

**THE INTEGRAL BUILDING-LANDSCAPE  
DEVELOPING A LANGUAGE OF INTEGRATION**

by

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## abstract

This thesis looks at the problem of disconnection between buildings and landscape and attempts to examine the notion of *integration* with the goal of developing a set of principles for integrating building and landscape.

The work begins by examining characteristics of building and landscape as well as attitudes towards nature, which may provide some initial indication of connectedness. From there, the term integration is examined and a foundation for a potential integrated building/landscape relationship is laid out.

Next, selected historical precedents are reviewed in order to construct a background of integrated relationships. These precedents are furthermore used to begin to create a list of case studies for developing a language of integration. The historical review includes both “high” architecture demonstrating integration through spiritual connections and search for a *topos*, as well as vernacular buildings and their integrative approach to construction, *of necessity*.

The integration language itself is developed through two parallel methodologies. It begins with a set of case studies examined for their formal/physical qualities of integration and how they are demonstrating integration. These case studies are categorized in a taxonomic fashion based on their kind/form of integration. The result of the case studies analyses is a final grouping of integration ideas based on observation. (positive analysis) Secondly, a number of issues are used to extract opinions from a set of reviewed literature of many different designers and theorists, and compared to illustrate commonalties between opinions. It arrives at another set of condensed integration ideas based on opinions from literature, which are considered experientially important for the building/landscape relationship. (normative analysis)

The integration ideas from literature are then compared with the formally observed ideas from the case studies to inform the construction of a combined set of integration principles. These principles are then ‘test driven’ with the Jericho Sailing Centre in order to work with the them and make any revisions. A final language of integration principles is then established.

The final language consists of a set of prerequisites and 14 physical design principles, concerned with situating of buildings, building form, and detailing of the relationship between building envelope and landscape space which will help to integrate building and landscape. The final language is intended to act as a design tool or as a way of analyzing existing projects.

Further research would involve application of these principles at different densities and at different scales of urban design, as well as comparison with sustainability criteria.

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## introduction

Problem: The importance of the building/landscape relationship  
Goals and Objectives  
Methodology Precedent  
Chapter Summaries

### Problem

---

#### The Importance of the building/landscape Relationship

The relationship between building and landscape is a discourse that has occurred everywhere humans have established their presence. In each construction a unique dialogue exists between constructed shelter and the existing natural or human-made landscape. This is a fundamental condition of humans living upon the earth. It begins when a building is placed upon the ground.

The first act of habitation usually results in some manipulation of the earth. It begins with digging, mounding, or leveling of the landscape to make it ready to accept a structure. In some cases buildings may be built over the ground, in trees, or in caves but due to gravity and human survival, a building must always have some physical connection to the earth.

The two sides of this dialogue seem to be subjects in which society is extremely interested. In 1983, Alfred Caldwell wrote that "Except for the national economic paranoia of making money, there are few things today more important to the megalopolitan consciousness than nature and architecture." (Domer, 1997, p.226) It is an unavoidable relationship. It involves more than the act of building; it involves the process of dwelling. Yet, perhaps because of its commonness this act might almost be overlooked and its importance forgotten. In fact, the very act of dwelling is one of defining the relationship humans have with the earth and therefore defines our lives absolutely. Robert Mugerauer reminds us that Heidegger believed "'dwelling names the manner in which mortals belong on earth, under the heavens, before the divine....' Mugerauer himself says "dwelling bespeaks genuine becoming at home with ourselves and the world." (Mugerauer, 1994, p.82) It suggests that dwelling is about defining ourselves in our environment. The relationship between structure and landscape is largely responsible for the success of our dwelling.

The building/landscape relationship is not just a subject that is of some philosophical interest or an issue that landscape architects and architects might only happen upon as a coincidental challenge with which to grudgingly cooperate in the course of their



professional careers. This common yet integral relationship of buildings and landscape is of vital importance in our world and requires more intentional, focused exploration.

I am interested in the hypothesis that an “integrated” relationship between building and landscape is a positive thing. It seems apparent that the status quo relationship between a building and the surrounding landscape, particularly as it pertains to the urban environment, is only very minimally integrated. The buildings are sitting on the land and share a space; the connection very often ends there. Over time, our buildings seem to have gradually become more and more disconnected from landscape, from nature. James Wines states that:

Architecture is desperately in need of a conceptual, theoretical, and philosophical reunion with nature. During the crest of the Modern Age, architects passionately believed that there was a direct equation with the combustion engine and a spiritual vision for the design of shelter. What began as a great socialist and technological vision has become the symbol of oppression and isolation from nature. (Zeihner, 1996, p.60)



*Figure 1. Examples of disconnected Building/Landscapes.*

Our modern inhabited environment is composed of buildings which are climatically and structurally disconnected from nature and landscape. The “Western” suburbs are oceans of isolated ships bobbing alone at perfect distance from their neighbours, barely touching the flattened monoculture of landscape that flows beneath them. There seems to be no effort for dialogue with the surroundings in which they float. Walls separate the sterile

interiors from the shared air of the outside. Architecture has created disconnection in our modern world. However, this relationship between buildings and landscape can be different, more harmonious.



*Figure 2. Examples of connected Building/Landscapes.*

I propose to study this disconnection through the concept of “integration” as one approach to understanding the problem in this relationship, with the intention of reaching toward some improvement of our environment. This thesis focuses on this relationship mostly at the scale of a single building in a fairly low density landscape. Certainly this is not the only scenario and is becoming less common and less feasible in urban situations, but it is perhaps the simplest scenario and is a good foundation for research of building/landscape integration. I imagine that it could lead towards further research in more dense situations with larger buildings and even to larger areas looking at the scale of the neighbourhood, city and region.

In the words of Garrett Eckbo, “The integration of building and site, of the rational geometry of man with the blind irregularity of nature, is the primary problem of physical development usually left over for the landscaping process.” (Eckbo, 1950, p.7) The exploration of this concept, the integration of building and site, or landscape, is the focus of this work. The thesis looks at what building/landscape integration means, what it

physically looks like, and if/how we could divide these physical integrations into types or principles that can be individually identified. We can then examine how the integration type is beneficial. Ultimately the intent is to construct a language of integration principles that will be useful for evaluating existing projects as well as a design tool for future projects. Initially, it is focused more on the single building in low-density landscapes.

The thesis proposes that the more building and landscape are integrated the better the experience. It also proposes a language for integration. Describing why integration is good and how it is accomplished is the purpose of this thesis.

## **Goals and Objectives**

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### **Goal:**

- to explore the building/landscape relationship at the scale of a single building in a low density landscape and develop a language for integration

### **Objectives:**

- illustrate the importance of the building/landscape relationship
- examine selected existing relationships through history
- build a library of integrated building/landscape relationships
- develop a typology/taxonomy for integration of building and landscape
- compare opinions on the building/landscape relationship to reveal how the (integrated) building/landscape relationship plays an important role in creating place
- develop a language of integration principles which could be used to evaluate existing projects and which could be used as a design tool
- illustrate how the world view/mind set could be changed through focus on phenomenal experience and the social/cultural genius loci, and therefore accept the new paradigm necessary for sustainability (done through using place-making for sustainability)
- discover and illuminate moments of cultural – environmental genius loci symbiosis

## Methodology

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### Phenomenal Method

This thesis on building/landscape integration is approached from the perspective of experience. Ultimately I am curious about how this concept might lead to satisfying criteria of building sustainable environments, but this thesis is focused on the experiential benefits of integration and not on the possible quantitative benefits of integration concerned with reducing energy, improving water quality, decreasing local temperatures, reducing urban runoff, or adding agricultural opportunities.

The end result of the research is a set of principles based largely on formal types of integration. The methodology I have chosen to attain this end is a phenomenal methodology based on observation and on the expertise of designers and philosophers concerned with the "experience" of the physical environment. This is a process for examining a physical relationship and is based on a process of examination and analysis consistently used in the field of urban design. It is a process that relies on the informed opinions of experts in criticism of urban design issues as well as my own insights inspired by the observation and analysis of these shared opinions. "Maurice Merleau-Ponty [also] provides a method of inquiry particularly suited to typological exploration since he accepts the validity of both the conceptual and the empirical, everything that exists in fact, as long as it relates to experience." (Condon, 1988, p.7)

The focus in the thesis is on the quality of our physical environment. "To create nice and, more importantly, meaningful, appropriate atmospheres we need to focus our attention not on the quantities but on the qualities." (Day, 1990, p.46) It is not a "provable hypothesis" like one typically found through scientific methodology, but is based in experience and the opinion of experience, and is accepting of "empirical facts". Patrick Condon agrees that research based on qualitative measures versus scientific measures is acceptable, even promoting the importance of this sort of focus.

We are suggesting that certain areas of the phenomenal that relate to the essence of environmental experience must somehow be incorporated into our thinking about humans and landscape; they should not be ignored simply because they are not verifiable as concrete material fact. (Condon, 1988, p.8)

### Chapter Summaries

The following is a brief description of how this phenomenal method was carried out in the process of the thesis.

The *introduction* discusses the importance of the relationship between building and landscape. It also proposes why it is important to work on the relationship.

*Chapter 1* helps to define building and landscape and looks at the relationship as a dialectic. It focuses on different ways of looking at the relationship.

The second part of *chapter 1* is intended to define what the term integration means in a general sense and begin to understand what it could mean for buildings and landscape. It also includes discussion on **why** integration of building and landscape is important and reviews similar concepts as a means of comparing this idea of integration.

Using the definitions of integration, *chapter 2* looks at selected historical relationships between buildings and landscapes. This includes the vernacular buildings and their integrative approach to construction. Historically integration seems to originate from respect for *topos* and *of necessity*.

*Chapter 3* explains the methodology for constructing a language of integration. It begins with case studies examined for their **formal/physical qualities** of integration and **how** they are demonstrating integration. These case studies are categorized in a taxonomic fashion based on their kind/form of integration. The result of the case studies analyses is a final grouping of **integration ideas or principles** based on observation. (positive analysis) **Secondly**, a number of **issues** are used to extract opinions from a set of reviewed literature of many different designers and theorists, and compared to illustrate commonalties between opinions. It arrives at another set of condensed **integration ideas or principles** based on opinions from literature, which are considered experientially important for the building/landscape relationship. (normative analysis)

The integration ideas from literature (normative) are then crossed/compared with the formally observed ideas from precedents (positive) to inform the construction of a combined set of **integration principles**.

These principles are 'test driven' in an application illustrated briefly in *chapter 3*. The principles are applied to an existing building/landscape scenario and the resulting process of using these principles is criticized and discussed based on the successes or problems and any further discoveries. Finally, the set of principles is revised based on this 'test drive' and a **final language of integration principles** is established.

The revised principles are then expanded upon in *chapter 4*. It includes images and sketches to enhance and illustrate the written word as well as discoveries found through the 'test drive', of how the principles relate to each other, and how they might be physically expressed.

Finally, the *conclusion* explains what was discovered with the entire process of research and design application of the principles. The hypothesis was that integration of building and landscape improves a project or makes a particular building and landscape experientially more successful. The thesis results are examined and discoveries are recognized. Furthermore, potential future work with more dense scenarios and comparison with sustainable development criteria is proposed.

## **chapter 1**

### **building an argument for integration**

The Inside/Outside Dialectic

Building and image of "House"

Image of landscape

Human versus nature relationship

Definition of integration

Building and landscape integration

Similar concepts supporting building/landscape integration

### **The Inside/Outside Dialectic**

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#### **Introductory Discussion**

The relationship between building and landscape is an extension of the general relationship between humanity and nature, described by Patrick Condon as "...the insight that results through the dialogue of the human soul with the physical phenomena of nature. This dialogue is a dialectic: it is semantic interaction between interdependent opposites." (Condon, 1988, p.17)

The subject of this thesis is fundamentally concerned with dialectics. Before discussing the integration of building and landscape, the two sides of the dialectic, we must first clarify the individual sides of the dialectic and how they relate to each other.

The two sides constitute numerous possible meanings and together elicit an extremely complex relationship. This relationship may be described from different perspectives. Some of the more powerful dialectics found in the building/landscape relationship are: inside-outside, prospect-refuge, human-nature, artificial-natural, open-enclosed, formed-formless, built-unbuilt, spacious-confined, formal-informal, rough-refined, machine-garden, wet-dry, dark-light, public-private, possibly urban-wilderness, patterned-random, finite-infinite. As Doug Paterson writes, "these dialectics can be physical or spatial, they can also be emotional or even unconscious." Furthermore, there are many subtleties of the building/landscape dialectic, perhaps best described as a human-human relationship or a human-nature relationship.

Dialectics are part of our lives at all times, none less so than this basic and profoundly important one between human habitation and the earth. Tuan states that "Human lives are a dialectical movement between shelter and venture, attachment and freedom." (Tuan,

1977, p.54) Dialectics, and this particular dialectic of human shelter and expansive landscape, are ingrained in our lives as human beings.

There is also a middle ground between the dialectic extremes. Patrick Condon writes that "Nature tends towards settings that are either forested, open, or a transition between the two; in other words: mass or void or edge." (Condon, 1988, p.16) I believe that this is also true if applied to building/landscape relationship. Within the dialectic there are three possibilities: building, landscape, or a transition place somewhere between the two extremes of the dialectic – the edge. This edge that acts as the meeting place between the inside and outside or human and nature, is architecturally where professional designers might look to create a particular kind of relationship and this relationship is essential to the work of architects and landscape architects. According to Norberg-Schulz, "The distinction between inside and outside is of fundamental importance in architecture, and modern architecture is in fact often defined in terms of a "new relationship between interior and exterior space." (Norberg-Schulz, 1988, p.33)

It is this transition place, or edge between the major players in the dialectic that is largely the focus in this study of integrating building and landscape. It will be examined more in the integration section later in this chapter.

## **Building and Image of "House"**

This section examines the essential meaning and symbolism of shelter as one of the players in the building/landscape relationship. What does shelter and building mean to us? For most of us it is something that symbolizes human habitation, protection, refuge, dwelling, home.

## **Human Creation**

A building is recognized to be a human built structure. This is probably the most powerful reason for its contrast with nature and landscape. A building is by definition an artificial element; it is built, with intention and purpose specifically to be separate from nature and landscape. The shelter is essential for human survival. It represents humanity and sets us apart from other living beings.

Rudolph Arnheim writes: "The basic fact of architectural expression is that of the building as a man-made object placed in a natural setting. There are other such objects, but architecture is distinguished from them by the particular way it supplements nature's resources and facilities, while at the same time insisting on a particularly human function, different in principle from those fulfilled by nature." (Arnheim, 1977, p.213)

Aldo Rossi states that architecture is "deeply rooted in the human condition." (Rossi, 1982, p.27) Yet, there is something about human habitation that is also very "natural". Human shelter can be compared to natural shelters of animals like nests, caves, or holes in trees. Our attempts at creating an inside protection from the landscape may be more



demonstrative than other creatures and except for rare indigenous examples the materials used are significantly modified, but it still has roots in natural forms and instincts.

As Pierre Vidal de la Blache wrote, 'the heath, the woods, the cultivated fields, the uncultivated zones, are related in an inseparable whole, the memory of which man carries with him.' This inseparable whole is at once the natural and the artificial homeland of man, and suggests a definition of natural which also applies to architecture. I am thinking of Francesco Milizia's definition of architecture as the imitation of nature: 'Although architecture in reality lacks a model in nature, it has another model derived from man's natural labor in constructing his first house.' (Rossi, 1982, p.27)

Perhaps looking at human shelter as an extension of natural forms makes it easier to imagine an integration between building and landscape.

### **Inside/Outside**

Secondly, "house" embodies the basic experience of being inside as opposed to the outsideness of the rest of the landscape. This section will discuss how building creates this inside.

Without the insideness of the constructed form of a building, the landscape as a whole would be likely viewed as neither inside nor outside. A building creates a dialectic and acts as a point of reference to define what is inside and what is outside. Yi Fu Tuan encourages us to:

consider the sense of an "inside" and an "outside," of intimacy and exposure, of private life and public space. People everywhere recognize these distinctions, but the awareness may be quite vague. Constructed form has the power to heighten the awareness and accentuate, as it were, the difference in emotional temperature between "inside" and "outside." In Neolithic times the basic shelter was a round semisubterranean hut, a womblike enclosure that contrasted vividly with the space beyond. Later the hut emerged above ground, moving away from the earth matrix but retaining and even accentuating the contrast between interior and outside by the aggressive rectilinearity of its walls. (Tuan, 1977, p.107)

Thiss-Evensen says that the walls, floor and ceiling of a building "balance the forces of inside and outside. The battle between these forces is an existential prerequisite for mankind. Without shelter, in the broadest sense, man cannot live upon this earth." (Thiss-Evensen, 1987, p.20) Insideness is necessary for man's survival and the shelter must provide this.

This insideness and outsideness also provides more than protection, but comfort and coziness like the image of a 'nest', both physically and psychologically acting as a refuge from the dark cold landscape of the outside. "The lamp in the window is the house's eye and, in the kingdom of the imagination, it is never lighted out-of-doors, but is enclosed light, which can only filter to the outside." (Bachelard, 1969, p.34) In our mind, house is a refuge from the wilderness and life-threatening elements of the exterior landscape. The

dialectic of the building insideness and landscape outsideness provides us with that simultaneous feeling of prospect and refuge. Protection from the dangers of the outsideness but nevertheless a view onto it as an otherness we can appreciate with peaceful confidence. With a reliable shelter the more extreme the conditions on the outside, the more exaggerated the feeling of comfort inside. As Gaston Bachelard says, "Baudelaire declares that dreamers like a severe winter" (Bachelard, 1969, p.39) and "in the reign of the imagination alone, a reminder of winter increases the house's value as a place to live in." (Bachelard, 1969, p.40)

This section intends to clarify the powerful image of "insideness" found in the imaginary and physical structure of "house". Insideness is a constant part of house. Integration of building into landscape may weaken this experience of insideness or strengthen it enormously. The notion of inside and how a building integrated into landscape can be extremely "inside" will be revisited again in chapter 2.

### **House as Place**

A house is a relatively simple building. It is a place, however, for many reasons. It provides shelter; its hierarchy of spaces answers social needs; it is a field of care, a repository of memories and dreams. Successful architecture 'creates the semblance of that World which is the counterpart of a Self.' For personal selfhood that world is the house; for collective selfhood it is a public environment such as temple, town hall, or civic center. (Tuan, 1977, p.164)

A house or building does possess more than a sense of comfort and protection, it has a role of being a home, a place we identify with as being the centre of our lives. It has a history and a sense of meaning. Furthermore, as Bachelard states, "With the house image we are in possession of a veritable principle of psychological integration." (Bachelard, 1969, p.xxxvi) This statement seems to suggest that we as humans have a psychological connectedness with the house we live in.

Bachelard goes on to look at the benefits of the house in terms of daydreaming. He says "if I were asked to name the chief benefit of the house, I should say: the house shelters daydreaming, the house protects the dreamer, the house allows one to dream in peace." (Bachelard, 1969, p.6) The house as place offers this opening up to the world through daydreaming and imagination.

This identification as "place" is also reliant on the way the landscape is prepared for habitation and how the building sits apart from wild nature. The forming of built structure identifies that space with human habitation and obvious otherness from the uncut forest.

Think of the way a new country is settled. At first there is wilderness, undifferentiated space. A clearing is made in the forest and a few houses are built. Immediately differentiation occurs; on the one side there is wilderness, on the other a small, vulnerable, man-made world. The farmers are keenly aware of their place, which they have created themselves and which they must defend against the incursions of wild nature. To the passerby or visitor, the fields and

houses also constitute a well-defined place, obvious to him as he emerges from the forest to the clearing. (Tuan, 1977, p.166)

Clearly the “house” creates a sense of place and identity in the greater landscape. It may be further reinforced as “place” through the manipulation of nature and preparation for human habitation.

### **On the Ground**

A building also provides a link for humans with the natural world because a building is placed on the earth and in the landscape. Norberg-Schulz says that “If the settlements are organically related to their environment, it implies that they serve as ‘foci’ where environmental character is condensed and ‘explained’...The buildings bring earth as the inhabited landscape close to man and at the same time...dwelling under the expanse of the sky...Buildings are furthermore related to their environment by resting on the ground and rising towards the sky.” (Norberg-Schulz, 1976, p.4-5)

This is the simplest and most obvious way that buildings have any relationship to the landscape. The simple fact that buildings must sit on the earth, or in the landscape, initiates the beginnings of a connection or co-habitation; an integration with the earth.

Furthermore, it should be recognized that this focus in the landscape and connection between earth and sky is a product of the verticality of the building in the landscape. The house provides this connection to the earth and sky as Norberg-Schulz explains, “by rising vertically and acting as a foci or axis mundi.” Bachelard also explains the house with these two connecting themes. He says that:

- A house is imagined as a **vertical** being. It rises upward. It differentiates itself in terms of its verticality. It is one of the appeals to our consciousness of verticality.
- A house is imagined as a concentrated being. It appeals to our consciousness of **centrality**. (Bachelard, 1969, p.17)

This final characteristic of a building begins to acknowledge the important association that building does and should have with the earth and landscape on which it is constructed.

### **Conclusions on house**

The building, particularly the idea of “house”, is loaded with meaning and symbols. For the purposes of this thesis on integration of building and landscape there are some useful points to consider.

- buildings are human constructions, yet there is some model found in natural shelters
- buildings constitute an “insideness” of protection and comfort
  - there may be the possibility of creating even greater insideness through deep connection with landscape
- a building or house is a “place” that is other than wild nature

- the preparation of landscape and building for habitation both play a role in this “place-making”
- a building rests on the ground
  - this physical connection is the beginning of a link with landscape
  - buildings are vertical objects that naturally illustrate an axis between earth and sky

## **Images of Landscape**

We know landscapes...because we go hiking in the mountains, because we drive through streets on the way to work, because we encounter landscapes continually in the course of going about our daily affairs. We know them because they reveal the state of the weather and the passage of the seasons, because they harbor the places of our memories, because they are the visible matrix of where we live. (Relph, 1989, p.24)

Yet how do we describe landscape? What does landscape mean and what are our perceptions of this concept? This section discusses the definitions of “landscape” and what it means to human beings. It is important to review this concept as the other side of the dialectical relationship and how our understanding of the concept may effect the proposed integration with building.

### **Initial definitions of landscape**

Landscape is a complex idea with numerous formal definitions as well as emotional understandings. Norberg-Schulz has this to say about landscape.

The concrete non-Euclidean spatiality of the life-world is revealed by our everyday language. Thus we say that a thing, such as a building, is on the ground, among the trees, next to the hill, under the sky, and, more generally, in the landscape...Together earth and sky constitute a “landscape,” which is the basic form of concrete space. Evidently landscapes are structure and comprise places of different kinds, such as valleys, bays, promontories, hilltops, grives and glades. (Norberg-Schulz, 1988, p.190)

This and the preceding quote by Relph are phenomenological definitions of landscape, essentially defining it as structured space containing entities; entities which help define what kind of space this is. Norberg-Schulz refers to landscapes comprising different kinds of places; a landscape is identified as a certain kind of landscape, i.e. hilly landscape, valley, prairie landscape, etc.

Landscape as a recognized concept was first discovered through painting. “As Kenneth Clark observed, Until fairly recent times men looked at nature as an assemblage of isolated objects, without connecting [them] into a unified scene....It was [not until] the early sixteenth century that the first ‘pure’ landscape was painted [and thus conceived].” (Corner, 1999, p.6)

Changing ideas of nature, wilderness, and landscape continue to inform the physical practices of design and building, and these, in turn, further transform and enrich cultural ideas....Indeed, an essential precondition for popular appreciation of picturesque landscape during the eighteenth century was prior knowledge of pictures – the landscape simply did not “appear” until it had been first presented through painting. Similarly, the acquisition of “good taste” in landscape appreciation was not granted through education alone but through social background and occupation. Consequently, eighteenth-century developments in European landscape equated images of landscape with wealth, high culture, and power, an equation that was encoded not only in garden art but also in painting, literature, and poetry. Landscape, as in the French *paysage*, carries with it to this day a sense of nationhood and cultural identity, an image that is also reflected in the use of the English term “country” to indicate both *nation* and *that which is not the city*. (Corner, 1999, p. 7)

All images of landscape are part of the consciousness of our society, ingrained with memories and emotions, but this has evidently changed significantly throughout history. When the term is used it must be understood within a particular context and time. According to Lyle, “Apart from the human face, our most essential visual imagery is probably that of the landscape...[yet] Although the importance of green landscape to the emotional well-being of people has long been widely recognized, human reactions to particular types of landscapes have not remained the same throughout history.” (Lyle, 1985, p.208) That withstanding, according to J.B. Jackson we need a new definition of landscape for our time.

The one we find in most dictionaries is more than three hundred years old and was drawn up for artists. The reliance on the artist’s point of view and his definition of landscape beauty persisted throughout the nineteenth century. Olmsted and his followers designed their parks and gardens in “painterly” terms. The point is, the two disciplines which once had a monopoly on the word – landscape architecture and landscape painting – have ceased to use it the way they did a few decades ago, and it has now reverted as it were to the public domain....we should not use the word *landscape* to describe our private world, our private microcosm, and for a simple reason: a landscape is a concrete, three-dimensional shared reality. (Jackson, 1984, p.3-5)

Jackson suggests that landscape is a shared reality and should therefore be used to describe the public domain. As it pertains to integrating buildings and landscape, this is perhaps an important opinion to consider.

There are a few initial important points on landscape for the purposes of this thesis.

- landscape is structured space that is seen as different types of landscapes or places
- landscape is a concept that was “conceived” by the human mind
- humans have reacted differently to “landscapes” throughout history and context
- a “landscape” is a shared reality and should be understood according to some as public space

The most important points to recognize are that *landscape* is really an idea that was conceived and developed by humans, and it connotes public space. It is not something which “existed” before we thought of it and defined it. Landscape was a notion about how humans perceived their surroundings. The idea that landscape is public space and shared by all is important as integration concerns sharing space.

### **Environment and Nature**

The word “landscape” is often equated with the concept of environment or nature. We talk about the environment or the landscape in the same breath or refer to our environment when we mean to refer to landscape. Although these might seem to be interchangeable, it must be made clear that “environment” is not the same as “landscape.” As described by Corner:

It is precisely because landscape is construed in an eidetic and subjective way that it can not be equated with nature or environment. As Augustin Berque wrote: Landscape is not the environment. The environment is the factual aspect of a milieu: that is, of the relationship that links a society with space and with nature. Landscape is the sensible aspect of that relationship. It thus relies on a collective form of subjectivity....To suppose that every society possesses an awareness of landscape is simply to ascribe to other cultures our own sensibility. (Corner, 1999, p.6)

Thus, landscape is subjective and based largely in culture. It is more than “that space out there” but is intimately entwined with meaning and how particular cultures live in that space.

Landscape is sometimes also considered to be equivalent to wild nature. As Garrett Eckbo says, “only an occasional fragment of architecture-building goes on in truly wild or primeval surroundings – the country home, the resort or recreation center. It becomes, therefore, somewhat romantic to develop theory in terms of a relation between precise architecture and wild nature, when its realization will entail the reproduction of an authentic facsimile of that scenery.” (Eckbo, 1950, p.39) Yet, in our present world with all the technology and possibility to influence our globe, the concept of wild nature or wilderness has almost disappeared. Edward Relph describes the landscape as everything. “Landscapes include trees, lawnmowers, garbage bags, trucks, people, and clouds in all their particular manifestations.” (Relph, 1989, p.23) This notion seems very accurate considering our potential for managing the entire global landscape. We are no longer at the mercy of wild nature but manage it and develop it at will. Any remaining “wild” areas are purposefully selected by humanity to remain that way.

### **Landscape is Man-made**

It might be suggested that landscape is connected with human habitation considering it is an idea conceived by the human mind, and is in fact a human construction just like buildings. Norberg-Schulz says, “landscape is a space where human life takes place. It is therefore not a mathematical, isomorphic space, but a “lived space” between earth and

sky.” (Norberg-Schulz, 1988, p.44) Landscape as a space where humans live is absolutely humanized. J.B. Jackson concurs, saying: “We tend to think that landscape can mean natural scenery only, whereas in England a landscape almost always contains a human element.” (Jackson, 1984, p.5)

An examination of the language is quite revealing in the argument for landscape being a humanized thing. Jackson writes about the word *landscape*, saying, “The equivalent word in Latin languages derives in almost every case from the Latin *pagus* – meaning a defined rural district.” (Jackson, 1984, p.5)

The syllable, *land*, as early as Gothic times meant plowed field, whereas the second syllable, *scape*, has meant shape or a composition of similar objects. J.B. Jackson writes:

Old English, or Anglo-Saxon, seems to have contained several compound words using the second syllable – *scape* or its equivalent – to indicate collective aspects of the environment....Taken apart in this manner, landscape appears to be an easily understood word: a collection of lands...the word *scape* could also indicate something like an organization or a system. And why not? If *housescape* meant the organization of the personnel of a house, if township eventually came to mean an administrative unit, then landscape could well have meant something like an organization, a system of rural farm spaces. At all events it is clear that a thousand years ago the word had nothing to do with scenery or the depiction of scenery. (Jackson, 1984, p.7)

Jackson further clarifies this definition saying “a landscape is not a natural feature of the environment but a synthetic space, a man-made system of spaces superimposed on the face of the land, functioning and evolving not according to natural laws but to serve a community. (Jackson, 1984, p.7-8)

In the contemporary world it is by recognizing this similarity of purpose that we will eventually formulate a new definition of landscape: **a composition of man-made or man-modified spaces to serve as infrastructure or background for our collective existence**; and if background seems inappropriately modest we should remember that in our modern use of the word it means that which underscores not only our identity and presence, but also our history. (Jackson, 1984, p.8)

This definition clearly expresses landscape as a man-made space, as a background for habitation and existence. It suggests that landscape is absolutely tied with human habitation and influence, and is therefore inclusive of urban spaces. Aldo Rossi says that “Cattaneo (Carlo Cattaneo) never makes any distinction between the city and country since he considers that **all inhabited places are the work of man**: ‘...every region is distinguished from the wilderness in this respect: that it is an immense repository of labor...This land is thus not a work of nature; it is the work of our hands, our artificial homeland.’” (Rossi, 1982, p.34)

The definition of landscape has furthermore been described by John Hopkins as “the place where humans and nature interact.” (Hopkins, 1999, p.206) This is a slightly

different take but refers to a similar idea that landscape is not strictly natural, nor is it something that is only human. Landscape is the product of nature and humans coming together in both real and imaginary ways. This last perspective seems particularly poignant regarding an integration of building and landscape. Landscape understood as a middle ground between nature and human society seems to encourage a sort of integration or mixing between building structure and nature. Although landscape has been described as something other than nature, it does suggest that landscape is a place of interaction and maybe integration between entities within the greater landscape; an integration of building with other entities of the landscape such as land, vegetation, and adjacent exterior space.

### **Beautification**

Finally, the term landscape is often associated with the word "landscaping" or beautification. This is perhaps an extension of the concept of a landscape painting and the connection with nature brought to our consciousness in the English Landscape Movement of the 18<sup>th</sup> century. This image necessarily connects landscape with plants and nature as discussed above.

While it can be argued that landscape is much more than plants and nature, and is perhaps even contrary to wild "nature", it is useful to recognize that this misconception exists and accept the fact that the image of nature is implicit in the concept of landscape. The fact that it is linked with vegetation, greenness, habitat says something that we cannot ignore because natural "processes" do exist in the landscape, and the earthly entities are a fundamental part of the landscape that should not be disregarded.

### **Conclusions on landscape**

This section illustrates a few important points for consideration in following discussion on integration of building and landscape.

- landscape is more than just environment, it is identifiable as a specific type of place with particular characteristics
  - therefore, integration of building and landscape is contextual
- landscape is not just nature or non-urban space, it is everything from urban areas to wilderness
  - therefore, integration of building with the rest of landscape seems logical because it is part of the greater landscape
- landscape is associated with inhabited space - it is man-made, defined, lived space
  - particularly a *designed* landscape space
- landscape is associated with nature and natural entities but not limited to that

This section is not intended to give an exhausted study of the concept of landscape, nor is it to arrive at a single definition. However, for the purposes of this thesis landscape should be recognized as our entire inhabited space. Sometimes, because of our considerable influence over the environment, this perceived inhabited space extends



beyond our actual living space into the wilderness and as yet undeveloped corners of the world. Yet this too is in a sense our landscape, as we have chosen to leave these areas in that state. Landscape becomes everything that is outside the building. Building is defined as the inside space.

This section is also intended to review some of the notions of landscape in order to understand the complexity of the subject as well as point out some ideas important for the argument for integration and the basis for the construction of the principles to follow.

## **Concluding Statements**

In summary, this discussion on the inside/outside dialectic and individual meanings of building and landscape is important as background by defining what is meant by building and landscape before beginning to discuss the possibility of their integration.

The review of definitions also serves as a point of departure for understanding the relationship they have to each other; how they demonstrate or would potentially demonstrate integration. The following is a list of significant points taken from this initial examination of terms and perceptions on building and landscape, specifically characteristics that seem to indicate a connection between them:

- both buildings and landscapes are understood as human constructions and inhabited places – human-made, designed, lived space
- in general, building means inside and landscape means outside, but as both are inhabited places, they can both be experienced as insides
- buildings actually have a model found in natural shelters
- landscape still has an association with nature and natural entities
- landscapes are shared realities and should be seen as public space
- buildings rest on the ground and act as a vertical axis connecting to earth and sky, and therefore are already somewhat integrated with landscape or earth – this fact offers further possibilities for integration
- contemporary views consider landscape as everything from cities to wilderness – with this view buildings are just objects in the landscape and it seems logical that they should have good relations with the rest of the whole of which they are a part

## Human versus Nature Relationship

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Having reviewed some issues of house and landscape which might be important for an examination of integration, it is perhaps also informative to examine the two main attitudes towards nature; humans as **part** of nature and humans feeling **apart** from nature.

### Apart from nature

More *civilized* societies have usually considered themselves as strictly *apart* from nature, either being afraid of it or superior to it. Anne Whiston Spirn says in her own book *The Granite Garden* that "The belief that the city is an entity apart from nature and even antithetical to it has dominated the way in which the city is perceived and continues to affect how it is built." (Spirn, 1984, p.5)

The history of the world has carried this common feeling of fear or subsequent dominance over nature, to greater or lesser degrees. It is perhaps for this reason that an idea of integrating humans and nature is worth examining, for integration is clearly proposing the possibility of a positive interaction between humans and nature instead of a separated, feared, or destructive relationship.

William Rees talks about our separateness from nature as a "Mental apartheid".

We...seem plagued by a form of mental apartheid that has erected an imposing psychological barrier between modern humans and the rest of reality. This perceptual dualism is clearly embedded in our language (which is itself a map of how we see the world). For example, the very term "environment" separates the really important stuff "in here" from everything else "out there." Our exemptionist attitude is also evident in the way we resist the notion that humankind is an integral part of nature, that we are just one of many millions of species occupying this planet...we do not have a body, we are a body; we are not surrounded by an "environment," we are an intimate part of the ecosphere...(Wackernagel and Rees, 1996, p.139)

John Hopkins believes this disconnection is largely to be blamed on technology. "Through the use of technology, we have been able to hide from ourselves the natural processes upon which we are dependent. We have become disconnected and dissociated from nature." (Hopkins, 1999, p.208) Spirn concurs describing the influence of architecture on our relationship with nature.

Architecture is a powerful tool of adaptation, but it has become an instrument of alienation. Most contemporary architecture, with its sealed windows, emphasis on façade and ignorance of landscape, divorces us both from the intimate processes of living and from nature, our fundamental habitat. Our power to transform the Earth has promoted the illusion that we control nature, that we are somehow separate from it. (Fung, 1999, p.144)

This control over nature is still prevalent today although it is slowly being influenced by the relatively recent interest in issues of the "environment." This influence is conditional however, as Michael Hough writes, "While the environmental movement is changing urban perceptions in the 1990s, the acceptance of nature is still a function of how it conforms to a predetermined set of values and to what extent it is under control." (Hough, 1995, p.173) As a society we seem unable to give up our feeling that we are superior over nature and look out at this alien world as something we don't understand.

It's interesting to see how this view of man/nature has been used in modernist architecture. If we see ourselves as apart from nature, then the natural dialogue involves contrasts interacting, possibly even as a dialogue on the subject. Modernism is often concerned with documenting this contrast.

Historically, human societies have looked upon nature as an alien entity entirely apart from the ordered civilized framework of the city. It was a creature initially to be feared and later to be conquered at the hand of will power and technology. For the purposes of this thesis it is clearly important to recognize that this attitude has been the prevalent view until rather recently, and the idea of integrating building and landscape clearly confronts this pedagogy with possibilities of a more interactive and symbiotic relationship between humans and nature.

### **Part of Nature**

Contrary to this separation from nature is the belief that humans are in fact part of a more inclusive definition of nature. Although this has not historically been accepted, it is quickly becoming the more accepted view and seems to be a strong basis for this proposal for integrating buildings and landscape.

According to the reasoning of Alfred Caldwell, humans and architecture must be recognized as aspects of nature.

Nature is not merely what we usually mean by external nature, such as the landscape, the flowers, and the seasons. Nature is the entire context of the universe. Hence nature is reality. The unreal is *contra naturam* – against nature. A single word could do: nihilism. That means the nothing, the meaningless, the empty. So architecture as the expression of nature is not some special kind of architecture. There has never been any other. (Domer, 1997, p.228)

Caldwell is not just proclaiming that humans are part of nature, but architecture is built in its image. In the opinion of Anne Whiston Spirn, "Nature is a continuum, with wilderness at one pole and the city at the other. The same natural processes operate in the wilderness and in the city." (Spirn, 1984, p.4) Humans belong to this large continuum of nature just as plants and animals, and architecture follows showing strong ties with the natural world.

Although throughout occidental history the idea of humans belonging to nature was not a popular opinion, this idea was apparent in Oriental cultures. For "...as Stanislaus Fung

points out, there is an important aspect of mutuality and inclusion to Oriental ideas of landscape as distinct from the binary dualism characteristic of Western conceptions.” (Fung, 1999, p.6) Although the actual developments in Oriental architecture may not demonstrate any more physical integration of building and landscape, the theory of inclusion and balance was part of their philosophy.

This same philosophy began to gain acceptance in Western cultures as well, despite apparent pressures from technology, and showed up in diverse examples of architecture. The change in attitude was based in ecological intentions and is considered to be a necessary starting point for the survival of humanity and restoration of the physical world.

Another fruit of the enlarged sense of nature that systems ecology and bioregional thought have given us is the realization that cities and suburbs are parts of the system....One can learn and live deeply in regards to wild systems in any sort of neighbourhood – from the urban to a big sugarbeet farm. The birds are migrating, the wild plants are looking for a way to slip in, the insects live an untrammelled life, the raccoons are padding through the crosswalks at 2 am, and the nursery trees are trying to figure out who they are. (Snyder, 1994, p.25)

According to this ecological perspective of humans and nature, cities are not places without nature; nature is everywhere. From an ecological interest, recognizing that cities are part of this natural system leads questions on how to improve the way they function within the system, and perhaps indicates the need for a more integrated relationship with it. Beatley concurs with this idea pointing out that:

The ecological view of cities and towns rejects the tendency to view nature as “somewhere else” – as outside and separate from where people live and work. Nature is all around us, and with this appreciation may emerge a sense of the ecological significance and aesthetic importance of many different types of lands and landscapes, whether it be the corner woodlot, the suburban creekbed, or the urban waterfront. (Beatley, 1997, p.87)

## Concluding Statements

This discussion on humans and nature is enlightening for this thesis because it demonstrates that there have existed contrary views and these views have had significant influence over our physical environments. This theme of being *part* or *apart* from nature seems to run parallel with ideas of “integrated or non-integrated” building/landscapes. It brings up some interesting points regarding integration of building and landscape:

- architecture and technology can alienate humans from nature; cities are seen as entities separate from the natural world
  - therefore, when considering integration of building with landscape, attention should be given to this issue and recognize the potential separation
- nature is reality and architecture is modeled on nature
- nature is really a continuum with wilderness on one end and city on the other

- the term nature might be replaced by landscape as we now consider the whole world to be part of landscape
- recognizing cities as part of nature indicates a potential interest in a more integrated relationship between buildings and nature

## Definition of Integration

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This section identifies and defines the term *integration*, the major theme of this thesis. Before we can begin to talk about this term as it relates to an integrated building/landscape we must be clear about what integration means. According to Tormont Webster's Dictionary integration means the following:

**Integration** n. **1.** a. An act or the process of integrating. b. The state of becoming integrated. c. **Desegregation.** **2.** The organization of the psychological or social traits and tendencies of a personality into a **harmonious whole.** **3.** *Physiology.* The processing of information received by the nervous system in such a way that a flexible and coordinated response is made.

This is not very helpful but does bring up other words like harmonious and whole. We can look further at related words.

**Integrate** v. **1.** To make into a whole by bringing all parts together; unify. **2.** To unite with or incorporate into a larger body or unit; especially, to cause (members of an ethnically or culturally distinct group) to be assimilated into a society. **3.** To desegregate. **4.** *Mathematics.* To calculate the integral of (a function). **5.** To bring about the harmonious integration of (personality traits): an integrated personality. To become integrated or undergo integration. [**Latin integrare, to make complete, from integer, whole.**]

**Integer** 1. Any member of the set of positive whole numbers (1, 2, 3,...), negative whole numbers (-1, -2, -3,...), and zero. 2. Any intact unit or entity. [**Latin, whole, complete, perfect, virtuous.**]

**Integral** 1. Essential for completion; **necessary for the whole.** Forming a constituent or intrinsic part; not separate: a house with an integral garage. 2. Whole; entire; intact.

This search suggests integration is a positive thing or action identifying similar words such as *unifying, making complete, whole, perfect, or even virtuous!*

### Completing the Whole - Positive Connotations

A look at the word *integral* brings us to the ideas of completion and the phrase "necessary for the whole." Such a bold statement suggests that integration is more than a good thing, it is necessary to complete the whole. Especially with the New Urbanists this idea of "completing the whole" is very important. Christopher Alexander is also concerned with "making everything whole" in his writings on theories of urban design and how to "heal" the city. Making things whole, or integrating parts of the city like buildings and landscape, is proposed to be the number one goal of designers and citizens alike.

In *A Pattern Language*, Alexander discusses numerous opportunities for meeting, or integration of different types of people through the manipulation of physical space; ideas

of integration which would supposedly contribute to “healing the city”. Here are a few of the *patterns* which include opportunities for integration mentioned by Alexander in *A Pattern Language*:

27. Men and women (integration of sexes)

35. Household Mix (integration of ages)

43. University as a marketplace (integration of academics into community)

67. Common Land

The common land has two specific social functions. First, the land makes it possible for people to feel comfortable outside their buildings and their private territory, and therefore allows them to feel connected to the larger social system – though not necessarily to any specific neighbour. And second, common land acts as a meeting place for people. (Alexander, 1977, p.337)

69. Public Outdoor room

88. Street Café

The connotations of *integration* are also discovered by identifying with words of similar meaning, some of which have already been mentioned. Similar terms to integration might be *together*, *blurring*, *melding*, *overlapping*, *connecting*, *unifying*, *merging*, *interaction*, or *assimilation*. Each of these terms has slightly different connotations or subtlety of meaning which might be useful or more descriptive with regard to understanding the result of integration. All seem to indicate a bringing together of two or more objects for the completion of a whole and ultimate betterment of everyone or everything.

We may also use some of the prepositions listed by Douglas Paterson to begin to express the subtle meaning of integration. Integration might be related to the prepositions:

beside	sandwiched between
next to	threshold
inside	entrance
on the surface	exit
attached	doorway
onto	halfway
with	axis mundi
coupled with	through
linked	into
along	intersection
alongside	arcade
adjacent to	midway
near to	within
edge	

As discussed earlier it is a term that assumes a dialogue between parties, using prepositions that necessarily bring them together in some physical relationship.

There can also be different kinds of integration in many contexts, and each of these may have numerous different connotations or images for us; both positive and negative depending on the context.

- Racial integration
- Cultural integration
- Vertical integration i.e. Grade 1 and 2, or adults and children
- Integration of the bright and slow pupils
- Integration of boys and girls or men and women (schools, work environments, social environments like a bar, restrooms, residences)
- Mathematical integrals
- Integration of people in a community – either a town or larger urban centre – the importance of public places for this to happen
- Integration of public and private or public and semi-public/private
- Integration of the mentally challenged with ‘normal’ community members
- Integration of city and country or urban and rural (the large realization of the building and landscape integration?)
- Integration of inside and outside (which is one of the fundamental relationships in the relationship between building and landscape)
- Integration of building with existing urban fabric and history of building in that area – issues of vernacular building styles, contextualism
- Integration of neighbourhoods (perhaps parallel to culture as above)
- Integration of forms, colours, textures, space
- Integrated systems i.e. computers, machinery, etc.

This list offers only a few of the many possibilities, but enough to show there can be integration of different people, of objects, of ideas, or of parts of the physical environment, as this study is focusing on.

### **Assimilation – Negative Perception**

Assimilation is another word for integration but there is a noticeable difference from the positive connotation of integration. Integration has a positive image of two or more different entities being brought together for the purpose of improving both of them. Assimilation has a negative connotation of making all things alike and thus removing the detailed differences that make each thing special. It refers us to a grey scale of similar objects instead of the brilliant colours of individuality.

This danger should be considered in an attempt to integrate buildings and landscapes. Although it is professed to improve the relationship, there is also the danger of removing the exciting contrasts and creating a single experience. The thesis does not intend to remove the differences but work at improving the connection between the building and landscape, the inside and outside. These contrasts must and will remain. The focus is on how they interact. Integration maintains the intention of healing and connecting the building and landscape into a united whole. A system of dialectics will continue to thrive



in this united whole from the intimate scale of a single building to the massive scale of an entire city.

## **Concluding Statements**

The term integration is used, often excessively, to depict a positive image. In advertising or marketing the word is quietly slipped in to complete the description of a place or service. “We have an integrated system.” “This development offers an integrated public space.” What is exactly meant by these phrases is not necessarily clear, but it is undoubtedly trying to portray a positive image and we are expected to be impressed, even relieved by this notion of integration.

What it means with regard to a building/landscape relationship has yet to be determined but it clearly represents the good things of wholeness and unity, presumably an answer to the *healing* or *completing* of our cities. The following points should be noted:

- integration uses words like make whole, complete, integral – it has the intention of making the dialogue better
- integration can be of many things, people, objects, ideas
- integration does have a different connotation than assimilation – given that, it should be wary – the idea of integration in this study does not intend to remove the differences but focuses on a better connection between the two sides, in this case building and landscape

## **Building and Landscape Integration**

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Now that the terms of house, landscape and integration have been initially addressed, it is possible to discuss the relationship(s) between them and begin to consider what the integration of building and landscape could mean. Through the earlier discussions it became clear that the relationship between building and landscape has often been very poor and perhaps needs to be more interconnected or integrated. The following section will begin to examine integration of building and landscape as a first step to developing a language of integration.

“Theodore Steinberg, in his book *Slide Mountain: Or the Folly of Owning Nature*, talks of how we have ‘de-physicalized’ the land (Steinberg 1995). That is, the average homeowner has very little sense of being connected in any real physical, environmental, or ecological sense to anything else.” (Beatley, 1997, p.16) This loss of connection to the land or landscape is the problem we are addressing in this thesis. The proposal is a reuniting of human with land, or building and landscape.

### **A fundamental Relationship - Building and land**

According to Elisabeth Kassler there are basically three architectural relationships between building and landscape. The first, in the words of Kassler is that “architecture, the pure creation of man’s spirit, be wholly independent of its natural setting, to which it then serves as complement and foil...implied in the contrast is a relationship of a kind – the dynamic relationship of opposites.” The second relationship called a modified pure landscape style, is best illustrated by the English Landscape Movement of 18<sup>th</sup> century England. The third approach “makes no fast distinction between the artifact and the facts of nature. Buildings are not strangers to the land, for everything is done to give a sense of interpenetration between architecture and its natural surroundings.” (Kassler, 1964, p.80) This approach was associated with Frank Lloyd Wright, and his firm stipulation that a building be “of the site, not on it.” (Kassler, 1964, p.80)

It is this third approach which acts as the basis for this thesis: believing that buildings and landscape are not entirely distinct entities but two parties belonging to the same whole. Rudolph Arnheim says “No spatial problem is more characteristic of the architect’s work than the need to see outside and inside in relation – that is, synoptically, as elements of the same conception.” (Arnheim, 1977, p.91) Seeing them in relation is the first step; **how** they relate is the next challenge. Arnheim continues his explanation on outside and inside saying:

Architecture as we know it combines two not easily reconciled tasks. On the one hand, it has to provide a shelter that protects its inhabitants against unwelcome outside forces and offers them a congenial internal environment. On the other hand, it must create an exterior physically adapted to its functions and visually impressive, inviting or deterring, informative, etc. Perceptually and practically, the worlds of outside and inside are mutually exclusive. One cannot be in both at the same time. And yet they border directly on each other. (Arnheim, 1977, p.92)

Actually, it does seem possible to be “perceptually” both inside and outside simultaneously. One can be outside of shelter, open to the sky above, yet still feel inside a particular landscape space, within the walls of a valley or inside a clearing. Yet, in the context of designing a building in a landscape, how will the inside and outside relate to each other if they are seen as “mutually exclusive” yet “elements of the same conception?” Regarding designed space, Eckbo states that “Our major objective is the integration, the harmonization, the co-ordination of, or the establishment of good relations between, the physical forms of nature and the physical manifestations of man in the landscape.” (Eckbo, 1950, p.38) This also means good relations between the inside and outside. How this is accomplished is not stated but it is clear that the shelter and the landscape should be in harmony and integrated.

Perhaps Norberg-Schulz is more specific when he says that “In general, the problem is to settle in such a way that a ‘friendly’ relationship with the site is established. Such a friendship implies that man respects and takes care of the given place. Taking care, however, does not mean to leave things as they are; rather they ought to be revealed and cultivated. Thus the settlement interprets the site and transforms it into a place where human life may take place.” (Norberg-Schulz, 1985, p.31) It is thus, an active and purposeful movement; something we must be attending to in our designing and planning. The idea of a friendly relationship perhaps also indicates that they would live together in a sort of harmonious or integrated condition.

Christopher Day discusses the importance of being aware of and purposefully connecting the different activities occurring inside and outside buildings.

Today our buildings serve different functions – inside and outside ones. Inside is to house an idea, say a clinic, a shop, a home. Outside they bound, articulate, focus or alter an external space, adding to or detracting from what is already there, the spirit of place. Many outside spaces serve both functions – an ‘idea’ function (like a meditation garden, private courtyard or car park) and a ‘response to place’ function.

Because the inside space, activities and qualities of a building and the outside surfaces and appearance are interrelated, the whole building and all the activities it generates need to be involved in this great conversation. The conversation between the idea, usage and place, between what will be and what already was. Between physical substance – the materialization of the idea – and invisible spirit of place – the spirit brought of the surroundings. (Day, 1990, p.107)

This quotation clearly describes the necessity for a philosophy of wholeness and integrated inside-outside relationship with regard to the activities and experience. All of these ideas together describe in different words the primary importance of bringing together inside and outside, humanity and nature, building and landscape. Richard Forman describes this integration of building and nature from an ecological perspective. According to Forman “In some countries these two basic components – [which he calls] ecology and culture – have diverged relatively recently...The deeper message is the importance of a new form of linkage between ecology and culture, land and people, nature and humans.” (Dramstad, Olson, and Forman, 1996, p.10) Whatever the

semantics of the dialectic there is an obvious concern for a “linkage” or integration between the building form and activities, and the existing site.

As briefly mentioned earlier, this degree of connection or “integration” being encouraged is often minimal and superficial. The building sits “on the land” and is not, as Frank Lloyd Wright suggests, “of the land.” The first and most fundamental way in which buildings and landscape are related is simply by constructing a building on the ground. There is a necessary and deep connection inherent in this act, which consists of leveling ground, digging into the earth, and sinking either foundations or the building envelope itself into the ground.

James Rose writes humorously about a couple wanting their “‘house’ to grow out of the landscape.

I put “house” in quotes because it wasn’t really a house. There wasn’t any word for it. It was shelter, but not “a shelter” because it was still too much the landscape for that. It wasn’t just a landscape, either, because it had very sophisticated “shelter” – radiant heat, massive roofs, and space enough so that you could do anything you might do in a house – but it wasn’t what people call a “house”. The nearest anybody came to finding a name for it was “environmental complex”, and that was a howl.” (Rose, 1965, p.19 – 21)

To describe what this integrated, connected relationship could physically mean is obviously difficult. We already as a society have very set ideas about what is a house/building and what is landscape. Therefore an integration of building and landscape is an image that perhaps makes sense theoretically but is difficult to express verbally and physically.

### **The Physical Reality - Edge**

It is necessary to clarify what an integrated relationship might be. What it physically involves formally, spatially, and materially. Might it simply be the merging of the building/landscape dialectic? If this is so, what does this merging look like?

First, the integration of building and landscape involves the manipulation of *both* building and landscape. If we consider them two separate elements it must be stated that both will have a role in the integration. It is the building however, which is generally being added to the surroundings and therefore it is the manipulation of the building which will play the greater role in the integration process, specifically the “edge” of the building.

Norberg-Schulz has identified particular kinds of boundaries or edges. “The boundaries of a built space are known as floor, wall, and ceiling. The boundaries of a landscape are structurally similar, and consist of ground, horizon, and sky.” (Norberg-Schulz, 1976, p.5) These boundaries will perhaps be the moments or “in-between” places where building and landscape will meet, merge and simultaneously “induce awareness” of each other.

Obviously the edge of the building is usually a wall. The wall becomes the most noticeable point of interchange between the inside and outside or the building and the rest of the landscape. In the words of Robert Venturi, "Since the inside is different from the outside, the wall – the point of change – becomes an architectural event. Architecture occurs at the meeting of interior and exterior forces of use and space....Architecture as the wall between inside and the outside becomes the spatial record of this resolution and its drama." (Venturi, 1966, p.86) Certainly the form, width, height, porosity, material etc. of this wall will effect the "point of change" between inside and outside. For example, any holes punctured in this wall would allow visual connection across the barrier and begin at least some movement between these opposites.

The term integration perhaps starts to become clearer when we begin to consider physical objects such as *the wall*. Many planners like Kevin Lynch have divided the physical environment into different parts such as this in order to make it easier to identify the relationships taking place in the environment or landscapes. Lynch divides the city, for example, into five types of elements: "paths, edges, districts, nodes, and landmarks." (Lynch, 1960, p.46) I think it is the edge that is of most interest for this study of integration and is the area in the building/landscape relationship that seems to offer the most opportunity for integration.

As explained by Lynch, "Edges are the linear elements not used or considered as paths by the observer. They are the boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, walls. They are lateral references rather than coordinate axes. Such edges may be barriers, more or less penetrable, which close one region off from another; or they may be seams, lines along which two regions are related and joined together." (Lynch, 1960, p.47) This idea of "seams" is particularly illustrative as an element or place where two regions or entities are connected. This definition of edge may serve as the place where the building and landscape will meet and be "sewed" together.

This boundary or seam may also take the form of a "threshold" or as Norberg-Schulz calls it, "an embodiment of a difference." Norberg-Schulz describes Heidegger's analysis of Trakl's "A Winter Evening," by showing how a threshold acts as both the unity and difference of world and thing. As he says, "In a building the threshold separates and simultaneously unites an outside and an inside, that is, what is alien and what is habitual. It is a 'gathering middle' where an outlook on the world is opened up and set back on earth." (Norberg-Schulz, 1988, p.46) A threshold such as a door is a specific aspect of an edge which has the potential to integrate the building and landscape. It is a "place" where the opposite sides "gather" and make an exchange. Thresholds define both sides by revealing the otherness, the brilliant warmth of the garden or the dark cool inside of the kitchen hall.

That space should contain these points of reference between building and landscape, between insideness and outsideness. These in-between points may have a considerable volume or thickness to them where building flows into landscape and landscape

interlocks with building, but the dialectic is not lost and we are still aware of where we are. Aldo van Eyck proposes that:

Architecture should be conceived of as a configuration of intermediary places clearly defined. This does not imply continual transition or endless postponement with respect to place and occasion. On the contrary, it implies a break away from the contemporary concept (call it sickness) of spatial continuity and the tendency to erase every articulation between spaces, i.e., between outside and inside, between one space and another (between one reality and another). Instead the transition must be articulated by means of defined in-between places which induce simultaneous awareness of what is significant on either side. An in-between space in this sense provides the common ground where conflicting polarities can again become twin phenomena. (Venturi, 1966, p.82)

## **Concluding Statements**

Integration of building and landscape begins with recognizing that there is no fast distinction between them in the sense that they are two elements of the same conception. They are two parts of a greater whole.

An integration of building and landscape seems to suggest a friendly relationship or a relationship that illustrates good relations between the two parts. The following is a list of general points on what creates an integrated building/landscape:

- it is perceptually possible to be simultaneously inside and outside
- integration means to respect and take care of site
- it involves revealing and cultivating aspects of the site, transforming it where human life may take place
- in order for integration to take place, the whole building and all associated activities or program ideas must be involved
- integration begins with the building being constructed on the ground
- edges are places where integration will take place – they are places of exchange, an architectural event
  - edges are seams which unite and connect building and landscape
  - they act as a threshold, a place with volume that has an identity of their own – it is here, this in-between place that buildings and landscape interact and merge

## **Similar Concepts supporting Building/Landscape Integration**

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There exist numerous similar concepts to the idea of building/landscape integration, and it is perhaps enriching and helpful to acknowledge these parallels. In some of these philosophies can be found very fundamental arguments in support of a human/nature harmony and strongly support the idea of integrating buildings and landscape.

### **Genius Loci**

The genius loci is a concept which is extremely similar in spirit to the idea of an integrated building/landscape. The idea is not unlike the philosophy of being *part* of nature. "*Genius loci* is a Roman concept....ancient man...recognized that it is of great existential importance to come to terms with the *genius* of the locality where his life takes place." (Norberg-Schulz, 1976, p.7) It is a concept that requires recognition of the essential qualities of a place and living in this place in a way that is appropriate. The building is responsible for unifying man and land and is necessary for man's being in the world. Heidegger and Norberg-Schulz describe this complete relationship between humans and land as "dwelling".

When man dwells, he is simultaneously located in space and exposed to a certain environmental character. The two psychological functions involved, may be called orientation and identification. To gain an existential foothold man has to be able to *orientate* himself; he has to know where he is. But he also has to *identify* himself with the environment, that is, he has to know *how* he is in a certain place. (Norberg-Schulz, 1976, p.7)

Simply, in the words of Norberg-Schulz, man dwells "when he experiences the environment as meaningful" (Norberg-Schulz, 1980, p.5) and this is successful when he has understood the genius loci of a place. This act of dwelling is really about integrating the human body and mind into a physical space or landscape.

Furthermore, there seems to be a link between the idea of dwelling and the concept of simply *being*.

The word "building" refers us to the IndoEuropean base *bhu* for "to dwell" and is related to our English "to be." Heidegger has drawn the inference from this relationship, pointing out the many strands that link dwelling to being. Building is first a being near a place, a haunting of a site, an eagerness for a manifestation and an obedience to what presents itself there. Building already begins in this approach to a site. Its fundamental activity is that of situating. This first building is a reflecting on a site – a preoccupation with a piece of nature as it is being framed and drawn within a human context. (Jager, 1989, p.223)

This act of situating plays a large part in how man orientates himself and identifies with the environment and therefore how he dwells. The entire notion of genius loci and dwelling is fundamentally an argument for integration and harmonious "being" between

the human and nature. This idea is clearly a similar line of thought to integrating buildings and landscape, both ultimately aspiring to a kind of perfect wholeness.

## Place

There is another idea that is similar to integration of building and landscape; the notion of "place".

Norberg-Schulz says that "A location or 'lived space' is generally called a *place*, and architecture may be defined as the making of places." (Norberg-Schulz, 1988, p.45) This seems to suggest that places are dependant on the way the architecture is connected to the land and therefore with the concept of dwelling. In this way it is similar to the concept of *genius loci*. In fact, Norberg-Schulz says, "The concept of *genius loci* denotes the essence of place." (Norberg-Schulz, 1976, p.5)

Edward Relph describes "places" as "fusions of human and natural order" and "significant centres of our immediate experiences of the world." (Relph, 1976, p.141) Lukerman (1964) also finds place to be an "integration of elements of nature and culture" and agrees with Norberg-Schulz saying the "the idea of location, especially location as it relates to other things and places, is absolutely fundamental" as a component of "place." (Relph, 1976, p.3) This emphasis on fusing human and natural order is particularly pointed considering this proposal for integrating buildings and landscape. It suggests to me that an integrated building and landscape might help to create these "places."

Place obviously refers to a physical location, even a "lived space" according to Norberg-Schulz. A place is created, you could say, through dwelling in the landscape, and dwelling is about identifying with the *genius loci*. Yet "place" is more than just a physical reality of dwelling. It is connected with process and an understanding of what the land means and has meant to a particular culture over a long period of time. Relph says that "Although place is closely related to space and landscape, its experiential dimension is qualitatively different from that of landscape or space....Place experiences are necessarily time-deepened and memory-qualified." (Relph, 1989, p.26) Place results from an involvement and care for land. It is connected with meaning and belonging.

Finally, like this thesis on integration, "places" are about the quality of experience. As Norberg-Schulz describes them, "Being qualitative totalities of a complex nature, places cannot be described by means of analytic, 'scientific' concepts." (Norberg-Schulz, 1976, p.3) Places cannot be objectively described as improvement through numerical evaluation. Similarly a study of integrating building and landscapes cannot be easily explained scientifically. Both ideas are based on phenomena and the subjective personal experience of environment.

In conclusion, the idea of "place" is intimately connected with the concept of a *genius loci* and dwelling. It is dependent on the way humans live in a certain location and concerns the "fusion of humans and nature". Place is also connected with the element of time and the meanings man has with his lived space. I believe that the idea of "place"



embodies the same emphasis on human/nature connections as this thesis on integrating buildings and landscape.

### **Wholeness**

These ideas of genius loci, dwelling and place seem to be similarly expressed through the idea of “wholeness” described by Christopher Alexander. Alexander believes that the key to ‘healing’ the city is “quite simply, to produce wholeness everywhere.” (Alexander, 1987, p.20) It is easy to see the connection between wholeness and the idea of integrating building and landscape, which is a form of merging or uniting of the elements of a city into a whole.

Paolo Soleri’s research into the idea of an “arcology” addresses the same idea in a similar way. “The term ‘arcology’, (being a fusion of the terms architecture and ecology), indicates that at a certain point in bigness, the architecture itself becomes a positive environmental or ecological factor, shaping man’s sociological identity....If society is to function adequately, then it must comply with the existential process of evolution and undergo implosive, compressive contraction. The whole is once more the sum of parts.” (Wall, 1971, n.pag.) Wholeness is defined in the term arcology, the fusion of architecture and ecology, another way of saying humanity and nature.

Douglas Paterson addresses this same concern for wholeness in this statement when he says, “we [now] face two significant crises; one an environmental crisis, the other an experiential crisis. The crises are interdependent; one can not be solved without also solving the other. In the environmental crisis we are well aware of our growing inability to sustain our future. In the experiential crisis we witness a fragmentation of self, community, and a sense of the civic.” (Paterson, ASLA, 1997:21) His conclusion seems to be that the experiential and environmental are interdependent with linkages between the ecology and phenomenology, between nature and humanity; with this duality potentially holding the answer to finally reaching a sustainable community.

Integration of building and landscape presumes the existence of the same whole system of which building and landscape are both parts. Integration or a more friendly relationship between them would seem necessary for the whole to be successfully achieved and maintained.

### **Sustainability**

The rather recent term of sustainability does seem to be somewhat associated with the earlier concepts of genius loci, place, wholeness and I would propose integration. They all address the importance of a meaningful connection between humanity and the ecological systems of the natural world.

The National Commission on the Environment says that sustainable development is “a strategy for improving the quality of life while preserving the environmental potential for the future.” (Beatley, 1997, p.4) This statement again addresses the two sides of the

story, the issues of man and the issues of nature. Sustainability is ultimately about accepting that all elements and aspects of the earth are interrelated and encouraging, even requiring a symbiotic relationship.

As it pertains to sustainable building and architecture, Andrew Scott says that:

What it actually becomes is not just an environmental strategy but a means of making buildings that are more user responsive, more humane places to inhabit, more intelligent in the way they balance their energy flows, more respectful of nature and the resources it offers, and more understanding of buildings having a life span during which they undergo substantial change and adaptation. Put together, it simply equates to better designed places in tune with the environment. (Scott, 1998, p.2)

I see many correlations between sustainability and integration. Although the idea of integrating buildings and landscape may not be the main focus of sustainability, surely it will play a large part in this process of designing buildings to be in tune with the environment. This connection may be worth further exploration in future work.

### **Ecopsychology**

Ecopsychology is the study of the effect of the natural environment on our mental well being and is the "name most often used for this emerging synthesis of the psychological and the ecological." (Roszak, 1995, p.4) According to many psychologists, human beings simply require an intimate connection with nature.

There is an increasing evidence suggesting that mental health and emotional stability of populations may be profoundly influenced by frustrating aspects of an urban, biologically artificial environment. It seems likely that we are genetically programmed to a natural habitat of clean air and a varied green landscape, like any other mammal. The specific physiological reactions to natural beauty and diversity, to the shapes and colors of nature, especially to green, to the motions and sounds of other animals, we do not comprehend and are reluctant to include in studies of environmental quality. Yet it is evident that in our daily lives nature must be thought of not as a luxury to be made available if possible, but as part of our inherent indispensable biological need. (Dramstad, Olson, and Forman, 1996, p.11)

Ecopsychology is a unique study because of how it suggests a psychological causal link with the physical environment. "Unlike other mainstream schools of psychology that limit themselves to the intrapsychic mechanisms or to a narrow social range that may not look beyond the family, ecopsychology proceeds from the assumption that at its deepest level the psyche remains sympathetically bonded to the Earth that mothered us into existence." (Roszak, 1995, p.5) In fact, as James Hillman states "the human subject has all along been implicated in the wider world of nature. How could it be otherwise, since the human subject is composed of the same nature as the world? Yet psychological practice tends to bypass the consequences of such facts." (Hillman, 1995, p.xix) As one

astronomer put it, hydrogen is “a light, odorless gas that, given enough time, turns into people.” (Roszak, 1995, p.8)

Again there is evidence that human beings should be and actually are intimately connected with nature. The study of Ecopsychology is reportedly stating the same concerns as those of *genius loci*, place, wholeness, and sustainability. They all support a connection or integration of human world with natural world. Perhaps this notion of ecopsychology and biological reasoning for a reconnection is even at the core of the parallel arguments.

However, this need has nothing to do with numerical facts on increased health etc. but is entirely based on spiritual healing. Tobias says that “deep” ecologists such as Naess and Nash justify their convictions for this human/nature connection saying that human beings simply have a biological and psychologically “need” to be integrated with the “goodness, balance, truth and beauty of the natural world.” (Thayer, 1989, p.105) It therefore seems natural to connect our dwelling structure with the natural world or landscape, permitting this meeting of human and nature.

This study of ecopsychology is based on the notion of *biophilia*, an important concept described by the Harvard zoologist E.O. Wilson as “the innately emotional affiliation of human beings to other living organisms.” (Roszak, 1995, p.4) Wilson also said this innate urge is “clearly evidenced in daily life and widely distributed” (Mooney and Luymes, 2000, p.18). This concept encourages a close connection with nature, perhaps an integrated building and landscape which could satisfy this “innate urge for affiliation with nature”.

Thus there is a connection between the physical environment and the health of the body and mind. If we are biophilic as suggested by Wilson and the ecopsychologists, it is necessary to bring humans and nature together for our biological and psychological well being. It therefore also implies that there is a necessity for an integration of buildings, man’s place of habitation, and the landscape, the place where humans and the natural world meet.

### **Cell is to the Body**

Like sustainability and all of these philosophies promoting a human and nature connection, there is the understanding that all aspects of the earth are interconnected. “Not only in shops, not only to make money or power out of other people, but in every aspect of environmental design, we must recognize that whatever we do affects the human being, the surroundings, the spirit of places and the wider world.” (Day, 1990, p.11) This argument by Christopher Day brings one to an awareness of the larger picture. “Barry Commoner’s well-known principle that ‘everything is connected to everything else,’ has become, in the 1990s, the embodiment of a larger regional and global view as well as a local one.” (Hough, 1995, p.24)

Therefore what happens at an individual scale of one building in the landscape will carry on to effect the larger community, the city, the region and the world. Aldo Rossi believes that in order to create wholeness at the level of the city we must first look to the individual “artifacts” in the city. These individual “artifacts” and the building/landscape relationship discovered at the site level remind us of the “cell is to the body” idea of Patrick Condon. Focusing on the micro relationship of the artifact may help us to build a better macro relationship found at the level of the city or the region, initially to improve the phenomenal world but also, because everything is linked, as a step towards improving the ecological world and the creation of a sustainable region.

Furthermore, as this thesis is focused at the scale of a single building in a low density landscape, it may act as a model or “cell” of ideas that could be taken in many directions to higher density situations or larger scales of the community or city.

## **Concluding Statements**

These concepts of genius loci, place, wholeness, sustainability, ecopsychology and the cell is to the body are all concerned with recognizing the connection between humans and nature or more specifically between human built structures and existing environment. These concepts may have slightly different focuses but they all recognize that the human/nature or building/environment relationship is important and key to successful dwelling or a sustainable environment or simply the health of the world.

This examination of some similar arguments seems to support this notion of integrating building and landscape, further illustrating the importance of connection and perhaps providing additional ideas for what makes an integrated relationship. The following is a summary of points that may be useful towards clarifying what an integrated relationship is and perhaps helpful for eventually developing a language of integration.

### **Genius loci**

- involves recognizing the qualities of an existing place
- genius loci is associated with “dwelling” and “being” in a place
- dwelling relies on orientation in that place and identification of its character

### **Place**

- a “place” is a fusion of human and natural order – culture and nature
- place refers to a physical location in the world and one which embodies meaning and feeling of belonging for the people dwelling there – it is connected with time and memory

### **Wholeness**

- we can heal the city by making everything whole
- making wholes constitutes creating connections between all parts of the environment
- wholeness is about fusing architecture and ecology – building and landscape
- environment and experience are linked

### Sustainability

- concerned with both human needs and environmental needs simultaneously
- encouraging a symbiotic relationship between all aspects of world
- is about making places in tune with the environment

### Ecopsychology

- recognizes a causal link between human psychological wellness and physical environment
- recognizes human need to be connected with natural environment

### Cell is to the Body

- everything is connected
- what is done at the scale of a single building may be expanded to influence an entire city or region

## End of Chapter Discussion

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This first chapter described the building/landscape relationship as an inside/outside dialectic, discussed the terms house and landscape, the concept of integration as it pertains to the building/landscape relationship, and some other philosophies which seem to agree on integration of building and landscape. These discussions are intended to lay down a background on the subject and provide an argument for pursuing such an issue. The chapter is also intended to illustrate the importance of integrating built structure into the site and into nature, and begins to identify what an integrated building/landscape relationship may become. It is the first stage in this goal of developing a language of integration for building and landscape.

Above all there seems to be some indication that building and landscape should be integrated; that they are part of the same continuum and should be more closely sewn together. Specifically through the brief examination of similar ideas such as *Genius loci* and wholeness, there is the sense that integration is extremely important. The physical integration of the built structure and surrounding landscape must be demonstrative of our overall attempts to live in harmony with nature. This harmony is important for our physical and spiritual well-being, giving us a sense of belonging and connection with the earth. It also focuses us to take responsibility for our surroundings and realize our influence and role on this globe.

The following are the most revealing points from this chapter which are useful in developing a language for integrating building and landscape:

- both buildings and landscapes are human constructions
- buildings actually have a model found in natural shelters – nature is all life
- landscape still has an association with nature and natural entities
- landscapes are shared realities and should be seen as public space
- **buildings rest on the ground and act as a vertical axis connecting to earth and sky, and therefore are already somewhat integrated with landscape or earth**
- contemporary views consider nature or landscape as everything from cities to wilderness – buildings are just objects in the landscape and it seems logical that they should have good relations with the rest of the whole of which they are a part
  - nature (or landscape) is really a continuum with wilderness on one end and city on the other
  - integration of building and landscape begins with recognizing that they are two elements of the same conception, two parts of a greater whole or system
  - recognizing cities as part of nature or a natural system reveals a potential interest in a more integrated relationship between buildings and nature
- integration uses words like *make whole, complete, integral* – it has the intention of improving a dialogue or relationship
- An integration of building and landscape seems to suggest a friendly relationship or a relationship that illustrates good relations between the two parts
  - integration means to respect and take care of site

- **integration involves looking to the site - revealing and cultivating aspects of the site to transform it for the purposes of human life**
- **in order for integration to take place, the whole building and all associated activities or program ideas must be involved**
- **edges are places where integration will take place – they are places of exchange, an architectural event**
  - **edges are seams which unite and connect building and landscape**
  - **they act as a threshold, a place with volume that has an identity of their own – it is here, this in-between place that buildings and landscape interact and merge**

Additional information from similar arguments

- recognize the qualities of an existing place – orientation and identification
- “dwelling” and “being” in a place is important – it is this process which will inform how the building and landscape merge
- a “place” is a fusion (or integration) of human and natural order – culture and nature
- successful place embodies meaning and feeling of belonging for the people dwelling there – it is connected with time and memory – integration will stem from process and participation in a place over time
- we can heal the city by making everything whole – connecting all parts of the environment
- sustainability encourages a symbiotic relationship between all aspects of world because everything is connected – how well it all functions together is a product of how well it is integrated? – places in tune with the environment
- **humans need to be connected with natural environment – close contact**
- **what is done at the scale of a single building may be expanded to influence an entire city or region**

These are the main points discussed in the first chapter. They are the basis for an understanding of integration and the beginning of developing a language for integrating building and landscape.

The next chapter will identify some selected building/landscape relationships through history in order to paint a visual picture of what we have done in the past, propose possible reasons for these choices, and begin to develop a list of precedents for integrated relationships which can be the basis for the case study analysis to follow.

## **chapter 2**

### **some historical perspectives on building/landscape relationship**

High Architecture of Western Cultures  
Modernism  
Oriental Influences  
Vernacular – Low Stream

#### **Introduction of Historical Overview**

Historically the attitude towards the building/landscape relationship has fluctuated enormously among periods and cultures, and therefore also the degree to which the building and landscape have been integrated or nonintegrated. The last chapter initiated the discussion on the relationship between building and landscape and an argument for integration. This chapter reveals some of the attitudes towards nature and built form, and illustrates numerous variations of the building/landscape relationship. This is done in order to review previous forms and perhaps extract some understanding of the intentions for these choices. This section also serves as the beginning of a collection of precedents of integrated building/landscape relationships, which will be used as case studies in the process of developing a list of design principles for the integration language.

There are essentially two “streams” of architecture and according to Christopher Day these two streams are conventionally called “high” and “low.”

The high architecture stream is inspired by cosmic ideas, the vernacular stream is rooted in daily reality – one is learnt by prolonged esoteric study, the other by making, doing and building, by mud, dirt and wood shavings. Both are artistic but neither is complete or balanced without the other: they need to be brought into conversation. (Day, 1990, p.28-29)

These two streams might also be compared with Platonic or Aristotelian perspectives of the world; one looking at an ideal way of building and connected with heavenly inspiration; the other based in practicalities and necessities of an evolving culture. This review of selected historical precedents will examine both high and low streams and the basis for each.



## **High Architecture of Western Cultures**

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While it's not practical to do an exhaustive study of every building/landscape relationship throughout western history, it is informative to look at some selected moments in different western cultures which have been considered influential on western, and one might say, global culture today.

As Day states, the high stream of architecture is inspired by cosmic ideas. The roots of western architecture, more specifically the ancient cultures of Egypt, Greece and Rome, were based on building for ritualistic purposes. These buildings were conceptions of intellectual place making, built for specifically interacting with "the gods". Certainly these cultures had constructed simple buildings for habitation as well, but the stone remains found on these sites today were buildings that spiritually integrated humans with the earth and heavens. They became significant "places" of connection; portals which allowed the citizens to communicate with the powers of the universe.

"High" architecture illustrates an integration with the cosmic world and acted as an "earthly" place for this heavenly contact to occur. The following examples of different cultures indicate some of these integrated scenarios, a form of integration which is now rarely seen in contemporary architecture besides the isolated case of religious buildings. These places demonstrate integration through their sacred functions acted out in a chosen landscape.

### **Egypt**

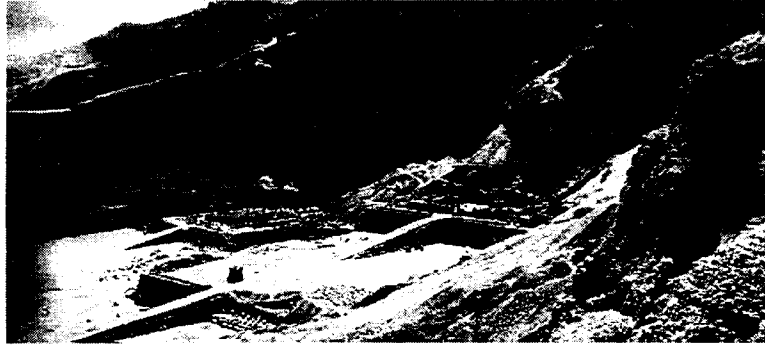
Egyptian architecture and life demonstrated a profound connection between humans and nature. For the Egyptians, this connection is strongly based on their religious beliefs.

Religion influenced every aspect of the Egyptians' life, including architecture. In fact the dominance of religion in the Egyptian society was the binder of architecture and land; like everything else, they were intimately connected. Alfred Caldwell speaks of this connection in the quotation:

The Nile River, in its inundation, bestowing annually its offering of rich mud which, under the desert heat of the sun, yielded several crops a year, was a dominant force in the development of Egyptian architecture. The Nile carved as permanent a groove in the thought of ancient Egypt as it did in the rocks of its riverbed. The flowering column capitals of the temple, as conventionalized papyrus and lotus, expressed the yearly springtime miracle of the resurrection of life following the inundation of the Nile. (Domer, 1997, p.229)

Egypt represents a culture intimately occupied with integration. Everything they did was in relation to the afterworld and pleasing the gods. In this way, the most important architecture was the architecture built for death and transportation to the afterlife. The pyramids represented a deep integration and connection at once with the ground and the universe. The tomb at the centre of these pyramids was deeply connected with the earth but also integrated with the cosmic universe outside.

Similarly, Queen Hatshepsut's Mortuary Temple also illustrates a powerful integration between earth and the heavens. The form of the temple is expressly for integrating the humans with the greater landscape of the universe in line with the setting sun.



*Figure 2.1 Queen Hatshepsut's Mortuary Temple.  
Connecting with the Gods*

The Egyptians also recognized that the earthly things were given to them by the gods. Their architecture is often derived from the forms of nature or makes reference to nature. In the Grand Hall at Karnak one progressed towards the deepest and most religious core of the temple by passing through a forest of columns constructed in the image of palms. This experience brought the exterior characteristics of nature to the inside so the religious visitor was at once aware of both a profound insideness and a reminder of the outside.

## **Greece**

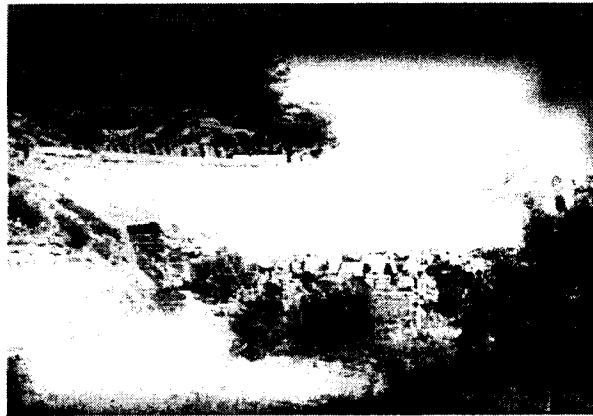
Historically Greece illustrates that they too were a culture concerned with a connection between human form and the heavens. There was an awareness of the earth and an understanding that their world was the work of the gods. Their architecture was positioned in nature in a way that was appropriate and respectful, searching for the perfect site in which to construct their temples for communication and sacrifice for the gods.

The abstraction of characters was the achievement of the Greeks, and was evidently made possible by the very structure of the Greek landscape....Each landscape is a clearly delimited, easily imageable "personality"...Before any temple was built, open-air altars were erected "in the ideal position from which the whole sacred landscape could be grasped. We understand thus how Greek architecture took the meaningful place as its points of departure. By relating natural and human characters, the Greeks achieved a "reconciliation" of man and nature which is particularly well concretized at Delphi. (Norberg-Schulz, 1980, p.24-31)

The Acropolis, as one example, was placed in its location because of the power of the site in that landscape, but also the importance of the building has a powerful effect on the surrounding landscape. Landscape and the placement of buildings on it were thoughtful

and intentional. Norberg-Schulz says that "By means of the building the place gets 'extension and delimitation,' whereby a 'holy precinct' for the god is formed....Heidegger also emphasizes that the temple is not 'added' to what is already there, but that the building first makes the things emerge as what they are." (Norberg-Schulz, 1988, p.41) For the Greeks, architecture is really a "setting-into-work" of "truth". The building is actually required to reveal the landscape for what it is. In this way, the Greeks clearly illustrate the I-thou connection to the earth, an attitude which possibly constitutes the "classical" origin for the rising of an integrated building and landscape. This idea was discussed in the previous chapter on genius loci requiring the acts of orientation and identification in order to construct the building in a way which reveals the essence or spirit of that place. It may be described as *topos*.

This same idea of *topos* was illustrated in the construction of theatres, although not directly inspired by cosmic ideas. The natural hillside reveals a sort of formal truth and the building or structure is integrated into this natural landscape to ultimately form a complete whole; the hillside is not destroyed but its essence utilized for what it is.



*Figure 2.2 Theatre built into the hillside*

In resume, Greek architecture demonstrated a religious based intention for linking building and universe, and a respect for nature, as part of the sacred world. Their temple architecture most importantly was constructed at a powerful place in the landscape, integrating the building with the site and the powers of the heavens. This architecture illustrates integration between building and a cosmic landscape.

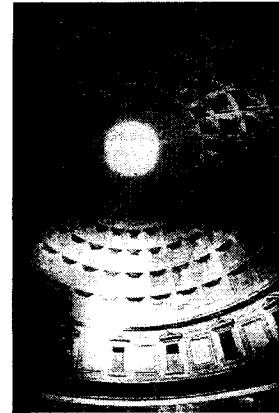
## **Rome**

Roman architects began to develop the technology to build great interior spaces, and therefore offer an opportunity for a connection between interior and exterior space; something that is less evident in previous cultures. However, like Greece, Roman architecture was still externally focused as evident in the public spacemaking of the forum. Here we can see at least initially an attempt at constructing linear and often symmetrical lines of movement from exterior to interior spaces in the forum buildings. Hadrian's Villa near Tivoli is another example of integration of buildings and landscape with a roughly organized collection of buildings set in a rural landscape.

Roman examples of integration between building form and landscape, or exterior space, were perhaps less tied to cosmic forces than Greek or Egyptian but they were nevertheless based in conceptual place making and symbolism. The forum was built for practical reasons of commerce, but also impressed the citizens of Rome and symbolized a connection to the gods with the presence of religious buildings. The formality of these shared symmetrical spaces and public buildings were used to demonstrate power of the Caesar and Rome.

The large interior space of the Pantheon was an incredible place of integration by creating a powerful sense of the exteriority of the greater city of Rome with an enormous almost outside-like interior. The huge voluminous interior of a building like the Pantheon, especially with the quality of light due to the centre oculus, seems to almost bring the rest of the city and the world of the gods into this interior space.

*Figure 2.3  
The Pantheon.  
Focus on the  
inside.*



Vitruvius writes on the importance of bringing landscape images into the homes of the people. This was normally done through fresco painting portraying images of “harbours, promontories, seashores, rivers, fountains, straits, fanes, groves, mountains, flocks, shepherds; in some places there are also pictures designed in the grand style, with figures of the gods or detailed mythological episodes, or the battles at Troy, or the wanderings of Ulysses, with landscape backgrounds, and other subjects reproduced on similar principles from real life.” (Vitruvius, p.211) From this writing it appears that there was a respect and even love for nature, and although Roman cities did not physically demonstrate much physical integration with nature the images of landscapes were nevertheless incorporated into the residences as a reminder of the presence and beauty of landscape.

Like the Greeks, the Roman world was externally focused and integration of building and landscape was mostly inspired by “higher” symbolic ideas than it was for practical reasons. Public places and temples were constructed to connect the Roman citizens with the world of the gods. Certain advances in technology however, did permit the construction of more voluminous interiors allowing interior building spaces to contribute to this sense of inside and outside.

### **Early Christian**

With regard to “higher” conceptual purposes, Christian society demonstrated limited integration with nature. It was generally inward focused due to religious reasons.

To the early Christian culture, at last centered in Byzantium, space was space within – thus the saying: “The kingdom of heaven is within.” So all the architecture of this period is substantially the architecture of the interiors – the world within – the great domed basilicas. (Domer, 1997, p.238)

Religious architecture focused on the interiors of the basilicas and even entire towns in the Middle Ages were inward focused, sometimes completely separated from the cultivated landscape outside by high walls. They were not only fortresses to protect the village from neighbouring enemies, but other potential “devilish” dangers inherently a part of nature and open landscape.

However, as this period in Europe evolved the changes made to the great Cathedrals began to open up to the outside. With technological changes the size of the windows could be greatly increased and therefore also the amount of light which could be brought inside the buildings. These new churches were opened up and seemed to bring all the light from the outside into the interior, light from the landscape outside, light from heaven.

Although the physical separation from open landscape is obvious in these periods of relative instability, Christianity and even further back to Judaism itself appears to be the basis for a long running philosophical separation between humans and nature. As Ian McHarg says, “Whatever the earliest roots of the western attitude to nature it is clear that they were confirmed in Judaism. The emergence of monotheism had as its corollary the rejection of nature; the affirmation of Jehovah, the God in whose image man was made, was also a declaration of war on nature.” (McHarg, 1969, p.26) Although this separation from landscape may be more justly based on reasons of necessity described later, there is some truth to the fact that Christianity was somewhat suspicious of nature and looked beyond earthly things to the heavens for many answers. This may have had some influence over the relative disconnection between humans and nature, buildings and landscape.

## Islam

Although from different origins, Islamic architecture was also inward focused. There was very little connection with the exterior landscape outside the walls of the mosque or palaces due again in part to religious origins of prayer but also connected to the climate of most Islamic countries.

Instead, with regard to conceptual origins, there was a different form of integration found in these buildings. Courtyards were designed in the centres of most building complexes and were rendered as imitations of the natural world. In this way there was an integration of building with an artificial landscape reconstructed in the heart of the building, as Garrett Eckbo describes it, “enclosed, intimate and secluded.” (Eckbo, 1950, p.15) It was in these courtyards or interior spaces that the entire world was suddenly available through prayer.



*Figure 2.4 Alhambra. Paradise in the courtyards.*

## Renaissance Humanism

As Ian McHarg writes, the Renaissance in Europe illustrates “the humanistic expression of man and nature.” (McHarg, 1969, p.70) This humanist philosophy propelling the Renaissance movement in Europe effected the relationship between humans and nature, and therefore building and landscape. The Renaissance made a strong move to free humanity from the oppression of nature while at the same time serving to spatially integrate building and landscape space to illustrate the power that humans had over the natural world.

The many villas and gardens constructed between Florence, Rome and Tivoli illustrated a definite wholistic approach to designing building and garden space, yet in the words of Ian McHarg, “The garden is offered as proof of man’s superiority.” (McHarg, 1969, p.70) In these villas, nature is contained, controlled, and very unnatural, yet after years of fearing nature this was a moment for humanity to break free of their fears and live with nature, transforming it into a place for human lives.

The same humanist philosophy is strongly evident a century later in France at palaces such as Vaux-le-Vicomte and Versailles. Like the Italian gardens, humans demonstrated incredible control over nature with long axes, artificial lakes, and pleached trees. In the words of Alfred Caldwell, these “clipped hedges, the strict avenues, the extravaganza of fountains, expressed the courtly despotism of Louis XIV. The distortion of living plants by clipping their growth, and the tyrannical insistence on reducing nature to the mode of a geometric artificiality, imply a will to power founded on a philosophy of cruelty blind to human dignity and rights.” (Domer, 1997, p.157) These great places integrating building structure and garden, extended their axes off to infinity, such that the palace and garden of the king were connected to the entire universe. Everything between the rising sun and the setting sun was within his power.



*Figure 2.5 Versailles. Building/garden axis.*

The order that humanity suddenly had over nature was an important move towards an integration of building and landscape by not only trying to integrate these palaces with the entire universe, but by creating gardens, in-between places which are connected to both building and the landscape. Wherever humans dwell they will tend to manipulate the land for their needs including transforming nature into something perhaps less

frightening and more accommodating. Gardens are examples of this middle ground between wild nature and humanity. According to Giedion, "Baroque style is about relations between architecture and nature. The formalizing of garden elements is 'an important milestone in the relationship of buildings to the land.'" (Eckbo, 1950, p.14)

In conclusion, the Renaissance was a period that intellectualized the human/nature relationship and demonstrated integration of building and landscape inspired by conceptual place making ideas. In the words of Garrett Eckbo, "We can sum up the formal tradition as a tradition of unified architectural conceptions in which indoors and outdoors, structural and natural elements, were integrated to produce complete site-space organizations." (Eckbo, 1950, p.15) The origins may have been based on escaping from nature's threats, but the building and landscape relationship did evolve toward becoming an integrated whole as much to connect with the rest of the universe as to symbolize dominance over wild nature.

### **English Landscape Movement**

In 18<sup>th</sup> century England there was the beginning of a modern view where humans and nature might eventually become united. "Almost from one generation to the next, and well before the articulate sensibilities of Romantic poetry, the English discovered nature. They found it habitable. Their taste for it extended even to wilderness: mountain and forest, desert and ocean, previously feared and avoided, were now relished as 'sublime'." (Kassler, 1964, p.9)



*Figure 2.6 The sublime English Landscape.*

This emerging love for nature instigated a movement towards integrating humans and nature, or at least a closer proximity to "paradise".

Believing that some unity of man-nature was possible and could not only be created but idealized, a handful of landscape architects took the dreams of writers and poets, images of painters of the period and the hints of a quite different order from the Orientalist Sir William Temple and, through the successive hands of William Kent, Humphrey Repton, Lancelot Brown, Uvedale Price, Payne Knight, and William Shenstone made over that raddled landscape of England into the fair image we can see today. Never has any society accomplished such a beneficent transformation of an entire landscape. (McHarg, 1969, p.75)

This form of landscape design attempted to recreate nature around humans so that they could dwell amidst its sublime beauty. This semi-natural landscape or 'idealized' landscape of the writers and painters had "...brought rough-cropped undulating meadows up to the very windows of their elegant mansions." (Kassler, 1964, p.10) The importance of this style is not the "timeless serenity" of the remaining garden parks, but is found in the residing design principles behind the movement. According to Kassler, it lies in the interpretation of genius loci and how important that was for landscape design. (Kassler, 1964, p.11) It is this recognition of the characteristics of site which brought building and landscape together. A kind of modern topos and priority on genius loci.

Compared to earlier philosophies on nature, the ideas emerging from this movement in 18<sup>th</sup> century England demonstrated an interest in design of a landscape which could conceptually reconnect human with nature.

Garrett Eckbo agrees that there was an opening up to nature. As he put it, "Kent, Brown and Repton 'destroyed the boundaries of the garden, the estate, and the park. These became as one with the landscape of England'." However, he does not agree that this was a real integration of human and nature. In his words, "It became conspicuous consumption and conspicuous waste...This was not the integration of man with nature in the landscape; this was the integration, by paternalism, of the landscape with certain specific men who were separated from the majority of their fellows." In his opinion this society was not ready for integration with nature. He believed that men had to start by integrating with each other and then "the integration of man and nature must be physically expressed at comparable scales: the individual house and garden; the community and the landscape; town and country." (Eckbo, 1950, p.24)

This same English landscape tradition was transported across to America at the end of the 19<sup>th</sup> century and became evident with the work of landscape architect Frederick Law Olmsted. Olmsted tried to recreate this natural landscape which indicated the continuing respect for sublime nature and an attempt to bring people closer to it by constructing human forms within this "natural" space. What is important at this point in western history is this clearly profound change in society's attitude to nature; the origins of our modern view of nature and the impetus for the growth of modernist architecture.

It is interesting to note that this time of the birth of a modern view of nature coincides with the final break from Christian power, especially the catholic church, with the formation of a free and independent America where church and state are for the first time independent of one another (and soon after the French Revolution). The church no longer had political control over areas of land and was relegated to a role of spiritual leader. So it was that at this time the western world became truly freed from religious control and therefore a humanist doctrine of superiority over nature; it was an opportunity for humans to reconsider themselves as part of nature.

On the other hand the industrial revolution of the late 18<sup>th</sup> century created a sort of plague over the physical environment. With mechanization came a renewed lack of respect for nature and a feeling of power over the earth. It also led to mass production housing that



limited any contextual uniqueness of buildings. This is the beginning of an international style. A style unconcerned with particulars of a local/regional landscape. In the words of Leon Krier, "Industrial rationality is by nature amoral, asocial and anti-ecological; it is both the instrument and the expression of moral, ecological, and social irrationality and collapse." (Krier, 1992, p.44)

At this time there was both a philosophical unification with nature and a technological revolution which began to destroy it. It's important to recognize this contradiction or duality as it continued to flow into the emerging philosophy of modernism. At this point a physical integration of building and landscape was rare but there was now a new attitude toward nature and a potential for reconsidering both a conceptual and formal integration of building and landscape.

### **Concluding Statements**

The "high" architecture of western civilization embodies conceptual ideas of place making. It illustrates an intellectual level of design linking building and landscape, often cosmic landscape, and making place significant because of the association with building or site as a place of connection with their universe.

For the purposes of examining integrated building/landscape scenarios, the following points are of interest:

- this architecture demonstrates an integration of building and landscape through the concept of topos inspired by conceptual ideas of connection with the universe
- Egyptian pyramids and mortuary temples became both connected with earth and heavens through ritual of burying the dead in these religious cores
- Egypt also demonstrated integration through using forms and symbols of nature in their architecture
- Greece indicates integration of building and landscape with significance of place for ritual purposes
- Rome begins developing real inside spaces and are used to spiritually link citizens with the landscape of the gods
- Byzantine and Islamic cultures did the same by creating the interiors as places for connection with heaven
- The Renaissance humanism frees people from oppression of nature but demonstrates integration of building and landscape in two ways:
- Development of ordered garden becomes middle ground between building and landscape
- Palaces like Versailles become building/garden wholes that make axial connections to infinity, demonstrating integration and rule over entire world
- English Landscape Movement paints landscape as beautiful and initiates the interest in conceptually integrating humans and nature
- In the 19<sup>th</sup> century there is both a philosophical unification with nature and a technological revolution and begins to destroy it

This “high” architecture is now rarely found in our cities of commerce. Perhaps this exploration and recognition of a *topos* or purposeful siting and connecting of building and place will be useful for reshaping our building/landscape to fulfill our human needs for reconnection with a greater cosmic universe. Certainly this high architecture reveals various examples which integrate building and landscape riding on conceptual or intellectual intentions for spiritual connectedness.

## **Modernism**

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The new respect for nature along with technological breakthroughs, offered the opportunity to re-examine architecture and question its relationship to the landscape, but the resulting architecture in the form of mass produced concrete boxes and high-rise buildings instead seemed to dominate and disconnect itself from the landscape instead of becoming integrated with it. This examination on modernism provides some interesting contradictions; architecture which offered the possibility to both integrate and disintegrate our built environment. The architecture largely responsible for our present condition.

### **Garden City to City Beautiful**

Modernism seems to have begun in the 19<sup>th</sup> century with ideas on city planning. In 1898 Ebenezer Howard proposed the end of growth in London and repopulation of the countryside in small villages to be called Garden Cities; small towns with an industrial base which would offer the inhabitants the opportunity to be reconnected with nature. His idea was intended to offer a reuniting of people with nature, an integration of city and country, buildings and landscape. In the words of Anne Whiston Spirn, "Each garden city, surrounded by a green belt, was to be one of a constellation of garden cities, each with population limited to 30,000, separated from each other by countryside." (Spirn, 1984, p.33)

This idea was the beginning of a "modern" integration of nature or landscape space with city dwelling. Howard's initial idea was adopted by many other professionals including Americans such as Lewis Mumford, Clarence Stein, Henry Wright, and Catherine Bauer. Unfortunately, these well-intentioned efforts were never fully realized by these planners, philosophers and architects to follow. As Relph states, "They combine the best of the city and the best of the country only in a very limited sense. It is, in short, the planning practices, the street layouts and pleasantly rustic domestic architecture, rather than the reform ideals, which have been copied." (Relph, 1987, p.62) Eckbo agrees, saying "The autonomous garden city, the Radburn principle of separating cars and pedestrians, the radiant city of skyscrapers in parkland, the decentralized city, have all been realized at best only in debased and limited forms." (Eckbo, 1950, p.74) Yet the seed was sown for these ideas of combining city and country, buildings and landscape space.

Another movement, given impetus at the Chicago Fair of 1893, was called the City Beautiful movement. This idea was similar to the Garden City in its integration of architecture and park space. However the style of the architecture was more of an imitation of the Renaissance period and at the scale of an individual building there was little to no integration. It was simply a formal grouping of buildings in a park. (Jacobs, 1961, p.24)

At the time these theories were conceived, western cities had generally become industrial centres that had no connection with nature or landscape. These urban planning theories

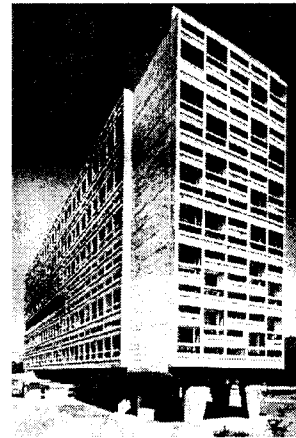
reunited city with nature, and paved the way for future opportunities of integrating building and landscape.

### **Le Corbusier and followers**

Of all the thinkers and architects who contributed to the creation and evolution of Modernist architecture, Le Corbusier was perhaps the most influential. The Swiss-born architect Le Corbusier was one of the “Modernists” responsible for developing these initial “anti-city” (Jacobs, 1961, p.21) planning ideas of Howard. In the 1920’s Corbusier proposed a kind of “Dream City” he called the Radiant City which consisted of skyscrapers set within a park. This idea was directed towards both a physical and social revolution of the urban environment, and brought the possibility of high-density living to Howard’s Garden City idea. It maximized unproductive land and provided public space for the working class, providing an opportunity for a reconnection with nature.

This same idea was embraced by others in years to come, notably Mies van der Rohe and Ludwig Hilbersheim, who developed the “City in the Landscape” concept based strongly on Corbusier’s initial Radiant City ideas. Theoretically these ideas offered an image of buildings emersed in verdure and at an urban planning scale began to integrate the city and nature. However, upon closer inspection, the high-rise buildings isolated people from the landscape largely because of their great height.

*Figure 2.7  
Habitation.  
Rising above  
the ground.*



These disconnections possibly originated with the fact that architects, not landscape architects, planners or gardeners, had now taken the centre stage for developing the “modern” cities. As Marc Treib points out, by the 1930s it was the architects who controlled the dialog between buildings and landscape, which were usually proposed as “discrete objects set in undifferentiated green space.” (Treib, 1999, p.29) According to Treib, this sudden loss of any “formal contiguity” between building structure and landscape had one major effect:

It meant that neither architectonic elements nor the accompanying landscape joined structure to structure as a greater whole. Landscape no longer fulfilled its historical role as the extension of, or matrix for, architecture, but now served as the vegetal buffer between buildings. The norm of the building in a park implied that landscape superseded architecture – at least when seen from a distance – and that landscape comprised a passive and undifferentiated field of vegetation. Curiously, the modernist fascination for complexly interwoven spaces within buildings did not extend to the surroundings but instead seemed to expire on the doorstep. In retrospect, this appears to have been a curious turn. (Treib, 1999, p.29-30)

In fact the modernist movement is sometimes described as a simple and radical separation between landscape and architecture. As Jan Birksted reminds us, modernism can be grounded in one statement by Le Corbusier:

One clear image will stand in my mind forever; the Parthenon, stark, stripped, economical violent; a clamorous outcry against a landscape of grace and terror. All strength and purity. (Birksted, 1999, p.1)

Clearly, Le Corbusier and many other modernists were responsible for a recognizable separation between building and landscape. The ideas of the Radiant City and the dominance of buildings as artifacts that stand aloof from the surrounding landscape had significant influence on the disconnection of building and landscape. However, there were many products of Modernism which literally opened the door for opportunities of integration.

### **Integration Opportunities in Modernism**

The last section discussed how modernism was responsible for a separation of building and landscape, however the theories behind modernism had no intention of doing this. As Corbusier says:

With all the criticism and blame layed upon Modernism, the roots of the philosophy were very much about creating a whole. The human eye, in its investigations, is always on the move and the beholder himself is always turning right and left, and shifting about. He is interested in everything and is attracted towards the centre of gravity of the whole site. At once the problem spreads to the surroundings. (Le Corbusier, 1931, p.191)

While it slowly turned into an international style that showed little compassion for the disconnected landscape around it, the principles ingrained in the modernist movement still offered the opportunity for a wholeness of building and landscape. Garrett Eckbo praises the ideas of modern architects when he discusses their work of enclosure and direct spatial experience and expounds on the "tremendous potential enrichment of our environment which is implicit in such marriages of structural and spatial imagination." (Eckbo, 1950, p.22)

In fact, if one examines the philosophies behind De Stijl, the Dutch contribution to Modernism, it is clear that there was an attempt to repair what was perceived as a "loss of the harmonic relationship between man and his environment." De Stijl, like other modern movements of the 20<sup>th</sup> century, was aware of this sort of "human alienation" and artists like Mondrian and Van Doesburg wanted to rebuild this universal harmony which, "liberates art from being a mode of personal expression, and in the words of Mondrian, establishes a 'unification of man with the universe.'" (Norberg-Schulz, 1988, p.143)

It was with new concrete and steel and glass technology that began to allow buildings a never before seen opportunity to open themselves to the surrounding exterior space, and therefore offer the possibility of unifying human and nature, or building and landscape.

Walls were now placed for definition of space without concern for structural integrity in the building. Roof structures were held up by steel or concrete posts and walls became free floating planes of concrete, wood or even glass, allowing space to flow freely from inside to outside making the transition between building space and landscape space more subtle and layered. There was now the possibility to integrate building space with landscape space without the hindrance of solid walls to separate them. Edges became places of merging and connection instead of simply barriers. This achievement of creating this so-called "flowing space" between inside and outside was, in the words of Robert Venturi, "perhaps the boldest contribution of orthodox Modern architecture....Such cornerless architecture implied an ultimate continuity of space." (Venturi, 1966, p.70)

In summary, the technology and philosophical freedom of the modernist movement contributed to an inside/outside relationship more continuous with more seamless edges. At least in theory, this was a great step towards integrating building and landscape.

### **Frank Lloyd Wright – a different kind of modernism**

The modernist movement did not only demonstrate some contradictions between theory and practice, it gave birth to many different styles and interpretations of what "Modern Architecture" should be. Frank Lloyd Wright is one architect worth mentioning for his considerable efforts to integrate building and site.

His buildings (particularly the private homes) illustrated a much different form of modernism than the so-called "European Modernists". His ideas and design style were often closer to forms in vernacular architecture, using local materials and trying to design a structure more suited to its particular region and climate.

He is particularly well known for his statement that a building should be "of the site", not on the site. This simple phrase is the foundation for his many homes and gardens that were designed together to construct one whole of form and space, building and site. These buildings also employed the ideas of flowing space that other modernists understood, but his buildings seemed to be more solid and rooted to the earth than many other modernist buildings. His buildings were often long and low, like extended lines moving out into the landscape. The roofs, were also quite low with wide eaves providing covered exterior space around the periphery of the building and creating a transition space that was in-between complete insideness and outsideness. As Ed Relph puts it, these homes were "fitting into their site." (Relph, 1987, p.100)

Wright's buildings were also composed of intricate detail; details which were repeated inside the building and continued out into the landscape. In one way these details common to both inside and outside helped to make a connection through reminders that it is all one whole. He was also particularly attentive to the detailing of the inside/outside relationship. A building like Fallingwater paints numerous examples of visual connections to the exterior landscape from within the protected interior space. Details

which create a simultaneous experience of insideness and outsideness; orientation and identification with the character of the place.

The buildings of Frank Lloyd Wright constitute many of the integrative ideas from Modernism as well as those rooted in vernacular or indigenous construction. His buildings were inspiration for the genesis of this thesis and many are used throughout the following chapters as examples of integrating building and landscape.

### **Contemporary Building/Landscape**

Finally it is interesting to quickly examine more recent “truths” about our living environment and the present relationship between building and landscape. Is it integrated or not?

First of all there seems to be a direct correlation between the initial Garden City idea in the early stages of Modernism and the present forms of many suburban neighbourhoods. The contemporary suburb exhibits the same idea of placing housing within a park-like setting theoretically offering the possibility for integration between the buildings and the surrounding landscape. However, these cookie-cutter landscapes seem to lack any soul. There is certainly no “higher” conceptual idea linking these citizens with their world. These places seem distant, like walking through a cemetery, too far from the dead to feel any contact. One feels alone in the silent streets amidst winding rows of insulated boxes; memories of landscape long forgotten.

Contemporary building form illustrates two contradictory changes which have effected our degree of connection with landscape. First, as Roger Stonehouse says, “in 20<sup>th</sup> century architecture we have seen a change from buildings with thick, solid walls with windows, usually small and nearly always openable, to buildings with thin, completely transparent (ideally visually non-existent) skins which have a completely sealed separation between the inside of the building and the outside.” (Stonehouse, 1998, p.127) This allows the standard building to be built anywhere in the world without concern for climate, because the inside climate is easily controlled and there is no physical connection with the outside. Inside becomes a new international environment, breathing recycled air, cold and dry, while the people swelter in the wet heat just millimeters away on the other side of the glass. The contrast is shocking. There is no merging of interior and exterior, a friendly edge which comfortably steps through a middle space of transformation. Inside and outside are different worlds.

Secondly, Stonehouse refers to the even more recent sustainability efforts of layering buildings, a move which has conversely opened buildings more to the landscape. As Stonehouse says:

over the past two decades, the moves to make more sustainable buildings in order to reduce energy consumption and pollution through a return to selective modes of environmental control have generally involved not only a reopening of the inside-outside relationship but also an increase in the sophistication of the layering of buildings between the inside and outside...Most significantly we see

the reintroduction of degrees of enclosure at different scales at the edge of the building e.g. Porches, arcades, and conservatories and often deep into the building eg. Courtyards, atria, and galleria so that the building is seen as zones of differing degrees of enclosure which interact environmentally and may be inhabited and used differently in response to changes in the external environment. (Scott, 1998, p.127)

So clearly our present buildings have both aspects of separation from landscape as well as adaptations which have more recently reinvented a "sophisticated" integration between building interior and landscape exterior.

### **Green Architecture**

Along with discussions of sustainability, the "Green" building movement has had considerable influence on architecture over the past few decades. This idea is based on visions of sustainable living where buildings begin to show more respect for the earth; buildings which are less harmful to the environment both directly on site as well as indirectly through reduced use of fossil fuels, less pollution, improving ground permeability, and many other goals. The buildings are often adapted to function more smoothly as a part of the natural ecosystem of the region. This relatively new concept in "designed" architecture demonstrates a real connectedness with the earth and local landscape. These green buildings have both a physical and conceptual integration with the earth, becoming a working component living and breathing as one with the earth. Any attempts at minimizing damage to the natural system seems to symbolize an integration with the spiritual and physical health of the earth.

### **Concluding Statements**

Modernism and movements to follow in the 20<sup>th</sup> century were responsible for enormous changes to our built environment. It was a period that propagated a rigorous analysis and questioning of building construction and the relationship of building to landscape. The most important ideas for the purposes of this thesis are perhaps that Modernism was a movement based largely on a theory of connecting building and landscape to form a greater whole, while at the same time creating huge separations between building and landscape.

In any case, this movement was responsible for breaking out from previous dogma on architectural styles, questioning the role of building and how it should be used and viewed in the landscape. It also was a time of great technological advancement which created the opportunity for more continuity between interior and exterior space. It is a movement which has provided many great precedents for integrating building and landscape as well as given us the freedom to explore the relationship.



The most important principles related to integration that seemed to emerge from this discussion are:

- **the Garden City idea brought building and landscape/nature back into comfortable proximity to one another providing opportunity for future connectivity**
- **high-rise buildings in park proved to further isolate building and residents from landscape**
  - landscape was no longer seen as an extension of architecture but just objects placed in an undifferentiated field of vegetation
- the modernist philosophy proposed at least a theoretical interest in wholeness between humans and the universe
- **the new technology of the 20<sup>th</sup> century opened buildings and created the possibility of continuous flowing space**
- FLW's buildings demonstrated integration of building and landscape at numerous levels by being "of the site":
  - **low buildings and low roofs that seemed to hug the earth**
  - **used local materials from the landscape**
  - **considered the character of the site and designed building to it**
- contemporary suburbs exhibit no "higher" intention for connection with the earth – they seem unnatural and dead
- contemporary buildings have two contradictions:
  - they are insulated from exterior climate – sealed separation
  - **sustainable interests have begun to layer buildings to reduce energy and coincidentally improve merger of interior and exterior**
- Green building symbolizes a "higher" objective of buildings to integrate with earth – they are non-intrusive and non destructive to environment, living in peace

## Oriental Influences

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Oriental cultures have had much different philosophies on nature than western cultures; a difference that has had some influence over their building/landscape relationships. Both Chinese and Japanese cultures seem to use an irregular geometry and bring building order together with idealized nature. However they also have some unique differences which have contributed to their precedents of integration.

It appears that western cultures are strongly attracted by these sensibilities and often try to incorporate the balance and apparently simple design solutions of the Chinese or Japanese styles. Although, the constructed interpretation of these theories on balance and harmony are few, the philosophy behind them has been well documented and has been the inspiration for many western architects.

### Chinese

In order to understand the resulting building/landscape relationships inherent in Chinese and Japanese cultures it is necessary to look to the conceptual philosophies. Chinese thought is influenced equally by the religious philosophies of Confucianism and Taoism. The forms of house and city were a product of Confucian ideas demonstrating a formality, and symmetry of man-made order. The garden was a product of Taoist sensibilities and demonstrated an informal, asymmetric even curvilinear form consistent with wild nature. These might seem to be contrary to one another and difficult to integrate, however humans were always present in this “natural garden” scene. If one examines Chinese landscape painting there is always a human figure, a building or some other human-made object found within this wild landscape.



*Figure 2.8 A  
balance of  
humans and  
nature in the  
garden.*

Whereas many scholars look at the dichotomy of the formal architecture and the horticultural values of the “Taoist” garden, it is this unified vision of architecture and landscape which embodies traditional Chinese views. As Fung states, “The Chinese term *yuan* (garden) commonly refers to environments that integrate open-air spaces with buildings and covered spaces.” (Fung, 1999, p.143) Chinese gardens, more than any other space in the Chinese landscape, seem to represent their philosophical intentions for

balance and harmony between humans and nature; the garden being a Taoist interpretation of humans connecting with their surroundings, in love with nature.

From these two philosophies sprung the concept of Feng Shui – an idea that is parallel to the concept of integration. In the words of Lin Yun:

Feng Shui is a theory on the relationship between the universe and the human life. Harmony and balance are two essential factors of Feng Shui – they are found in the process that aligns man with the universe. And this process is called the Tao. For the Chinese, man is linked to the heavens and the earth through the Tao and everything is divided into complimentary dualities – the yin and the yang....It's the interaction – the balance and harmonisation – of the forces of yin and yang which gives birth to the theory of the ch'i – pointing out at once the cosmic breath and the energy of the human spirit. (Rossbach, 1988, p.2-3)

As it concerns the built environment, Feng Shui is concerned with forms and orientations and a proper balance between the land and human structures. According to Wang, the most important concept in Feng Shui is the Chi. "The ideal building site is one where the chi is moderately abundant and where it slowly curves and meanders through the landscape.... Feng-shui's goal then is to tap the earth's chi, like an acupuncturist taps a person's chi, in order to find the place where it flows smoothly and the yin and yang are balanced." (Wang, 1994, p.47)

This balance is not only important for experiential harmony but is believed to determine the luck of the inhabitants. These physical demands on building form and relationships between objects are extremely particular and are deeply attached to religious and spiritual beliefs. Because of this rootedness in religion and superstitions, it is difficult to accept all of the physical solutions proposed in this philosophy. It is the theory of balance and harmony, the higher conceptual idea, which intends to spiritually integrate human with universe. The formal products from Feng Shui are rarely examples of any physical integration.

### **Japanese**

Like Chinese culture largely influenced by Confucianism and Taoism, Japanese culture was influenced by Shinto and Zen Buddhism; essentially parallel philosophies to Confucianism and Taoism.

Zen Buddhism, with influences from Taoism in China, professed that humans and nature should have intimate contact. Ian McHarg compares the Japanese culture with western traditions saying:

Where you find a people who believes that man and nature are indivisible, and that survival and health are contingent upon an understanding of nature and her processes, these societies will be very different from ours, as will be their towns, cities, and landscapes. The hydraulic civilizations, the good farmer through time, the vernacular city builders have all displayed this acuity. But it is in the

traditional society of Japan that the full integration of this view is revealed.  
(McHarg, 1969, p.27)

The Japanese have a sense of being in deep connection with nature. The culture expresses a sense of need for intimate interaction with the environment, “the virtual elimination of a sense of a fundamental dichotomy between human beings and nature.” (Miller, 1999, p.51) Perhaps this is influenced by the introduction of Zen sect of Buddhism into their culture; a need for a “studied simplicity and irregularity based on a special approach to natural forms and ways of living.” (Lloyd, 1963, p.122)

It is perhaps through the Japanese “tea ceremony” that this attempt at integrating human and nature is most visible. This passage by Mara Miller illuminates the balance between human and nature, building and landscape.

Not only does the building reflect the forest, but the forest takes on the golden hue of the building; it is lit not only by the sunlight but by the golden light of the pavilion. The reflection of a building on the pond upon which it is situated is an effect long admired by the Japanese – it was used at the Byodo-in in Uji during the Heian period – and it inevitably brings to mind two cherished Buddhist images: the reflection, which like a dream and indeed like our ordinary everyday ‘reality’ may be mistaken for true reality which is apparent only to the enlightened mind, and the metaphor of the clear and dust-free mirror, which like the ideal enlightened mind takes in the reality of its surroundings but never attempts to hold onto them. But at Kinkaku-ji not only does the pond reflect the building, the building reflects the pond, whose ripples cavort across the surface making delightful patterns upon the plain walls.

The result is a perfect interpenetration of building with environment, in which the artificial is integrated with the natural, hard wood and metal with liquid and air and light, geometric rational plan with teasing unpredictability of natural forms, reality with shadows and reflections, the seemingly eternal with the fleeting and constantly changing. (Miller, 1999, p.56)

The extent to which the human and natural elements are spliced together is indicative of their wishes for a spiritual bond with the universe. The Zen Garden, although more blatantly symbolic for meditation, is also a place for connection with the universe and reaching the state of nirvana. The Japanese gardens are highly intellectualized places; places which are functionally intended to bring humans into a more spiritual place of being with the world.

It is evident in the work of Frank Lloyd Wright and other architects, that this integration of buildings and landscape explicit in Japanese culture has been attractive and adopted by western cultures. Miller proposes that it is largely due to “the combination of natural materials and rational structure.” (Miller, 1999, p.43) Yet, both Chinese and Japanese cultures show more of a conceptual concern with connection to the spiritual world than a physical one. It seems to be the energy and philosophy ingrained in these cultures, which has been identified and interpreted elsewhere.

## **Concluding Statements**

The Oriental cultures of China and Japan have illustrated a strong interest in spiritual connection with the greater landscape of the world. These gardens and places for meditation are symbolic of this dream. Connection with nature and intent for spiritual connection is ingrained in their religious influences of Taoist in China and Zen Buddhism in Japan, both originally stemming from Buddhism and both rooted in a respect for nature and attempt at spiritual enlightenment.

Although these cultures represent these conceptual needs in only isolated places, their intellectual concern for balance and harmony with the environment has had considerable international influence in the past century.

The most enlightening principles in this examination of integration are the following:

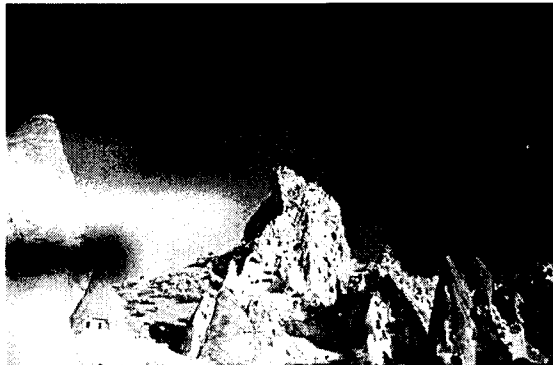
- Buddhism brought a respect and desire to be connected with nature
- Chinese gardens try to unify human forms and natural landscape
  - Symbolic of this interest in integrating humans with rest of the world
- Feng Shui further demonstrates an intellectual need for balance and harmony with the world
- Japanese have deep connection with nature
  - The tea ceremony is symbolic of spiritual connection but also the physical garden experience intricately designs the ceremony to be experienced in a particular way that binds human and nature, spiritually integrated with universe
- Zen gardens are intellectually designed places that are symbolic of the mind and function to help reach the point of nirvana

## Vernacular/indigenous architecture – Low Stream

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If we lower the eyes from the wonderful, strident but innocent assertions of man's supremacy, we can find another tradition more pervasive than the island monuments, little responsive to the grand procession of architectural styles. This is the vernacular tradition. (McHarg, 1969, p.29)

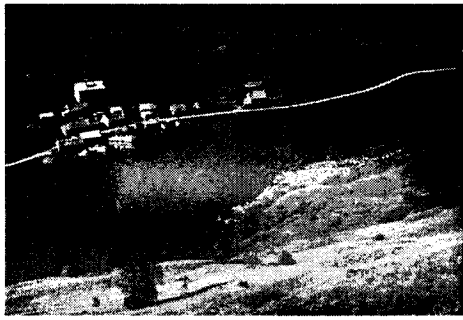
Vernacular architecture, as Bernard Rudofsky calls it, is “architecture without architects”. (Papanek, 1994, p.16) It is based on simple necessity; to construct convenient and appropriate shelter in a particular region and climate. Vernacular architecture does not originate from intellectual ideas concerned with style or symbolism but reveals the practical needs of the inhabitants, every brick placed for a reason. This tradition is normally indicative of indigenous cultures which live close to the land and with the land. “Once upon a time – kale na kale as they say in Swahili – all of us lived in houses that had been built of predominantly local materials, buildings well adapted to the site as well as climate and ecology...Informed by tradition and human in scale, these dwellings represented a sensuous frugality.” (Papanek, 1994, p.16) Vernacular architecture exhibits all of these things, and represents perhaps moreso than any of the previous mentioned cultures and styles, a truly integrated relationship between human shelter and landscape.



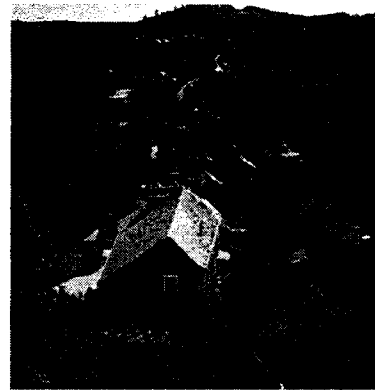
*Figure 2.9 Cave dwellings, Turkey. Indigenous places, living with the landscape.*

This vernacular style of architecture is evident in pre-industrial societies where “man is so close to the land that he seems unable to do it visible wrong. Villages and towns appear to grow out of the ground, and temples seem dedicated to the genius loci as well as to the gods above.” (Kassler, 1964, p.80) Societies with limited technology simply have no choice but to try to be respectful of the land, to take care of it and build their shelter from the resources the local land has to offer. This also tends to connect the people more intimately with the local landscape.

In the middle ages European society still had a sense it was part of the natural world, the practical building form conforming to the hills, built of local stone, and keeping everyone in close proximity to the country due to the size of the town. In these relatively small towns “agricultural and rural pursuits, like fowling and fishing, formed a part of daily urban life.” (Spirn, 1984, p.31) The relatively small size of these villages and the way they conformed to their existing sites demonstrated the practical necessity for survival at this period, building small because everyone was on foot, and conforming to the site because it was the only way they could build with their limited technology.



*Figures 2.10 Vernacular forms. Conforming to the natural character of the local landscape.*



Papanek also describes vernacular architecture as having some kind of charm or attraction that other kinds of architecture are missing. He says that:

This sense of enchantment is not rooted in nostalgia or sentimentality; rather it is the intuitive recognition of forms and patterns that speak a nearly universal language that is deeply rooted in our collective unconscious. How else to explain the sense of invitation, cozy intimacy and welcome we find in seeing vernacular dwellings even in settings culturally opaque to us: a floating reed village on Lake Chad, a house'shrine in Ubud on Bali, Hassan Fathy's villages near Nubia, the great pueblo at Taos, an Eskimo igloo, stone farm houses in Austria, a Kirghizian yurt, or the black tents of northern Africa and the near East? (Papanek, *Earthword*, p.16)

These examples illustrate a kind of integration between the building structure and the landscape whether because they are built from the local materials or because they are simply built to adapt to that climate or topography. Whatever the reason, it is a connection between the building and landscape that makes the place seem right.

Vitruvius, in his *Ten Books of Architecture*, proposes numerous ideas for building construction, many of which originate from simple reasons of practicality, and coincidentally tend to connect the building with the earth. He describes the importance of digging foundations deep into the earth saying, "the whole substructure should be as solid as it can possibly be laid." (Vitruvius, p.86) This suggests an importance for a grounded building, well planted into the earth, to maintain a strong building. He doesn't recommend this because of any aesthetic, but simply because it is necessary to keep the building standing. He also recommends the idea of tapering a building from the bottom up "because we ought to imitate nature as seen in the case of things growing; for example, in round smooth-stemmed trees, like the fir, cypress, and pine, every one of which is rather thick just above the roots and then, as it goes on increasing in height, tapers off naturally and symmetrically in growing up to the top." (Vitruvius, p.132) This is practical because the bottom of the building must be strong enough to support the upper sections. This tapering wall is also well grounded in the landscape.

## Time

Indigenous cultures tend to develop rather slowly. The indigenous architecture scattered across the entire country of India, for example, illustrates an example of piecemeal growth, slowly evolving and expanded as necessary, the landscape bending and adapting to these changes. In this case the gradual development of buildings across the local landscape has perhaps allowed an integration that a more rapidly and aggressively developing culture might not experience. There is a harmony between the human presence and the natural landscape. They fit together and over time have become like one entity of human and nature. Even in fairly densely populated areas, the indigenous animals seem to have survived and been given the chance to adapt and live amongst the human inhabitants. This is a good example of how buildings and people have been able to integrate and exist comfortably with the landscape.

## The Farm

The concept of *farm* is in itself a manifestation of integrating buildings and landscape, or humans and landscape. The humans must work with the land to survive. There must be a symbiotic relationship where they live and thrive together. As McHarg states:

He prospers only insofar as he understands the land and by his management maintains its bounty. So too with the man who builds. If he is perceptive to the processes of nature, to materials and to forms, his creations will be appropriate to the place; they will satisfy the needs of social process and shelter, be expressive and endure. As indeed they have, in the hill towns of Italy, the island architecture of Greece, the medieval communities of France and the Low Countries and, not least, the villages of England and New England. (McHarg, 1969, p.29)

In fact, humans have until recently always been connected to this farming way of life to some degree because "...settlement, as Mumford has pointed out, could not grow beyond the limits of its water supply and food sources until better transportation and a more sophisticated administration could evolve. This early association with food production maintained a connection between the country and the city in some form until the Industrial Revolution." (Hough, 1995, p.12)

The farm is symbolic of landscape, the place where human and nature interact; where the farmer has tried his best to transform land into something habitable and profitable. The farm becomes a personification of this symbiotic relationship between farmer and the inhabited landscape that has existed almost forever in the history of human civilization.

The rural or agricultural countryside, particularly when it is productive and well-developed, is a region in which man and nature meet, mingle, but seldom completely dominate one another...Here is full integration of man's orderly, geometric, functional, accurate organization of space and materials with the full, free, rich, pushing growth of nature. (Eckbo, 1950, p.41)



Numerous individual forms in farm buildings illustrate this integration. In many countries the family house and animal barn are one building with two sides, bringing all under one roof so the farmers may take advantage of the heat from the animals in the cold winters. They also wouldn't have to go outside to feed them in inclement weather. Barns are also forms rooted in practicality. As the farmer needs more room for animals and silage, the barn can be added to with half-sheds slowly reaching out to the landscape and extending the roof ever closer to the ground, tying this building more solidly over time.

### **Design for Climate**

Vitruvius writes that houses must "conform to the nature of the country and to diversities of climate." (Vitruvius, p.170) His suggestion speaks of a fundamental need to recognize the particular qualities of a place and build the shelter to appropriately respond to that place and climate.

This is one of the main ways that vernacular architecture naturally achieves an integration with the landscape: adaptation to the local climate. Most of these vernacular buildings illustrate the common practices of designing buildings for their particular climate, building a contextual connection between the shelter and place. In one way it is simply practical, but it is also important for a society's awareness of their relationship to their surroundings. The physical design of the building becomes a metaphor for their relationship with their environment.

One way of designing for climate is to work with the form of the building. Obviously there are many forms depending on the place. Norberg-Schulz reminds us that "the roof usually recalls the forms of the landscape." (Norberg-Schulz, 1985, p.117) A roof form in a heavy snow climate would probably be well pitched to allow all the snow to fall off easily, whereas a building in a hot or perhaps wet climate might have wide eaves for shade and/or protection from the rain.

According to Perry, "in Tunisia, people preferred to live in underground structures, while in Fez and Isfahan, people lived in clustered courtyard houses...in southern Morocco and in Yemen...houses were shaded during the summer days, had natural means of ventilation through wind scoops and wind towers, had thick walls and domed roofs, and were made with local construction materials...." (Perry, 1994, p.18) Ideas of building underground houses in hot climates are not only practical for keeping the living environment cool, but the form or placement of the building ultimately belongs to that place because it is adapted to the local climate. In this way the building is also intellectually integrated with the site.

Even Socrates and Vitruvius wrote about the importance of facing a building to the south in colder climates and to the north in warmer climates. (Perlin and Butti, 1994, p.8-9) It is a simple idea but is a decision that connects the building with that climate and place. It then becomes a building which "belongs" to that region.

The response to climate is also associated with the materials used. For example, using mud-brick for a building wall may be very appropriate for controlling temperature in hot climates. However, use of local materials is also another way of integrating the building with the local landscape because there is a direct association between the materials of the land and the materials of the building. It is a simple visual connection that grounds the building in its place. Feeling the gritty surface of the house, the pebbles of the soil underfoot compressed and baked into a vertical piece of human ingenuity.

## **Culture**

Vernacular architecture goes hand-in-hand with culture. Obviously every culture will have particular forms of architecture that evolve in particular ways based on geographic and climatic adaptations. As Norberg-Schulz says, "Vernacular settlements from all parts of the world are in fact topologically organized, and thus express the primary importance of the site, with which man has to come to terms." (Norberg-Schulz, 1985, p.41) However, it is not only based on topography or climate, their beliefs and opinions of comfort will also influence the way they connect or disconnect their buildings with the landscape. An Islamic community will have inward looking buildings and appear to show little integration with the landscape around them. However, they may show integration in other ways by recreating an ideal landscape in the interior courtyard or building their buildings out of the local mud.

"The physical environment is said to be a mirror of culture. It is probably true that in any settled society environment and culture are adjusted to each other." (Lynch, 1972, p.218) This is an important statement because culture will have a profound effect on the degree to which buildings and landscapes are integrated. Every culture is a complex history of preferences and idiosyncrasies that make it unique and effect the degree to which they need to be more or less integrated with the local landscape.

It is possible to say, however, that no matter how much particular cultural preferences and traditions may effect the integration of buildings and landscape, there are clearly commonalities found across the globe where indigenous or vernacular architecture seem to show similar responses to similar climates and a need to connect with the local landscape. Vernacular solutions do cross cultures. Similar responses can be identified in Etruscan towns, China and New Mexico with decisions to have built structures into the ground. The way this is done is perhaps slightly different in each case, but the integrative idea is relatively the same, responding to need.

## **Authenticity**

Vernacular solutions also seem to illicit an air of authenticity. Kimberly Dovey suggests that "authenticity is a property not of environmental form, but of process and relationship. As process, it is characterized by appropriation and an indigenous quality. As relationship, it speaks of a depth of connectedness between people and their world." (Dovey, 1989, p.33)

The "authentic" is bound with place; understanding the place you live in and responding to it in a natural manner, of necessity. The authentic is an indigenous process.

A formative process is indigenous when the form emerges out of the everyday life and context of the place. Thus, the shutters evolved from the dynamics of boundary control; the fireplace from the nature of fire, heat and gathering; the beach from the interaction of land and sea; the medieval village from the dwelling traditions of that society. (Dovey, 1989, p.43)

Form in vernacular buildings is not simply a random decision or based on style for the sake of style. Form is born of necessity, for practical purposes and acts to connect human with landscape.

It also seems difficult if not impossible to intentionally create the authentic; for authenticity is something that occurs without intent for creating it, it is not easily reproduced consciously. "It is important to understand, then, that *inauthenticity* emerges out of the very attempt to *retain or regain authenticity*." (Dovey, 1989, p.36)

Much of Modern architecture has nothing to do with authentic form. Even the style called the "international style" suggests that buildings are not built for a certain place and culture but can be duplicated anywhere without care for connection with a particular site. As Christopher Day warns, "All such approaches are more concerned with style than responsiveness." (Day, 1990, p.15) And it is the responsiveness to a site and climate which is necessary to unconsciously discover the authentic.

### **A Modern Vernacular?**

Vernacular architecture is a response to human need however the subject usually implies some indigenous culture or very old culture. Could a modern vernacular be discovered in our present society responding to modern needs?

Our lives evolve so much around the need for automobiles that the suburban form is in a sense a vernacular form responding to transportation planning. This form may not be vernacular in the same sense as vernacular forms coming from indigenous societies, and it is certainly not a form that is built piecemeal with response to climate and place, but the modern suburb supplies the need for cars and integrates these suburbs with the rest of the developed landscape through this transportation connection.

It is perhaps possible to look toward the individual examples of suburban homes to find some physical characteristics of integration. Suburban homes generally have a front, back and side yard condition. These yards, if designed properly, can really become an extension of the interior living space, gardens that are formally responding to the building yet undeniably outside and connected with landscape. They become exterior rooms for living and thus it is possible to look at them as integrating building with landscape. Often, however, the buildings do not integrate with the exterior space in any way beyond planting some shrubs next to the house or providing a patio outside the living room.

As Roger Stonehouse mentioned earlier, modern buildings are now built in layers for practical reasons of energy savings, creating air spaces that are warmed by the sun. These layers of space which have practical origins are also becoming a way of reaching out to the landscape, creating layers of in-between space between what is completely inside and what is outside.

Occasionally modern buildings are built using ideas from past indigenous cultures, building with modern versions of adobe, building into hillsides or ground, and still responding to regional climates with appropriate roof forms. Some newer buildings also demonstrate an integration with landscape by using other more recently discovered building materials such as hemp or straw bale wall construction. Use of natural materials, often taken from the local landscape, visually and conceptually also integrates the building with landscape besides the practical issue of using materials at hand.

## **Concluding Statements**

Vernacular buildings and landscapes are a product of process and relationship. They come about through interaction with place and are developed based on specific qualities of that place. Vernacular is not something that can easily be replicated upon demand. It is born as humans dwell in their environment and make practical and necessary decisions about dwelling in that place. Simply put, vernacular buildings belong to their landscape. They are truly integrated with it at a physical level as well as a cerebral, meaningful level.

The following points are indicative of vernacular architecture in the discussion on integration:

- Vernacular architecture is based on necessity
- Normally it is indicative of an indigenous culture living close to the land – often pre-industrial societies
- Demonstrates use of local materials, linking with landscape
- Adapts to local climate, showing integration with place
  - Roof recalls qualities of landscape
  - Orientation of building
  - Underground building
- Urban centres usually quite small for practical reasons, also shows more connection with rural landscape
- Need for deep foundation and tapering walls for keeping building standing – this helps to connect building solidly with earth
- Vernacular architecture is usually slow, piecemeal growth “of necessity”
- Farms demonstrates integration with land through practical need
  - Barn form reaches out to landscape
  - Sharing space with animals – proximity to landscape entities
  - Farms are places of interaction between human and nature – tamed nature
- Use of local materials is practical and binds building to landscape
- Cultural ideas and aesthetics effect degree of integration
- Vernacular solutions do cross cultural boundaries

- Is authentic, responding to place and program based
- Modern suburbs vernacular in sense that they respond to needs of automobile
- Suburbs integrate to surrounding landscape through individual gardens
- Modern buildings are layered for practical reasons – this layering, with greenhouses etc. creates merging between insideness and outsideness

## End of Chapter Discussion

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This look at the building/landscape relationship through some historical examples is important for this thesis because it provides a background of existing places and the beginning of precedents for a composition of integration principles to follow. Different cultures, in different periods have chosen to construct integrated or unintegrated relationships with nature and landscape for practical or cultural reasons. Whether they were integrated or not, there was a reason, often a conscious choice for that relationship.

It is possible to follow these general changes from Greece, to Rome to the Renaissance, to contemporary architecture. Perhaps the final manifestation of space as the relations between inside and outside is connected with the breakthrough of looking at nature as beautiful and valuable. Certainly up until the 18<sup>th</sup> century, western societies considered themselves to be largely separate from nature. Until the Renaissance, Europe was "spiritually" superior to nature, yet there was still a sense of physical connectedness with the land and a feeling of being at the mercy of nature. With the resurgence of humanism in the Renaissance, humanity rejoiced in a new dominance over nature, physically superior as well, which precluded any possible integration with natural landscape. It was not until the English Landscape Movement that humans began to cultivate a new respect and interest for nature and landscape. There was still a sense that nature was something apart from the human world, only it was now enjoyed for its "sublime grandeur".

With the advent of the modernist design philosophy of the 20<sup>th</sup> century, there was finally both the philosophical openness/freedom and the technological advancement to question and experiment with the building structure and the relationship between building and site. It's clear however, that this Romantic philosophy of mankind's separate but respectful attitude to nature has continued into modern times, despite the opportunities offered through technology and architectural philosophy and criticism. Much attention has been put into creating potentially integrated building structures, yet from a planning perspective, "the nature and experience of the spaces between buildings has been left largely to chance, resulting in what Brett (1970, p.117) has termed SLOIP...space left over in planning." (Relph, 1976, p.23)

Then certainly there has become a terrific separation between human and nature as urban environments slowly eradicate any former evidence of natural systems within our habitable environment. As Michael Hough says, "Water supply and disposal systems leave no indication that the water supplied to the kitchen tap had its origins in the forests and landscapes of upper watersheds, or that rain falling on rooftops and paved surfaces and disappearing without trace into catchbasins and underground sewers is part of a continuous hydrological cycle." (Hough, 1995, p.15) It is clear that there needs to be a greater harmony between these natural cycles and the city form not only so the systems can work better together, but also for greater understanding of how these natural processes are still a large part of our community. An understanding of how human and nature, building and landscape are really part of a greater whole and should be visually if not functionally integrated.

The "Green Architecture" movement that has been developing over the past couple of decades is the only true beginning of an openness to an integrated building/landscape relationship. From this point society began to question our role in nature and offer the discussion of integrating building and landscape as an appropriate future direction for development.

However, although there is now a desire for this connection with the land, we have not seen a definitive exploration and taxonomy of the qualities or types of conditions which render an integrated building/landscape. Integration between building and landscape has many precedents and examples from the beginning of civilization to the present. Perhaps the most integrated examples are found in vernacular architecture where building form and materials are integrating the structures with the local landscape because of simply practical needs.

For our present civilized society, this vision of architecture united with landscape is still unclear. That is why it is important to examine these historical and existing buildings in order to particularize integrative characteristics, qualities of possible integrated conditions. This is the beginning of understanding precedents and developing a language of integration for building and landscape.

The following are the most important ideas on integration that emerged from this discussion on historical precedent:

- historically, examples of integration of building and landscape are based on a **topos** or spiritual connection to place, and **from necessity**, intimately connected with the earth for survival
- The Renaissance humanism demonstrates integration of building and landscape in two ways:
  - **Development of ordered garden becomes middle ground between building and landscape**
  - Palaces like Versailles become building/garden wholes that make axial connections to infinity, demonstrating integration and rule over entire world
- English Landscape Movement paints landscape as beautiful and initiates the interest in conceptually integrating humans and nature
- In the 19<sup>th</sup> century there is both a philosophical unification with nature and a technological revolution that begins to destroy it
- **the Garden City idea brought building and landscape/nature back into comfortable proximity to one another providing opportunity for future connectivity**
- **the new technology of the 20<sup>th</sup> century opened buildings and created the possibility of continuous flowing space**
- FLW's buildings demonstrated integration of building and landscape at numerous levels by being "of the site":
  - **low buildings and low roofs that seemed to hug the earth**
  - **used local materials from the landscape**
  - **considered the character of the site and designed building to it**

- contemporary buildings have two contradictions:
  - they are insulated from exterior climate – sealed separation
  - **sustainable interests have begun to layer buildings to reduce energy and coincidentally improve merger of interior and exterior**
- Green building symbolizes a “higher” objective of buildings to integrate with earth – they are non-intrusive and non destructive to environment, living in peace
- Vernacular or indigenous architecture exemplifies integration of building and landscape through practical and programming decisions based on the needs of the society
  - **use of local materials, linking with landscape**
  - **Adapts to local climate, showing integration with place**
    - Roof recalls qualities of landscape
    - Orientation of building
    - Underground building
  - Urban centres usually quite small for practical reasons, also shows more connection with rural landscape
  - **Need for deep foundation and tapering walls for keeping building standing – this helps to connect building solidly with earth**
  - **slow, piecemeal growth “of necessity”**
- Farms demonstrates integration with land through practical need
  - Barn form reaches out to landscape
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  - Farms are places of interaction between human and nature – tamed nature
- Cultural ideas and aesthetics effect degree of integration
- Vernacular solutions seem to cross cultural boundaries
- **Suburbs integrate to surrounding landscape through individual gardens**
- **Modern buildings are layered for practical reasons – this layering, with greenhouses etc. creates merging between insideness and outsideness**



## **chapter 3**

### **constructing the integration principles**

Case studies analysis  
Literature analysis  
Initial integration principles  
Principles in use  
Final list of principles

#### **Introduction**

The previous two chapters put forth a general background on the importance of the subject, provide some initial precedent examination, and begin to develop ideas on how to integrate building and landscape. Ultimately, the goal of this thesis is to examine what integration could mean and develop a language tool for integrating building and landscape. This chapter describes how this language of integration principles was composed.

Certainly there emerge numerous ideas or important principles on integration from the first two chapters. These conclusions plus many more were the product of both precedent study and literature review. This chapter describes how individual lists of principles were developed through each of these methods and how they were used to inform the composition of a final language of integration principles.

#### **Case Studies**

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##### **Methodology for Constructing Principles**

Beginning with the review of historical precedents in the previous chapter, a number of precedents or case studies were examined in order to search for and reveal individual characteristics of integration. Approximately 150 of these case studies were examined through the following method:

- i. A partis was drawn of the case study scenario in order to attempt to reveal the essence(s) of the formal relationship – especially as it pertained to integration.
- ii. The case study was analyzed for how it was demonstrating integration between building and landscape – there could have been more than one idea per case study.

The entire list of case studies and a summary of their integration characteristics are shown in **Appendix I**. A number of these precedents are described in some detail below

in order to illustrate the phenomenal method of analysis used as well as to help illustrate the kinds of integration characteristics that were discovered.

## **Case Studies**

### **Magnified Descriptions**

Several of these case studies seemed particularly integrated. A more magnified inspection of these case studies serves to illustrate the methodology as well as discuss the majority of the integration characteristics revealed in a phenomenal way.

#### **Figure 3.1 Rubadoux/Cameron Studios**

**Rose Bay, Nova Scotia, 1989**

Architect: Brian MacKay-Lyons



This project speaks of sensitivity both to the vernacular architecture of the east coast and to the simplicity of the landscape. The fir tree nudges the structure slightly out to the rocky coast, the piers planted between the rocks. There is a formal resonance that the landscape has on the positioning of the building, both for reasons of fertility and placement next to the tree, looking out to the ocean beyond.

“It combines the vernacular precedents of the English barn and local fishing shed. The scheme also defers to the cultural landscape in its siting by occupying the least fertile edge of the site and consequently leaving the field untouched. In this regard, it is an environmental design project prompted by an architectural commission, which underlines an idea that the stewardship of the land is a prime responsibility of the architect.” (MacKay-Lyons, 1998, p.21)

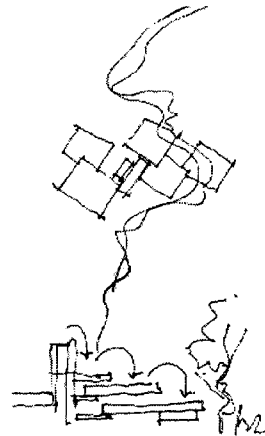
The minimalist building shows respect for this site, existing without damaging, living peacefully among the rocks and shrubs. A small building at the doorstep of nature, inhabited yet connected with the rhythms and flows of the ocean current and the coastal winds.

Imagine sitting within the comfort of this dwelling, thrown out on the rocks of the wild Atlantic. Looking out to sea from your chair inside, it might be like riding a small sea

vessel, the writhing waves of this aquatic landscape surrounding you; pulling this earth bound frame into the midst of nature.

This structure seems perfectly balanced on the edge of the Atlantic coast. It is nestled up against a lone fir tree, wedged between the boulders of a rocky beach. It is solidly grounded, yet feels to be very unobtrusive allowing nature to continue in its daily evolution.

**Figure 3.2 Fallingwater**  
**Bear Run, Pennsylvania, 1936**  
Architect: Frank Lloyd Wright



Fallingwater is about trying to fit in with the site. As Frank Lloyd Wright is known for saying, a building should be “of the site”. This building looks to be integrated and of the site in every way. “In his book *The Natural House*, he emphasized the importance of integrity, wherein a house should be integral to its site, integral to its materials, and integral to the life of the inhabitants.” (Zeicher, 1996, p.22) The house is a product of all of these elements, becoming integrated with every aspect of its reality.

The great horizontal slabs seem to step down as a series of rock platforms protruding from the valley side. The central hearth of the building, stacked from local stone, shoots out of the ground like a great vertical rock left there by the receding ice sheets, unusual but not unnatural. The stream following the valley floor winds around and through this series of slabs as natural as any other obstacle in its way.

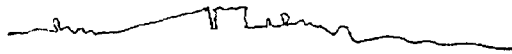
This building has become part of the natural system of this landscape. It is grounded deep in the earth and the slabs seem to step down in harmony with the natural slope.

Inside, one can look out from the deeply rooted core of this structure to the shining trunks of the forest and down to the rocky ground. The forest seems to surround the building and the windows placed to bring this exterior within the building walls. The creek running beneath the floors a constant reminder that the building is part of its path, penetrating the structure and bringing them together as one system.

Fallingwater integrates with the landscape in many ways. The roof and floor slabs seem to step down the hill like natural stairs along the valley side. The floor slabs also penetrate the landscape, reaching out to interact with it and allowing the landscape space to move in between ever closer to the core. The colour of the local stones or even the concrete slabs share the same colours as the tree bark and the valley soil. Besides these horizontal slabs the building is mostly composed of glass walls, the exterior landscape always accessible from the beneath the cantilevered roof. The entire building also seems to emphasize a horizontal movement spreading out along the ground like so many giant steps making their way through the forest floor.

**Figure 3.3 Taliesin West**  
**Tempe, Arizona**

Architect: Frank Lloyd Wright



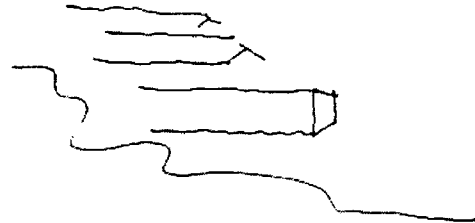
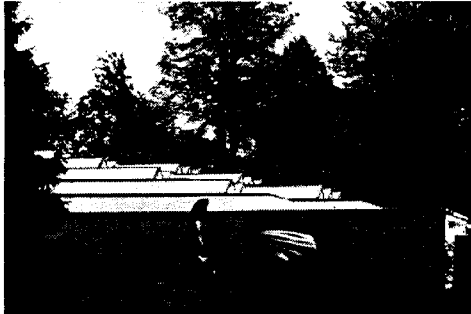
This building, like other buildings by Wright, is truly in the spirit of the place. The building is largely composed of rocks found in the local desert, a camouflage of reds and browns barely distinguishable from the desert landscape itself.

It is also a very low building, some of it built right into the desert floor. Inside the air is cool and it smells of the dry soil it is sunken in. This low partially submerged building extends its horizontal form along the desert floor like a gecko basking in the summer sun. It seems to hug the earth and extend itself out to the horizon in this flat landscape.

Apparently, the students studying under Wright were expected to create their own shelter in the desert, composed of the local materials and built to survive in that landscape for a long period of time. This exercise demonstrates Wright's understanding of what a building is about. A building is meant to provide shelter for the inhabitant living in a particular environment and with a certain purpose. The building structure is therefore a product of this environment and the activity of the user. Taliesin West illustrates this awareness and respect for site and needs of the inhabitant.

Beams from the main structure extend out horizontally too, providing a partially covered exterior space along the edge. Walking under this shaded terrace, there is the feeling of protection and belonging, yet experiencing the sounds and smells of the outside. It is a place between shelter and exposure to the sweltering landscape of the desert.

**Figure 3.4 Louisiana Museum**  
**Humbleboek, Denmark, 1958-80**  
Architects: Bo and Wohlert



This building, or set of building forms, seems to hug the hills above the Danish coast. The buildings are long and low, sunken into the ground. They step down very slightly with the rhythm of the site.

These long buildings seem to project into the surrounding site, allowing the exterior space to move up between them and create a wonderful balance of structure and green space. Parts of the building are entirely glass walled where the outside seems to becoming part of the inside, visually extending the hall out toward the forest or the sea.

**Figure 3.5 Swiss Chalet**  
**Berner Oberland, Switzerland**



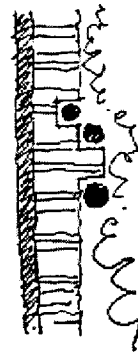
The traditional chalet of Switzerland integrates with the landscape in many ways. First of all the pitched roof seems to ground the building, the roof angling toward the earth, almost touching it in some cases. The roof form can appear to mimic the outline of the rolling hills of the surrounding landscape, the chalet nestled in among them.

This chalet is tucked into the side of one of these hills, using the hill as an advantage for access to the granary. It is both set into the hillside and heavily connected with the earth,

but it is also working with the topography for the program of the building. Without any effort, the chalet and hillside can live together in great harmony.

The base is from the stony ground, the upper floors and roof from the nearby forests. The stone base of the chalet seems to be built from local stones, and seems a natural material for foundation. This weight at the bottom firmly plants the building on the ground. The wood for the rest of the building is also from local forests, a natural material obviously hewn from the resources of the Swiss landscape. These natural materials taken from the site or nearby seem to connect the building with the place. It is a product of its surroundings, both in form and material. As in many vernacular buildings, this is a product of necessity – using resources at hand and using topography to aid in the construction of the shelter.

**Figure 3.6 Studio at Bristol**  
**Bristol, Wisconsin, 1970**  
Architect: Alfred Caldwell



This building shows a true integration between building and landscape. The trees seem to penetrate the structure, coming up to the building envelope and pushing through the roof. In fact, the building has been constructed within the trees, moving in-between them and building the edge of the building this way and that to allow them room to grow.

The building seems to want to live among the existing trees, but with minimal disturbance, giving in to nature where it pushes near. So the trees become part of the building, living together as one whole. The building edge ends up undulating or crenellated, allowing the landscape to interlace into this edge, locking together in a solid seam, wood planks and wood trunks, one natural and other designed.

The building has also been constructed from the surrounding wood of the forest and the stones from the solid earth.

The wide overhangs provide an exterior gallery around the outside of the building wall, the penetrating trees acting as great Doric columns holding up the roof. Trees on one side and solid wall on the other, this walkway is between interior and exterior, having access to both at once.

**Figure 3.7 House on Hornby Island**  
Hornby Island, Canada



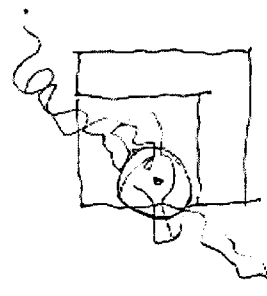
This house seems to have evolved from its surroundings. One can see the evolution of this building as it has been slowly constructed as necessary, from the drift wood found on the beach or the logs pulled from the forest beyond.

The landscape is literally woven into a sculpture for living, each piece taken from the land and applied to the shelter as it grew into a human form. The grass has begun to grow along the roof, covering the building with nature once again.

The building form seems to sit evenly along the ground, rising up from the beach like the dense massing of salal. It is built and it is natural. It belongs to this place because of the material it is made of, the process it has experienced, and the minimal amount of disturbance and addition that keeps it balanced and part of the natural system.

The pitched roof seems to respond to the wet climate, providing a solid roof for the rain to run off and wide overhangs for places to sit outside yet under cover. It is a building that belongs to this place, respectful of the landscape, respectful of the climate.

**Figure 3.8 Robert Osborn House**  
Salisbury, Connecticut, 1951  
Architect: E.L. Barnes



This house gives a large corner of its foundation over to exterior space. Sitting on this floor slab one might feel like the forest was crawling through your living room. The entire slab is raised off the forest floor, confirming it is a built structure, yet it is open to

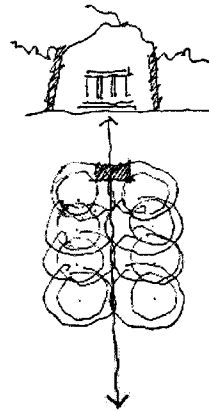
the sky and the walls of the forest. Nature crawls up onto this slab and trees grow through it. It is the place where building and landscape meet and this meeting has a real volume.

The space is a room of the house, yet outside. It is connected with the building but allows nature to interact and enter this outdoor room, blending the two together. It is like a metamorphosis of space, somewhere between inside and outside, made of stone but piled in an undeniable human geometry.

**Figure 3.9 Oak Alley Plantation**

**Vacherie, Louisiana, 1839**

Architects: Jukes – Roman



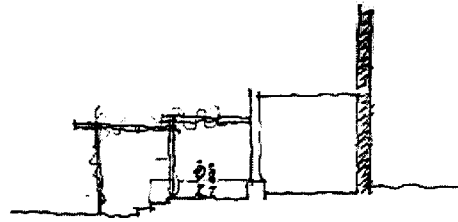
The grand allée of oaks runs up to a set of Greek columns drawing the eye from the cool shade of the trees up to the white façade of the building. The axis is something shared by both landscape and building. They are one with the building providing a terminus for the line of trees, the trees acting as a great journey up to the doorstep of the building, giving it power and nobility. The building is bound with this line in the landscape.

The oaks even bend toward each other forming a roof. Walking along this road, the sun occasionally breaks through the branches of the overhead canopy, not entirely complete, like an extension of the building roof in the distance.

Building and landscape are part of the same axis. A line on the earth which is shared by both, linking them together in one whole, like the gardens of Villa Lante or Versailles. The axis travelling away from the building toward the distant horizon, reaching toward infinite, to the next day. Lines are connectors.



**Figure 3.10 Sans Souci  
Berlin, Germany**



The terraces around the exterior of the building slowly brings the solid enclosure of the structure of the building together with the open, light quality of the landscape. The building is layered with space from the very enclosed centre to the very open courtyard of the Orangerie and out to the forest. The series of terraces is between these extremes.

In fact the entire complex is a thick bridging of building with landscape, each space having clearly defined edges moving subtly from a place of enclosure to the openness of the free landscape. The terraces step down from the building like stairs, slowly reaching their way to the solid earth. The roof structures also step down with patches of blue sky more visible as one moves away from the building core.

Sans Souci is about layering. These partially covered terraces between inside and outside are the most evident place of merging between the building and landscape. One has time to move between them, fully knowing when you are here or there, and every step in between. The geometrical frame works its way toward the forest and the plants climb up the terraces toward the heart of the building, vines entwining, moss creeping up walls.

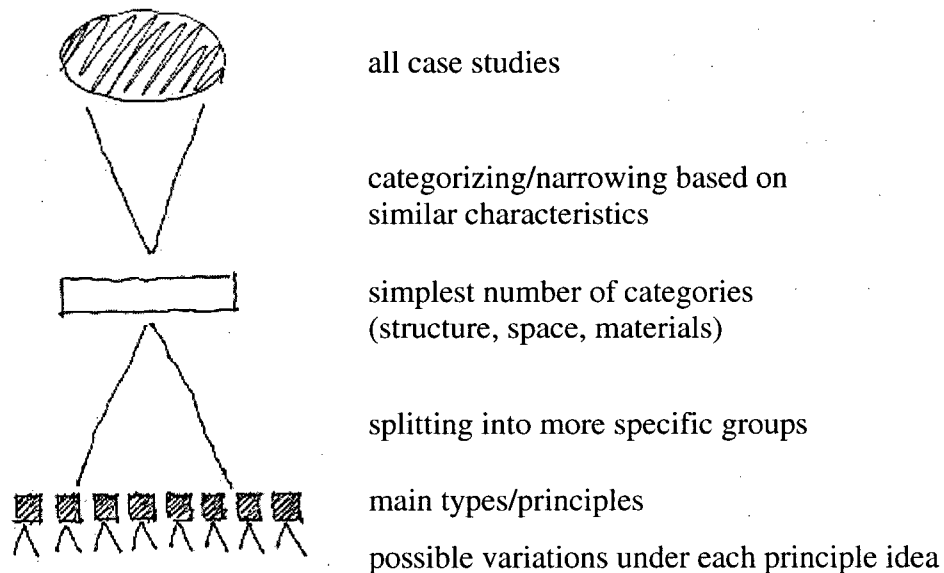
### **Concluding Statements**

A review of several case studies demonstrates how the individual places were analyzed using a phenomenal method of examination. This observation of different buildings and their relationship with the surrounding landscape brings up numerous characteristics which seem to integrate the building and landscape. These selected examples were rather typical, showing a few or many characteristics. The individual characteristics were noted, summarized and categorized to form the list of principles.

## Case Studies

### Principles

As the analysis of these individual case studies continued over several weeks, it became apparent that there were some commonalities among the precedents; each building/landscape was not demonstrating completely unique ideas of integration, but instead a number of ideas continued to reappear over and over again in other projects. At the end of this precedent analysis, there were approximately 30 different categories or ideas of building/landscape integration which seemed to emerge from these precedents. They were grouped in a taxonomic fashion, or by types, based on the physical concept of integration that dominated that relationship.



**Figure 3.11 Flow Diagram of Case Study Analysis**

Precedent for this method of analysis can be observed in the work of many designers and theorists interested in the study of the phenomenal world. Some of these theorists who have been referenced for this methodology are Christopher Alexander, Patrick Condon in his article entitled *A Designed Landscape Space Typology: A Theory Based Design Tool*, Rob Krier in his analysis of urban form in the book *Urban Space*, and the work of Thomas Thiis-Evensen in his work *Archetypes in Architecture*. These authors have all observed and analyzed landscape and building form based on formal qualitative characteristics, and attempted to identify and categorize them into separate types. This work similarly tries to identify common forms or typological ideas, this time ideas that demonstrate integration of building and landscape.

These types were initially categorized into more general groups based on materials, spatial arrangement, form, function and process. Under each of the final selected types are many possible variations which could change due to style, climate, or culture. As Christopher Day explains, "In every seed there is, more or less, a pure plant, an

archetype. As the plant grows the individuality of its surroundings – soil, climate and so on – causes it to modify this archetype.” (Day, 1990, p.89)

As explained above, the integration characteristics or ideas from the reviewed precedents were categorized and summarized. This is the summarized list (Table 3.1) of integration principles from the examined case studies.

**Table 3.1 Integration Principles from Observed Case Studies**

Category	Integration Principle
Materials	<ul style="list-style-type: none"> <li>- Use of glass to connect visually and lighten the building in the landscape.</li> <li>- Use natural materials.</li> <li>- Plants should climb up and over building.</li> <li>- Plants to be used around base of building to aid in transition from building mass to landscape. For size and texture.</li> <li>- Use local materials.</li> </ul>
Spatial Arrangement	<ul style="list-style-type: none"> <li>- Minimal architecture in dominant landscape. Includes idea of small building size.</li> <li>- Building tucked into landscape with minimal interference of natural systems</li> <li>- Intermingling of buildings and landscape.</li> <li>- Spread the building mass out in landscape.</li> <li>- Close proximity of building to natural elements like water</li> <li>- Variable sized buildings allow flow of landscape to continue.</li> <li>- Lines of movement (could be axial or symmetrical) that connect the building and surrounding landscape.</li> </ul>
Form (Horizontal)	<ul style="list-style-type: none"> <li>- Transition rooms around a building.</li> <li>- Slow layering of the building from solid to open landscape.</li> <li>- Courtyard as transition room or as artificial landscape shaped by building.</li> <li>- Thick wall with zone of space.</li> <li>- A metamorphosis of form – gradual change from building to landscape.</li> <li>- Buildings should be low and horizontal in form.</li> <li>- Roof form should conform to surrounding landscape.</li> <li>- Landscape can penetrate the building.</li> <li>- The edge of the building can be crenellated.</li> <li>- Walls should be planes that don't completely enclose, only define.</li> <li>- Building can have saddlebags or penetrations into the landscape.</li> </ul>
Form (Vertical)	<ul style="list-style-type: none"> <li>- Building wall should taper up. Be wider at bottom making it solidly grounded.</li> <li>- The building roof can be pitched.</li> <li>- The building can be terraced down with rooftop gardens.</li> </ul>

	<ul style="list-style-type: none"> <li>- The building can be sunken or dug into the earth.</li> <li>- The building(s) can take the form/be influenced by the slope of the land.</li> <li>- The building can be cut into the earth or cliff/dug out of it.</li> <li>- The building and landscape can become one entity. A whole.</li> </ul>
Form ( <i>organic</i> )	<ul style="list-style-type: none"> <li>- The building can use organic or natural, less geometric forms that make it seem like a more 'natural' building.</li> </ul>
Function	<ul style="list-style-type: none"> <li>- The building can have integration with the landscape through shared system process like graywater treatment.</li> </ul>
Process	<ul style="list-style-type: none"> <li>- The piecemeal growth of a building or buildings allows for a greater integration of the building form and the existing landscape.</li> </ul>

## **Literature Review**

### **Methodology for Constructing Principles**

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The second list of principles is based on the review and comparison of existing literature on the subject of building/landscape relationships and interpretation of how they should be integrated. Unlike the observed case studies, this list is based largely on what the building/landscape relationship *should* be, not necessarily on what always exists; it is a normative form of analysis. For this reason, this list was more critical of the value of an integrated relationship and was more influential in the construction of the list of principles to follow.

Over a period of a year or more, a long list of books was reviewed in order to become familiar with the opinions of different specialists on the subjects of architecture, landscape and urban design. The particular authors were selected based on their qualitative or experiential interests in architecture and landscape. They are not scientists in most cases but mainly phenomenologists or designers and writers concerned with the study of the qualitative characteristics of the inhabited environment.

The following books and their authors were reviewed and ultimately used to compose the second list of integration principles. The entire bibliography was helpful in some way but the following list identifies the works most useful to the composition of the integration ideas. The books in bold script were the most influential of all.

### **Author/Book List**

**Alexander, Christopher.** *A Pattern Language. A New Theory of Urban Design.*

Arnheim, Rudolf. *The Dynamics of Architectural Form.*

Bachelard, Gaston. *The Poetics of Space.*

**Beatly, T. and Kristy Manning.** *The Ecology of Place.*

**Birksted, Jan.** *Relating Architecture to Landscape.*

Domer, Alfred. *Alfred Caldwell: The Life and Work of a Prairie School Landscape Architect.*

Carr, S., M. Francis, L. G. Rivlin, and A.M. Stone. *Public Space.*

Childs, Gilbert. *Rudolf Steiner: His Life and Work.*

Condon, Patrick. *A Designed Landscape Space Typology. A Few More Good Types; Selected Designed Landscape Spaces.*

**Cullen, Gordon.** *Townscape.*

Dramstad, Olson, and Forman. *Landscape Ecology Principles in Landscape Architecture and Land-Use Planning.*

**Day, Christopher.** *Places of the Soul.*

**Eckbo, Garrett.** *Landscape for Living.*

Hough, Michael. *Cities and Natural Process.*

Jacobs, Jane. *The Death and Life of Great American Cities.*

Jackson, J.B. *Discovering the Vernacular Landscape. A Sense of Place A Sense of Time.*

Kaplan, R. and Kaplan, S. *The Experience of Nature.*

Kassler, Elizabeth. *Modern Gardens and the Landscape.*

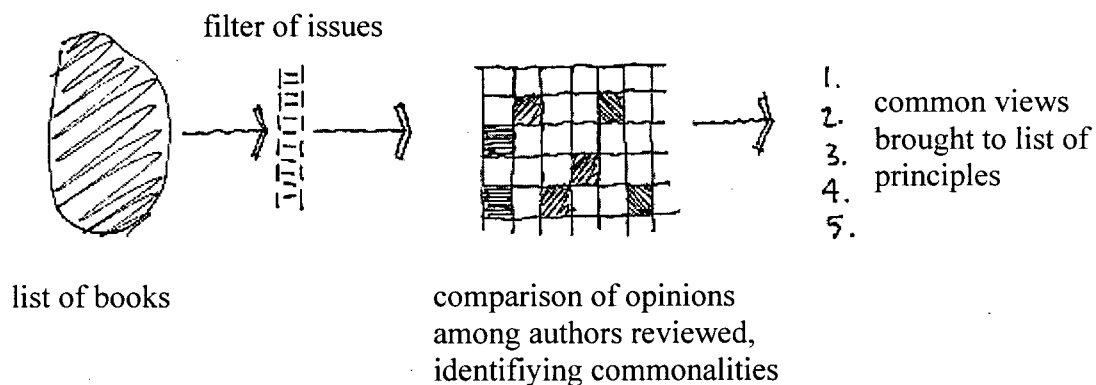
Kelbough, Doug Ed. *The Pedestrian Pocket Book*.  
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 Tuan, Yi Fu. *Space and Place*.  
**Vale, Brenda and Robert. *Green Architecture*.**  
 Venturi, Robert. *Complexity and Contradiction in Architecture*.  
 Zeiher, Laura C. *The Ecology of Architecture*.

**Appendix II** is a summary of the ideas from each theorist which has some relevance to the argument for integration and search for characteristics which would integrate building and landscape.

## Literature Review

### Comparing Opinions

In the process of reading through these various books and articles, a number of common opinions were evidently shared among these authors, yet it was not easy to begin to make a list of these ideas. Therefore, upon completion of the majority of the literature review, a number of **issues** were selected to help extract opinions from this set of reviewed literature (see Table 3.2) in order for the opinions to be compared and reveal commonalities. These commonalities then became the list of principles on integration gleaned from the review of literature.



**Figure 3.12 Flow Diagram of Literature Analysis**

This method of comparison and categorization through the use of a set of issues is similar to the matrix used by Patrick Condon et al in the project entitled *A Few More Good Types; Selected Designed Landscape Spaces*. Similarly, a list of authors were reviewed and opinions and comments were compared on particular issues or beliefs concerning designed landscape spaces. Common opinions were then noted.

### Issues Used to Extract Integration Ideas

Meanings

Attitude to Nature

Architectural/Formal Continuity

Plants

Wall Form

Ground Form – How a building sits on the ground

Roof Form

Openness/Closedness – Doors and Windows

Spatial Arrangement – percentage of coverage, location, distance between, position

Materials

Functionality of inside/outside relationship

Building type and size

Contextualism

These commonalities were counted and initially ranked in importance based on how many different experts mentioned them. In the end all of the opinions were condensed into one list of ideas considered important in the building/landscape relationship.

**Table 3.2 Condensed Commonalities for each Issue**

Issue for Extraction	Common Opinions
Meanings	<ul style="list-style-type: none"> <li>- genius loci/connectedness/4 fold</li> <li>- function of building holds meaning</li> <li>- church is symbolic of connection to the earth</li> <li>- designing for climate is meaningful in linking building with earth</li> </ul>
Attitude to Nature	<ul style="list-style-type: none"> <li>- genius loci, at one with nature</li> <li>- blending of building with nature</li> <li>- touching nature is important</li> <li>- respect for nature and health of site</li> <li>- importance of tree</li> <li>- nature determines building form - informs</li> <li>- co-existence of human and nature</li> <li>- design for climate – shows respect also</li> <li>- wholeness and harmony with land – a continuum</li> <li>- piecemeal/natural growth</li> <li>- importance of soil</li> <li>- we are part of nature</li> </ul>

	<ul style="list-style-type: none"> <li>- garden as connection to nature</li> </ul>
Formal Continuity	<ul style="list-style-type: none"> <li>- blurring or graded metamorphosis of form and materials</li> <li>- layered space between inside and outside</li> <li>- transition rooms – indoor landscape, outdoor room</li> <li>- building reaches out and garden reaches in</li> <li>- lines of movement flow from inside to outside – axial</li> <li>- earth offers connectedness or groundedness to site</li> <li>- courtyard is recreated landscape</li> <li>- building grows out of ground</li> <li>- interpenetration of building and landscape</li> <li>- fusion of shelter and landscape – environmental complex</li> <li>- flow of space in and around buildings</li> <li>- landscape becomes part of building</li> <li>- underground building or into cliffside</li> <li>- stairs are intermediary objects connecting</li> </ul>
Plants/Vegetation	<ul style="list-style-type: none"> <li>- plants climb up and over building</li> <li>- plant at base of building to ground it</li> <li>- trees as intermediary scale between human and building and between building and landscape</li> <li>- softens city grid</li> <li>- building feels cooler and softer</li> <li>- roof gardens bring landscape onto building</li> </ul>
Wall Form	<ul style="list-style-type: none"> <li>- taper base of wall to make it seem well settled</li> <li>- portico or columns as arcade transition space</li> <li>- planes separate space without enclosing completely</li> <li>- glass to connect visually</li> <li>- crenellate edge/thick wall/orientation to outside and inside</li> <li>- building married to ground</li> <li>- bay window pushes out into landscape</li> </ul>
How building sits on ground	<ul style="list-style-type: none"> <li>- fit building into contours of land</li> <li>- concave walls tie building to ground</li> <li>- fit into landscape</li> <li>- movement of ground form from outside to inside</li> <li>- low, ground hugging buildings</li> <li>- 3 to 4 story house maximum</li> <li>- horizontal line of living</li> </ul>
Roof form	<ul style="list-style-type: none"> <li>- green roofs give feeling of landscape covering roof</li> <li>- extend roof to ground – pitched roof</li> <li>- wide horizontal roof – cantilevered</li> <li>- roof form emulates surrounding landscape</li> <li>- roof steps down in terracing manner</li> <li>- low ceilings and eaves</li> </ul>
Openness/closed	<ul style="list-style-type: none"> <li>- layers of enclosure – transition space with columns</li> <li>- building to be open to land</li> <li>- doorway is important point of transition</li> <li>- use glass doors and windows a lot</li> </ul>



	<ul style="list-style-type: none"> <li>- use many small windows</li> <li>- windows should open, wide</li> <li>- free planes not enclosing</li> </ul>
Spatial Arrangement	<ul style="list-style-type: none"> <li>- small building size</li> <li>- proximity to nature</li> <li>- balance of building and nature – massing</li> <li>- location is important</li> <li>- freedom of movement around building</li> <li>- tuck building into landscape – between, next to</li> </ul>
Materials	<ul style="list-style-type: none"> <li>- use of glass to connect</li> <li>- wood and stone – local materials</li> <li>- metamorphosis using materials – intermediary materials like adobe, brick, beaten earth</li> <li>- plants</li> <li>- breathing walls</li> <li>- water to soften building – proximity to natural element</li> </ul>
Functionality	<ul style="list-style-type: none"> <li>- link house with garden – a whole</li> <li>- grey water – from building to garden, linking through system</li> <li>- access to water</li> </ul>
Building type and size	<ul style="list-style-type: none"> <li>- Swiss chalet is grounded</li> <li>- organic movement</li> <li>- variable building size</li> </ul>
Contextualism	<ul style="list-style-type: none"> <li>- geography/topography gives meaning to building</li> <li>- buildings nearby give historical influence</li> </ul>

## Literature Review

### Principles

These integration ideas extracted from selected issues or topics were then further summarized and a final list (Table 3.3) of integration principles was developed based on the reviewed literature.

**Table 3.3 Integration Principles from Literature**  
(in order of most appearances)

There should be a blurring or gradual change or metamorphosis of material and form between the building and the landscape. Think of brick, tile, or beaten earth as intermediate materials. (18)
Fit the building into the ground physically so they become one. Tucked in, between. (14)
There should be layering of space between inside and outside. This could include arcades, galleries, bay windows, porches, gardens or transition rooms like courtyards. This might be two categories – layers of space and transition rooms. (12)
The walls should be constructed as open planes to direct movement, define space but not enclose completely. Openness. (9)

Use glass to connect the inside and outside visually. (9)
The building should be designed for the climate. (7)
The building must reach out into the landscape and the landscape should reach in to the building. This can be with form and materials. (6)
Plants should climb over building. (6)
The base of the wall should have a concave taper to tie building to the ground. (6)
The building should be low and ground hugging. (6)
Plant plants at the base of the building to act as a grounding and graduation of scale from building to landscape. (2) AND Trees can be used as intermediate scale between building and landscape. (5)
The roof form should harmonize with the surroundings. (4)
Use 'natural' materials. (4)
Fit the building into the existing contours of the landscape. (3)
Hipped roof ties the building to the ground. (3)
There should be close proximity between building and landscape. (3)
Lines of movement flow from inside to outside and vice versa. (4) AND An axis can be used to draw movement from inside to outside. (2)
Roof should step down to meet with the ground. (2)
Crenellate the edge of the building, making it thickened up and allowing the space to become a 'place' addressing both inside and outside. Bay windows and saddlebags could be here. (2)
Use materials from the surrounding site to connect the building to the site. (2)
Low ceilings and eaves to tie roof to ground. (2)
The ratio of building mass to landscape mass should be even or a greater percentage of landscape mass. (2)
The building should be small in scale. Also crosses with the idea of 3 story buildings. (2)
The building should be long and horizontal in form.
The function or program is important to the building connecting to the earth in a symbolic way i.e. Church, farm, garden
Respect for site through minimal disturbance of natural systems
Nature determines building form – the formal resonance of the landscape form
Have many doors and windows (small).
Paving with cracks in-between – metamorphosis, change
Walls should breath - materials issue
Windows to have a low sill
Have windows that open wide.
Create wholeness – that is another word for integration
Genius Loci – also another way to describe integration
Piecemeal/natural growth allows greater opportunity for binding/integrating.
Use stairs as connection. (part of axial movement or lines)
Graywater system as way of integrating through a shared system.
Buildings should consider existing styles of surrounding buildings.
Water to soften building.

## **Concluding Statements from Case Studies and Literature Analysis**

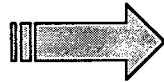
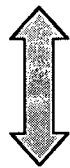
Both the results from the case study analysis and the literature analysis were used to inform the construction of the list of integration principles to follow. It is interesting to note that both lists were very similar and contained parallel ideas. The case study analysis was based on observation of existing projects and the literature analysis was based on common opinions by noted authors, therefore the combined list will be a product of both positive and normative analyses.

## **Initial Integration Principles**

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After regarding the integration ideas from observation and integration ideas from reviewed literature (see Figure 3.13), a final list of 18 integration principles was drafted (Table 3.4). It is not the only possible list, nor is it necessarily the best list. It is, however, the best list I was able to construct given the materials reviewed.

### **Case Studies Ideas**



*initial integration principles*

### **Literature Ideas**

**Figure 3.13 Constructing Initial Principles**

At this point the list was based almost solely on these two sources of data. My own input was limited to selecting the case studies and authors as well as the best way of condensing the information. This initial list has not yet been tested.

The goal of the thesis was to develop a list of integration principles with the understanding that integration of building and landscape is a good thing. Therefore, the point is not just to list these principles but to explain **how** the principle will demonstrate integration and **why** it is important.

These initial principles of integration were grouped under 9 categories:

**natural influences**  
**situating**  
**materials**  
**style**  
**building**  
**wall**  
**space**  
**roof**  
**plants/life**  
**systems**

The categories and principles are presented in order of potential application, from the overall setting in the landscape to the order in which the building and then landscape would be designed/constructed.

**Table 3.4 18 Initial Combined Principles – before “test drive”**

<b>Category</b>	<b>Principle</b>
Natural Influences	1. Let the landscape influence the building form. 2. Allow idea of natural piecemeal growth to guide development, growing as necessary for inhabitants.
Situating Building	3. Situate the building in the site in order to create a whole. 4. Bring the building into close proximity with natural landscape elements. 5. Strive for an appropriate balance between building and landscape space.
Materials	6. Use building materials that bring the structure closer to the local landscape.
Style	7. Employ a natural or ‘organic’ building style; a form which seems to emulate the local rhythm of the landscape.
Building Mass	8. Place the building mass firmly on or in the earth. 9. Guide the building out into the landscape.
Building Wall	10. Allow the landscape to reach into the building. 11. Design the structure to be sufficiently ‘open’ to the landscape. 12. Create a metamorphosis of material and form between building and landscape.
Space	13. Construct a layering of space around the building – thicken the edge or transition area between building and landscape. 14. Connect building and landscape through shared lines of movement.
Roof	15. Connect the building to the ground through manipulation of the roof form.
Plants/Life	16. Situate trees and plants which create a smooth transition between building and landscape. 17. Let the building be covered by ‘nature’.
Systems	18. Link the building and landscape through a shared system.

## **Principles in Use – The “Test Drive”**

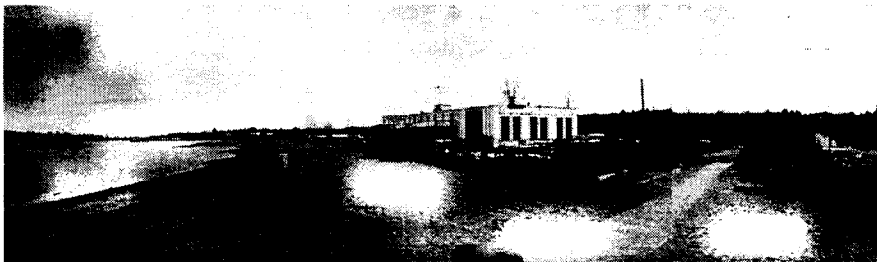
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Finally, these initial principles were test driven on a selected building/site in Vancouver in order to work with them and see how they could be applied. I was curious to see if they appeared to be successful when used in a form of design process and if this list was the best list that could be composed, or if it could be improved.

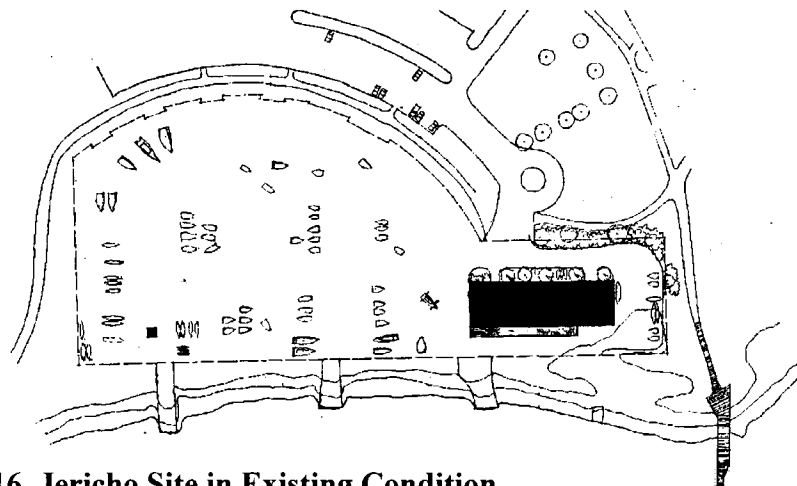
The site picked for the test drive was the Jericho Sailing Centre in Vancouver. It was selected in large part because it is a building which seems to lack much integration with its surrounding landscape. It is also set in a very powerful landscape and seems to offer many possibilities as a hub for integrating this building with the existing landscape as well as adjacent landscape space and the related activities. It could be used to integrate not just the building with the landscape but to help integrate the entire surrounding landscape together.



**Figure 3.14 Jericho Site from southeast.**



**Figure 3.15 Jericho Site from west looking down beach.**



**Figure 3.16. Jericho Site in Existing Condition**

The methodology in this testing of the instruments was simple. The principles were applied in order, trying out in as many variations as possible for each principle given the chosen context. As I worked with them, I continually described the process in writing and my feelings on how they worked. It was an opportunity to really play with these integration principles and discover how they could be applied. It was also an chance to possibly discover further integration ideas as the design process progressed.

Secondly, principles were not only applied individually, but applied simultaneously with each other to see how they reacted together and which ones seemed to be naturally attracted to similar principles or coincidentally worked together.

The entire process was a way to use them in a design platform in order to get a feeling for their potential success or failure. The process was not intended as a design project with the goal of arriving at a final design, nor was it the intention of proposing a particular design process with which to use them. It was a chance to discover new principles, to make revisions to the principles, the order of principles and question the number of principles. There are many other books which have discussed building/landscape relationships and attempted to compose lists of principles or *patterns*, in the case of Christopher Alexander. The numbers of principles varies from as little as 5 in the book by Berrizbeitia and Pollak, to over 250 in *A Pattern Language*. This was an opportunity to consider what was an appropriate number of principles for the desired use as a tool for designers.

## **Discussion on Test Drive**

The testing of principles on the Jericho site was first of all used to work with the principles. Secondly it was a way of illustrating the potential success of the principles and how the integration of building and landscape might look physically.

The test drive of principles resulted in several changes being made to the initial list including combining principles together, ordering of the list, and eventually decreasing the number of principles. It also identified the difference between prerequisites and actual physical principles.

Most of the principles remained very similar to the initial list. The principle of piecemeal growth was changed to a prerequisite, understanding the importance of time in slowly developing an integrated building or complex of buildings. It is connected to building of necessity, and should be employed in any of the principles, linking the inhabitants with their environment and in so doing developing a sense of belonging and meaning with the site.

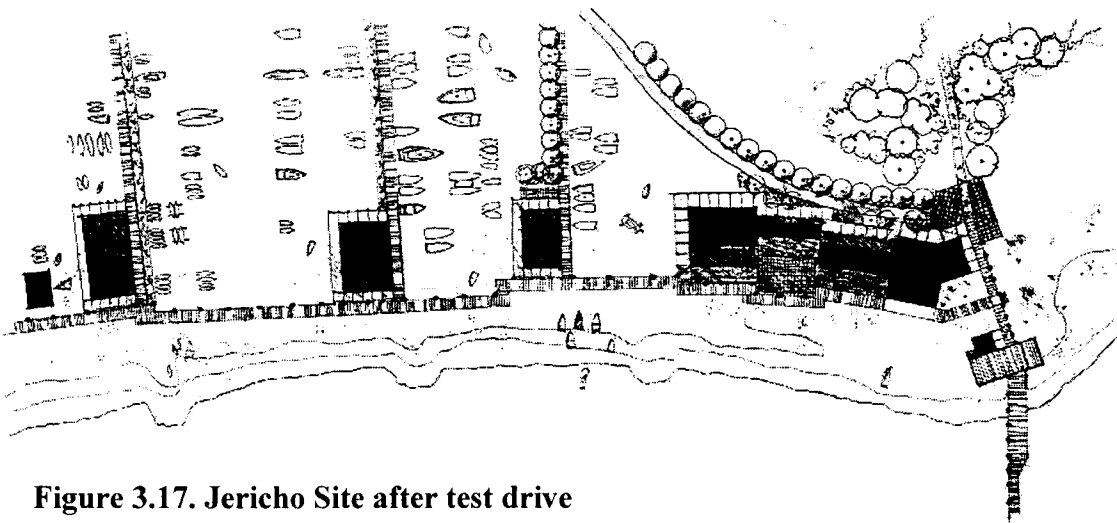
The principle of situating the building to create a whole was thought to relate more to the principle of landscape influences and was put under that category. The principle of organic style was found to relate to numerous principles. It was perhaps too specific to stand on its own as a principle but it is a valuable solution to many principles including layering, metamorphosis, landscape influences on form and even pulling the presence of

the building toward the building. The principle of roof form was thought to relate so closely with principle of grounding or rooting the building that it was finally included under this principle. Similarly the principles of planting plants close to the building and the principle of covering the building with nature were thought to relate more to pulling landscape closer to the building and were included under that principle.

Furthermore there was the inclusion of a principle on allowing climate to inform the building/landscape relationship. This was formally under others but seemed to be such an important idea that it was moved up to a principle unto itself. Also, a final principle was included relating to programming and the importance of this idea in connecting the building with other landscape activities. It seemed to be related to many historical examples of integration where building and landscape were tied together through need and program. How the inhabitants live in the building and use indoor and outdoor space is an important influence on the way the building and landscape physically relate to one another.

Apart from these changes, the order of the list was slightly changed based on the apparent order in which these principles seemed to be most naturally applied. Generally the list runs from principles of looking to the landscape for inspiration of form and situating, to materials and programming, to building massing, form, and systems. It is intended to go from the wider perspective to specific details, as one might in any design process.

In conclusion, the design testing of the principles was informative as an opportunity to use them in my own process in order to see if they were strong principles, if they were in an appropriate order, and to see if they were at least useful in my eyes if not for others. These changes were made to hopefully tighten up the principles and make them easily understood and useable.



**Figure 3.17. Jericho Site after test drive**



## **Final Integration Principles – A Language of Integration**

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This is the final list of integration principles. It begins with some general prerequisites concerned with adopting an integrative attitude. The main list concerns the physical integration principles which generally constitute a form or physical move that effects the building/landscape relationship. It is roughly arranged in order of general positioning, material selection and programming, and form of structure. Together the prerequisite attitudes and physical design principles constitute a proposed language for integrating building and landscape.

### **Prerequisites**

The first group of prerequisites speaks to a particular attitude that must be adopted along with this pedagogy of integrated building-landscape.

**Allow idea of time and piecemeal growth to inform development.**

**All implementation of integration ideas must be predicated on respect for existing cultural patterns and habitual moves.**

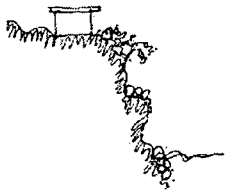
**The building and landscape must be designed in the same stroke of the brush.**

### **Physical Design Principles**

The physical design principles are prescriptive recommendations that must contribute in some way to a change of form. Under each prescriptive principle there is the beginning of descriptive ideas to achieve this principle. Each descriptive idea will have infinite possible variations based on the project, the location, climate, culture etc. and individual contribution from the habits and personal preferences of the designer applying these principles to their individual design process.

### ***Site Influences***

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**1. Bring the building within comfortable distance of natural landscape elements to initiate an intimate discourse.**

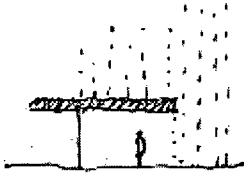
- i. Locate the building physically near to nature and natural elements.
- ii. Enfold the building in the forms of the landscape.



**2. Allow the spirit of the place to influence the form of the building/landscape whole.**

- i. Allow the existing contours of the site to influence the form and positioning of the building mass.

- ii. The roof form can emulate the surrounding topography or character of the landscape.
- iii. The existing landscape features can have a formal resonance on the building position.
- iv. The landscape can inform the building form.
- v. Look to existing inhabited landscape for “types” or style to inform new building.
- vi. Express the program/activities of the place in the building form.

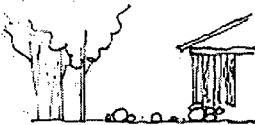


**3. Allow the climate to inform the design of the building/landscape relationship.**

- i. Climate should influence positioning or siting of building.
- ii. The climate should influence the form of the building, most often the roof. i.e. cantilevered roof, pitched roof.
- iii. Climate should inform the materials used for construction.

***Materials***

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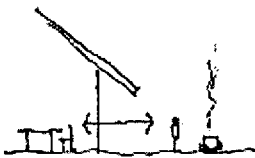


**4. Employ the use of building materials which demonstrate an obvious relationship with the local landscape.**

- i. Use materials from the local landscape to construct the building.
- ii. Use natural materials for construction.
- iii. Use textures and colours which connect building with local landscape.

***Program***

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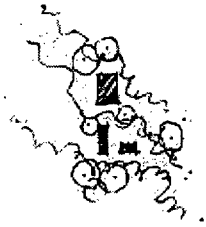


**5. Look to the building program(s) to dictate the relationship between building and landscape.**

- i. The practical needs of the inhabitants will inform the formal connection between inside and outside.
- ii. Draw connection between building and peripheral activities surrounding landscape.
- iii. Program building for celebrating landscape.

## *Massing*

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### **6. Distribute the building mass appropriately to attain a balance of building in the landscape.**

- i. Break down the edge of the building to allow an interlocking with the landscape.
- ii. Spread the building mass across the site to allow interaction with landscape.
- iii. Use variable sized buildings.
- iv. Buildings should be small in scale if possible so landscape is always close to inhabitants inside.

## *Building Initiatives*

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### **7. Plant the building mass on the earth such that the building is profoundly rooted to the ground.**

- i. Building can be low and hug the ground, with low ceiling too.
- ii. Fit the building into the ground physically.
- iii. Tie the building and ground together by pulling the roof down and raising the land up.
  - Step the roof down in a terracing manner.
  - Pitch the roof to guide it to the ground.
  - Terrace the ground surface to prepare for building.
- iv. The base of the wall should have a concave taper to spread out and grab the earth.



### **8. Push the building form outwards to liaise the building with its surrounding landscape.**

- i. Penetrate the landscape with saddlebags or bumps pushing the building out and creating a crenellated building edge to better lock with landscape.
- ii. The building should be long and horizontal in form, pushing out to the horizon.
- iii. Wall planes or building pieces can push out into the landscape interacting and guiding the landscape space back to the building.
- iv. The building floor can spread out to merge with the landscape floor.

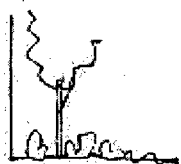


### **9. Open the building envelope to the outside landscape.**

- i. Use planes which allow free movement of space between building and landscape.
- ii. Use glass to create visual continuity.
- iii. Use many doors and windows for movement from inside to outside and visual connection.
- iv. Open the building to the sky with courtyards or skylights, allowing light to enter into building from above.
- v. Open out to borrowed views of adjacent landscape.

## ***Landscape Initiatives***

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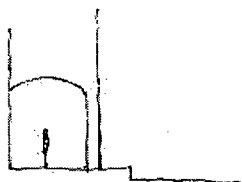


### **10. Pull the presence of the landscape up to meet the building.**

- i. Mound plants and earth up around periphery of building to scale it out to landscape.
- ii. The ground can be terraced up to accept the building, like rooting the building to ground.
- iii. Cover the building with "nature".
- iv. The landscape can physically penetrate the building.
- v. The landscape floor can reach into the building.
- vi. The forms of nature can influence the building envelope.

## ***Sharing***

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### **11. Layer the space between "insideness" of the building and "outsideness" of the landscape.**

- i. Use arcades, galleries or columns around edge of building to thicken in-between space.
- ii. Create in-between rooms like gardens, terraces, or porches which are both part of building and of landscape.
- iii. Building courtyards with arcades to build layers of inside and outsideness.
- iv. Crenellate the edge of the building wall to make it thicker and interact more with the landscape. A more rough textured building edge will help do this.

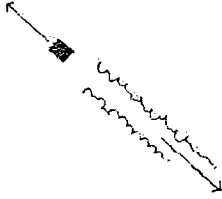
### **12. Build a metamorphosis of material and form between building and landscape.**



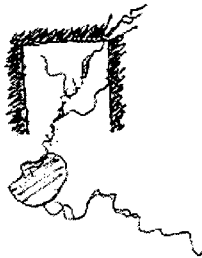
- i. Landscape and building form can slowly morph from one to the other in both materials and form.
- ii. Paving with cracks in-between – rough and refined coming together in floor surface.

- iii. Use intermediary materials like adobe, beaten earth, which are between natural and human created material.

**13. Connect building and landscape through shared lines of movement.**



- i. Use paths, trees, plants, or landforms or other landscape elements to connect building structure and landscape space, axially or nonaxially.
- ii. Use symmetry in landscape and building to build an associative link.
- iii. Use stairs to connect building with landscape.
- iv. Use certain materials along these lines to tie building and landscape together.
- v. Use “sight” lines or borrowed views to connect building with greater landscape.



**14. Link the building and landscape through a shared system.**

- i. Use graywater system to link building and landscape functions.
- ii. Use solar, wind, or water power from landscape to run building.
- iii. The building can exist unobtrusively in the ecological system.

## **chapter 4**

### **a language of integration**

Prerequisites  
Principles

#### **Introduction to the Integration Language**

The following is the proposed integration language focusing on a single building in a relatively low-density context. The language is composed of a short list of prerequisite attitudes and a list of 14 physical design principles. Each principle is essentially a prescriptive idea that suggests how the building and landscape should be integrated. Under each prescriptive idea there are a number of descriptive solutions which describe clear physical actions for integrating building and landscape under that principle. There may be many more possible descriptive ways to achieve the principle than have been mentioned. Finally, there are an infinite number of variations for each descriptive idea depending on the place, climate, culture, and certainly the designer.

The integration language is not directly proposing a particular design process, nor is it suggesting how these principles must be used. That is ultimately to be decided by the user. The language is intended to condense and clarify what is believed to be a useful list of ways to integrate building and landscape, considering a single building in a low-density situation. It is also intended to inspire designers to question and visualize the potential benefits of integration and the desire to integrate building and landscape in their work.

#### **Prerequisites**

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The first group of prerequisites speaks to a particular attitude that must be adopted along with this pedagogy of integrated building-landscape.

#### **Allow idea of time and piecemeal growth to inform development**

An examination of most vernacular or indigenous architecture indicates an evolution of building as needed, over a long history. That slow piecemeal growth seems to allow the opportunity for integration of building and landscape, perhaps because it allows time for reflection and review of the previous development, or perhaps because slow thoughtful development is more reliant on the process of connecting spaces together as needed or desired. As Christopher Alexander states, "the task of creating wholeness in the city can

only be dealt with as a process...thus, in our view, it is the process above all which is responsible for wholeness." (Alexander, 1987, p.3)

Piecemeal growth also allows places to change, to evolve. Perhaps evolution can suggest what building or exterior space might be needed next and how the whole can be integrated together.

When we build objects that do not evolve, we deny this life process and this response to surroundings. (Day, 1990, p.89)

Therefore, by building slowly and allowing time to have its effect, the building will show more of a connection to that place, having evolved and become a familiar object in that landscape.

**All implementation of integration ideas must be predicated on respect for existing cultural patterns and habitual moves.**

This is necessary for any project including proposals to integrate building and landscape. Building and landscape, interior and exterior space have different sorts of cultural histories and relationships depending on the society. Some cultures have been more connected with their surroundings than others and this must be respected.

This pedagogy of integrating building and landscape is not to be applied blindly in the face of historical precedent or cultural ideas, however through the examination of numerous cultures it appears as though many cultural beliefs have been rooted in a connection with the earth. This need for integration with landscape has been practically and spiritually necessary. How this is done will be dependant on the cultural history of this relationship with the land. Not all cultures will accept the idea of building a structure into the ground or creating porches or outdoor garden rooms. It will depend on the aesthetic and cultural beliefs of the people in association with climatic restrictions of the context.

**The building and landscape must be designed in the same stroke of the brush.**

In order for the physical integration principles to be implemented, the building and landscape must be seen together in the design process. Historically and intellectually the disciplines of architecture and landscape architecture have been separated, arguably for reasons of artistic integrity. In order for building and landscape to come together into this integrated whole, architects must begin to include landscape into their consciousness as connected with building, and landscape architects must become more comfortable about realizing the role of buildings in the landscape and the movement between what is interior and what is exterior space.

The development process normally involves the construction of the building followed by the landscape, fitted around the artifact upon completion. In order to create an integrated

building/landscape this process must change so the building and landscape are designed together, or really the building is designed to fit into the existing landscape and the landscape is altered to accept this new element.

House and garden usually do not arise together and seldom at the same time. Mostly a house is built first and the garden made around it, but if there was a garden first, little of it remains undisturbed by the time the house is built. House-building is always a drastic intervention into an existing order, if only that of the biological society of weeds which covers and protects the earth. Garden-making is an extensive reordering set out according to new and inventive rules, yet always in sympathy with nature. The layout of the house requires a planner, that of the garden also. Often the representatives of these two entwined disciplines do not meet, or come together too late, when they can but tolerate each other. It would be better if they met to discuss and decide every detail before the first sod was broken. Best of all, the planning of 'house in its garden' should be a mutual undertaking. (Mattern, 1960, p.92, translated by P.B.Jones)

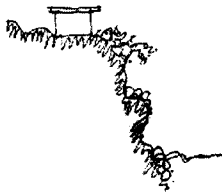
This refers in large part to the necessity for the divided professions of architecture and landscape architecture to work together, if not merge into one discipline. As Elisabeth Kassler describes it, "Both professions look beyond the individual buildings, the individual garden, to the great problems of urban design and regional development, for theirs are social arts, affecting the lives of all manner of people by bringing them into new and potentially fruitful relationships with each other and with the world about them." (Kassler, 1964, p.7)

It's seems necessary therefore, to establish this idea as a guideline of integrating buildings and landscape: the professions must either work together or each individual must concern themselves with both building and landscape activities at the same time and the design of these elements as one process, the design of one whole. Garrett Eckbo says "We (landscape architects) must become sensitive and appreciative of the forms of architecture, and the architects must become sensitive and appreciative, not only of the forms of nature, but of the forms of landscape design which can come out of the meeting of architecture and nature." (Eckbo, 1950, p.38)

## **Concluding Statements**

These prerequisite attitudes are necessary in order for the following physical integration principles to be successfully applied. They embody the respectful and sensitive spirit of this integrative pedagogy, necessary for the implementation of formal ideas.



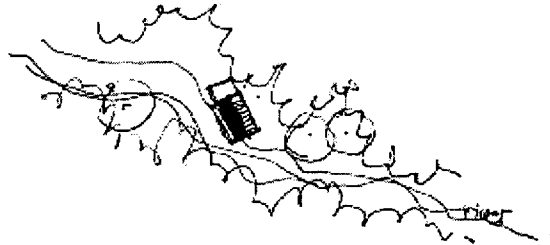


### 1. Bring the building within comfortable distance of natural landscape elements to initiate an intimate discourse.

- a. Locate the building physically near to nature and natural elements.
- b. Enfold the building in the forms of the landscape.

*...the intrusion of man into the wilderness without vulgarity... Our picture of the cliffs at Corsica is remarkable for the reason that the houses enter into the spirit, into the wildness of the scene by crowding up to the edge of the cliff, up to the danger point. (Cullen, 1961, p.86)*

I imagine a small cabin nestled in the wood, or a house sitting a few feet from a meandering stream. A building set up against such a vivid symbol of nature and landscape speaks of connection, perhaps even integration.



Integration suggests a building that is humble enough to coexist close to nature in a symbiotic expression of love. The building becomes almost submissive to nature, tolerating even enjoying its natural character and wanting to be near to it to experience the wonder and beauty of nature and landscape. It is feeling a sense of immediacy.



*Figure 4.1 Noyes House, Conn. Immediacy with nature.*

In order for the building to integrate with landscape in this way, the designer must begin by observing the existing character of the landscape and consider how the building can be placed to exist quietly against the natural order of life. Close proximity is a subtle, difficult maneuver which requires great sensitivity, yet getting that close is like sitting in

a small auditorium right up close to a great musician. You don't want to disturb him, but being that close is exhilarating, exciting. You feel connected.

Close proximity to natural elements integrates building and landscape simply because of this immediacy. Proximity to natural landscape is found in medieval towns, largely because of size of town and extent of landscape. It is also found in The Pedestrian Pocket idea. Building and landscape, city and country become one whole each holding their own place in the larger organism. Buildings are not too far that they are disconnected from landscape and nature. Christopher Alexander discusses this importance of proximity to country in the pattern **3. City Country Fingers**, saying:

Keep interlocking fingers of farmland and urban land, even at the center of the metropolis. The urban fingers should never be more than 1 mile wide, while the farmland fingers should never be less than 1 mile wide. (Alexander, 1977, p.25)



Building near to a dense patch of "landscape" offers the building and inhabitants a feeling of connection with it because it is right there within arms length, part of the inhabited space, part of the dwelling space. It also refers to the need for balance between built form and landscape space.

Having landscape elements near to our dwellings reminds us of the greater landscape of the earth and psychologically connects us with nature. As Kevin Lynch says, "As we spend more of our lives in interior environments, we are deprived of many natural clues to the passage of day and season." (Lynch, 1972, p.69) Close proximity to natural landscape elements reconnects us with these natural clues and integrates us into our environment. We can smell the changes in our forest as summer moves to fall.



*Figure 4.2  
Eames House,  
California.  
Nestled in the  
trees.*

This proximity to nature is connected to the idea of biophilia discussed earlier. Alexander reminds us that "the need that people have for water is vital and profound..." (Alexander, 1977, p.136) We need to be near to water, to nature. If a significant density of landscape space is not available, particular elements of the landscape can be included to give this feeling of proximity to nature. Water is perhaps the best example of this. Water is a powerful element that can have significant effects on experience within

buildings. Pulling water inside the walls of a building structure can bring the spirit of the landscape within the building giving the interior a sense of exterior, mitigating discomforts of hot dry climates, bringing sounds that buffer external city noise, and reminding us of a cool humid brook running calmly through a nearby forest.



*Figure 4.3  
The Bishop's  
Harbour.  
Its feet in the  
water.*

When a building is constructed within this immediacy of nature, it becomes a product of the natural elements and changes over time with the natural flows and growth of that landscape.

The physical processes of sedimentation have been exploited by the Venetians, passed back and forth between usefulness and idea. It is as though strategies of layering become a preoccupation, and part of a vocabulary for building...Torcello, the earliest settlement of the Venetian archipelago, is built on such a sand bar, the lagoon water protecting it from invasion. Its cathedral lies so close to water level that the layers between the sand bar and its pavement are imperceptible, the fine tessellation of the pavement echoing the wave pattern of silt below. The shift in the pattern of these small tiles testifies to the gradual settlement of the building, like debris slewed across the top of a wave. (Salter, 1999, p.264)



*Figure 4.4 Venice. Nature  
changes the city.*

### **Design Discoveries from Jericho Sailing Centre**

I feel that the position of the Jericho Sailing Centre is not unintegrated in terms of this principle. It is positioned next to the ocean and therefore it is already in reasonably close contact with natural elements of this landscape. The principle seems to be most applicable to this site by experimenting with how close the building can get to the water, the principle landscape element.

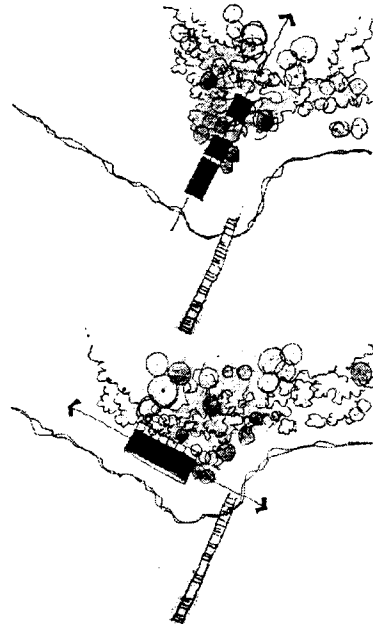
It could have gone right beside the water or over it, or even in it. Yet there was something about this idea that seemed too invasive. The building as a vertical object simply stood out too much when it was on the water. It seemed more appropriate to sink it into the ground, into the sand. There was more a feeling of integration when the building became less visible or less conspicuous, almost hidden. This principle must therefore be used carefully. Close but not too close is the answer. In fact the hesitation of using this principle indicates the fact that these principles are not to be used in isolation from a typical design process. It is one of many tools that could be used to improve a project but the same awareness and sensitivity to unique contextual issues must be adhered to and the use of these principles tailored to work within these site limitations.



*Figure 4.5 Next to or even over the water.*

Another decision was to try to enfold the building into the trees behind it. This might be an idea for other projects too. To simply try to retain as many trees as possible and build the building as close to these trees without endangering them. Proximity to trees, water, or cliff sides provides that presence of landscape to be seen potentially from inside and remind the dweller of this close contact thereby a feeling of integration with that landscape.

Public access to the surrounding landscape, in this case the waterfront is important. The building should not be restricting movement around the landscape, especially access to natural landscape elements. In this case the building can become more integrated simply by removing the chainlink fence. Suddenly it becomes much closer to the natural landscape elements of water, beach, and forest. There would be an immediacy to the surrounding landscape that does not exist with a separation even as permeable as a chain-link fence.



*Figure 4.6 Backed into the forest.*

A general discovery in the test drive was the connections between principles. Each of the principles is naturally a strong idea unto itself but is also decidedly connected to other principles. It was often difficult to use just one principle without suddenly applying another. I find this to be an important observation for the thesis in general. As soon as

one begins to consider the building and landscape as sharing form and space, it is easy to recognize the connections and how they can be actually looked upon as one principle; simply seeing building and landscape as two phenomena interacting in infinite ways.

**Connected Principles:** 2, 6, 7, and 10

**Final Statement**

This principle suggests simply that bringing the building closer to nature, one of the main components of landscape, will help integrate building with landscape. The proximity will allow both a physical and psychological connection to the immediate landscape, creating a feeling of integration with the surroundings.

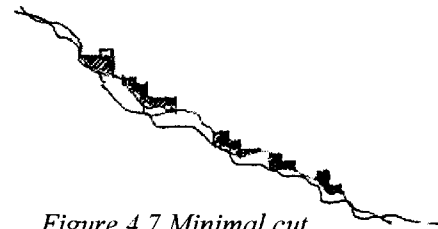
## 2. Allow the spirit of the place to influence the form of the building/landscape whole.



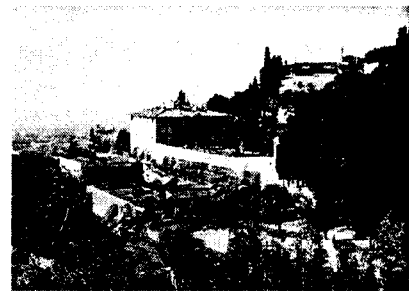
- a. Allow the existing contours of the site to influence the form and positioning of the building mass.
- b. The roof form can emulate the surrounding topography or character of the landscape.
- c. The existing landscape features can have a formal resonance on the building position.
- d. The landscape can dictate the building form and size.
- e. Look to existing inhabited landscape for “types” or style to inform new building.
- f. Express the program/activities of the place in the building form.

*One way to achieve a deeper and more lasting meaning is to emphasize the connections between a place and its context. To do this requires a gathering in and expression of those qualities of context that make a region or a city or a neighborhood unique. (Carr, 1992, p.266)*

In order for a building and landscape to find a state of integration, the designer may look to the existing characteristics of the landscape and let these characteristics help inform the siting, position and to some extent the form of the building. One may begin with response to existing topography, letting the existing contours dictate the most practical position for the building, placing the structure for optimal protection from the elements or the place which provides the best foundation. It may also be a question of “topos”, recognizing a natural power of place and how the building should be built to be most deeply connected with it. In this way the building conforms to what exists and shows some respect, even humility by accepting this landform and building into it. Gordon Cullen expresses the importance of the awareness and respect for the topography of the land.



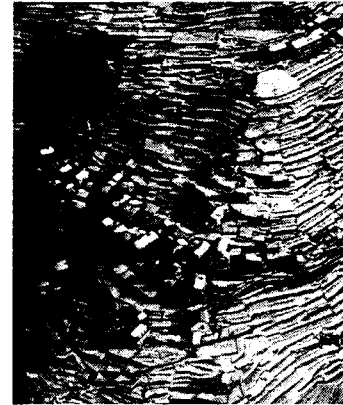
*Figure 4.7 Minimal cut and fill.*



*Figure 4.8 Villa Medici, Fiesole. Set into the hillside.*

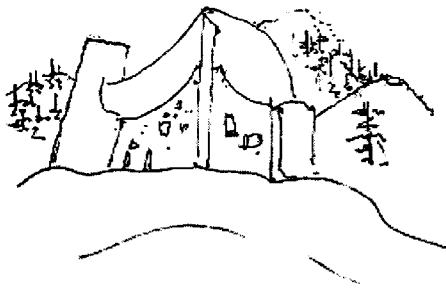
The art of manipulating levels is a large part of the art of townscape. Variations in the level of the ground can occur either directly, as a result of the contours of the site, or artificially, arising out of the needs the planner has to meet. But however they are caused, one's reactions to levels are coloured, in the first place, by the peculiar sensitiveness that man has to his position in the world. (Cullen, 1961, p.175)

Christopher Alexander discusses the importance of topography in the pattern **169. Terraced Slope**. (Alexander, 1977, p.791) He discusses the importance of terracing against erosion so the building may ecologically rest unobtrusive in the landscape, but the Terraced Slope does much more than that. The act of terracing is one of the first moves when building in a hilly landscape. The act of subtly terracing into existing contours with minimal cut and fill shows an awareness of the topography and wanting to dwell within its original form. The building becomes a product of the local landscape and is integrated into the rhythm of the environmental whole.



*Figure 4.9 Vineyards and buildings in France terraced along slope.*

Springlines identified striations of different porosity in the rock, which became the terraces for inhabitation. The disposition of settlement in the wind shadow of such terracing was 'registered' in the three-room traditional dwelling, its two opposing doors reflecting the predominant onshore and offshore winds, its thatched roof held down with weighted nets against south-westerly gales. (Staller, 1999, p.262)



*Figure 4.10 The roof of Ronchamp mimicking the surrounding hills.*

#### **Roof Form**

The roof form may also achieve this integration. As the roof imitates the form of the landscape, the building becomes an extension of this surrounding. Steen Eiler Rasmussen contemplates Corbusier's chapel at Ronchamp saying, "The undulating rhythm of the landscape seems to continue in the design of the church. As you come nearer you discover that there is not one plane surface; the entire building curves and swells into an extraordinarily well-integrated composition." (Rasmussen, 1959, p.213)

**The roof form of the rural buildings in Switzerland also exhibits a grounding with the earth.**

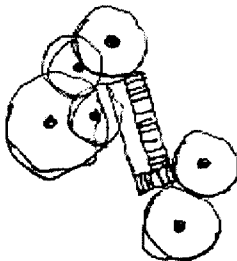
The chalet of Simmental, thus is distinguished by a large gable wall which opens towards the sun and the view with rows of glittering windows. The roof is very pointed, and the general character is solid and ground hugging, lending a sense of protection and assurance among the wild forms of the mountains.

In nearby Emmental the mountains give way to rounded hills. Here the houses also have immense roofs, but they are steeper and half-hipped, so that the built form looks like a large voluminous body. This type of roof is common in most of the hilly regions to the north and east of the Alps, and harmonizes well with the character of the landscape. (Norberg-Schulz, 1985, p.94)

*Figure 4.11  
Swiss chalet.  
Roof form fits  
with  
surroundings.*



By imitating the form of the landscape, the building not only takes on physical characteristics of the landscape and thus seems to reach out to become a part of it; it also lets the landscape climate advise the form of the building, especially the roof. In this way the building belongs to that particular region/landscape. It is similar to the principle on climate.



*Figure 4.12 Weaving the  
building through trees.*



“In the days of hand-power it was easier to go round a tree-root or a boulder or follow a contour than go straight through. The lines that resulted – for path, field boundary or building placement were, for pragmatic reasons if no other, in conversation with the landscape. Nowadays you can design a building in one country to be built in another...they can therefore be sited anywhere in the world, but they belong nowhere.” (Day, 1990, p.13) This speaks to the formal resonance that the landscape can have on the building. The position of trees or landform can effect the position and even the form of the building. The building thus belongs to that place intimately and becomes integrated with the infrastructure of the landscape. A building wall jogged in and out to avoid a large birch tree, shows respect and care in the placement of the new structure. Each move is, as Michael Hough says, “of necessity”.

The “International” buildings of today have lost this site specific ‘conversation’ between a building and a local landscape. Buildings that are effected by their local landscape, especially because of pragmatic reasons, are more intimately connected with that landscape.

#### **Discussion on Fallingwater by Frank Lloyd Wright (Figure 4.13)**

Fallingwater, perhaps one of the most recognized buildings of modern architecture, is exemplary of this principle. The building seems as much a part of this landscape as the rocks or the trees. Wright has let the natural character of the place inform seemingly

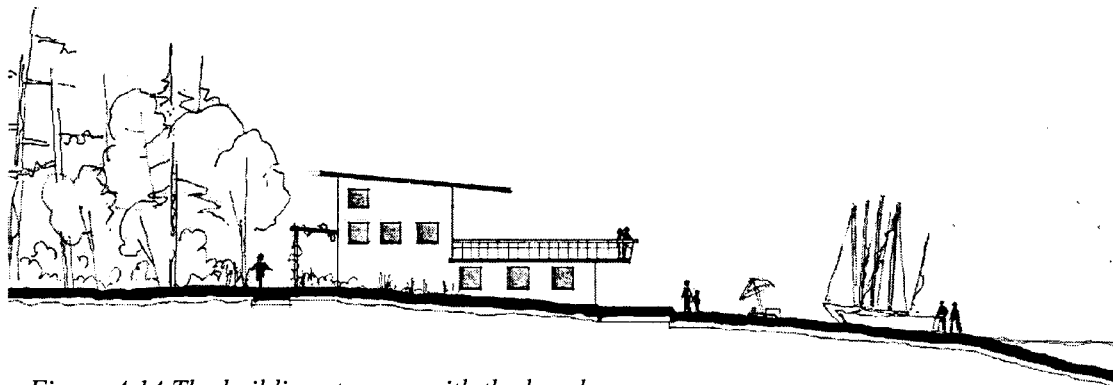


every aspect of the building from its position, orientation, building form, colour and massing. As Rasmussen describes it, "Wright has continued Nature's composition of horizontal elements and massive rocks in the green hollow of the valley. The house is composed entirely of horizontal masses that seem as natural there as the jutting rocks of the waterfall, and the occupants live in rooms that jut out over the rushing water." (Rasmussen, 1959, p.77-78) The building seems to be in harmony with the surrounding landscape. Robert Venturi agrees and comments on Wright's Fallingwater saying that "in accommodating his rural buildings to their particular sites, has recognized **inflection at the scale of the whole building**. For example, Fallingwater is incomplete without its context – it is a fragment of its natural setting that forms the greater whole. Away from its setting it would have no meaning." (Venturi, 1966, p.96) As the building is informed by the landscape, the building becomes integrated into this particular site.



### Design Discoveries from Jericho Sailing Centre

The Jericho site, being low and relatively flat, suggested a low building, perhaps buried in the sand; one which might have a roof form that rose up from the water as the beach rises from shore to treeline. If the site was completely flat like a desert, a flat roof may be appropriate as it would mimic the landform. In this case there is a slight rise up the beach so a slightly pitched roof seems to have a more meaningful dialogue with the land. The building integration will be largely achieved by fitting the building into the existing forms of the land. As the land rises up then the building might do this also. It is then visually observed that the building is making an effort to understand the essence of the landscape.



*Figure 4.14 The building steps up with the beach.*

The trees running along the beach park seemed to continue to the Sailing Centre site and indicated the need for trees to continue all the way to this building. It is like an anchor at the end of this tree line. It was discovered therefore, that like the building, the landscape could also be manipulated to integrate building and landscape together. The positioning of the wharf and paths also suggested that the building should be nearer the wharf and have some closer connection with these circulation routes. It would simply help to integrate the building more with these activities if they were closer together.

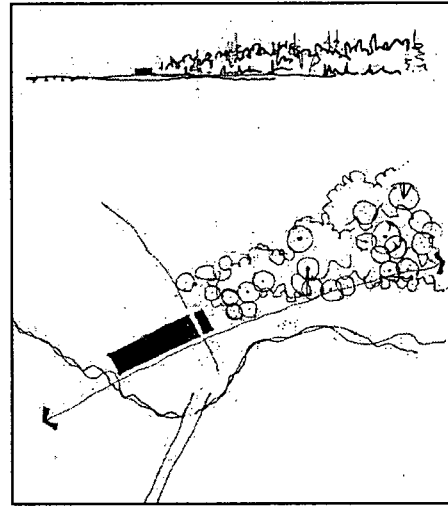


Figure 4.15 Continuation of tree line.

Considering the site is quite long and activity occurs across the entire fenced site, the building should perhaps be split up to become more a part of this activity; a response similar to the principle of massing. It suggests the importance of spreading the building out to interact with the landscape space. The orientation of these mini buildings might furthermore be connected with the orientation of the shoreline. This is simply acknowledging the movement of the shoreline and moving the building front to run parallel with it. As the building takes clues from the land, it becomes more connected with it. In this way the sun, wind, and views can also influence the building position.

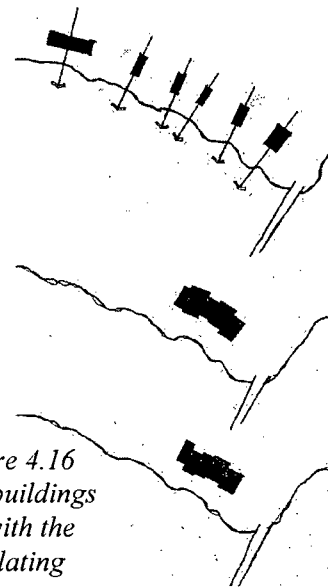


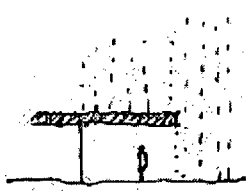
Figure 4.16 The buildings jog with the undulating shore.

This principle seems to be almost a metaphor for the entire language. It indicates a need to look to the land for answers to the building form, orientation, and even materials. It suggests the importance for the building to be in some way the product of its environment showing respect and a need to communicate with the surroundings.

**Connected Principles:** 1, 3, 5, 6, 7, 10, 13, and 14

### Final Statement

This principle suggests the importance of looking to the landscape for clues on how the building should be in that place. By having the landscape influence the building in this way, the building becomes intimately rooted to this place and integrated into the surrounding landscape.

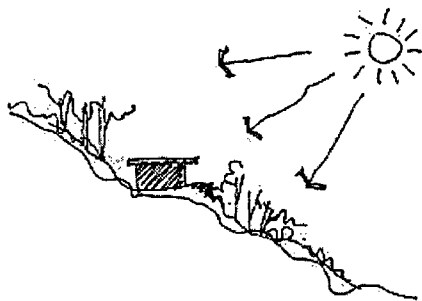


### 3. Allow the climate to inform the design of the building/landscape relationship.

- a. Climate should influence positioning or siting of building.
- b. The climate should influence the form of the building, most often the roof. i.e. cantilevered roof, pitched roof.
- c. Climate should inform the materials used for construction.

*Diverse, ingeniously constructed buildings that respond well to local climate, are built of local materials, and rest comfortably in the landscape can be found all over the world. (Zeihner, 1996, p.12)*

Designing the building to fit appropriately in the climate is integrating the building into this larger scale of the landscape and region. The building which is built in response to the local climate, belongs to that site; it is appropriate for that place. The form, materials, and siting of the building are influenced by this climate and therefore when we see the building it offers a visual discourse on why it is the way it is. Heidegger discusses a peasant house in the Black Forest that is influenced by the climate saying:



*Figure 4.17 Well positioned for sun.*

There, when a man built his home near a spring and facing south on a hillside protected from the raw winds, it was the earth itself which directed the construction of such a building: and man by being open to the demands of the earth was merely a responder. When he extended the roof far down past the wall of the house and gave it sufficient slope, he had taken into consideration the stormy winter skies and possible accumulations of snow on the roof. Here too, the weather, or rather the sky, determined the structure of the building. (Relph, 1976, p.39)

This discourse between the resulting building characteristics and the influencing factor of the region's climatic conditions justifies the building's presence. It is like speaking Italian when in Rome. If one speaks the language, wears the appropriate attire, and orders the typical drink there is a better chance of becoming integrated into that culture. If you speak Russian in Rome you would be considered a foreigner. This is the same for the building. There is an appropriate way for the building to be in order to call itself integrated into the region, community and site.

A building could be informed by the climate in many ways:

Put windows to the south in cool climates.

Building underground in the cool soil in hot climates.

Pitch roofs in snowy or wet climates to allow the snow or rain to run off easily.

Use adobe brick or other material from the local soil which keeps the building cool in summer and warm in winter.

Construct roof cisterns in wet climates as a water source.

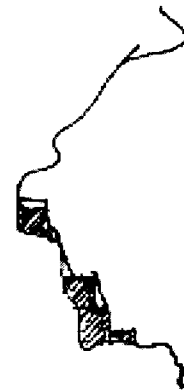
The Anasazi Indians are a good example of a culture that exhibits buildings designed for their climate. "Buildings were typically sited within cliff faces to take advantage of the cooling shade provided by overhead rock canopies during hot summer months. In winter when incoming solar energy was desired the lower angle of the sun penetrated directly into the houses. Similar design strategies can be seen in the traditional architecture of the Middle East and Asia." (Connery, 1994, p.53)



*Figure 4.18 Mesa Verde. Protected from sun and rain.*

Connery illuminates the importance of buildings built into the earth and the importance of overhangs for this particular context. These overhangs provide shade but also transitional space between inside and outside. Even outside of the walls of an individual building it is possible to feel you are inside, under the protection of the rocks overhead. It is a comfortable place of prospect and refuge, and specific to the needs in this climate.

A roof tells its *raison d'être* right away: it gives mankind shelter from the rain and sun he fears. Geographers are constantly reminding us that, in every country, the slope of the roofs is one of the surest indications of the climate. (Bachelard, 1969, p.18)



The Danish farm house shown below, solidly integrates the building into that landscape because of its attention to local climate. If we can tell what the climate is by looking at the buildings, aware that it is constructed to protect the inhabitants from the howling winds, or the pouring rain, or the blistering sun, there is obviously some deep connection between building and site. This building was constructed to survive in a very wet climate building a very steep pitch to the roof and extending the roof almost down to the ground.



*Figure 4.19  
Danish farm  
house. Roof is  
appropriate.*

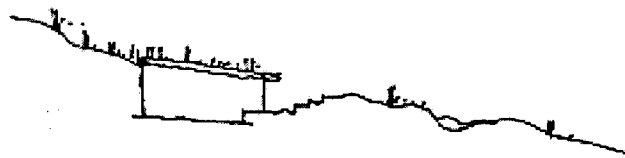
This building in the French Alps is built of stone to withstand the high winds and heavy snow fall in the winter. It's a stocky building able to resist this harsh winter climate. This small hut built of stones and dug halfway into the hard ground tells a story about the quality of this pervasive winter climate. Nothing else could survive in this place, so exposed to driving winds and heavy snow on the roof. The use of these materials is a response to the climate and in turn it helps to integrate this building meaningfully into the landscape.



*Figure 4.20 Surviving in a harsh climate.*

The building can also be designed to interact with the elements of the natural landscape, using the wind, sun or tides as energy. Using solar panels as roof materials might be one example of creating a building or building component that works with the qualities of the local landscape and climate. The windmills in Holland are buildings that interact with the wind. This is related to the principle of shared systems.

The integration of building with landscape is achieved when the building is informed by the climate. Obviously there are many practical reasons for designing for climate; if it rains a lot, you want a good roof. However, designing for a particular climate is also important to integration because of the conversation that results. If a building is built for pragmatic reasons to survive and shelter humans in that climate and landscape, then there is a meaningful dialogue between the building and the place. The building location, form, and materials are necessarily chosen to work with that place; this illustrates a connection to the climate and landscape.



*Figure 4.21 Underground building might be necessary for very hot or cold climates.*

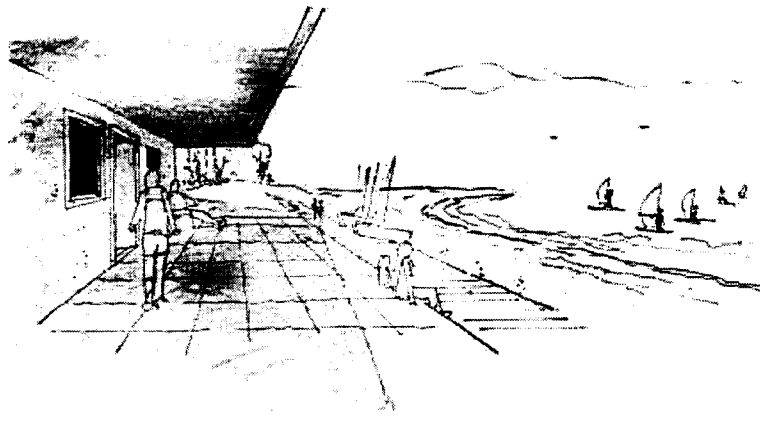
One might even say it becomes an authentic building or authentic place. The building choices are relying on the place and make the building special and unique to that place, an authentic place. If the building were constructed in a different climate and landscape, different position, form, and materials would be used and therefore another unique relationship would result between that building and its environment. Ignoring climate can not only be disastrous in terms of survival but it can be experientially dangerous too. As Michael Hough says:

Another crucial consequence of ignoring climate is the loss of a sense of place – of that sense of connection with a particular urban or naturally indigenous environment. (Hough, 1990, p.19)

Buildings which are designed for climate are both practically and philosophically integrated with the site. They demonstrate the fundamental act of building to satisfy need and are thus part of an authentic process and contribute to a sense of place.

### **Design Discoveries from Jericho Sailing Centre**

The Vancouver climate influences this building by demanding wide overhangs because of the typical rainy weather and need for shade in the summer. The site is extremely exposed on all sides. It is perched out on the beach only metres from the water. In this location it would be extremely hot in the summer and the winds and rain in the winter would be ferocious. The sailors need an outdoor space that is covered, a place to prepare for a day on the water, a place that will keep clothes dry and a place to apply last minute sun screen. The building must respond to these climatic specifics.



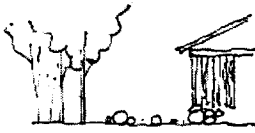
*Figure 4.22 Wide eave protecting from sun and predictable rain in winter.*

Like the principle on landscape influences this idea came up in many principles. In some way it is a design solution that achieves many principles but it is important as a fundamental concept for integrating buildings and landscape. In order for the building to be truly integrated into the landscape, it must be built to appropriately protect the dweller from the climate - hot, cold, wet, dry. Attending to this fundamental issue is a key way of integrating the building into its contextual landscape.

**Connected Principles:** 2, 4, 7, 9, 11, and 14

### **Final Statement**

Allowing the building to be informed by climate is simply an extension of principle 2 in being informed or influenced by the spirit of the place. It is fundamental to the integration of a building into the landscape because a building that is built to shelter its inhabitants in a particular climate is a building that belongs to that climate and landscape.

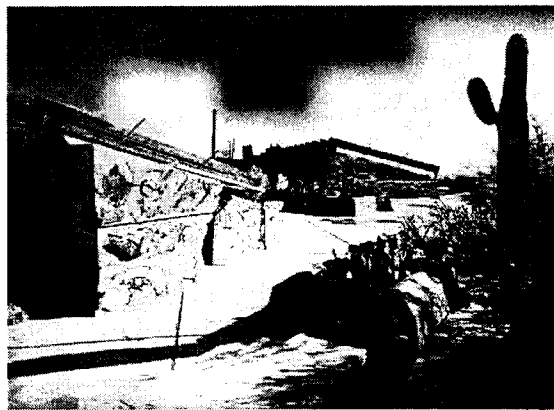


**4. Employ the use of building materials which demonstrate an obvious relationship with the local landscape.**

- a. Use materials from the local landscape to construct the building.
- b. Use natural materials for construction.
- c. Use textures and colours which connect building with local landscape.

*It becomes apparent that the architecture of the landscape, perhaps even more than the architecture of buildings, can be wholly ours – yet wholly free- only when structure and space are developed, in Frank Lloyd Wright's phrase, "out of the nature of materials". (Kassler, 1964, p.15)*

The materials used in the construction of the building should bring the building in contact with the local landscape either because they are taken from the site or the materials, colours, or texture in some way make the building appear to naturally rise out of the earth.



*Figure 4.23  
Taliesin  
West. Built  
from the  
rocks and  
soil of the  
local  
landscape.*

**Local Materials**

Using local materials found on site or in the region literally create a building that is part of the landscape; its physicality originates from that place. According to Day, "Traditionally materials found in the surroundings were raised artistically to become buildings. Today we are free to use anything. But to fit, the materials need to feel right for the place." (Day, 1990, p.109) These materials may be stone, wood, mud, grasses etc. depending on where the building is constructed. Through the use of local materials the building becomes deeply connected with its site. "Existentially it is therefore justifiable to talk about wood and stone cultures." (Norberg-Schulz, 1988, p.109) The materials used identify with the particular cultures and the environment in which they are found.

Examples of using local materials for building construction are common in many indigenous cultures. They were often the only resources available for building their shelters, so practically it made sense. Yet it also served to deeply root the building into that place visually and spiritually as well as materially. Cosmos Mindeleff describes the Pueblo architecture in the United States saying, “its results were obtained always by the employment of materials immediately at hand.” (Jackson, 1994, p.33) A building constructed from the stones of the earth around it seems to rise from the ground in a natural even logical manner. There is visually a shared medium linking the building and landscape in a meaningful way.



*Figure 4.24 Pueblo architecture. Building blocks from local soil.*

In fact, William McDonough believes that indigenous architecture is not just architecture from original inhabitants of a place, it is somehow defined by architecture that is “well adapted to the particular site both in terms of design and materials.” (Lazarus, 1994, p.49) It is not only visually connective; it is often appropriate material for that environment and therefore also integrates the building to the landscape because of its appropriateness to that climate.

### **Natural Materials**

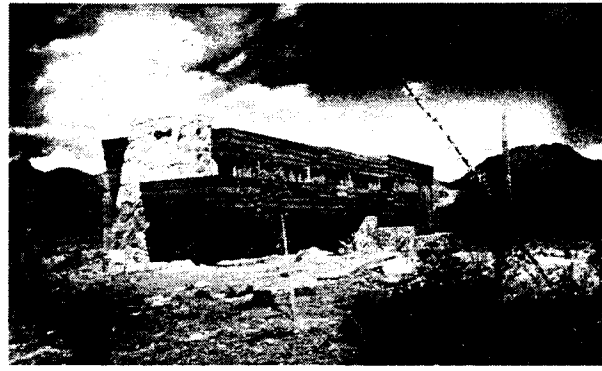
A level of integration between building and landscape can also occur through simple use of natural materials, even if they are not directly from that site. A building seems to belong to the earth when it is composed of natural materials; wood, stone, mud, grass, reeds, etc, especially if they are used in the proper places. In the words of Christopher Day:



*Figure 4.25 Hornby Island. Slowly built from drift wood along the beach.*

Wood is for life above the ground. It needs a masonry base to root it in the earth – a heavy inward-leaning base, preferably partcovered with vegetation.... Natural materials are ‘natural’ for human environment. They help to give us roots. (Day, 1990, p.115-116)





*Figure 4.26 Buildings with stone base, wood above.*

Wood and stone are directly taken from the land and sculpted into a human structure. This structure is like a transformed landscape put together with the trees and the soil from the earth. It is a living being.

However, natural materials such as wood or stone are rarely useful for building in their natural form. Normally they must be altered in some way, like sunbaking mud in the shape of bricks, cutting tree trunks into boards, or hewing stone in squares. Alfred Caldwell said bricks are “one of the great inventions of mankind.” (Caldwell, Alfred. “Brickwork.” *Encyclopaedia Britannica*, 1959 ed.4:117-22.) They are a metaphor for this integration of human and nature, a natural material formed into a geometric shape useful for construction purposes. A brick is like a garden, shaping natural materials under human order.

**The natural and built environment can be blended by using native and adapted plant materials which are suited to the climate and location, requiring little or no irrigation. (Groesbeck and Striefel, 1995, p.71)**

While bringing native plant material into the more ordered environment of human landscape may blend together the natural “landscape” and inhabited “landscape”, it might also be useful in integrating the building into that landscape. As the native material is brought into the ordered framework around a built structure there is literally a shared unit – the plants come from the local environment, but they are ordered under human terms. It is a form of metamorphosis that occurs as nature comes closer to building and becomes more and more geometric.

### **Colour and Texture**

The colour of the building, like material, can also be a way of integrating the building to the site, particularly if the pigment is brought from that landscape. “If there is yellow stone in the locality, the houses are very likely to be the yellow of that stone. And if they have plastered walls, it is sure to be yellow plaster derived from the local yellow sand.” (Rasmussen, 1959, p.216) The image in



*Figure 4.27 Grimaud, France.  
Red soil, red houses.*

Figure 4.27 shows the Provencal town of Grimaud with its red and ochre buildings displaying the same colours as the red clay soil from which they were conceived.

### **Design Discoveries from Jericho Sailing Centre**

I found this a difficult principle to apply. Perhaps it requires a further stage of design, more detailing stage. Natural materials that could be used for this project might be sand, sandstone, or maybe drift wood or beach logs. The building walls might also be composed of rammed earth or a combination of sand and additional soil which would allow it to pack more densely.

The material use of the roof is ideal to connect the building with the activity of sailing. Use a canvas or "sail-like" roof that makes the building more nautical. In that sense, even the original blue and white seems to reflect stereotypes of nautical colours. Wood seems to be an appropriate material for the rest of the building considering the forest industry in BC and the many large logs along the length of Jericho and Kitsilano beaches.

I would like to see some sort of sand finish to the walls -- maybe concrete with sand coating. The texture becomes very important too, not just the material. It might be more interesting to work with natural colours and textures for some projects that don't have any obvious useable local materials. Perhaps using sandy tones, or using the local sand for the exterior finish or floor surface inside.

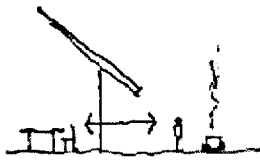
Also, I considered the used of materials like copper or wood which indicate the movement of time and the effect of landscape on building structures, slowly evolving, eroding and marking the influence and contact of landscape with building materials. Materials can be selected which will offer this visual reminder of the connection between building and landscape; that they are not alien from each other, but share the same space and even inflect their presence on each other.

### **Connected Principles: 2, 12**

#### **Final Statement**

The building can be integrated into the local landscape through the use of local materials in the building construction, literally raising the building from the local landscape. The building can also be rooted to the landscape by using natural materials, colours, and textures which seem to reflect that context.

## 5. Look to the building program(s) to dictate the relationship between building and landscape.



- The practical needs of the inhabitants will inform the formal connection between inside and outside.
- Draw connection between building and peripheral activities of surrounding landscape.
- Program building for celebrating landscape.

*The program of the building should be one of the key informants on the entire condition of the building, especially the relationship between the interior and exterior space.*

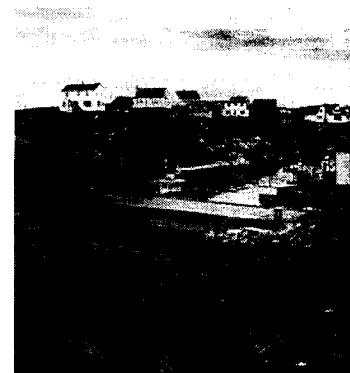
Programming would likely be a consideration with the application of any of the principles. Certainly how the building and landscape activities are used together is of concern in any design. However, the building program is particularly important in determining the formal relationship between the building and landscape, especially the use of the interior and exterior spaces.

### Practical Connection

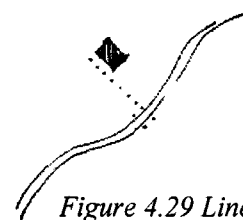
Looking at indigenous cultures it is clear that the building is absolutely a product of human needs. Different cultures produce different buildings, a response to unique requirements and contextual limitations. The unique program of each building will also dictate the way the building and landscape must interact; how the inhabitant moves from the field to the barn, from the garden to the kitchen. The more intimately these functions and places are sewn together, the more efficient the inside/outside relationship, and the more integrated it will be.

### Connection to Adjacent Activity

Buildings may be more integrated with landscape by awareness and acceptance of peripheral activities nearby. This connection can be made by physically drawing lines in the landscape like paths or roads to connect the building with the exterior function. A playground in the park can be tied back to the building with a path.



*Figure 4.28 Peggy's Cove. Practical connection between buildings and fishing activity.*



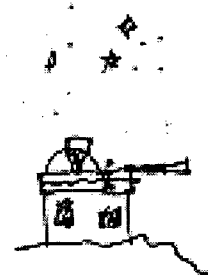
*Figure 4.29 Lines connecting to adjacent programs.*

Furthermore, if the building supplies particular programs or facilities that would be useful for adjacent users or activities, there is a more intensified relationship between the building space and landscape space. A public toilet would connect the playground with the community centre, a dressing room would connect to the soccer pitch.

When the building is constructed it may also be considered as a space for future activities in that surrounding landscape which do not yet exist. The inclusion of particular programming with the addition of rooms or facilities to accompany those programs might offer the possibility of future connections with landscape and landscape use.

### **Celebration of Landscape**

It's possible to integrate building and landscape through purposeful celebration of the local landscape, including particular programming elements in the building design. Windows may be placed in the building to focus on a particular aspect of the surrounding landscape. For example, it can have glass roofs or roofs which open completely to watch the stars or fireworks above, as shown in the sketch at right.



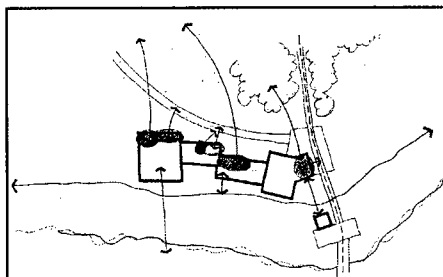
*Figure 4.30 Looking out at landscape.*

It may include measuring devices to record the tidal changes. In fact the building itself may be a huge ruler that measures the tides, so everyone knows when it hits the second terrace it is the highest tide of the year. The building can include windsocks or sundials built into the building itself. These additions may help to integrate the building into the landscape by celebrating the systems and qualities of the landscape. They are programming ideas that allow the building to interact with the landscape or focus attention on landscape.

### **Design Discoveries from Jericho Sailing Centre**

The program of the Jericho Sailing Centre revolves around water sports, beach use, boat storage and maintenance, and meeting rooms. It must provide some in-between spaces between the indoors and the boats, some place for preparation in rainy weather or protection from the sun in summer. The connection between building and beach needs to be improved from the present condition providing more terraces or preparation areas right off the beach.

The Sailing Centre might include opportunities for biking, track meets or have other services that apply to the activities of the landscape. In this case it is related largely to beach activities or park activities. The building becomes a centre of use for multiple activities in the vicinity, linking the Sailing Centre with its surrounding activities and landscape space. With programmatic connections to these surroundings the building becomes integrated in its environment.



*Figure 4.31 Building space linking to adjacent programs in landscape.*

The building may celebrate the landscape and spirit of the place by using nautical forms or make connection to the oceanfront forms. It might include the form of a boat or sails. It might be in the form of waves. It is trying to connect the program going on in the general landscape and the form of the building. It might also be a series of giant beach umbrellas as roof for the building, integrating the building structure into the activity of the foreshore. As in the principle on climate or systems, programming may be included to become more aware of the surrounding habitats or natural systems. Through this focus on the landscape the building becomes more integrated into the surroundings.



*Figure 4.32 Building taking on theme of program..*

**Connected Principles:** 2, 3, 4, 14 and potentially all of them

#### **Final Statement**

This principle was finally included after some test driving of the principles. It is important to consider the use or function of the building and how it can help to integrate with other adjacent or existing programs. The building form can also reflect the activities making a visual connection between form and activity.



## 6. Distribute the building mass appropriately to attain a balance of building in the landscape.

- a. Break down the edge of the building to allow an interlocking with the landscape.
- b. Spread the building mass across the site to allow interaction with landscape.
- c. Use variable sized buildings.
- d. Buildings should be small in scale if possible so landscape is always close to inhabitants inside.

*Reciprocity often depends on architecture that is made up of, or broken down into, multiple elements. This combination of fragmentation and multiplicity serves to open the architectural work in such a way as to be able to engage the landscape not as opposite but as elements of connection and use, similar in kind to elements of architecture. (Berrizbeitia and Pollack, 1999, p.15)*

The building mass is critical to integrating a building into the landscape. Of course in this study it begins by focusing on single buildings in a low-density landscape, so distribution of building mass is going to be more balanced than a high-rise building or shopping complex. However, a relatively small single building can also be more integrated by redistributing the building mass, breaking down the edge or spreading itself out to create a balance or “reciprocity” between architecture and landscape.

### Building Edge

There can be moments where the edge of the building mass becomes lighter and more open allowing the landscape to creep nearer the building and begin to penetrate and lock itself into the building edge. If the building is blocky and straight at the edges there is no opportunity for the landscape to meld into the building mass. The edge of the building mass must break down to allow an interlocking with the landscape. This same idea can also be found in discussion on crenellated building edge and metamorphosis of building form and material.

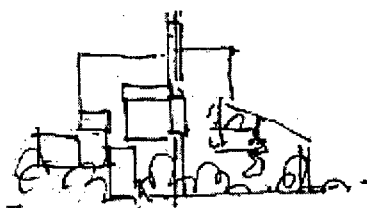


Figure 4.33 False Creek Buildings. Undulating edge.

### Spread out the Building Mass

This idea suggests that a building should really be a composition of a few smaller buildings spread out across the site. This does two things: first it creates space between these buildings allowing landscape to weave in-between the buildings, secondly it naturally makes the building pieces smaller thus creating a more even balance. Christopher Alexander mentions the importance of this in the pattern 95. **Building Complex.**

Never build large monolithic buildings. Whenever possible translate your building program into a building complex, whose parts manifest the actual social facts of the situation. At low densities, a building complex may take the form of a collection of small buildings connected by arcades, paths, bridges, shared gardens, and walls. (Alexander, 1977, p.471)

*Figure 4.34  
Caldwell's  
Zoological  
Gardens.  
Building  
mass  
spread out.*



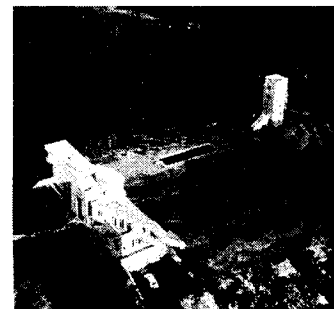
Large buildings have less exterior wall surface and therefore offer less opportunity for movement between interior and exterior spaces. A large block of building mass keeps landscape at a distance, on the outside. This mass needs to be broken up and the landscape space may then wind its way through these buildings, balancing the mass and void. In the case where the *fsr* is increased, there may be other ways to integrate building with landscape. Integration at increased densities is something to be examined further in later research.

Splitting the building mass into smaller parts creates "landscape" spaces in between where there was none before; courtyards or garden rooms between building pieces, all part of a greater balanced whole. Dennis Domer describes how Alfred Caldwell created "the sense of one harmonious and extensive building, with courts, little gardens, and terraces. A powerful architectural expression resulted." (Domer, 1997, p.132) As the building parts are broken off and spread apart, the landscape is suddenly revealed, close and intimate between the building pieces.



*Figure 4.35 Landscape spaces between buildings.*

*Figure 4.36  
Building parts  
spread out and  
positive  
landscape  
space is created  
between.*



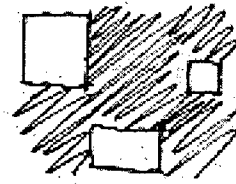
*Figure 4.37 Small building in dominant landscape, a nice balance.*

### **The building should be small in scale.**

Searching for examples of integrated buildings brings forth images of small residences nestled in a great landscape. A small building naturally seems to be more deeply integrated into the site than a large building. I feel that it is due to a balance between building mass and landscape mass. The small building really becomes an object in the landscape, victim to the caprices of the nature, all-powerful in its bigness. This same building would also seem more integrated into the landscape if it was in the country rather than in the city. In the country, nature has a greater presence and the building becomes a smaller component of the overall landscape.

## Positive Space

Alexander talks about the importance of positive space in all of his books and states in *A Pattern Language* that, "An outdoor space is positive when it has a distinct and definite shape, as definite as the shape of a room, and when its shape is as important as the shapes of the buildings which surround it." (Alexander, 1977, p.518) Positive space is important for creating wholes and thus integrating all components of the environment. By spreading building mass out and creating these contained spaces between the pieces, it is adhering to this philosophy of positive space.

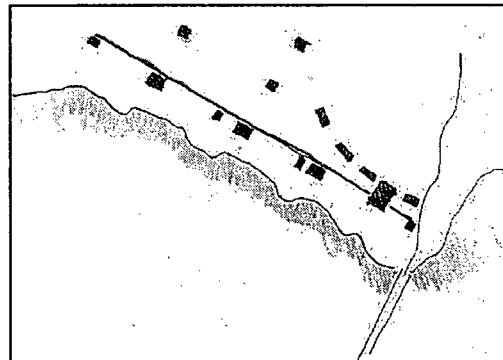


*Figure 4.38 Positive space created by a few small buildings.*

Feng Shui, Taoism and Zen Buddhism illustrate similar ideas of balance. The necessity for balance between mass and void, building and landscape, heavy and light. It can be seen in the composition of elements in a Chinese garden, a tall light tree protecting a stocky solid rock at its base. Together there is a sense of balance and harmony, the yin and yang integrated in one whole.

## Design Discoveries from Jericho Sailing Centre

The first obvious problem is the massing of the Jericho building. It is too heavy to allow any possible integration with the landscape. The building must become more balanced with the landscape space by spreading the building mass out across the site, making the building pieces smaller, and possibly making the building sizes different. The Jericho site can use this principle by spreading the building over the site based on the different water sports i.e. Sailing clubs, windsurfing, rowing clubs etc. This spreading of building mass across the site also begins to form other outdoor spaces and overlaps into the principle of layering space.



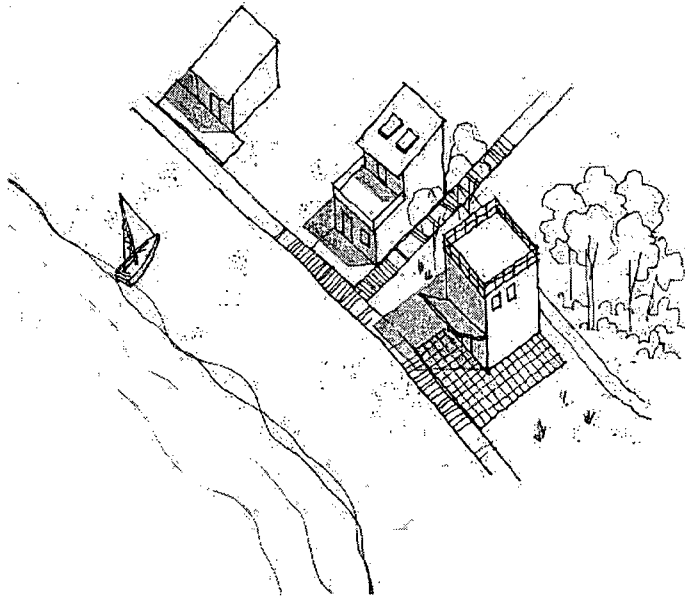
*Figure 4.39 Spread many small buildings along the beach site.*

I also noticed that by changing the building massing I began to move the pieces in and out creating a crenellated edge and allowing the periphery of the buildings to begin to form exterior volumes.

The use of spreading the mass out, variable sized buildings, small buildings also leads towards stepping the buildings up from the shoreline, in this case which is part of roof



form and the principle on grounding the building. It might also refer to spreading the buildings out and each building becomes much smaller, even lower.



*Figure 4.40 Break large mass into many small buildings. New positive landscape spaces are created and have more contact with landscape.*

There is perhaps a fine line between integrating the building and landscape by spreading the building mass across the site, and overtaking the landscape with excessive building structure. The spreading of mass must go hand in hand with creating smaller, lower buildings to create the appropriate balance between mass and void, a harmony of building and landscape whole.

**Connected Principles:** 2, 7, 11, 12 and 13

#### **Final Statement**

This principle proposes a literal integration of building mass and landscape space by breaking the building mass up and spreading it in several parts across the building. What results is the creation of new landscape space, often that transition space between completely outside and completely inside.

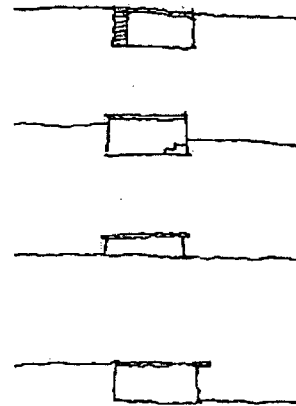
**7. Plant the building mass on the earth such that the building is profoundly rooted to the ground.**



- a. Building can be low and hug the ground, with low ceiling too.
- b. Fit the building into the ground physically.
- c. Tie the building and ground together by pulling the roof down and raising the land up.
  - Step the roof down in a terracing manner.
  - Pitch the roof to guide it to the ground.
  - Terrace the ground surface to prepare for building.
- d. The base of the wall should have a concave taper to spread out and grab the earth.

*Architecture historians have learned to accept the bungalow, the split-level ranch house, and the A-frame, but still they cannot bring themselves to recognize the trailer as a dwelling. (Jackson, 1994, p.59)*

Why is this true? Perhaps because a trailer is not permanently connected to the land. It has not rooted itself in the ground, connected with the landscape. A trailer is contrary to the concept of integration of building and landscape, disconnected and alienated from the landscape; a transient object without roots in one place.



*Figure 4.41  
Variations on rooted  
buildings.*

Planting the building is literally about a rooting of the building structure to the earth. I like the metaphor of planting as though it is something to **grow** in the earth, to **live** in the landscape being nurtured by the resources of nature. It can be achieved with building a low building, something that is placed firmly on the ground, even *in* the ground. It can also be achieved through the form of the roof or building walls.

**Ecological Groundedness in Gestalt Theory**

Groundedness is a dynamic state of the person that includes the sense of confidence, pleasure, and wonder resulting from progressively deepening contact with the wild and domesticated natural community of the person's neighborhood and larger land region; with unpaved ground, soil, or landscape; with weather and the diversity of native plants and animals; and with human family, neighbors, and local cultural activities. The person has a growing sense of the ways in which these aspects of home or place are intimately connected with his or her self and household as well as with each other. (Cahalan, 1995, p.217)

**Ground-hugging buildings**

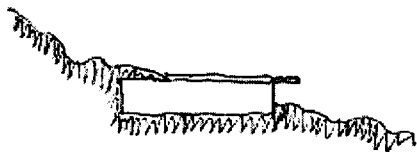
Alexander suggests a **Four-Story Limit** in *A Pattern Language*. He says "There is abundant evidence to show that high buildings make people crazy.... A simple

mechanism may explain this: high-rise living takes people away from the ground, and away from the casual, everyday society that occurs on the sidewalks and streets and on the gardens and porches.” (Alexander, 1977, p.115-116) Society works in the landscape, a public place. This disconnection from this public place is evidently of some concern. Building low buildings, which offer more direct connection to society, publicness, and landscape, are more integrated forms than high-rise buildings.



*Figure 4.42 Low house by Marco Zanuso. Hugging ground and spreading to horizon.*

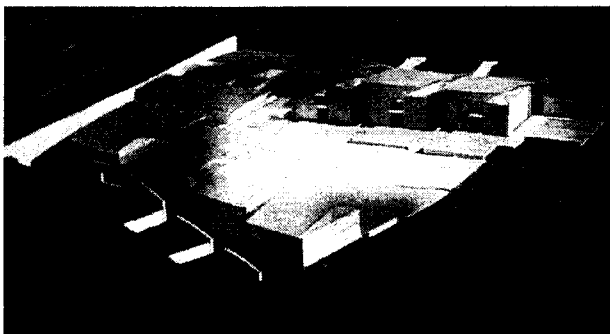
Low buildings seem to hug the earth. They rest firmly on the ground, like a sleeping lion. There is an unspoken relationship that is partly gravity and partly love. It is a relationship that suggests deep-rooted integration between building and earth.



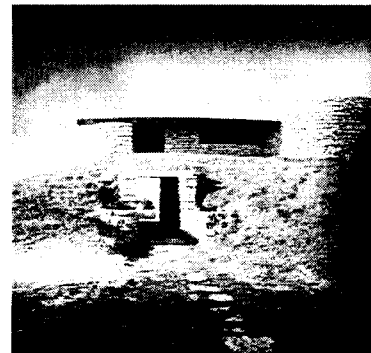
#### **Into the ground**

Literally sink the building into the ground so it becomes one with mother earth; into the side of a cliff, underground, or at least planted with a deep foundation/cellar. Many cultures around the world from China to New Mexico have built their houses

deeply in the ground. “For example, extensive use has been made of natural shelters, caves, or homes buried partly within the earth. In the part of China known as the loess belt the soil consists of a soft silt that can be carved and excavated easily.” (Vale, 1991, p.143)



*Figure 4.43 Eurosud. Set into the hill.*



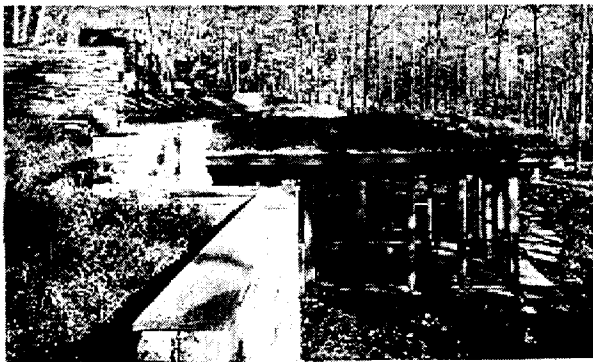
*Figure 4.44 2nd Jacobs House.  
The ground is part of the building.*

A building that is built down into the ground spreads its roots and becomes one with the earth. Reaching down and outwards in the soil, solidly set and temporarily permanent

like a tree. Half of a tree is below ground, the roots holding it fast and feeding on the nourishment from the soil. A tree is part of this landscape.

The house, the cellar, the deep earth, achieve totality through depth. The house has become a natural being whose fate is bound to that of mountains and of the waters that plough the land. The enormous stone plant it has become would not flourish if it did not have subterranean water at its base. And so our dreams attain boundless proportions. (Bachelard, 1969, p.24)

In this way, the earth becomes part of the building structure. In our dreams we may even imagine it as this “stone plant” taking water and nutrients from the ground to sustain it, to help it survive. Earth and building share a common idea, that of sheltering man.

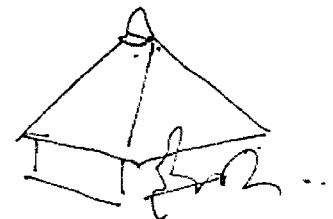
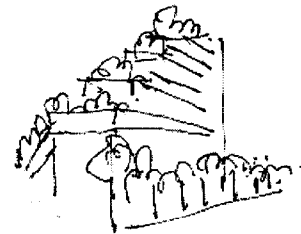


*Figure 4.45 Underground houses. The grass is growing above your head.*

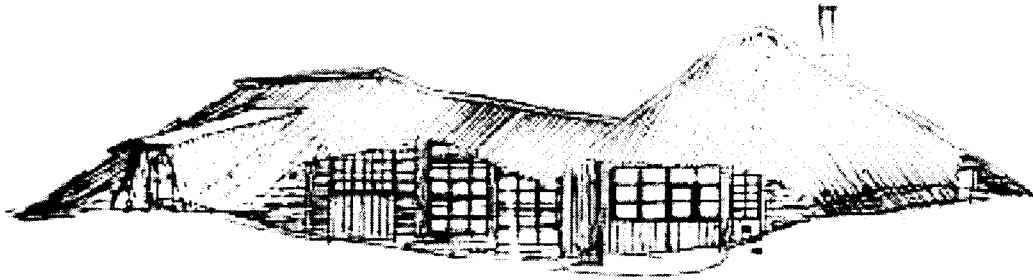


### **Roof form**

The building may be rooted to the earth through the form of the roof. A roof form that gradually terraces down to the ground is like a set of stairs connecting building mass down to landscape. A pitched roof is also demonstrating a visual connection from peak to ground. The eye follows this line and may continue it all the way to the ground even if it doesn't reach that far. The pitched or terraced roof has its origins in the simple vernacular architecture found in the plains Indian Teepee, or the huts of the indigenous African tribes, or the ziggurats and pyramids of many ancient cultures. The ground becomes the bottom of the triangle supporting the roof and thus a critical extension of the building structure. As Thiis-Evensen says, “...the shed roof is an agent in making the building a part of both the town and the surrounding landscape.” (Thiis-Evensen, 1987, p.369)



*Figure 4.46 A tent fly reaching to the ground and fastening securely.*



*Figure 4.47 Summer house by Knutsen. Roof is low and grounded.*

**The gesture of a steep roof can tie a building down to the ground whereas a shallow one with deep eaves can frame and emphasize a wall. (Day, 1990, p.117)**

Just as the roof can gesture towards the ground, the ground can rise up to meet the building by mounding up a heavy base for the building to rest on, even beginning to bury the building as it moves up the side of the walls. The land swells open to accept the building and molds around the walls, hugging and supporting.

### **Entasis**

The way the building wall meets the ground can improve the sense of groundedness a building has with the earth.



*Figure 4.48 Variations of concave walls.*

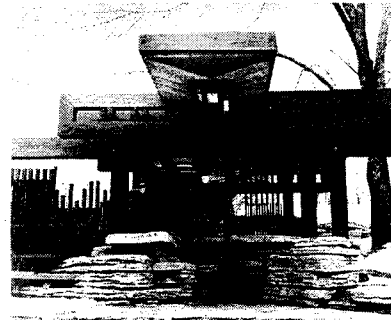
A massive and perhaps concave base and accentuated horizontals “tie” the building to the ground, whereas an emphasis on the vertical direction tends to make it “free”...In the first Hera temple in Paestum the strong entasis of the columns as well as other details brings us close to the earth, in accordance with the character of the goddess. (Norberg-Schulz, 1980, p.66)

Christopher Day writes that not only classical architecture used this method, but also “vernacular walls invariably widened at the foot, usually with a two-angle flare.” He says, “I don’t use a uniform taper but increase or swell it at the base to obtain firm, strong forms, varying the angles and gesture to suit the circumstance. I also like to have a little of this quality internally. These buildings *belong* on the earth whereas others which meet it vertically are only *parked* here. Of all meetings, how a building

*Figure 4.49 ING Building. Reaching outward for balance.*



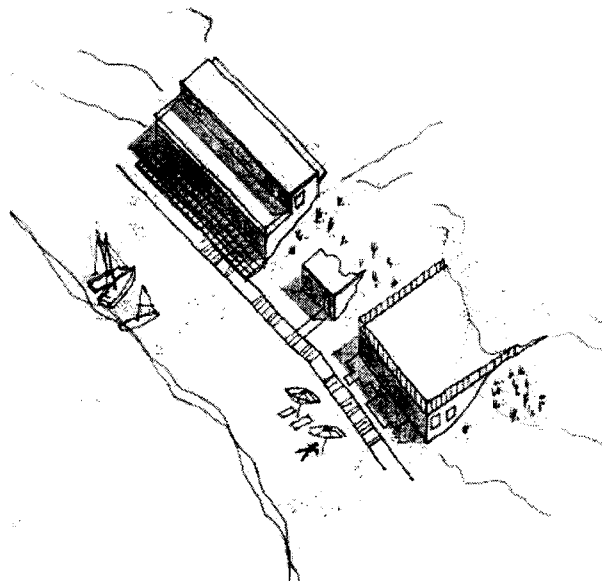
meets the ground is perhaps the most important and yet the one most commonly unconsidered." (Day, 1990, p.62-63) Buildings which meet the ground this way show a solid position in the landscape. They become more than objects that are constructed on the surface of the land; they reach out and grab on, seemingly growing up from the earth. These buildings are tied to the earth and integrated into that landscape because of this spreading root.



*Figure 4.50 Pavilion on the Prairie River. Base is solid and spreading.*

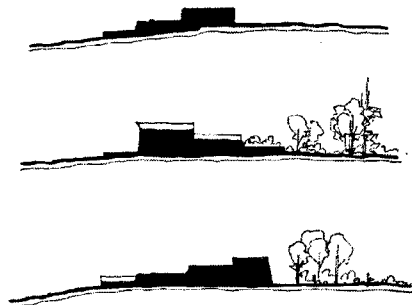
### **Design Discoveries from Jericho Sailing Centre**

The beach form seems to suggest low buildings that sink into the sand. I imagine a building that has been partly buried by sand after a long storm. The building should be half in the ground. The building might be fit into the ground but there is the danger of water coming up to the building. Maybe they can use some kind of barrier to protect the building from the ocean tides or maybe the front part of the buildings can even be flooded by high tides allowing greater contact of building with natural systems.



*Figure 4.51 Buildings half buried in sand.*

The building form and roof can step up with the shoreline or step back to the parking and playfields, either way a stepped building will seem to be more connected with the earth, terracing down to meet it. These diagrams are stepping down but also seem partially buried in the sand, the evolution of the beach slowly rising up around it.



*Figure 4.52 Terraces stepping up or down.*

As I proceed in the application of principles toward design I find that I am easily pulled away from concentrating on the principles themselves and succumb to the many other issues of designing a program and structure. I find that often the general design issues of connecting pathways etc are actually participating in applying the principles even without

thinking about them. I also find that my own design process is naturally trying to look to the site to try to fit or integrate the building and new landscape character with the existing. It is perhaps something that many designers try to do anyway. It is a way of thinking about development; even a style of design.

**Connected Principles:** 2, 6, 10, 11, and 12

**Final Statement**

The principle suggests that integration can be attained through low, ground-hugging buildings which expressly show an effort to firmly dig into the ground. In this way the building becomes a planted object that seemingly grows from the earth like a tree and allows man to dwell within the earth, under her care, safe and protected.

## 8. Push the building form outwards to liaise the building with its surrounding landscape.



- Penetrate the landscape with saddlebags or bumps pushing the building out to meet the landscape and creating a crenellated building edge to better lock with landscape.
- The building can be long and horizontal in form, reaching out to the horizon.
- Wall planes or building pieces can push out into the landscape interacting and guiding the landscape space back to the building.
- The building floor can spread out to merge with the landscape floor.

*In addition to spreading out 'by native character to environment', a house should also be 'married to the ground'. In other words, the bedrock, fireplace and chimney are the inside that makes expansion to the outside psychologically possible. (Thiis-Evensen, 1987, p.55)*

The building may push outward to integrate with the landscape. This may be done with forms bumping out from the building, by designing long horizontal buildings that reach out toward the horizon, pushing building pieces out to the landscape, or by spreading the building floor out to merge with the landscape floor.

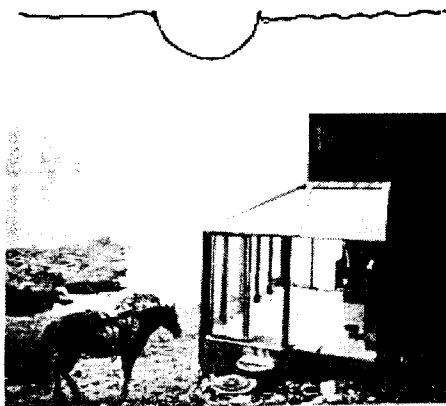
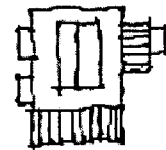


Figure 4.53 Saddlebags on buildings at Sea Ranch.

Secondly, the use of numerous saddlebags creates a crenellated building edge and allows the building and landscape to interlock or dovetail together like tongue and groove flooring. A flat wall seems to act as a barrier. With this crenellated wall, the building subtly pushes out and the landscape creeps toward the building, creating volume along this

### Bumping Out

Saddlebags, a term associated with much of the work of Charles Moore, particularly concerning his work at Sea Ranch (1965), is a form which integrates the building with landscape. It does this in a couple of ways. First, the saddlebag, in the form of a bump out or bay window, reaches out from the building and punctures this landscape space, attempting to connect with the landscape. This saddlebag allows landscape space to surround it on 3 sides.

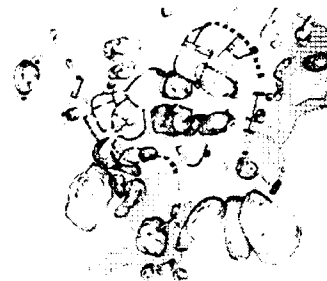
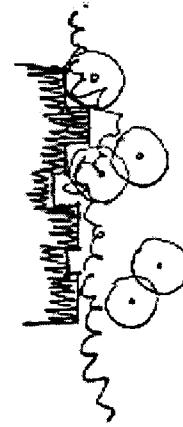


Figure 4.54 Crenellated building edge. Charles Foreman Johnson.

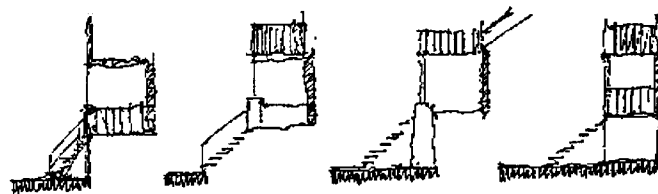


transition space between landscape and building. This building edge volume has essentially been thickened up, becoming a place which may address both inside and outside spaces.

Make sure that you treat the edge of the building as a "thing," a "place," a zone with volume to it, not a line or interface which has no thickness. Crenellate the edge of buildings with places that invite people to stop. Make places that have depth and a covering, places to sit, lean, and walk, especially at those points along the perimeter which look onto interesting outdoor life. (Alexander, 1977, p.753-755)



**This "zone" that exists around the building edge is similarly created with bay windows, bumped out sections, porches, patios, terraces, verandas, greenhouses, even wide eave overhangs. This pushing of building form outwards is a gesture to make contact with landscape. It also thickens this space and creates an in-between transition space where building and landscape can interact and become integrated.**



*Figure 4.55 Different porches. A way of pushing out.*

### **Horizontal Reaching**

A building that is long and horizontal in form suggests a desire to reach out and connect to the surroundings. Frank Lloyd Wright's buildings often stretch out horizontal planes both daring to stray from the stolid centre of the home and welcoming the landscape to venture beneath these balconies. This horizontal movement connects building and landscape because of the effort to reach out to live amongst the landscape space. This move, like saddlebags, can begin to create these spaces which are partly related to the building and partly related to the landscape. "In many of Wright's one-family houses this horizontality dominates the outside and is enhanced by the scarcity of partitions outdoors. The horizontal style of living promotes interaction, free mobility from place to place, and ease of progress, whereas vertically oriented living stresses hierarchy, isolation, ambition, and competition." (Arnheim, 1977, p.38) As seen in the Robie House below, the building's horizontal form is stretching itself across the ground, pushing out walls and roof planes to get as close as possible to the surrounding landscape,



and in the process creating these in-between covered yet outdoor spaces somewhere in the gathering middle between building form and landscape space.



Figure 4.56 The Robie House. Horizontal extension.

### Building Parts Pushing Out

Pushing out seems to mentally draw the building as a hand, reaching out to grab the landscape, holding tight and pulling that space back into the realm of dwelling. This drawing of Alfred Caldwell's farm in Wisconsin illustrates the geometry of the building pushing out into the landscape space in the form of walls and arbours. These walls change the character of the landscape and help to connect and pull them together into one entity.

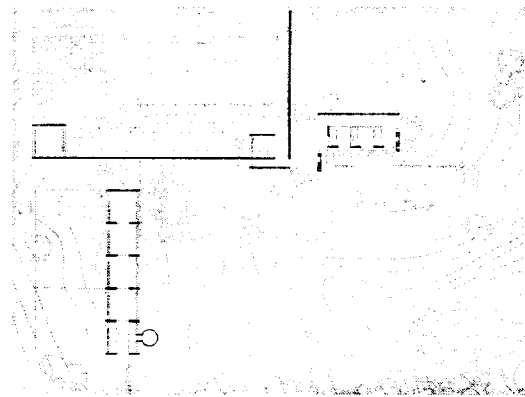


Figure 4.57 Farm in Wisconsin.



Figure 4.58 Aquatorium

The model for Aquatorium in Tennessee plays building planes out on both sides like legs of a spider, creating channels that guide vegetation between these walls and up toward the building centre. There is an interlocking of materials and form, the building pushing out and landscape pushing in.

### Floor Surface

This horizontal movement outward can also pertain to the floor surface. Integration of building and landscape can occur with the building and landscape sharing the floor, extending itself beyond the walls of the structure and continuing into the landscape. Imagine the clean tiles of the kitchen stepping beyond the door and continuing out

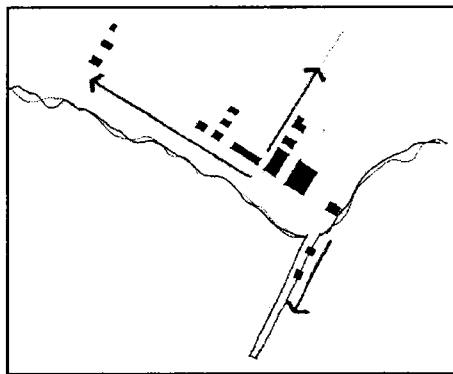


Figure 4.59 Square geometry of building stepping out into landscape.

into the garden. The kitchen space is extended into nature enlarging the nook that used to stop at the building wall. This idea is similar to the principles of creating layers of space between building and landscape.

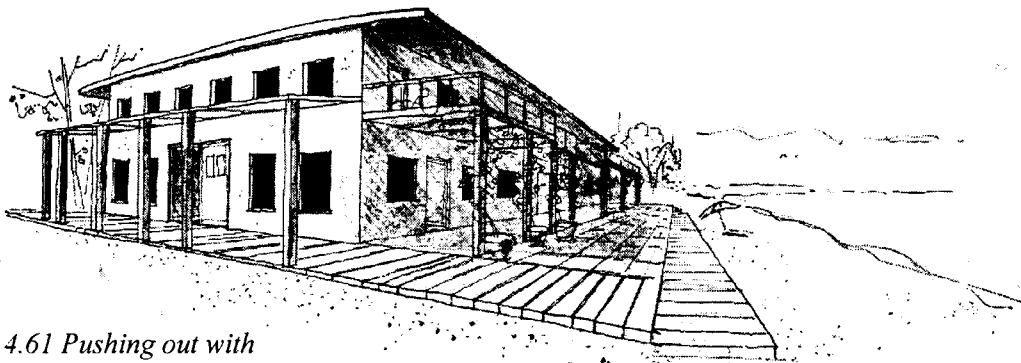
### **Design Discoveries from Jericho Sailing Centre**

It was discovered that not only saddlebags can push out from the building but actual pieces of building can break off and move into the landscape. In this way it is similar to building massing. Parts of the building can project out into the landscape like lines in the landscape. By breaking the building into several pieces and spreading it across the site there are more opportunities for interaction with the landscape space and more opportunity for creating interesting positive spaces between these building segments.



*Figure 4.60  
Building parts  
breaking off  
and moving  
outwards.*

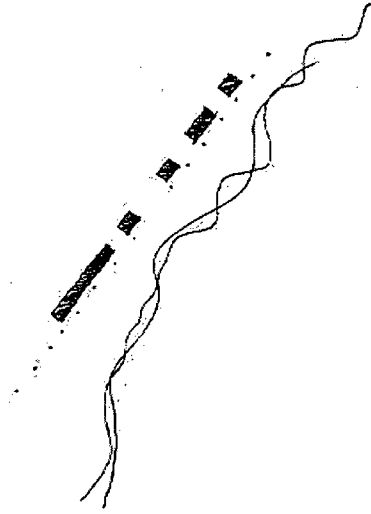
The landscape was also penetrated with exterior spaces like the layering principle. The building space is expanded into the landscape by putting in patio space or covered exterior space around the periphery of the building, like an atrium or greenhouse. This is like bringing the building floor out into the landscape. The wide eave is a simple idea but it is something that would provide a solution for the pushing out principle as well as the layering principle or metamorphosis principle. The difference between this principle and layering is that this principle focuses more on building form and direction, reaching the building parts out horizontally to interact with the landscape. Layering proposes building transition space between building and landscape.



*Figure 4.61 Pushing out with  
balconies, terraces and galleries.*

The pushing out is partly achieved by the overall long horizontal form of the entire building complex. The individual buildings are not so horizontal but in this case I can do both – make it horizontal and also split the horizontal piece into individual units solving the massing/balance issue. A horizontal form seems to reach down the shoreline, extending itself to the city and out to the setting sun.

Crenellated edges is a strange idea which seems to create this layering of space but is also very connected to organic form. Organic or sinuous form is an idea that came up as potentially many solutions. It has this ability to create this thickwall effect and an in-between volume. It also starts to emulate nature and is therefore more about principle 2 or 12 on metamorphosis. It is changing the wall to accept the inward direction of the landscape. It demonstrates a metamorphosis as the building wall loses the clean geometry normally associated with human forms and begins to change as it moves toward the influence of landscape and natural forms.



*Figure 4.62 Horizontal form of building complex.*

This building could become more integrated with the beach landscape by continuing the interior floor surface outside. Tiling or other geometric refined surface may step down from the building and out into the work yard or serve as seats or terraces in the landscape surrounding the building. It may quietly disappear as it moves further away, or metamorphosize into something else, changing into a rougher texture or breaking up altogether.

**Connected Principles:** 6, 7, 11, 12 and 13

### **Final Statement**

This principle suggests that the building can become more integrated with landscape by simply projecting itself out into that landscape. This can be done by pushing the walls, roof or floor out to the landscape to connect with it and begin to create these intermediate spaces between inside and outside.

## 9. Open the building envelope to the outside landscape.



- a. Use planes which allow free movement of space between building and landscape
- b. Use glass to create visual continuity.
- c. Use many doors and windows for movement from inside to outside and visual connection.
- d. Open the building to the sky with courtyards or skylights, allowing light to enter into building from above.
- e. Open out to borrowed views of adjacent landscape.

*A motto of Mahatma Ghandi's hanging on the wall represents this philosophy: "I do not want my house to be walled in on all sides and my windows to be stuffed. I want the cultures of all lands to be blown about my house as freely as possible." (Perry, 1994, p.19)*

Open the building walls to the landscape outside. This may be done by creating a more penetrable envelope, using glass for walls and punching many openings in the walls and roofs, allowing views out and light in.

### Planes

Design the walls to act as planes that direct movement instead of creating barriers between the interior and exterior. This will allow the outside landscape space to flow inside and the interior building space to flow out. Building and landscape are no more completely different ideas but one shared space within defined moments of insideness or outsideness.

The most symbolic of this idea is represented in Mies van der Rohe's Barcelona Pavilion where the entire structure is composed of horizontal and vertical planes. These planes define the building rooms yet allow the exterior and interior space to merge without the "black or white" extremes conjured by more solid wall conditions, alienating the interior from landscape.



Figure 4.63 Barcelona Pavilion.

Rudolf Arnheim describes a typical F.L.W. house as "an airy arrangement of horizontal slabs and uprights with plenty of space left open between them. It is essentially negative space, as neutral and nondescript as the surrounding outside. In fact, the building's openings are continuations of that outer space, reaching into the building, below the overhanging roofs and terraces and between the uprights." (Arnheim, 1977, p.227)

Norberg-Schulz says that F.L.W. wanted:

simultaneously to express belonging to the earth and freedom in space. Thus he composed the building of planes of “infinite” extension parallel to the ground, but introduced a vertical core as well as low hipped roofs to give it an anchorage. The (horizontal) freedom in space is also concretized by an opening up of the walls by means of bands of glass. The wall is no longer there to enclose space, but rather to direct it and to achieve a unification of inside and outside. (Norberg-Schulz, 1980, p.67)



*Figure 4.64 Fallingwater. Planes projecting out. Landscape moves between them.*

Japanese buildings illustrate this technique of using planes to direct movement and focus our attention to the landscape outside. Rasmussen reminds us that “They do not enclose rooms but form light frames around the inhabitants and their few possessions, flattering openings out towards Nature.” (Rasmussen, 1959, p.99) “They are light wooden structures elegantly designed on the “open plan”, that is to say the rooms are not clearly separated from each other or from the garden.” (Rasmussen, 1959, p.102)

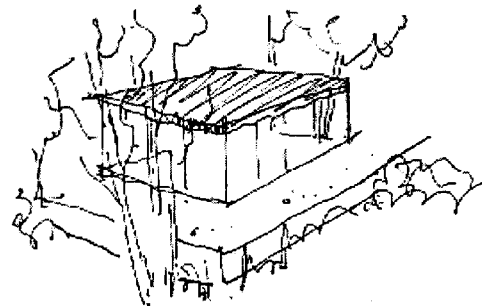
These buildings also design the building and landscape in unison focusing building openings onto distant views and connecting the building visually with this borrowed landscape. This is similar to the principle on connecting lines.

### **Glass**

Assembling a building in glass or providing many windows to look out to the surrounding landscape allows the person dwelling inside to have a visual connection with the exterior space, pulling him/her outside or bringing nature inside.

According to the architect Robert Venturi, “one of the powerful twentieth-century orthodoxies has been the necessity for continuity between [building and surroundings]: the inside should be expressed on the continuity of inside and outside.” The boldest way to achieve this so-called flowing space – the continuity of inside and outside – is by radically exaggerating glass windows...

Standing before a glass door, I am struck by an undeniable, paradoxical impression of being at two places at once. While bodily being outside the building I am, simultaneously, visibly present inside. (Lang, 1989, p.208)



*Figure 4.65 Glass house. Visually accessible to both outside and inside.*

There is something profoundly comforting about sitting inside, protected and warm, while staring out to the expanse of a stormy sea. This is achieved because a building has windows. It would be great to be able to sit deep within this house and still be able to experience the power of the storm outside. That would truly be a feeling of experiencing

inside and outside at once. Or looking up from the comfort of your bed, to the brilliance of the night sky, cold and dark. At once feeling access to the exciting vastness and loneliness of the outside and at the same time feeling enclosed, warm, and safe.



Figure 4.66 Haus Waldmohr. Trees and glass.

“A clear glass wall is, of course, transparent but it also transmits light and has a mirror-effect. It is these three qualities together which determine the way in which the glass wall carries out the inside-outside connection...inside and outside seem to merge.” (Thiis-Evensen, 1987, p.189) Being inside this house in the forest, one may feel the closeness of the forest only separated by a thin layer of rigid liquid, the light pouring in, it’s as though the forest floor continues into the living room.

## Doors and Windows

*Le Corbusier: “The history of architecture is the history of the struggle for light, the struggle for windows.” (Scott, 1998, p.77)*



This quote suggests that architecture has constantly been trying to open the building up to the outside. To let the natural light inside and to see out to the landscape surrounding. It is perhaps suggesting the need for a connection or integration with landscape and nature.

Perhaps it’s enough to say that the interior and exterior can be connected and integrated simply by providing doors and windows. But make these openings significant such that there is real opportunity for visually connection, whether because the openings are large enough, or there is a good transition as one enters or exits the building. The windows must be able to open so the outside air can pass inside, bringing the perfumes of lilac in the evening or the sounds of songbirds in the early morning.

Alexander suggests two things about windows:

In each room, place the windows in such a way that their total area conforms roughly to the appropriate figures for your region, and place them in positions which give the best possible views out over life: activities in streets, quiet gardens, anything different from the indoor scene. (Alexander, 1977, p.892)

One of a window’s most important functions is to put you in touch with the outdoors. If the sill is too high, it cuts you off. (Alexander, 1977, p.1051)

Being able to sit inside at your desk and look down at the rough texture of the rocky earth or the young green foliage of the shrubs next to the house may bring these outside qualities closer, even up to your computer station. You are at once at your desk and in the garden. You may even reach through the window to run your hand along the moist cool ground, a strong contrast to the warm cup of coffee and smooth surface of the computer keyboard.

**Even for occupations which theoretically have no need of natural light, windows offer a contact between the artificially controlled indoor world and the weather and life-renewing cycles of nature outside. (Day, 1990, p.51)**

For all the parts of the building which offer the greatest experience of connection between inside and outside, the door is the most visible. As Lang states, "The door is the incarnation of my experience of transition, animating in a visible manner the dialectic of inside and outside, fundamentally presenting either a welcoming or rejecting face.... The doorway is between outside and inside, between public and private, between anonymity and familiarity, between foreign and personal; doors frame our precious moments of meeting and parting, and across their thresholds passes our fate." (Lang, 1989, p.204-205)

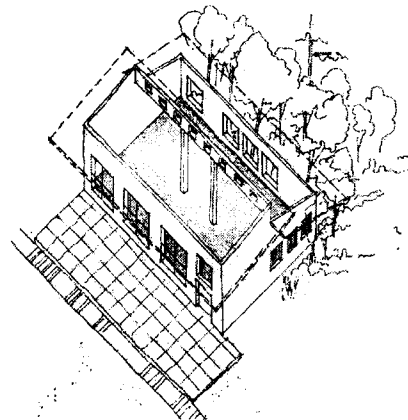


*Figure 4.67 The doorway is an important place to connect inside and outside.*

Building and landscape, interior and exterior are linked through this threshold of door. It is the opening we walk through to move from inside to outside, to experience the transition between being within the confines of the building to the expanse and freedom of the landscape. Passing through this moment brings us from the cool shade of the coatroom to the bright warmth of the back porch, our eyes squinting to adjust to the change. Integration occurs here in the movement from one place to another. It is possible because of the opening. How successful this integration is will depend on the way the doorway experience extends into the home and outside into the landscape.

### **Design Discoveries from Jericho Sailing Centre**

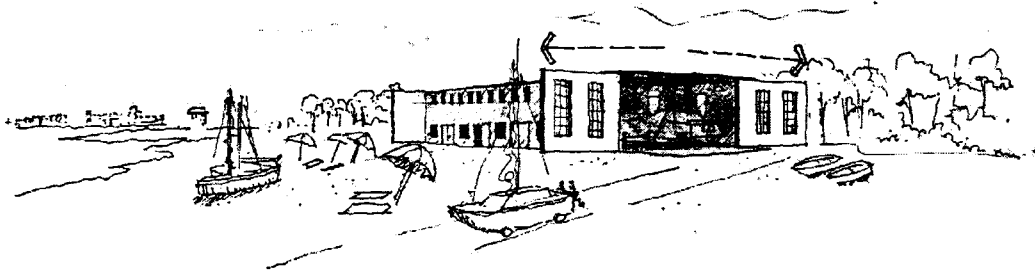
The Sailing Centre has such a fantastic location along the beach front it seems essential that the interior spaces of the building have a visual connection with the excitement of the activity along the water, the views of English Bay and beyond to the northshore mountains. This can be done by simply putting many windows along the water side of the building giving the people inside the visual connection to the aquatic landscape around them, so much a part of the building function.



*Figure 4.68 Many windows to connect visually to exterior.*



Open the building walls mechanically so the building becomes nothing more than a roof with supports. The insideness is only defined by the roof overhead and blends inside and outside space into one continuous workyard and storage space, some under roof and some not. This could be practical for moving boats in and out too.



*Figure 4.69 Open the entire wall to let the landscape inside.*

Use light wells or light shelves to bring light into the building. Flooding the interior with natural light seems to make it feel more connected to the outside and the qualities of landscape. Natural light is an element associated with landscape, therefore bringing natural light into the building seems to be a way of integrating with landscape. If the lightwells are big enough they become courtyards.

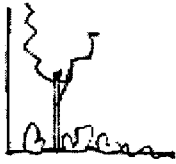
Openings on the roof would also open the building vertically to the sky not only letting in natural light but give the interior rooms the same blue ceiling as the outside. The azure of the sky replacing the solid ceiling, able to gaze up from your desk or lunch table to watch the clouds float by overhead. You are at once inside and outside under the great landscape sky.

Be careful with issues of climate – how much the building is opened will depend on the climate. Some of these ideas will not be practical like roofs that open if it's in the wet season. Very hot or cold climates may not be able to use as much glass as others. However glass should be possible for both roofs and walls in this climate, not too cold or hot and with the addition of blinds or wide eaves the interior can be kept cool.

**Connected Principles:** 10, 11, and 13

### **Final Statement**

This principle brings inside and outside together by simply opening the building envelope to allow landscape to be either visually connected or physically accessible. By opening the building to the exterior landscape through openings or glass, the interior and exterior can be experienced simultaneously, being able to look inside from the landscape outside or stay in contact with the exterior spaces from within the building.



### **10. Pull the presence of the landscape up to meet the building.**

- a. Mound plants and earth up around periphery of building to scale it out to landscape.
- b. The ground can be terraced up to accept the building, like rooting the building to ground.
- c. Cover the building with "Nature".
- d. The landscape can physically penetrate the building.
- e. The landscape floor can reach into the building.
- f. The forms of nature can influence the building envelope.

*Today the art of bringing trees and buildings together is based on the tree lending its richness to buildings, and on buildings pointing out the architectural qualities of trees so that the two together make one ensemble. (Cullen, 1961, p.168)*

Pulling the landscape toward the building is similar to the principle of pushing the building out. This principle proposes that the landscape or associated elements of a landscape could become more interactive with the building, in closeness and form. The elements of a landscape like vegetation and ground materials can be brought to the edge, envelope the building and even penetrate the building envelope so landscape and building become united. This close contact and intermingling of building elements and landscape elements forces an integration of the two and creates a conjoined whole.

#### **Mounding and Surrounding**

Trees, shrubs, flowers, grasses etc can be planted up around the base of the building to bring the landscape diversity into close contact with building form helping to give weight to the base of the building; to integrate the building mass into the landscape by providing a graduation of scale between human structure and landscape. This planting does a similar thing to principle 1 on proximity, creating a closeness between the qualities of landscape and nature, next to the human constructed shelter. A single vine may be planted just a few inches from the exterior wall surface or massing of vegetation may be built up around the building bringing lots of "landscape" character to the front door.

Furthermore, the ground may be mounded up around the building, reaching up the walls and giving a solid foundation to the building.



*Figures 4.70 Plants near building.*





*Figures 4.71 Planting around the base seems to ground the building to the site.*

Trees, perhaps even more so than other plants, play an important role as an intermediary scale change not only between humans and landscape but between humans and buildings. "Fairbrother describes how trees in towns mediate between the scale of humans and of buildings since 'they are large enough to register on the large scale, and particularly because they have vertical mass' while at the same time the tree 'in detail is in our own human scale of perfection – twigs and buds and leaves and flowers belong closely and intimately to our personal range'." (Birksted, 1999, p.3)



Trees may also have the ability to integrate building segments together with landscape by creating lines or allées shooting through the landscape, an integration idea discussed more in principle 13 on lines of movement.

This solution of integrating building and landscape by planting around a building may be limited to the size of the building and the balance between the building mass and the landscape space discussed under principle 6. If a building is too massive or too tall, or if there is little open space around the building this technique will have limited effects. As Eckbo relates, "the 'landscaping' becomes more purely decorative – a frill around the base of a monument." (Eckbo, 1950, p.43) Once again referring to the idea of building low small buildings which will integrate more comfortably within the landscape

*I love the way the silhouette of a tree is projected onto the side of our house. It's like the spirit of the tree is absorbed by the building just by growing next to it. And when it's a windy day, the silhouette of the tree seems to caress the building wall as it sways back and forth over the stuccoed surface.*

### **Let the building be covered with "Nature"**

Plants may climb up and over the building, enveloping the building in the organic qualities of "life". There should be a sense that the building is overwhelmed by the natural materials of the world; vulnerable to the growth and power of nature.



*Figure 4.72 Vines crawling over the building.*



*Figure 4.73 Menara Boustead Building, Malaysia. A hairy building.*



*Figure 4.74 Vine covered building in Aarhus.*

Somehow, a building with plants growing up the side or over the roof seems to create a more “natural” looking building. The building may be constructed of completely synthetic materials but if it is covered with plants it suddenly looks established and rooted in the site. Alexander determines that “A building finally becomes a part of its surroundings when the plants grow over parts of it as freely as they grow along the ground.” (Alexander, 1977, p.1136) It demonstrates the powerful effect that plants have on us and what they mean to us. When a building is covered with plants the building looks old, like it has shared a long history with the land. There has been an allowance for time to have its effect on the building and an opportunity for a melding together of building and landscape, the human structure becoming ever so slowly enveloped in vegetation, a victim of the evolving landscape.

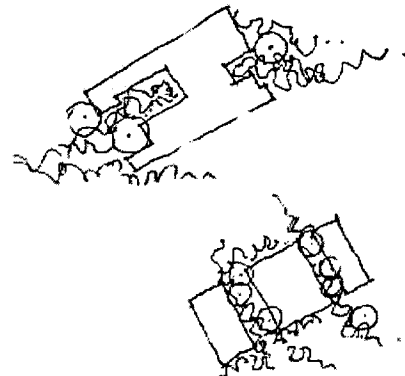
As Jane Jacobs explains, “San Francisco gives an impression of much verdure and relief from city stoniness. Yet San Francisco is a crowded city and little ground is used to convey this impression. The effect arises mainly from small bits of intensive cultivation, and it is multiplied because so much of San Francisco’s greenery is vertical – window boxes, trees, vines, thick ground cover on little patches of ‘waste’ slopes.” (Jacobs, 1961, p.107) Window boxes or vines climbing up the walls gives the sense that building and landscape share the same space; a blurred zone between what is built and what is natural. The building walls come alive, green and complexly textured, shimmering in the dusk like a giant square tree.



*Figure 4.75 Telegraph Hill, San Francisco.*

### **Landscape physically penetrates the building**

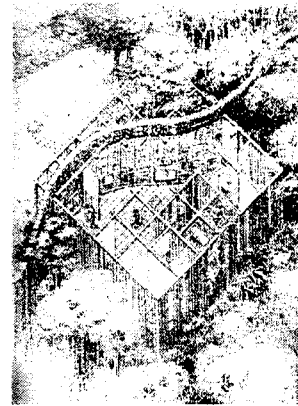
If the landscape elements go so far as to penetrate the building envelope, there is a sense that the building is permeable. The fortress-like wall opens up and accepts the landscape running through it like a creek, or a tree exploding up through the floor and out from the roof. The spirit of the landscape is pulled inside and binds building and landscape together like a nut and bolt screwed tightly one into the other. Winding a ribbon of “landscape” through



a building as in the image at right, provides a connective corridor with the exterior. A light shaft or courtyard in the centre of a building may similarly permeate the building's integrity, constructing a vertical stairway to the shared sky above. It is a reminder of the natural beauty that exists outside and is so different from the refuge within.



*Figure 4.76 Tree shooting through decks. West Vancouver.*



*Figure 4.77 Environmental Education Centre, Virginia. Landscape winding through building envelope.*

The ground surface of the landscape may penetrate into the building also. Bart Lootsma describes how the work of Rem Koolhaas and OMA treat architecture and urbanism as:

extensions of the "skin of the earth," to use architect Raoul Bunschoten's term. This synthetic approach finds its origins in the work of Rem Koolhaas and OMA....the building is conceived as a frame composed of floors, and the stack of floors may be considered a continuation of the ground. In designs by OMA, such as the competition entry for Yokohama (1992), the Jussieu Library in Paris (1993), and the Educatorium in Utrecht (1997), this attitude is especially evident in the folded continuity of the floor slabs as upward, "topographic" extensions of the landscape. Moreover, the floors are made from materials that recall the ground: stone, concrete, wooden parquet or screed (underlayment). (Lootsma, 1999, p.262-263)

### **Natural Forms**

A sinewy winding building form such as the Museum of Civilization can instill the presence of nature and natural forms in the solid construction of a building. The spirit of the landscape is pulled directly into the form or style of the building, by working with geometries uncommon to human constructions. Curving forms that flow and bend. Forms that are more often found in the path of a meandering stream or the curve of a rock on the beach, smoothed through the work of water and time. Building with forms like these, so contrary to most



*Figure 4.78 Museum of Civilization, Hull. Forms reminiscent of nature.*

traditional building techniques which for sake of convenience return to flat walls, and rectilinear forms, pulls the spirit of nature and landscape into the building, reminding us of landscapes we've walked through in the past.

This spirit of landscape can be pulled into the landscape through use of natural materials and forms which seem to grow out of the earth. Perry discuss Taliesin West by Frank Lloyd Wright, and Bavinger House by Bruce Goff as two buildings demonstrating an organic style of architecture. These buildings were organic in the sense that they used natural materials and form in a way that the building literally seemed to grow from the ground. The presence of the landscape was pulled into the building mass itself and is described by Perry as the "ageless ideal – the art of building in harmony with nature." (Perry, 1994, p.43)

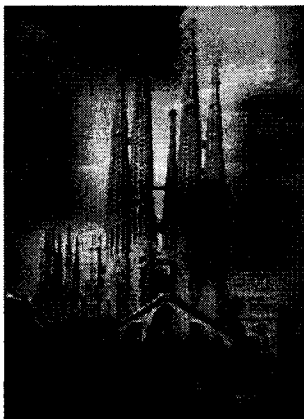


Figure 4.79 La Sagrada Familia.

This "natural" spirit of landscape can also be illustrated with the work of Antoni Gaudi, among others. With Gaudi it was both the use of natural materials and an emphasis on these forms which seemed to be inspired from "life" itself. The Sagrada Familia seems alive or at least it was at one time, textures resembling dried skin or porous bone, forms reminiscent of nature and associated with landscape; parabolic curves, rough surfaces, like trees or hoodoos standing erect and alone, eroded from the sandstone cliffs over centuries of blowing wind. The building and landscape become spiritually connected through this use of form, so familiar from our weekends in the country.

Clearly, Loos thought architecture should serve merely as an extension of nature, namely as objects whose visual features seemed derived entirely from the physical functions they performed, just like the form of a tree or an animal's body.

Although not attempting literally to imitate nature or to pretend that his buildings are products of nature, the architect can conceive of man as an outgrowth of nature. From this point of view, architectural creations, although unashamedly human in origin, should conform to nature and be shaped in the manner of nature. Buildings should grow out of the landscape, "in the image of the tree," as Frank Lloyd Wright said, and perhaps incline toward biomorphic shapes rather than geometrical ones. Such "organic" architecture may favor curving deviations from the straight line or plane, and merge in the continuous flow of a landscape that eschews the clear definition of elements, so characteristic of human reasoning...(Arnheim, 1977, p.214)



Figure 4.80 *Essai sur l'Architecture*, Abbé Laugier. Nature is the origin of architecture.

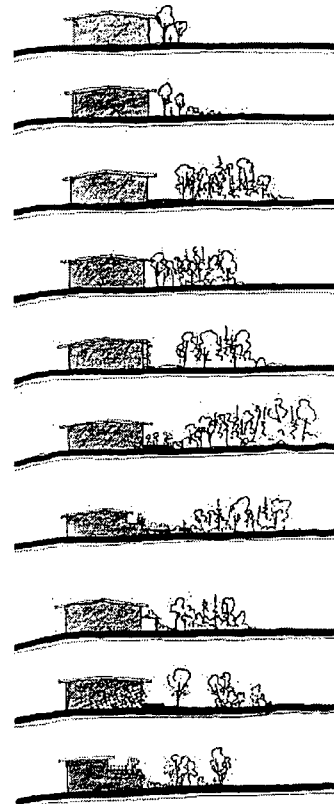
## Design Discoveries from Jericho Sailing Centre

Similar to principle 1, this principle suggests bringing landform and plant material into close contact with the building form. But instead of focus on situating the building, the plants and landscape elements are added or continued up to the building helping to anchor it in the landscape or covering the walls and roof like a blanket of vegetation.

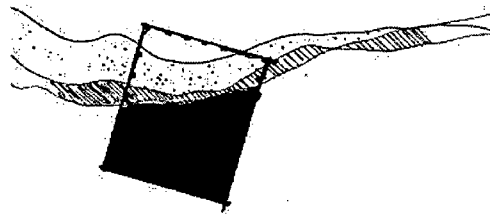
The Sailing Centre seemed to suggest the use of extra planting to connect the building with the trees and vegetation further back from the shoreline. The sand could also be pulled up and mounded around the walls of the building, partially burying the building in the sand dunes.

It could be very ordered with rows of trees along the building edge, subtly stepping down from the building height to the landscape around it. Or the building could be planted with heavy masses of vegetation. The Centre could also be integrated with the landscape by changing the building massing to allow vegetation or ground surface to begin to step up the building, climb across its surface, or enter into the building by opening the building walls to bring pockets of the landscape inside. It may begin to create garden spaces or transition spaces that layer the edge between building and landscape as discussed in principle 11.

Pulling the landscape floor inside, in this case sand from the beach, may be a very powerful experience. Perhaps the entire bottom floor could be programmed for storage and maintenance, accepting sand to blow in and cover the floor without interfering with the function so the building would really seem to be sitting in the sand. The upper floors programmed for the more "clean" activities. Or the floor surface could change, metamorphosize, as it moved from the beach into the building centre.

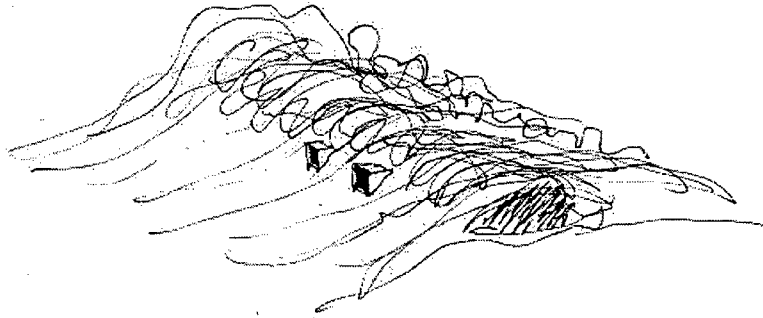


*Figure 4.81 Various ways of bringing plants up to the building.*



*Figure 4.82 Bringing the beach inside the building.*

The expanse of sand along the shoreline of Jericho brings to mind the images of sand dunes, rising up from the water's edge like great pillows. This idea of pulling the spirit of natural forms into the building may be realized in the Sailing Centre by trying to construct the building in the spirit of sand dunes, a bulge rising up and over from the beach front to the playfields behind. I could imagine windows or doors poking out as geometric blocks from the "sand dune" building, the sand blowing softly over the form, dune grasses growing on the roof. It would be almost hidden along the shore, integrated deep into the beach itself.



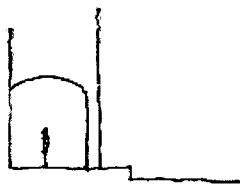
*Figure 4.83 Form of sand dunes molded by the wind and waves.*

**Connected Principles:** 1, 2, 7, 9, 11, and 12

#### **Final Statement**

This principle describes how the landscape elements can be pulled up closer to the building to allow building and landscape to interact and begin to share space. The immediate landscape elements can graduate the scale and material between building and landscape. Landscape can also enter the building bringing the qualities of landscape within the interior. Finally, the spirit of nature can be pulled into the building through use of natural forms reminiscent of landscapes and life.





### 11.Layer the space between “insideness” of the building and “outsideness” of the landscape.

- a. Use arcades, galleries or columns around edge of the building to thicken in-between space.
- b. Create in-between rooms like gardens, terraces, or porches which are both part of building and of landscape.
- c. Build courtyards with arcades to build layers of inside and outsideness.
- d. Crenellate the edge of the building wall to make it thicker and interact more with the landscape. A more rough textured building edge will help do this.

*Rochandal: “The image conjured up by Rochandal illustrates a particular special disposition: a successive encasement of volumes, thus giving a hierarchical layering of living areas from the interior, very protected spaces, to the exterior spaces.” (Perraudin, 1998, p.101)*

Gilles Perraudin describes the Rochandal Principle, illustrated below in one of his projects in France, which proposes an alternative way of thinking about the building/landscape relationship; no longer a distinctive single boundary between inside and outside but layers of space with changing degrees of insideness.

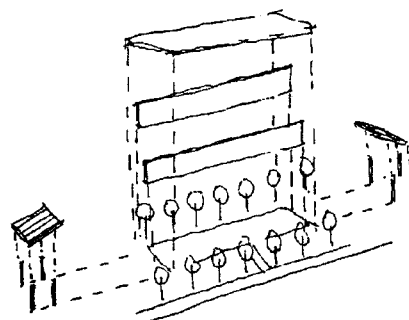
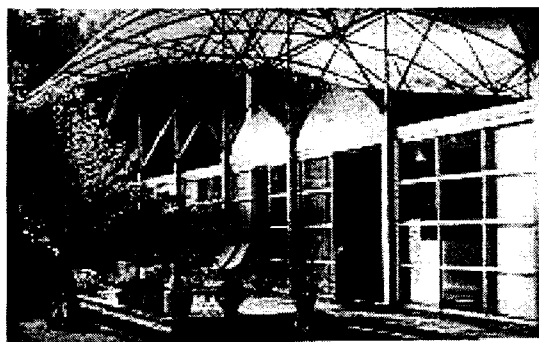


Figure 4.84 Layers of cover around house in Lyon.

Layering of space involves constructing places in the middle; space that is neither completely inside nor completely outside but a gathering place between the two, where landscape and shelter merge together. The middle is the edge, thick and rich with experience and awareness of the changing light and enclosure as you walk through the continuum from deep inside the cool shadows of the building, to the brilliant sunlit yard outside, the sun hot on your cheeks. The place between is the covered deck, brighter, warm but not hot. Comfortable in the heat of midday and refuge in case of sudden storm.

Roger Stonehouse mentions many of the patterns found in *A Pattern Language* which are examples of this layering of space between insideness and outsideness along the edge of the building envelope.

Window reveals and shutters  
Window seats  
Balconies  
Awnings  
Bed cupboards  
Outdoor rooms  
Lobbies  
Conservatories  
Courtyards

Atria  
Pergolas  
Porches  
Porticos  
Verandas  
Belvederes  
Galleria  
Hanging gardens  
Deep eaves

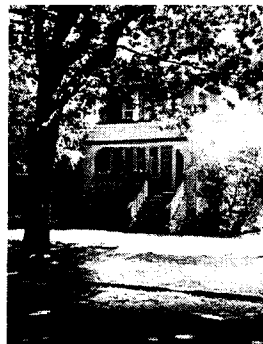
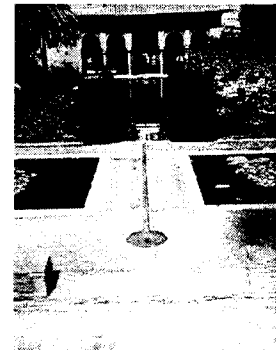
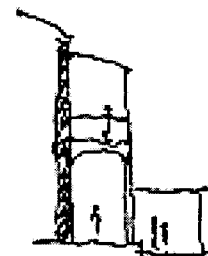


Figure 4.85 Examples of layering with porches or gardens.

As he says, “it is precisely these situations at the edge, partially enclosed and partially open, which seem to be persistently attractive and enduring across all cultures.... So we may see the re-establishing of more richly layered relationships between inside and outside, which inevitably rediscover, extend and rework traditional types and patterns in a process of continuity and change, as essential to the creation of environments which are sustaining for individuals and societies and which are sustainable environmentally and culturally and enable us to dwell in and with rather than outside and against the environment.” (Stonehouse, 1998, p.129-130)

### Arcades and Galleries

Construct columns or pillars around the building to create gallery space or arcades. Spaces which are partly separated from outside by the permeable row of columns yet open to the flowing air. Decidedly within the realm of building space, even sheltered by the building roof, but one step away from the open sky above. As you walk along this gallery there is a rhythm of shadows from the pillars, each space between like a large window from floor to ceiling opening out to the garden below.



As Alexander says, “Arcades – covered walkways at the edge of buildings, which are partly inside, partly outside – play a vital role in the way that people interact with buildings.” (Alexander, 1977, p.581) These spaces absorb the landscape instead of stop it cold at the door. The building steps out to greet the public landscape and the landscape and is welcomed into the narthex, the entrance to the shelter. In discussing the **Pattern 166. Gallery Surround**, Alexander argues that these in-between places are necessary to connect the private and public realms of our inhabited environment.



Figure 4.86 Gallery around courtyard, Budapest.

If people cannot walk out from the building onto balconies and terraces which look toward the outdoor space around the building, then neither they themselves nor the people outside have any medium which helps them feel the building and the larger public world are intertwined.

We believe, simply, that every building needs at least one place, and preferably a whole range of places, where people can be still within the building, but in touch with the people and the scene outside. (Alexander, 1977, p.778)



Figure 4.87 The Blue Mosque, Istanbul. Gallery between interior and exterior.

### Outdoor Rooms

Douglas Paterson has written that:

*In any particular dialectical condition, the middle position, between the two opposites, often assumes a position of experiential importance equal to the importance of the opposites.*

This middle position may be formed with places like porches, terraces, gardens or any other space that is created around a building, partially protecting yet more outside than inside. These spaces between the dialectic of inside and outside are extremely important for bridging the gap; for integrating or connecting the building with the landscape. They create a transition zone of opportunity for the building and landscape to mingle and interlock, a “soft edge” where public and private space can merge.



Figure 4.88 Degrees of cover at Sans Souci, Berlin.



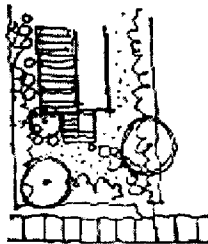
Figure 4.89 Between public and private, Amsterdam.



“Urban designer Jan Gehl coined the term ‘soft edge’ to describe ‘comfortable resting areas, placed on the public side of the buildings and with direct connection to them.’ Like a front porch where people sit for hours on summer evenings, this semiprivate area provides an easily accessible and comfortable place to be outside and ‘watch the world go by.’” (McCamant, 1988, p.178) These soft edges are examples of layered spaces between built and unbuilt, public and private, inside and outside. They are rooms of prospect and refuge.

It is hardly too much to say that every building needs an outdoor room attached to it, between it and the garden; and more, that many of the special places in a garden – sunny places, terraces, gazebos – need to be made as outdoor rooms, as well. (Alexander, 1977, p.765)

An outdoor space becomes a special outdoor room when it is well enclosed with walls of the building, walls of foliage, columns, trellis, and sky; and when the outdoor room, together with an indoor space, forms a virtually continuous living area. (Alexander, 1977, p.766)



More so than even terraces or porches, a garden is perhaps the most experientially rich transition room between built form and nature. Gardens are literally physical mergings of building forms and landscape elements, interacting and creating a new place in the middle. It is an inside and outside experience. A green room enclosed in crawling vines and creeping moss, partly covered with leafy branches transparent to the sun above.

Gardens, like houses, are built of space. Gardens are fragments of space set aside by the planes of terraces and walls and disciplined foliage. Until now we have defined too nicely the differences between that space which is roofed and within the house and that which is left outside and round the house. We did not see, until the architect threw down his walls, that the space of house and that of garden are parts of a single organism: that the secret of unity lies in a unity of spatial sequences. The new vision has dissolved the ancient boundary between architecture and landscape architecture. The garden flows into and over the house: through loggias and courts and wide areas of clear glass, and over roofs and sun-rooms and canopied terraces. The house reaches out into the garden



Figure 4.90 Arnstein House, Sao Paulo. Covered garden.



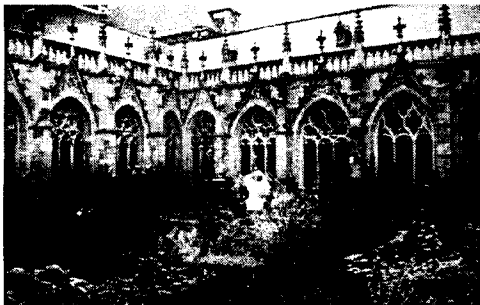
Figure 4.91 Millard House, Pasadena. Garden is an in-between space, part natural and part built.

with walls and terraced enclosures that continue its rhythms and share its grace. The concordant factor is the new quality given to space. (Eckbo, 1950, p.61)

This transition room between inside and outside doesn't necessarily have to be "outside" the building. It can be a room incorporated much more within the building envelope. "In Scharoun's Philharmonie...the completely 'free' plan of the engirdling lobby forms a zone of transition between the busy, urban world outside and the simultaneously centralized and axial order of the concert hall itself." (Norberg-Schulz, 1985, p.83) The lobby is the transition room, a breathing space between the chaos outside and the interior world of formality.

### **Courtyard**

Courtyards also create layered space by cutting an outdoor space in the centre of a building, geometrically constructed and enclosed. Walking around the arcade surrounding the central courtyard feels secure and protected against the cool wall of the building, but through the columns inside the courtyard it is open to the rain and the sun from the sky above. It is certainly less powerful an experience of nature than might be experienced in a garden, but nevertheless it is a place that is both enclosed and open, both building and landscape.



*Figure 4.92 Cloister in Utrecht. Both inside and outside.*

These courtyards or cloisters like this one in Utrecht can also become very rich places of tempered landscape, growing herbs and flowers; small boxes of beauty and healing. Courtyards are places of dreaming. They open the building up to the potential of the landscape by recreating dreams of nature and landscape; paradise within the order of the geometrical opening.

The experience of walking around the edges of the garden, enjoying it from the covered space, smelling the fragrance of herbs, feeling the warmth of the sun, and hearing the trickle of a central water feature contributed to the serenity of these sanctuaries. (Parsons, 2000, p.5)

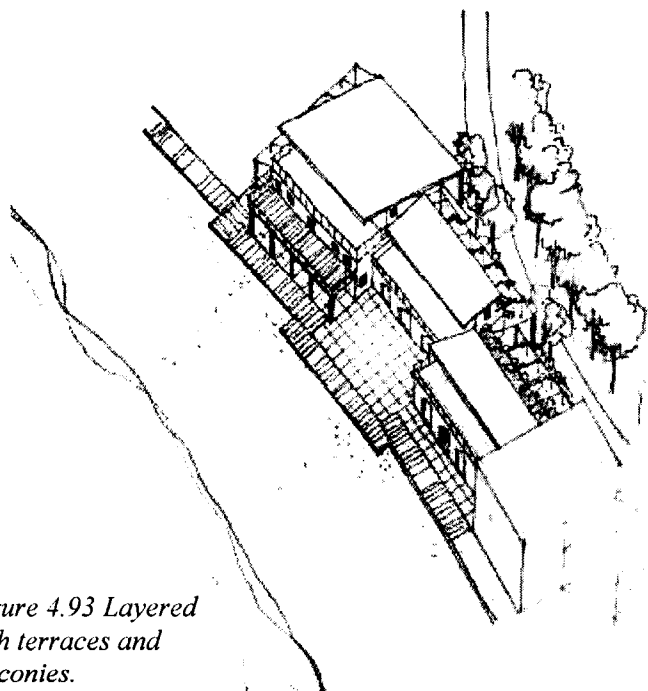
### **Design Discoveries from Jericho Sailing Centre**

Layering is similar to the principles of pushing and pulling. It creates changing structure moving outwards from the building. On the other hand it opens the building up to the landscape, allowing it to creep into the building, moving into these in-between spaces and mingling with the building structure.

In this project it seems a natural idea to push the building outward to the landscape space by becoming less vertical and more horizontal to jive with the horizontality of the beach

and ocean surface. Moving from the vertical to the horizontal is perhaps a general way of integrating with the surroundings because landscape seems to have this horizontal quality about it whereas houses are naturally a vertical object at heart. This layering out may be accomplished by simply building galleries and terraces around the building, spaces which create these prospect and refuge experiences. They could be very useful for preparation areas in wet or very hot weather, places to sit outside yet still be covered or have solid floor beneath your feet. Creating a variety of different partially covered or outdoor rooms especially on the water side of the Centre would help to thicken up the building edge and buffer the space between the more public beach and the more semi-private Sailing Centre.

Jogging the buildings in and out such as the sketch below may also help to thicken this edge and bring the landscape into these half courtyards.



*Figure 4.93 Layered  
with terraces and  
balconies.*

It was discovered that overhangs, a roof form idea that is part of the grounding principle as well as the principle on pushing outward, is at the same time very much a part of layering. It creates this covered outdoor space which is halfway between inside and outside. It then also works as a metamorphosis of space. Layering and metamorphosis are extremely similar principles. Layering is physically trying to create different rooms that are transition spaces between built and landscape. Metamorphosis is more the process of change occurring as a material or form runs from inside to outside.

**Connected Principles: 6, 7, 8, 9, 10 and 12**

**Final Statement**

Layering space as a way of integrating building and landscape is extremely important and very common. Creating layers that gradually become less enclosed as they move toward the landscape gives the experience of building and landscape coming together to form a volume of change. This volume has a thickness that provides a zone of integration for building and landscape.

## 12. Build a metamorphosis of material and form between building and landscape.



- Landscape and building form can slowly morph from one to the other in both materials and form.
- Paving with cracks in-between – rough and refined coming together in floor surface.
- Use intermediary materials like adobe, tile or beaten earth which are between natural and human created material.

*To meet, elements often need to be modified in their form to respond to each other... This principle can be brought into every form of meeting so that elements do not just collide with each other but speak to each other – indeed, so that they sing together. (Day, 1990, p.70)*

Metamorphosis integrates through the movement and change that occurs as the building moves out to the landscape and the landscape flows into the building. It can be conceived by changing form or changing material. The floor surface is one of the most obvious places of metamorphosis. As Gordon Cullen states, “One of the most powerful agents for unifying the joining the town is the floor...” (Cullen, 1961, p.53)

### Morphing Form

Imagine the floor of the house stepping out into the garden, cracking and crumbling into rubble. Then as the gravel surface of the garden rises and continues into the kitchen it is contained and solidified into stone, smooth and cool underfoot. As the material moves inside it becomes smoother, more refined; as it flows outside it changes to rough textures and irregular designs. Aldo uses stairs to join interior and exterior, the steps becoming filled with low plants and the shapes becoming less regular as they continue out into the surrounding landscape.



Figure 4.94 Maison Carre. Shared stairs changing between building and landscape.

Jones describes the work of Hans Scharoun and Herman Mattern saying:

In many of the later Scharoun/Mattern houses crazy paving is laid from the garden right into the living room and across to the hearth, just as the garden soil continues inside within the conservatory. Typically, the paving then changes into some more regular form of tiling or parquet for the more private areas of the house, while the most finely gridded geometric tiling is found in the purest, most private areas, where culture must exert control over nature: the kitchen and bathroom. (Jones, 1999, p.184)



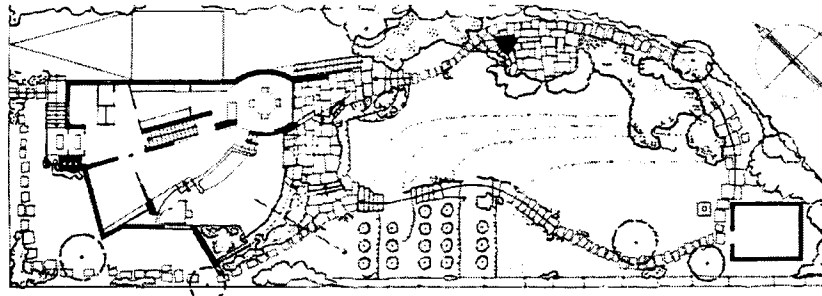


Figure 4.95 Building by Scharoun and Mattern.

This project by Scharoun and Mattern pulls the building and landscape together, sharing the same material but changing it as it moves from inside to outside, becoming more refined as it enters deeper into more intimate corners of the house.

Alexander encourages merging things together, like metamorphosis, “so that it is impossible to say exactly where the building stops and the earth begins.” (Alexander, 1977, p.787) Blurring the edge between building and landscape so that the two seem to become one piece, slowly almost imperceptibly changing across the spectrum from inside to outside. Alfred Caldwell also intended to “blur the distinction between nature and built form”. (Domer, 1997, p.17)

In the final analysis, a binary conception of architectural design as different from landscape architecture and from garden design must be replaced either by a graduated and gradual axis where one end represents architecture as landscape and the other represents landscape as architecture with a range of continuous variations between the two...(Birksted, 1999, p.3)

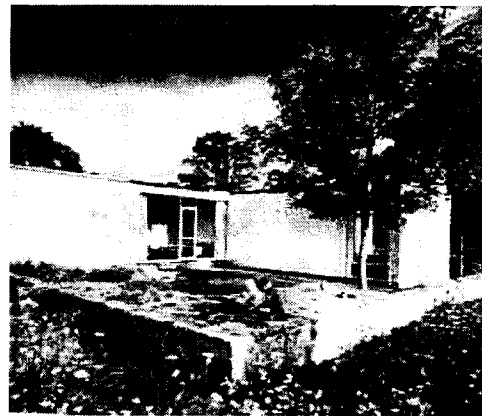


Figure 4.96 Osborn House. The terrace slowly changes degree of refinement.

It suggests that the building and landscape are not entirely different entities but one whole with shades of difference; the building a continuation of landscape blending together seamlessly. Examples of blending building into landscape can be found in many indigenous cultures where the building is such an integrated component of the landscape it is difficult to say where one ends and the other begins. Perry writes about Indian architecture in North America saying, “Their architectural imprint, often ephemeral, blends harmoniously with the land, and the ebb and flow between residents and surroundings is smooth. They are places where people can live together in comfort and tranquility.” (Perry, 1994, p.21)

### Breaking Down

The idea of paving with cracks in between draws this picture of metamorphosis, literally materials breaking down as they become more influenced by the forces of landscape. The integrity of the building materials is giving in to the strength and resilience of nature. Roots may appear through the sidewalk forming cracks and fissures, spreading apart providing room for grass or moss to grow between the aging construction. Although architects probably don't want their buildings to fall down, the same idea can be created through this awareness of metamorphosizing the experience; making room for nature to take over and spread throughout the paving stones or crawl up cracks in the wall.

A special innovation repeated in many later Scharoun/Mattern houses is the **crumbly edge of the wall where it sinks into the garden**, stressed with a battered corner where render gives way to rough stone. The passage from smooth to rough marks the transition from culture to nature. A hard edge would have detached the house starkly from the garden, but the opposite effect is wanted, so that one cannot decide where house ends and garden begins. (Jones, 1999, p.184)

Perhaps our fascination with ruins is related to this principle of metamorphosis. A ruined abbey or temple taken over by moss and climbing plants is a sublime creature. Nature has begun to soften the edges and blur the original distinction between building mass and landscape; now a mix of built forms and natural forms melding and existing together as one.

*Figure 4.97  
Ruins of  
Monastery,  
Massif, France.*



### Intermediate Materials

The selection of certain "intermediate materials" can personify this metamorphosis simply by having qualities which relate to both building and landscape. A building whose walls are composed of rammed earth or adobe brick like the house to the right symbolizes a transformation of original material into an ordered form suitable for the geometries of human construction. The earth has been ordered, contained and squared off so the soil under our feet is now standing upright in front of us.



*Figure 4.98 King House, Santa Fe.  
Between natural and manipulated.*

These materials can also be used in the middle ground around the exterior edge of the building. These materials are between rough and refined, belonging to building and nature.

In physical terms, the rootedness occurs in buildings when the building is surrounded, along at least a part of its perimeter, by terraces, paths, steps, gravel, and earthen surfaces, which bring the floors outside, into the land. These surfaces are made of intermediate materials more natural than the floor inside the house – and more man-made than earth and clay and grass. Brick terraces, tiles, and beaten earth tied into the foundations of the house all help make this connection; and, if possible, each house should have a reasonable amount of them, pushing out into the land around the house and opening up the outdoors to the inside. (Alexander, 1977, p.787)

### Design Discoveries from Jericho Sailing Centre

Metamorphosis is a concept that could be used on different levels but seems to be mostly found at the scale of detailing. It is specifically addressing the changing of materials and form as one moves from inside to outside. Going from a more formal or ordered or clean/refined design on the inside to a rougher, less ordered form on the outside.

With this building on the beach it seemed appropriate to use intermediary materials like sandstone which is somewhere between the sand on the beach and the structure of a brick or stone for a building. Material use could change too, layering different materials from exterior to interior and each new material may be more refined and finished.

The movement of floor material can also be mixing with the exterior materials as it slowly moves outward as shown at right. Square smooth tiles form the inside step outside and merge with rough textured stones. Conversely the stones move inside to replace the finished tile in some places.

The degree of regularity or rectilinearity may decrease as floor geometry moves outside, becoming split and fading away into the sand.

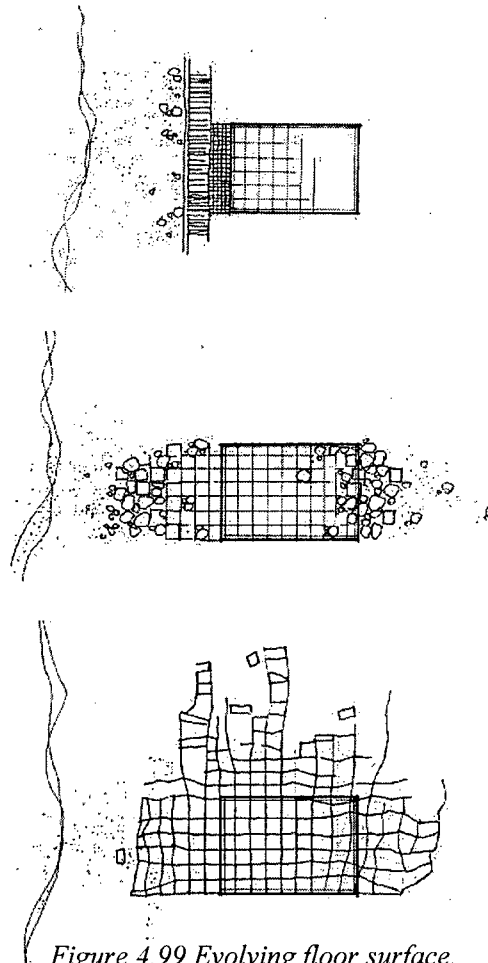


Figure 4.99 Evolving floor surface.

The metamorphosis can also occur with the change in building mass or change of landform as it moves from very built landscape to very natural landscape. This slow change is certainly similar to layering of space, possibly terracing the building down or opening the building so the walls are just columns instead of solid wall, roof becomes trellis with vines instead of impermeable roof surface.

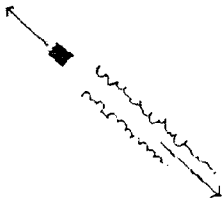
The metamorphosis principle is providing similar integration solutions to principles 8, 10 and 11. The principles of pushing and pulling are crossing into metamorphosis but they are in some way more aggressive, more direct. Metamorphosis is a much subtler way of moving. The others are strong moves to bring the two sides of the dialectic together. Metamorphosis is encouraging a gradual melding from one to the other so that it is physically difficult to see where one stops and the other starts.

**Connected Principles:** 8, 10, and 11

**Final Statement**

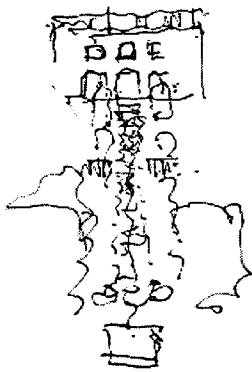
This principle suggests that by sharing material or form the building and landscape may be conceived as one whole; a whole that gradually metamorphosizes as it passes from interior space to exterior space. Building and landscape are integrated as they share this common yet slowly changing element.

### 13. Connect building and landscape through shared lines of movement.



- Use paths, trees, plants, landforms or other landscape elements to connect building structure and landscape space, axially or nonaxially.
- Use symmetry in landscape and building to build an associative link.
- Use stairs to connect building with landscape.
- Use certain materials along these lines to tie building and landscape together.
- Use "sight" lines or borrowed views to connect building with greater landscape.

*Roads, paths, boundaries (such as fences or woodland edge) and topographic features (such as the junction of sloping and level land) tie a building into the landscape. (Day, 1990, p.109)*



*Figure 4.100  
Villa Lante.  
Building and  
garden on  
axis.*



*Figure 4.101 Oak Ally Plantation*

#### Landscape Lines

Building and landscape can be integrated through the use of shared lines or movement, lines that run from the landscape to the building. The images that come to mind are the grand formal gardens of the Renaissance in Europe. The chateau or villa and garden are tightly bonded through a shared axuality and symmetry continuing from the grand allées of trees or finely clipped hedges running from the garden space right up to the central entrance or formal staircase rising up to the building. The building and landscape are tied together with this axuality and symmetry.

This image of the Oak Ally Plantation shows how the symmetrical building is connected back to the long allée of oak trees framing the building at the end of the tunnel.

I am overwhelmed by the feeling of wholeness experienced at Versailles. Almost everywhere you walk you are aware of an axial ordering which ultimately leads back to the grand palace, the lines extending through the town, once swaths cut through the park that seemed to run on forever. Standing at the far side of the grand canal and looking back to the chateau from that great distance with the allées of Plane trees framing the view, is a beautiful expression of an integrated building and landscape. The garden feels

like an extension of the building's axuality and the building in turn seems to be a necessary centre to the garden.

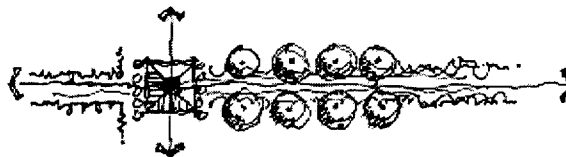


*Figure 4.102 The great axis of the Grand Canal, Tapis Vert and The Palace.*

The axis mundi connects a building vertically with the earth as well. This invisible line is our way of dwelling between earth and sky and defines the connection to both. As Norberg-Schulz says:

The axis mundi is...more than a center on earth; being a connection between the cosmic realms, it is the place where a breakthrough from one realm to the other can occur. Human life takes place on the earth under the sky, and the vertical is therefore experienced as the line of tension.

The path or axis is a necessary complement to the center, since the latter implies an outside and an inside, or, in other words, the actions of arrival and departure. (Norberg-Schulz, 1985, p.23)



**An axis is perhaps the first human manifestation; it is the means of every human act. The toddling child moves along an axis, the man striving in the tempest of life traces for himself an axis. The axis is the regulator of architecture. (Le Corbusier, 1931, p.187)**



*Figure 4.103 Vaud, Switzerland. Building and vines share the same axis.*

“Unlike the Baroque garden with its well-defined axis leading to the palace, or the religious sanctuary focused on the shrine, the picturesque garden had no dominant feature to draw people together: usually no more than an oval lawn.” (Jackson, 1994, p.112) In this way, the picturesque garden was missing this connection between building and landscape. Building and landscape were less integrated even if the nature seemed to run right up to the windows. The axis on which both building and landscape are set is a common bond linking object and space together.

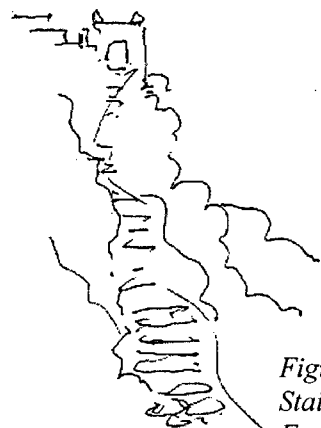
However, the shared lines do not have to be symmetrical or necessarily axial. There can be many kinds of shared lines that lead from the exterior space to the interior space. As Norberg-Schulz says, “This can happen in different ways.... The so-called ‘guiding’ elements are of particular interest in this connection, that is, lines and surfaces which from the interior continue towards the outside and viceversa.” (Norberg-Schulz, 1988, p.33) The focus is perhaps less on formal lines but on movement of form or material, shared by inside and outside rooms. It may be paving stones or a copper railing, a set of stairs or light fixtures that wind from the interior out into the landscape.



Indigenous building is often found along the edges of tree lines or along waterways. The building and landscape end up sharing these lines and thus are more strongly connected to one another. Whether they are on axis or irregular forms in the landscape, building and landscape can be integrated by sharing common forms. In the words of Christopher Day, “A building needs forms and shapes – outlines – roof and eaves lines which relate to (not necessarily copy) or perhaps contrast the surroundings. These, combined with plan shape, create the appropriate gestures: of welcome, of privacy, of activity, or repose. These in turn are part of the experience of approaching and entering a building.” (Day, 1990, p.109)

### Stairs

Stairs have played an extremely important role in building/landscape integration, in the words of Thiis-Evensen, “as an intermediary in the relationship between outside and inside, between the house and its environment.” (Thiis-Evensen, 1987, p.89) Stairs are lines of movement, which are shared by both building structure and landscape. They act as the path of connection between the inside and outside and bring us up from the landscape or down from the building. Stairs are integrators.



*Figure 4.104  
Stairs up to  
Fortress, Sion.*

Jones describes the stairs in the Schminke House by Hans Scharoun, saying "The steps outside the house echoed those inside, and lines of movement flowed from house to garden, from garden to house. In short, everything possible was done to tie the house into the garden, to dramatise the difference between its various faces, to create series of outdoor rooms complementary to those within." (Jones, 1999, p.181)

### Materials

This line of movement can use particular materials that move from outside to inside too. In the Moslem tradition we find water as a common material for connection and relation. The line of water continues from the garden space to the interior courtyards or buildings. The cooling sound and visible presence lends one to think of the garden and nature beyond the walls, associations to a paradisiacal nature. The shape is less important than the movement of the substance. Water coming within the walls forms a spiritual connection with landscape outside. It cools and heals, brining the qualities of landscape, memories of past encounters in the wilderness.



*Figure 4.105  
Water  
connecting  
inside to  
outside.  
Generalife.*

Elizabeth Kassler describes the building and landscape sharing the movement of water. It could describe any number of gardens like Villa Lante, Villa d'Este, or The Generalife in Granada.

This was living sounding water, frothing down carved chutes, leaping into jets, brimming over placid reflecting pools, and flowing through precisely cut stone channels to irrigate the garden and to connect one part with another, indoors with outdoors. (Kassler, 1964, p.12)

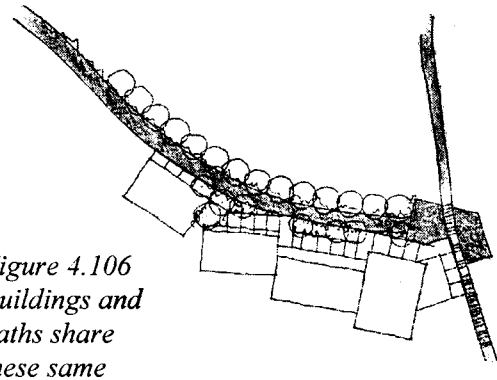
### Design Discoveries from Jericho Sailing Centre

Naturally occurring lines in the landscape can inform the building position to link building with landscape. Lines, either axial or nonaxial, can also be created to link building and landscape. The Jericho site had strong lines with the trees along the beach park. It seemed natural to try to position the building as a continuation of this tree line, the massing of the building becoming thinner as it wound further from the trees.

Axes from the building openings may continue into paths which run through the work yard, connecting the different boat storage areas back to the main buildings. The lines can also be simple paths of movement in the landscape upon which the buildings can be positioned such that the lines work with the function of the building. The building and landscape become whole through this common connection of building placement and movement in landscape space.

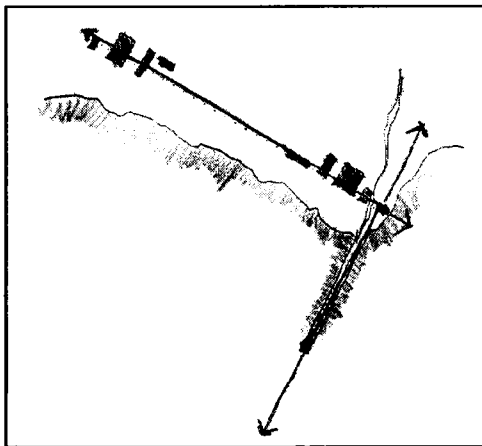


The site had some existing lines of circulation, paths for walking and biking, which might be changed to integrate the building more into the program of the landscape. The walking path along the shoreline could be swooped down to run right along the edge of the building(s) giving the built structures an edge to build along.



*Figure 4.106  
Buildings and  
paths share  
these same  
irregular lines.*

The shoreline can also be used to inform the positioning of buildings, spreading along this line. Connected as if by a string, the building segments could wind along the undulating shoreline being informed by the rhythm and length of the site.



*Figure 4.107 Building connected  
with line of pier and following line of  
shore.*

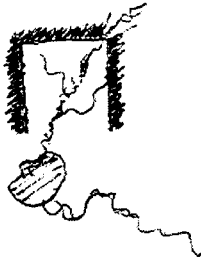
The line of the pier jutting out over the water is another strong line existing on this site. The building position could be changed to be more in line with this pier, linking the pier and water back to the building; obvious considering the function of the Sailing Centre. This proximity to the pier path and position in line with this axis out to the ocean seem to offer strong ways of integrating the building into this landscape. People walking along these paths may stop and watch the boat maintenance or extra facilities for the beach public may be available in the building, connecting the building back to the community like in the programming principle.

The lines of new paths, landforms, or rows of trees or lights can connect different buildings together too. Axiality is a powerful tool for making connections. The straight line is a form associated with humanity; natural lines exist in the landscape but are rarely straight.

**Connected Principles:** 2, 5, 8, and 10

### **Final Statement**

Shared lines of movement visually and experientially connect the form of the building and the landscape. These lines can be on a central axis and symmetry with the building, or they can be other irregular lines on the landscape, perhaps existing forms of waterways, trees or hillocks, paths, fences or tended fields. The shared line integrates building and landscape together through a common bond.



#### 14. Link the building and landscape through a shared system.

- Use graywater system to link building and landscape functions.
- Use solar, wind or water power from landscape to run building.
- The building can exist unobtrusively in the ecological system.

*If the building is "working" with the landscape, there is a kind of partnership that blossoms, pulling them together to function as one machine.*

Thinking of a shared system recalls memories of Villa d'Este at Tivoli. The building is perhaps less a part of any garden system, but the extent to which the water is pumped throughout the garden and used to run the great water organ seems appropriately shared between building structure and landscape. Gravity fed water and human ingenuity come together to run this giant machine, the sounds of nature bursting from its pipes.



*Figure 4.108  
Self-sufficient  
House,  
Building and  
landscape  
work together.*

This linking of building and landscape may be accomplished by systems which are set up to help humans or nature. Examples of systems which might be aiding the building function are graywater systems, using solar, wind or water power, or even roof gardens.

Graywater systems use plants in the designed landscape to filter soapy water from the showers and sinks to be reused in toilets. The used water is filtered through reeds or grasses, cleaning it for reuse in toilets. The building uses the landscape to help in the building function. They share a common system, linking building and landscape.



*Figure 4.109 Graywater  
system.*

The building can also work with the landscape in the opposite way. Kevin Connery describes the Valdemarsgade housing project in Slagelse, Denmark where the garden benefits from a water collection system on the building roofs, a cistern which is part of the building structure that is good for the landscape.

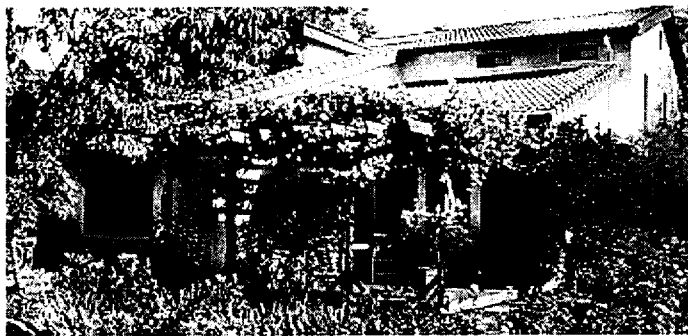
Storm water is collected from the housing block's roofs into an inner courtyard pond where it is either used in the extensive grey water system or recharged into the ground via a stream and recharge bed. It helps irrigate the housing block's community garden and flows along a stream which forms part of the children's play area. (Connery, 1994, p.67)



*Figure 4.110 Solarhaus, Issum. Using roof  
to collect water and gain solar energy.*

This shared water system between building and garden brings the building and landscape together into one whole relying on each other to complete the circuit.

These systems and connection between building and landscape should also be recognized and celebrated. As Day reminds us, "How many people know where water comes from and goes to beyond the limits of tap and plughole? Used water could be cleaned of pathogens, excessively available nutrients and even chemical pollutants by a biological and rhythmic flow system of flow-forms, ponds, reed beds and other vegetation. Such systems don't need to be shut away in sewage farms; they can be attractive even artistic." (Day, 1990, p.169) Identification of such systems can even be educational – the system is about the building and the landscape working together and is potentially very important in establishing a "spirit of place" connecting the building and inhabitants with their land.



*Figure 4.111  
Village Homes,  
Davis. Water is  
the system  
connecting  
buildings and  
open space here.*



*Figure 4.112 Windmills taking  
energy from landscape.*

A building which uses elements from the landscape like sun, wind or water for energy purposes is also sharing an energy system with the landscape. In this way the building has a connection with the natural resources of the earth and becomes linked with the landscape by plugging into these resources. Knowing that your house functions with the help of the sun, wind, river or tides builds a profound sense of belonging and need for the landscape, relying on nature for survival. As mentioned earlier in the principle on climate, windmills are demonstrative symbols of this connection; building structures which are integrated with the landscape by running on wind power.

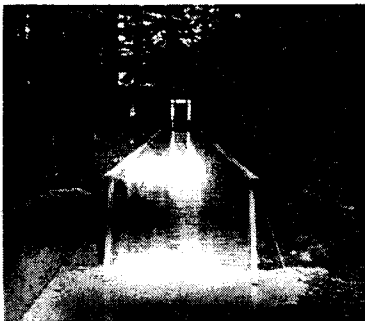
Even using plant material on the building like roof gardens or vines up the side of the wall is in a sense a way of integrating building and landscape through a common system. As Day says:

Indoor plants not only soften architectural hardness but (ferns especially) can redress the ion balance in the air. Plants outdoors can be used to moderate micro-climate. They give oxygen and life to the air we both pollute and breathe.... Climbing plants can not only soften hard corners, make unyielding textures

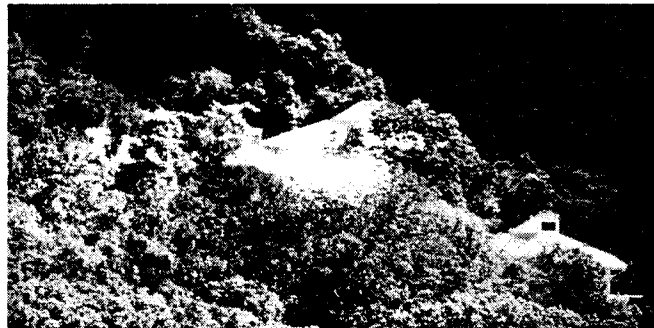
approachable, enrich walls and clamber or cascade in archways, but also absorb street noise. (Day, 1990, p.52)

The plants act in many ways to clean the air, absorb noise, and help to cool the building. "Roof gardens and 'wet roofs' (a flat roof with a few inches of ponded water) have been introduced to reduce the heat absorbed by buildings." (Spirn, 1984, p.84) This is really borrowed landscape but these natural elements are in a sense the landscape working to cool the building.

Beyond these systems which are constructed to work with the building, the building and landscape can also begin to integrate through the understanding of natural systems and local ecology; attempting to understand how the building may work together with this ecology. Green architecture is largely focused on this idea, to discover how the building can be integrated into an existing ecology, perhaps even doing something which is helpful to the surrounding ecology. Certainly the idea of designing a building to be less dominating on the surroundings is a form of integration. Integration has this element of being inconspicuous. Of being almost hidden in the crowd. With the building acting to minimize its damage on the environment, it is in a way becoming integrated with it. In the words of Glenn Murcutt, 'One must touch-this-earth-lightly' (Vale, 1991, p.141) This attitude illustrates the necessary sensitivity a building must have to become integrated with the local natural systems such that it does not hinder these systems but respects them and allows them continue, even participating in the system as a component of the local landscape.



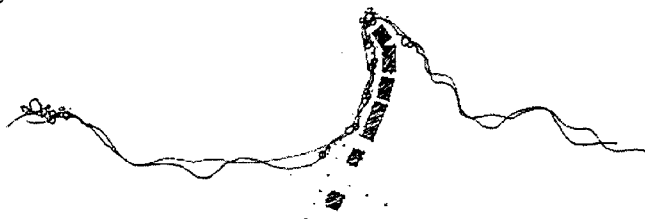
*Figure 4.113 Paulk Residence, Seabeck, Wa. Living in the trees.*



*Figure 4.114 Harmony, Virgin Islands. A light touch.*

### **Design Discoveries from Jericho Sailing Centre**

This is difficult to show for this project. It could be achieved through using the building as a groyne to collect littoral drift, helping to prevent loss of sand and slowly enlarging the beach<sup>1</sup>



*Figure 4.115  
Buildings as  
groyne  
preventing  
littoral drift.*

It might also use the landscape to filter water for reuse – graywater system. It seems less useable in this situation considering the context next to the ocean. The system would have to be completely isolated. Certainly there are possibilities of using wind or solar power to connect building with local climate and landscape. Perhaps the landscape program or structure could incorporate ordering forms that help to generate energy through wind or sun for the building uses. Or perhaps in this case even wave energy. The building may be built out into the ocean to take advantage of tidal flows for energy purposes.

Finally, the Sailing Centre could be almost completely buried in sand, only leaving projections for windows and doors. It would allow the beach to dune and change without the influence of the building mass. In this context in such a human manipulated landscape, it doesn't seem necessary. The natural systems have already been greatly altered.

**Connected Principles:** 3, 4, 5, and 10

**Final Statement**

Sharing a system common to building and landscape may not integrate them as an inside and outside relationship, but connects the building to the surroundings functionally as well as psychologically. A building that uses the local landscape or works in tandem for a common purposes is intimately connected with the site.

## Conclusions of Principles

These principles may be discussed individually but one major discovery was how they are often connected with each other. Trying to apply one principle often leads to one or two others which automatically follow. Perhaps this is important to find that once there is an attempt to integrate building with landscape, it rides through all the design process. It also leads to the question of whether these principles should be further combined or if they should be expanded into more. How many principles are enough; an appropriate number when working on a project? It's difficult to say. They could be split into many more or combined into just a few. I think that this is a reasonable sized list to be used for consideration in most design projects.

Buildings that are integrative under one principle often demonstrate many of the principles and seem to be extremely successful building/landscape relationships. Many of the projects by Frank Lloyd Wright illustrate numerous principles from this list, integrating building and landscape at many levels from intellectual connections to deeply physical connections between inside and outside. The buildings are often designed to experience the outside from deep within or the building form resting low even into the earth, spreading horizontally out to the horizon and built up from a collection of materials found in the local landscape making the building truly "of the site."

Through the examination of these projects and a review of different principles of integrating building and landscape, it is clear that there are different shades of integration from a real understanding of the *topos* or *genius loci* of a place, to more superficial openings of the building or constructing roof top gardens. Integration can be achieved at many levels with varying degrees of intensity. Even small moves may benefit the project and create a feeling of connection between building and site.

The language is intended to provide a framework for considering options of integrating building and landscape. It is also intended to act as inspiration indicating the potential beauty and connectedness which could arise from such attention to integration.

In order for these principles to be successfully applied, the architect and landscape architect must work together with the same focus. Together they may find the vision for creating this whole of building and landscape, sharing space and form, the building a part of the greater landscape of habitation. In this way, perhaps the principles are a more useful tool for architects. It may help to bring landscape more clearly into the vocabulary of their design process.

## conclusion

Thesis Conclusions  
Future Work

### Thesis Conclusions

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This thesis attempts to examine the idea of integration and make some proposals for how building and landscape may be better integrated. The thesis focuses on single, relatively small buildings in a low-density landscape. This work could contribute to integrating building and landscape in many ways. The intent is to improve the inhabited environment by bringing building into an intimate connection with the site to root the building in its place. Integration of building with landscape may succeed in revealing greater meaning to the inhabitants and allow the people to dwell more successfully in that landscape.

The goals of the thesis were not just to document existing integration methods and create a list, but what could and should exist for this relationship. The final language of principles is composed for use by designers and planners in the process of developing new building/landscape relationships, but it is also important as an illustration and description of how and why integration of building and landscape is important. It is both a positive and normative exercise.

The subject matter of this thesis is huge. This discussion on building and landscape and inside and outside is what architecture is about. This relationship is tenderly linked with culture, with climate, with technology and with time. It is a subject which has been discussed and written about in many periods from many different perspectives, even more so in the past century, but even with all the discussion we still construct buildings which are poorly integrated into landscape, which have relatively little connection between inside and outside, and therefore isolate buildings as something apart from landscape. This work is intended to enrich the discussion on the relationship by trying to offer another perspective, another methodology of studying the condition, with the hope of moving closer to clarifying and particularizing how building and landscape can be better integrated and the relationship improved.

Perhaps this work is just a different perspective with which to approach design of building or landscape. Yet, it seems to be a more inclusive approach, focusing on both building and landscape in tandem, and hopefully bringing them together to create a more wholistic project. Alexander focuses on the importance of creating a whole in the larger

urban fabric – this set of principles is focused on creating these smaller wholes by looking at design of individual buildings and landscape through a slightly different lens.

Furthermore, as these ideas are not new ideas, found in many existing places and exposing previously discussed ideas shared by many authors, the work becomes more of a review and filtering of existing knowledge. This thesis is unique in attempting to focus on revealing and particularizing the individual types or characteristics that create this integration – to become clearer on what these traits are, what they do, and why it is important.

An interesting discovery was that almost all buildings have some of the principles of integration; the simple condition of resting on the ground promotes some relationship and opportunity for integration. However, from looking at extremely integrated building/landscapes like Fallingwater, Taliesin West, or numerous indigenous cultures around the world, one might conclude that the experience of the place and connection with the earth is greater with the more principles it demonstrates. In this way, the list of principles could also be used as a way to critic and analyze existing projects from a perspective of building/landscape connection.

Finally, the process of discovery and results as they are seem to suggest that integration of building and landscape has many different forms and will succeed in creating a richer, more meaningful place, the built form and landscape living in greater harmony.

## **Future Work**

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The principles could be further tested in architecture or landscape architecture design studios to see how they influence the way students design. It would be an opportunity to further test the effect of the principles by designers who would have some distance from the research.

Furthermore, because this thesis was focused on integrating a single building in a relatively low-density landscape, it would be interesting to discover how these same notions of integration might be applied to higher densities. Perhaps some would remain the same, while new forms, spaces and materials might emerge from the new challenges of different densities.

Throughout the process of examining building/landscape conditions, it was also obvious that many of the buildings which demonstrated levels of integration were also described as “Green” architecture. Although this thesis was not specifically directed at “Green” or “sustainable” buildings, they were often illustrating integration as well as satisfying criteria for sustainability.

This connection with sustainable building seems to indicate the possibility of comparing the principles for integration with sustainability criteria to see if integrated building/landscapes are more or less sustainable building/landscapes. Already, in focusing on integration as a path to healing our inhabited environment, there is clear



indication that there are at least some ecological benefits from many of these principles. Obviously there are always links between ecology, economics, social equity and phenomenal experience – so comparing these results with “sustainable” criteria shouldn’t be too much of a jump. Some of the “sustainable/livable” benefits discovered so far are:

- Building underground keeps building cooler in summer and warmer in winter – reduces energy use
- Build buildings of natural materials – less toxic materials – less risk of water, air, soil pollution
- Use in situ materials so less cost of transportation – reduces energy use and air pollution
- A genius loci attitude of fundamentally integrating the building to be “of” the land instead of on it – probably more permeability and building functions with land
- More plant material around building – improves air quality
- Habitable landscape allows more contact between animals and humans – showing greater respect for a union
- Integrated building/landscapes are more public – more equitable
- Layering can help to insulate building – greenhouses
- Greywater systems – decreased water use
- Many windows – passive solar heating in winter
- More green space around building – more permeable ground surface to recharge ground water
- Courtyards and light shafts – opportunity for getting more natural light into building

Furthermore, integration of building and landscape does not or should not simply stop at the aesthetic or physical level. Integration should be created at the very deepest level of systems, binding the built forms and landscapes together in every way. Realization of this profound connection will further add to the experience of harmony and healing, and perhaps help in adopting sustainable development choices.

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## Appendix I - Complete List of Case Studies

Name of Case Study	Summary of Integration Characteristics
<b>Park Guell</b> Barcelona, Spain Antoni Gaudi	rough, coarse texture seems natural organic form seems to resemble nature tapered gallery grounds structure
<b>Doorway in old house</b> Village in Hungary	thick wall and thick threshold is good transition space
<b>Tampellaaukio Church</b> Helsinki, Finland (1960-69) Timo Suomalainen	built into rock outcrop, existing site form built down into the earth, earth becomes part of building
<b>2<sup>nd</sup> Jacobs House</b> Madison, Wisconsin Frank Lloyd Wright (1948)	inside of the hill the hill becomes part of the building structure
<b>Underground House</b> New Hampshire Donald Metz	building is partly built underground grass roof brings landscape into building building seems to taper up from earth – firmly grounded
<b>Roofgarden</b> Lawrence Halprin (1952)	form of the house and terrace move out into landscape
<b>Japanese Zen dry garden</b> Ryoan-ji 1500	courtyard landscape is large part of house borrowed view of surrounding landscape platform is transition space between interior and garden
<b>University of Virginia</b> Charlottesville, Virginia Jefferson (1804-17)	columns/gallery creates transition space axiality with distant landscape connects building with landscape
<b>Villa Rotunda</b> Vicenza, Italy Andrea Palladio (1550s)	stairs connect building with ground – platform sits firmly axial connection with landscape space farm function of these buildings connects with landscape
<b>Rocky Mt. Institute</b> Aspen, Colorado Steven Conger	organic shape, crenelated wall seems to conform to curving forms of landscape
<b>Acropolis and Parthenon</b> Athens, Greece 5 <sup>th</sup> century BC	building location links to spiritual landscape – place is NB stairs or steps linked to ground columns created this in-between space
<b>Sagrada Familia</b> Barcelona, Spain Antoni Gaudi (1884-)	organic form, has both human and natural qualities tapering columns and walls at entrance connects solidly to the earth walls are punctured with openings balconies move out into landscape
<b>Court of the Lions</b> Granada, Spain 1354-91	axial connection with water from inside to outside courtyard brings light inside paradise garden links with landscape idea
<b>Taj Mahal</b> Agra, India 1632-48	axial connection between building and garden landscape symbolic of paradise, 4 flowing rivers
<b>Villa Lante</b> Viterbo, Italy	symmetry shared by building and landscape axiality connects building with garden and distant lands

<b>Villa Farnese</b> Villino, Italy Vignola (1559-1620)	symmetry and use of axuality to connect building with landscape building and garden designed together
<b>Villa d'Este</b> Tivoli, Italy Piro Ligorio (1549)	on axis with building whole complex is cut into the slope in 2 directions using natural water source in garden system
<b>Baensch House</b> Berlin Spandau, Germany Mattern/Scharoun (1935)	building floor terraces down to landscape ambiguity of when form is part of building and when it is part of landscape – metamorphosis
<b>House on Connecticut River</b> Richard Bergmann	over the water – beside the water – proximity stones build foundation of house – sits naturally
<b>Village Hall</b> Saynatsalo, Finland Alvar Alto	grass terraces leading from building to ground use natural materials, brick
<b>Courtyard Houses</b> Old Amsterdam	small gardens act as transitional space between courtyard landscape and building a little arcade creating transition space
<b>Dakterras</b> Holland Mien Ruys	outdoor room integrating idea of building and landscape a structure that is both part of architecture and part of landscape
<b>Gallery</b> from A Pattern Language (p.785) Christopher Alexander	layering of space – transition continuity of floor surface from inside to outside material is of the earth but refined
<b>Blue Mosque</b> Istanbul, Turkey	arcade around courtyard offers transitional space
<b>Covered Porch Houses</b> Adelaide, Australia	covered porch creates in-between space between private and public
<b>Microclimate Layers</b> Training Centre Jourda and Perraudin	layering of inside and outside transition emphasize transition space – be clear about where you are building becomes lighter as you progress to outside
<b>Courtyard garden</b> Budapest, Hungary	arcade built around courtyard is partly connected to building and partly connected to garden
<b>Court of the Oranges</b> Cordoba, Spain 1600	courtyard garden is a landscape space within a building structure the space is landscape but very heavily built
<b>Train Station</b> Madrid, Spain	a landscape on the inside in this greenhouse space
<b>Roman House</b> 400AD	courtyard as inner garden – open to the sky columns around courtyard further transition space
<b>Glass House</b> Oakville, Ontario	glass reflects surrounding vegetation and almost becomes camouflaged in landscape visually connection from inside to outside
<b>Parking Garage</b> Indonesia	plants climb up wall – landscape element covers building
<b>Sylvia Hotel</b> Vancouver, Canada W.P. White (1912)	building is covered with vines
<b>House in Gent</b> Gent, Belgium	vegetation covering building
<b>Moore Residence</b> Connecticut Alfredo Devido	building constructed into earth grass roof glass used to connect inside and outside
<b>Evergreen Building</b> Vancouver, Canada Arthur Erickson (1978)	roof terraces down to the ground with gardens steps up from escarpment building looks to be covered with vegetation

<b>House in Kitsilano</b> Vancouver, Canada	vegetation around house grounds building into landscape partially covers house blending house into surroundings amount of vegetation is equal massing to building mass
<b>Barn</b> Founex, Switzerland	vine is planted beside building – scales building vegetation beside building brings it closer to landscape
<b>La Fabrica</b> Barcelona, Spain Richardo Bofill (1973)	plants crawl up building and between structures building form allows penetration of landscape
<b>Park Centre/Museum</b> Uluru, Australia	roof form mimics landscape and “The Rock” colours appropriate for landscape trees help to scale landscape to building
<b>Step Pyramid</b> Egypt 2700 BC	stepping up from earth wider at bottom grounds structure
<b>The Asian Centre</b> UBC, Vancouver, Canada Donald Matsuba (1981)	roof is very low to ground – grounding solid and sits well on earth
<b>Museum of Anthropology</b> Vancouver, Canada Arthur Erickson (1973-76)	building form steps down to ground low ceiling at entrance building feels sunken into ground, rooted
<b>Shaughnessy Place</b> Vancouver, Canada McCarter, NairnePartners	terracing down to ground roof gardens
<b>Hanging Gardens of Babylon</b> 3500 BC	roof gardens – paradise – just an idea vegetation covering very grounded ziggurat
<b>House in West Vancouver</b> Vancouver, Canada Arthur Erickson	terracing down to ground allows rooftop garden fits into topography
<b>Robson Square/Law Court</b> Vancouver, Canada Arthur Erickson	layers of space roof gardens terracing down use of glass to visually connect
<b>House of Gaudi</b> Barcelona, Spain Antoni Gaudi	penetration of landscape structure airy structure that is providing small amount of insideness in a great outside
<b>House in West Vancouver</b> Vancouver, Canada	house is built around tree – tree penetrates house house seems to be built into landscape without too much destruction of existing site
<b>Eagle House</b> Hornby Island, Canada	use of glass roof opens to sky landscape a line which is both inside and outside
<b>Sun House</b> Alfred Caldwell (1978)	wide overhangs for transition space the shapes of the building are found in the landscape – borrowing landscape form
<b>Russel Hollingsworth House</b> West Vancouver R. Hollingsworth (1977-82)	low building and horizontal form – seems to hug ground glass for visual connectivity wood material seems natural and right
<b>Smith House</b> West Vancouver, Canada Erickson/Massey (1965)	long horizontal building penetrates into landscape with horizontal beams fits into landscape using cues from existing site
<b>False Creek Millbank St.</b> Vancouver, Canada Thompson, Berwick, Prett and Partners (1975-77)	buildings with saddlebags penetrating landscape low forms and opportunity for landscape to join like tongue and groove floor – crenelated walls pushing out into landscape

<b>Sea Ranch</b> California Charles Moore	saddlebags penetrating landscape like bay window also spreads mass of building around use of wood improves integration further
<b>Bay Window Study</b> Thiis-Evensen	penetration of landscape with bay window
<b>Louisiana Museum</b> Humleboek, Denmark Bo and Wohlert (1958-80)	long buildings, low – seems to sit firmly on site glass walls to connect with outside sometimes sunken into slope
<b>11 houses</b> Philippe Rotthier	buildings use tapered walls use of adobe low buildings that conform somewhat to topography
<b>First Nations House of Learning</b> UBC, Vancouver, Canada Larry McFarland (1991-92)	built into part of hill natural materials and natural finish pitched roof grounds building
<b>Unitarian Church</b> Madison, Wisconsin Frank Lloyd Wright (1947)	pitched roof grounds building heavily to site seems to dig the prow into the earth
<b>Underground Gallery</b> Cape Cod, Mass Malcolm Wells	roof top garden and grass roof building built into the ground
<b>House by Missouri River</b> Charles E. King	sunken into ground
<b>Cave Houses</b> Cappadocia, Turkey	homes cut into rock formation, live inside rock
<b>Town in Turkey</b> Cappadocia, Turkey	houses built into cliffside materials and colour seem to connect building to site terracing of house to fit into hillside
<b>Village Houses</b> Gordes, France	buildings constructed of local materials built onto hillside small buildings vegetation is equal massing to buildings
<b>House edge</b> Denmark	edge of building becomes zone of living bench on outside wall connects landscape use to building structure planting grounds building, scale
<b>Parks Board Offices</b> Vancouver, Canada Underwood, McKinley and Cameron (1960)	use of glass to connect low building beams projecting out to landscape cantilevered roof offers transition space materials of wood and stone
<b>House in Vineyard</b> Hawke Bay, New Zealand Ian Athfield	sitting in vines in non-disruptive way vines continue through building
<b>Sugar Hut</b> Nova Scotia, Canada	minimal interference – building sits quietly in landscape cabin built by local trees
<b>Peggy's Cove</b> Nova Scotia, Canada	minimal building mass sitting in rocks proximity to ocean activity of fishing seems to link building with landscape through function – living with landscape
<b>Capilano Fish Hatchery</b> North Vancouver, Canada Underwood, McKinley and Wilson (1979-80)	fits among rocks and rocky hillside cantilevered, long form fits into slope
<b>St. Michel l'Aiguille</b> Le Puy, France	building seems to be part of hill use of local stones

<b>Isola Bella</b> Lago Maggiore, Italy 1632-1671	island in lake one piece with a balance of vegetation and building
<b>Machu Pichu</b> Incas, Peru (1500)	use of in-situ materials built into terrain, seems sunken into site connection with spiritual world through built structures
<b>Chateaux</b> Sion, Switzerland	steps cut into hill the hill itself seems to become the castle
<b>Mt. St. Michel</b> Normandy 11 <sup>th</sup> century	building dominates the land – together they make a whole
<b>House in Country</b> Uruguay Horacio Ravazzani	building fit into sloping site stepped stone walls and foundation seem to be part of land
<b>Shrine of the Virgin of Meritxell</b> Richardo Bofill	fit the buildings into the hillside stepped project appropriate location
<b>Sanctuary of Asclepius</b> Kos, Greece 2 <sup>nd</sup> century BC	built into side of hill use topography to inform development axial connection of building and landscape
<b>Castle at Najac</b> Auvergne, France	village is integrated into existing topography conforms to site use of local materials for buildings
<b>City of Bern</b> Bern, Switzerland	buildings and terraces fit into slope of land
<b>Barry Downs House</b> West Vancouver, Canada Barry Downs (1979)	low, horizontal and fitting into slope vegetation on roof and around building grounds building
<b>Building on Canal</b> Venice, Italy	entire city of Venice has special kind of integration with water landscape foundations are actually in water
<b>Castle by lake</b> Tyrol, Austria	building is very close to lake, thrust out into the lake proximity to lake and mountain, the castle seems nestled snugly between
<b>Chenonceaux</b> Castle on Cher River, France	castle built over river, footings in the water exists with river continue its course
<b>Lafayette Park</b> Detroit, Michigan Mies van der Rohe and Alfred Caldwell	massing of buildings in landscape seems balanced glass connects interior and exterior trees relate people to scale of buildings
<b>Rowhousing</b> Letchworth, England	massing of buildings and landscape is balanced
<b>Studio in Bristol</b> Bristol, Wisconsin Alfred Caldwell (1970)	enveloped in landscape use of wood makes it connected with forest vegetation on roof glass connection with outside
<b>Trudseland Cohousing</b> Copenhagen, Denmark	pitched roofs proximity to landscape low horizontal buildings
<b>Paulk Residence</b> Seabeck, Washington James Cutler	minimal trees destroyed building mass is light and almost hidden in forest use of wood and glass
<b>Harmony Centre for Sustainable Resort Development</b> Virgin Islands	buildings conforming to site well hidden – good balance in forest shows respectful attitude to landscape

<b>Village</b> Grimaud, France	use of local materials and colour of soil built piecemeal into slope
<b>Parson House</b> Phoenix, Arizona Frank Lloyd Wright (1940)	use of local stone seems to grow out of site – tapered walls low building excentuates horizontality of desert stepped balconies
<b>Versailles</b> Versailles, France	axial connection of building with infinity of landscape building and landscape built together
<b>King House</b> Sante Fe, New Mexico	use of adobe and colour of earth building is low and ground hugging
<b>Abandoned Monastery</b> Massif, France	a ruin with vegetation taking over building local materials used to build it low building fit into hillside power of surrounding landscape
<b>Cloister</b> Utrecht, Holland	courtyard garden represents landscape inside building arcade around cloister is in-between space
<b>Millard House</b> Pasadena, California Frank Lloyd Wright (1923)	progression of spaces from inside to outside garden porches and balconies stepping into landscape
<b>Haus Waldmohr</b> Landstuhl, Germany	use of wood in forest colour is similar to surroundings glass almost makes building invisible
<b>Aquatorium</b> Chattanooga, Tennessee SITE	landscape punctures the building building walls move out to landscape and vegetation pushes inbetween walls and over building
<b>Essai sur l'Architecture</b> Abbe Laugier (1753)	trees form building – origin of architecture is nature
<b>Housing on Telegraph Hill</b> San Francisco, California	buildings fit into slope covered with vegetation good massing between building and landscape
<b>Village</b> Graves, France	piecemeal growth massing is important, size of development fits into hill and along riverside
<b>Chalet</b> Bernese Oberland, Switzerland	low roof connects to ground roof fits with hilly landscape building is tucked slightly into hillside farm building works with nature bottom is stone – heavy, upper is wood from forests
<b>Eurosud Calvisson Centre</b> Nimes, France William McDonough	tucked into side of a hill form of building is stepping down in similar manner to existing land
<b>Windmill</b> Holland	lines in landscape connect with building position
<b>Storage Barn</b> Vaud, Switzerland	on axis with vines very small building is balanced in vegetation
<b>Generalife</b> Granada, Spain	axis between garden and building built into hillside
<b>Sans Souci</b> Berlin, Germany	covered terraces bridges inside and outside
<b>University of Aarhus</b> Aarhus, Denmark	vegetation covering building terracing of ground up to building

<b>Residence</b> Carefree, Arizona Charles Foreman Johnson	organic form material is local – adobe fit into existing form of landscape – informed by landscape rocks become part of building built into rocks and ground
<b>House in South Africa</b> Marco Zanuso	long low building seems to sit in ground plants on roof and all around it landscape seems to run right over it or through it
<b>Villa Medici</b> Fiesole, Italy (1458-61)	terraced building into existing slope outdoor terraces serving interior buildings seems to fit comfortably into hillside
<b>Village Homes</b> Davis, California (1975)	integration of systems/functions of water planting between buildings – good massing/balance
<b>Solarhaus</b> Issum, Germany Haefs/Platen	proximity with natural landscape system of filtering water in landscape
<b>House on Hornby Island</b> Hornby Island, Canada	pitched roof built of local driftwood, piecemeal as necessary
<b>Taliesin West</b> Tempe, Arizona Frank Lloyd Wright	materials in building are from local site low building, built into the ground in places
<b>Oak Alley Plantation</b> Vacherie Louisiana Jukes Roman (1839)	axial connection between building and allee of trees
<b>Robert Osborn House</b> Salisbury, Connecticut Edward L. Barnes (1951)	garden is conceived as part of the house sharing a slab garden is on house platform and is inbetween being part of house and part of landscape
<b>Maison Carre</b> Bazoches, France Alvar Alto (1961)	terracing,stepping from building to landscape reaching out to landscape house seems anchored to ground
<b>Arnstein House</b> Sao Paulo, Brazil Bernard Rudofsky (1941)	transition garden room between completely inside and completely outside no solid roof
<b>House in Lyon</b> Lyon, France Jourda and Perraudin	transition of layers around building cantilevered roof provides semi-outdoor space
<b>German Pavilion</b> Barcelon Exposition 1929 Mies van der Rohe	planes moving out to landscape landscape can flow into building
<b>Environmental Education Centre</b> Prince William County, Virginia SITE, James Wines	penetration of building by landscape sharing a system, sharing a membrane minimal environmental impact
<b>Menara Boustead Building</b> Kuala Lumpur, Malaysia 1985	plants climbing building
<b>Museum of Civilization</b> Hull, Canada Douglas Cardinal	building tries to mimic landscape forms of erosion and movement
<b>Notre Dame du Haut</b> Ronchamp, France Le Corbusier	openings and projections crenelates building edge allowing space to flow in and out roof mimics surrounding landscape
<b>Studio at Bristol</b> Bristol, Wisconsin Alfred Caldwell (1970)	nature penetrates building form or building is built around existing trees

<b>Robie House</b> Chicago, Illinois Frank Lloyd Wright (1908)	long form of building sits solidly on ground cantilevered roof creates transition space low building stretching towards horizon
<b>Farmhouse at Bristol</b> Bristol, Wisconsin Alfred Caldwell (1948)	planes of farm buildings stretch into fields – sharing lines between building and landscape
<b>ING Building</b> Amsterdam, Holland Rocky Mt. Institute 1978 Hoofdkantoor 1987	organic shape seems to wander like a river building wall tapers at bottom – solid building mass is spread out and variable
<b>Pavilion on the Prairie River</b> Chicago, Illinois Alfred Caldwell (1936)	use materials on site heavy base and lighter materials on top slight taper taking form of a tree
<b>Villa Zapu</b> California Hargreaves Associates	building mass is split up so landscape interacts between use of axis to connect building and landscape parts
<b>Theatre of Ephesus</b> Turkey 100BC Rome	theatres built into landscape of hill, using natural slope of land
<b>The Bishop's Harbour</b> Balbianello, Italy	feet in the water, building sits down in the lake
<b>Queen Hatshepsut Mortuary Temple</b> Egypt 1479 BC	built into side of cliff building and landscape become one entity place for connection with spiritual world
<b>Rubadoux/Cameron Studio</b> Rose Bay, Nova Scotia Brian MacKay-Lyons 1989	looking for vernacular of area connects with landscape proximity to ocean minimal massing in landscape trees and rocks and shore inform building
<b>Cliff Palace</b> Mesa Verde Anasazi Indians	built into cliff use local materials for extra one with the landscape
<b>Sumela Monastery</b> Turkey 5 <sup>th</sup> and 6 <sup>th</sup> centuries	built into the side of a cliff rock cliff is the foundation for this building
<b>Hut in Savoie</b> France	building is made of the surrounding rocks low building in the ground pitched roof ties to hilly landscape
<b>Falling Water</b> Bear Run, Pennsylvania Frank Lloyd Wright (1936)	minimal disturbance in landscape allowing river to flow low and hugging hillside planes pushing out into landscape using rock from the area views out to landscape from interior are connective
<b>The Natural House</b> Murphy Residence Atlantic Coast, USA	building fit into existing landscape and informed by topography and vegetation built around trees massing is good in forest
<b>Terraced Fields</b> France	housing conforms to slope of land, adapting existing hillside
<b>Barn/House</b> Denmark	low roof local reed and wood materials slight overhang creating transition space
<b>Eames House</b> Pacific Palisades, California Charles Eames (1949)	house is pushed into the steep hillside trees up next to building wall, almost hiding it
<b>Boat Landing Pavilion</b> Huntington Beach, Ca Alfred Caldwell (1975)	building is enfolded in trees seems to fit inside comfortably



<b>Zoological Gardens</b> Montreal, Canada Alfred Caldwell (1954)	spreading mass of building across landscape creating a balance of building and landscape space and allowing landscape to creep between
<b>English Landscape Garden</b> Stourhead park, England	garden/landscape came right up to building edge proximity
<b>Suzhou Garden</b> Suzhou, China Ming Dynasty	trees and shrubs amongst buildings water beside natural materials covered spaces a mix of nature and human forms
<b>Noyes House</b> New Canaan, Connecticut Eliot Noyes (1955)	balance of building in landscape proximity – it's right there

## Appendix II – Summaries of Authors Opinions

### Norberg-Schulz

- the basic act of architecture is to understand the vocation of place
- an axis mundi or tower expresses being in a place – vertical connection to earth
- church is interpretation of the earth/sky relationship
- the fourfold of Heidegger – connection to the universe
- dwelling is refuge – the purpose of architecture – orientation and identification
- dwelling is about prepositions – settling between low mounds, under large trees, between rocks and next to a swift stream
- man visually focuses, symbolizes and gathers meaning
- genius loci
- friendly relationship with the site – respect for place and understand the genius
- vernacular settlements – topologically organized express primary importance of site
- use of portico, colonnade, arcade between in and out creates transition zone
- guiding lines from inside to outside
- a massive concrete base ties building to ground
- openings concretize inside-outside relationship
- planes are left free assuring free flow of space
- concave walls ties building to ground
- stone base like the earth
- Swiss chalet has the qualities which connect to landscape – large gable, solid ground hugging, roof that emulates hills, built into ground
- in vernacular architecture the roof usually recalls forms of landscape
- use materials that bring inhabited landscape closer to man
- use of glass walls opens up building to landscape
- wood and stone cultures, composed of local materials

### Frank Lloyd Wright

- buildings belong on the earth and freedom in space
- symbology of materials – north versus south – connection to place
- earth line of human repose
- buildings in the image of the tree - should conform to nature (organic architecture)
- use of planes of infinite extension reach out to landscape
- interpenetration of building and landscape
- a building should be “of the site”
- wall is not there to enclose but to direct space and unify inside and outside – bands of glass also do this
- buildings should be long and low
- there is horizontal line of living which is important to connection with landscape

### Alexander

- root the building to the ground
- not separateness – at one with the world – connection with the earth
- plants should climb over building – becoming one with nature
- wholeness heals the city
- graded variation
- merging of things – blurring – ambiguity between in and out – yet definition of edge
- positive space

- many doors into courtyard
- cascade of roofs, flowing into landscape
- arcades create partly inside and partly outside space
- edges of arcade with low ceiling or roof
- need entrance room
- building edge is a place
- outdoor room is continuous living space with building
- gallery surround creates transition space
- greenhouse is landscape in building
- accessible green – proximity to landscape
- walls of foliage or climbing plants should grow over building
- paving with cracks for plants to grow – mix of built and nature
- simply planting trees next to building is good
- building should be oriented to inside and outside – thick wall – crenelated wall
- make the seams visible
- a 4 story limit to building – lower building has more connection
- intermediary materials like gravel and earthen surfaces around perimeter
- terraced slope – building sits into slope – don't fight it
- dormer window or bay window reaches out to landscape
- low sill putting you in touch with outdoors
- windows should open wide – filtered light from outside
- access to water

#### **Day**

- health of the earth
- nature and climate determines our building form and materials
- one step up to building
- slow change of ground surface – elements are modified as they meet to “sing”
- roads, paths, fences, hedges and topographic features tie a building with landscape
- vegetation brings a softness and ion balance
- planting around building-ground junction is important for connection
- walls should breath
- put plants on wall
- how a building meets the ground is the most important – tapered wall outwards
- ground hugging buildings in hot climates or cold climates
- roof and eaves that relate to surroundings
- steep roof can tie a building to the ground
- several small windows are better than one large
- building which is small in scale as possible
- tuck building into landform – placing it to extend lines of hedgerows or landform
- local materials were traditional
- wood above ground and masonry below to root it to earth
- covered with vegetation
- the whole building and all activities need to be involved

#### **Beatley**

- sense of place from respecting context
- important to be connected to nature
- fit within nature – important for our health/spiritual health
- spiritual tie to trees – profound psychological benefits of vegetation
- building should fit in the landscape

### **Caldwell**

- the farm is the ultimate work of art – connecting humans and nature
- blur the distinction between nature and built form
- city in the landscape – an organic whole
- nature is the structure of reality
- decentralize cities – tall buildings placed far apart provides more landscape between
- garden space and parks within walking distance
- one harmonious, extensive building with courts, gardens and terraces

### **Eckbo**

- important to become sensitive to forms of nature and landscape which come from meeting of architecture and nature
- importance of trees as scale between man and landscape
- integration with nature
- house reaches out into garden with walls and terraced enclosures
- gardens should flow in and over house
- the countryside is where man and nature meet
- large buildings need adequate open space around them
- secret of unity lies in a unity of spatial sequences, garden flowing into house and house reaching out into garden

### **Rolph**

- perfect harmony – church
- place involves integration of nature and culture
- the earth directs construction of building
- extend roof to the ground
- access to natural world – proximity
- use natural materials
- places have a historical component
- geography is important for meaning and human existence
- location is essential as it relates to other things

### **Thiis-Evensen**

- symbolism of the church
- Fallingwater shows natural cliffs becoming part of house construction
- stairs as intermediary between in and out
- round columns as intermediaries
- building married to the ground – rooted
- bay window pushes out into landscape
- horizontal form is human – attached floor is one with the ground
- horizontal form of roofs and floors
- roof form of Notre Dame emulates surrounding landscape – shed roof like hills
- gable of roof opens connection between inside and outside
- door is important for threshold between inside and outside
- glass wall merges inside and outside

### **Arnheim**

- buildings should conform to nature
- concave walls open the building toward urban space
- openness makes surroundings accessible – building openings are continuations of outer space

- architecture is extension of nature
- buildings should grow out of landscape

#### **Cullen**

- importance of the tree
- indoor landscape – outdoor room
- bringing together trees and buildings
- the floor is important to unify the town
- contours are important to recognize and work with

#### **Rasmussen**

- building space not to be separated from nature or garden
- walls don't enclose rooms, only form light forms and define edges
- flattering openings towards nature – Japanese
- roof of Notre Dame is continuation of surrounding landscape

#### **Birksted**

- use trees to mediate between humans and buildings
- gradual axis between architecture and landscape
- interpenetration of building and landscape
- glass doors and walls – visual connection
- crumbly edge of wall sinks into garden – rough to smooth
- interpenetration
- steps from inside to outside
- landform flowed into building form – transition between foyer, external terrace and park

#### **Venturi**

- flowing space of modernism
- configuration of intermediary places clearly defined
- the wall becomes an architectural event
- the door is necessity for continuity between building and surroundings – simultaneously inside and outside

#### **Kassler**

- respect for nature and man
- the courtyard – recreated landscape
- urban open space is continuation of earth's surface – all landscape
- Burle Marx tries to fit garden into natural landscape – requires metamorphosis
- in pre-industrial towns buildings grew out of the ground
- the building in the meadow adds something

#### **Scott**

- be responsive to climate
- transitional space around building – layers
- terraces
- landscape atriums are part of building
- degrees of enclosure
- landscaped roofs
- smaller buildings – greater access to natural environment
- locally sourced materials

**Bachelard**

- the next – natural homes built by animals – snail shell
- 3 story house – cellar – earth deep – rooted to the earth
- hollowed out rock

**Jackson**

- link house with garden – the women would do this through activities
- trailer is not acceptable form of dwelling because it is not grounded
- Indian pueblo use local materials – connected with soil

**Hough**

- don't ignore climate – leads to a loss of sense of place
- connectedness
- vegetation cools building and feeling
- proximity to country – important to be near food source

**Kelbaugh and Calthorpe**

- variety of 1 to 3 story buildings
- use of courtyards
- use of plants to bring landscape into urban area
- proximity to nature may also help to socially integrate

**Jacobs**

- variable building size and shape
- incremental growth
- concentration of cities – increased density
- vertical greenery in San Francisco
- low buildings of decentrists

**Ecolonia**

- organic architecture – emphasize the common bond of form between man and nature
- natural growth – piecemeal
- gentle separation between dwellings and open space using gardens
- small scale design better opportunity for connectivity
- natural building materials

**Heidegger**

- man in the world – the fourfold
- the building makes things emerge as what they are

**Connery**

- water from roof irrigates garden – using system to connect
- green roofs
- buildings in Anasazi were sited within cliff faces

**Lynch**

- the topography will reinforce strength of urban elements
- the country can reach back into the city
- the doorway is important transition space
- importance of proximity to natural environment for signals of natural time

**Perry**

- Gaudi and Taliesin West – organic movement
- underground structures in Tunisia
- use of local materials connects to surroundings

**Surrey Charette**

- variety of housing types
- unite cultural landscapes with natural landscape
- incremental growth

**Vale**

- Thoreau's view of the hut as human life being part of nature
- work with climate
- rock becomes part of house – underground homes
- dig into the ground to build

**Rose**

- minimal disturbance – respect for existing site characteristics
- fusion of shelter with landscape – space sculpture with shelter instead of houses plus gardens
- wide roof

**Spirn**

- nature as continuum – wilderness to city
- relationship to climate

**Roszak**

- groundedness to nature – deep contact with earth
- use native plants and unpaved ground for connectedness

**Miller**

- buildings adapted to local climate and site
- use local materials – renewable - straw bale
- walls should breathe

**Tuan**

- house as symbolic of place
- we love to sit on the ground – love for soil
- trees are used to create place

**Corbusier**

- axis with nature – humans as unit of conduct
- skyscraper in garden

**Condon**

- cloister – arcade as transition space between inside and outside
- bosque, allee back yard, front yard, square, stair, terrace

**Sennett**

- flow of movement in and around building – due to technologies
- use of glass to connect

**Bennett**

- co-existence of opposites
- the city in vegetation

**Groesbeck and Striefel**

- use local plants to blend natural and built environment

**Lyle**

- slow change from house to landscape with plants

**Kaplans**

- there is a balance between building and landscape to be found

**Oliver**

- buildings used to be built of local materials – sensual frugality

**McCarthy and Battle**

- adaptation to climate

**Easton**

- Indian architecture is harmonious with land – smooth transition between structure and land

**Forman**

- wholeness in development – not fragmented

**Moquin**

- use mud brick – feeling of living with local land

**Zeihner**

- use of local materials

**Decker**

- focus of architecture is the relationship it enters into with the site

**Bruning**

- walls up to 2' thick

**McHarg**

- man-nature harmony

**Carr**

- deeper meaning from emphasizing connection between place and context

**Krier**

- layer space between inside and outside – Greek Agora

**Lang**

- glass doors – being two places at once

**Steiner**

- metamorphosis



**Gehl**

- soft edge between private and public

**Rossi**

- locus – importance of place

**Dovey**

- authenticity and connectedness

**Wines**

- contextual data is important for integration