

ON ADAPTIVE REUSE

BY

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BOZEMAN

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by
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School of Architecture
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Jeanne McKeague

MARCH 17, 1978

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to my parents

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INTRODUCTION

"Fortunately, for a diversity of character, for urban cohesion and for the climate of today's economy, recycling has become a tested route for new uses."¹ This route appeals to many Americans today - not only the architect who finally executes this theme but also the clients who own and use the buildings.

Why has this theme developed? One theory is that the fast pace of progressive change in our country has stimulated us to look back at our two hundred years of history. On the other hand, it may be our constant concern with the future, justified by appealing to our past. This is demonstrated by our need to adapt old buildings to viable new spaces. Underlying both these explanations is the Americans' sense of place, where "the symbols must be visible - the visible symbols of an invisible past."²

1. p. 138, Recycling Old Buildings, Elizabeth Kendall.

2. p. 146, The Future of the Past, Robin Winks.

FUNCTIONS, EVALUATIONS AND USES

Advocates for recognizing buildings of the past, and giving them new uses have summarized five basic functions of such a program.³

1. object of pride
2. object of commemoration
3. education
4. preservation
5. promoting an aesthetic environment

They have cited many benefits,⁴ pointing out that massive demolition is unworkable since preservation generally is faster, can use the same utilities and is less polluting during construction. Also, preservation lifts morale by valuing the human spirit. They agree that preservation can provide an aesthetic satisfaction to the onlooker. Financial advantages include increased taxable values and tourism. Besides these advantages, community forces can be strengthened by volunteer help on some projects.

To be considered for such a program, an old building may have historical associations or merely be of aesthetic merit, or the building may continue the neighborhood pattern. However, just as important for the success of the program is the building's adaptability to a new use.

Thus when we evaluate these projects we have certain judgements.⁵

1. the visual importance in the urban context
2. the quality of design having regard to the character of the original building
3. the social and cultural importance of the new use

3. p. 143, The Future of the Past, Robin Wink.

4. p. 5, Historic Preservation in Inner City Areas, Arthur Ziegler.

5. p. ix, New Uses for Old Buildings, Sherban Cantacuzino.

The visual importance of the old building relies on the "power of this very human capacity to remember and to associate forms with events."⁶ Old buildings, often with distinct visual characteristics may be more easily identifiable and remembered. Thus, by retaining inherent architectural characteristics instead of disturbing them, we may profit both in advertising and by providing "a quality of architecture not possible today."⁷

Other visual characteristics important to the urban environment are texture, scale and rhythm. By careful study of timeless materials, a scale neither grand nor intimate and existing street facades, we may achieve a quality of design having regard to the character of the original building.

Success of an old building in the modern, urban environment not only depends on its original visual significance and the quality of its resulting design changes, but often on the crucial decision of a new use. Therefore 'adapting' becomes a key word in the program.⁸

Sometimes, old buildings simply need this adapting program because their original use has been duplicated to the point of redundancy or the building's original function no longer exists. Thus, if conservation principles and new uses are not developed for it, it is destroyed. However, given a new use the old architecture can again become active in the daily lives of successive generations, allowing them a sense of continuity and stability in their physical environment.

Once one old building is given new life, a chain reaction can occur, encouraging revitalization for entire areas. This revitalization not only means architectural repair but also renewing sociological aspects. "If our towns are

6. p. 56, Economic Benefits of Preserving Old Buildings, National Trust.

7. p. 116, Recycling Old Buildings, Elizabeth Kendall.

8. p. 4, Remodeling Old Houses, George Stephen.

to remain living organisms, planning must now concentrate on encouraging a richer mix of uses in central areas."⁹ Combinations of facilities in our urban districts not only help guarantee full occupancy of buildings but once again provide a wide array of people, places and times.

To aid in reaching the new use decision, several points should be considered.¹⁰

1. the historical and architectural importance of the structure
2. the size of the structure and disposition of rooms
3. the location of the structure

Even though careful thought has been given to determine a new use, the building still will not be successful in our environment if it does not receive a sympathetic conversion.

9. p. ix, New Uses for Old Buildings, Sherban Cantacuzino.

10. p. 7, The Restoration Manual, Orin Bullock.

STATEMENT

ADAPTIVE REUSE CAN PRESERVE OUR
HISTORY, CONSERVE OUR RESOURCES,
STRENGTHEN OUR CITIES' CORES AND
CHALLENGE THE ARCHITECT TO
DEVELOPE DESIGNS INCORPORATING
THE OLD WITH THE NEW.

ADAPTIVE REUSE DEFINED

Adaptive reuse can be defined as preserving a structure, site or group of structures by giving them a contemporary function that will fill community needs and add to the urban environment.¹¹

11. p. 2, Historic Preservation, Marsha Glenn.

PRESERVE OUR HISTORY

The environment we live in, for the most part, has been determined and designed by earlier generations. Thus, they have given us an historic architectural legacy that may serve as an educational resource. To recognize the qualities of this legacy, does not imply that we should stop the clock to admire another museum, but continue maintaining a sense of cohesion in our lives by giving still useful architecture new uses.

We have discovered that with careful study we can add active new designs and mechanics to an existing orderly framework. This allows us a feeling of continuity with our heritage without requiring a complete historic restoration. The human need for familiarity, stability and sense of place will play a greater part in our urban lives as they become increasingly complex. Having an historical perspective to look back upon, we can understand better where and what we want to be today. We should not lose these memories for "old buildings like old people are essential to a healthy and mature society in that they give a sense of balance and continuity with the past, but they must be valued at their true worth and not merely accepted on sufferance."¹²

12. p. 7, Remodeling Old Houses, George Stephen.

CONSERVE OUR RESOURCES

Besides revealing our history and thus enstilling a feeling of continuity in the city, an adaptive reuse project must meet certain economic requirements. Most buildings must have a lively position in the business market before investors and city officials acknowledge their validity. These projects, often because of their distinguishable character, attract sophisticated interests and give a substantial increase in local real estate values. Thus, preservation can stimulate money for the business sector and taxes for the government, along with added tourist dollars.

Adaptive reuse still aids the job market by providing maintenance and reconstruction work. In addition, the large investment of materials, labor, time, and services is salvaged. This accounts for savings in power and fuel. The most significant value of an adaptive reuse project is its ability to act as a catalyst to revive the entire spirit of a declining district.

STRENGTHEN OUR CITIES' CORES

"A city without old buildings is like a man without a memory."¹³ Each building represents the cities' own culture, expresses its unique history. No other city can duplicate it. This is the slogan of many urban developers in their fight against decaying downtowns.

Sometimes, by retaining, enhancing and adapting older buildings, the scale, character and atmosphere of a neighborhood can be kept, or it may provide a necessary stability in a slipping district by inviting permanent newcomers. So, successfully rehabilitating existing buildings benefits the quality of the community's urban scene. Often these revitalized areas become safer, quieter and more convenient. It encourages a greater mix of people and in turn creates a sense of brotherhood, community pride and personal involvement.

13. p. 7, Economic Benefits of Preserving Old Buildings, National Trust.

CHALLENGE THE ARCHITECT

An architect must not let his love of old buildings smother his own creative spirit. He cannot let the adaptive reuse program be an excuse for his own lack of confidence. It should not be merely a case of nostalgia but an understanding of the past and its effect on the quality of the visual environment.

"Buildings live together like people, with occasional quarrels, mild bickering, constant compromise, respect for individuals, plus the odd flight of passion or fancy. To search out, analyse and enrich this pattern, demands an unusual degree of sophisticated insight and awareness."¹⁴ This pattern of diffuse variety of forms creates possibilities for interesting and sensitive design solutions. The architect decides how modern forms, added to an old building or inserted into an old neighborhood, can effectively compliment the existing. Thus the architect serves as a bridge from one era to another.

14. p. 151, The Future of the Past, Robin Winks.

EXTERIOR GUIDELINES

In adaptive reuse projects, most preservationists adhere to a few basic guidelines pertaining to the exterior work.

1. the original design, materials and details are used wherever possible
2. a facade shouldn't be made to look older than it is
3. introduction of modern elements to the facade must be done with extreme care¹⁵

The first guideline allows for the character, scale and spirit of the building to be retained. Without the second, our history and continuity can be blurred. The third shows just how great a role the architect plays in the adaptive reuse program. We find that often "the most respectful the changes the more valued the old building will be."¹⁶ So it is encouraged that the exterior walls be saved or sensitively changed in order to keep their integrity, but often the interiors are fair game to house creative new designs.

15. p. 162, Recycling Old Buildings, Elizabeth Kendall.

16. p. 117, Ibid.

INTERIOR VERNACULAR

In fact, adaptive reuse advocates urge that if the interior has undergone many remodelings over the years, a very contemporary interior is logical. However, if the interior has survived without many changes and the new use agrees with the old detail, the original fabric should be kept. Often this works best in the public areas where retaining fine wood paneling and banisters not only preserve historical artifacts but also the sophisticated aura of another time.

The standard interior adaptive reuse vernacular has come to mean a combination of the original with new introductions. This usually means exposing the old brick structure and painting super graphics on shiny new partitions. In these cases, all old interior partitions are removed, a new steel frame added for support while old brick, posts, beams, joists or trusses are exposed and cleaned. Then arches are punched out of transverse brick walls. These architects then add bright reflective stripes, circles and geometric shapes to enliven the interior. New soft curved partitions and openings contrast with the old linearity and right angles of the existing. Color and change in floor levels create interest and alter the scale. The architects are using color, planes, space, light and line as elements of their design. These should be carefully studied in all designs and thus we find that the standard preservation vernacular is only one answer to the challenge of relating the old to the new.

INSERTING THE NEW

"To insert the new into the old requires the highest degree of skill and imagination in every case. Respect for architectural neighbors means more than meaningless pleasantries."¹⁷ Together, the two styles may complement each other. This should be thought of as an advantage and not as a taxing problem for the designer.

There are four common ways of dealing with an addition to an existing building.¹⁸

1. the addition is an exact duplicate in architectural style of the original
2. the addition be a modification of that style
3. the addition forget the past and express itself
4. the addition be a sensitive and understanding response to the essence of the older building's architectural concept

Often these principles combine, so the addition is new and contemporary but also states a relationship and dependency on the existing building by subtly echoing the earlier design, using similar finish materials, aligning openings and eaves or adapting old details in new ways.

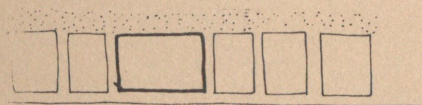
Sometimes, the architect abstracts the old facade to create his new one. He may choose to relate the two by using the same materials or give them a new interpretation by using a modern material that still resembles the scale and color of the original. Aligning and keeping proportions of the fenestration also respects the scale, rhythm or symmetry of the old. Maintaining the roof line, keeping the new facade in the same plane and noticing the directional emphasis are several important characteristics that influence design decisions and the resulting new architectural details.

17. p. 151, The Future of the Past, Robin Winks.

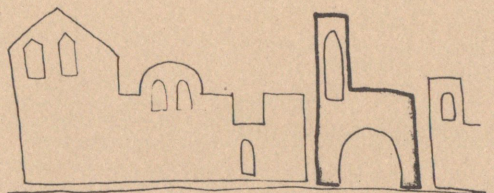
18. p. 168, Recycling Old Buildings, Elizabeth Kendall.

LEFTOVER OUTDOORS

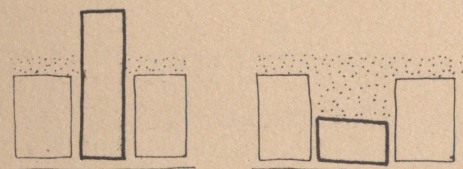
Sometimes, due to economics or size and site restrictions, an addition to the existing building is not possible. These subsequent, outdoor spaces require just as serious consideration skylit, landscapped plazas may serve as neighborhood focal points. The existing buildings become integrated with the courts by the use of materials, walls, balconies and new openings. Even sensitive landscape design can simulate a continuous facade line.



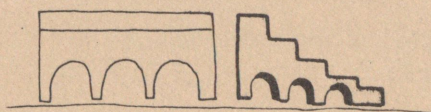
relate to existing scale



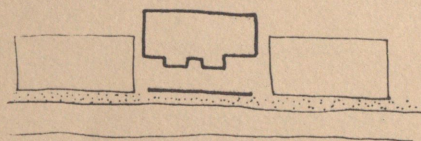
use contemporary motif



contrast existing scale



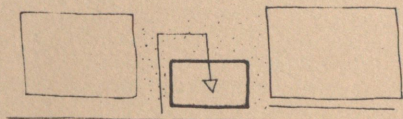
use new "verbatim"



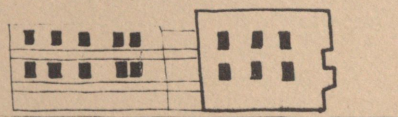
use a false wall

Techniques for continuity between old and new

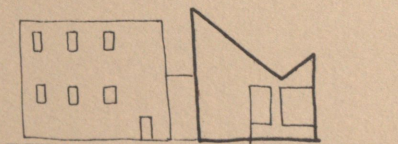
- borrowing form*
- absorption*
- embracing*
- addition*
- reflection*
- artifacting*
- refitting*
- contrast*



enter new from rear

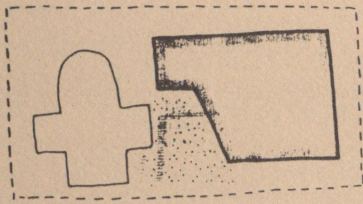


relate to existing fenestration

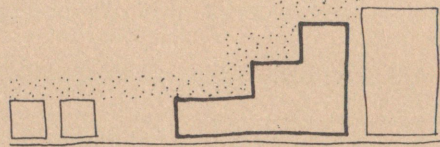


contrast existing fenestration

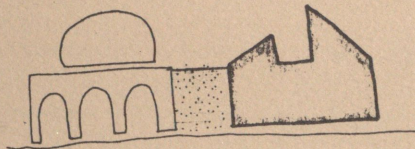
CONCEPTS



entry between old and new



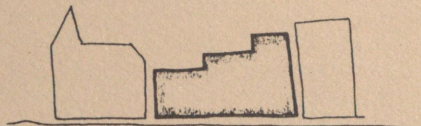
new as scale transition



use a transition joint



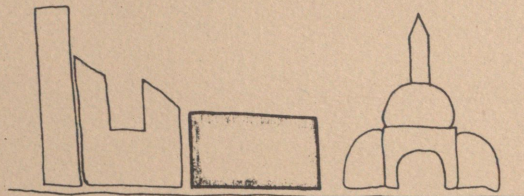
strengthen facade continuity



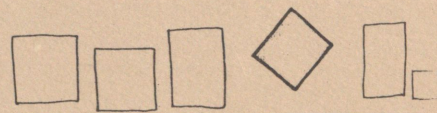
use new as unifying element



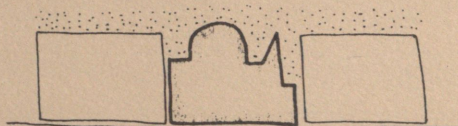
accent facade continuity



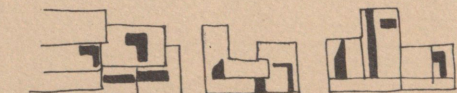
use new as pause



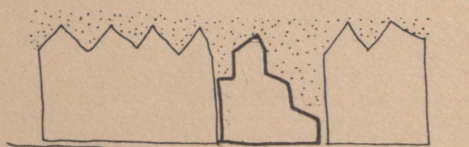
new as geometry contrast



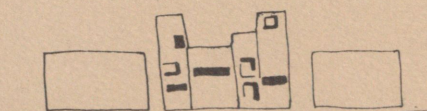
contrast existing profiles



relate to existing mass/void



borrow from existing profiles



contrast existing mass/void

MECHANICAL SYSTEMS

Mechanical considerations must also be added to the list studied by the architect. Those familiar with adaptive reuse programs have found that usually exposing new plumbing, airhandling ducts and electrical conduit gives a substantial savings in time and expense and is often the only solution. It is up to the architect to play this up by color coding the services or subtly blending them into the surrounding colors. Other architects create interstitial spaces between the high ceilinged volumes, for housing mechanical systems. Another solution is to provide the larger more complicated support facilities in an adjacent building if the use, site and design allow.

CODE REQUIREMENTS

Building codes are also important in the adaptive reuse program. If the program calls for the same use as the original, some old codes may apply.

But with a new use, new codes must be adhered to. Handicap provisions often limit adaptive reuse projects since elevators or ramps can't always be integrated. Fire codes call for ample fireproof staircases, sprinkler systems and concrete floors. Structural codes may require bracing for lateral support. These and other codes should not be considered as severe restrictions in adaptive reuse but can be used as elements of design.

URBAN RENEWAL

Urban Renewal seems to many to be a double edged sword. Before realizing that areas needed to be preserved, many great spaces were destroyed. First, the policy was total demolition in hopes to rebuild decaying districts. But then an historic preservation act stopped this senseless action and the Housing and Urban Development Department took a leading role in planning rehabilitation of buildings and entire neighborhoods instead. Also the program became locally conceived, planned and carried out, allowing the cities' own efforts with federal financing, to create unique solutions to blighted districts. Besides grants of up to twothirds or three-fourths of the net cost of an urban renewal project,¹⁹ the federal government offers low interest loans, technical advise and special mortgage insurance. So by trial and error urban renewal has become a process hopefully of selective subtraction, leaving challenging possibilities for adaptive reuse.

19. p. 8, Preserving Historic America, Department of Housing and Urban Renewal.

PROJECT

DESIGN FOR AN ADAPTIVE REUSE OF THE
ATLAS BLOCK IN HELENA, MONTANA IN
CONJUNCTION WITH THE ADJACENT
VACANT LOT.

LAST CHANCE

Last Chance Mall, in downtown Helena, Montana, is a typical example of Urban Renewal problems. Through trial and error and much local concern, Helena's central business district is once again active.

In 1967, a group of downtown merchants merged together as Helena First. Their goal was to stop further decay in their district and urge business back from the suburbs. The first attempt, under Urban Renewal, was massive demolition, removing many fine historical landmarks and much of the area's character. By 1972, they had realized this mistake and began taking a more historical preservation outlook, finding that it was wiser, cheaper and more rewarding for the distinctive and salvagable buildings, they proposed adaptive reuse programs with new buildings filling in the vacancies. Their goal was to avoid both sterile modernization and sterile nostalgia and thus they created a pedestrian mall lined by distinctive, restored facades and fitting new ones.

Such a project would never have been accomplished without special funding. Federal money from Urban Renewal, Community Development, and the National Park Service was used to restore facades and stabilize structures. Over fifty million dollars has been invested, returning a 1000% increase in taxes and rehabilitating seventeen buildings.²⁰ Still this revitalization would not have been successful without an effort by dedicated citizens. Aware of the importance of their historic past, the people have managed to preserve something unique - Last Chance Gulch - which may well be the most unusual mainstreet in America.²¹

20. p. 11, American Preservation, 'Helena, Capital of Montana', Porter Briggs.

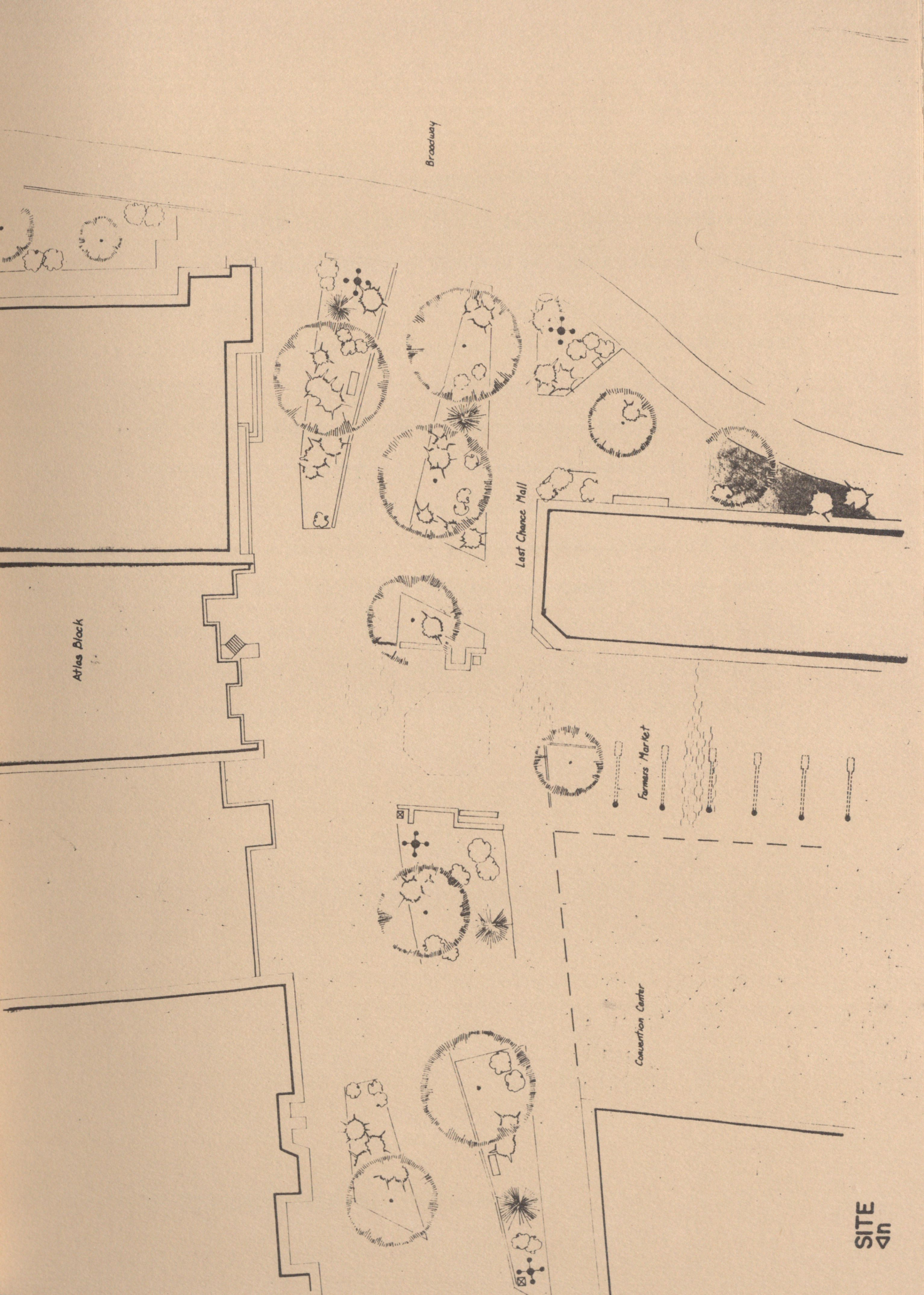
21. p. 11, Ibid.

HELENA OPULENCE

In the late 1880's, one easterner reported, "to the younger generation, Helena is a Parisian-like centre which he hopes in time to see."¹⁷ This describes the aura of Helena some twenty years after discovery of gold in its Last Chance Gulch. It was a period of energetic and opulent architecture, expressing the early settlers' romance and pride in their city. The stylistic aspects of this architecture were influenced by Victorian architectural publications and earlier western boom towns.

Helena's business grew rapidly in the 1880's because of the famous gold deposit and the lush surrounding cattle country. Successful businessmen commissioned local architectural firms to design luxury commercial buildings. This highly esteemed building type was an investment for them and a status symbol of the city's progress. Their diversity in appearance gave distinguishable identity to the businessman while their interesting and elaborate details made Helena a cosmopolitan center in the Rocky Mountain Region.

22. p. 47, Montana Magazine of Western History, 'Helena's Fabulous Building Blocks', Willard B. Robinson.



Atlas Block

Broadway

Last Chance Mall

Farmers Market

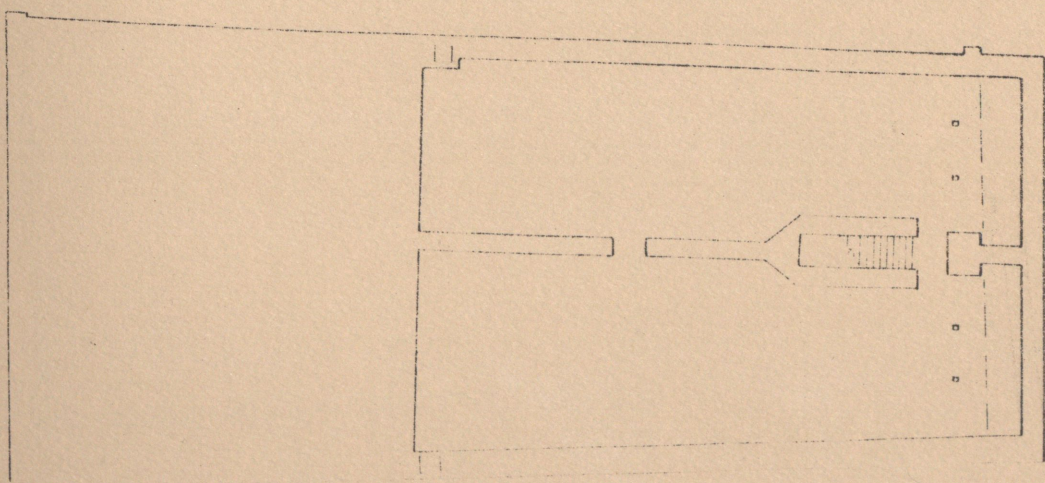
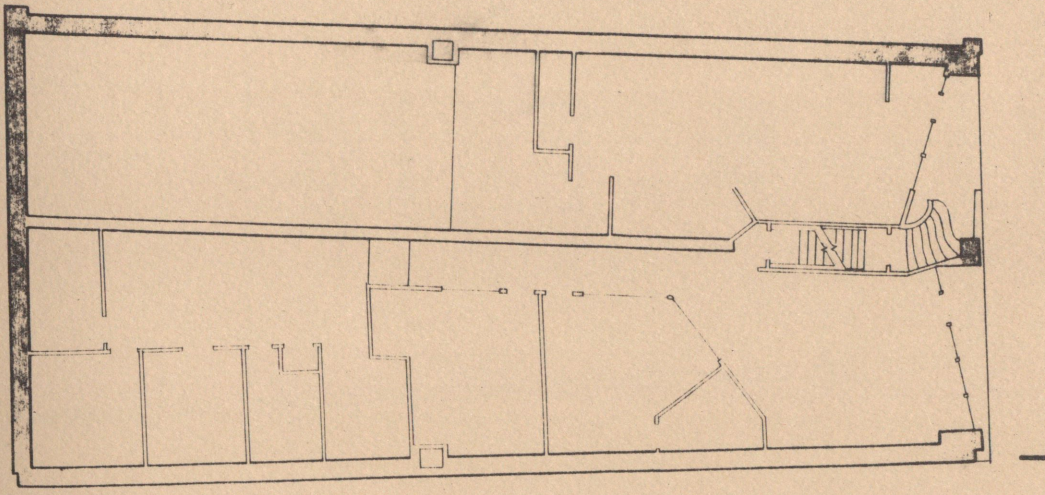
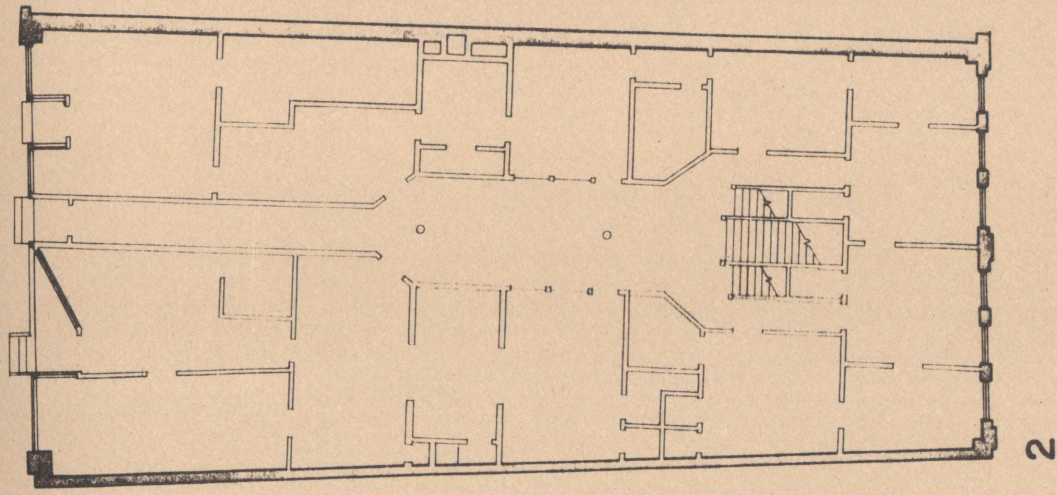
Convention Center

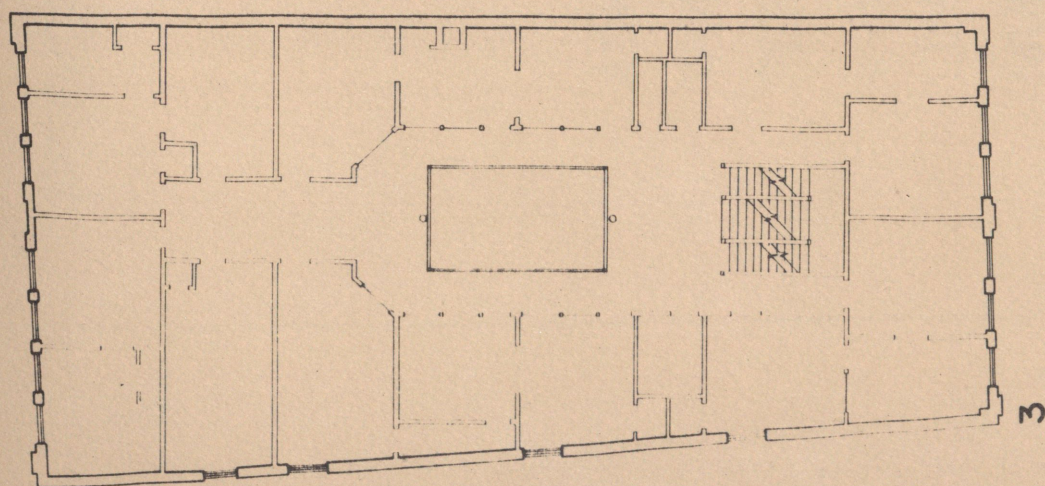
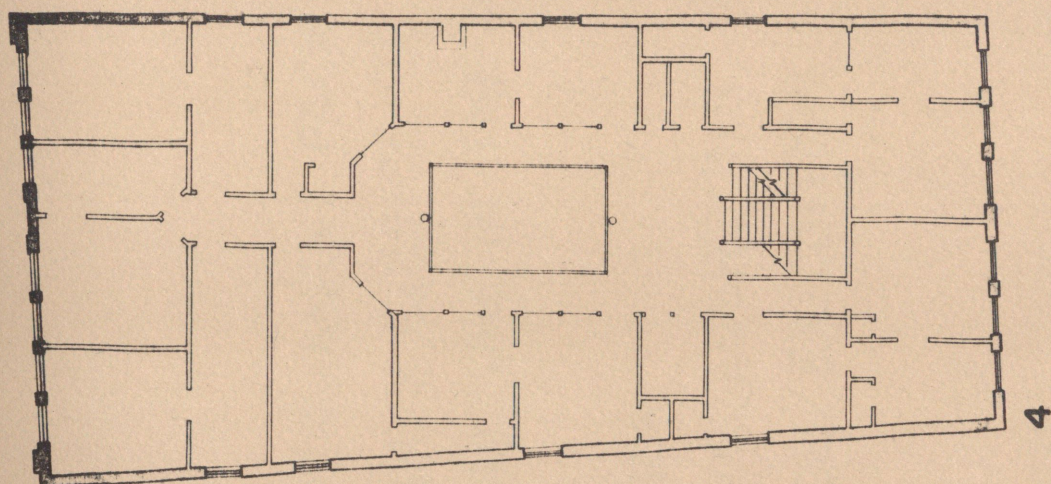
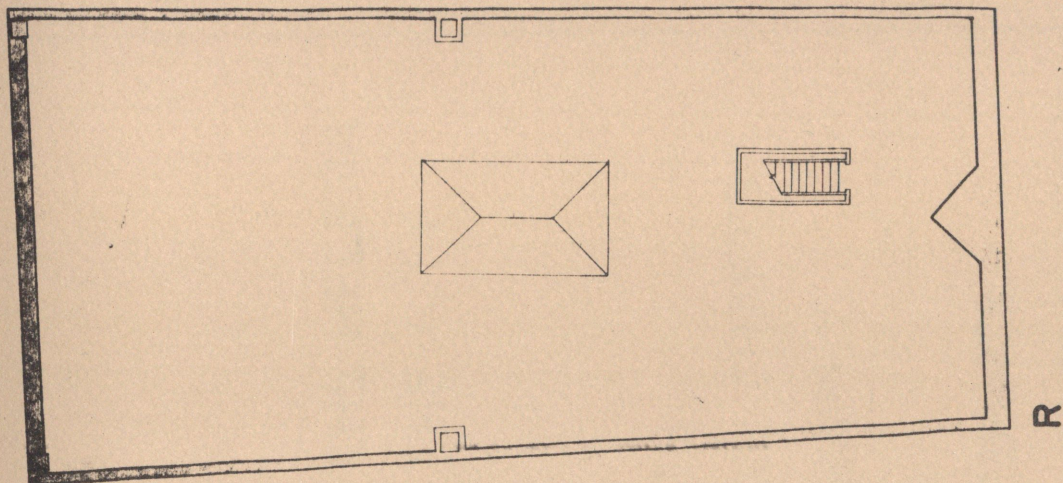
SITE
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THE ATLAS STORY

"A wealthy community always erects decorated buildings,"¹⁸ commented Dresser in his *Studies in Design* (1874-1876). This very aptly describes the Atlas Block in Helena, Montana. Built in 1888, it is one of Helena's finest examples of novelty and decorated buildings. The Atlas, designed by the Helena firm of Schaffer and Stranahan, expresses the romanticism of decoration. It tells a delightful story of vigilance and strength. The original owner was S. J. Jones, a fire insurance company. The building itself was to symbolize their unwavering reliability and thus attract customers. The short, stubby atlas figure supports an urn, representing the works and concerns of man and the world. A salamander (fire) is slithering down to the urn (a threat) but is kept away by two watchful winged lizards (insurance). Even the cornice is decorated with a fire design. It is reported that S. J. Jones was not happy with his building, but whether it sold more insurance or not, its fun ornamentation has intrigued many Helenans passing by for the last ninety years.

23. p. 42, The Decorative Tradition, Julian Barnard.





PROGRAM

PERMANENT FACILITIES FOR THE HELENA
ARTS COUNCIL TO PROVIDE THE CITY
CULTURE IN THE ARTS

ADMINISTRATION

WORKSHOPS / CLASSROOMS

PERFORMANCE / EXHIBITION

SALES

LIBRARY / LOUNGE

MULTIPURPOSE

FINE ARTS

ARTS AND CRAFTS

PHOTOGRAPHY

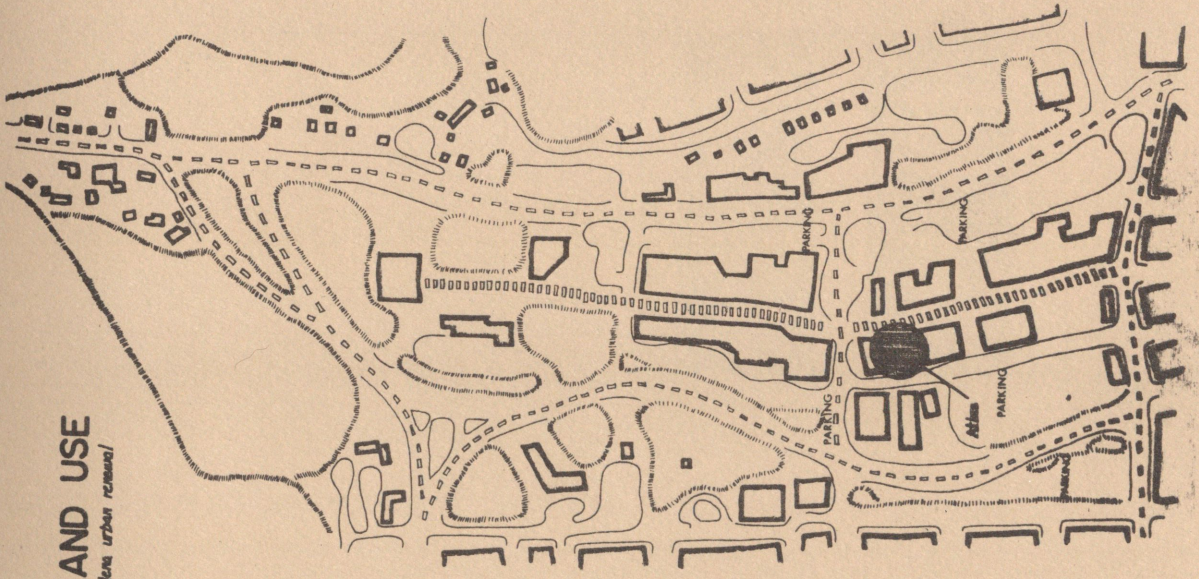
MUSIC

DRAMA / DANCE

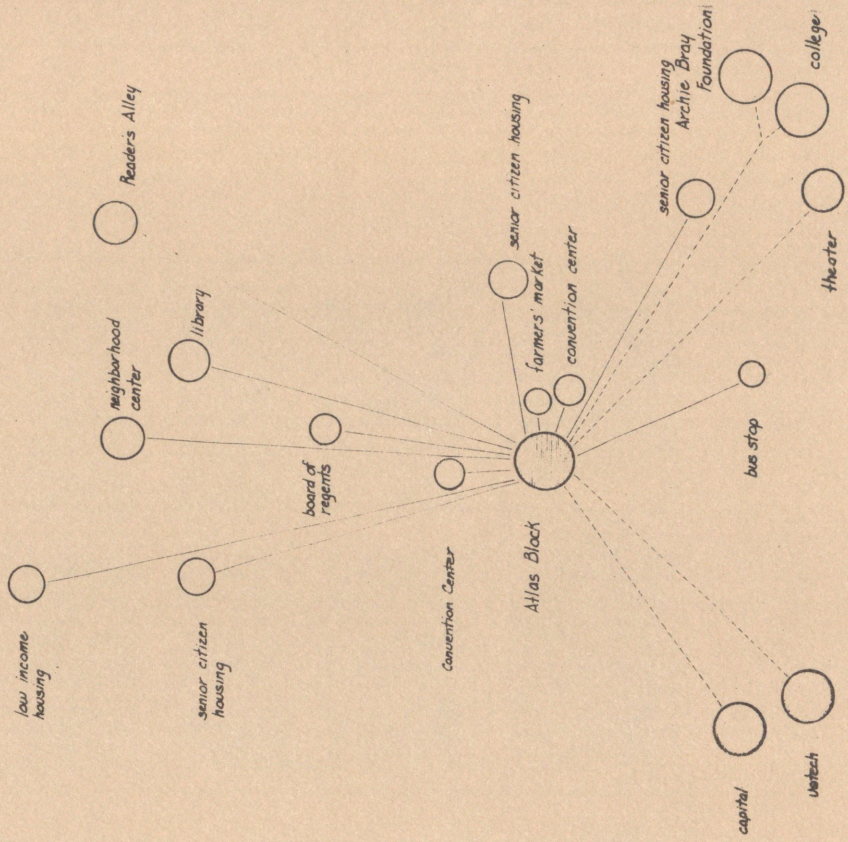
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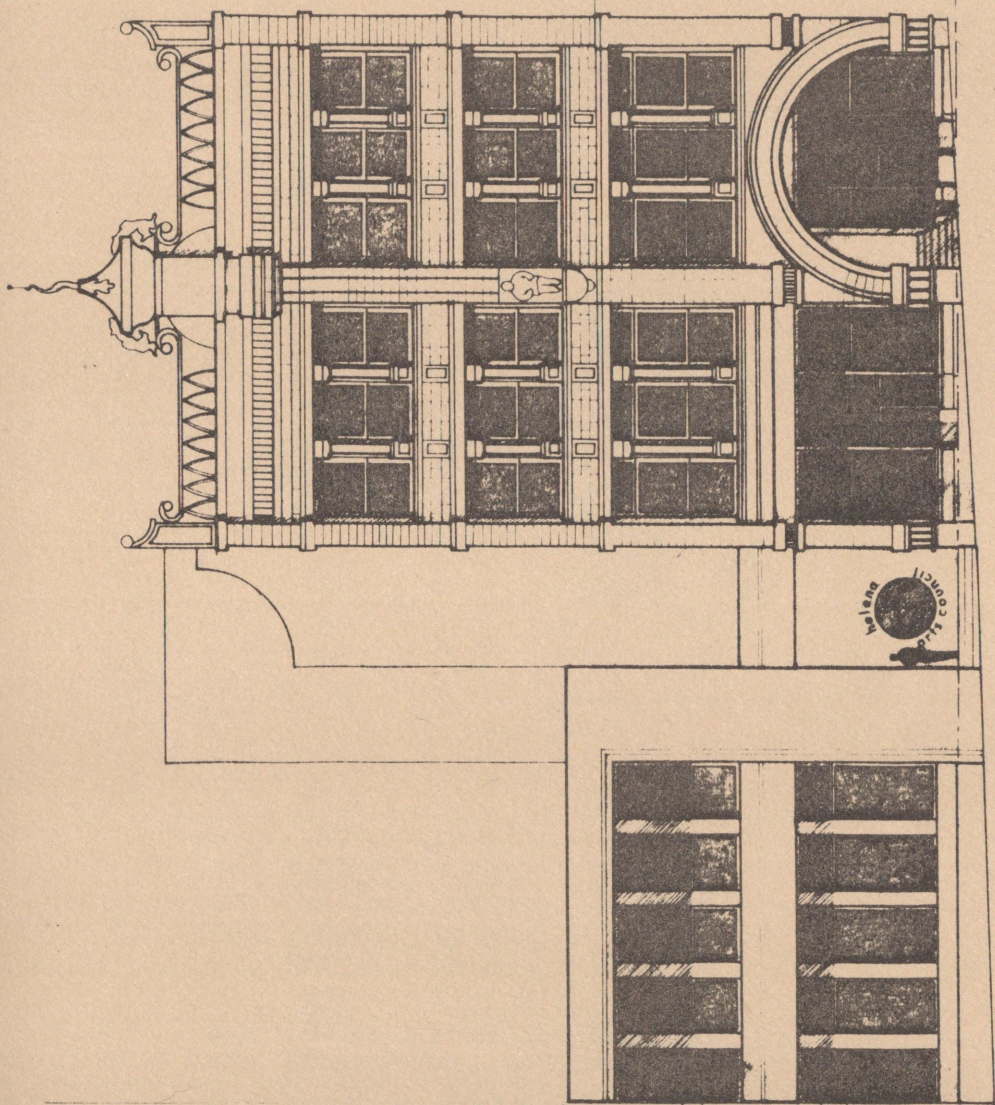
LAND USE

Helena urban renewal

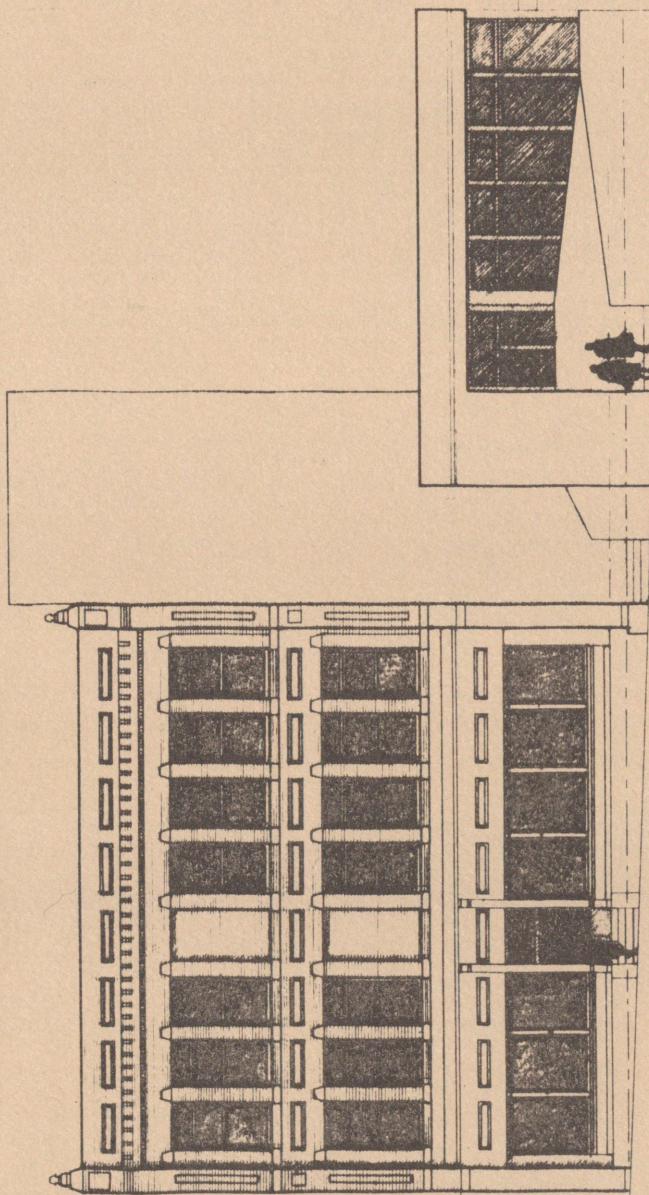


CITY/ATLAS RELATIONSHIPS

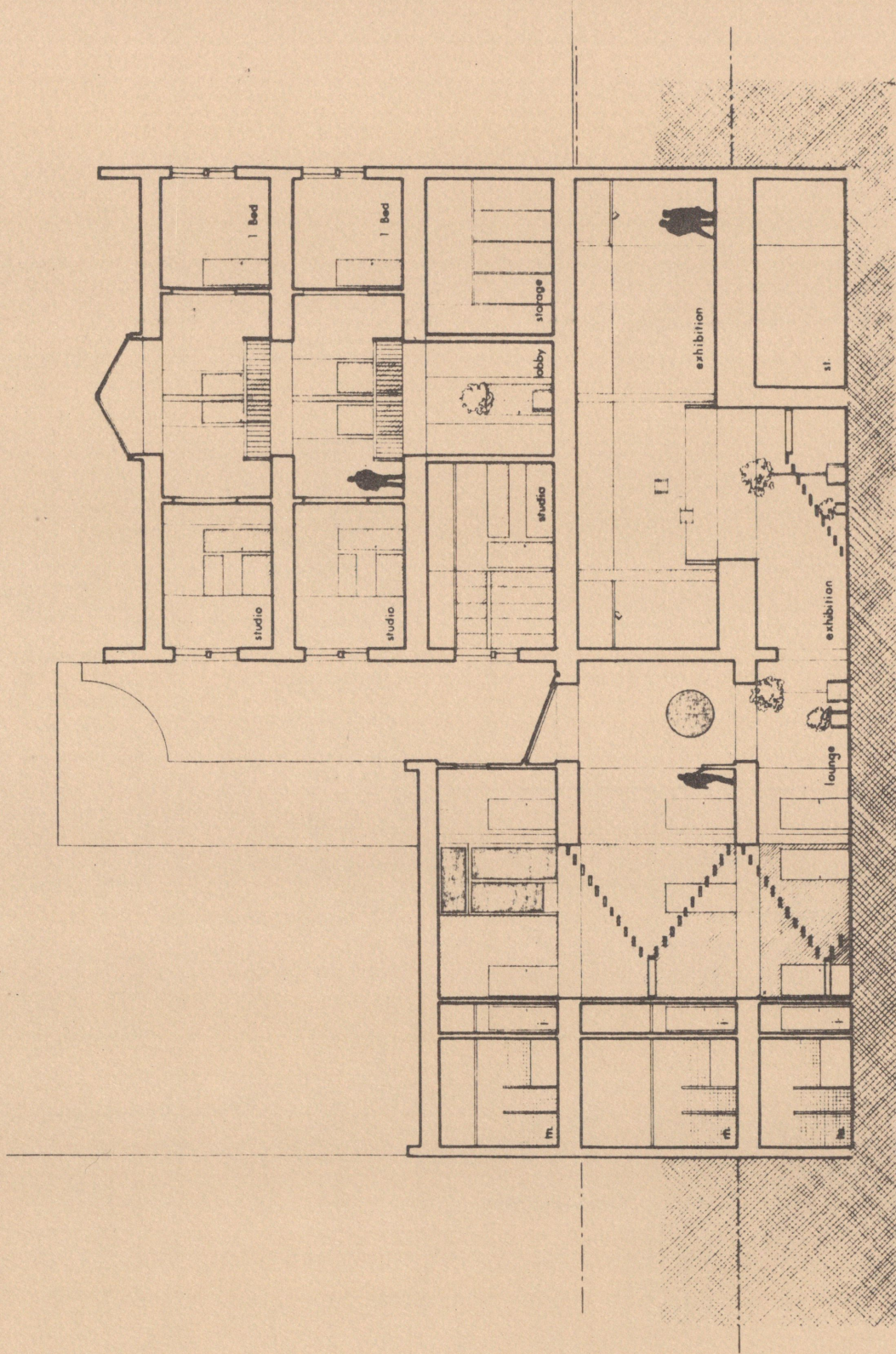




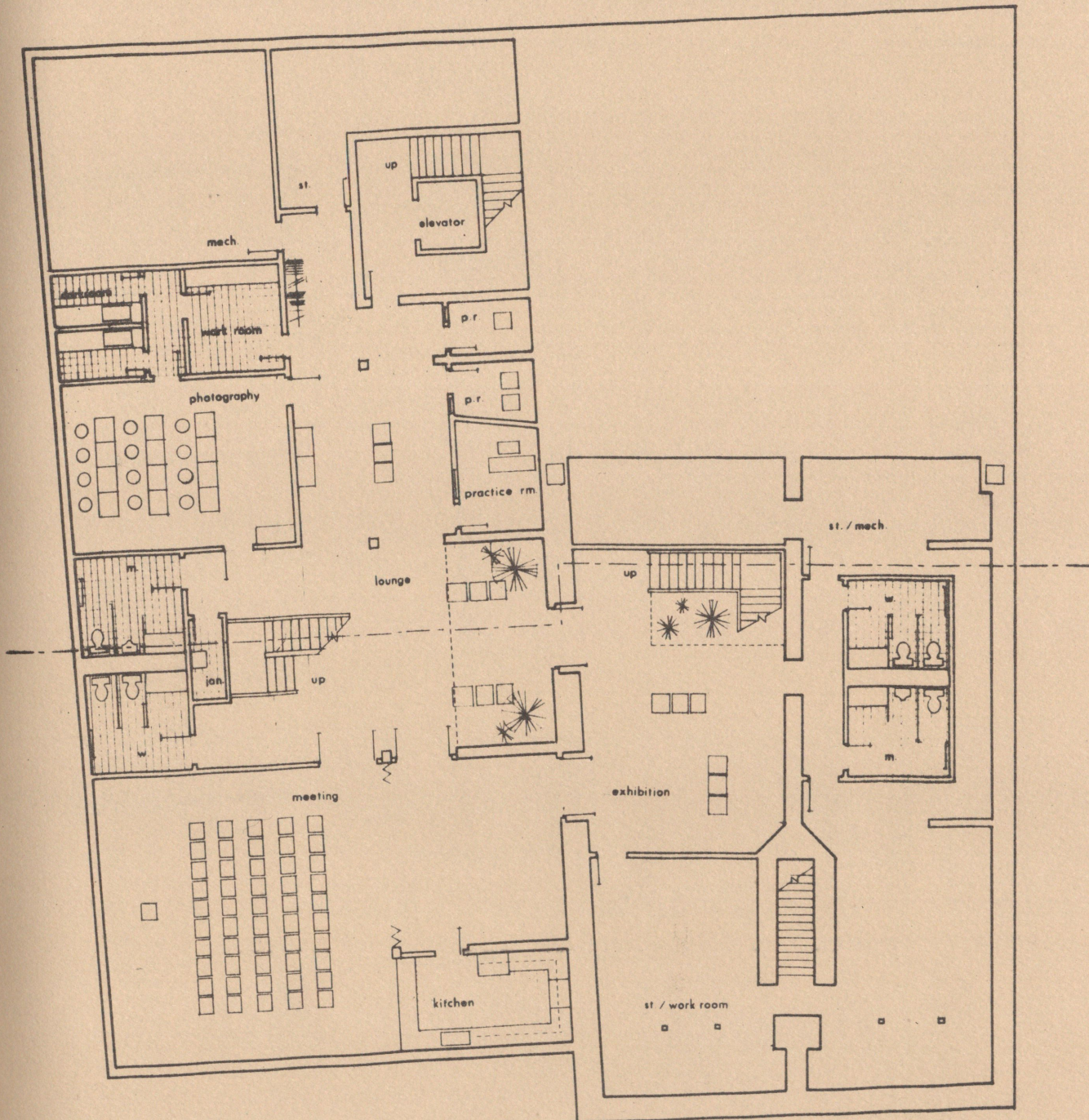
WEST

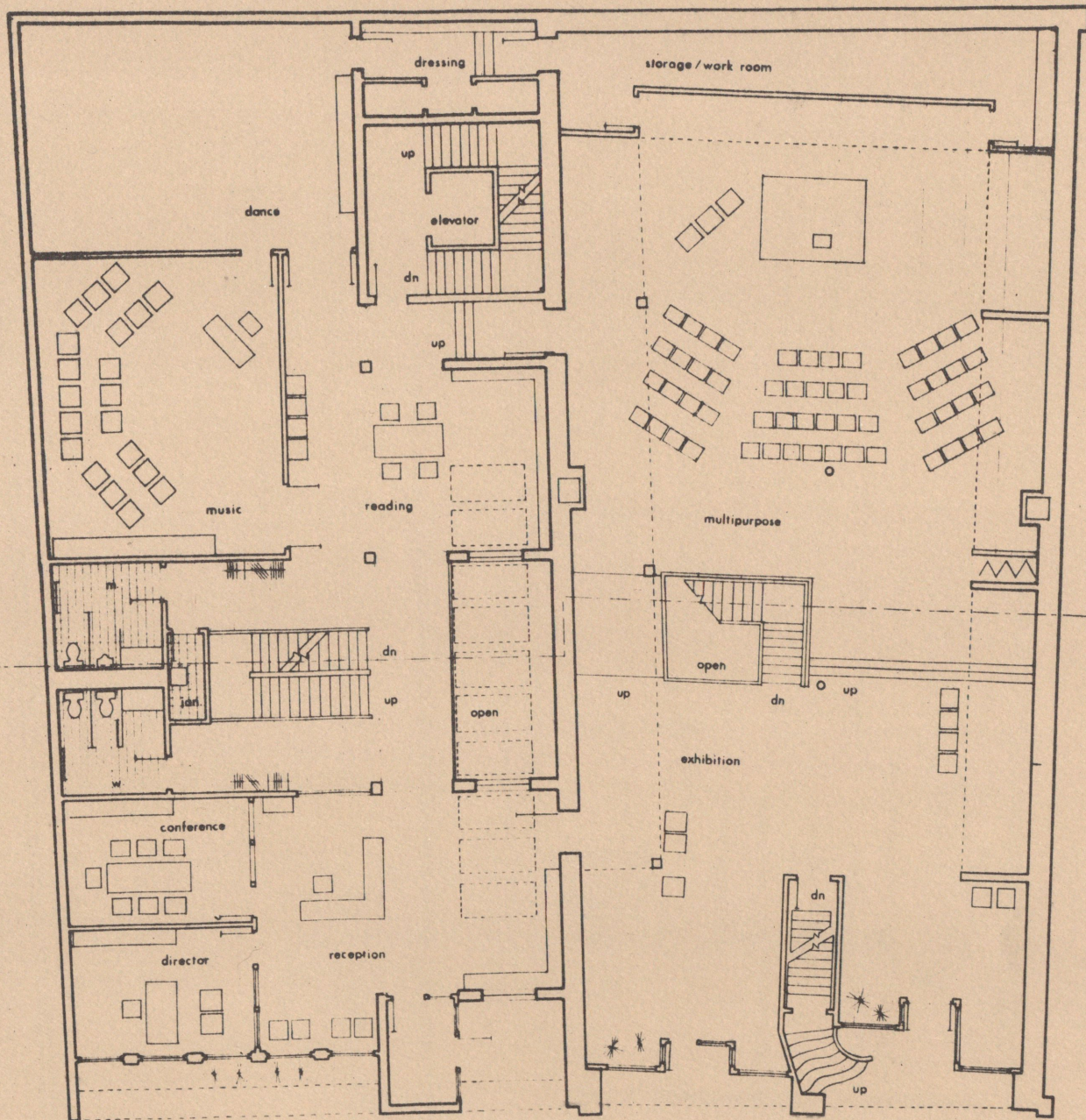


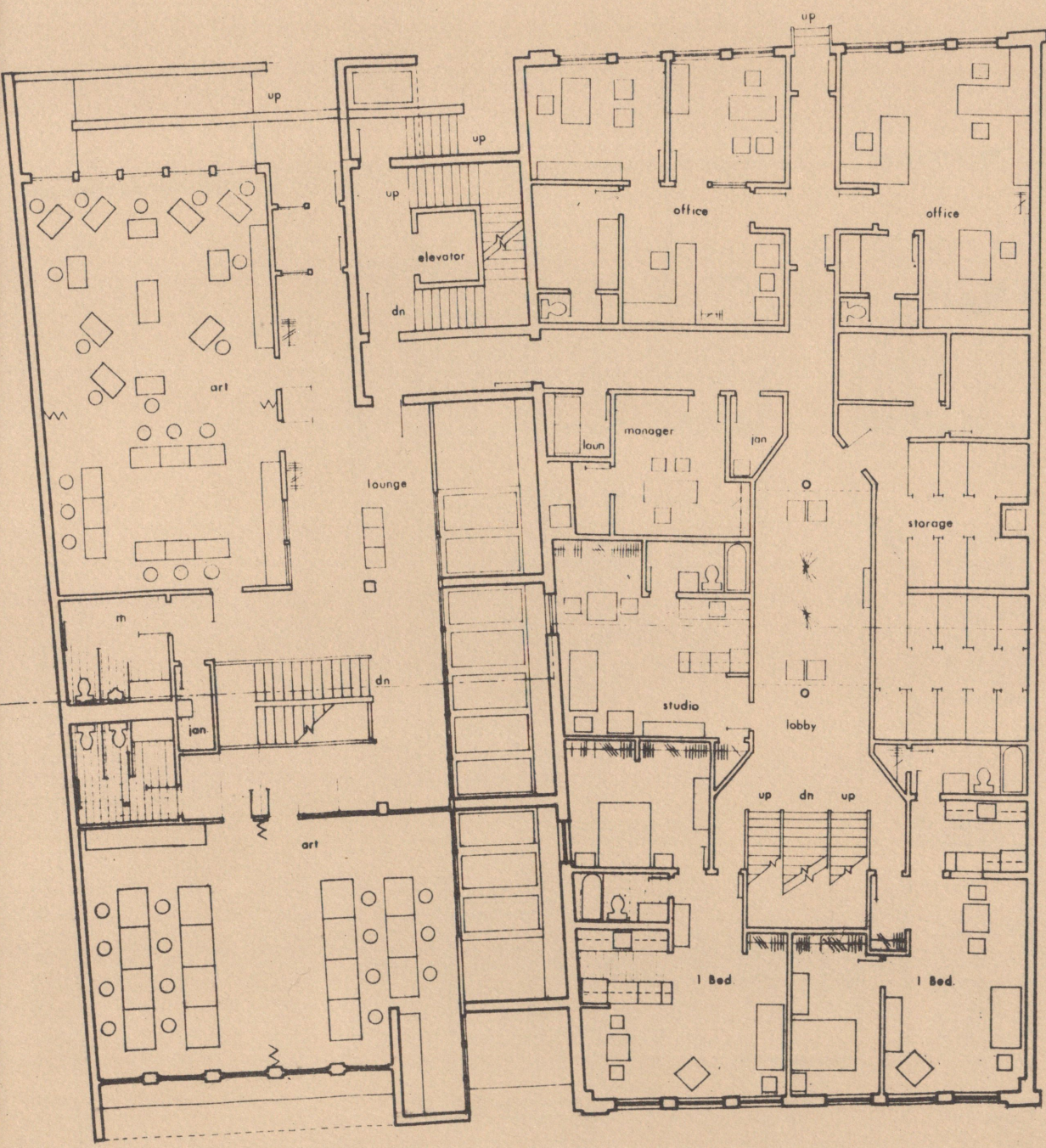
EAST
1/8" = 1'-0"

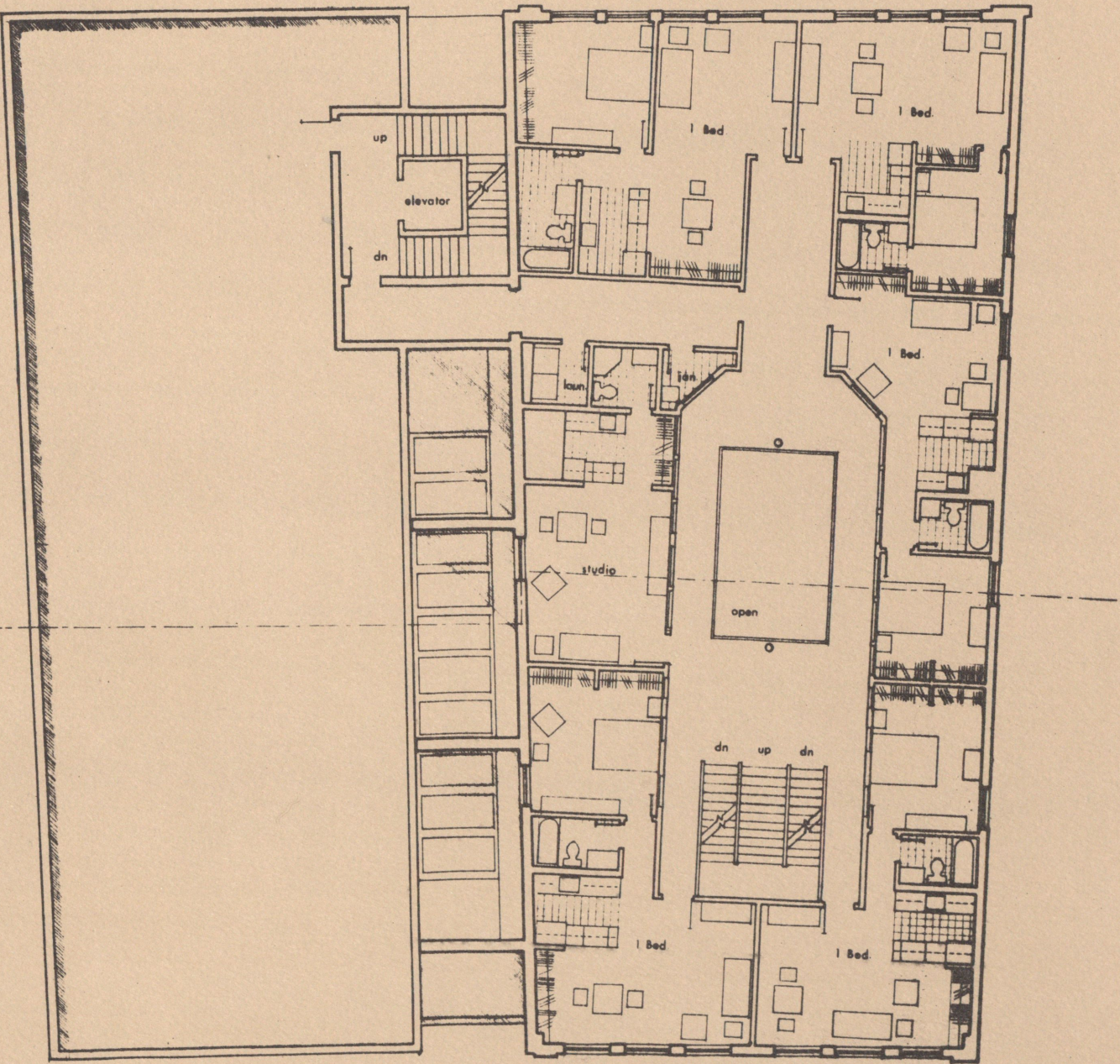


SECTION
1/8" = 1'-0"









CONCLUSION

All through my research on adaptive reuse, I kept running across one general theme - limitations can be opportunities. Structural requirements could define spaces and become a strong design feature. Mechanical systems could enliven spaces and explain functions. Other so called limitations often brought up unexpected opportunities.

I found that I enjoyed working within the boundaries of a city lot, something we had little exposure to in design class. With the form basically determined, I spent my efforts planning that enclosed interior to suit other criteria. Having stringent given data, seemed to supply answers for my design decisions. As I related the new facade to the existing, I again could recognize the importance of the given. Thus it seemed I was looking for not just a solution but the solution for that exact situation.

So, I have not only gained valuable knowledge in adaptive reuse programs but also a basic design tool. I have learned the importance of the given environment in each new design project and how to utilize that given information in generating my design, from overall concept to final details.

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