Suburban Office Space: an exploration of continuity and difference

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Fig. 0. Final model, plan view without first roof.

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Abstract
Anonymous boxes whose primary architectural features are stacked floor plates and horizontal bands of reflective glass predominate the suburban office landscape. These objects, scattered across fields and along freeways, are outdated images of the industrial age when capital was the most important business resource. As architecture, they represent the values of this past age: their homogenous and hermetic character depicts an efficient, regimented workplace where the office is isolated from the community and work is separated from the rest of life.

In today's information society and global economy, people have replaced capital as the key business resource, and thus the values of the workplace are shifting. Efficiency is being replaced by effectiveness - doing the right things with the right people in the right way - and separation is being countered by corporate participation in the community and by company support of their employees' lives both within and beyond the workplace.

The thesis is that suburban office space ought to reflect these new values and proposes the exploration of two relationships: continuity and difference, as the means to this end. Continuity is chosen for it's possibilities in defining relationships of connection and difference is chosen as a way of promoting the varied activities of the new workplace.

Thesis Supervisor: William Porter
Title: Professor of Architecture
Dedication

To my grandmothers:
Grandma Ruby Taylor, for the sense of design, fashion, and construction that inspires the creative act
Grandma Elizabeth Reymer, for investing in the future
Grandma Jennie Culver, for always making my dreams possible
Grandma Margie Reymer-Bent, for the example of energy, passion, and risk
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Introduction

The thesis develops out of my dissatisfaction with the common suburban office building. A simple critique of these buildings concludes that they lack any contextual relationships and isolate their occupants from the community. Their envelopes are barriers, both from the perspective of the occupant and from that of a person outside of the building. Their spatial structure offers no clues as to what a workplace is or how it functions. Beyond dissatisfaction with what these buildings offer their local environment is their lack of response to the cultural issues of the workplace in the information age.

The project begins with an examination of workplace issues related to the people involved with office buildings and their level of concern with the building. A set of precedents is then studied to develop an understanding of how certain relationships expressed by the physical form of an office building express these issues. This investigative work leads to the formulation of the design problem and the initial solution ideas. The design process further explores relationships having meaning for the workplace. The final design is a particular implementation of two specific, yet generic, relationships: continuity and difference, into physical form in order to create a better workplace.

"The American suburban office building is probably the least satisfactory of all the basic building types we have in this country today."

Robert Campbell
in Architecture, 1988

"We are living in one of those rare times in history when the two crucial elements for social change are present - new values and economic necessity."

John Naisbett
in Re-Inventing the Corporation, 1985
Framing the Thesis

Workplace Issues

The workplace of the information age operates within an entirely different framework from that of the prior industrial age. As the office building should be a product of its age, some characteristics of today's workplace culture have been chosen to provide focus for the thesis.

1. The shift of a corporation's strategic resource from capital to people implying a change from minimizing costs to utilizing information, accruing knowledge, and promoting creativity.

2. Increasing competition for professional employees generating the need to offer employees a better environment.

3. The changing of organizational structures from a pyramidal hierarchy to a diamond - a structure with a small executive leadership, a large group of professional workers, and a small support staff.

4. New ways that organizations function.
   Replacement of linear processes performed by isolated employees with concurrent processes performed by cross-functional teams.
   Increasing emphasis on intuition and vision instead of control and the status quo.

5. A changing workforce: younger, better educated, increasingly female, more mobile, flexible, and environmentally and health conscious.

6. Changing societal attitudes toward work.
   Integration of work and life; changing jobs, companies, and careers; seeking more
satisfaction from work. The idea of working for one company for a period of forty or so years until complete retirement from the workforce is obsolete for most of us. Even staying in one career for a lifetime is becoming much less common. In the information age, everyone is an entrepreneur. Jobs will come and go, companies and individuals will periodically reinvent themselves to stay viable.

Levels of Concern
From a critical look at current office buildings and a review of the new workplace values of the information age it becomes evident that the successful office building must address the concerns of all persons involved in the building and recognize the experiential levels at which these concerns lie (figure 2).

For the employee, the workplace is part of her compensation package, a productivity tool, a symbol of the larger organization to which she belongs, a social place, the "home" office, a place that imparts a sense of importance and commitment on the part of the corporation to her work.

For the community resident, the office building is part of the fabric and character of the community. It makes a statement about the culture of the community: the local attitudes about work and its connections to private and public life.

For the executive, the workplace is part of the compensation package offered to employees and part of the set of work tools provided to them. It is the environment that becomes a stage for the life of the business. It demonstrates the corporation's
relationship to the community and serves as a billboard presenting the values of the corporation.

For the developer, the office building is a real estate investment, for the purpose of this thesis it is considered a long term investment.

**Continuity and Difference**

Rather than an anonymous object isolated from its site and larger context the office building could express it's function and offer relationships to its site and context. These relationships could take many forms. It is the position of this thesis that the relationships of continuity and difference are particularly appropriate for the suburban office building.

Continuity is creating connections - addressing the problem of isolation. It is relevant both for interior and exterior space. Continuity of exterior space should meld the complex into the community and become a key feature in the making of an office fabric. Thus a region of office buildings would become a neighborhood of buildings and open spaces woven together rather than individually placed autonomous objects. Continuity inside the building promotes the sense of the whole. From the user's point of view, it connects her to all the other people working in the building thus promoting collaboration. Continuity should also exist between inside and outside space. This is important for any good building, particularly in the Pacific Northwest where the outdoor environment is very much part of the culture of the region. For an office building, this relationship can make a strong statement about the type of workplace it is.

Difference is increasing our understanding of the
environment by responding to its particularities. Difference is a product and promoter of creativity and individuality. Thus, it seems an effective relationship for promoting the new workplace. Certainly, a change of emphasis from capital to people implies a change from homogeneity (money is money) to uniqueness (people are individuals).

The combination of continuity and difference should serve the workplace well. The two relationships strike an appropriate balance that also must be found in the workplace: a balance between the corporation and the individual, between business interests and community interests, between an efficient building and an effective building.

**Fig. 4 Proposed office condition of continuity**
Precedent Analysis

A set of precedents is studied at four levels to develop an understanding of the relationships of the building to its environment and of the formal strategy used to establish this relationship.

Relationship to Context: In the physical realm, this is the urban presence of the building. Temporally, it is the image of the building that could be assumed by the corporations occupying it.

Relationship to Site: Use of open space to connect to the fabric of the community, make public/private exchanges. Idea of landscape - is it a visual amenity? does it offer uses? Is it part of the building part?

Relationship of Building Parts: How does the user experience the building?

Details of Building: How are the ideas of the building carried out in its actually making? For an office building, these details are most likely to be found in the elevations.
Relationship to Context

- modern village within a traditional village
- workplace as information processing plant

Relationship to Site

- site relationships of street, grade and landscape are used to reinforce the graphic layout of the complex
- outdoor space that is not part of the diagram becomes left over space
- parking becomes part of diagram, feeds main promenade

INIST, Nancy, France

Factory and Offices, Alzenau, West Germany

• object in landscape
• workplace as functioning, independent, community
• unique, corporate identity

• site is constructed to support / reinforce varying functions of the building
• streets oriented to the production bays
• courtyards provide landscape and light for production workers
• lake provides view amenity for office workers
• parking feeds circulation spine
Relationship of Building Parts

- separated, autonomous building units are explicitly connected by passageways
- no spatial or visual relationships or connections between building units
- relationships of function and hierarchy are established by axes and location in plan and section

Details of Building

- an overall aesthetic of functional efficiency is established within which each building is uniquely detailed to express its role in data processing

- building units are identified by a unique shape according to function
- production spaces and office spaces are registered off a circulation spine
- circulation spine provides physical and visual connections between office, production space, and landscape
- courtyard spaces link production bays, atria link office floors

- details are scaled to each building unit and further differentiate it formally and functionally

- perspective of office bays

- detail of library louvers
Relationship to Context

- object in a grid of objects
- workplace as corporate identity

Relationship to Site

- building is removed from its site by two stories of parking
- no spatial relationships to site, small entries at street level

Salick Health Care
Los Angeles

IBM Summit Green
Greensboro
North Carolina

• massing to create a volumetric presence and rhythm along the highway
• parking feeds directly to entries

• object on highway
• workplace as equivalent office space
Relationship of Building Parts

- the building is a hierarchal assembly of volumes: base, back office, front office and boardroom
- volumes are constructed from varying facade treatments

Details of Building

- regular rhythm of facade accentuates irregular structural system
- perspective of board room

- volumetric organization and expression according to function - circulation, office, warehouse

- detailing reinforces the identity of the horizontal and the vertical
- brise-soleil occurs on the south side facing the freeway
- north side is a flush curtain wall
- axon at right shows the dominance of the horizontal brise-soleil
Relationship to Context

- object in a grid of objects
- workplace as corporate identity

Relationship to Site

- open plaza space is created at the ground level and public access is continuous through the building
- parking feeds public promenade through building

Reidel Medical Building
Tijuana
Mexico

Larkin Office Building
Buffalo
New York

- object in irregular field of objects
- workplace as corporate monument

- building is a monumental presence on the street, a smaller annex creates space for entry
- open space is isolated in the interior of the building
**Relationship of Building Parts**

- Public functions are organized at ground level, private above.
- Private circulation is perpendicular to public.
- Parts are layered in response to sun orientation.

**Details of Building**

- Axon of public entry.
- Use of solid walls and glazed walls as a response to sun position.
- Stacked floor plates are connected visually with a central light court; they are physically connected by remote stair towers at the corners.
- Section showing connection of entry annex to main building.
- Perspective of work space.
Project Description

The project is a for-lease, multiple tenant office complex.

Program
The program is defined in zones, from the most distributed and private zone of the work group, less than 25 people, to the most centralized and public zone, that where the office complex intersects with the community. The intention is to use these zones to create differentiation within an office complex of homogenous use and to define levels of identity.

- work group
  - more private
    - enclosed offices
    - open office space
    - common work space
    - reception
  - more public
    - meeting/team workrooms
    - restrooms
    - outdoor space
    - social space - lunch, coffee
    - entry
    - parking
- group of work groups
- office complex
- office complex plus community
  - retail - food, cleaners, newstand, coffee
  - outdoor space
  - paths
  - parking
Site

The buildings will be located on a current office site in Bellevue, Washington as a demonstration of what could be instead of what is. Bellevue is a suburb of Seattle and a city itself of about 80,000 people. It is separated from Seattle by Lake Washington and connected to it by two freeways crossing floating bridges. Bellevue has a young central business district identified by a skyline of rather bland glass towers, several office parks hidden in stands of tall evergreens, and a myriad of office buildings scattered along its freeway edges. The city has developed via what might be considered the Los Angeles model - with a dominant priority given to automobile transit. This model, combined with rapid population growth, has led to a city dominated by streets and parking that still has traffic jams. Currently, the traffic-efficient model is being reconsidered and Bellevue is taking a more holistic approach to what kind of city it wants to be.

Bellevue is chosen as a setting for its regional character and global outlook.
The chosen site has many features which can be exploited to enrich the office environment. To the north is a wooded greenbelt of large evergreens which creates a significant natural presence. Beyond these trees is Bellevue Community College, offering an opportunity to relate the workplace to an educational facility. To the south is Interstate 90 and beyond it a residential neighborhood. A typical office park shares the eastern edge of the site and a public park & ride commuter lot is to the west. Also on the western edge is a lightly used overpass connecting the community college and park & ride with the residential neighborhood to the south.
Concept and Form Development

Following the initial investigation of the workplace and particular precedent studies comes the search for concept and form. These are developed in tandem, tested against each other and against the objectives for the design solution. They are also tested against the site which brings the design problem from the generic to the particular.

Starting from the generic, I looked for a diagram and metaphor which would encompass the ideas of continuity and difference. The proximity of the site to the freeway led me to think about freeway intersections, linear space, overlapping space, spiraling space, etc.

The design development begins with diagrammatic models and proceeds through more detailed models and sketches. The models and sketches vary from the conceptual and diagrammatic to the intuitive and free form.

Fig. 10 Design process models
Initial Sketch Models

Two diagrammatic sketch models were done based on the form of a freeway intersection. They both depict the interplay of curved forms with rectilinear forms and the overlapping of elements.

Diagram 1 demonstrates the idea of alternating built space and open space of the same dimension and the use of a curved form as a connecting element.

Diagram 2 demonstrates using curved forms to define outdoor space and the idea of primary, shared spaces and secondary, private office spaces.

The plexi-glass model explores the linear form, ideas of layering as a buffer zone against the freeway, and using organic forms to differentiate uses within the

Fig. 11 Concept idea diagrams

Fig. 12 Plexi sketch model
Concept Models

Four concept models were made exploring initial ideas of form relative to the site.

The following ideas are explored at this stage:

- Use of a narrow dimension, 60 feet, to accommodate natural light and ventilation.
- Defining a face along the freeway.
- Continuity of building form and circulation, particularly circulation from the parking areas.
- Engaging and adding to community infrastructure.
- Defining the space of the site, a sense that the building utilized the capacity of the site and creates edges and boundaries without creating closed borders.
- Presenting a distributed, non-hierarchical image of places of varying intensity rather than importance.
- Exploiting opportunities for difference relative to the site.
Linear Scheme

This scheme was to test an extreme idea of utilizing the narrow dimension. It is informative as a space-making element relative to the freeway and illuminates the possibilities and difficulties of the linear building.

Layered Scheme

This scheme breaks the single linear building into a series of layers which get smaller as they move from the freeway into the woods. The longest building adjacent to the freeway makes the freeway presence. It engages the overpass which conceptually becomes a connecting element. The idea of the connecting element repeats as a pedestrian walkway. The peeling back of the buildings in a diagonal allows each building a direct relationship to the woods and allows a soft edge at the western boundary in opposition to the hard, street oriented edge on the east side.

The open space between the building, while continuous, is undefined and appears as accidental. Each building is of equivalent intensity throughout its length.
Repeating Scheme

This scheme breaks the linear scheme into elements that repeat across the site, building elements parallel to the freeway, circulation elements perpendicular to it.

Each building has unique relationships to the freeway, the woods, and the other buildings. The open space is continuous but varies in terms of view, dimension, and amount of enclosure. Varying intensities occur as buildings are either closer together or further apart.

The relationship of the complex to the site is uncertain, it is the same for the east and west edges and the freeway and nature edges. It becomes unclear where the form "begins" and "ends".

Spiral Scheme

This scheme takes the linear form and winds it around the site in a spiral.

The spiral engages all the cardinal directions of the site, making different solar and site relationships. It creates places of varying intensity. Open spaces vary in character but tend to be discrete. One continuous building. Interesting interplay of efficient pedestrian connector with interior building circulation.

The spiral becomes such a strong form that it could become a prototypical solution. The scheme seems to require more exploration as to how a spiral would become site specific. The building is more continuous than the open space.
Tectonic Models

Two sketch models were made to explore tectonic relationships.

One of the primary ideas was the relationship of a softer, organic form to a sleek, rectilinear form - actualizing the differences of nature and the freeway. The organic form appears in the roof, bringing the landscape up to meet the sky. The forms and materials of the freeway occur in the building structure and at the ground level, occasionally projecting up to meet the roof.

The second model furthers the exploration of continuity and difference in the use of materials. Sheet metal, metal screen, and concrete are used to recall technology, the freeway, and speed. Wood and fabric are used to punctuate the relationship with nature.

Diagonal elements occur across the linear forms, relating them together and a strategy for dealing with the east ends of the buildings appears. These ends shift toward the freeway and begin to peel away in section as their movement along the freeway dissipates.

Fig. 15 Tectonic models
Building Form and Site Massing

The study model shows the three linear building forms responding to the diagonal force.

A tower element is experimented with as part of the 3rd building in effort to create a connection to a more global realm by capturing views of Seattle. This approach is too severe and out of character with the low-rise nature of the scheme. Perhaps this sky-level view connection can be captured in the vaulted spaces under the curved roofs.

The curved roofs change from the front building to the back building to express the increasing shift in the building form. While the curved roof of the first building is elegant, simple, and structurally logical, that of the second and third building appears clunky and capricious.

The east ends of the buildings shift and spiral with the intention of creating indoor spaces of more intensity and outdoor spaces of higher definition. While these are laudable objectives, the resulting forms are out of place in the scheme.

Fig. 16 Model of office complex, plan view

Fig. 17 Atrium sketch showing shift in floor plates
Dealing with the parking is a key issue. The primary objective is that it become a function of the office complex and express itself as such. As part of the continuity, it should be a node of the circulation system, an entry and exit point rather than an undefined zone. Consideration of the parking was a key point in the decision to go with the layered scheme. As the layered scheme has north/south sides relating to freeway/nature, it also has east/west ends relating to the office park/park & ride. Expanding the park & ride vertically into garages for the office buildings could mesh the complex with the park & ride, physically connecting the workplace with its context and symbolically connecting the office with the community.

Differentiating the space in section serves to give meaning to the non-office elements of the program. Finding special places for the daycare, the gym, and the cafeteria demonstrates the commitment of the corporation to these facilities and the values they represent. Two options are obvious: the top floor or the ground floor. Either would be viable, I have chosen the top floor. For the daycare, this affords the opportunity for a rooftop play area - out of site of the office workers and safely removed from traffic and strangers. For the cafeteria/restaurant, this provides everyone with a view of the freeway and Seattle.
The North side of the buildings relates to its solar condition and the open space beyond. Instead of the more monolithic mechanical wall systems of the south sides, the enclosure on the north consists of infill systems and individual, operable windows.

Fire stairs become sculptural elements in the open space between the buildings and also provide outdoor eating areas.
Design of Atrium

The atrium becomes the main point of entry for each building and the connection to the other buildings. The three elements together comprise a diagonal link across the complex.

A shift of the building form occurs at the atrium, both in plan and section. The occurrence of an atrium at this point allows the experience of connection between the two sections of the building. The floor plates peel back at the atrium, allowing the space under the vaulted roof to grow in dimension approaching the atrium (figure 20).

Fig. 20.5 Office complex, plan view

Fig. 20 Atrium sketch
Two solid, vertical "columns", containing meeting rooms set up a diagonal. The addition of the curving ramp creates a dynamic, spiraling, space. Extensions of the floor plates of each building create open places within the atrium, in contrast to the closed meeting rooms.
Fig. 22 Model, view from freeway
Fig. 23 Model, plan view

Fig. 24 Model, view from freeway
Fig. 25 Ground plan
Fig. 26 Model, plan view

Fig. 27 Model, view from freeway
Fig. 28 Plans, building along freeway
Fig. 29 Model, view from freeway

Fig. 30 South elevation, view from freeway
Fig. 31 Model, north elevation
Fig. 32 Site section

Fig. 33 Model, view from west

Fig. 34 Model, view from east
Fig. 35 Model, view from northwest
Conclusion

In the search for a general solution to the problem of the suburban office building, the design strategy of exploiting the relationships of continuity and difference is a most satisfactory discovery. Continuity and difference can address the general issues of the workplace both culturally and formally yet they have the potential to be manipulated to create specific solutions per site and client.

It is interesting to note that on a cursory level the form of the office building remains the basic rectangle. It is the new proportions that give it power and meaning in the freeway landscape. Also significant is the observation that a minimum of difference is effective against a backdrop of continuity. These points are especially significant when considering the cost constraints typical of the speculative suburban office building. They hold the promise that a rich environment could be created within a reasonable budget.
Illustration Credits

all images by the author unless otherwise noted

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