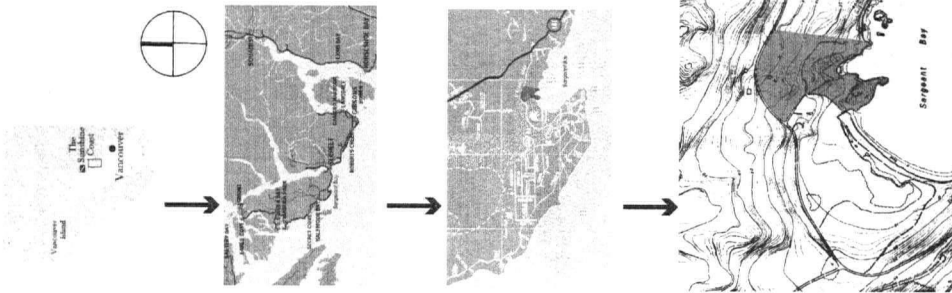
PRECEDENT Women's Hospital - Cedar Square Single Room Maternity Unit



Floor Plan  
Generic hospital floor plan compartmentalizes the birth process

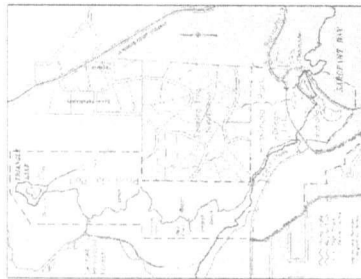
# SITE CONTEXT

## LOCATION



1:5000

## PARK



Provincial park directly adjacent to site

## FOREST COVER

Forest cover in and around Sargent Bay Park



Forest cover on site comprised of Douglas Fir, Hemlock, Red Cedar, Red Alder



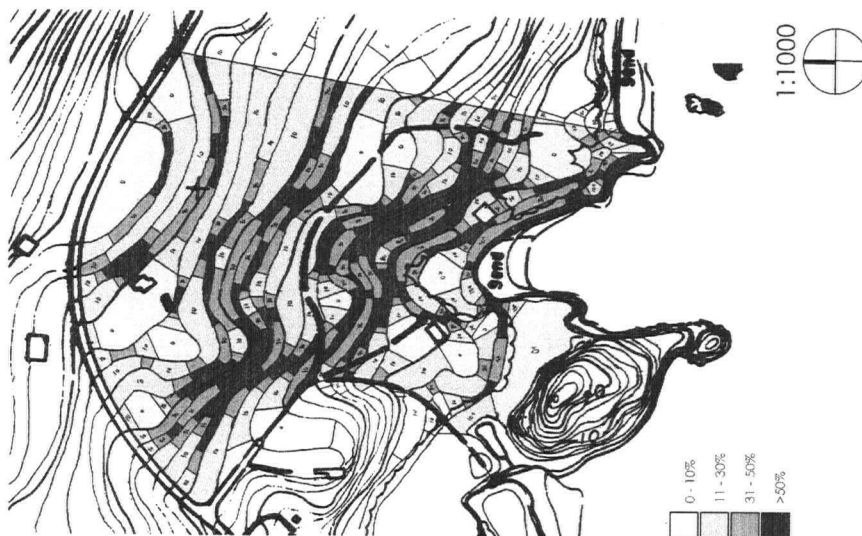
View west of park beach and marsh from atop rock



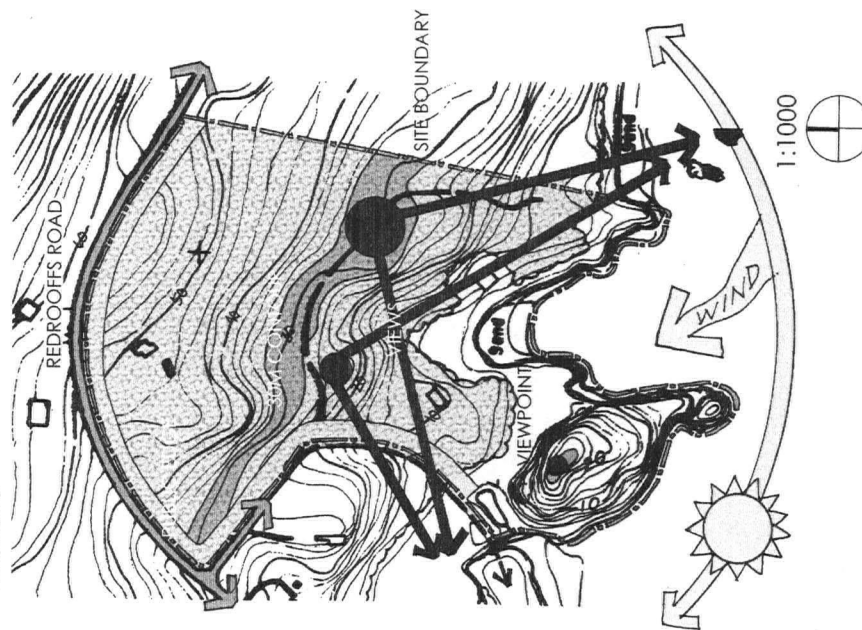
Brodiaea Virginia Pail Chocolate Lily Pacific Treefrog Bay Firefish Hooded Merganser Red Legged Frog Chicory Smooth Bay Shrimp Tiger Lily  
Great diversity of species found in lower park

# SITE ANALYSIS

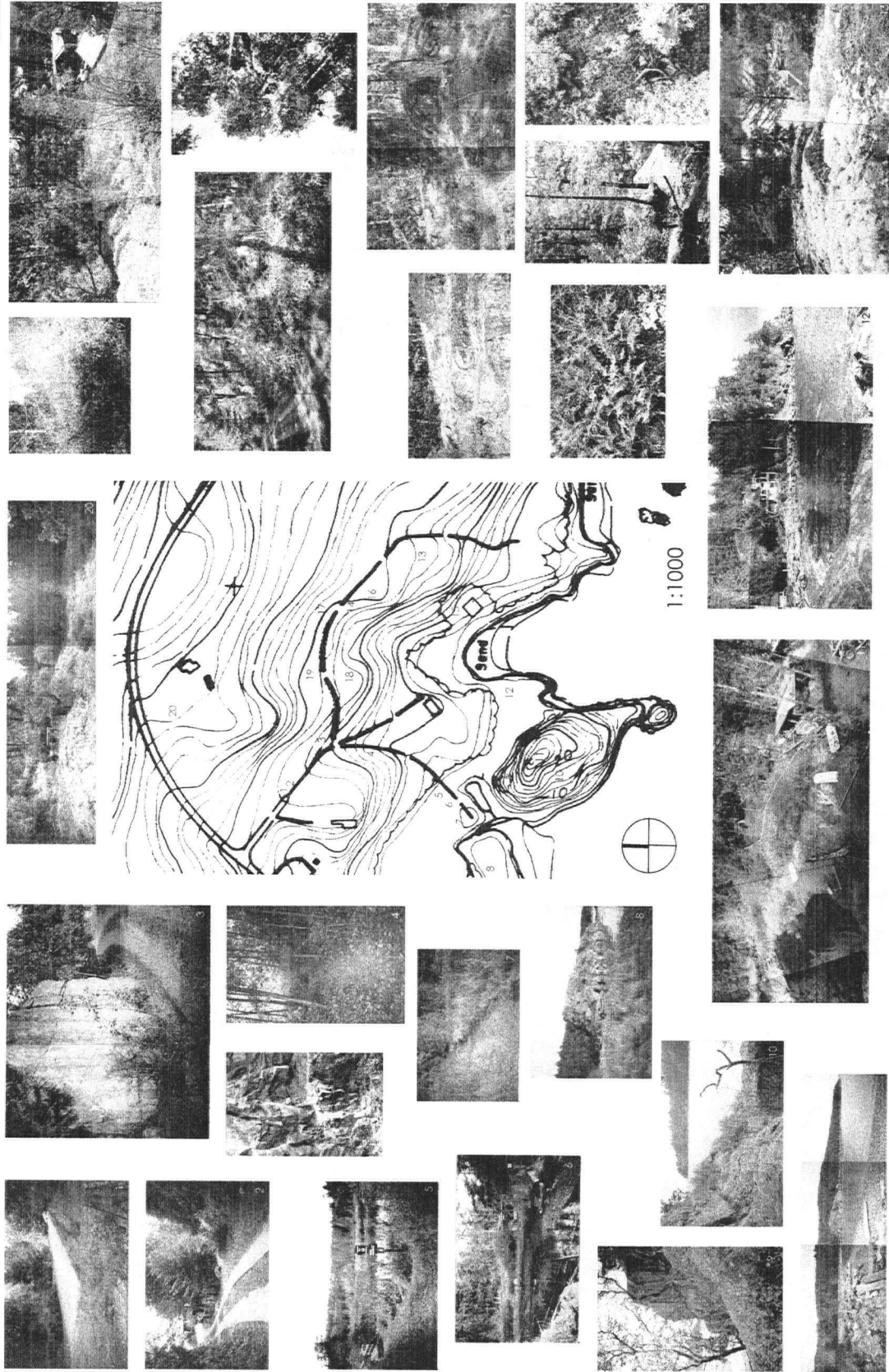
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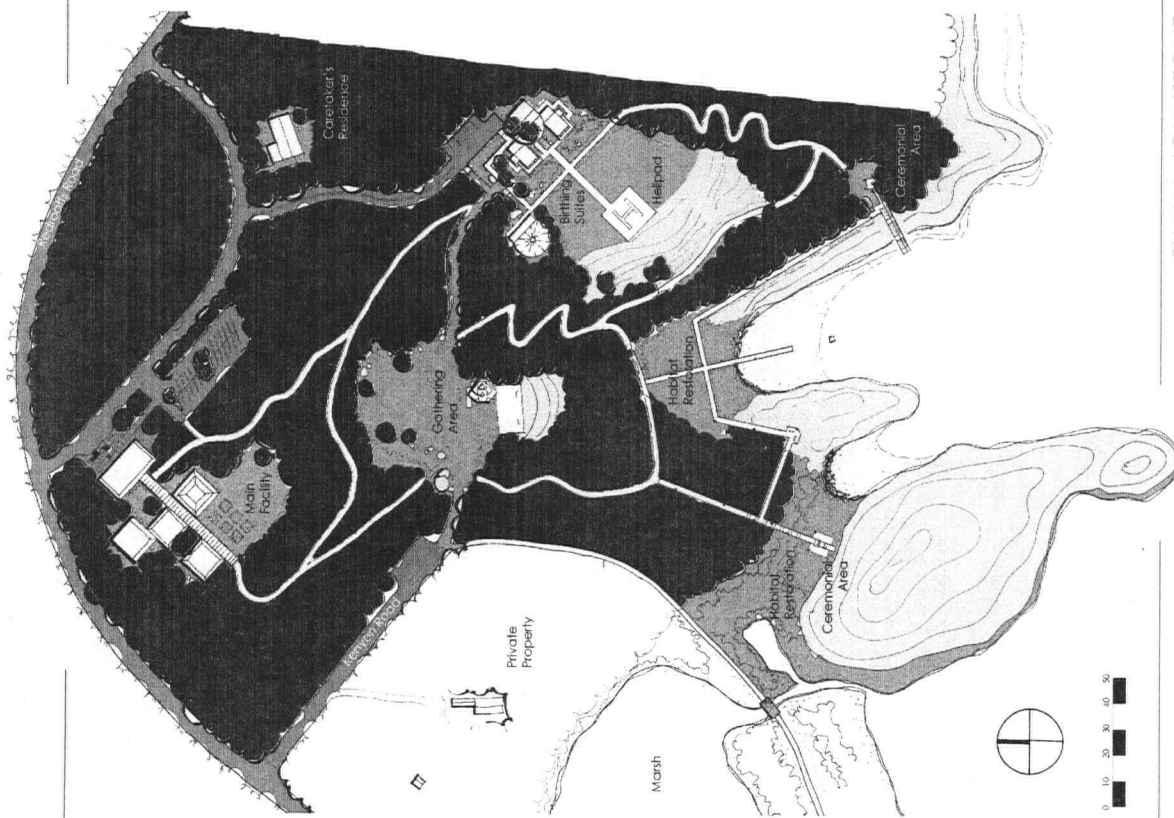
VECTORS



# SITE CHARACTER



# SITE PLAN



## PROGRAM

### WHOLE SITE PROGRAM

#### MAIN FACILITY

Administration  
Offices  
Exam rooms (2)  
Library  
Lobby  
Lounge  
Classroom  
Exercise room  
Laundry room  
Washrooms  
Mechanical room  
Storage

Total indoor space 700 sq/m

Parking (24)  
Sitting garden  
Herb garden  
Garden Shed  
Lawn

2 point access from Redroofs Road

#### BIRTHING SUITES

#### GATHERING AREA

#### CEREMONIAL AREAS

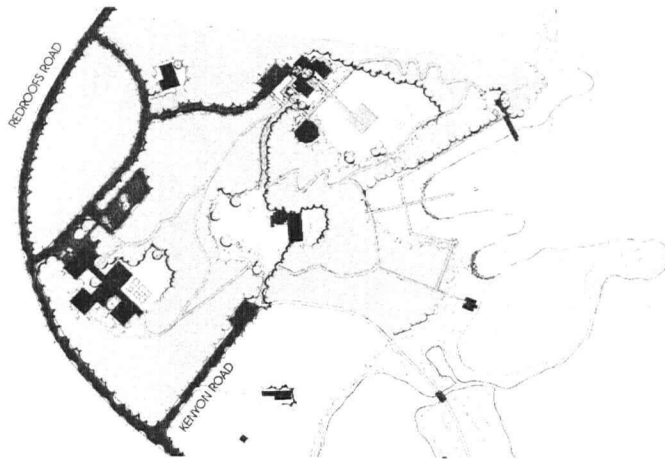
#### PATH AND BOARDWORK NETWORK

#### HELPAD

#### HABITAT RESTORATION

# CIRCULATION

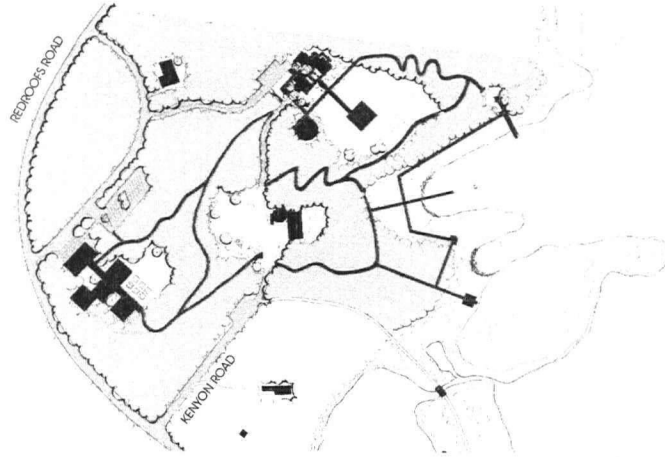
## VEHICLES



### VEHICLE PROGRAM

- 2 point access from Redroofs Road
- Indirect access from Kenyon Road to Gathering Area (back door park access)
- Parking at Main Facility for facility clients and staff (24 spaces)
- Parking at Birthing Suites for clients in labour and attendants

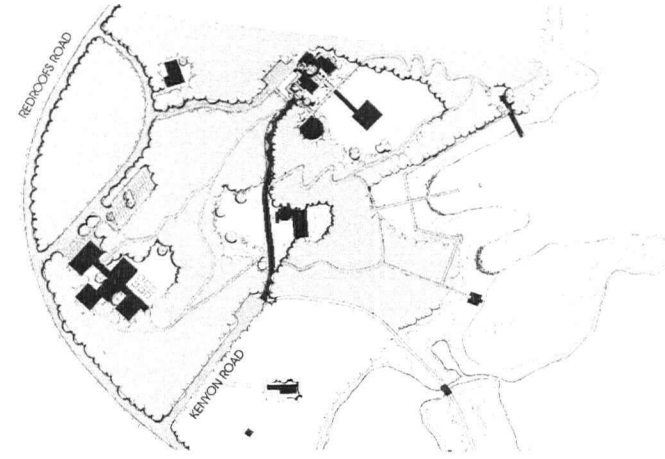
## PEDESTRIAN



### PEDESTRIAN PROGRAM

- Path system for clients to explore and become comfortable with the site
- Paths connect building programs with landscape programs
- Ground paths and boardwalks respond to site character
- Labouring women have access to all paths, but other clients and guests do not have access to birthing suite paths

## EMERGENCY



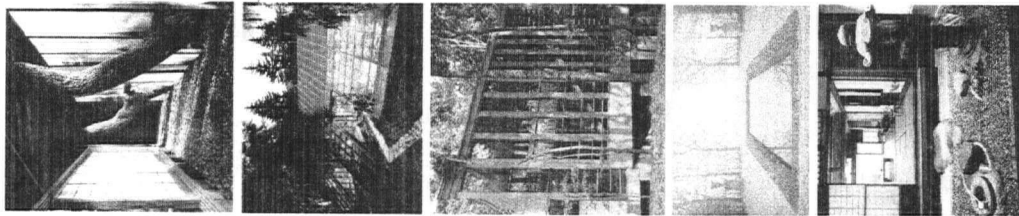
### EMERGENCY PROGRAM

- Emergency transport of clients in labour by Medrac to Women's and Children's Hospital in Vancouver
- Emergency vehicles (fire, police, ambulance) have 12 minute travel time from downtown Seattle
- Emergency vehicle access to Gathering Area and Birthing Suites via Kenyon Road and fire lane through Gathering Area

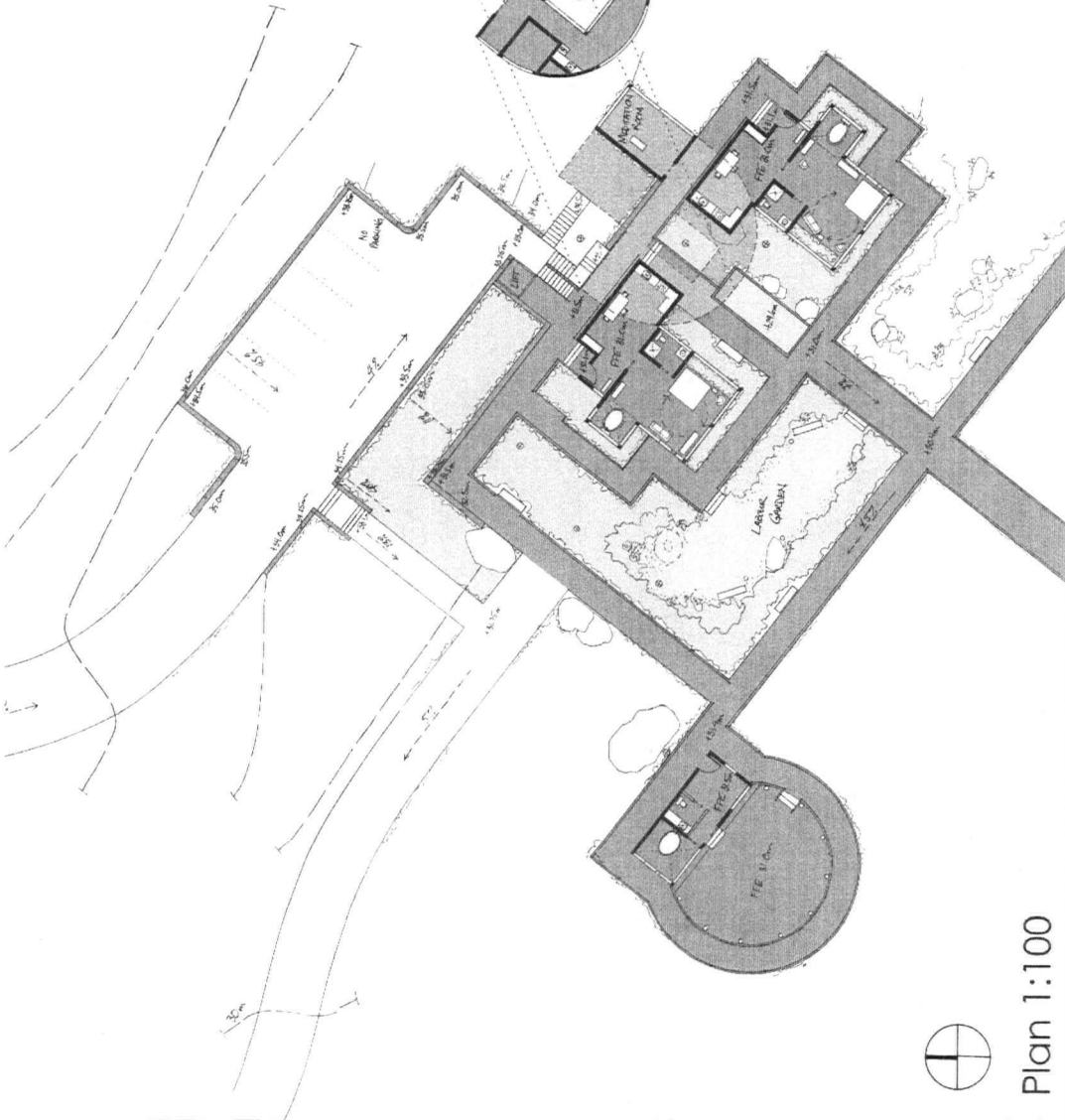


# BIRTHING SUITES | BRING YOU FORTH

PRECEDENT



SITE



Plan 1:100

## PROGRAM

MIDWIVES' SUITE  
Bedrooms (2)  
Office  
Lounge  
Kitchen  
Washroom  
Storage

105 sq/m

### BIRTHING SUITES TYPE 1 (2)

Bedroom  
Pool room  
Washroom  
Kitchen  
Storage

80 x 2

160 sq/m

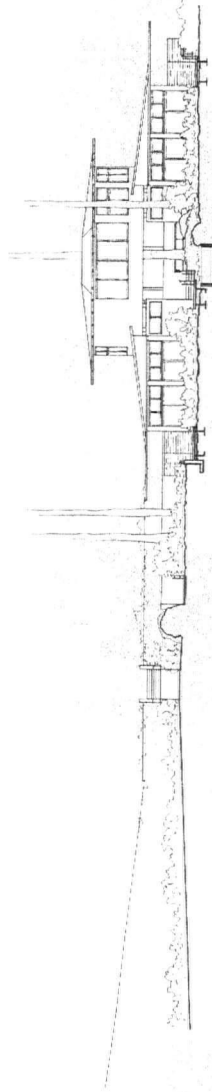
### BIRTHING SUITES TYPE 2

Bedroom  
Pool room  
Washroom  
Kitchen  
Storage

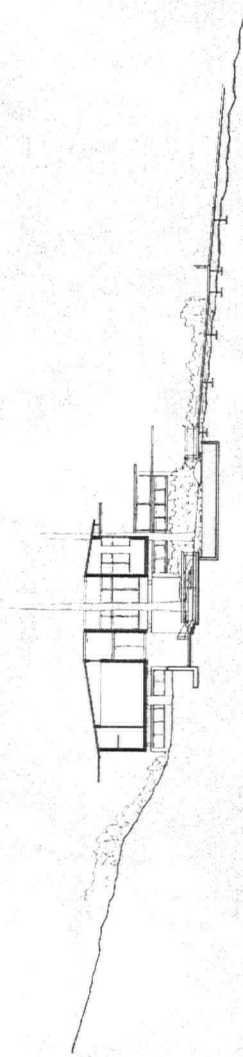
110 sq/m

Total space  
Labour Garden  
Reflection Garden  
Paths  
Heliport/lookout deck  
Meditation room

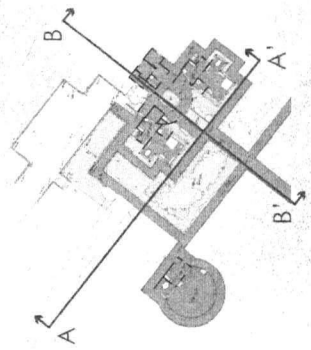
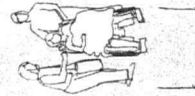
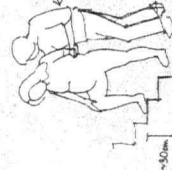
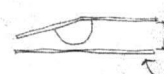
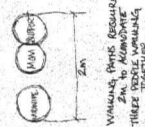
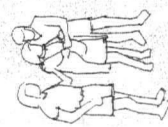
# BIRTHING SUITES | BRING YOU FORTH



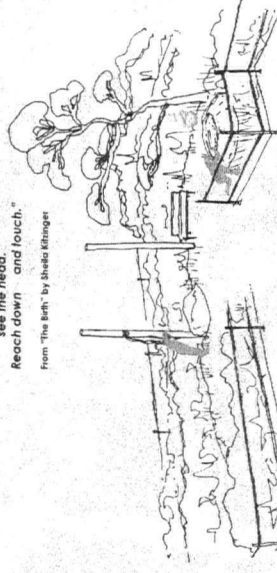
Elevation A-A' of Birthing Suites and Midwives' Suite, view north  
1:100



Section Elevation B-B' of Birthing Suites and Midwives' Suite, view east  
1:100



The waiting time is almost over.  
Expectation leaps.  
Grasping branch, trunk or house-pole, a woman bends and bears down  
over the birthing nest of soft fern or wool, sand, fur or moss:  
"Be brave, my love ... Not long ... I see the head."  
Reach down ... and touch."  
From "The Birth" by Sheila Klinger

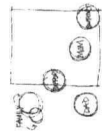
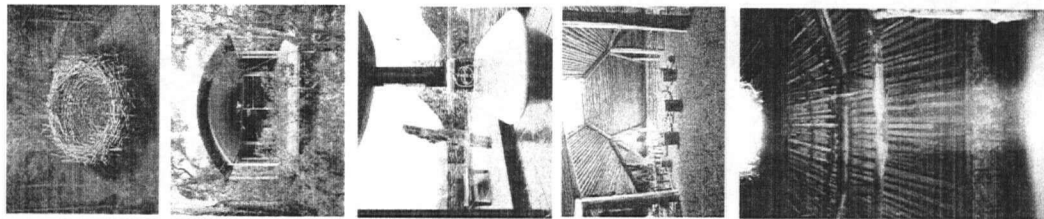


Perspective of Labour Garden, view west

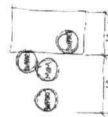
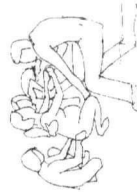


# BIRTHING SUITES | BRING YOU FORTH

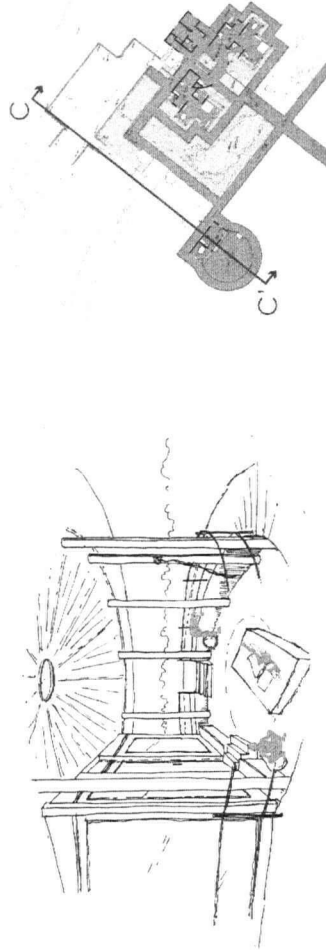
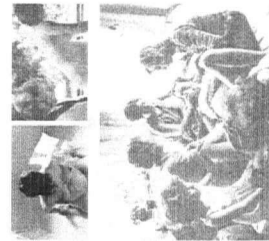
## PRECEDENT



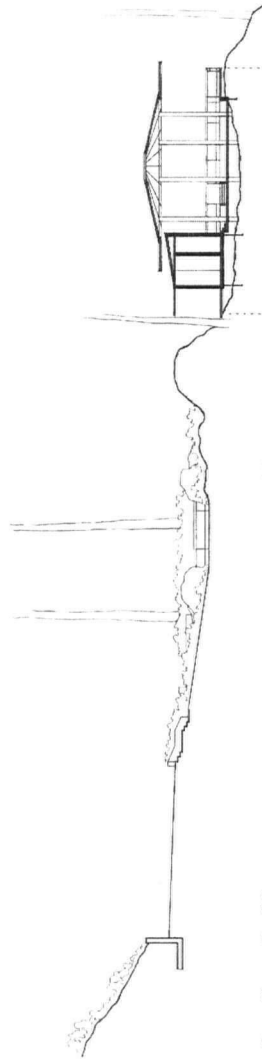
DOUBLE IN QUANTITY, THE BIRTH SUITE, ALLOWING FOR THE BIRTH OF TWO CHILDREN, WITH A VARIETY OF LAYOUTS, PARTITIONS, & SUPPORTS.



SINGLE BIRTHING SUITE, ALLOWING FOR THE BIRTH OF ONE CHILD, WITH A VARIETY OF LAYOUTS, PARTITIONS, & SUPPORTS.

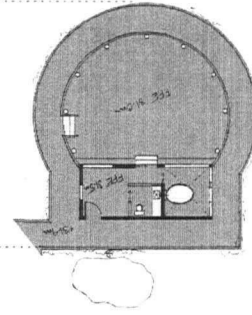


Perspective of Birthing Suite type 2, view east



Section C-C' of Birthing Suite type 2, view east

1:100



Floor Plan of Birthing Suite type 2

1:100

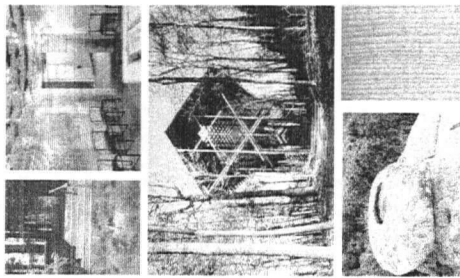
SHANA JOHNSTONE

"LIFE AND LANDSCAPE"

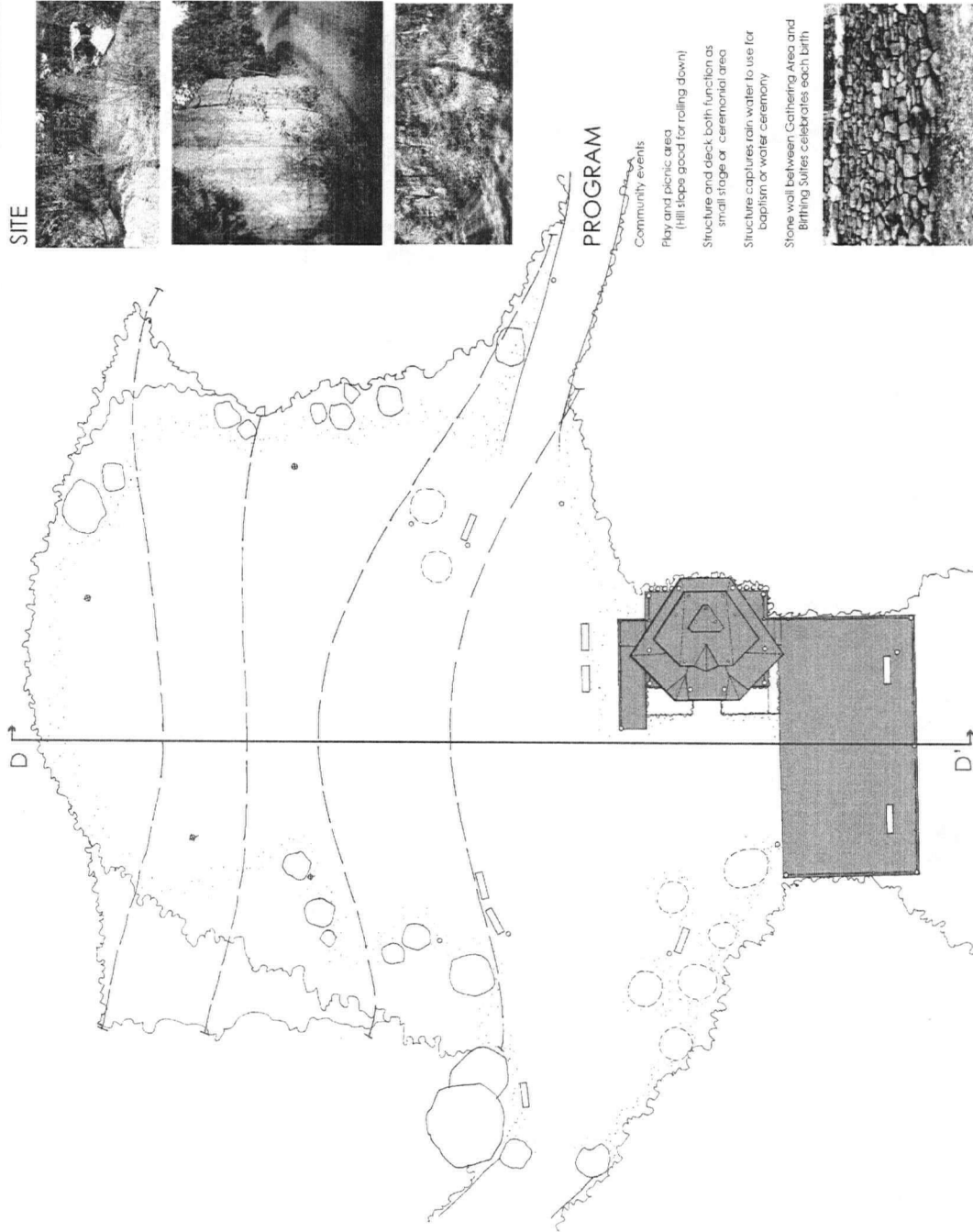
2003

# GATHERING AREA COME TOGETHER

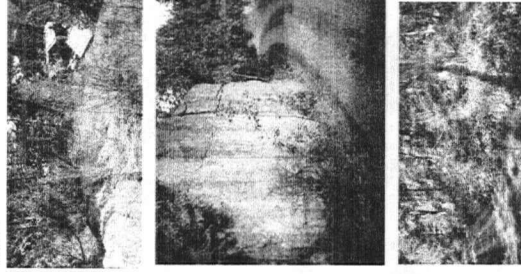
PRECEDENT



Plan 1:100

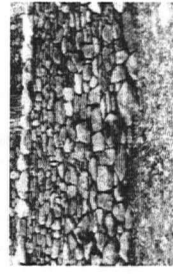


SITE

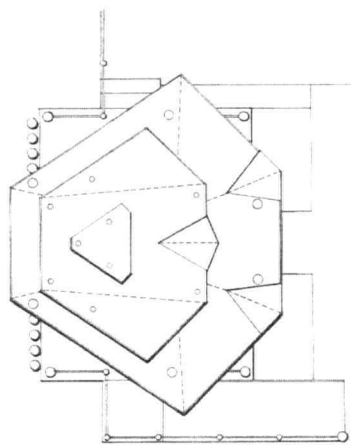


PROGRAM

- Community events
- Play and picnic area (hill slope good for rolling down)
- Structure and deck both function as small stage or ceremonial area
- Structure captures rain water to use for baptism or water ceremony
- Stone wall between Gathering Area and Birthing Suites celebrates each birth

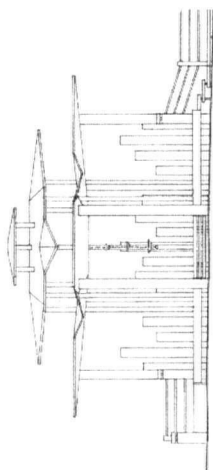


# GATHERING AREA COME TOGETHER



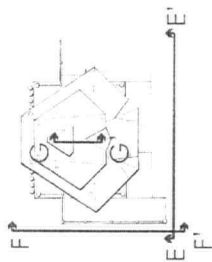
Plan of structure

1:50



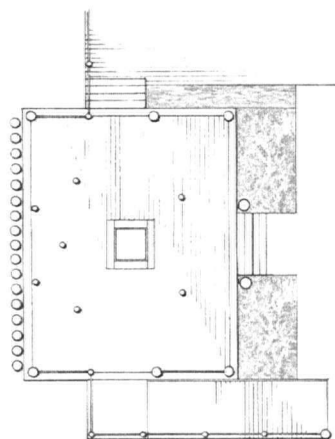
Elevation E-E' of structure, view east

1:50



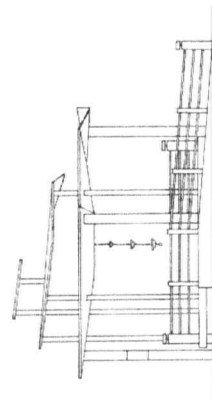
Section G-G' of structure with rain chain

1:25



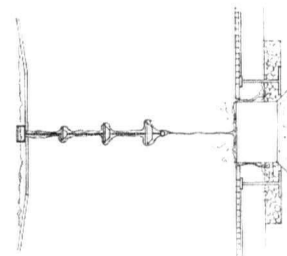
Floor Plan of structure

1:50



Elevation F-F' of structure, view south

1:50

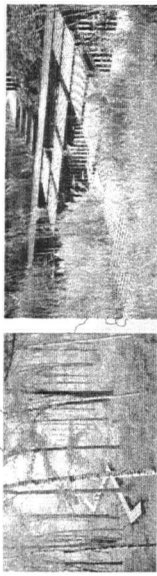


Elevation D-D' of Gathering Area, view east

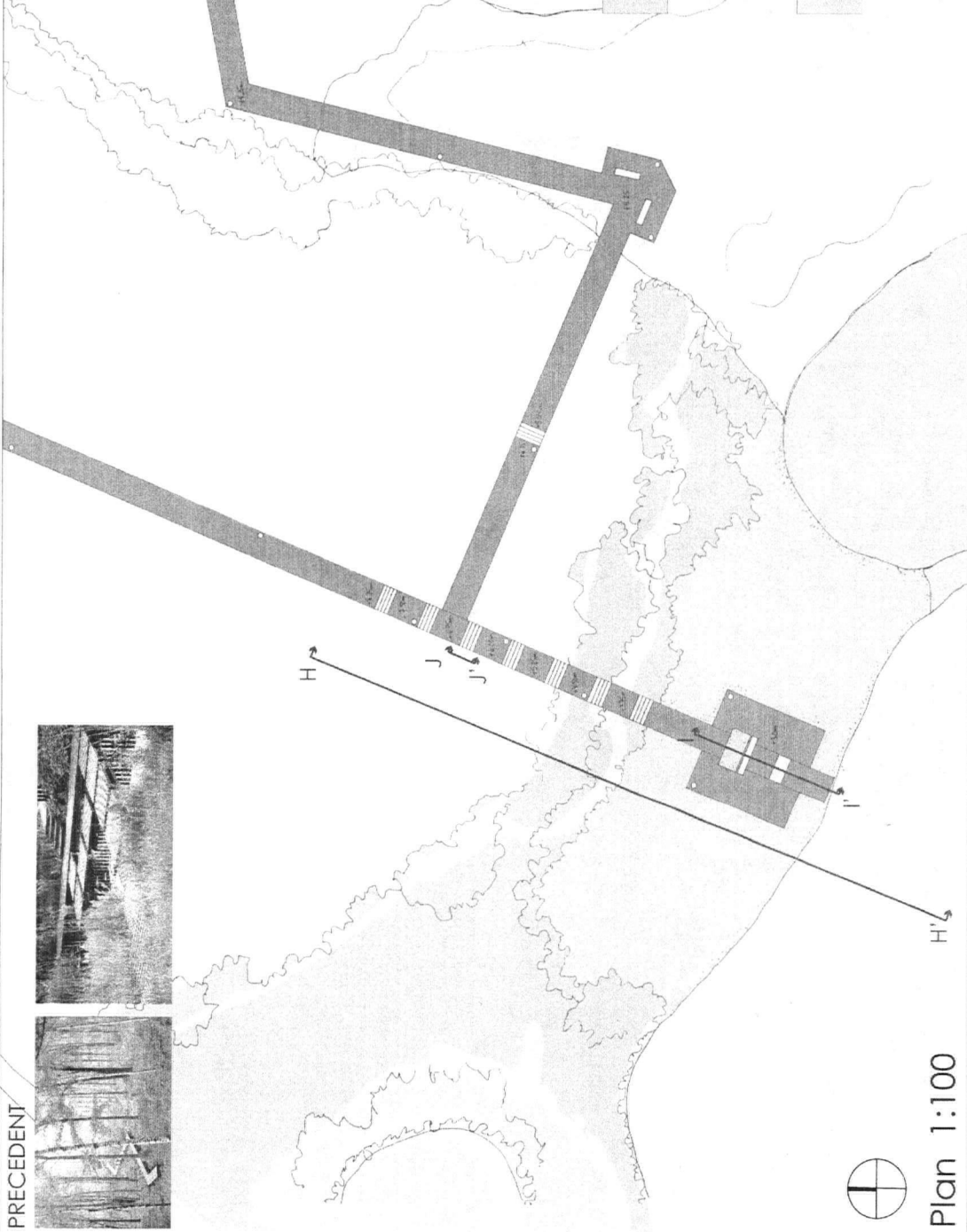
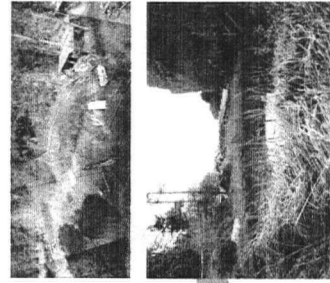
1:100

# CEREMONIAL AREA SHELTERING ROCK

PRECEDENT



SITE



## PROGRAM

- Habitat restoration of low area through planting of native species found in park
- Boardwalk gives access to rock face
- Platform allows for small ceremonies (Naming ceremony, wedding, prayer)
- Painting of rock face (non-toxic)
- SPECIES TO BE ESTABLISHED



Pacific Crab  
Apple  
Mead  
Salmonberry  
Arbutus  
Rhus speciosa  
Astragalus



Dune-grass  
Creeping  
Spike-rush  
Panicum capillare  
Common Rush  
Forsythia

50

SHANA JOHNSTONE

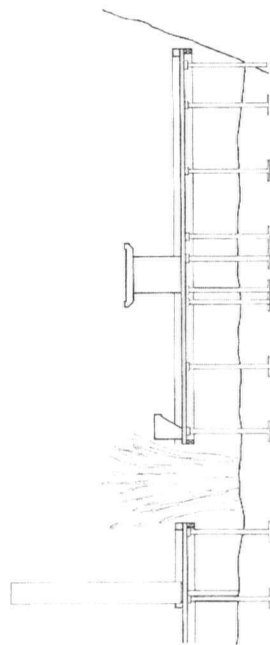
"LIFE AND LANDSCAPE" 2003

Plan 1:100

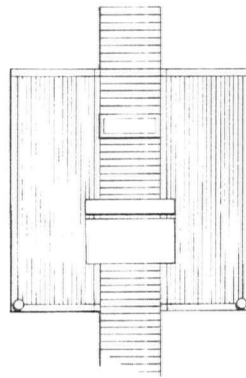
# CEREMONIAL AREA SHELTERING ROCK



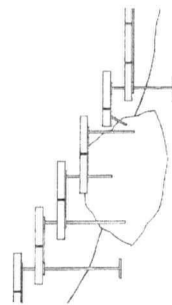
Silbury Hill, Wiltshire, England



Section I-I' of platform, view east 1:25



Plan of platform 1:50



Section J-J' of stairs, view east 1:10



Section H-H' of stairs and platform, view east 1:50

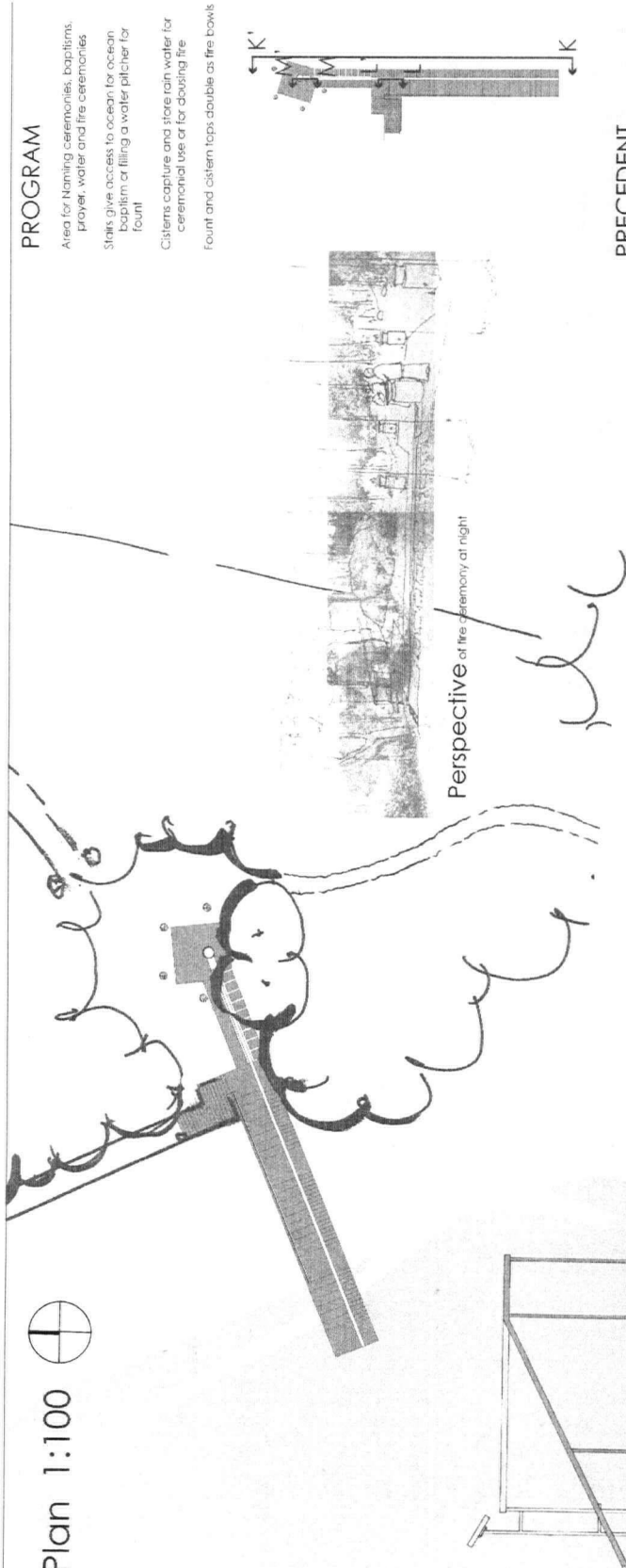
Relief sculpture of a pregnant woman, from a shrine wall at the Neolithic town of Catalhöyük, Turkey. Covered with red ochre and decorated with designs of plants. Designs probably imitate body paint used magically to help women through childbirth.

Rock drawing of a woman giving birth, from Sha'ib Sarrma in Yemen. Cro-Magnon cave.



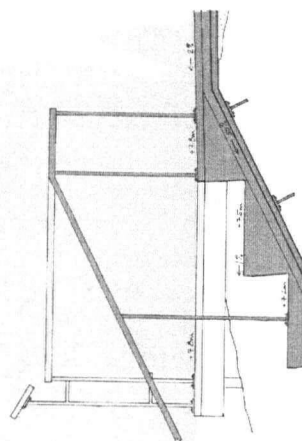
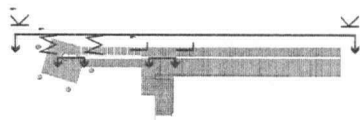
# CEREMONIAL AREA BY FIRE AND WATER

Plan 1:100

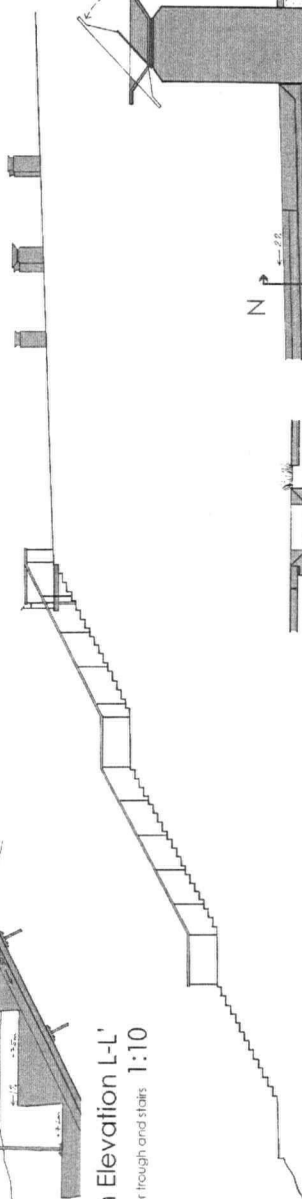


## PROGRAM

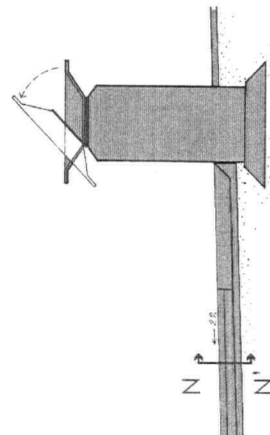
Area for Naming ceremonies, baptisms, prayer, water and fire ceremonies  
Stairs give access to ocean for ocean baptism or filling a water pitcher for fount  
Cisterns capture and store rain water for ceremonial use or for dousing fire  
Fount and cistern tops double as fire bowls



Section K-K' of stairs and fount 1:50



Section M-M' of fount 1:10



## PRECEDENT

