Extensions of Systems
Methods for Structure and Form in Silverton, Colorado

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ABSTRACT

An understanding of spatial structural systems in an environment is seen as a valuable method for observation and projection in design. This thesis makes use of explicit systems of form and method by which future development and expansion would provide identity and continuity for the site. The essential key to "contextual" architecture is an understanding of certain "rules and principles" that structure the particular. Systems of form and method are analyzed and directly used or transformed into projections that are seen as providing a continuity with the spatial characteristics or "spirit of place."

The thesis examines a method for further growth in the town of Silverton, Colorado, a town with an interesting juxtaposition of built and natural form. The structure of this town seems to typify many characteristics and patterns of American cities and towns developed concurrently during the 19th century. Relatively few initial decisions were made which set up the conceptual framework for growth, yet a wide variety of interpretations were made with "a spirit of innovation and boundless optimism."

A conviction of this thesis is that architecture should develop from the understanding of forms that recognize methods, intentions and qualities found within their own "context." Existing spatial systems, explicit or implied, are seen as valuable "starts" upon which to extend, build and transform.
The thesis begins with the observation of explicit systems of form within Silverton and makes reference to elements of systems elsewhere which are seen as complementary to the project. Methods used in the development or structuring of systems are given as examples, along with the vocabulary as they pertain to a design project in Silverton at the level of the tissue and building, to examine the territory between access systems and public territories of buildings. The third section gives examples of a repetitive dimensioning system used by Frank Lloyd Wright in his domestic designs.

Thesis Supervisor: N. John Habraken
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Introduction

I became interested in the understanding of an architectural context when I was asked along with my associate to design a commercial building within the town of Silverton, Colorado two years ago. This was also my first real introduction to a grid-iron town of the west and mid-western states, after being brought up in a small New England coastal town.

Silverton offers the strange juxtaposition of a very urbane controlled form situated in some of the last, most beautiful wilderness area of this country. Further along in my education I was introduced by John Habraken to the "supports theory" of design and for his course I wrote a paper on the support concept initiated by urban planners of 19th century America in the development and deployment of the grid-iron plan, one of which Silverton is.

The overriding question of "appropriate contextual response" has always been in the back of my mind since making a design for the town of Silverton, and the thesis was an opportunity to raise some formal issues about a place, the types of public territories related to buildings in these towns, and a kind of architecture that displayed an enthusiasm and vigor I feel is some of the best this country has produced. Despite its 100 years settlement, and changes undergone in the initial structure of Silverton, these buildings and their relationship with the street, the only public gathering space, still preserves a quality of cohesion yet with the appropriate amount of diversion I personally like.

The resulting thesis takes a similar attitude to its title and makes extensions of projects and people who structured my education I care to visit with again. In the same way I seek structure and identity in the forms I analyze, I also seek to find common grounds for dialogue among my mentors so that I may find identity on which to base or stand by my work. The material
which follows seeks to find a common theme among the elements and methods analyzed which address the issue of appropriateness to context by first revealing its own identity.

Discussion of the formal context was concentrated on the structuring of spatial or patterns of access and building systems of the town. This is not to say new building should make literal use of the forms, but there should be a knowledge of patterns and systems which exist, whether or not they are maintained in new design decisions or if they are changed or transformed to something seen more appropriate for use.

Silverton, like many of her American contemporaries seems to offer similar patterns of buildings with strict spatial intentions which seem to offer less than European counterparts in terms of connection or defined public territory with the street. Very few elements of form actually connect the buildings to their sites. A typical condition of American architecture seems to be isolated—self-contained forms with sometimes little regard for the context in which they exist. The grid form with the ability for easy and rapid expansion along with architecture's contribution to the classical period of American landscape did little to offer this particular problem of connection with the street.
Calculation as to distance (internal) is a natural ability in Americans—travel time by hours, walking by blocks. Place descriptive ability is much less marked, and sense of location in time—history—almost absent. The very widespread use of the grid system supports this sensibility and has the effect of flattening space, even if the real topography is somewhat hilly...that is why one thinks of New York as flat when one has experienced it as distinctly domed. American space is flat.

Hierarchy of importance is established by internal, indicated horizontally by the extent of territory covered, or, in the city, by space left open, and classicized by trees. Horizontal space abounds.

Relatively little new growth has occurred in Silverton during the last few decades, virtually none within the commercial area of town, so it was difficult to make comparison to any new growth. Several towns with similar patterns of development and change, in particular the town of Telluride, Colorado, seemed to offer pastiches of existing forms in their new contributions to new building.

It seemed to me a continuation of the "false-front" typology of building disrespects problems new forms must have to change of use patterns and
advances in building technology. These new buildings also seem to misunderstand the spatial configuration and patterns of use the original buildings had behind their facades. New development and building in towns like Telluride seem to lack the awareness of the conceptual development that dictated their form according to use needs, and a positive relation to the street network which was a major force behind the development of these town "structures."

Silverton, like its neighbor, Telluride, a better known resort town, is undergoing transformations from an economy primarily supported by mining to a recreational increase in winter and summer tourism. Preservation of the initial and still active economy as a mining town is an important artifact to be recognized in any new development that will occur. The transformation or struggle as the town changes from principle occupation of mining to resort town must not lose the original intentions that these buildings have with the street; the recognition of tradition and qualities that exist in the initial gestures of development as well as the introduction of contemporary methods within these contexts.
Existing Spatial Structuring Systems of the Site

Welcome to Silverton, Colorado!
Situated at an elevation of 9,300 ft. above sea level, Silverton lies on the western slope of the Continental Divide in the San Juan Mountain range of western Colorado. The town is located in a valley along the Las Animas River surrounded on three sides by mountain peaks of over 13,000 feet. Since its development over 100 years ago as a principal mining town, Silverton is experiencing a change in growth from its existing mining economy to becoming a year round recreational and resort town.

The major attraction as a resort town is due to its siting in some of the last wilderness area of the country. Another popular attraction of the area is the Silverton and Durango Narrow Gauge Train, one of the last narrow gauge steam driven trains in the country that at its seasonal peak daily carries 400 people on runs up the Animas River Valley from Durango, 50 miles to the south.

The town of Silverton offers a striking coexistence of urban form
within an alpine setting. Silverton along with similar remote settlements nearby from frontier times are fairly typical examples of town planning carried out by mining and railroad companies of the 19th century. Each town is a similar grid-iron pattern with wide streets, rectangular blocks with deep narrow lots. Most town forms and growth patterns align themselves north-south with the natural valleys in which they exist, reinforced by the movement systems of railroads and roads.

Silverton, unlike some of its contemporaries, has undergone very little change or additional growth since its initial development. This may be partly due to its remote location and its consistency as a town organized to serve the mines. Therefore, much of the original building stock is untouched. Unlike towns such as Denver which have been added to and transformed extensively, Silverton remains in her original condition.

The lack of growth may also be due to the town's location in a climate with high amounts of snowfall with two major passes leading to the town which often leave Silverton cut off for several days at a time during harsh winter months.

Silverton experiences extreme fluctuation of temperature during the year. Daytime summer temperatures may be high (75°F) with nighttime levels...
...As night darkens, the street scene changes from the work and traffic of the day and assumes quite a festive tone. Sweetly thrilling peals of music are borne upon the night air, and the brilliantly lighted, palacial saloons are thronged by the sportive element, with the pleasure seeking and curious, all classes mingling happily. The sharper with his trap-game laid for the sucker, just fresh from the hills with too much dust or bullion certificates, or the greeny from the east with more of the Pop's bond coupons than he has of Ma's wit; either may be enticed by the glowing allurement.

The Durango Southwest, 1883.

considerably lower. In July and August mean maximum temperatures are 78°F and mean low at 42°F. Winter temperatures range from 38°F to 8°F as averages. Snowfall can start as early as October and snow pack may average 4' with drifting at 6' plus.

Because of its location in a valley surrounded by three mountain ranges, winter sun only lasts a few hours on both sides of the street each. There are virtually no southern exposures in the commercial area of town due to the streets' orientation at a north-south direction, and the adjacency of buildings packed on the blocks. Direct overhead sun in the winter months requires shading, especially where large expanses of glass are used on commercial fronts. Evidence of canopies or awnings at building edges can be seen in historical photos of these towns, and many of the larger buildings still make use of them today.

The distinctive built features of the town include the unusually wide streets with consistent building types that include elaborate cast-iron fronts developed from pattern books of the time. Commercial frontage is developed on small lots of 25' multiples. The larger 100' lots are both hotels in the town.

There is no distinction in block and street form or size of the residential and commercial areas. For this reason the street system is omnipresent, but because of its size offers the most acceptance to change of the elements.
The railroad always played an important role in the town's development and still does today. The railroad was the only means of survival since most goods, building materials, etc., had to be shipped in from the manufacturing cities of the mid-west and east coast. The importance of the train is shown by the town once considering the train running right through the main (Greene) street. Even today with its popularity as a tourist attraction, the daily ritual of greeting the train as it drives almost into the center of town with visitors is key to Silverton's survival.

With the initiation of Silverton as a National Historical Landmark in the early 60's, tourism began to develop. The town no longer relies upon a single economic base of the mining industry, but has shifted its potential for becoming a major resort area for the Southwest, similar in aspiration to the past developments seen both in Telluride and Aspen. Not only does Silverton need to turn its attention to resort-seekers, but the community has always used its commercial facilities, restaurants and bars as public forums used on a daily basis. Due to its physical isolation, Silverton seems to possess a very good sense of community and sharing not always found in our modern society today.

If any element is seen as necessary for survival, yet at the same time such a dominant ordering piece, it is the street network. In its simple form the street offers little variety. Yet in research and visits to this town the street is the one place that remains the large public gathering space common to all. The street is seen relative to the New England town green, or the European square or plaza. However, in order for the street to be habitable year round, new focus and methods of transforming it as the element of exchange between public and private, or as "threshold" must be examined. Recognition of the importance of the street element must be made so that it will continue to be the major structuring element of interface between public and private realms of the town.
Existing Systems of Form

Silverton and its western counterparts began as cities of continuous storefronts with easy pedestrian access. The buildings with their position facing the street, with a high adaptable interior space, are a building type directly related to the movement system of the town. The introduction of the automobile and building types which do not respect the street edge result in the loss of edge or building-to-street continuity.

Attempts in this thesis were to investigate existing systems or patterns of building-to-street relationship which enforce the contextual or existing spatial type of building which exists in my site of Silverton and its contemporaries. The elements which are identified then transformed or adapted come from examination of the existing stock and of building types observed elsewhere which are recognized for their support of street and collective life.

Strong solar radiation at Silverton's high climate dictates the need for provision of protection at the building edge zone throughout the year. Heavy snows which can pack as high as up to 8' in extreme winters, plus the atmosphere of a discovering resort, suggests some protection for the pedestrian, yet maintaining a strong relationship between the building and collective territory of street, particularly for commercial use such as hotel and restaurant/bars with the surrounding alpine landscape. Reference to building form of resort architecture where nature is engaged, not shut out, are of prime concern to merchants and the economy of Silverton.

Some goals for future growth and change in Silverton include:
- recognition of its prime location in a remote wilderness area as beneficial to economic support for merchants and tourism
The old community of village, its physical forms bodying-out the earlier social and religious code, had been replaced by another ideal—that of the individual self-sufficient homestead whose spatial image is scattered, houses; the sacred place shifted from the church and the meeting house to the home.

The period of Republican simplicity between the founding fathers and the Civil War, when the grid—the lightest of bindings, the Minimum of collective support—located an interchangeable man in the interchangeable landscape of an idealized egalitarian social order.

Penn said that the road was more important than the property—a reversal of traditional values—and certainly in the late-grown cities the amount of space in the public domain was vast. In 1900 Denver was 45% street space.

Framework - Network - Infill System in relation to Silverton.²

Framework: "The Framework is the largest, most permanent element of physical organization; it changes least and is therefore the most neutral part of the system."

As framework elements I have included:
- Natural landscape. Silverton situated in the confluence of three mountain ranges.
- The access-building organization of the existing grid.
- Tourism-Passenger Rail Service of the Durango-Silverton Narrow Gauge Railroad.

Networks: "Networks refer to the lines of movement within the framework. The network is 3-dimensional and includes movement of people, services, and goods. Network components may or
may not correspond with the framework."

- Introduction of new pedestrian movement laterally to the east towards transportation and recreational facilities.
- An attempt to provide for greater use of the territory between streets and buildings.

Infill: "Infill is the smallest part of the tripartite system, most susceptible to change and adaptation; therefore it has the shortest lifespan. Building lots, buildings and uses of buildings are examples of infill."

- A recognition of building growth patterns
- Option for the reversal in use of the streets and buildings or building parcels.

I have defined the elements of infill at both the collective tissue and building levels.
Collective Level

The introduction of the independent infrastructure, a complete self-stable element, would become a large support structure for the individual building forms. The infrastructure in its basic form would have a longer lifespan than any independent infill that may happen in either the building or street zone. It may be seen as the collective element or effort in the design, an effort of mine to provide a form which allows exchange of use to occur across party walls, or building lots, a form which supports and intensifies life in the street.

Conceptually the infrastructure is similar in thought to the grid form at the larger size or the building spatial features which allow for manipulation in mezzanine and facades. It is this higher-level of elements, one which allows for change to occur in its structure over time, that is the concept behind the infrastructure element.
Building Level

Individual buildings within the larger framework of these towns are of a typical size, or increments of the size, in this case a dimension of 25'. This 25' dimension is added to incrementally, forming building sizes of 25', 50', and 100' multiples in the commercial area. Examples of aggregate form include the repetitive use of street-block-street pattern, the continuously built commercial block and the tripartite subsystem of the facades and organization of the plan at entry zone.

Compositional form of a communal or symbolic importance are characteristics found in civic or very public buildings (hotels, etc.). Compositional forms are usually very singular forms, and form discontinuities with the existing aggregate forms of commercial and residential stock. These buildings often times are detached or set back from the existing building pattern, sometimes claiming entire city blocks, as is the case with the San Juan County Courthouse. Colorado Springs, Colorado is an example of a form built as a resort town also on the narrow gauge D&RG line. Developed by General W.J. Palmer, the use of the grid pattern was used in the routine fashion. However, the prominent
buildings such as hotels and health spas occurred at major intersections with 140' wide Pike's Peak Avenue terminating at a large hotel site with the mountain vistas directly behind the hotel. Twin diagonal streets which end at block parks also focus on this prominent hotel.

An objective was to develop a model by which new development builds qualities of exchange and territory between adjoining landscape and access into town through option use and exchange of city form "the grid."

Street Grids as Support

The current trend for "design for diversity" is a force behind the grid's apparent unpopularity. There is a perception that all street grids are alike. Not so. The underlying system to the grid itself allows for a great range of diversity from its basic form.

The street grid was seen by the ancient Greeks as a symbol for rational urban life, not as a symbol for ease in development associated with 19th century American planning techniques. To the ancient Greeks and Romans the grid was "capable of interchangeable blocks which symbolized the emancipation from traditional restraints and the achievement of relative egalitar-
ianism and geometric order." 3

Street grids don't necessarily create monotonous mechanistic form. Frank Lloyd Wright's adherence to a philosophy of an "organic architecture" used a double directional orthographic system of geometric organization which supported an integration of structural, functional and spatial relationships he believed to be coincident with the nature of the program. The composition of form and space was controlled by a generating geometric structure which gave a rational order to Wright's spatial phenomenon. 4

The plan organization of Savannah offers a particular articulation which allows for variety in the patterns of or interpretation of inhabitation. Its ability to change and support positive differences in use while not losing the initial structuring makes it an interesting example of tolerance within a system. Its unique character comes from the assemblage of cellular wards capable of easy addition to the initial modules which creates distinctions within the whole. Each ward can be seen as a separate stable unit which is connected by a larger scale or system of organizing the wards together into a collection of patterns of systems.
Identity

Kevin Lynch writes:

"A workable image requires first the identification of an object, which implies its distinction from other things, its recognition as a separable entity. This is called identity, not in the sense of equality with something else, but with the meaning of individuality or oneness."

This sense of "identity" or structure should manifest itself in all aspects of the physical environment. Such as:

- Identity of a concept
- Identity of a repeated form used at different scales
- Devices or repetitive elements used to structure physical form
- The structure of patterns in the natural environment.
In Silverton there is a certain structure to the town at the level of site and building. The design project seeks to identify these elements and their characteristics or patterns of structure and extend upon them. An element intermediate between the size of the site, or in this case the access network, and the building was developed to provide additional or support territories of exchange and use between the buildings which was not present in the existing patterns, or list of elements.

However, this new form respects the initial spatial structure of the town and is seen as having similar formal and image properties of existing elements of building and street.

In his book, Supports - An Alternative to Mass Housing, John Habraken makes an argument that structural or ordering systems in our environment must have the ability for the inhabitants to make identification with their surroundings. One way to achieve this is to allow a system that is open ended and allows for personal interpretation.

Change

Apart from positive or negative growth of structural systems, this term implies change within primary systems. There can be changes of two kinds, change of function in the initial structure, or changes brought about through the occupants as an expression of their identity. There needs to be a necessity of developing structures and forms which can develop and respond over time. These structural systems, or methods or concepts of organizing, should remain a cohesive unity at all stages of growth.

Time has to do with change within their primary structures. Patterns of growth must be allowed but in order for growth to allow cohesion of the initial structuring system, there must always be a reference back to the initial gestures.

Grid patterns are an excellent example of primary systems upon which to build. The grid allows for the articulation of the building block or parcel into smaller units which are more complement to human scale. The grid plan can keep a city from becoming an amorphous mass, by allowing for a variety and interpretation of the explicit, allowing easily for the integration of urban functions. In addition, change is easily done with-

In Habraken's opinion identification with one's own surroundings is only possible if the occupants have contributed something to these surroundings or have had something done for which they THEMSELVES are responsible.

"It is about personal considerations and decisions, the formulating of one's own desires, and the coming to a judgment about a given work. It concerns the assessing and choosing of innumerable small details, the manifestation of preferences and whims. It concerns the freedom to know better than others, or to do the same as others. It has to do with the care to maintain, or the carelessness about private possessions, with the sudden urge to change as well as the stubborn desire to conserve and keep. It is related to the need to display and to create one's own environment, but also the desire to share that of others, or to follow a fashion. The need to give one's personal stamp is as important as the inclination to be unobtrusive. In short, it has to do with the need for a personal environment where one can do as one likes; indeed, it concerns one of the strongest urges of mankind: the desire for possession.

Now possession is different from property. We may possess something which is not our property, and conversely something may be our property which we do not possess. Property is a legal term, but the idea of possession is deeply rooted in us. In the light of our subject, it is therefore important to realize that possession is inextricably connected with action. To possess something we have to TAKE possession. We have to make it part of ourselves and it is therefore necessary to reach out for it. To possess something we have to take it in our hand, touch
It, put our stamp on it. Something becomes our possession because we make a sign on it, because we give it our name, or defile it, because it shows traces of our existence."

As a realization of these ideas, Habraken suggests the erection of prefabricated housing structures that can be filled in individually, in a similar way to that of the "Fort l'Empereur" project in Algiers. He envisages dwellings that can be assembled in much the same way as standardized kitchens. The housing structures would belong to the community (public) and would be erected for a long duration; the individual infill dwelling units (private) would be built, altered and demolished.

He provides the following commentary on the overall appearance: "There is an architecture of uniformity and one that creates form in variety. In the latter case we are concerned with the principle of 'support structure and infill package'. In such a case it is possible for a facade form to be so powerful that anything can happen within it without the overall impression being chaotic from the outside. One will see it as a lively variety."

Basic Concepts in Urban Planning

Extensions of Existing Urban System

The endless space of a field--multi-directional repetitive unit vs. the finite space of a public space such as a public square together form a twin phenomenon in Van Eyck's sense. In contrast to this is the singular repetitive consistent module which lacks the component of finite space.

Analysis seeks to understand some formal implications of the orthogonal system of organization and apply some of that learning to design at building scale.

The design project is focussed at change in use at the street space. Its success is measured by the intensification of it as the already main gathering place in the town and seeks to incorporate a higher level of pedestrian use in the street; a greater awareness of the relations of:

1) arrival from train into town
2) engagement of a wilderness experience with the urbane atmosphere of the town.

Tissue Levels

The existing pattern of development in the commercial area includes buildings enfronting one another along both sides of the street. The street
is of a consistent dimension, almost omnidirectional in plan. However, particular to the site in Silverton is the location in the containment of a valley, which helps tremendously. The public street or square is missing. The only change in system is the occupation of the street by the train on a daily basis for several hours. The street provides public support for social and cultural relations within the town.

Looking for reinforcement of patterns in the systems of inhabiting the western street shows existing spatial features of:

- boardwalks
- semi-arcades, either simple wooden or elaborate cast-iron
- canopies or awnings used to shade against summer sun.

Ways in which the existing organization could be multiplied in smaller increments rather than evergoing grid were seen as positive methods in the new design. Goals of the design at the level of the tissue were to define systems of place or territory, identity rather than the continuous access system which exists with the grid now.

Physical Spatial Structure of Tissue and Buildings

Figure ground of built with unbuilt always as the networks and never any reversal of the two. This
Wake.
This, in my opinion, is the only medicine against sentimental historicism, modernism and utopianism. Also against narrow rationalism, functionalism and regionalism. A medicine against all the pests combined. --

Each culture constitutes a very special case. That surely is a wonderful thing--wonderful in a different way for each different case!

To go chasing after historical or anthropological data appertaining to different cultures with the object of propelling a preconceived notion of culture is therefore an arbitrary occupation. Toynbee did so industriously.

The issue here is not whether it is possible to adventure intellectually into a cultural world not one's own, not whether it is at all possible ultimately to circumscribe successfully the nature of any special case. I merely want to stress the fact that each case is a special case and can only be understood in its own terms.

It should by now be possible to acknowledge, sine qua non, the intrinsic validity and simultaneous JUSTIFICATION OF ALL CULTURAL PATTERNS, irrespective of time and place.

"Western civilization" habitually identifies itself with civilization as such (with what it stands for) on the postfactual assumption that what is not like it, is a deviation, less "advanced", "primitive" or, at best, exotically interesting—at a safe distance.

But western civilization—what a self-assured jingle—is just one special case in an enormous multitude of special cases, each of which carries its own possibilities and deals with them in a way specifically its own. (1962)

Architects nowadays are pathologically addicted to change, regarding it as something one either hinders, runs after or, at best, keeps up with. This I suggest, is why they tend to sever the past from the future, with the result that the present is rendered emotionally inaccessible—without temporal dimension. I dislike a sentimental anti-type of hierarchy tends to segregate elements of building, access and landscape. Tissue level is defined as smaller than urban structure, but larger than the individual building size. Interventions on this scale respect but transform the specific structuring system of:

- building to street relation
- building to site or unbuilt relationship.

The new infrastructure provided is almost seen as a "facelift" or added layering of an additional explicit system based on collective attitude towards additional territory which seeks to intensify and support public life on the street.

Major collector nodes were developed in the street for a new reference to focus on:

- the east side of town
- the reception of the train
- at the site level, to interlock urban form with natural form and the river valley.

Intentions are to focus the north/south pedestrian commercial area by concentration of public space at these major intersections to better identify place within the on-going street network. The re-routing of any major automotive travel to the next block to allow for public claiming and identity of these three major cross roads. Buildings which exist adjacent to these intersections can help support the recognition of public gathering.
place.
Identity of three territories of exchange between main access and side streets through difference in form, to define three small plazas that one moves around or through with the option to pause or move out from the main street to other neighborhoods or the outer edges of the town.
antiquarian attitude towards the past as much as I dislike a sentimental technocratic one towards the future. Both are founded on a static, clockwork, notion of time (what antiquarians and technocrats have in common). So let's start with the past for a change and discover the UNCHANGING CONDITION OF MAN in the light of change—i.e. in the light of the changing condition he himself brought about. If the lasting validity of man's past environmental experience (the contemporaneity of the past) is acknowledged, the paralysing conflicts between past, present and future; between old notions of space, form and construction and new ones; between hand production and industrial production, will be mitigated. Why do so many believe they must choose categorically, as though it is impossible to be loyal both ways?

I have heard it said that an architect "cannot be a prisoner of tradition in a time of change". (1966)
Aldo van Eyck, Forum, Juli 1970
Project Type

The program chosen for the design was generic to existing patterns of "building" within the commercial district. A program of mixed use for the site's project is representative and provides a continuum with the existing typology-morphology. These building types have provided adaptability in change.

Dimensional Analysis

Support Diagram

Elements and their dimensions for new building were determined by the context, the existing patterns and dimensions of street (access) and building.

The relative position of elements to each other and to adjacent buildings and streets remains constant, yet dimensions get changed, and additional layers of explicit system get added to increase the territory and define new public territory at buildings' exchange with the street.

To support public gathering and to allow for stable territories to exist opposite from movement systems of the street, the collective nature
Another important difference between the Victorian and the modern designer was the ability of the former to completely fuse function and fantasy: the physical and the psychological uses of the object. This, again, needed the intervention of the intuitive mind and to be carried out by a high level of craftsmanship. To the good Victorian designer "decoration" was not a dirty word as it is today. It was not merely the superficial elaboration of a surface. "Decoration" meant something much more active and subtle. Just as the cast iron galleries of New Orleans were physically functional because they allowed access to the open air while still protecting the inhabitants from the fierce suns and heavy rains, and were, at the same time, psychologically functional by creating the feeling of a bower (tying in with the luxuriant plant forms, and separating the elevated gallery from the world of the street), so, too, the Victorians found numerous ways to make "decoration" create an individual mood for a house; or to fashion delights for the eye; or to completely modify the feeling of the building being only a wood or brick box. The Victorians were adept at

Determinants of the Dimensions and Forms

Human scale
Response to climate
Response to "context"

of a three part vertical zone at the facade of commercial space, middle zone, and cornice zone.

Rules in regard to position and dimension dictate the section/elevation rather than implied systems of false fronts which have less respect for internal organization within the buildings.

The Internal Passage and Partially Internal Arcaded Streets of Europe

The use of a system of internal galleries and external arcades are referenced to as a system of pedestrian support for the larger networks of urban organizations. There is an associative similarity between these repetitive elements to the existing spatial structuring system of Silverton.

1. External arcades used as elements to formally force an exchange of use across building and property
lines enforcing a larger collective image at the level of the tissue support.

2. Internal galleries perpendicular to the major access movement system (north-south) to link Greene St. with the train and river valley to the east. The internal gallery has the opportunity to be enclosed during the harsh winter months in Silverton, allowing for very public internal gathering spaces. The galleries also substitute or allow for reversing the existing system of very singular and solid use of the block being totally built (of enclosed building) forming a continuous wall between streets.

3. The use of an infrastructure placed along Greene St. parallel to the major direction of movement which creates a zone of use of potential extension from commercial and retail buildings.

4. The satisfaction of the need for beauty, the creation of a house as an organic thing, lovingly adjusted to all the needs of the beings it shelters, cannot be accomplished by physical functionalism alone; another kind of functionalism must be present.

The Principle of Contrast

Above all, the Victorians understood the principles of contrast, which is very old in the history of architecture, but which is still valid, and which the modern architect seems to have forgotten completely. They understood that in order to make any particular element work in designing it should be contrasted, or opposed, by other elements. The modern architect, in his frantic search for "pure form" (and to cut down construction expenses) threw away decoration, color and texture. He has finally rediscovered texture, and he is slowly rediscovering color: how it can be used to modify form, give lightness or heaviness to walls. But in his obsessive search for "pure form" the architects of our time (with the exception of Antonio Gaudi) have ended primarily and ironically achieving what amounts to total blankness, to massive inexpressiveness. Purity, when there is no complexity nearby to make it work, becomes completely without individuality and completely inhuman. This is because it lacks anything to focus the eye and interest the mind. Opposition and counter-play in forms and visual significance create a dynamic tension in a building or a room which help to give them "life": those factors that the "life" of a building ultimately imply is a field that demands a great deal more thought and investigation than has yet been done.

Since architecture is the one art most deeply involved with human beings; since its roots go far below the conscious level of the human psyche; since it has the potential to influence human beings so that they will become more complete individuals, it follows that all kinds of mental and emotional traits can become involved with, and fostered by, the "house."
Vertical Supports at the Territory of Exchange

The vertical height of infrastructure was determined by existing facades and their needs to get direct access out to the street and keep the existing theme of buildings directly enfronting a street or commercial zone. These zones were similar to those found in Swiss vernacular forms in which zones were of climatic considerations. The upper level of privacies shows almost a complete reversal of materials as well.
also follows that it is of the greatest importance for us to know more about the relations between men and buildings. More comprehension of the intuitive discoveries of the Victorians should definitely help us in this direction.

The wall becomes a habitable wall of varying use dimensions; not only a single dimension any more. Territories shift laterally and overlap to provide a recognition of adjacencies in which form supports the mutual use upon territory at the exchange. The court is used as the main element which helped make the exchange from the ongoing directional system of the street to lateral pedestrian movement internal to the block. Courts or galleries are seen as major organizational elements for collective stable territories whether in their positive or negative version of the units: buildings, blocks, site.

The development of interior galleries were used as thermal zones between the exterior unheated and interior heated spaces. These new pedestrian systems of access through the blocks become major collective parts of the building, allowing for direct access through the site at ground level with public shops, restaurants and support services for private use above and for access at the first level above the ground in a more private way. The double court allows for privacy at the second
story level with interior open space for a second story connection to the public territory at ground level.

Summer scheme: The position of access on the ground with an almost market-like quality allows for extensions of semi-private use from internal mezzanines out into the street with such use seen as restaurant, cafe, or bars. Optional routing of permanent or temporal quality provides shading in summer months, a transformation of contextual awning devices used on commercial buildings of the 19th century.

Winter scheme: Due to amounts of heavy snow in the winter months, sometimes with packing and drifting of the street, the mezzanine system could become a raised pedestrian access system for the buildings along the street.

Several unbuilt parcels in the town have the option of shifting this arcade infrastructure into lateral internal galleries with the ability of becoming enclosed during the winter months. These new galleries would provide transitional zones into new public territories at ground and mezzanine levels. They become the organizing building element for these parcels and have the potential of engaging the space as a positive collective element for the town.
These galleries would link Greene Street, which is the central street of the grid, to outer neighborhoods, services for buildings located in internal block alleys, parking off Greene St., which is a regulation in winter. A major focus upon development of the east end of town towards the river valley for recreation and transportation by train could make these galleries strategic locations for paths into the main commercial district.

The infrastructure is also seen as a gradual transformation of internal building enclosure to the street. Thus the zone of exchange the building now has with the street is increased from an average of 4' to 24'—the average dimension of the
smallest building width of 24'; creating more stability of territory for recognition of existing building stock and easy transition from major access to building entry.

The concept of adding such an access system to the town was to enforce the use of activity in the street, especially in summer months when the climate allows such. The actual form of the infrastructure is meant to also enforce the very frontal, positive relation these 19th century buildings have with the street. Its design is seen as an attempt to integrate the spirit and concepts of the existing building typology discovered in the analysis of Silverton and similar morphologies.
The Design Project

Systems of Methods that Support

The understanding and importance placed on spatial systems is that they can offer fundamental aspects of social order. The function of a system is to provide a "framework" or conceptual structure that is common and understood by all, which can allow for various interpretations by the culture. This common system which is understood allows for interaction between the participants in a structural or methodical way. What systems offer us is a clear conceptual framework, or in architecture, an organizing system which we can extend from and rapidly build upon, which makes for a continuity of culture, tradition and methods. Spatial structural systems in architecture can be a type or a method of building, that allows for a constant which helps to "structure" or unify concepts into a cohesive building or city.

During this country's rapid expansion during the 19th century, structuring systems were used to organize the rapid growth of new cities and building that occurred within short periods of time. The grid system of structuring our cities became a pattern widely accepted. The initial concept of a grid system allows for endless interpretation in physical form of cities and buildings. The grids are both flexible and functional, allowing for various growth patterns to expand while preserving a formal order and unity. At the urban size the grid is seen as a method which recognized individual powers within the larger body of a culture, and allowed for freedom in the manipulation of its structural framework.

In concept the use of such an ordering system is seen as a coherent and valuable method for rapid expansion. The forms these cities and towns took, however, was not always sympathetic towards the site in which it was sometimes found. The relative simplicity in which the grid was used was often time repetitive and monstrous, an everexpanding growth which was exclusive of the landscape that it covered.

Despite its shortcomings, the development of such a structuring system brought with it resources and energy abound.

"It is amazing to see the vast amount of building that the 19th century, under the pressure of industrialization's demographic developments, produced. For those who had access to the resources it was a happy and creative time. Power, a spirit of innovation, and boundless optimism still went hand in hand with a craftsmanship understood.
and appreciated by all and a collective image of what was worth building. In short, we see implicit systems still alive and well. They were geared up by industrial repetition and pattern books to a feverish pitch of growth and production but still held together by a dream shared by all involved."

Transformation of the Tissue

Silverton's traditional framework is its systems of grid, street-building continuous aggregate commercial core. Through its original structure there is an underlying organization which allows for flexibility in its continuous growth pattern. However, these patterns or structural systems are very independent, inclusive from the whole. Formally I tried to change the independence of each system to a dependence or exchange (formally) with the new infrastructure. However, there was a great effort to transform directly the existing patterns, adaptation rather than total change to a foreign system. Therefore an attempt was made to repeat in some way a method or concept, an explicit system which the planners of the 19th century grid towns gave.

The infrastructure is minimal in its form, almost mimics the building form of the facade, but becomes a stable independent system that works...
as an element of exchange between the buildings and the street. It is not a static system, but one which supports the desire for a temporal or seasonal use with the street, and still allows for individual interpretation by the merchants, the same way the explicit spatial systems exist already, with allowance for variations at the building level.

In a similar concept of allowance for adaptation or option, the larger scale use at the tissue level is viewed in a similar method. The street is no longer dominant to the buildings or landscape. By the placement of buildings in the street, the system of total access is reversed, where the pedestrian infrastructure system allows for a mutual sharing at the territory of the street.

The manipulation of a new pedestrian system still acknowledges existing continuities, but in its form tries to recognize a more stable form at intersections or lateral moves off Greene Street, with emphasis of change in movement to the river edge and transportation systems of train, automobile and services for the commercial district of the town.

In the same way building in the street reverses its role as an auto access system, the addition of internal pedestrian access laterally through the blocks reverses the use of an always packed block of building. This new system of access occurs in
the form of internal passages which are very public at ground with commercial or resort uses along them. This internal system has the option of becoming enclosed in winter months, allowing for large public collective use during harsh weather.

The reversal or introduction of new access networks is not a new concept. Haussmann inserted a new system within the existing tissue of Paris. The boulevard network system was a complete stable system at a high level of order within an already existing spatial system.

An attempt in the design was to question the existing spatial system of buildings and their new demands of changing use, lifestyles, a change in attitude of community towards its surrounding landscape, the need for exchange--formally as well as socially--in a sometimes hostile environment. The roles of the access system, the buildings, and landscape were not seen anymore as independent elements, but elements which were seen as dependent upon each other. Therefore I was able to exchange formally the role of each of the three elements in making transformations of existing spatial systems of Silverton. Role and use become interchangeable and solve some of the problems I had with the existing system of exclusiveness among the systems and elements.

A major concern throughout the work was the development of new forms and strategies for growth in Silverton that develop from an understanding of existing and traditional forms and systems so that new design within the town builds upon rather than against and projects a continuum of the place. (structure and identity)
Plates
PLATES

i. Existing Site Plan, Silverton, Colorado.
v. Plan. Infrastructure Study.
vi. Model. Infrastructure Details and Building Support.
vii. Model. Infrastructure Details and Building Support.
xiii. Section. Infrastructure across Greene Street.
xiv. Longitudinal Section through Building Gallery.
xvi. Section. Internal Court.
xvii. Elevation Studies.
xviii. Elevation Studies.
xix. Elevation Studies.
xx. Elevation Studies.
The organization of the existing structure in Silverton is hierarchical, a separation rather than integration of buildings, access, and landscape. The grid in its simplistic form as it exists rigidly separates the town itself from the outer landscape. Its form is very akin to Medieval defensive towns. The present system of roads was specifically developed for its support of this once thriving mining town. The 100' width of the main street (Greene St.) was initially set up to accommodate the train which would travel further on to the mines.

With the change in economics of the town, its attraction as a resort would indicate the need for mutual relations among the three forms of access, building and landscape. The premise of this methodology of form is that new built interventions and manipulation of the existing structure are clear intensifications of natural inhabitable landscapes. Form references used display physical attributes of the natural or built landscape.

Elements of a Language

Continuity vs. Separation
Reciprocity-exchange vs. adjacency
Field-distribution
Transformation [each self-stable form develops characteristics of the other]
Access (movement) [continuous and discontinuous]

"Built forms are seen more as accretions of self-centered stable units."8

Continuity vs. Separation

The existing structure in Silverton is seen as a system ordered by a very limited number of dimensions at the levels of:
1) Site or Tissue: The repetitive use of a consistent block size
-- 300' x 240' access system -- major north/south streets (including Greene St.) are 100' in width. Side streets travelling east/west are 80' in width.

2) Building: Commercial buildings are multiples of the standard lot size, 25 feet. Three major sizes occur or are variants of the standard size: 25', 50' and 100'. With the larger dimension there is a strict sub-system of tripartite division within the facades and plan organization of the street edge. There is a constant zone of open framework, wood or cast iron facades with the average vertical dimension around 18'-6"; a middle zone of a surface with punched openings and a cornice zone. There is no continuity of the facades (registration) except for the ground plane. Buildings vary in depth on their lots with the commercial street facade the constant edge.

Except for a few unbuilt gaps in the fabric (results of fires or demolition) the blocks are uniformly packed (direction, size and materials all exhibiting the same physical attributes).

This of course has to do with the ability for a grid plan organization to develop quickly, one which was responsible for badly needed and rapid development of town and services in Silverton due to its location and need for deployment of use as a mining encampment.

With a strong framework of structure developed, and a change in use
of the town from a 19th century mining camp to 20th century developing resort, transformation of the continuity established should be provided for a more landscape sympathetic form. What the existing organization of building, access and landscape offers is a standard constant or reference that is very powerful and allows for transformation which respects the initial decisions behind the spatial structure of the town.

An initial concern in the thesis is appropriate transformation of the spatial structure which still allows for new design to "fit" with the existing framework of the place, "context and image." A similarity of form (or transformation from existing form) was developed through conceptual and dimensional referencing to existing dimensions, and patterns, however no longer used as a single element for each dimension. As a result, the new addition is seen as part of the larger continuity or system.

**Associative Discontinuity**

Forms which are seen as disassociative yet reinforcing factors for change in the use of the existing "structure".

**Tissue Level:** The disruption of an ongoing access system that is reinforced by the building "fronts" to lateral movement at two sizes.
Size of:

1) Street: To reinforce movement systems to the east towards the train and river valley. Since most sides of buildings are heavy planes and read as sides, the lateral streets take on a "back lot" image. The addition of a new infrastructure which transforms and extends the storefronts wraps the corner and attempts to give this side a new "face." The importance of these lateral streets as new support streets (services, parking, pedestrian movement) for the commercial district, plus their new option of form reversal to "landscape" or some type of built park adjacent to the main commercial area.

2) Building size: Reversal of the constant built blocks to through pedestrian galleries allows movement through these blocks with commercial or upper level privacies support (i.e., restaurants, bars) along their access. These galleries have the option of becoming enclosed during the winter months to provide for public gathering space during harsh weather.

The recognition of street intersections from a very directional, almost negated intersection, allows a more focal territory by the position of new built elements of building and infrastructure. These intersections should be open and provide views out to the landscape beyond from the constant built up edges of Greene St.

The introduction or reversal of these side streets to forms which intensify the landscape outside the grid --movement across them--associates to the natural landscape beyond. Intersections may also focus upon adjacent buildings: The Grand Imperial Hotel, French Hotel, and Silvertown Town Hall, for example.
Reciprocity-Exchange

The initial gesture of the grid suggests a form (historical use of the grid as encampment, defensive town) which tends to isolate itself from its surrounds. Attempts were made to resolve this separation of outer landscape with inner built forms to make a coherent totality of mutual reciprocity. Any kind of associative discontinuity of the lateral direction is seen adding to and reinforcing prevailing directions of growth form and landscape.

The three block commercial district of Silverton is a continuous network formed by an exclusive system of buildings packed along an access system. The existing access form does not change dimension (width) to accommodate lateral side streets. The figure is a pure grid network. Access (streets and alleys) control the built and conquer the natural worlds. The system is hierarchical and the road always wins! Similar systems of organization exist throughout the country which negate topographic features.

One of the major problems I see in the existing structure of Silverton is the exclusive and segregated forms of a place which tries to celebrate its location as potential resort town. The current organization of an access controlling system excludes any potential sharing between access, building and landscape.

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Self-stable territories and dimensional correspondence of terrestrial displacements.
Tolerance Within the System
A Full Range of Options through Reversals of Form

Similar characteristics of forms defined in the opposite way help to generate the continuity while the reversal calls out differences or helps in generating a range of form within an overall spatial cohesion.

One quick method of alleviating these exclusive conditions is to reverse the role of each system, i.e.
in patterns of form to separate exclusive ones.

Field Organization

Field organization (free of lineal grids) gives a range of relationships among building, access, landscape. Definitions within the field are potentially reversible. The built object has the option (building form), to be the reversed unbuilt form where open space becomes the object. "In landscape transformation families of less welcoming climates, which must be countered for comfort, form is double-directional, accretions of 'self-centered stable units.'" In Silverton the transformation of these open spaces to en-

access can optionally become building
access can optionally become landscape
building can optionally become access
building can optionally become landscape.

These transformations are easily achieved using a grid system of organization. Frank Lloyd Wright clearly demonstrates these principles in much of his work. The reversal still allows the form to be read as part of its original system, thus providing a continuity with existing systems or patterns. A hierarchical system, like the one which exists in Silverton, limits the relation and exchange with-
closed courtyards with potential for direct solar gain could provide for potential collective use territories internal during the winter months.

Territorial Addition Applied to Building Methods

The method of additive definition to existing growth patterns that exist multiply as a series of adjacent or linear additions of built entities. In order to achieve overlap or exchange within the existing cellular forms, territorial exchange which provides a spatial exchange is achieved when zones are displaced or shared.

Additional zones to the commercial edge are added with the new infrastructure, which intensifies the relation and building growth of the street, and makes an effort to share territory of optional use laterally between existing buildings or parcels. In new methods of transforming the existing structure from the individual use of dimension and orthographic system, the approach was to assemble sub-elements of the 25' module (or single building, and the 25' module itself, built and un-built). All dimensions recognize the larger structure, but attempt to assemble it additively as well as its whole.

All elements recognize the field attributes of existing growth patterns, dimensions, reciprocity and optional associations, which support the field composition theory rather than the existing packed, uniform, sub-divisive pattern which exists in Silverton and similar towns.

The attitude taken to establish a range of differences within the existing continuities established by the respect for such constants in the existing structure as:

- existing patterns of building growth and direction
- an increase in the option or range forms may take
- a correspondence in new built forms to the existing.

New movement or access patterns try to achieve this same theory of exchange by their lateral shift in.
movement (i.e., the auto movement around, pedestrian movement within the arcade around the collective court).

The range varies from very enclosed, defined galleries and atriums to open frameworks of the infrastructure.

Exchange of Territory at the Infrastructure Site

Creation of spatial territories occur where the exchange of zones or adjacencies occur. These territories or places (built or unbuilt) reinforce movement and must reinforce built direction or growth. Registration and differences are allowed by the reference edge.

Overlaps produce either territory that intensifies direction or stabilizes it. Stable forms of both use and movement provide for optional "stay" or "go". These territories call the introduction to the lateral movement patterns or place.

Associative Continuities

Characteristics of built pieces of one particular area can find themselves displaced in other areas. Representation can occur in the form of reversals or partial assemblages. They may appear isolated, yet remain part of larger context from which they were generated. Established as repetitive recognizable forms or dimensions
these elements found in the field help establish overall continuity.

Variations from Continuities

The displacement of the infrastructure and the projection of the new building into Greene St. both reinforce the development of territory to an edge which has none. Continuity depends on the degree of exchange permitted by the new form. New building and territories which are displaced from the existing facade calls out a difference between the existing buildings of 19th century Silverton and new projections. The force of movement around the atrium allows for a recognition of place within or outside which sets up the shift in pedestrian movement laterally through the gallery. The displaced facade of the new infrastructure increases the dimension of the use territory and creates stable dimensional territories of exchange to entrances of existing building stock. The infrastructure allows for a range of continuous elements which allows an option of its use for the summer and winter months.

Association of Elements to a Support

Elements do not remain as isolated objects. Vertical stairs to the infrastructure occur within its zone and not as independent or isolated elements similar to subdivided territories which
occur within the existing building structure.

Recognizable Dimensions of the Spatial Structuring System

Some of the recognizable dimensions are built and used directly. The 24' extension of the new hotel into the street, the unbuilt 24' of the 50' building zone is not used one to one. The tripartite sub-bay system of 8' increments is used. Here for the gallery dimension zone of 16' and a smaller side entry zone of 8'. In general the larger building size of 24' is usually made up of smaller additive dimensions. These larger dimensions do find their full size repeated in larger public collective spaces such as:

the atrium
the zones of street inhabitation
the dimension of the infrastructure from the existing facades to create a stable zone of exchange between the street and these buildings.

Discontinuity

The exchange is made through displacement of form. Displacements acknowledge the existing growth direction and produce similar displaced form of similar direction, i.e., the infrastructure in general reinforces the built direction of the town. Any
lateral use or movement defined by the form, either as a built or un-built territory, helps identify secondary access, but the major direction is still allowed to read as dominant. These lateral directions are built to help define place (more stable territory rather than ongoing).

Equal use of both major and lateral direction in territory and dimension subdivides, offering no clear decisions as to growth and relation of built form to landscape.
Rules of the Structure
A Summary of the Transformation of Elements and Spatial Systems

Rules and Principles of Spatial Systems in Silverton

An analysis of the context was made to derive generating principles of structure. The analysis is limited to a certain type of building--commercial brick bearing walls, high commercial space accommodating flexible mezzanines and building facades of elaborate cast iron fronts. These elements became the contextual reference for the project along with the larger scale infrastructure of access and movement systems.

- Level of support - Buildings
- Level of the tissue - Collective building with new infrastructure
- Lateral/Horizontal zoning of the plan
- Vertical zoning of the section/elevation
- Horizontal - multiples of the 25' bay, within each bay exists a 3 part zoning

The range of dimensions which define territory at the street edge

Depth of existing wall zones: extensions - bays, corner bays

Continuous elements of the aggregated facade
- The only continuous element (registration) is that of the ground plane.
- The dimension of 1st floor commercial zone varies from 12' to 18'6".
- The ground plane is usually open with the major structure of the buildings running across the bearing walls perpendicular to the depth.
- In general the commercial plane is a combination of cast iron columns, plates and glazing.
- Zone of 2nd story housing or private use is made up of solid planes with punched openings in the plane.
- The third element in this tripartite system is that of the cornice zone. The cornice supports the plane, independent element covering gabled roofs sometimes.
- Reversals do exist where the ground (commercial zone) is continuous, solid; plane punched by openings (Reversal of the Norm).

Depth/Transition of Wall Zone

The dimension is on average 3 to 5' deep at the commercial zone. Any side walls on lateral streets will sometimes have an entrance; however, the entire plane is a continuous surface with punched elements. Entry is sometimes reversed and minimally decorated.

Intensification of buildings through material use

Materials are generally brick, Colorado stone, and painted cast iron or wooden painted fronts, cornices, and trim. All elements are bounded or framed by trim, their edges elaborately decorated with color to distinguish them within their field (site). The ornamentation is made to call out and intensify the elements from their adjacencies. What results is a layering of definitive elements onto a more general field. Color is used to further intensify these elements, quite often in a different color from its adjacent neighbor.

Families of Form.
Similarities in Forms of the Particular

There is a general way in which these building forms are organized. There is the continuous surface family of:

- brick bearing walls with punched openings on the long dimension of the building. These are most always the bearing structure.
- planes at the upper levels of the buildings, with punched or a continuous band of windows set within the plane. Often these planar facades
are layered with decorated painted trim.
- the open linear framework at the commercial edge. These are often times cast iron or wood frames, with infill of either brick, wood, or glass. The iron and wood framework is often elaborately decorated and painted also.

Rules at the Level of Tissue

Tissue level consists mainly of blocks running north-south with the major direction of travel. Later streets are 80' in dimension. The short dimension of commercial buildings with their respective store entrances face the major street (Greene St.) with large expanses of glazing and framework. Sidewalk 10' in width replaces the raised boardwalk. Sun screening elements of canopies are used in summer which add to the exchange zone between building and street, semi-public and public.

On the side streets the buildings present planar facade with punched openings; sometimes a subdivision bay of the 25' front wraps the corner. Some examples of a bay dimension opened with lintel for entrance. Either the punched or ribboned second story windows usually continue, most always as a punched opening in the masonry or stone plane.

By the fact the Greene St. or short dimension facade is an open
framework, the commercial or store front intensifies the relationship of building to street. By its minimal dimension of its depth, the vertical dimension of the first story space, and depth back make these buildings very frontal (focal) towards the main street.

Zoning

Strict enforcement of zoning finds building in multiples of the 25' dimension. Spanning of structural members and materials dictates the dimension to accommodate handling and shipping of materials on railroad cars. There are zoning height regulations within the town as to minimal and maximal dimensions of building heights.

In my new scheme I tried to be consistent with the same relationships of street, middle, and roof zones. Elements in their form were consistent, however their position in respect to street, adjacent buildings and site were changed.

Exchange of Zones

Intensification/Articulation
Use of displaced facade that becomes an arcade which intensifies the relation between facade and territory formed by the placement of the infrastructure An increase in the territory between the two (depth of transition) attempts a sizeable definition of public place adjacent to street as either an enclosed (built) winter court or small public plaza (unbuilt) created by the building forms A consistency in 3 vertical at the facade zones, however sometimes material reversal of these zones when the heavy flat cornices (roof zones) become habitable territory, they open up to admit light to upper level rooms.

When street facade is set back and pushed out there is still allowance for continuity at ground and first level.

The new infrastructure is not seen as a singular use element, rather it works with the temporal quality of life in Silverton which is now dictated by the change of seasons.

- an optional use of the infrastructure by the individual merchants
- the reversal of the pedestrian access continuity where:

Summer use

Summer access on ground is protected from the sun. Ground uses extend and become public extensions from buildings at the street level. The upper levels become private use and extensions of mezzanines as either
Winter use

Because of heavy snows, sometimes up to several feet of packed base with additional drifting, pedestrian access can occur at the mezzanine level. Parking works from alley and side streets; upper level of access used as access only into buildings. The new building supports the orientation and directional continuity of existing stock at the territory along the street edge. Transformation of the form in the plan organization increases the dimension of street however, built extension or increase in size of building transition becomes a positive element or obstacle which forces pedestrian movement laterally to the direction of the internal street arcade. This is done only at three points along a two block portion of the town to recognize and develop a new "interior" lateral movement at the level of the tissue. This "built"-"unbuilt" form of movement around a focussed territory is a diagram which is frequently used throughout the design. It can become an extension of the building at the upper level; the privacies of the hotel exchange with the street, as well as public collective territories at ground.

Since access must be continuous in winter on the upper arcade it is possible to see this outer habitation

private commercial or hotel use.
of the upper level of mezzanine only becomes seasonal.

Clearly the differences in the design are recognition of main access/direction of streets and building in the town. An attempt when working with a strict organization of access/building/access that sometimes allows the use reverses, or ABA.

In my case the new arcade exists as an extension of the zones of the building fronts having to do with street relation, increase of seasonal use of the territory at the building edge. The drawings and model show the arcade to be a direct or consistent layering, allowing for no direct adjacency of existing buildings and the street.

If the upper level access system is to be used in the winter months, this level must be consistent along the building edge with no breaks. However, its dimension may be reduced to a minimal 8' and the third level of overhead covering may be eliminated when the least amount of building in front of the existing structures is desired.

The major private floor of the hotel has been removed from the ground level and placed up on level allowing for the consistency of a very high ground floor space, with the first floor seen as part of a mezzanine system. Both ground and first levels make a major vertical exchange at the interior atrium space.

It is also at the atrium that pedestrian access moves around and can shift laterally to the direction of the internal/external gallery. Off this gallery at ground, small commercial shops may occur with easy access and servicing of these spaces at ground below the private functionings of the hotel. Vertical exchange happens at the atrium in a more focussed or complete form then moves to the side and rear of the building, where linear use of lighting supports the gallery movement through the building.

Gallery space

Similar to the external arcade on Greene St., the internal gallery also has the option of reversing its use with the seasons. The linear gallery itself could remain open throughout the year with small shops or storefronts off it. This would allow for the separation of use from the more enclosed atrium, allowing it to be used efficiently as an internal public refuge from the extremes of Silverton's winter climate. Closure inside the gallery is at the storefronts.

In summer both atrium and gallery may be open to each other and the street allowing for a greater exchange and extension of the commercial use at ground and out to both the street and gallery.

This reversal in forms of the arcade, court and gallery, allows for
Palestinian gallery through the bazaar.
tical space around the atrium and above and adjacent to the internal/gallery space which in program is seen as more support space for the hotel rooms such as entry, lobby, restaurant, lounge.

Bay or Tripartite Zoning System

In 25' bays existing division or zones of use normally follow a use access use pattern. In 50' dimensions this similar pattern of central access occurs in two 25' bays, usually with vertical access or stairs to upper level privacies. On rare occasions this pattern sometimes substitutes itself, shifting the access to either side of the 25' bay.

greater flexibility in the use of the program, which reflects the seasonal changes and temporal changes Silverton goes through form-wise and socially, from a very extroverted claiming of the street and landscape to a more introverted and enclosed state during the harsh winter months.

The internal functions of hotel are more conventional, yet there is a more positive exchange of the ver-
The central access which exists tends to divide the space into two equal spaces. The division of the 25' unit with central access seems to limit the size of use within the space, therefore a system of side access with the dimension of 25' seems more favorable. When the 25' unit is aggregated into 50' or 100' building dimensions, there is more flexibility in options due to the increase in size. In order to maximize store frontage the use of vertical stairs to upper level privacies was shifted from the perpendicular location of its central location within the 50' building front to its new position parallel to the external arcade, further intensifying both the arcade and stair elements together, making it a much more public element. The placement of the stair with the arcade also allows for increased frontage with the smaller 50' dimension of commercial use within the existing structuring system of this building type.

In order for a major direction change into the atrium and internal arcade to be strongly perceived, the new facade extends into the street the same dimension the arcade does. This form of new facade away from the plane of existing buildings reverses from that of the arcade to note its:

1) difference in use from the arcade
2) helps begin a strong lateral

move into the 50' building parcel and internal arcade.

This form which extends could be either "built" or "unbuilt" in its form with varying degrees of closure. The attempt is to use it as a positive element to deflect the strong movement along Greene St. into a new internal pedestrian arcade system laterally through the block, with destination of movement to either parking, train, landscape, or residential neighborhoods of the town. Extension of upper level semi-public hotel use into the street is achieved, while allowing the building at ground to remain open to allow for the continuation of access at ground and upper level pedestrian access along Greene St. The infrastructure element provides some ground protection from winter snows and summer sun for ground related access and services to lower level commercial and upper level hotel use.

The form is more enclosed from elements with various degrees of closure, a transformation from the light arcade in the street, but not totally enclosed as internal commercial uses or privacies.

The grid layout of Silverton is oriented in the valley with Greene St. running NE to SW. In the shorter periods of winter, direct sun and potential for solar gain is limited to just a few hours due to the total surround of mountain ranges. There exists a morning side and an after-
noon side to the commercial buildings. The building design was made to extend this period of direct exposure to sun by extending new building into the street, yet maintaining a low profile not to block too much sun from the north in winter when the sun's angle is at its lowest. At the upper levels of the hotel the organization of the building is directed towards the south and the short dimension of the site, rather than repeating the existing organization of narrow deep buildings.
The recognition and understanding of spatial characteristics in form and method are seen as necessary when making design projections which seek to provide a continuity with the features and patterns of growth with a particular site.

I chose to study the particular problems that exist with public space or the interface between buildings and streets since it seems to typify characteristics in many American cities and towns. Silverton, Colorado was used as the particular site because it provided a continuity with a site I already had an intuitive understanding for.

When working with any given context the methods to achieve continuity or to make connection with the particular are seen through the use of specific characteristics of elements found within that site. In the case of Silverton, the access system of streets which is so dominant, yet the only public gathering space within the town, had to be recognized and preserved. Through the development of additional territory adjacent to both elements of building and access, it became possible to increase options of use and form which define or support a new change in use of the town.

New methods of deploying an explicit system or element such as the infrastructure is similar in intentions to providing a higher support such as the grid plan did with its initial structuring system. New methods and development of greater territories of exchange help the existing systems and elements of building and access which are exclusive to each other into territories or space which is seen as mutually inclusive with one another.

New growth or methods are seen as providing a recognition and continuation of preceding generations. Instead of making anything "new" we as designers should reevaluate existing systems of form and make them more suitable for our circumstances. Design should help to connect the underlying, to make explicit what is implied. If what exists is destroyed or negated we lose any connection and meaning we have to our past.
Existing form and methods can be seen as valuable starts for our work. The transformation process whereby existing systems of form and method are analyzed and adapted becomes the working method. New projections are seen as improving upon explicit systems which can allow for individual interpretation and expression by the participants. Extensions on systems and methods demonstrate that understanding patterns and principles of a place or form is necessary if we seek to establish a continuity with what exists, to build with places rather than opposed to them.
Spatial Organization in Design
Frank Lloyd Wright

Observing the work of Frank Lloyd Wright it shows a sense of the natural in his attempts to form by his perception in the order of organic form. Wright saw "design as abstraction of natural elements in purely geometric terms." In his work one can observe a strict conceptual and organizational rigor. Although there was such rigor, he was able to form a wide range of spatial variety through the manipulation of a consistent set of dimensions and consistent use of form and materials.

The order of a three-dimensional field of spatial organization allows
elements to be located freely, optionally through this abstract grid. The use of the grid can be seen as an explicit form of structuring space, or the organization of buildings.

A geometric system of such rigor is hardly seen, however, as an "organic" architecture. What fascinates me is the consistency in the use of such an organizational system, yet the variety which is achieved by the manipulation which allowed for such diversity from the overall or conceptual order.

The origins of Wright's geometrical organization as design tool have been shown by Richard MacCormac to "lie in the gifts of Froebel training as a child." MacCormac suggests that manuals from Froebel and the biological terms during his training with Sullivan gave Wright his design vocabulary: Nature, organic, crystallization, integration, efflorescence, and structure.

The three-dimensional grid of the Prairie houses were a literal projection from the consistent, yet not always regular tartan grid. The grids were not always of consistent dimension--ABAB,...etc. This system of organizing elements in space was so that there was an overall conceptual coordination in the form. Early work in Oak Park and the Midwest was a smaller grid organization of the larger urban structures formed by
19th century American planning. The buildings were not isolated within their lot, but challenged the existing grid organization of the city by subdividing and manipulating it. Boundaries enforced a limit to the tartan organization and focussed organization around the central element of "hearth," "the parts being integrated with the harmonious whole."

Organization and movement patterns in the Prairie buildings always focussed around the core, whether a very tight symmetrical organization or a shifted, asymmetrical one. Movement usually follows the tartan which lies as zones between symmetrical rooms.

External approach to these houses recognizes or lets one experience several approaches and views, strictly following the grid organization in its movement, until finally entering. Wright's early visit to Japan seemed to enforce his strong conviction for modular coordination which he observed in traditional Japanese architecture. These residential buildings were additively organized around a structuring system that enforced the relation of these buildings and their adjacent landscape. The way of moving and relating to the house is not an axial, simplistic approach of the "Classical" language, but much more akin to eastern cultural tradition. In Japanese residential architecture it was common to enter a house via a strong movement through a forecourt or garden, making a strong recognition of movement from the public to private zones of the dwelling. "House" makes strong connection or exchange with "nature" as one experiences both. The system deployed offered more of an exchange between building and landscape which is found to develop to its maturity in Wright's later and larger Prairie houses and the yet to come Usonian period.

In Wright's domestic architecture of wood construction, dimensions were small, between 2 and 4', usually divisions of 8' or of standard building materials 2x4, 4'x8' panels of plywood, etc. Vertical dimensions
were that of materials: siding of 1' plus brick courses a larger size of use dimensions: sill heights, tops of doors, clerestories and finally, roof zones.

Usonian houses tended to be much more rigorous in incorporating the vertical dimension with plan over earlier Prairie houses. Zones or heights of clerestories, tops of windows or doors were called out to intensify the horizontal layering of elements or zones within the building.

Usonian houses had three sets of plans:
1) floor plan
2) "deck" plan at top of door height
3) ceiling plan

All three plans do not necessarily coincide to further intensify their horizontal continuities. The use of horizontal ledges at building edge, or when passing from one territory to another call out movement through or out, compress space to very low dimensions before releasing it.

These ledges were functional as well as spatial points of exchange or transition. They provided surfaces for decoration, lighting as well as the integration between territories.

Within the elaborate and subtle uses of space in Wright's architecture, there is the beauty of an underlying organizational efficiency. The grid or tartan plan was the unifying or underlying spatial structural system. There is an increased intensification or recognition of the zones or margins between spaces from earlier, tighter Prairie houses to a much looser exchange of territories and zones between adjacent rooms in the later Usonians.

Yet in both periods of Wright's career one can find a rigorous use of the tartan or three-dimensional grid as an organizational system to give unity to such a beautiful variety of diversity. If the consistent use of a grid or orthographic system is seen as a limited framework, there are infinite varieties of other non-rectilinear form used with the same rigor or consistency in organization not shown here. In some cases, especially in the Prairie period, Wright chose to engage a larger system of organization--the Continental Grid of the sites' surroundings and street plans.
Ward Willits Residence (1902), Highland Park, Illinois
W. E. Martin Residence (1903). Oak Park. Illinois
FOOTNOTES


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Structure


