Historical and visual analysis with design recommendations for storefronts facing the Madison County Courthouse square, Winterset, Iowa

by

K. W. Klotzbach

A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF ARCHITECTURE

Major: Architecture

Signatures have been redacted for privacy

Signatures have been redacted for privacy

1991

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I. INTRODUCTION

"The storefront is the most important architectural feature of many historic commercial buildings. It also plays a crucial role in a store's advertising and merchandising strategy to draw customers and increase business. Not surprisingly, then, the storefront has become the feature most commonly altered in a historic commercial building. In the process, these alterations may have completely changed or destroyed a building's distinguishing architectural features that make up its historic character. As more and more people come to recognize and appreciate the architectural heritage of America's downtowns, however, a growing interest can be seen in preserving the historic character of commercial buildings. The sensitive rehabilitation of storefronts can result not only in increased business for the owner but also can provide evidence that downtown revitalization efforts are succeeding" (Jandl 1983).

The above statement was quoted from one of a series of Preservation Briefs published by the National Park Service. This quote applies to many downtown areas of small town America. The decline of small town central business districts is a complex mixture of social, political and economic issues. Physical deterioration of the building materials and related benign neglect of the structures that house the downtown businesses are intertwined into these larger issues and contribute to the diminishing visual image of the downtown

area as well. The changes in the visual image occur slowly in time and are usually not perceived until it is too late to recapture the original image.

The approach to visual image problems that occur in compositions of architectural facades such as storefronts in a historic commercial district has become an issue that communities are becoming aware of and that environmental planners and designers will encounter.

One community in south-central Iowa, Winterset, while addressing these issues, has begun to rediscover its architectural heritage and has taken steps towards preserving the storefronts facing the courthouse square. Winterset, a community of about 5000, is located in the center of Madison County and is the seat of the county government. The courthouse (Figure 1) is located on a public square in the heart of the downtown business district.

The architectural styles, primarily Italianate, of the courthouse and many of the storefronts oriented toward the square represent a significant period of late 19th century history when commercial districts in Midwestern towns were being established and the established districts were expanding and developing (Figure 2). The emergence of a modified Italianate commercial architecture is evident in catalogs published around the turn of the century which include a variety of prefabricated storefront modules that incorporate Italianate style details into architectural elements.

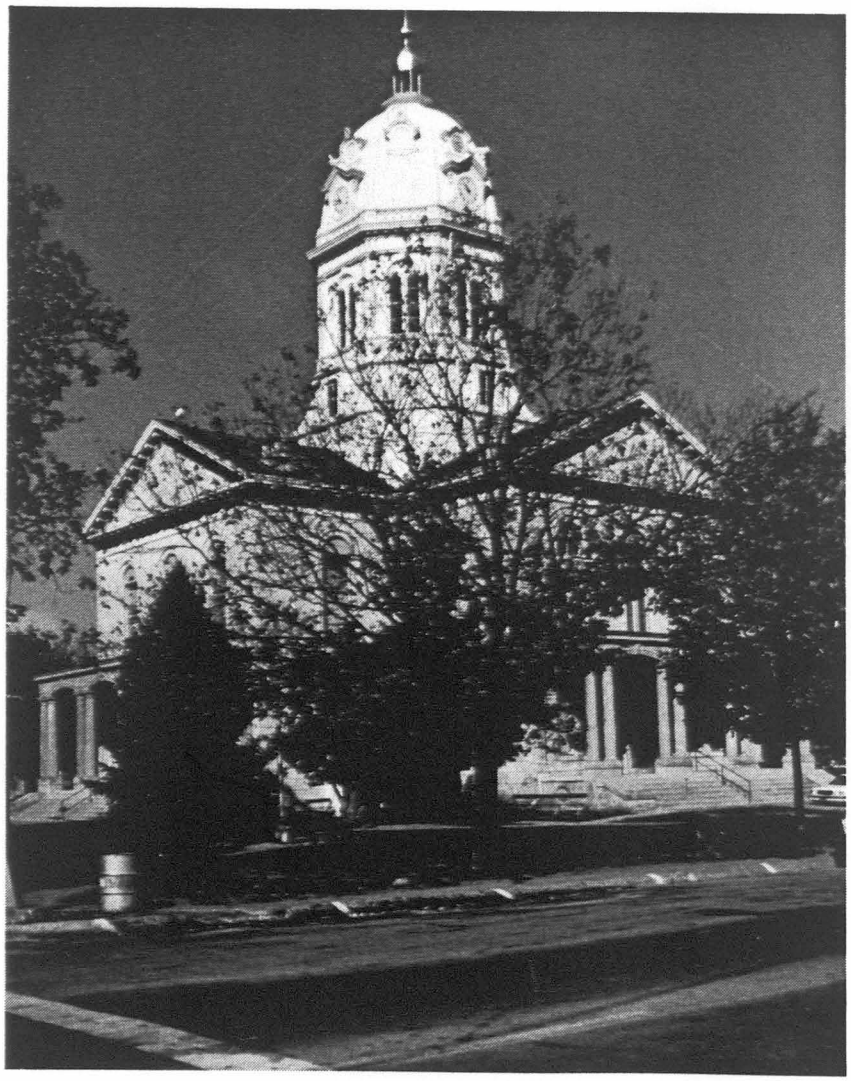


Figure 1. Madison County courthouse

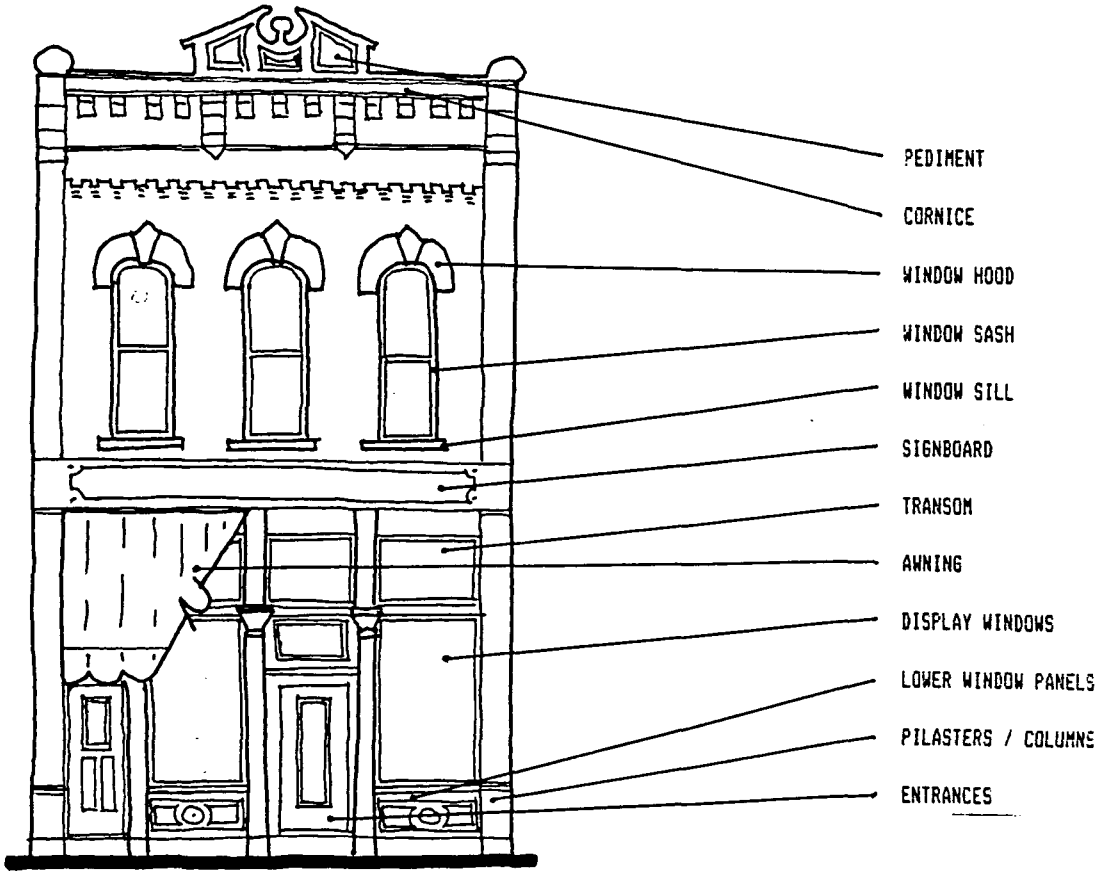


Figure 2. Italianate commercial style architecture

Over time, significant changes have occurred to the buildings and their storefronts facing the square. Some of these changes have altered the overall visual image of the square and most changes have not been conducive to this image. Members of the community are concerned that this component of their heritage may be lost permanently.

One of the current problems related to the storefronts facing the square is sorting out what important distinguishing features and characteristics are to be preserved and how the preservation activity should be undertaken. Individuals and groups in the community differ in opinions concerning the preservation of the heritage and image of Winterset. However, a general concern for preservation of the buildings and storefronts in the courthouse square district is prevalent.

The problem itself has become how to define the elements that contribute negatively to the visual image of the downtown area and what courses of action should be taken to meet these needs. The deterioration of what were originally strong visual characteristics such as building materials and architectural decorative forms and visual pollution introduced by insensitively designed signs on businesses are among the strongest contributors to the overall visual image deterioration of the square.

Brief History of Winterset

The plan of Winterset was laid out in 1849 by Alfred D. Jones with the courthouse square located at the geographical

center of Madison County. The site was selected to enable equal accessibility from all parts of the county. The original plan of Winterset (Figure 3) was laid out on a five by seven block grid with a public square on the center block. Individual blocks in the grid were 264 feet east-west by 281.5 feet north-south with a 17.5 foot east-west alley located at mid-block, except the center block which was a square 264 feet on a side with no center alley. Blocks were divided into 66 feet wide by 132 feet deep lots which are oriented to the east-west streets except for the two blocks immediately east and west of the square which are oriented to the north-south streets. Except for Court Avenue, which was laid out with an 82.5 foot right of way, the remainder of the streets were laid out uniformly with 66 feet rights of way (Niegowski 1989).

The nine blocks in the center of the grid form the immediate courthouse square district. The plan of these blocks is referred to as a Shelbyville square (Figure 4). Price (1986) states that "the Shelbyville square, so called from its prototype in Shelbyville, Tennessee (Figure 5) simply uses a block out of the grid. It is simpler in concept than the Lancaster square and is easier to lay out and is more frequently encountered."

The original courthouse was not built on the square. The first courthouse, built in 1850, was a one story log structure built one block east of the square. The first permanent courthouse was designed and constructed on the square in 1868-

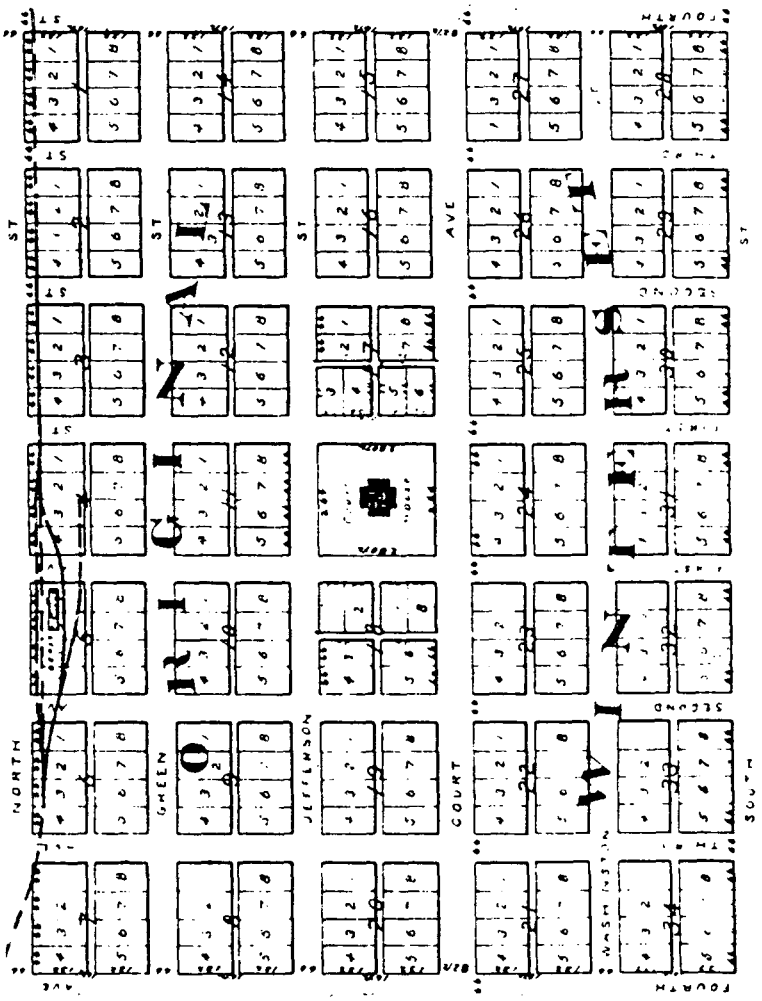


Figure 3. Original plan of Winterset

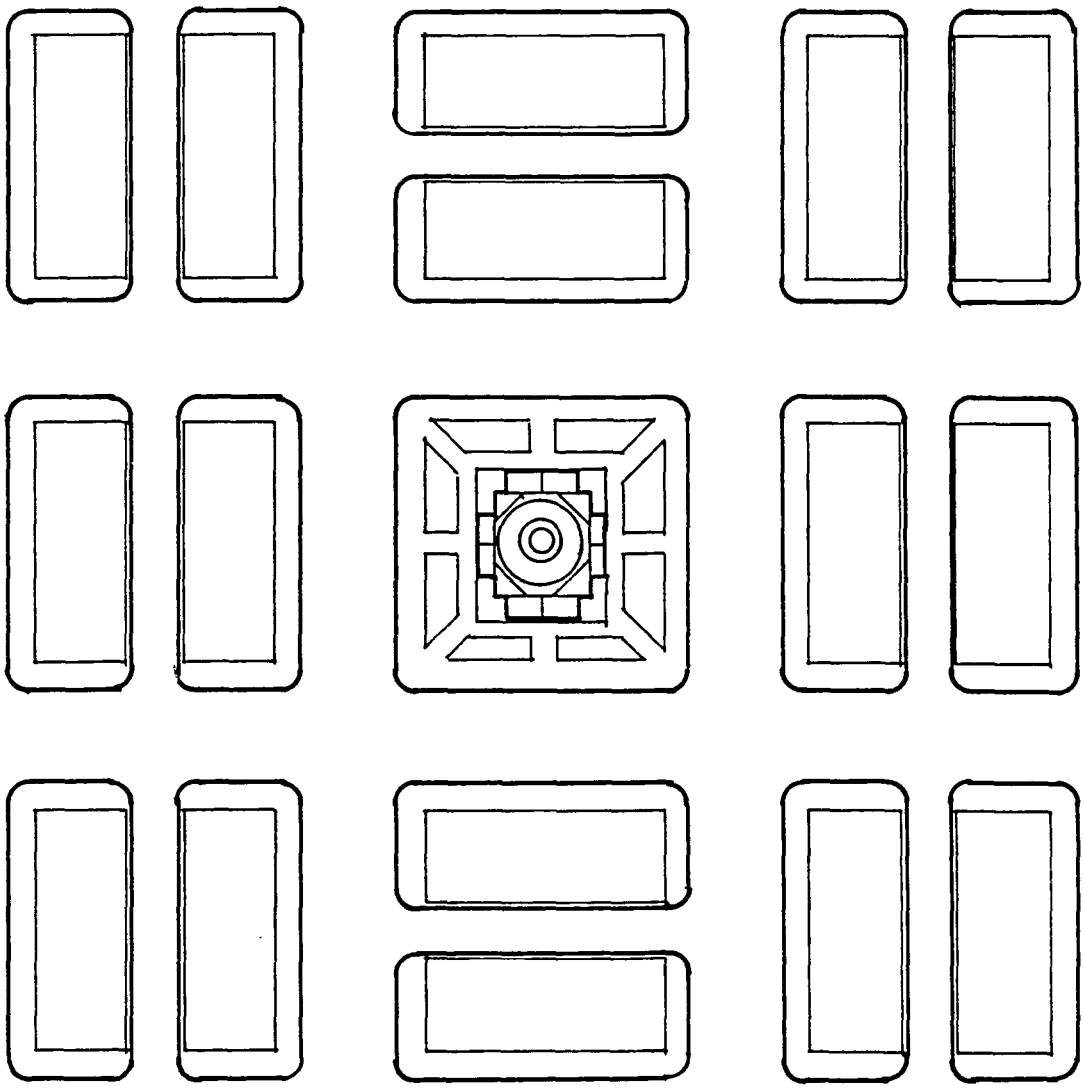


Figure 4. Typical plan of Shelbyville square

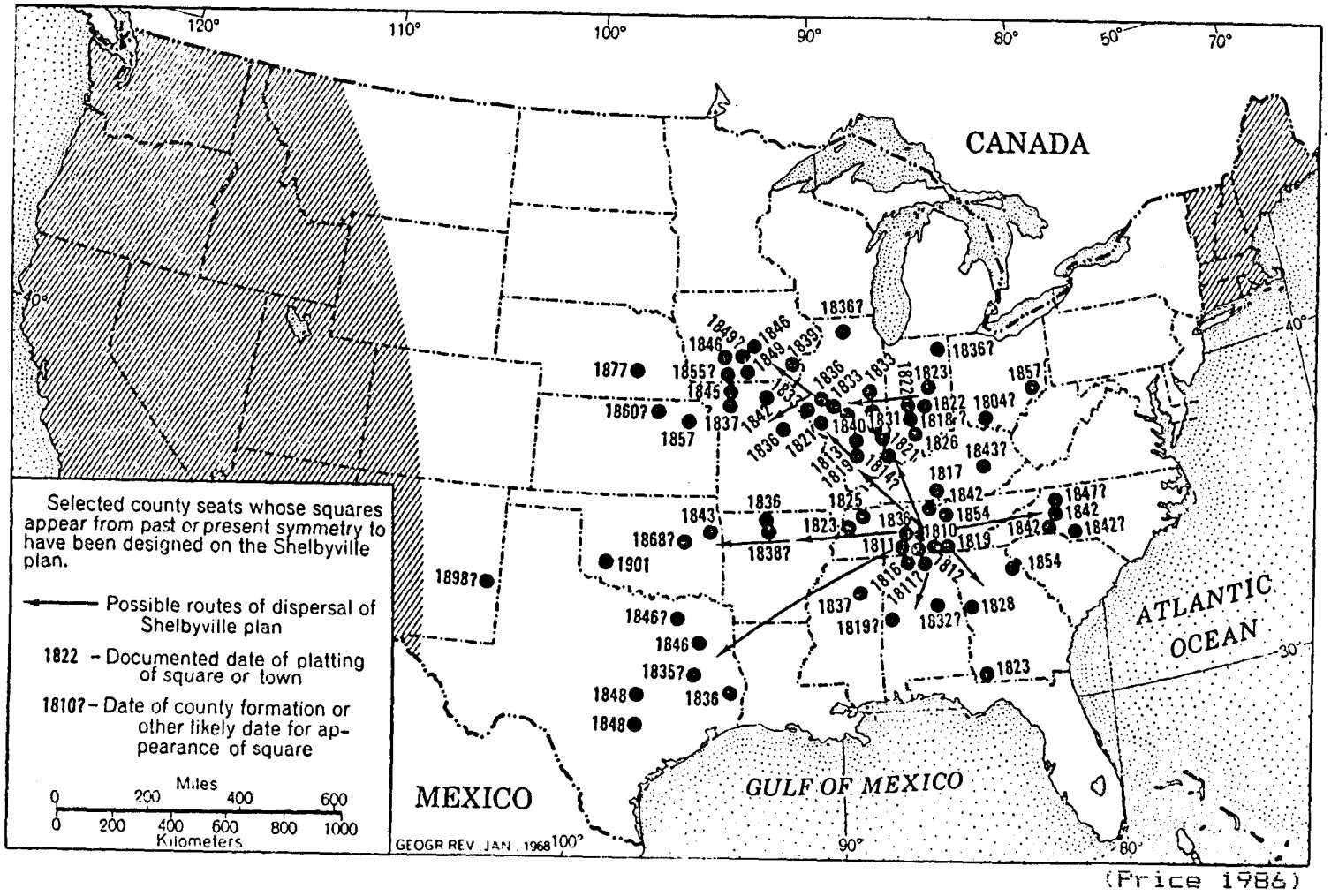


Figure 5. Migration of Shelbyville plan

69. It burned in 1875 and was replaced in 1876-77 with a similar structure designed by A. H. Piquenard, who designed the state capitol buildings of Iowa and Illinois.

Historical and Economic Significance

Winterset is rich in history and its citizens are proud of their heritage. The late movie actor, John Wayne, was born in Winterset and the house that is believed to be his birthplace is enshrined. George Washington Carver lived and worked in Winterset for a brief period of time. A pocket park one block east of the square memorializes him. Madison County has a number of covered bridges and every second weekend in October, the town of Winterset celebrates with a Covered Bridge Day festival on and around the courthouse square. Madison County is where the Delicious variety apple was developed and Winterset was a "depot" on the underground railroad during the Civil War.

Winterset has some economic advantages that make restoration and rehabilitation of the courthouse square district viable. Downtown Winterset is about a 35 minute drive from the Des Moines International Airport and about the same distance from the rapidly expanding office parks in West Des Moines. Winterset is less populated than nearby West Des Moines and is attractive to families not wanting to live in the city. An electronics components manufacturing firm has recently established itself in Winterset and intends to create 500 new jobs.

The combination of increasing population and the amount of tourism that Winterset attracts has the community interested in maintaining and promoting their resources. One of these resources is the retail district surrounding the courthouse square. In 1989 Winterset competed for a grant of up to $50,000 in the Iowa Town Squares program sponsored by the Iowa Arts Council and won. The package they presented to the Iowa Arts Council yielded a grant of $45,000 to be used for developing a plan to maintain and upgrade the buildings and landscape around the town square. The community has already enlisted a design team of professionals to assess current conditions and to make recommendations for improvements to the square. This thesis parallels their study but remains separate as it is primarily academic in nature and is not intended to generate specific recommendations for the preservation treatment of the storefronts in the Winterset courthouse square district.

CHAPTER II. STATEMENT OF THE PROBLEM

Among the larger complex issues such as social, political and economic, which are contributing to the decline of Winterset's downtown district are issues related to the physical deterioration of the building fabric and overall visual image associated with the storefronts facing the courthouse square. These issues, decay of building material and a series of historically inaccurate modifications to the storefronts, over time, affect the visual perceptions of local retail customers and tourists who may or may not decide to conduct business in a particular store simply because of its visual appearance.

Problem Definition

The approach to addressing the visual problems associated with the storefronts begins with an understanding of the buildings. "There are different ways of understanding old buildings. They can be seen as examples of specific building types, which are usually related to a building's function. Buildings can be studied as examples of using specific building materials. They can also be considered as examples of an historical period, which is often related to a specific architectural style" (Nelson 1987).

The meanings of historic buildings also go beyond their physical presence. Nelson (1987) also claims that "there are many other facets of an historic building besides its functional type, its materials, or construction or style that

contribute to its historic qualities or significance. Some of these qualities are feelings conveyed by the sense of time and place or in buildings associated with events or people. A complete understanding of any property may require documentary research about its style, construction, function, its furnishings or contents; knowledge about the original builder, owners, and later occupants; and knowledge about the evolutionary history of the building. Even though buildings may be of historic, rather than architectural significance for association with specific events or persons and it is those tangible elements both on the exterior and interior that should be preserved". Nelson (1987) cautions, however, that "this approach is not a substitute for developing an understanding about the significance of an historic building and the district in which it is located".

Several organizations such as the National Trust for Historic Preservation (NTHP) and the Association for Preservation Technology (APT) were founded on principles of historic preservation and membership includes many experts in the field of building conservation as well as non-trained individuals with an interest in preservation. These organizations actively disseminate information through books, journal articles, and technical pamphlets regarding historic preservation techniques and practices and are recognized as being among the best sources of information covering preservation topics.

However, Ziegler and Kidney (1980) state that in spite of all of our preservation know how, the task of preserving historic buildings in smaller towns and communities "is difficult for two major reasons. The first is money. In the cities, we have learned to summon relatively large sums of capital through memberships, community giving campaigns, fund-raising events, and manipulation of federal programs that apply specifically to urban areas. Few such resources exist for the small town. The second reason is involved with the differences in approach to property in cities and in rural areas. Preservation deals in property; in cities, preservationists buy it and sell it, often with covenants that protect at least the exterior. They seek historic zoning, they demand enforcement of the protective clauses of the Historic Preservation Act of 1966, as well as that all-inclusive protection of buildings from federally financed programs that is expressed in Executive Order 11593. They extend, in effect, the basic concept embodied in all zoning and all environmental protection laws, namely that the right to private property is circumscribed by the public good. Such a view is less restricted. Adequate funding and the sophistication of urban give and take are most often lacking in our small towns and rural areas, and architectural preservation, which seems such a necessary and inevitable course of action, is not, for them, so matter-of-course" (Ziegler and Kidney 1980).

Another part of the problem is arriving at a definition for what a historic building is. "Preservationists generally agree that the history of a building, together with its site and setting, includes not only the period of original construction but frequently later alterations and additions. While each change to a building or neighborhood is undeniably part of its history, much like events in human life, not every change is important" (Weeks 1985).

The definition of what is historic or not is usually related to some reference in time. "Entire districts or neighborhoods may be listed in the National Register of Historic Places for their significance to a certain period of American History (e.g., activities in a commercial district between 1870 and 1910). This 'framing' of historic districts has led to a concern that listing in the National Register may discourage any physical change beyond a certain historical period. This is not the case. National Register listing does not mean that an entire building or district is frozen in time and that no change can be made without compromising the historical significance. It also does not mean that each portion of a historic building is equally significant and must be retained intact and with out change. Some change is thus anticipated within each rehabilitation of a building for a contemporary use" (Weeks 1985).

The individual features and general characteristics of the building must be defined because they provide the key to

understanding the building and give clues to the approaches for preserving the original fabric or designing in the historic context. Therefore, criteria, based on individual building features and general visual characteristics, must be identified and established as a means of analyzing the storefronts.

Lu (1980) states that "preservation criteria are critical because they determine what kind of relationship the new will have with the old in a historic district, yet they often relate closely to other aspects of development regulations as well, such as land use, setbacks, density, signs, and street plans (official mapping). Collectively, the criteria must achieve preservation goals.

Preservation criteria need to address those relevant 'abstracts of aesthetic quality', as William Murtagh has called them, such as materials, color, scale, rhythm and other visual elements that are essential to the integrity of historic districts".

Thesis Objectives

The prime objective of this thesis is to explore and develop methods for the analysis and decision making processes which lead to the preservation and design treatments of late 19th and early 20th century storefronts on commercial buildings. Emphasis will be placed on the process of researching, documenting ,and analyzing the visual features and characteristics of the storefronts that face the Madison

County courthouse in Winterset, Iowa. An important part of this process is to evaluate the methods used by exploring the visual characteristics issues through design. The designs presented in this exploration should not be construed as specific design recommendations, rather they serve as a feedback mechanism to test the analysis methods used in the design process. The expected outcomes of this study, in the form of a set of design recommendations in both verbal and graphic forms, are intended to be applied to historic storefronts in general and not just to those in Winterset.

Winterset's courthouse square district was selected for study because of its proximity to Ames, condition and extent of existing historic building fabric, and an attitude shown by many individuals in the community that was conducive to this particular activity. Although the design recommendations generated depict particular storefronts in Winterset, they are not intended to apply specifically. It is intended, however, that the ideas generated in this study may be useful in Winterset's efforts to preserve and maintain the historic character of the storefronts in the courthouse square district.

One important point to consider is that even with new ideas incorporated into the treatment of historic storefronts, it will be necessary to provide routine maintenance to retain the structural and visual integrity of the storefronts. A large contributor to the visual and physical decline of the

storefronts has been deferred maintenance. Specific maintenance recommendations that address the needs for continual care of the storefronts are beyond the scope of this thesis, however, they are an important component in the preservation treatment of the storefronts and should not be overlooked in an actual preservation plan.

The chapters that follow explore a systematic approach to the visual analysis of the storefronts. The methodology includes a review of related literature, the development of existing conditions elevations of the storefronts, the development and construction of existing conditions models, and the development of matrix diagrams used in analyzing the visual qualities of the storefronts. The expected outcome of following this methodology is a rational process of decision making used in the design treatments of the storefronts facing the Madison County courthouse square.

The analysis is followed by a set of recommendations based on selected appropriate alternatives for the design treatments of the storefronts with respect to their important historic features and characteristics while viewing them in their present context. While implementation of an ongoing periodic inspection and maintenance plan for the storefronts is suggested in the design recommendations, specific actions are not outlined as they are beyond the scope of this thesis. Upon completing this process, the analyses and recommendations are finally reviewed and summarized in the conclusions.

CHAPTER III. LITERATURE REVIEW

A literature search was conducted primarily for the purpose of obtaining information related to the analysis of commercial buildings built in the late 19th century to the early 20th century and to understand historical development of the courthouse square district in Winterset.

The specific information being sought included explanations of methodologies used in analyzing historic commercial buildings (archival research, photography, measured drawings, etc.), descriptions of historic commercial buildings (definitions of stylistic characteristics, descriptions of building materials and construction methods, etc.), explanations of methodologies used in building conservation (analysis of the building, recommendations for preservation, etc.) and historical background information related to the plan and layout of the courthouse square and surrounding commercial district in Winterset.

Preservation Briefs

The Preservation Briefs published by the National Park Service proved to be the most useful source of information for describing building conservation methodologies and contain both technical information and insight to approaching the problems of design and restoration of historic buildings and historic districts.

The information in Preservation Brief numbers 11, 14, and 17 was directly applicable to the problems associated with the

storefronts facing the Madison County courthouse square. Preservation Brief 11 presents methodologies for rehabilitating historic storefronts. Preservation Brief 14 presents a series of short case studies of new exterior additions to historic buildings and Preservation Brief 17 describes a methodology for defining architectural character by identifying the visual aspects of historic buildings. The information in Preservation Brief 17 provided a basis for setting up analysis tools such as the existing conditions elevation drawings and models and the analysis matrices described in the following chapters.

Weeks (1985) states in Preservation Brief 14 that "a project involving a historic building is considered acceptable within the framework of the National Park Service's standards if it: 1, preserves significant historic materials and features; 2, preserves the historic character; and 3, protects the historical significance by making a visual distinction between old and new." Although this brief was written with respect to exterior additions to historic buildings, most of this information can be translated into defining appropriate actions for replacement features on existing buildings as well as infill where a new building is to be placed within a historic context.

Photography

Recording Historic Structures, a recently published book by the Historic American Buildings Survey (HABS) and the

Historic American Engineering Record (HAER) divisions of the National Park Service, spells out the methodology for conducting research and documenting historic structures. One chapter is devoted to photography. Lebovich (1989) states that "photography is the least expensive, fastest, and easiest method of documentation. But photographs are also taken when measured drawings and histories are prepared. In such situations, photographs complement the other work.

"Photographs are more easily understood and can convey information not normally included in the other forms of documentation. Three dimensional qualities, spatial relationships, current conditions, texture and context (are) more quickly comprehended in a photograph than through a lengthy written description. Texture of materials is difficult to depict by drawing or writing. Certain aspects of current conditions such as minor cracks, spalling or peeling paint would be too small or too time consuming to draw. A single photograph, taken from the right vantage point, establishes the environmental setting for a building or structure to be studied. To achieve the same result with a history or drawing would require expending too much effort on a secondary aspect of the subject being documented. In making decisions about documenting a resource, it is critical to understand what aspects of a building or structure are best depicted by photographs, a history, or drawings" (Lebovich 1989).

Photography of storefront elevations is one method used in establishing base elevations that document existing conditions. "How CADD Helped Restorations" by Thomas K. Butt (1989), discusses the use of computer-aided design and drafting (CADD) in the "analysis of historic buildings in elevation and the generation of restoration schemes for these elevations. Although seemingly rapid and convenient, digitizing from a photo of an existing building does not permit precise recording due to slight variations in photos. As it turned out, checking the precision of the photo tracings consumed the time that computerized tracing saved. On the Oroville (California) project, the time required to record one structure ranged from two hours for a simple, unadorned facade to 15 hours for a facade with ornate details. Once project data was stored in the computer's memory, however, we found that organizing and revising it was much simpler than with the more traditional hand-recorded methods" (Butt 1989).

Measured Drawings

Another chapter in Recording Historic Structures is devoted to measured drawings. Burns (1989) has compiled a chart of different types of architectural and engineering drawings, which existing condition drawings are a part of. "Existing condition drawings record the physical fabric and conditions of a structure at a given point in time. They are often produced as the first step in the rehabilitation or restoration of a historic structure. HABS/HAER measured

drawings are a specialized subset of existing condition drawings. Measured drawings are one of the most expensive forms of architectural and engineering documentation because of the length of time they take to produce. But they are produced for many reasons. They can be used as the basis for planning restoration or rehabilitation work, to record a structure facing imminent demolition, to aid in the normal maintenance of a structure, as a protection against catastrophic loss, or as a scholarly study" (Burns 1989).

Maintenance of Historic Structures

In Conservation of Historic Buildings, by Sir Bernard M. Feilden (1982), a description of the methods used in careful inspection and analysis of historic structures are discussed. Feilden also makes a case for routine inspection and cyclic maintenance as part of a building's conservation program, a practice which has been largely ignored by architects.

Other Related Literature

Other information searched for during the literature review included similar research related to visual image studies of architectural facades and the definitions of terms associated with the preservation of historic buildings. This background information was necessary to enable the formulation of the decision making processes developed in this thesis.

Visual Image and Design Relationships

Guytinco (1987) proposes establishing visual image continuity as a means to unify and give identity to

architectural facades. Unifying the visual image of the facades does not imply "sameness"; rather, it suggests an "effect produced by the various components of a particular style or group of styles within a unifying streetscape. These elements are visually linked to create one visual image."

"Cities and communities are more aware of historical values and therefore are concerned with how much environmental designers can contribute to the development of a social image and identity. Through the implementation of preservation laws and ordinances, communities express their expectations to professional designers and to reinforce their obligation to preserve the architectural integrity of their cities.

"A way of architecturally developing and maintaining a community image is manifested through the design of facades of built structures. Historically, facades and other architectural forms were interpreted symbolically; evolving from representations of power, a gradual transition to representing culture and the increasing scope of professional design activity. Today, facades are varied in form, color and texture to reflect individual tastes, Individual variations in architectural facades are aesthetic contributions to the historical substance of cognitive environments" (Guytinco 1987).

In Old and New Architecture: Design Relationship, published by the NTHP, a series of readings describes various preservation issues and how they relate to new design.

Goldberger, in one of the readings, discusses the difficulties encountered with the fusion of new design in historical contexts.

"The question of the design of buildings of the design of historic districts, of the juxtaposition of old and new is as difficult and subtle a dilemma as exists in architecture. There are no formulas or simple guidelines. If there were, they would have been found long ago, and there would be no need for discussion. An architect could just take one from column A and one from column B, so to speak" (Goldberger 1980).

Definitions

Definitions for specific terms used in the decision making processes involving historic structures is required so that all parties engaged in these activities can communicate their ideas more clearly. Many terms are used in describing the treatment of historic structures, some more specific than others. Among the most vague are terms such as: "remodeling", "refurbishing", and "renovation". Two sources, the glossary (Figure 6) in The Brown Book (NTHP 1983a) and Table 630-5 (Figure 7) in Time Savers Standards for Landscape Architects (Harvey and Buggey 1988) contained more precise terms with clear definitions. These will be considered as the working definitions in this thesis.

The information obtained from the literature review was useful in establishing the methodology for analyzing the

PRESERVATION
Generally, saving from destruction or deterioration old and historic buildings, sites, structures and objects and providing for their continued use by means of restoration,rehabilitation or adaptive use. Specifically, "the act or process of applying measures to sustain the existing form, integrity, and material of a building or structure, and the existing form and vegetative cover of a site. It may include stabilization work, where necessary, as well as ongoing maintenance of the historic building materials." (Secretary of the Interior's Standards)

RECONSTRUCTION
"The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, or object, or part thereof, as it appeared at a specific period of time." (Secretary of Interior's Standards)

REHABILITATION
"The act or process of returning a property to a state of utility through repair or alteration which makes possible an efficient contemporary use while preserving those portions or features of the property which are significant to its historical, architectural and cultural values." (Secretary of Interior's Standards)

RESTORATION
"The act or process of accurately recovering the form and details of a property and its setting as it appeared at a particular period of time by means of the removal of later work or by the replacement of earlier work." (Secretary of Interior's Standards)

Figure 6. Terms and definitions (NTHP 1983a)

TABLE 630-5
Approaches to Historic Landscapes

Approach	*Definition*	*Implications*
Preservation	To maintain site essentially as it is, neither upgrading nor permitting deterioration, e.g., Dumbarton Oaks, Washington, D.C.	▪ Low intervention—protection of historical fabric without destruction ▪ Only possible where site condition permits such low intervention ▪ Undiscriminating record of site evolution
Conservation	To actively intervene to prevent further deterioration of site or site elements	▪ Protection of historical fabric, sometimes involving partial destruction and replacement ▪ Application of scientific testing and technology
Rehabilitation	To upgrade to modern standards while recognizing and retaining historical character	▪ Limited historical research to ensure recognition of significant elements ▪ Modern and historic elements must be integrated sensitively ▪ May involve a high degree of intervention and the resulting loss of historical fabric
Restoration	To put back what was once there as accurately as possible, e.g., Stourhead, England	▪ Necessitates extensive historical research and accuracy ▪ Archaeological investigation is needed ▪ Usually necessitates a high degree of intervention, e.g., removal ▪ Construction and design: replacement
Reconstruction	To recreate what was there in the past but exists no longer, e.g., Governor's Garden, Williamsburg, Virginia	▪ Necessitates extensive historical and archaeological research to obtain accuracy ▪ Reproduction of design, elements, and artifacts is necessary ▪ Appropriateness to museum site must be considered
Reconstitution	To put in what would be appropriate to period, scale, use, and so forth, e.g., Upper Canada Village, Morrisburg, Ontario	▪ Broad historical research is needed to establish character and pattern to be reproduced

Figure 7. Terms and definitions (Harvey 1988)

visual image of the storefronts. Photographs of the existing storefronts combined with accurate storefront plan measurements provided the base information to develop a set of existing conditions drawings and models form which the analysis was developed.

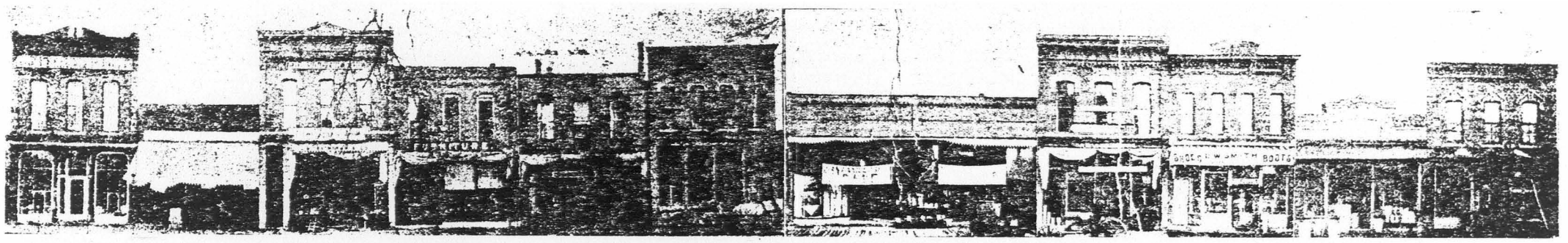
CHAPTER IV. ANALYSIS

The primary problems associated with the storefronts are visual in nature and required sources of information that were related to the visual arts. Primary and secondary information in the form of photographs, drawings, and models was essential to analysis of the storefronts.

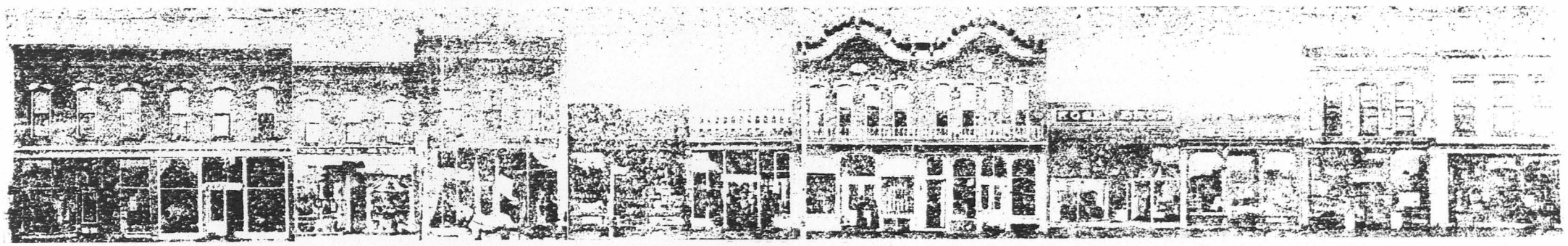
Archival Research

Archival sources were identified and researched primarily for historic photographs and other information that would aid in the analysis of the storefronts. The search began at the Madison County Historical Society in Winterset. The library contained a collection of scrapbooks compiled by local residents. Most of the information in the scrapbooks was in the form of newspaper articles which were pasted to the pages. Some photographs of activities in the courthouse square district were included with these clippings.

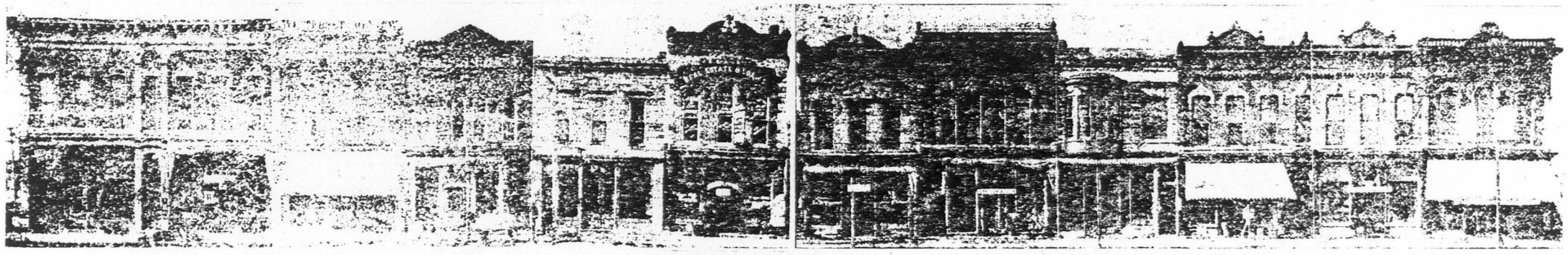
Essential visual and historical information was found in a scrapbook with clippings from the December 27, 1899 "Winterset Review" newspaper (Figure 8). This year-end edition of the 50 year anniversary of Winterset contained a complete set of photographed elevations of the storefronts facing the courthouse square. These photographs made the documentation of previous existing conditions possible as it was the only source that had a complete set of storefront elevations all taken within a very narrow time frame and were referenced to a specific date.



EAST SIDE OF SQUARE - 1899



SOUTH SIDE OF SQUARE - 1899



WEST SIDE OF SQUARE - 1899

NORTH SIDE OF SQUARE - 1899

Figure 8. Photographic record of storefront elevations

Another important archive discovered was a panel of eight aerial views (Figure 9) of the storefronts apparently photographed from an upper level of the courthouse. A caption on the panel states that the photographs were taken between 1868 and 1872. At the time these photographs were taken a number of wood frame structures occupied lots facing the courthouse. All of these have since been replaced with either stone or brick structures. Wooden covered walkways attached to the storefronts were among some of the more important details observed.

Permission to remove and photocopy the scrapbook containing the historic storefront elevations was not granted at the time, so slides of those particular pages were taken for later study. The slides were studied and elevation drawings (Figures 10-13) were generated approximating historic conditions of the 1899 storefronts. The photographs of the storefront elevations showed complete construction of all storefronts in materials, most of which exist yet today. Two major problems were encountered, however; one was the deteriorating condition of the paper on which the images were printed and the other was storefront details blocked by elements such as covered walkways and awnings casting shadows.

The local newspaper office, "The Winterset Madisonian", was the next source investigated. The primary objective was to locate original photographs or negatives of the elevations contained in the aforementioned scrapbook. These were not

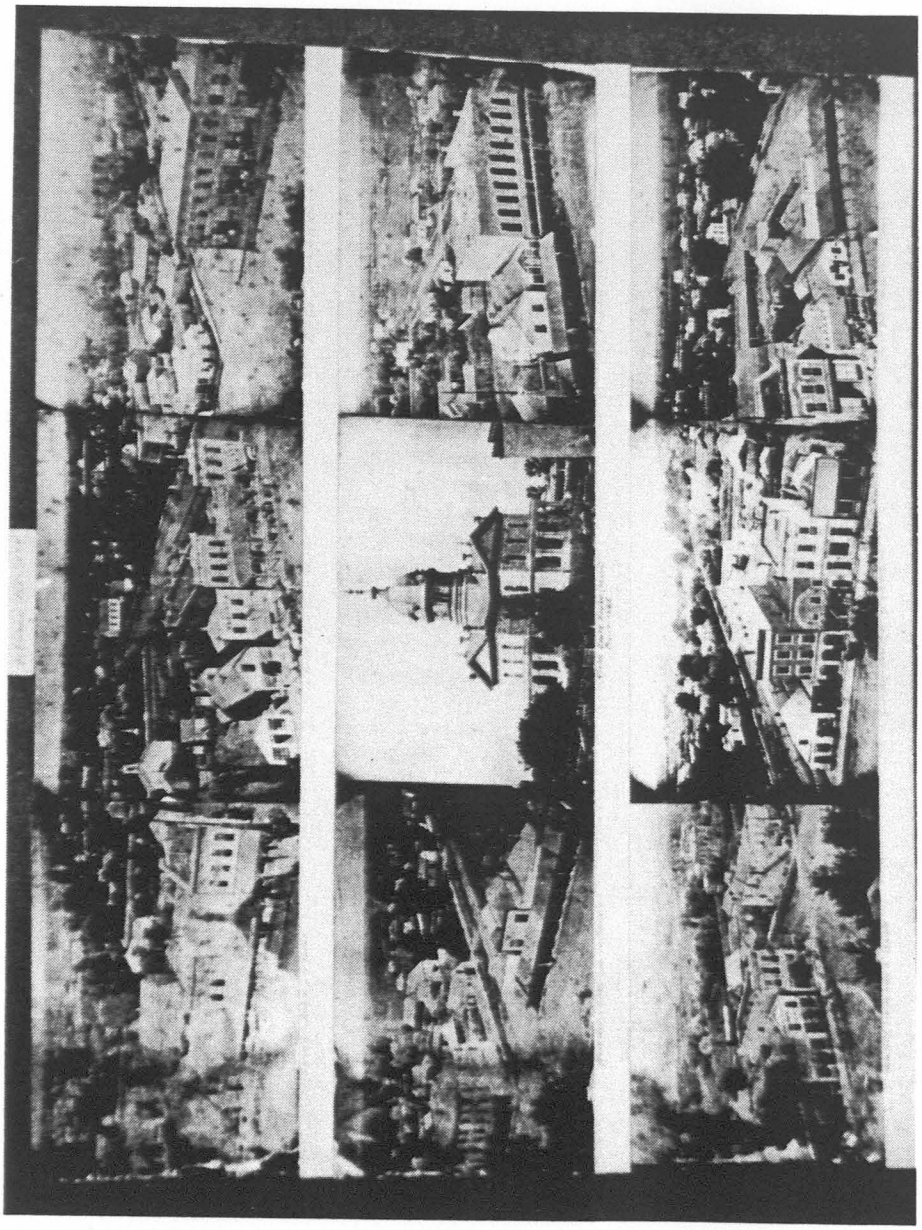


Figure 9. Aerial views of the courthouse square 1868-72

Figure 10. East elevation: historic conditions

Figure 11. South elevation: historic conditions

Figure 12. West elevation: historic conditions

Figure 13. North elevation: historic conditions

discovered during the search and afterwards an employee stated that the newspaper which printed the elevations had gone out of business and that the most probable location of archival storage for the newspaper had been lost in a fire some years earlier.

The Iowa State Historical Society Archives were researched for reproductions of the elevation photographs found in the scrapbook in the Madison County Historical Society archives. A microfilm of the December 27, 1899 "Winterset Review" was located in the State Historical Society archives in Des Moines, Iowa and reproduced for later study. The quality of microfilming was poor and less detail was discernable than what was observed on the scrapbook photographs. The original pages of the newspaper from which the microfilm was shot had been sent out for binding with other issues and was not available for viewing.

Another source researched at the State Historical Society collection was a set of fire insurance maps. The fire insurance maps showed plans of buildings with their general type of construction such as wood or masonry. These were useful only in the sense that by reading them consecutively by year of publication an evolution of construction materials could be observed. The major pattern recognized in this series of events was the disappearance of wood frame structures which were replaced with brick and masonry structures. The major drawbacks to using this source are that

the maps are not updated annually and do not indicate detailed information such as architectural style.

Another possible source for originals or reproductions of the photographed elevations was private photo collections of local historians. Two Winterset historians, Gary Allen and Gene Crawford, had compiled sets of historical photographs of Winterset and allowed viewing with previously requested permission. Although the original elevations were not located in either of these two sources, there were a number of photos depicting events on the square with some storefronts shown in perspective.

Documenting Existing Conditions

The documentation of existing conditions phase began with a first-hand visual inspection of the storefronts and the surrounding environment. This was done to assess the general conditions of the storefronts and to aid in decisions regarding the types of documentation methods to be implemented in the analysis of the visual characteristics of the storefronts.

Documenting the existing conditions is important as it serves as a base point for examining any changes that may have occurred over time when compared to old photographs or other historic visual images of the storefronts. Capturing the current visual images of the storefronts also allows for assessment of actions to be taken with respect to the preservation treatment of the storefronts.

Recording existing conditions with photography and measured plan drawings of the building materials were the two basic methods used to generate a set of accurate base elevations (Figures 14-17), for use in comparing existing conditions to historic images as well as in the development of design recommendations.

Two sets of photographic images were generated; one in 35mm color slide format and one in 3" x 5" color prints from 35mm negatives. The slides were used for developing preliminary storefront elevation sketches and the prints were used for study in the development of the 1" = 8'-0" analysis models.

The preliminary elevation sketches were combined with cumulative horizontal measurements along the base of the storefronts and a base plan delineating lot lines obtained from the Madison County Assessor's office. The resulting product was a set of elevations depicting existing conditions of major building structure and significant details.

Plotted below the base elevations is a partial plan of the storefronts at street level showing articulation of major openings and structural members. The plan shows the sidewalk from the curb to 12 feet in from the major plane of the storefronts. The plan was added to clarify features on the storefronts that could not be delineated on the elevations. A tenant reference map (Figure 18) obtained from the Winterset Chamber of Commerce is included for storefront identification.

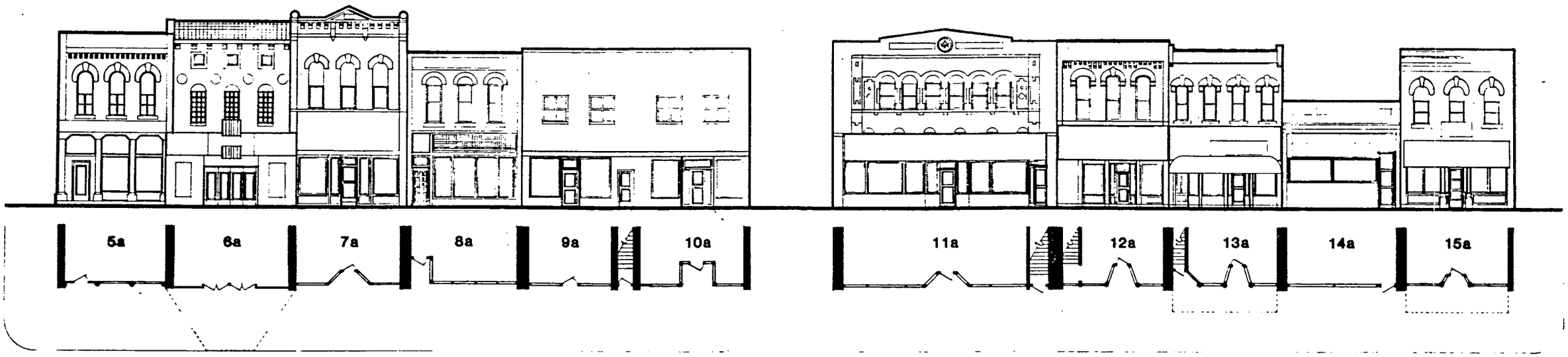


Figure 14. East elevation: existing conditions

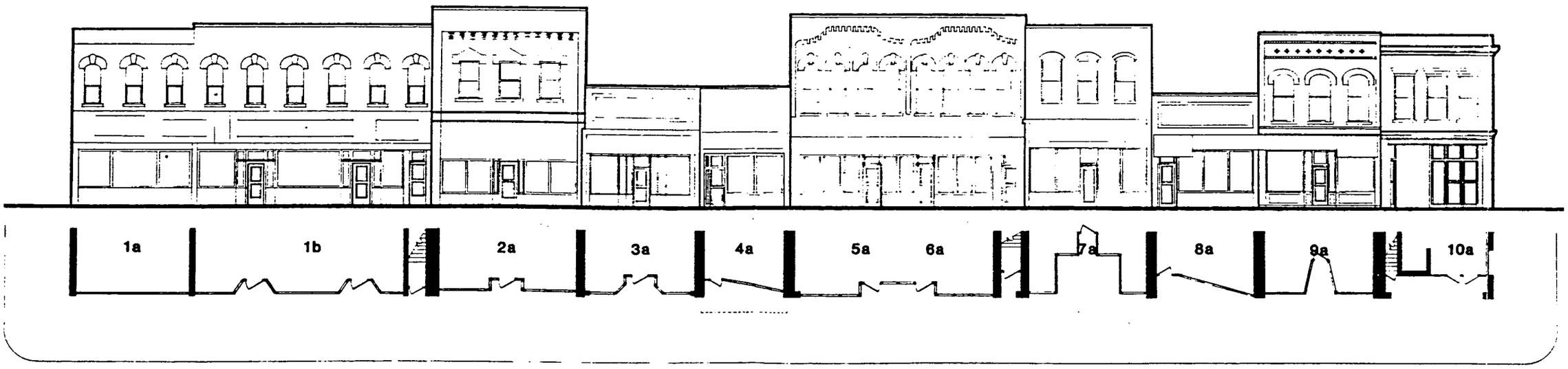


Figure 15. South elevation: existing conditions

Figure 16. West elevation: existing conditions

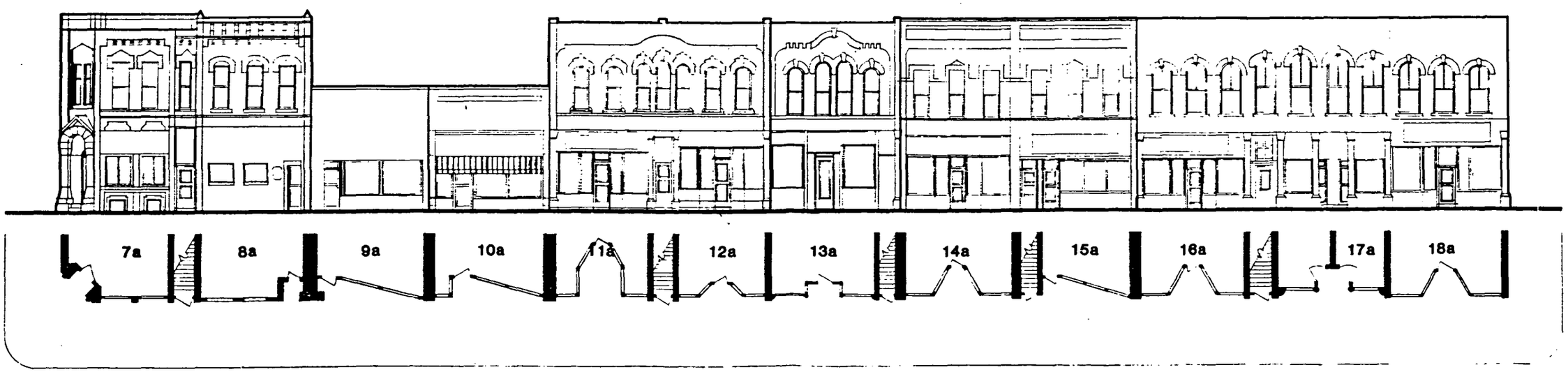


Figure 17. North elevation: existing conditions

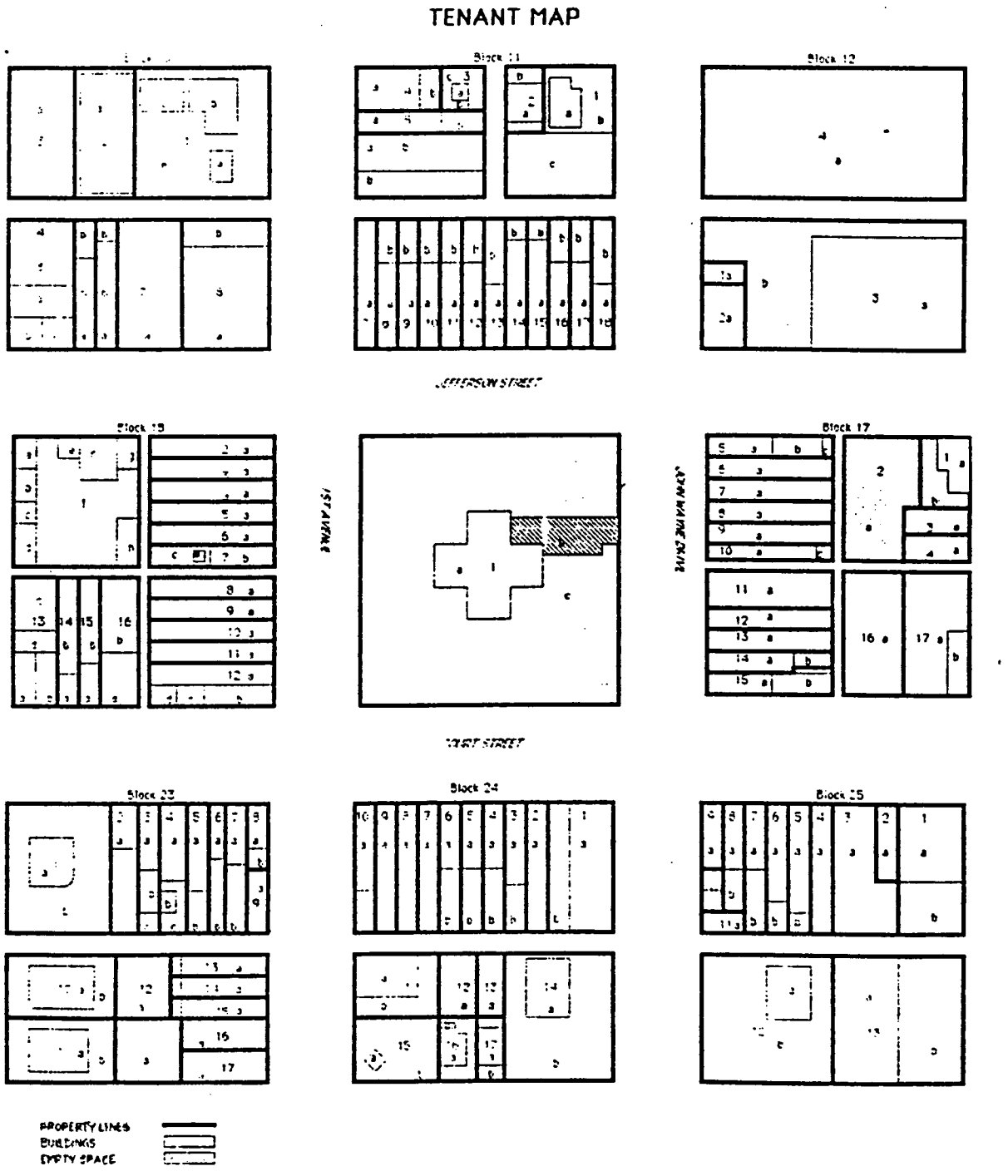


Figure 18. Tenant reference map

Two small scale plans were drawn to show relationships with some of the larger issues associated with urban planning. One plan (Figure 19) showed the current boundaries of the city with the city blocks and major streets with the locations of major public facilities such as schools, churches, restaurants and hotels. This plan showed the proximity of each of these facilities to the courthouse square and the major paths to and from the square.

The other plan (Figure 20), drawn at a 1" = 50'-0" scale, shows the footprints of all major buildings in the courthouse square district. Existing parking arrangements around the square are shown as well as major changes to the square itself.

Modeling Existing Conditions

Two types of models were constructed from chipboard and cardboard to aid in the analysis of the existing conditions of the courthouse square district and the storefronts themselves.

A small scale model (1" = 50'-0") included the nine block area surrounding the courthouse district (Figure 21). The model was generated to give a sense of scale in the immediate vicinity and to aid in orientaion. Buildings were represented in massing only with no detail. Major vegetation, automobiles, and people (all at the appropriate scale) were added to enhance the sense of scale.

A set of larger scale models (1" = 8'-0") were constructed to depict major structure and details of the

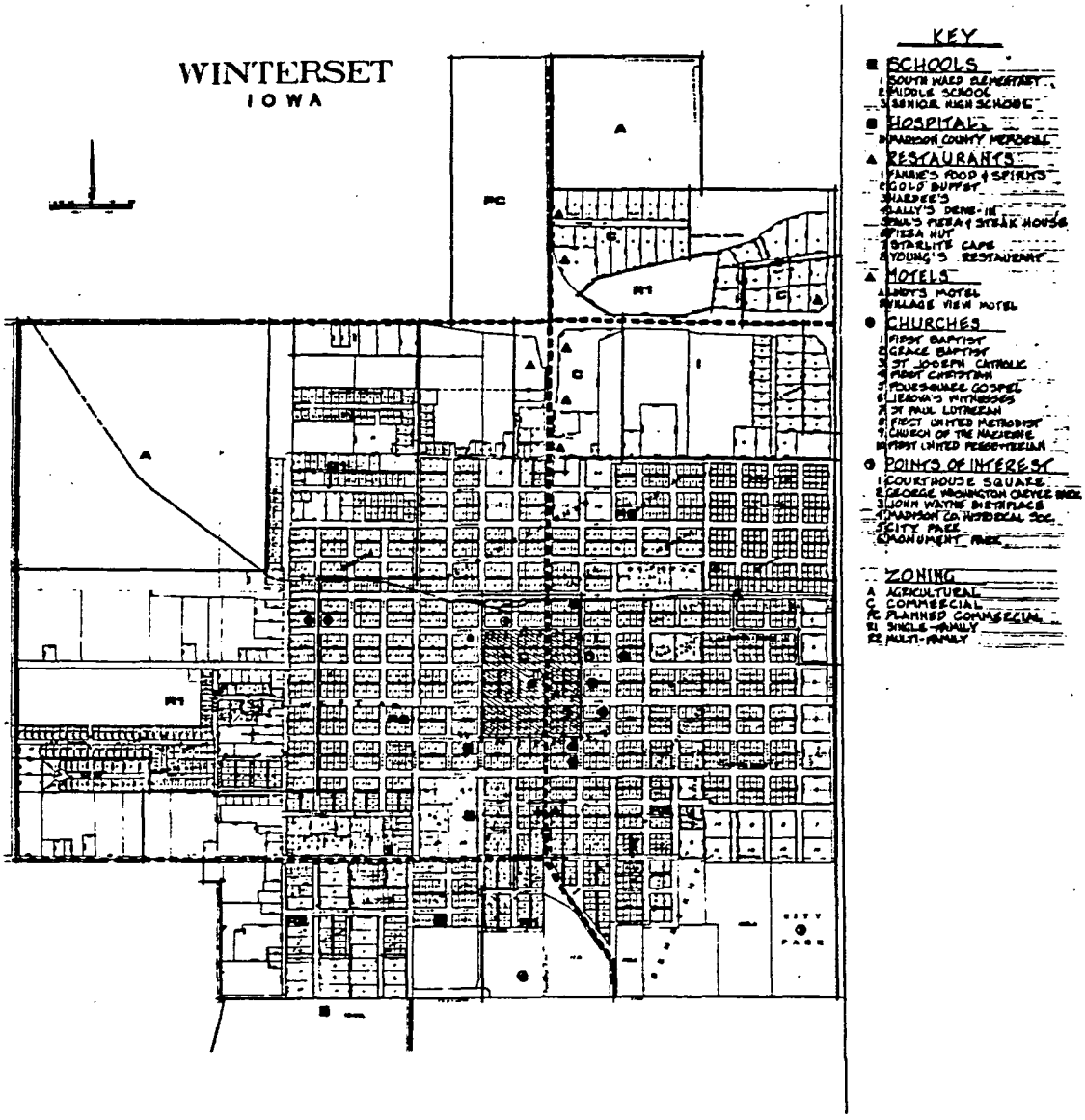


Figure 19. Current plan of Winterset

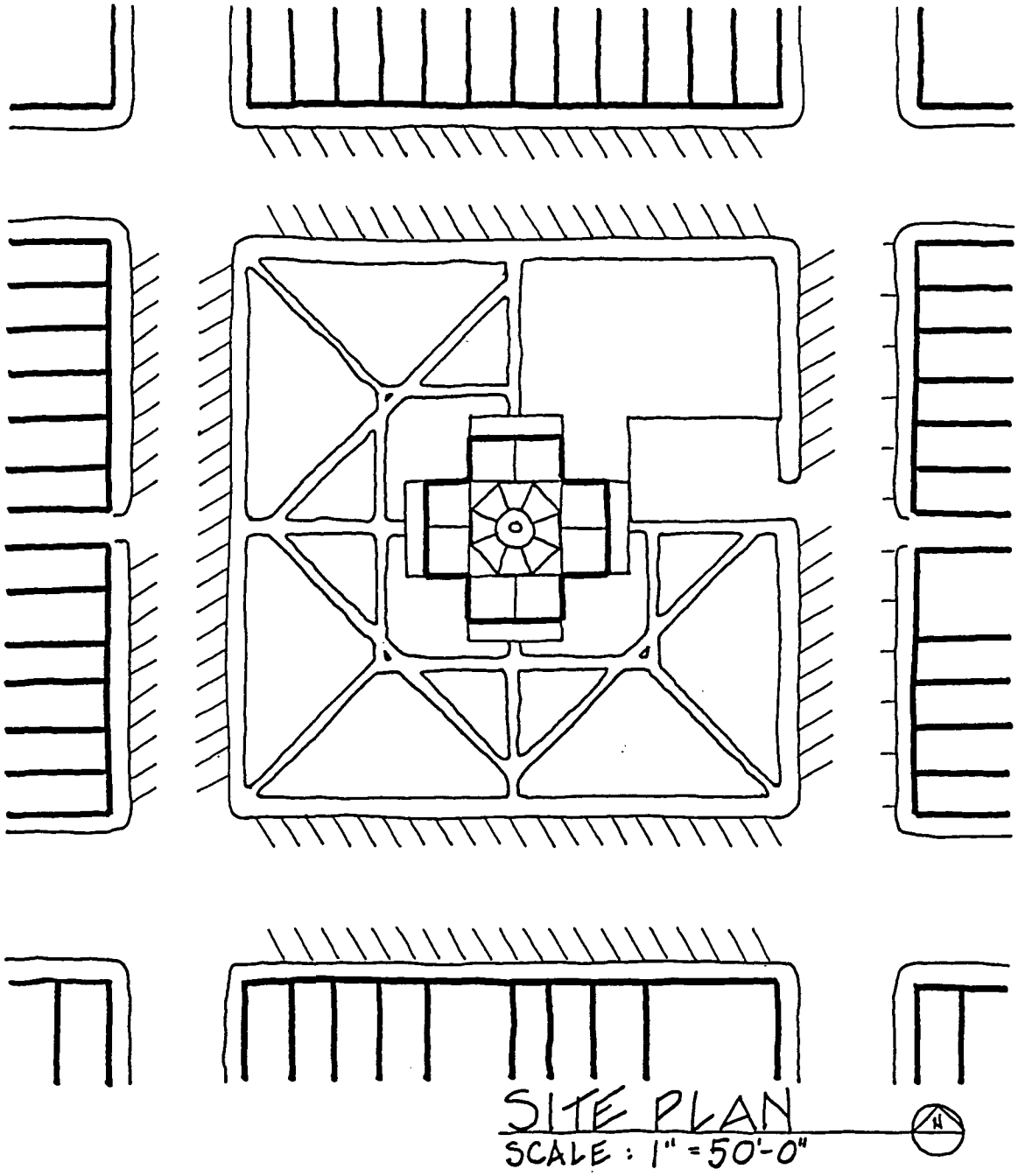


Figure 20. Plan of courthouse square district

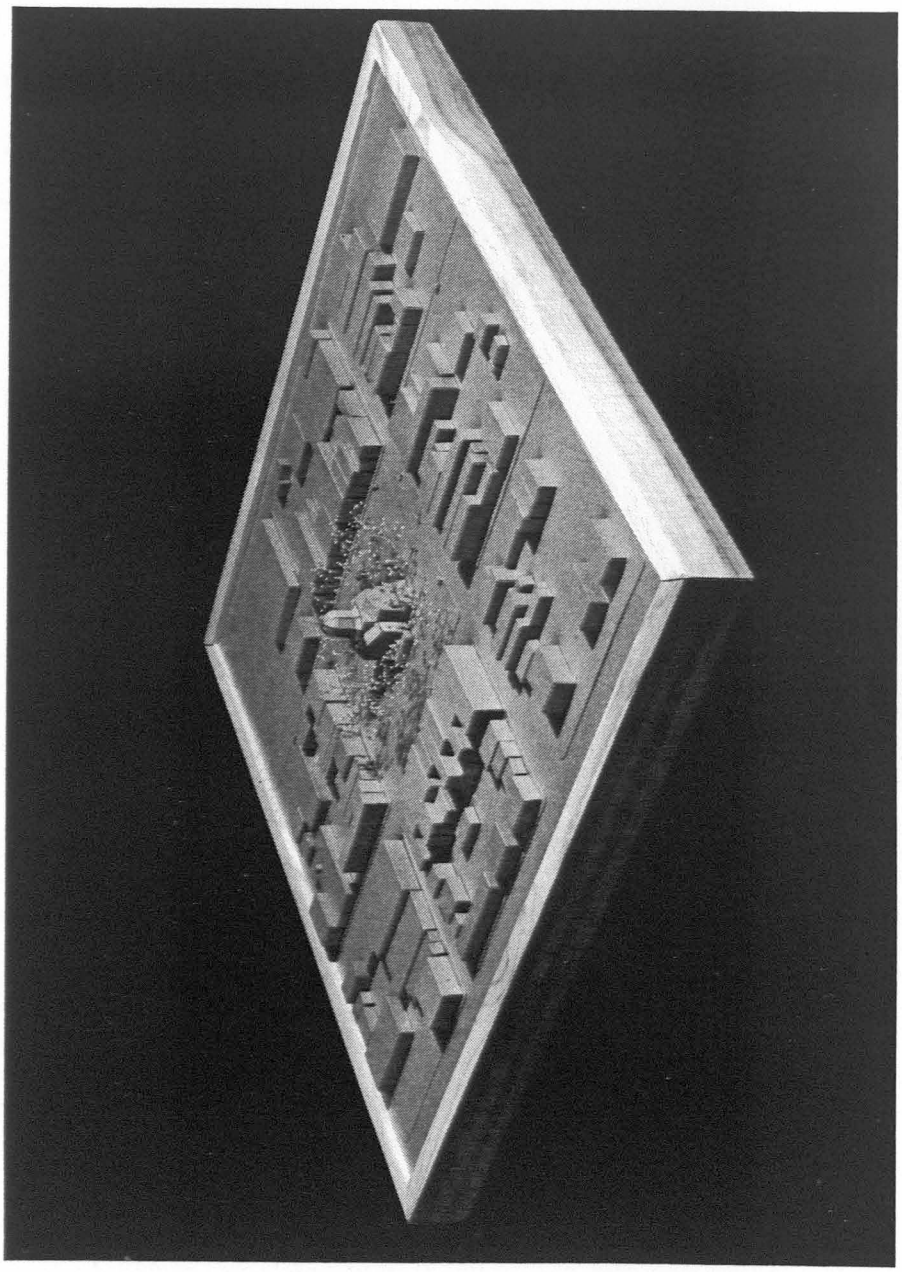


Figure 21. Model of courthouse square district

storefronts (Figures 22-25). The main objective of the models at this scale was to show form, color, and texture of the building materials and trim.

Early experimentation with model construction was executed monochromatically (Figure 26) with layers of chipboard laminated to authenticate relief in the surfaces. This was followed by trials incorporating color and trim details such as window frames. Marker and colored pencil were applied directly to the chipboard to simulate brick and stone. This technique was unsuccessful as the marker was readily absorbed into the chipboard and did not represent the building materials authentically.

It was discovered that rendering on the back of tracing paper yielded a more realistic representation of brick when mounted to the chipboard. Brick was simulated by applying markers to the back side of a traced elevation with an appropriate color as determined from the 3" x 5" color prints. Closely spaced horizontal lines of appropriate colored pencils were added to simulate mortar between the brick courses. In some instances cross-hatching with another colored pencil was applied to further enhance the texture of the brick. the traced elevations were then mounted to a single layer of chipboard with a spray adhesive and the fenestrations were cut out.

Heavy bond textured drawing paper of an appropriate color accurately represented stone. Tracings of the elevations were

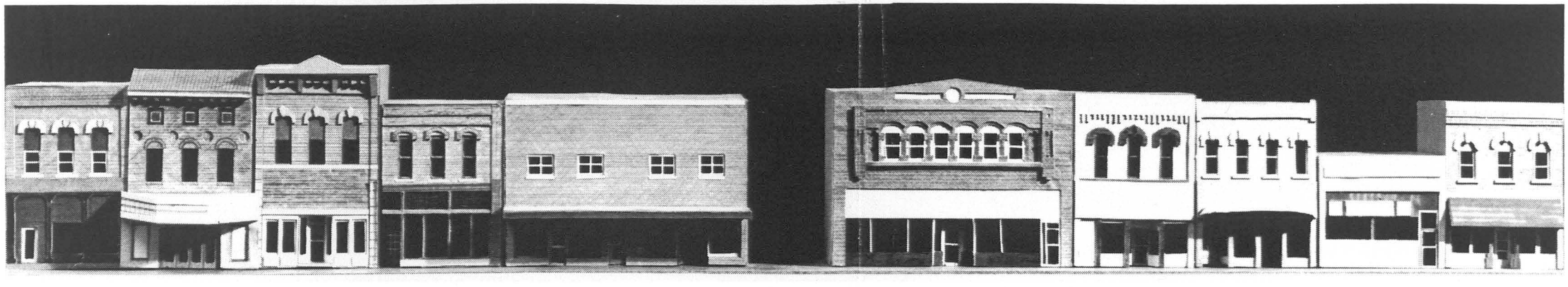


Figure 22. Model: east elevation

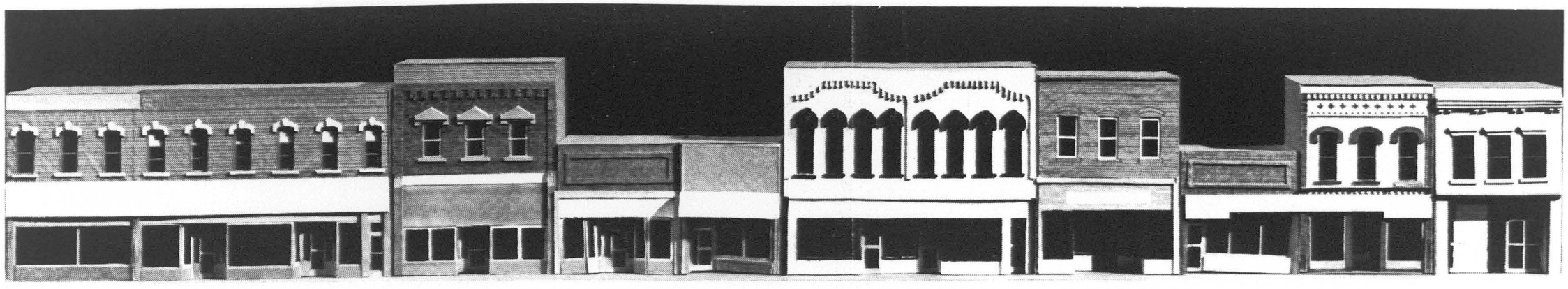


Figure 23. Model: south elevation

Figure 24. Model: west elevation

Figure 25. Model: north elevation

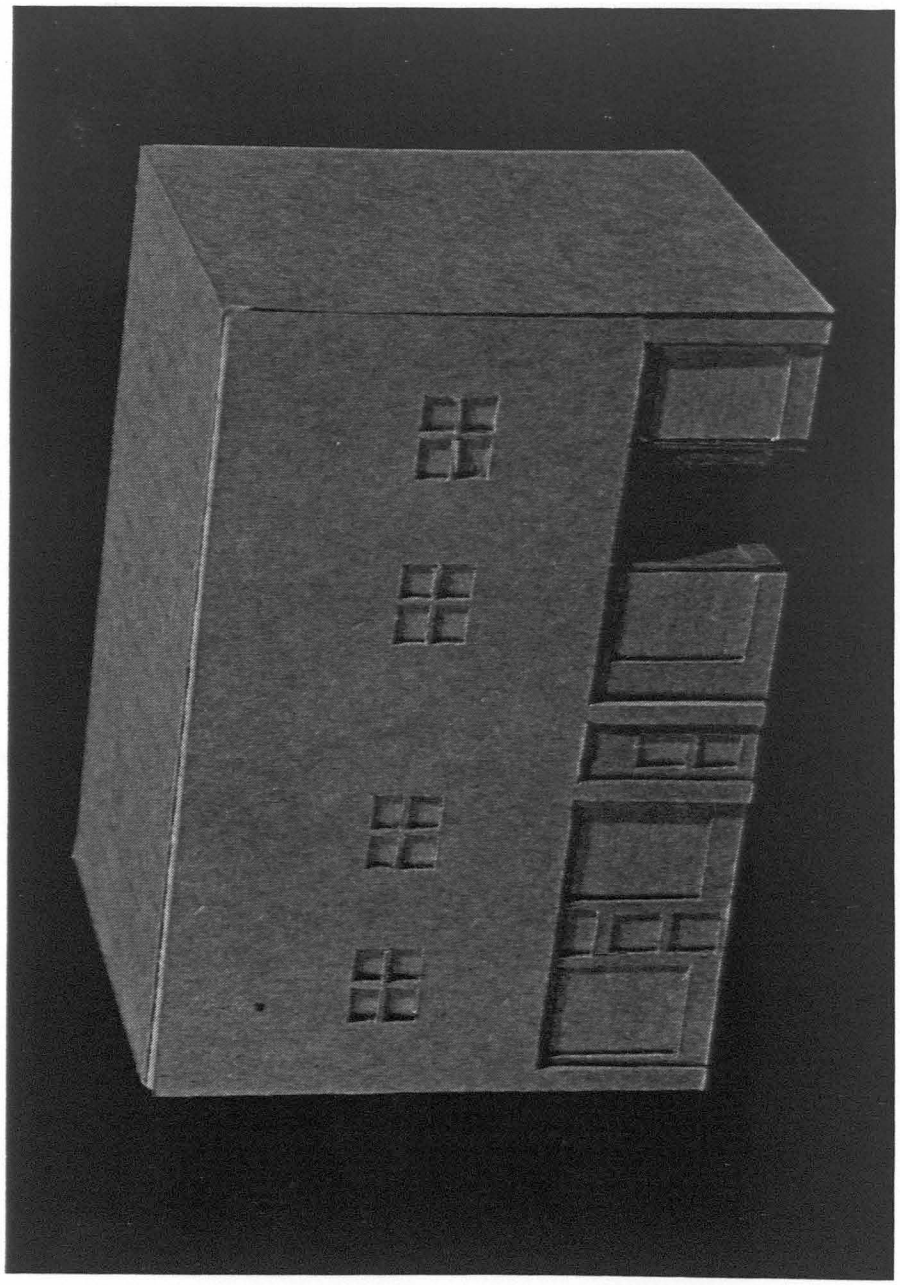


Figure 26. Experimental monochromatic model

applied to the paper with a non-permanent bond of adhesive as the tracing paper was to be removed after the void areas were cut out. Stone coursing was delineated in two ways: scoring mortar courses onto the paper with a dull modeling knife and drawing mortar courses onto the paper with a grey marker.

Aluminum foil was experimented with as trim for storefront doors and display window frames where applicable. The foil wrinkled and did not adhere well to the chipboard. The foil was eventually replaced with a grey contact film.

Major projections and recesses were also suggested on the models. Relief of features (Figure 27), such as window openings, window hoods and sills, and cornice lines was accomplished using multiple layers of chipboard. Window openings were "glazed" with clear contact film with a dark colored film mounted behind.

Major recesses into the storefronts were constructed to authenticate depth as the facade compositions were mounted in corrugated cardboard cubes (Figure 28).

Upon completion of construction the models were mounted to a base of cardboard laminated with chipboard to simulate the sidewalks and curbs. Curb cuts were added to the bases at entrances to alleys and at corners of the block to more accurately depict existing conditions. All four sets of models were then arranged on a large, square base with a chipboard scale model of the courthouse located in the center (Figure 29).

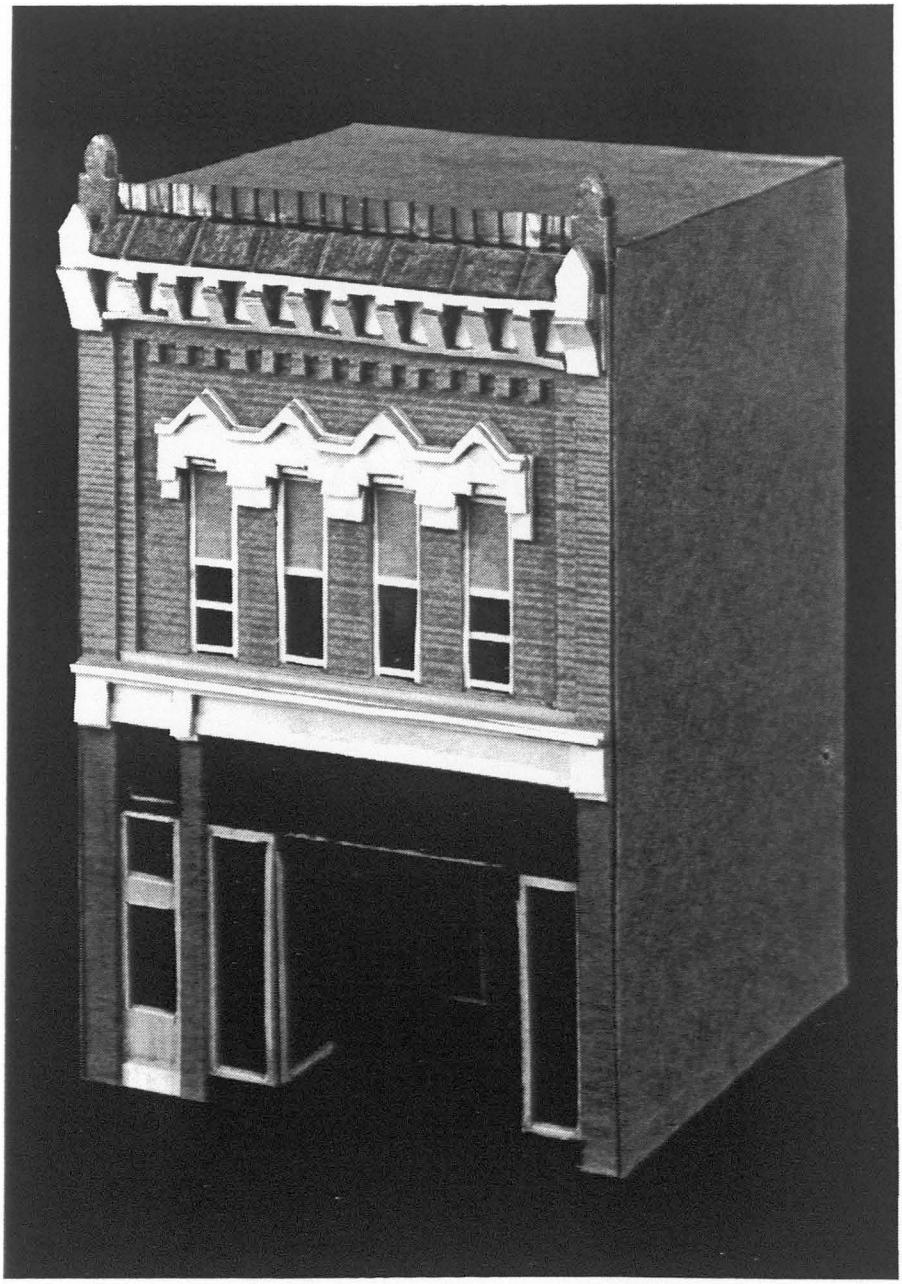


Figure 27. Detail: relief of features

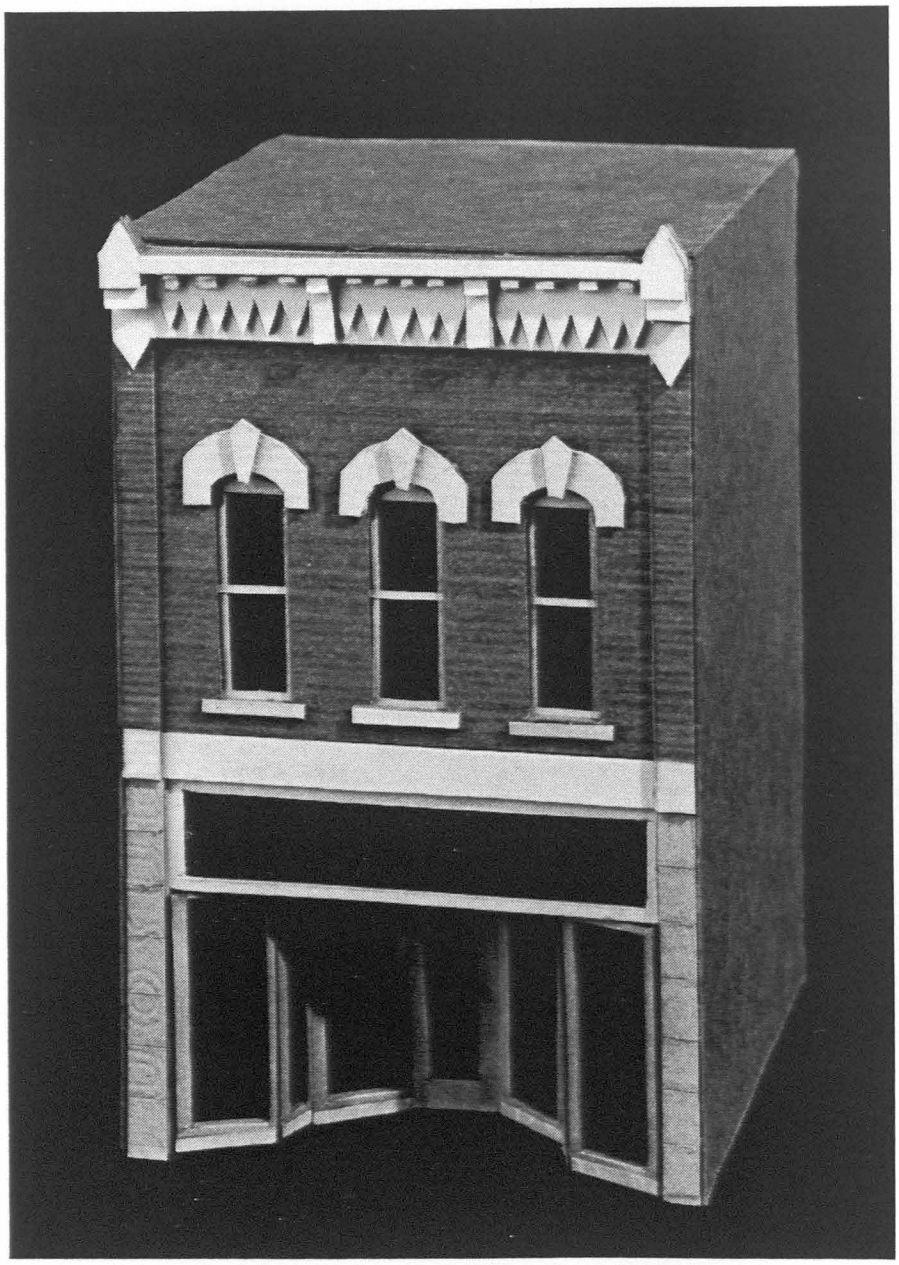


Figure 28. Detail: recessing of storefront entrances

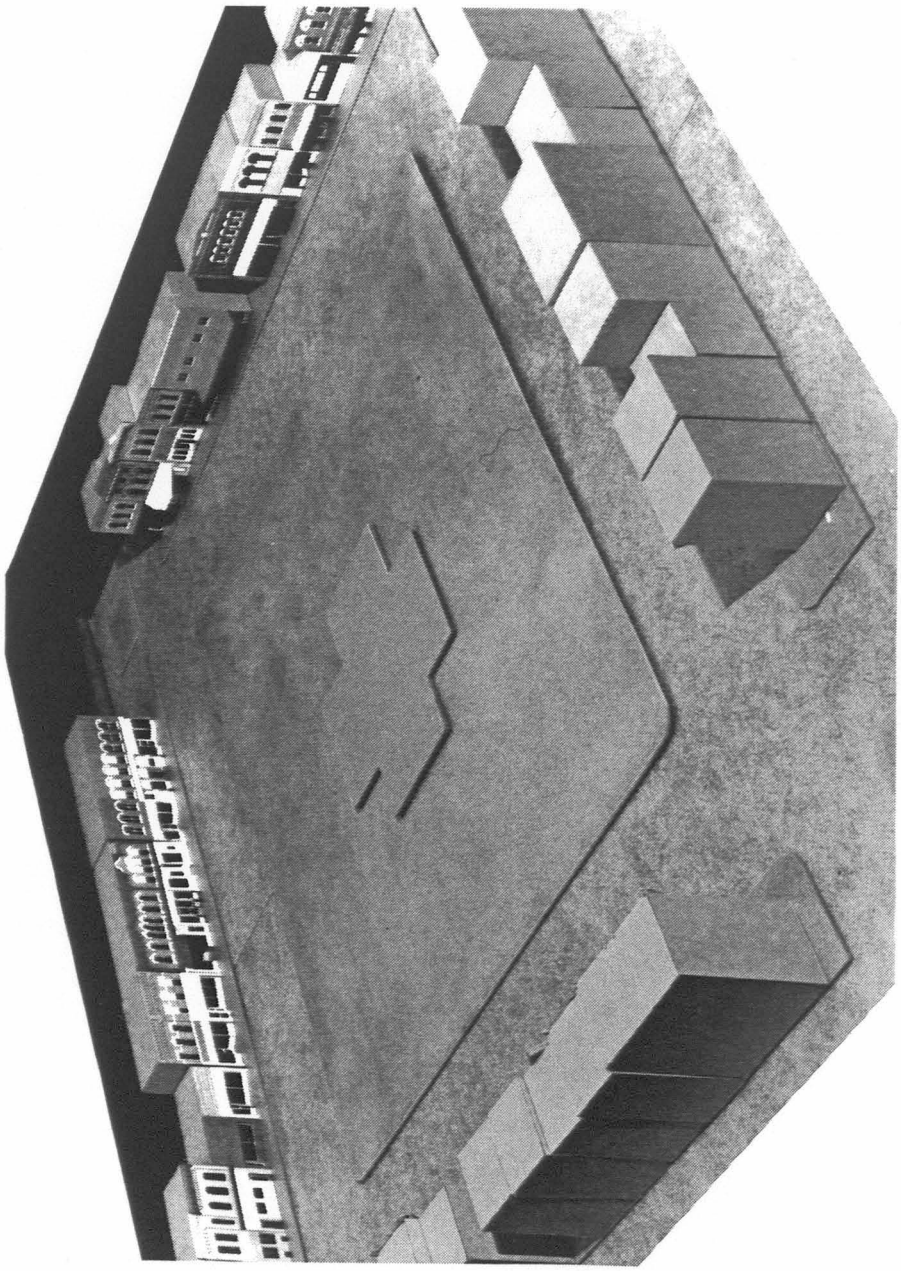


Figure 29. Model of courthouse square (scale: 1"=8')

Matrix Diagrams

Another tool used in the analysis process was the matrix diagram. The matrix diagrams were implemented in the analysis of the physical building components such as window hoods and pilasters as well as the overall visual characteristics such as rhythm and proportion. These features and characteristics were abstracted and configured onto a chart for objective study. The main advantage of this type of study is that subjective criteria such as personal preferences are further removed in the analysis of the diagram and the individual parts can be analyzed without the influences of how they relate to other parts.

Diagram construction

The construction of the diagram for analysis of the storefronts was a grid laid out with selected building components and characteristics plotted on a set of parallel axes and the individual buildings plotted on a perpendicular set of parallel axes. The criteria rated on the grid for the building characteristics were based on selected features described in reviewed literature.

Twenty-two criteria were selected that accurately represented three major areas of concern: architectural features (pediments, cornices, window hoods, sashes and sills, signboards, transoms, awnings, display windows, entrances, pilasters, and lower window panels), materials and assemblies (building materials, texture, color, scale, and

craftsmanship), and overall visual characteristics (height, proportions of facades and openings, rhythms of solids to voids, and directional expression of the storefronts). This method was derived from a procedure outlined in Preservation Brief 17. Nelson (1987), in Preservation Brief 17, describes a three-step process used to identify a building's visual character: identify the overall visual aspects, identify the visual character at close range, identify the visual character of the interior spaces, features and finishes. The scope of this analysis was limited to the first two steps: identifying the overall visual aspects and identifying the visual character at close range.

Nelson also suggests that features such as shape, openings, roof and related features, projections, trim, and setting also be identified and analyzed. The twenty-two criteria selected for the diagram are more specific as they accentuate the differences between similarly constructed buildings.

For the analysis conducted in this thesis, a rating scale of five intervals ranging from 0 to 4 points was established. The lowest values were assigned to the criteria that were either detracting from character of the storefront or were not existing. The highest values were assigned to criteria that either enhanced or contributed to the visual character of the storefront. The assigned point values reflected the author's subjective judgement and none of the criteria were weighted.

A plot of these characteristics with their respective ratings was drawn on a grid using solid dots of four different diameters to delineate the ratings (Figures 30-33). A large dot represented a very strong characteristic while a small dot represented a very weak characteristic. No dot indicated that the feature was insignificant or not existing.

Upon completion of the analysis matrices with dots, numeric equivalents of the matrices to the dots were tabulated in grid and summary form (Figures 34-38). A graph of the total points and frequency of occurrence is illustrated in Figure 39. The numeric equivalents show individual strengths and weaknesses among the storefronts and also show relative strengths and weaknesses in visual image among the four elevations similar to observations made from the dot matrices. The highest point rating was assigned a value of 4, therefore, the total points a storefront with all 22 characteristics rated as very strong would be 88. No pediments were present on the existing conditions elevations, however, so the maximum possible total was reduced to 84 points.

The strongest storefront (6a on the west elevation) scored 78 points and the weakest (4a on the south elevation) scored 21. The storefronts with the lowest scores were hindered by the fact that they had one story facades that did not have the upper level features of window hoods, sashes, and sills. This gave the one story facades a 12 point disadvantage right away. The one story facades being of more

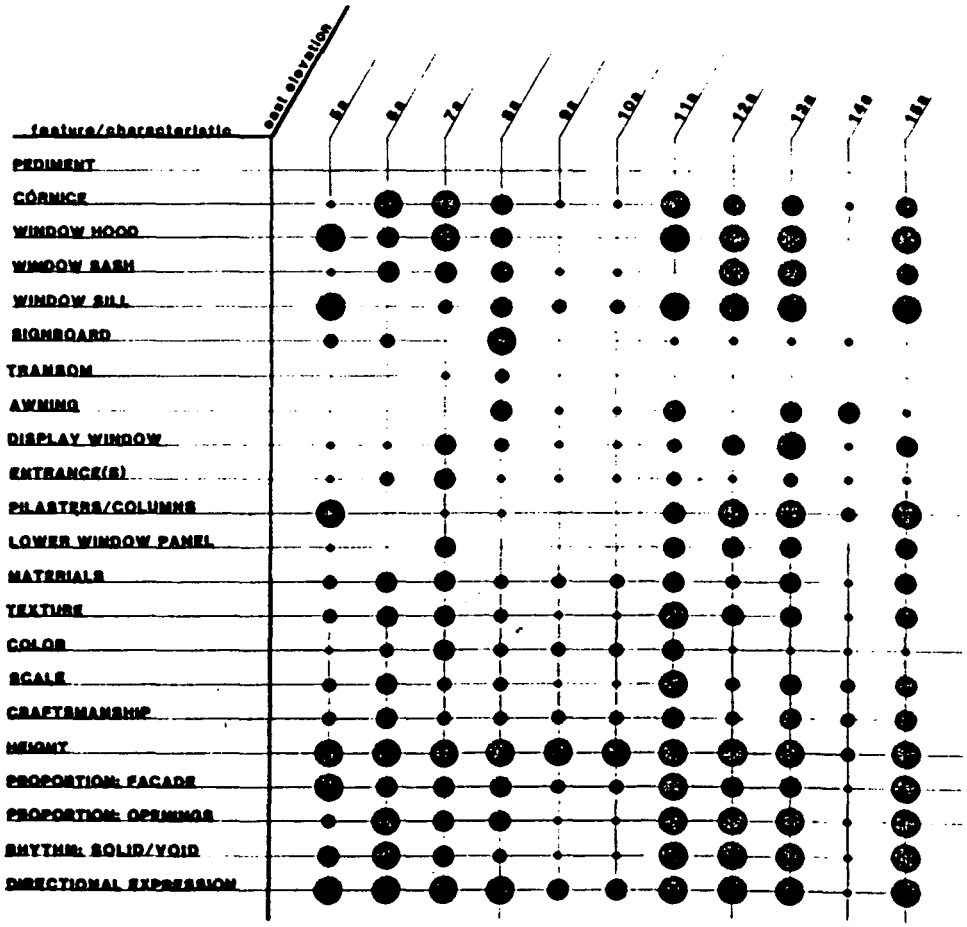


Figure 30. Matrix diagram: east elevation

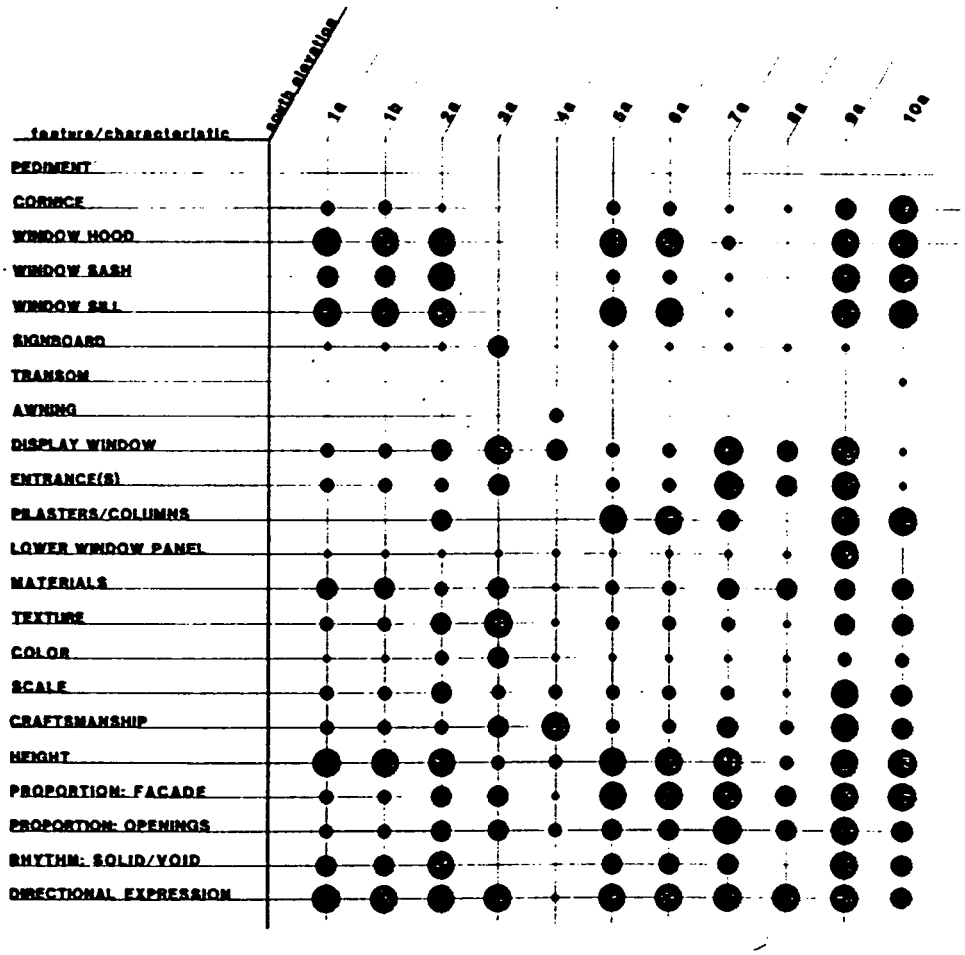


Figure 31. Matrix diagram: south elevation

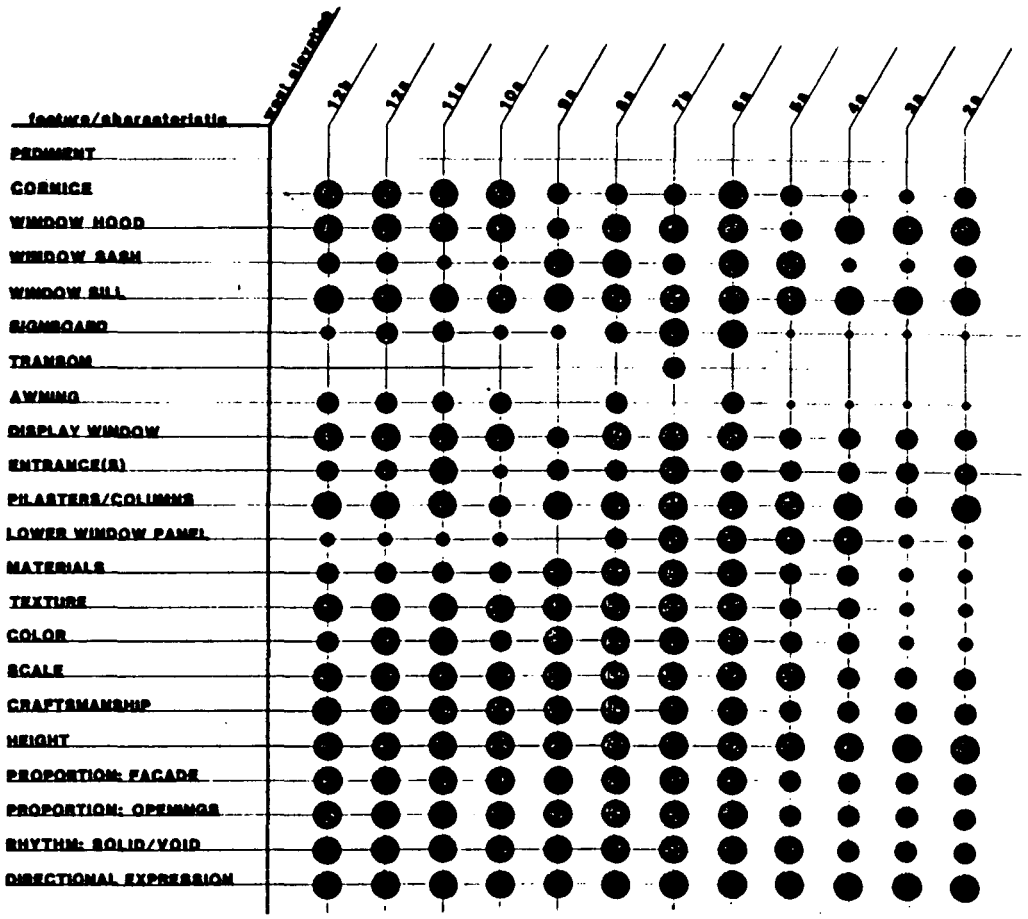


Figure 32. Matrix diagram: west elevation

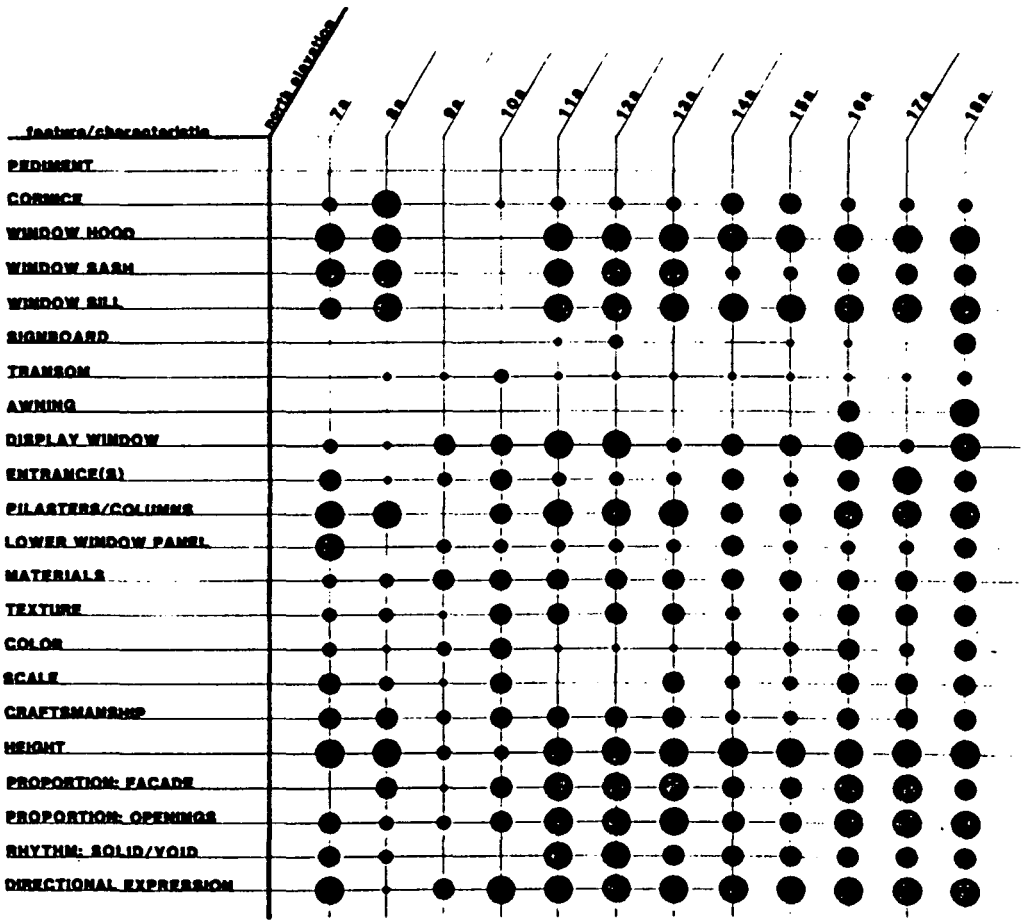


Figure 33. Matrix diagram: north elevation

	5a	6a	7a	8a	9a	10a	11a	12a	13a	14a	15a
PEDIMENT	0	0	0	0	0	0	0	0	0	0	0
CORNICE	1	4	4	3	1	1	4	3	3	1	3
WINDOW HOOD	4	3	4	3	0	0	4	4	4	0	4
WINDOW SASH	1	3	3	3	1	1	0	4	4	0	3
WINDOW SILL	4	0	2	3	2	2	4	4	4	0	4
SIGNBOARD	2	2	0	4	0	0	1	1	1	1	0
TRANSOM	0	0	1	2	0	0	0	0	0	0	0
AWNING	0	0	0	3	1	1	3	0	3	3	1
DISPLAY WINDOW	1	1	3	2	1	1	2	3	4	1	3
ENTRANCE(S)	1	2	3	1	1	1	2	1	2	1	1
PILASTERS/COLUMNS	4	0	1	1	0	0	3	4	4	2	4
LOWER WINDOW PANEL	1	0	3	0	0	0	3	3	3	0	3
MATERIALS	2	3	3	2	2	2	3	2	3	1	3
TEXTURE	2	3	3	2	1	1	4	3	3	1	3
COLOR	1	2	3	2	2	2	3	1	1	1	1
SCALE	2	3	2	2	1	1	4	2	3	2	3
CRAFTSMANSHIP	2	3	2	2	2	2	3	2	3	2	3
HEIGHT	4	4	4	4	4	4	4	4	4	2	4
PROPORTION: FACADE	4	3	3	3	2	2	3	2	2	1	4
PROPORTION: OPENINGS	2	4	3	3	1	1	4	4	4	1	4
RHYTHM: SOLID/VOID	3	4	3	2	1	1	3	3	3	1	4
DIRECTIONAL EXPRESSION	4	4	4	4	3	3	4	4	4	1	4

Figure 34. Numeric equivalent matrix: east

	1a	1b	2a	3a	4a	5a	6a	7a	8a	9a	10a
PEDIMENT	0	0	0	0	0	0	0	0	0	0	0
CORNICE	2	2	1	0	0	2	2	1	1	3	4
WINDOW HOOD	4	4	4	0	0	4	4	2	0	4	4
WINDOW SASH	3	3	4	0	0	2	2	1	0	4	4
WINDOW SILL	4	4	4	0	0	4	4	1	0	4	4
SIGNBOARD	1	1	1	3	0	1	1	1	1	1	0
TRANSOM	0	0	0	0	0	0	0	0	0	0	1
AWNING	0	0	0	0	2	0	0	0	0	0	0
DISPLAY WINDOW	2	2	3	4	3	2	2	4	3	4	1
ENTRANCE(S)	2	2	2	3	0	2	2	4	3	4	1
PILASTERS/COLUMNS	0	0	3	0	0	4	4	3	0	4	4
LOWER WINDOW PANEL	1	1	1	1	1	1	1	1	1	4	0
MATERIALS	3	3	2	3	1	2	2	3	3	3	3
TEXTURE	2	2	3	4	1	2	2	2	1	3	3
COLOR	1	1	2	3	1	1	1	1	1	2	2
SCALE	2	2	3	2	2	2	2	2	1	4	3
CRAFTSMANSHIP	2	2	2	3	4	2	2	3	2	4	3
HEIGHT	4	4	4	2	2	4	4	4	2	4	4
PROPORTION: FACADE	2	2	3	3	1	4	4	4	3	4	4
PROPORTION: OPENINGS	2	2	3	3	2	3	3	4	3	4	3
RHYTHM: SOLID/VOID	3	3	4	0	0	3	3	3	0	4	3
DIRECTIONAL EXPRESSION	4	4	4	4	1	4	4	4	4	4	3

Figure 35. Numeric equivalent matrix: south

	12b	12a	11a	10a	9a	8a	7b	6a	5a	4a	3a	2a
PEDIMENT	0	0	0	0	0	0	0	0	0	0	0	0
CORNICE	4	4	4	4	3	3	3	4	3	2	2	3
WINDOW HOOD	4	4	4	4	3	4	4	4	3	4	4	4
WINDOW SASH	3	3	2	2	4	4	3	4	4	2	2	3
WINDOW SILL	4	4	4	4	4	4	4	4	4	4	4	4
SIGNBOARD	2	3	3	2	2	3	4	4	1	1	1	1
TRANSOM	0	0	0	0	0	0	3	0	0	0	0	0
AWNING	3	3	3	3	0	3	0	3	1	1	1	1
DISPLAY WINDOW	4	4	4	4	3	4	4	4	3	3	3	3
ENTRANCE(S)	3	3	4	2	3	3	4	3	3	3	3	3
PILASTERS/COLUMNS	4	4	4	3	4	4	4	4	4	4	3	4
LOWER WINDOW PANEL	2	2	2	2	0	3	4	4	4	4	2	2
MATERIALS	3	3	3	3	4	4	4	4	3	3	2	2
TEXTURE	4	4	4	4	4	4	4	4	3	3	2	2
COLOR	3	4	4	3	4	4	4	4	3	3	2	2
SCALE	4	4	4	4	4	4	4	4	4	3	3	3
CRAFTSMANSHIP	4	4	4	4	4	4	4	4	3	3	3	3
HEIGHT	4	4	4	4	4	4	4	4	4	4	4	4
PROPORTION: FACADE	4	4	4	4	4	4	4	4	3	3	3	3
PROPORTION: OPENINGS	4	4	4	4	4	4	4	4	3	3	3	3
RHYTHM: SOLID/VOID	4	4	4	4	4	4	4	4	4	3	3	3
DIRECTIONAL EXPRESSION	4	4	4	4	4	4	4	4	4	4	4	4

Figure 36. Numeric equivalent matrix: west

	7a	8a	9a	10a	11a	12a	13a	14a	15a	16a	17a	18a
PEDIMENT	0	0	0	0	0	0	0	0	0	0	0	0
CORNICE	2	4	0	1	2	2	2	3	3	2	2	2
WINDOW HOOD	4	4	0	0	4	4	4	4	4	4	4	4
WINDOW SASH	4	4	0	0	4	4	4	2	2	3	3	3
WINDOW SILL	3	4	0	0	4	4	4	4	4	4	4	4
SIGNBOARD	0	0	0	0	1	2	0	0	1	1	0	3
TRANSOM	0	1	1	2	1	1	1	1	1	1	1	2
AWNING	0	0	0	0	0	0	0	0	0	3	0	4
DISPLAY WINDOW	2	1	3	3	4	4	2	3	3	4	2	4
ENTRANCE(S)	3	1	2	3	2	2	2	3	2	3	4	3
PILASTERS/COLUMNS	4	4	0	3	4	4	4	3	3	4	4	4
LOWER WINDOW PANEL	4	0	2	2	2	2	2	3	2	2	2	3
MATERIALS	2	2	3	3	3	3	3	3	3	3	3	3
TEXTURE	2	2	1	3	3	3	3	2	2	3	3	3
COLOR	2	1	2	3	1	1	1	2	2	3	2	3
SCALE	3	2	1	3	0	0	3	2	2	3	3	3
CRAFTSMANSHIP	3	3	2	3	3	3	3	2	2	3	3	3
HEIGHT	4	4	2	2	4	4	4	4	4	4	4	4
PROPORTION: FACADE	0	3	1	3	4	4	4	3	3	4	4	4
PROPORTION: OPENINGS	3	2	2	3	4	4	4	3	3	4	4	4
RHYTHM: SOLID/VOID	3	2	0	0	4	4	3	3	3	3	3	3
DIRECTIONAL EXPRESSION	4	1	3	4	4	4	4	4	4	4	4	4

Figure 37. Numeric equivalent matrix: north

East elevation

5a	6a	7a	8a	9a	10a	11a	12a	13a	14a	15a
45	48	54	51	26	26	63	56	64	22	59

South elevation

1a	1b	2a	3a	4a	5a	6a	7a	8a	9a	10a
44	44	53	38	21	49	49	48	29	68	54

West elevation

12b	12a	11a	10a	9a	8a	7b	6a	5a	4a	3a	2a
71	73	73	68	68	75	77	78	64	60	54	57

North elevation

7a	8a	9a	10a	11a	12a	13a	14a	15a	16a	17a	18a
52	45	25	41	58	59	57	54	53	65	59	70

(average total points for all storefronts: 56.07)

Figure 38. Tabulated summaries of matrices

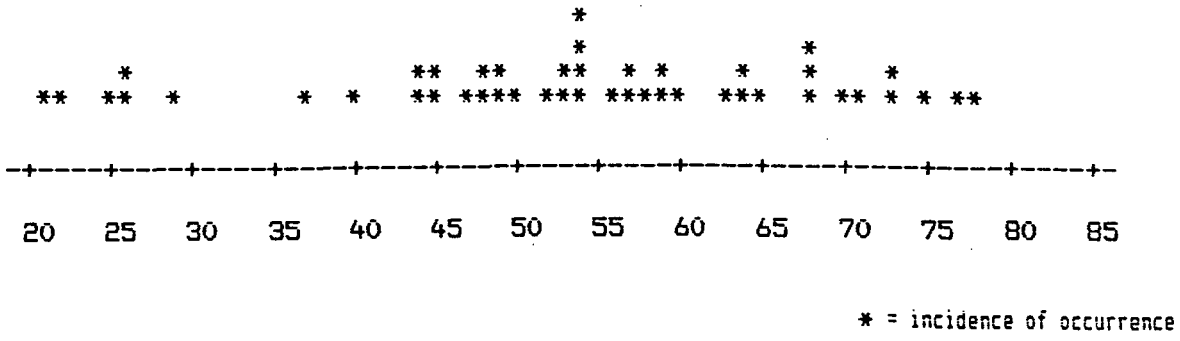


Figure 39. Total points and frequency of occurrence

simplistic design also did not have the strong distinguishing characteristics such as bold cornice lines, cast iron columns, relief in the facades that give texture, etc., that most of the two story facades exhibit. The weakest facade, reflecting its low point total, was constructed almost entirely of diagonally oriented wood siding which had absolutely no relation to adjacent or other storefronts on the square.

The utilization of the tabulated point values will be explained further in the process of developing appropriate design approach alternatives.

Interpretation of matrix diagrams

After completing the diagrams, certain patterns and relationships were readily identifiable. The most significant outcome was the great differences in strength of overall building component and visual characteristics among the four elevations.

The west elevation was decidedly the strongest composition, averaging about 68 points, while the south elevation, averaging about 45 points, was the weakest overall composition. The north and east elevations ranked in between, averaging about 47 and 53 points, respectively, with the north rating significantly higher than the east. The average point value for all of the facades was 57 points.

Individual buildings were readily discernable as being strong, weak or somewhere in between, with respect to overall visual image. A row of the larger dots on the vertical axes

indicated that the overall visual image of the storefront was strong and a vertical row of smaller dots indicated that the building rated quite low in its overall visual image. Combinations of large and small dots on a vertical axis indicated that certain elements, whether they be individual building components such as window hoods, pilasters, etc., or compositional characteristics such as rhythm, proportion, etc., stood out as strong or weak, but did not indicate an overall strong or weak visual image of the storefront.

A summarized tabulation for the average point values of the individual features and overall characteristics is presented in Figure 40. The average point value for all features and characteristics is about 2.50. The highest averaged value, 3.91, was that of the characteristic associated with the storefront height and its relationship with heights of adjacent storefronts. The lowest averaged point value, 0.00, belonged to the pediment feature which was non-existent on all facades.

As point values of 3 and 4 were assigned to the strongest features, it was decided that the value of 3 would represent the minimum for a strong rating. All of the overall visual characteristics, height, proportions of facades and openings, rhythms, and directional expression, averaged over 3 points and were determined to be strong contributors to the overall visual image. Most of the architectural features except for window hoods, window sills, and columns and pilasters fell

PEDIMENT	0.00
CORNICE	2.50
WINDOW HOOD	3.25
WINDOW SASH	2.57
WINDOW SILL	3.30
SIGNBOARD	1.36
TRANSOM	0.45
AWNING	1.05
DISPLAY WINDOW	2.95
ENTRANCE(S)	2.45
PILASTERS/COLUMNS	3.00
LOWER WINDOW PANEL	1.95
MATERIALS	2.80
TEXTURE	2.80
COLOR	2.23
SCALE	2.73
CRAFTSMANSHIP	3.00
HEIGHT	3.91
PROPORTION: FACADE	3.14
PROPORTION: OPENINGS	3.30
RHYTHM: SOLID/VOID	3.02
DIRECTIONAL EXPRESSION	3.89

(averaged point value of all features and characteristics: 2.52)

Figure 40. Average values of features and characteristics

short of this benchmark point value. The range of averaged point values for the remainder of the architectural features was between 0.00 and 2.95 indicating that they were not contributing strongly to the overall visual image.

The transitional band features, including signboards, transoms, and awnings received the lowest averaged values of 1.36, 0.45, and 1.05, respectively. Transoms and awnings received low point values by being either in poor condition or not existing. Signboards and signage in general received low point ratings for a variety of reasons including: masking of significant architectural features, insensitive choice of lettering typestyle, and inappropriate color schemes. Historical analysis of old photographs and material researched in the literature review indicated that signs were important to each storefront's identity and that most signs were an integral part of the architecture whether they were painted directly on boards that were attached above the display windows, painted directly onto the display windows, or other methods that respected the architecture of the storefronts.

The materials and assemblies characteristics including materials, texture, color, scale, and craftsmanship all rated higher that the overall point average, but still fell short of the minimum acceptable point value of 3 indicating a weaker contribution to the overall visual image. The values of these characteristics were influenced by simple benign neglect, replacement of original materials with materials exhibiting

less sensitivity to the original visual image, and inferior levels of craftsmanship.

The development and interpretation of the matrices reinforced initial "gut" reactions to the conditions analyzed in the existing conditions elevation drawings and models. Information interpreted from these diagrams could now be coupled with appropriate design alternatives and be developed into a set of design recommendations.

CHAPTER V. DESIGN ALTERNATIVES

During the preliminary work, it was suggested that the approach of selecting particular time periods for restoration might be considered as a method to identify possible alternatives for design solutions. However, a decision was made not to use this approach because the existing buildings represented a large span of time. To select a particular time, 1870 for example, implies the removal of certain dominant brick structures from the square and replacing them with wood frame structures that are present in the historical photographs. It also implies the removal of architectural finishes such as Carrara glass which was used in the 1930's. The hypothetical 1870 date could also precede the existence of some of the more ornate cast iron storefronts. The impact of a time period based solution would then result in moving backwards in a technological sense and diminish the aesthetics of a series of brick masonry structures.

Niegowski (1989), in an unpublished manuscript containing a regional image survey of business districts in southwestern Iowa communities which included Winterset, states that "an attempt to restore the entire square to a particular architectural period would be frustrating and not necessarily desirable or appropriate. It would be frustrating in that the extant buildings around the square do not all fit neatly into an identifiable architectural period or style, making it difficult to establish a reference period for restoration

work. The bulk of the buildings are of the Italianate style and were built in the late 19th Century. However, there are other noteworthy buildings on the square from other periods and which are decidedly not Italianate".

On a recent trip to England, sponsored by the Iowa State University Landscape Architecture Department, the author had the opportunity to meet John Sales, Chief Horticulturalist for the National Trust in England. His comments, in an interview recorded by Zimmerman (1990) focusing on the restoration of Stourhead Park in Wiltshire, can be translated from preservation of the landscape to the treatment of historic buildings as well: "When you go to thinking about the conservation of it (the grounds at Stourhead), you cannot start taking layers off. You want to say 'well, we must strip it back to the 18th century'. It does not work, because too many things have happened. You begin to do that and you destroy what you are really trying to preserve. What we are trying to preserve here is certainly Henry Hoare's 18th century landscape, but we are also trying to preserve the evidence of continuity that has occurred since then. Of course it means that you get overlays of different styles, one on top of the other, but that if you treat it right, it is enriching; it is not diminishing what was there before".

Defining Alternatives

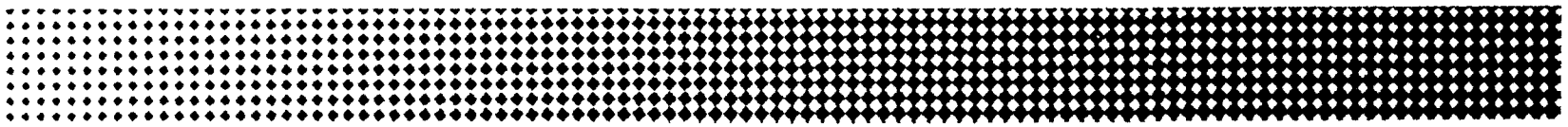
Not all work related to the treatment of historic structures or historic districts can fit neatly under one

heading such as preservation or restoration. For example, Table 630-5 (Figure 6) in Time Savers Standards for Landscape Architects (Harvey and Buggey 1988) lists six different approaches for the preservation of a historic landscape. The terms and accompanying descriptions are applicable to historic structures as well. In addition to the listed approaches (preservation, conservation, rehabilitation, restoration, reconstruction, reconstitution) it is strongly suggested that a category dealing with sympathetic infill be added. Sympathetic infill is a valid approach as long as the infill design adheres to the Secretary of Interior's standards. This also provides the designer an alternative to the preservation and restoration approaches which by definition specify designing in a strict historic vocabulary. It also provides an alternative for designing on a vacant site.

Taking this amended list of seven approaches and distilling it to four major categories of design treatments of buildings in historic districts yields: preservation, restoration, rehabilitation, and infill (Figure 41). This list was simplified by recognizing that the definitions for "preservation" and "conservation" are very similar. Conservation is essentially the European equivalent for the North American definition of preservation while the terms "reconstruction" and "reconstitution" define procedures that occur in both the more encompassing definitions of the restoration and rehabilitation approaches. This simplified

Most Conservative
Least Intervention

Least Conservative
Most Intervention



PRESERVATION
To maintain site esentially as it is, neither upgrading nor permitting deterioration.

RESTORATION
To put back what was once there as accurately as possible.

REHABILITATION
To upgrade to modern standards while recognizing and retaining historical character.

INFILL
To put in new with respect to contextual issues of height, scale, use, and so forth.

Figure 41. Spectrum of preservation approaches

spectrum of design approaches, with examples, is illustrated in Figure 42.

A flow chart (Figure 43) was developed to aid in the preservation approach decision making process. The flow chart is entered with a given historic building or building site after which a series of tests are applied to determine an appropriate course of action. The first test applied upon entering the chart is whether or not the building exists. If the building does not exist, then an infill approach should be implemented.

Subsequent tests are applied if the building does, in fact, exist. A test to determine if repairs are required is then applied to the given situation. If repairs are not required, then a preservation approach should be followed. Should repairs be required, another test is applied to determine the extent of intact materials. A rehabilitation approach, as defined by the Secretary of Interior's Standards, should be implemented if major features are not intact. If the features are intact, another test is applied to determine whether or not pertinent historical data, in the form of photographs and drawings, e.g., are available. A restoration approach is appropriate if the major architectural features are intact and there is sufficient historical information to allow an accurate restoration to be implemented. If the data is not available or not sufficient to provide the background information required for an accurate restoration, a

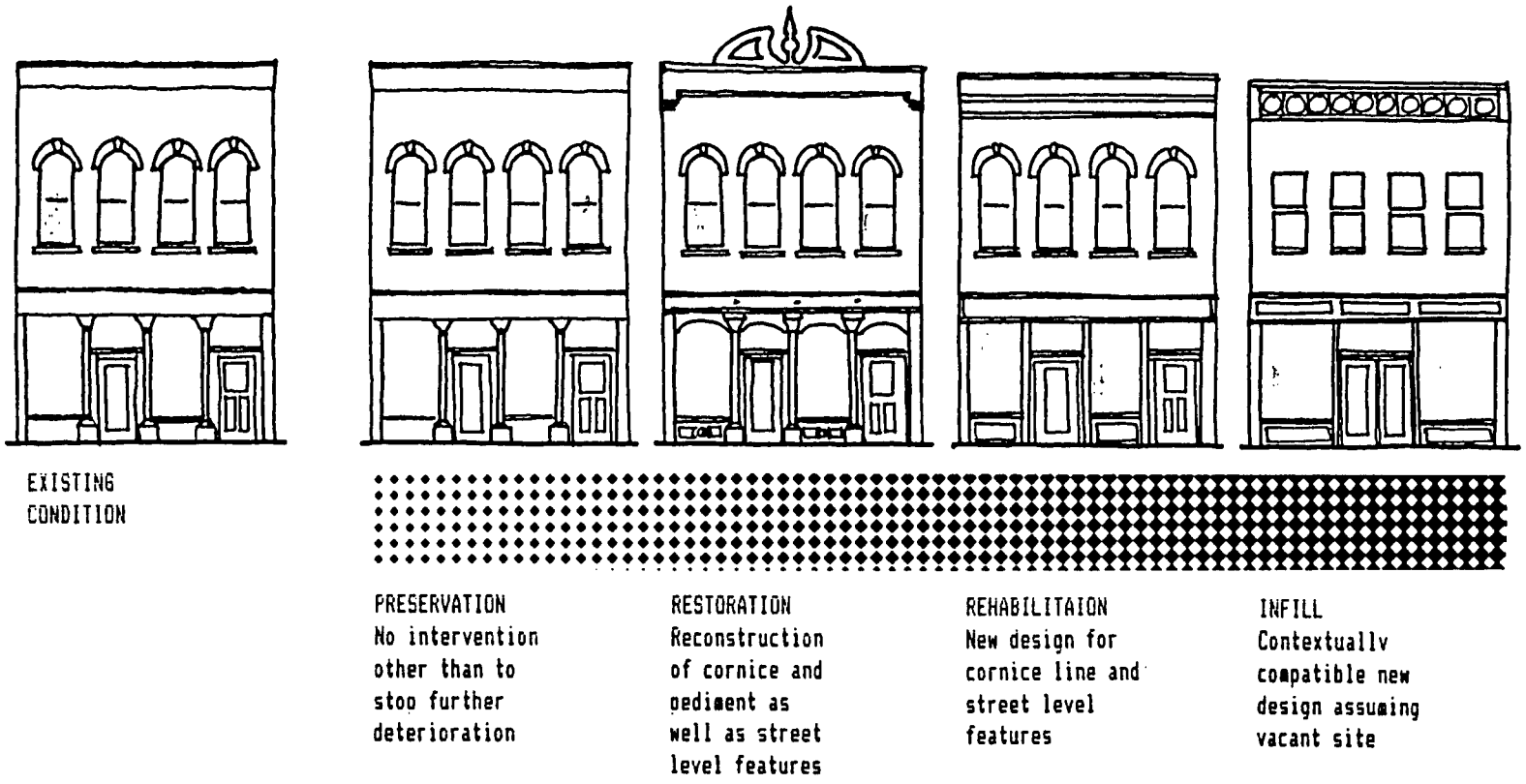


Figure 42. Spectrum of approaches with examples

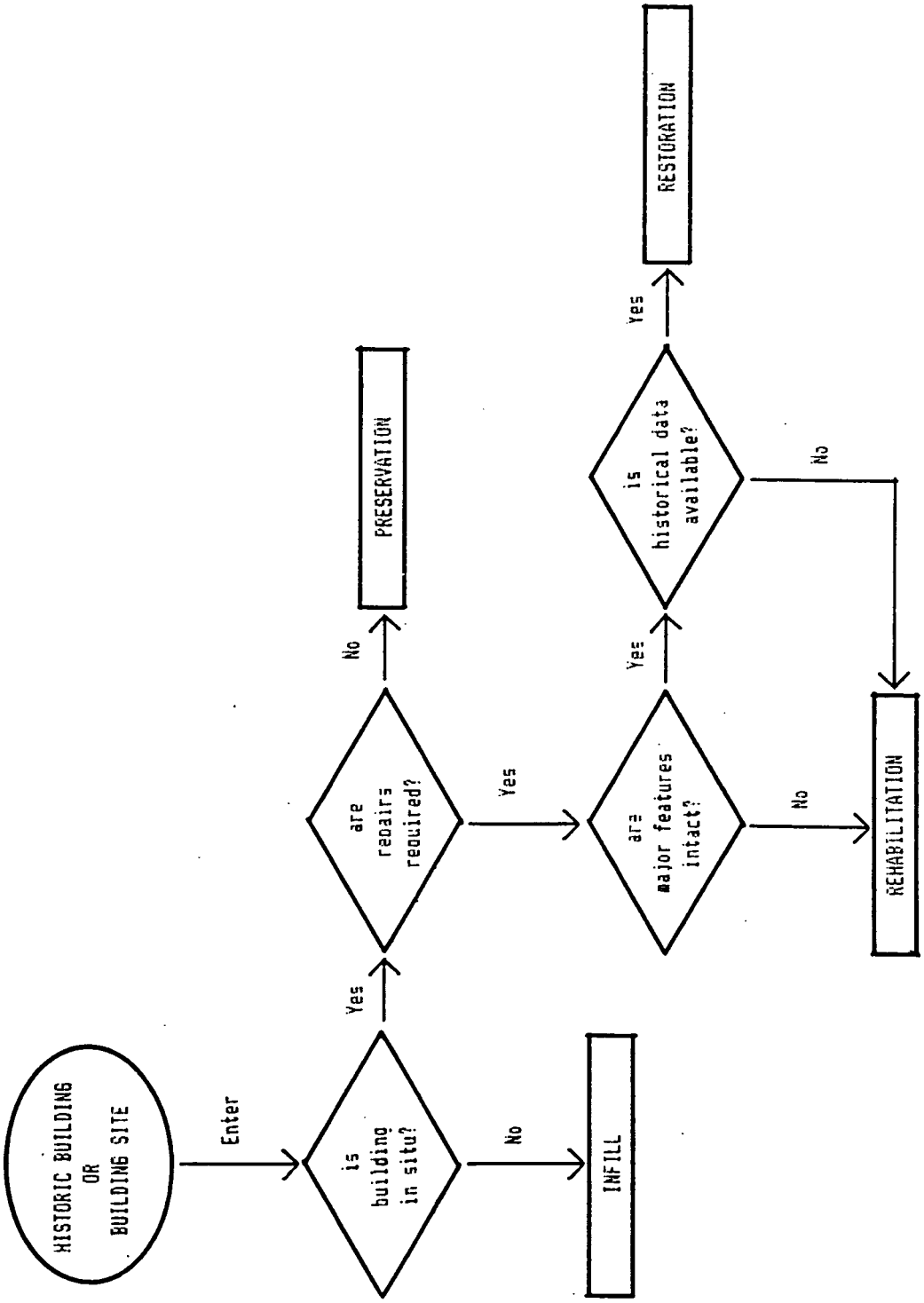


Figure 43. Flow chart for design approaches

rehabilitation approach should be implemented.

It is important to note that a significant amount of judgement is necessary to determine the level of "intactness" of major architectural features and whether or not the historical data are complete enough to pursue an accurate restoration. It should also be kept in mind that the suggested design approaches, derived from the flow chart, are general courses of action and that more thorough studies of individual situations are required in the process of determining an appropriate course of action.

Selecting Alternatives

In selecting an approach for the preservation of the visual image of the storefronts, there is no one "best" way. All four elevations around the square exhibit a predominance of existing structures, therefore the primary approaches to treatment of the storefronts were preservation, conservation, restoration, or rehabilitation oriented. The remaining approach, infill, was applied in the cases of missing, severely deteriorated, or inappropriate storefronts. In many instances more than one approach was appropriate to the situation.

In one instance, reconstruction combined with preservation was encountered. To illustrate this example, building 7b (Figure 16) located on the north side of the alley on the west elevation, had most of its structure and architectural features, such as cast iron columns and window

hoods, intact and in good condition; however, the pediment had been removed from the cornice line (Figure 44).

With the condition of the majority of features intact, a pure preservation approach was valid; however, this leaves the cornice line bare. To reconstruct the missing pediment on the cornice line would not be categorized as a pure preservation approach. From a designer's point of view, however, the bare cornice line would be viewed as incomplete and unacceptable; hence, the dilemma. The remainder of the storefront's characteristics scored high on the matrix diagram, therefore the recommendation would be to reconstruct the pediment as a means of completely restoring the storefront's overall visual character.

The four previously described design approaches were applied to the composite elevation diagrams (Figures 45-48) which were constructed by placing tracings of the existing conditions elevation drawings over their respective historic conditions elevation drawings and blocking out the differences. The differences were categorized and delineated as either removed, altered, or intact materials on the composite elevation diagrams. Each storefront was then assigned a particular design approach (preservation, restoration, rehabilitation, or infill) based on analysis of the composite elevations, matrix diagrams, and the author's subjective judgement. The composite elevation diagrams were combined with the information developed on the matrix diagrams

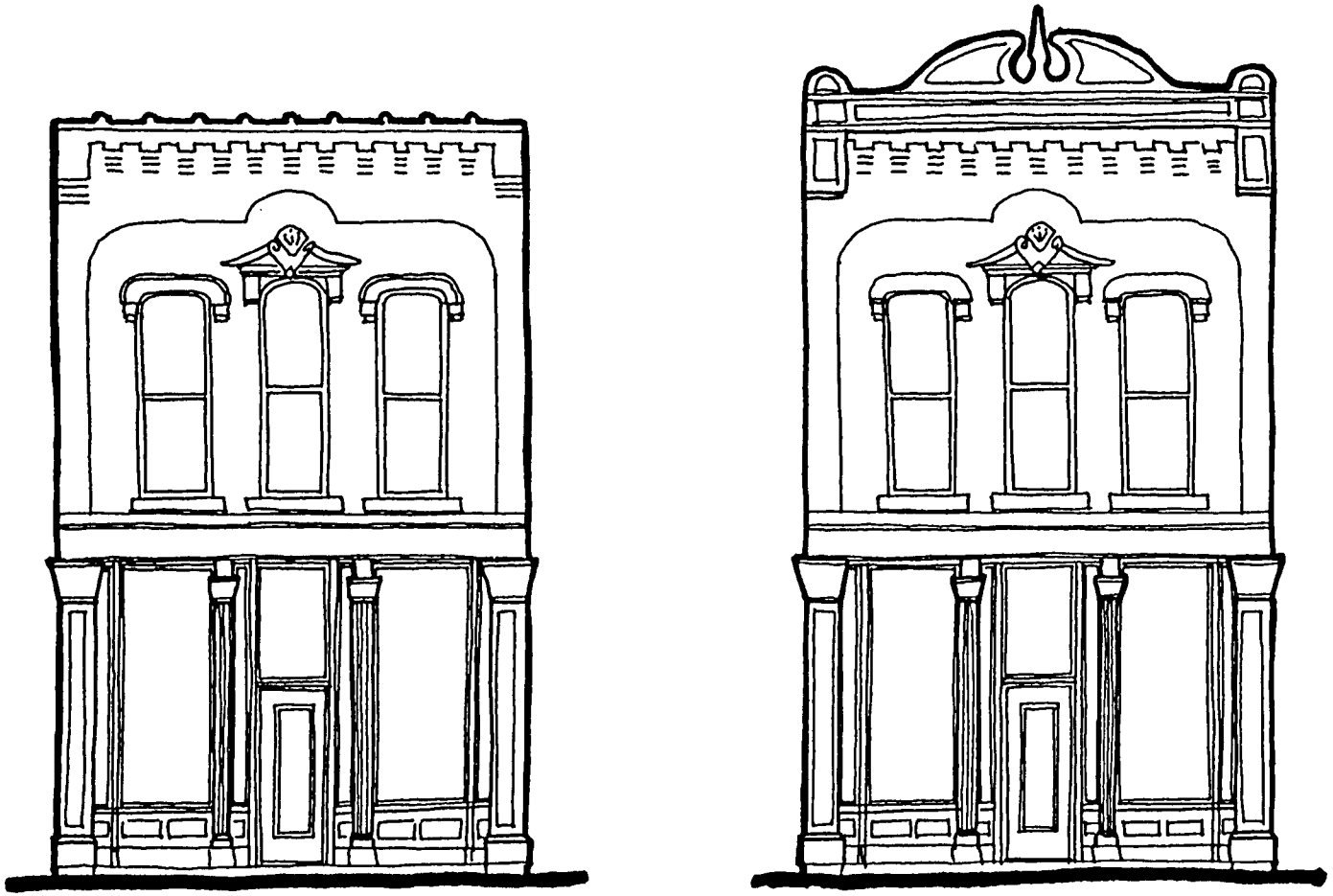


Figure 44. Examples of singular and combined approaches

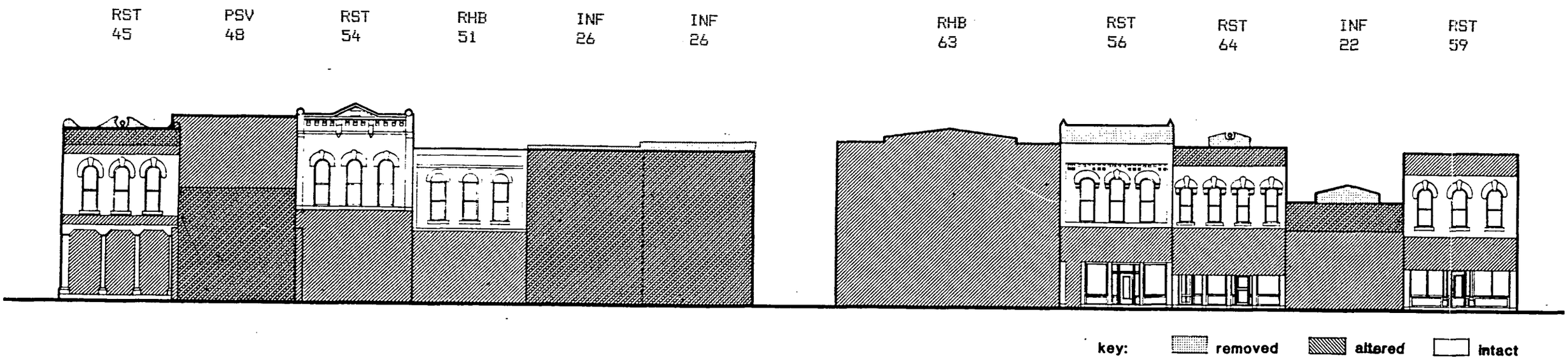


Figure 45. Composite diagram: east elevation

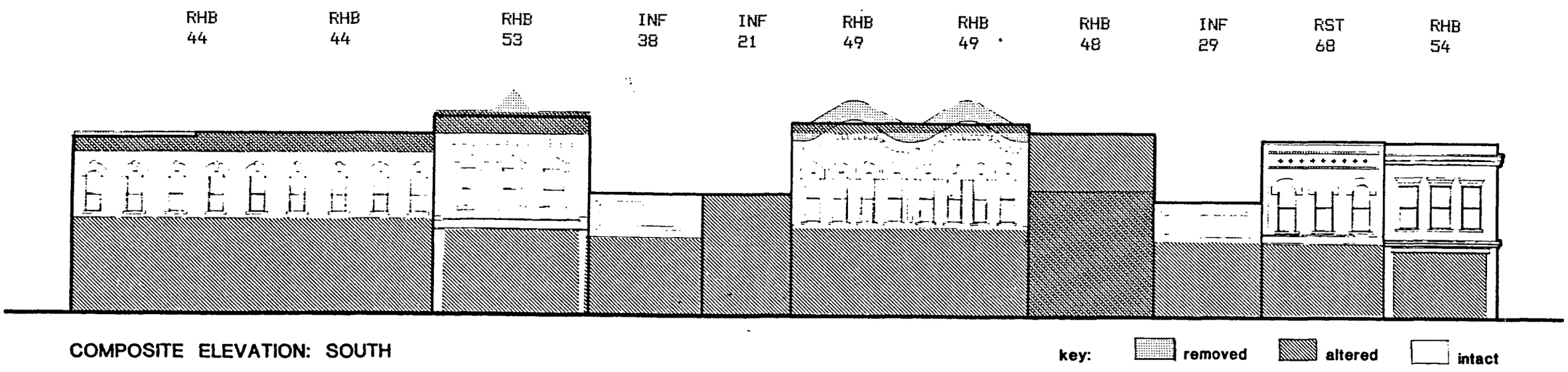


Figure 46. Composite diagram: south elevation

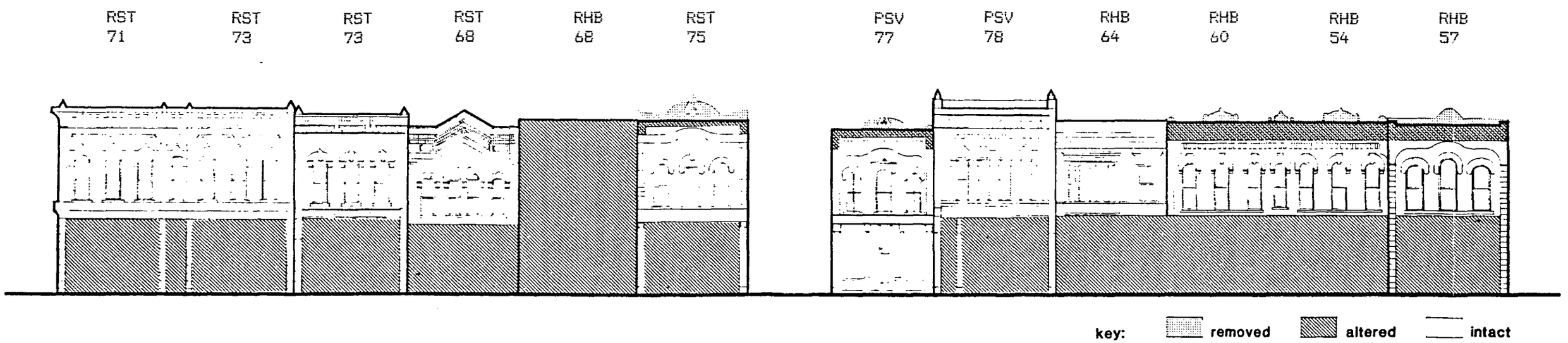


Figure 47. Composite diagram: west elevation

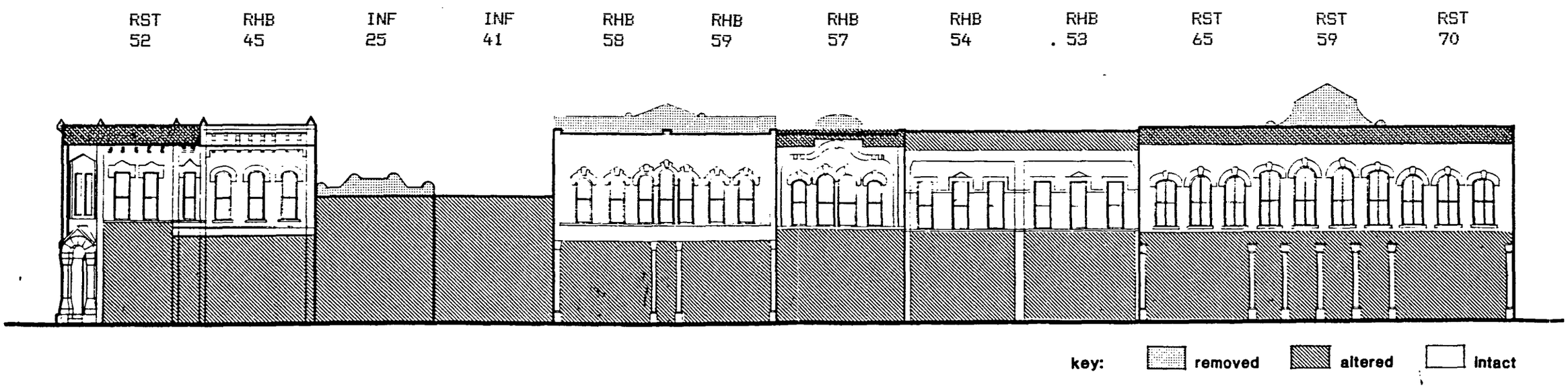


Figure 48. Composite diagram: north elevation

to further narrow the choices of preservation approaches. Review of the slides, photographs and models of existing conditions was also a part of this process. The most difficult task encountered in this process was to attach specific nomenclature for the design approach selected. To assist with this procedure, a graph (Figure 49) was constructed with the four previously defined design approaches placed on parallel horizontal axes. The total point values and frequencies of occurrence, determined from the matrix diagrams, were plotted on the axis. Vertical lines were then drawn to delineate each approach to aid in interpretation of the graph.

The distinction between infill and rehabilitation was clear as was the distinction between restoration and preservation. Restoration and rehabilitation overlapped, although, more of the lower scoring storefronts were assigned rehabilitation treatment while the higher scoring storefronts had been assigned restoration treatment. A balance point of 59 points, determined both graphically and mathematically, divided these two treatments about equally. This balance point was very close in value to the average point value for all storefronts which was approximately 56 points. The division line between restoration and rehabilitation could have been drawn at the 56 point value as well. Because of the occurrence of rehabilitation and restoration overlapping nearly equally, the author selected the balance point value of

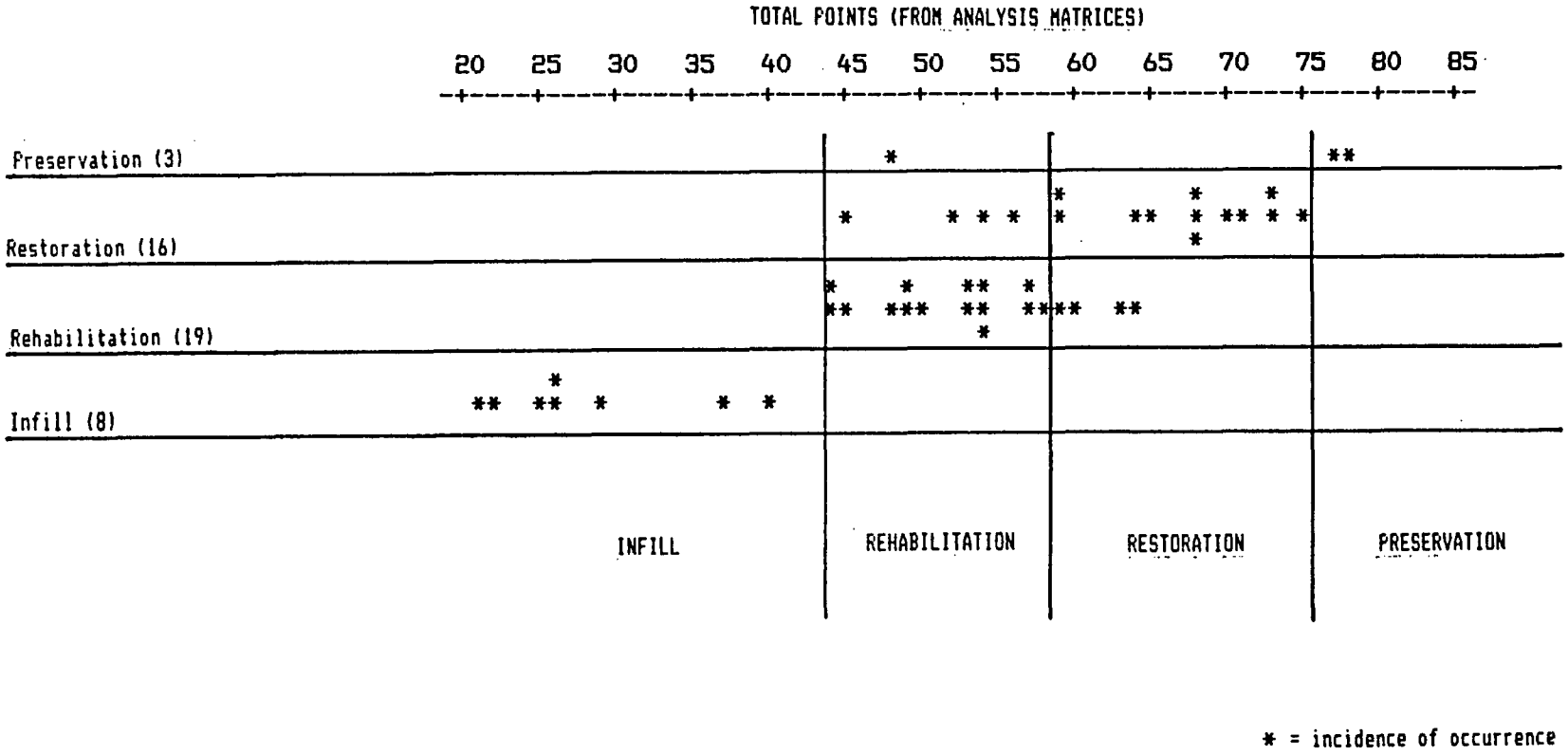


Figure 49. Graph delineating design approaches

59 as the division between restoration and rehabilitation for testing the definitions of the design approaches against a set of new elevation drawings by incorporating the design recommendations developed in the following chapter.

The point ranges for the selected approaches were then determined to be: infill (0-43 points), rehabilitation (44-58 points), restoration (59-75 points), and preservation (76-88 points).

The combining of information gathered and examined in the previous analyses, with clearly defined alternatives, led to the definition and selection of appropriate design approaches. A wide range of possibilities exists for the preservation treatment of the various storefronts. It is the coupling of the analysis with the range of appropriate alternatives that produced valid approaches to the preservation treatment of each storefront's visual image.

CHAPTER VI. DESIGN RECOMMENDATIONS

The design recommendations presented in this section were developed from information compiled in the literature review and analysis and combined with the appropriate design alternatives. The recommendations are primarily tailored to address the visual image issues related to the storefronts in Winterset. However, with minor modification these recommendations could be applied to architecturally significant commercial storefronts in other communities. For example, the storefronts in Winterset are two story in composition, meaning that they are composed of large display windows on the street level and one upper level punctuated by smaller vertically oriented windows. Some examples of historic storefronts examined during the literature review often exhibited more than one level of upper story window bands. The recommendations presented in this thesis are intended for the design treatment of two story facades. These recommendations could be easily modified for application to facades with multiple upper levels, however.

In order to present the design recommendations in a logical manner, the twenty-two criteria analyzed in the analysis matrices were separated into three major categories. The three categories by definition are: overall visual characteristics, architectural features, and materials and assemblies. The overall visual characteristics, which include height, proportion, and rhythm, should be addressed first as

they establish the basic forms and modules of the storefront compositions. The architectural features along with materials and assemblies give the storefront character and contribute to a differentiation among the storefronts resulting in unique visual image identities.

Physical assessment of the architectural features is included in the form of a checklist. This was done to accommodate the range of design approaches where it is possible to have an existing architectural feature on a facade that would not be re-designed in the case of a restoration or rehabilitation of the storefront, but might be require some level of repair or maintenance in order to regain the desired visual character of that feature. The checklist provides information used in the process of generating design recommendations and provides guidelines for the continued care (i.e., preservation) of the architectural features that are restored or designed for either rehabilitation or infill replacement.

A comprehensive discussion on the physical maintenance of the architectural features,such as cornice lines and cast iron columns, is omitted because the highly technical and detailed information that it entails is beyond the scope of this thesis. Several books and publications are devoted to this multi-faceted subject. Among the best sources of information are Sir Bernard Feilden's Conservation of Historic Buildings (1982) and the "Preservation Briefs" series published by the

National Park Service. The "Preservation Briefs" series are available at all state historical preservation offices.

The third major category to be addressed in the design recommendations deals with materials and assemblies. The items included in this category are materials, texture, color, scale, and craftsmanship. This area will not be discussed in detail, however, the selection of materials and how the other items in this category that relate to the enhancement of the overall visual image of the facade must be examined in order to generate a comprehensive set of design recommendations.

Overall Visual Characteristics

The major overall visual characteristics of the storefronts have been analyzed with respect to the heights of the facades and their relationships in height to adjacent facades, proportion of the facades, proportions of the window openings, rhythms of solids and voids of the upper story window openings, and horizontal and vertical directional expression of the storefront. Examination and analysis of the elevation drawings, both the historic and the existing storefronts as well as the existing conditions models, provided clues to the appropriate design treatments with respect to these characteristics.

Height

All one story facades should be redesigned or replaced with two story facades in order to establish a continuity with adjacent rooflines and upper story window patterns in

neighboring facades. The continuity of rooflines at a two story height will enhance the sense of enclosure already established by adjacent and nearby two story storefronts.

Adjacent storefront heights should be within 10%, above or below, the height of any adjacent storefronts (Figure 50). The average two story facade is about 35 feet in height, therefore the acceptable range of heights should vary between 32 and 38 feet while respecting the height of an adjacent facade. Varying the heights introduces variety and breaks up the monotony of continuous cornice lines.

Proportion of the facade

The basic proportions of single bay storefronts were recognized as vertically oriented rectangles from the analysis performed in an earlier chapter. The basic proportion can be derived from the Golden Mean where one side of a square is elongated by swinging an arc of one of the diagonals to intersect a line extended from the pivot point of the arc to the point where the arc intersects the line (Figure 51). The result is a rectangle having sides with a 1.6 to 1 ratio in height to width, respectively. This means that the basic dimensions of a single bay facade with a 22 feet width would result in a height of approximately 35 feet. These dimensions are adequate to develop a two story elevation for a storefront. The supposition made for this thesis is that the acceptable range of width to height ratios should fall between a range of 1:1.5 to 1:1.7.

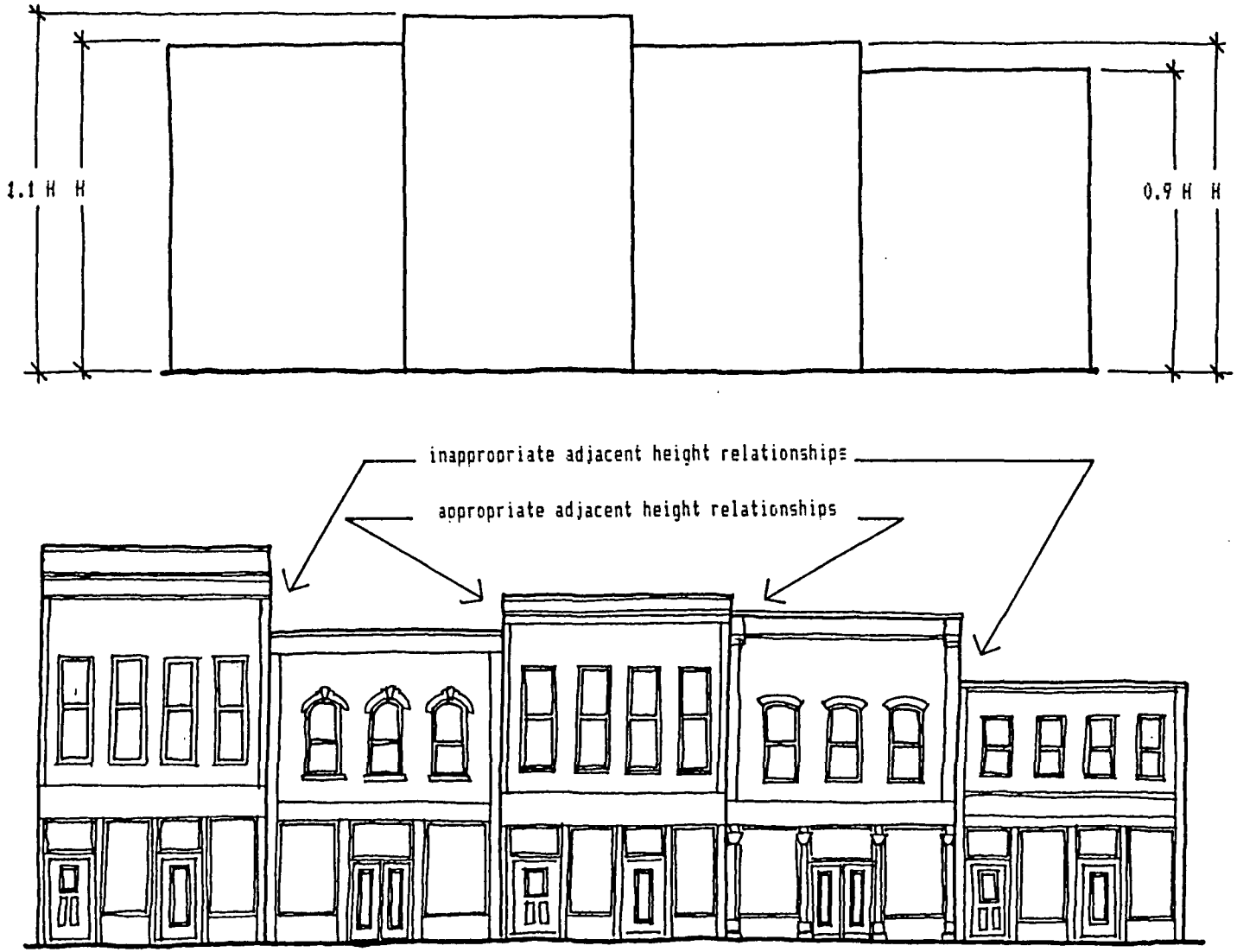


Figure 50. Appropriate adjacent height relationships

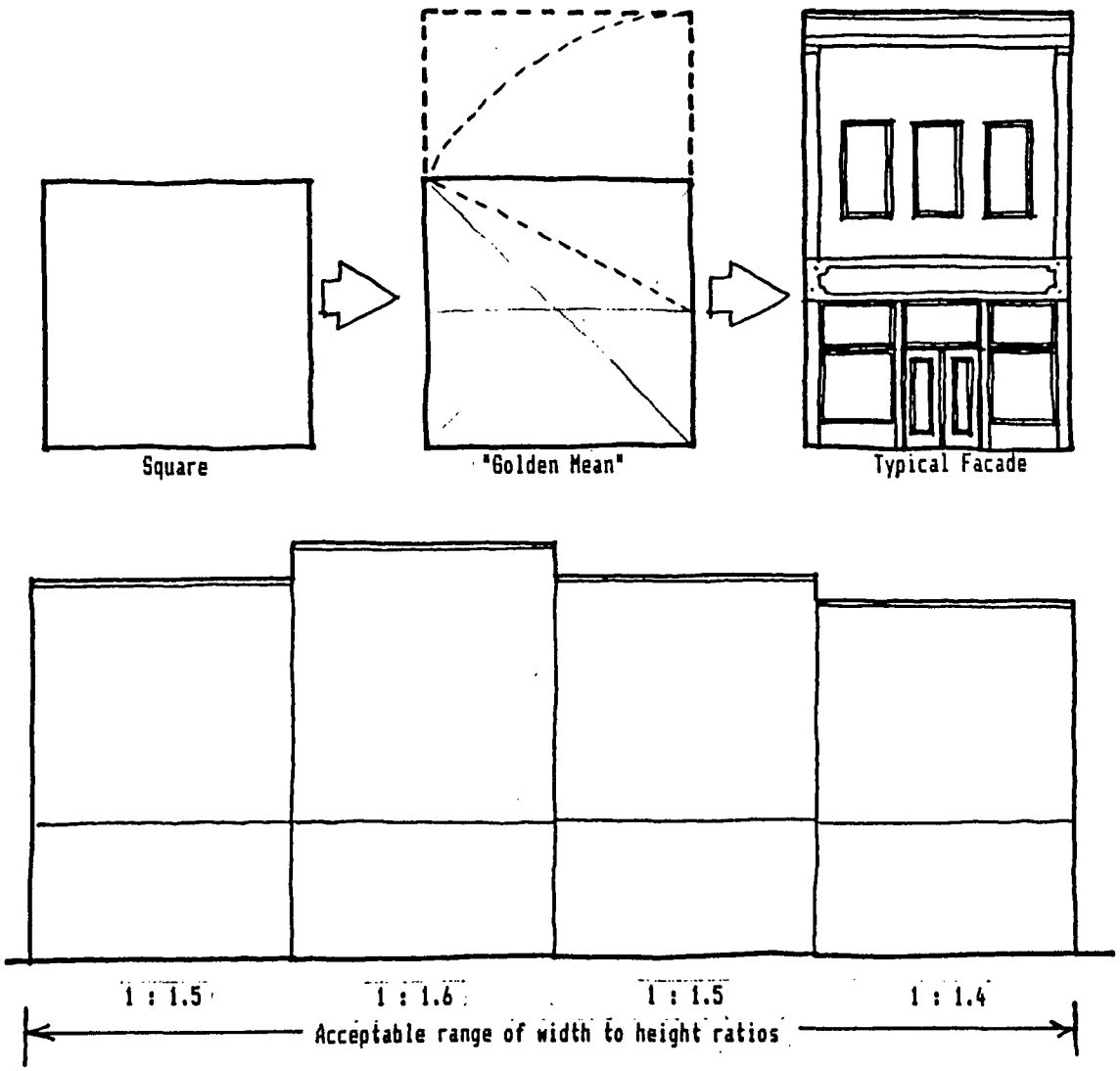


Figure 51. Appropriate proportions for the facades

Proportion of the openings

The recommended proportions for the upper story window openings and the storefront display windows are illustrated in Figure 52. The recommended proportioning and compositions of the fenestration resulted from analysis of the elevations drawings and existing conditions models.

An individual upper story window opening should be a vertically oriented rectangle with the height ranging from 2 to 2.75 times the width of the opening, which measured between 2.5 and 4 feet wide. The vertically oriented windows reinforce the vertical orientation of single bay facades and introduce variety to horizontally oriented multiple bay facades. The upper story window openings should be approximately 25% of the total upper portion of the facade.

The proportions of the display windows and entrances should be kept simple and the overall composition should be recognized as a horizontally oriented rectangle. Vertical structural elements such as columns and pilasters, window frames, and recessed articulation of the entrances should be used to reinforce the selected proportioning. The total amount of fenestration at the street level should be greater than 90 percent of total display and entrance portion of the facade.

The sizing and proportioning of entrances into the storefront should respect the needs of the physically impaired. This may not be possible for the more conservative

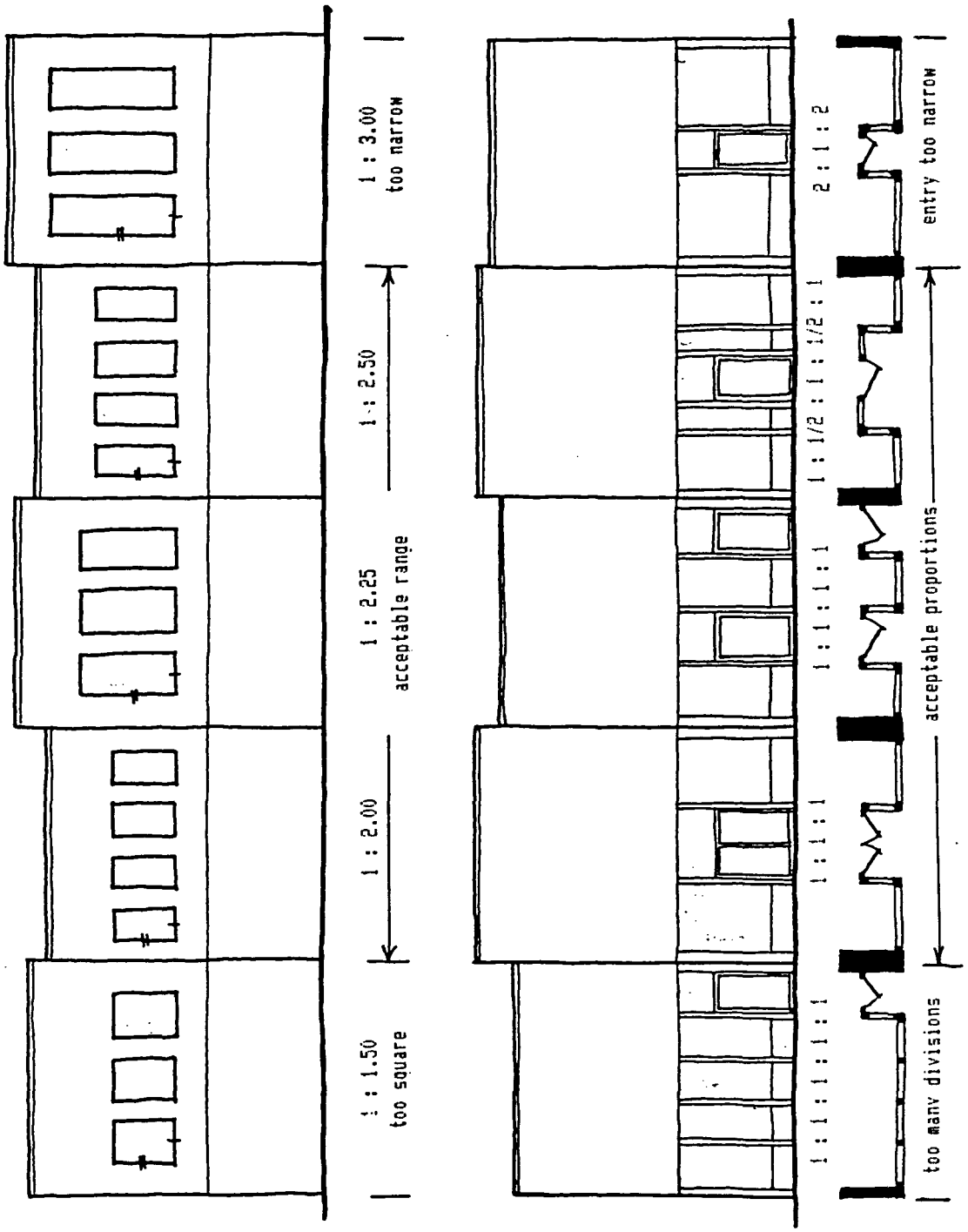


Figure 52. Appropriate proportions for the openings

approaches of preservation, conservation, and restoration or reconstruction. However, rehabilitation, reconstitution, and infill plans should incorporate equal access considerations that address the needs of the physically impaired.

Rhythms of solid and voids

The analysis of the historical and existing facades show a predominance of rhythmic spacing for the upper story windows and street level features in the facade. Figure 53 illustrates a variety of upper story and display window rhythms.

The spacings of upper story windows need not be identical all the way across, but should have a bi-laterally symmetric relationship with the facade. Varying the window heights and window forms within the composition and considering whether or not to change the spacing also contributes to the visual interest by introducing another level of complexity.

The rhythms introduced by the street level features should be kept simple. Rhythms of the display windows and entrances should also be defined with architectural elements such as columns, pilasters, window frames, and recessed entrances.

Directional expression

The horizontal or vertical directional expression of the storefront should reflect the bay configuration. A single bay storefront should be read as a vertically oriented rectangle. Multiple bay storefronts, on the other hand, should be read as

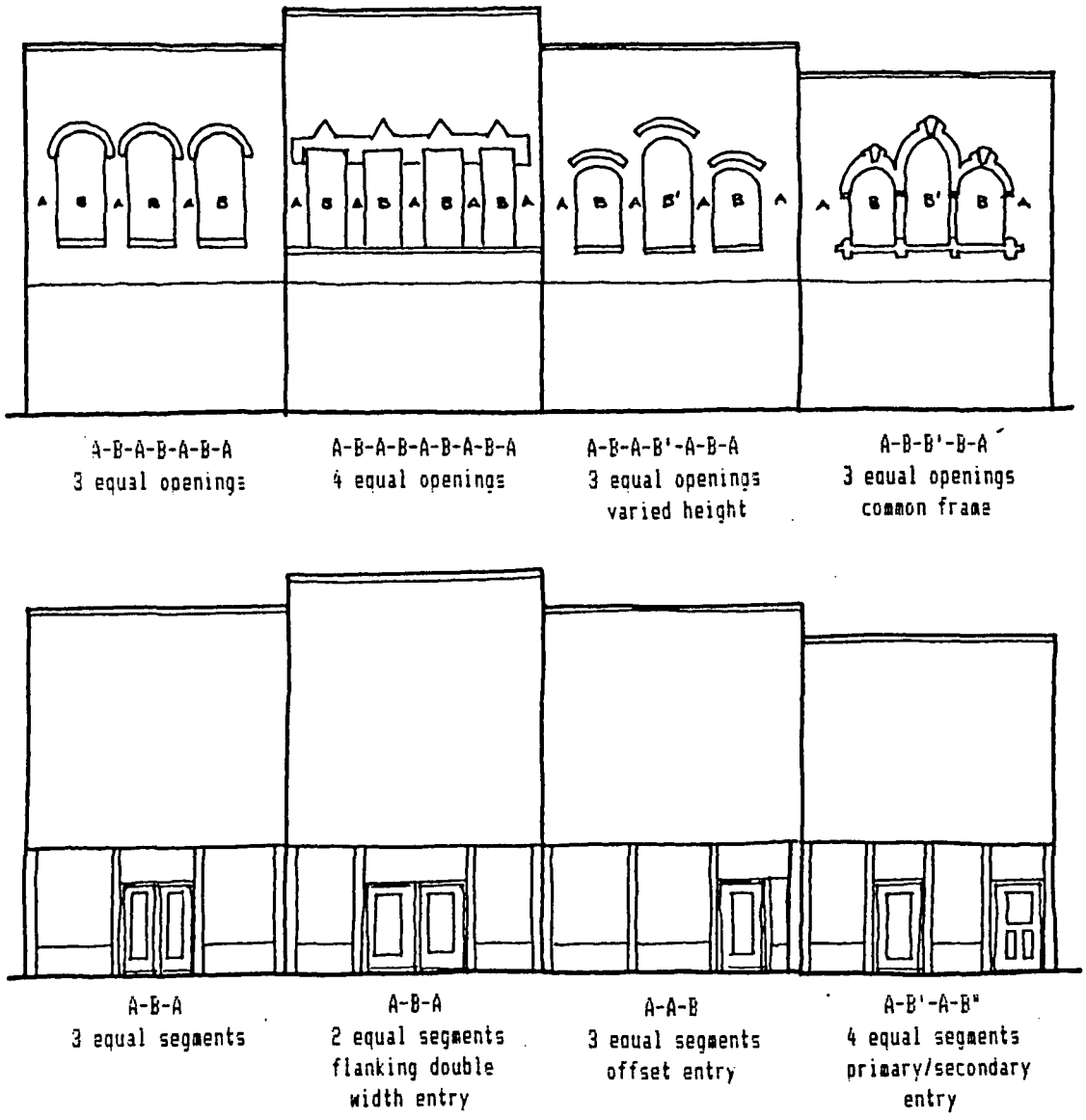


Figure 53. Appropriate rhythms of solids and voids

horizontally oriented rectangles. Figure 54 illustrates the orientation of single bay and multiple bay facades that are derived from single bay design. Certain key architectural elements, called out in the illustrations, add definition to the directional expression of a particular storefront.

Vertical directional expression of single bay facades should be reinforced by overall form and architectural elements such as vertically oriented upper story fenestration, columns and pilasters, and pediments topping the cornice line. Multiple bay facades receive reinforcement of their horizontal directional expression from uniform cornice lines, upper story window banding, brick or stone belt courses, signboards, transoms, and patterning of display windows at the street level.

Visual Image Assessment for Architectural Features

Twelve of the twenty-two characteristics examined in the analysis matrices are the tangible elements that contribute to the total visual image of the storefronts. These twelve features have been separated into four distinct categories (Figure 55) which allow the designer to concentrate on specific features rather than having to analyze the entire facade simultaneously. The designer must keep in mind, however, the implications of completely ignoring the remainder of the facade. All of the architectural features must work in harmony with one another in order to achieve a successful design. Breaking the features into categories allows the

VERTICAL EXPRESSION

- Overall form
- Vertically oriented upper windows
- Columns and pilasters
- Pediments

Single bay facades should reinforce vertical expression

HORIZONTAL EXPRESSION

- Uniform cornice
- Upper story window band
- Belt courses
- Signboards/ transoms
- Display windows

Multiple bay facades should reinforce horizontal expression

Figure 54. Directional expression of the facade

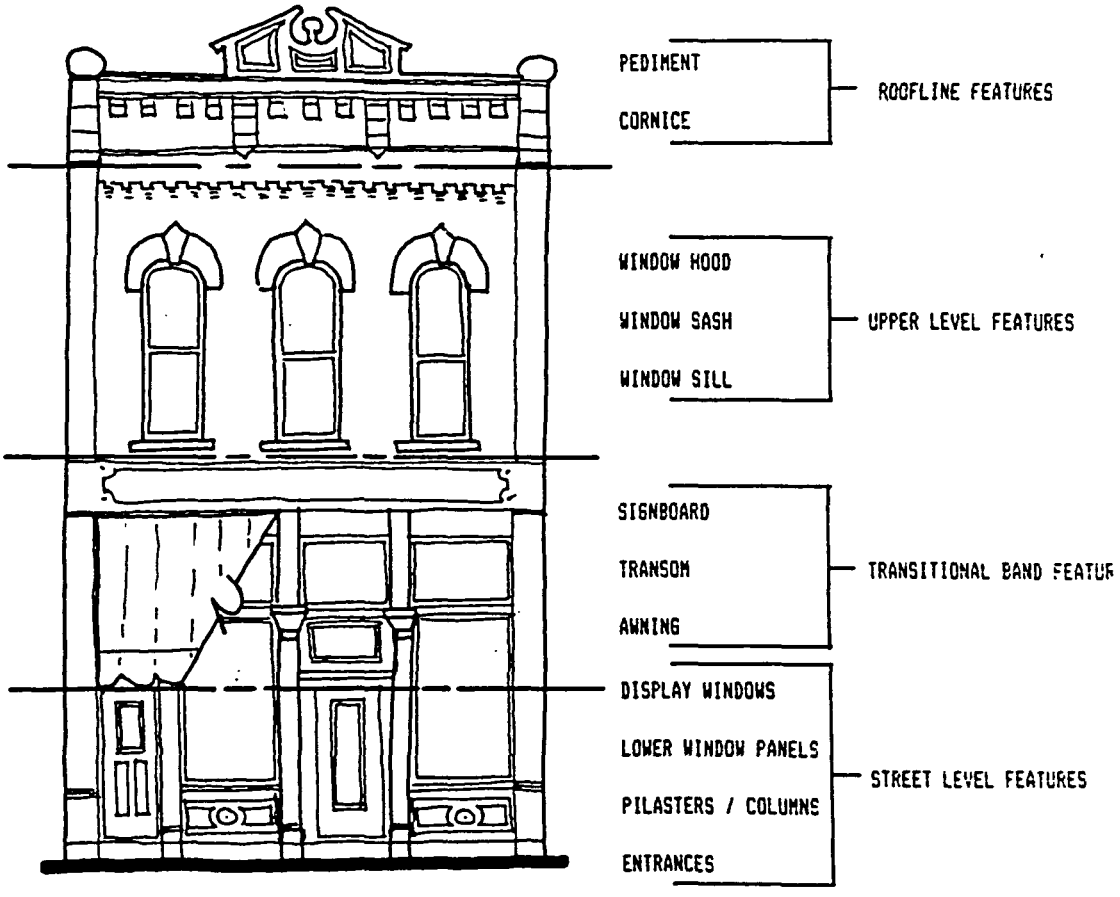


Figure 55. Divisions of architectural features

designer to focus on specific areas during the design process and to compare them with the features in other areas, however. In a completed storefront design, all features must respect one another in terms of scale, materials, color, texture, etc.

The four major categories of architectural features addressed in this section are: roofline features (pediment and cornice), upper level features (window hoods, sashes, and sills), transitional band elements (signboard, transom, and awning), and street level features (display windows, pilasters/columns, entrances, and lower window panels).

The design recommendations for the architectural features are summarized in checklist form with suggested treatment for that feature with respect to the four selected design approaches. The checklist summarizes the current status of the architectural features examined in all of the elevation drawings and models developed in the analysis.

Roofline features

The top of the building is defined by elements such as pediments and cornices. Pediments are late 19th and early 20th century features that add decoration to the cornice line. Intact pediments and cornices should be either preserved or restored depending on their present condition. Deteriorated or missing details can be accurately restored to their original form if photographs or drawings of the original feature are available. Facades that have been rehabilitated or designed for infill should not mimic features or details

that are associated with an earlier time period. For example, pediments were often placed above the cornice line on turn of the century commercial buildings and, therefore, should not appear on later construction. A bold cornice provides a termination for the top of the facade, however, highly decorative, bracketed cornices represent Italianate style architecture and should be avoided in later construction.

Upper level features

The primary features of the upper portion of the facade are related to the window openings. Specifically these features are the window hoods, window sashes, and window sills. Properly designed upper level windows, in terms of proportion and detail, contribute positively to the visual image of the storefront. In addition to proportion and rhythmic spacing discussed earlier, particular attention should be given to the sensitive detailing of the window hoods, sashes, and sills.

Window hoods Window hoods made of stone, terra cotta, or cast iron were common architectural features of the late 19th century storefronts. Repair of damaged or deteriorated hoods can be accomplished by removing and replacing the entire hood or repairing the hood with similar or appropriate substitute materials. Highly decorative window hoods are not appropriate for rehabilitated or infill designed upper levels.

Window sashes Insensitive modifications, including painted out or blocked out glazing and aluminum replacement

sashes, should be removed and replaced with wooden sashes and glazing that respects the original character of the window openings. Attention should be given to the division and number of panes in a given window opening. Careful examination of old photographs and drawings is required in order to reconstruct a sash accurately.

Window sills Window sills not only add character, but provide a base for the window frames and a drip edge to direct moisture away from the wall. Restoring a deteriorated window sill will prevent further ingress of moisture into the wall. Window sills may be designed for individual openings or for groups of openings creating a belt course below the window openings.

Transitional band

Signboards, transoms, and awnings are optional items that separate the upper level from the street level of the facade. They provide the functions of business identification, sunlight and daylight penetration, and shading of the storefronts, respectively.

Signboards Signboards are an important part of the storefronts and their treatments must be addressed for all preservation approaches. Their most important function is to identify the store either by name or type of goods sold to the customer. Providing identification for the storefront can be accomplished in several ways (Figure 56). Among these are painting or applying lettering and other graphics on a board

LINTEL
Lettering painted on lintel above display windows

DISPLAY WINDOW
Lettering painted on display windows

AWNING
Lettering on leading edge of awning

TRANSOM
Lettering etched on transom

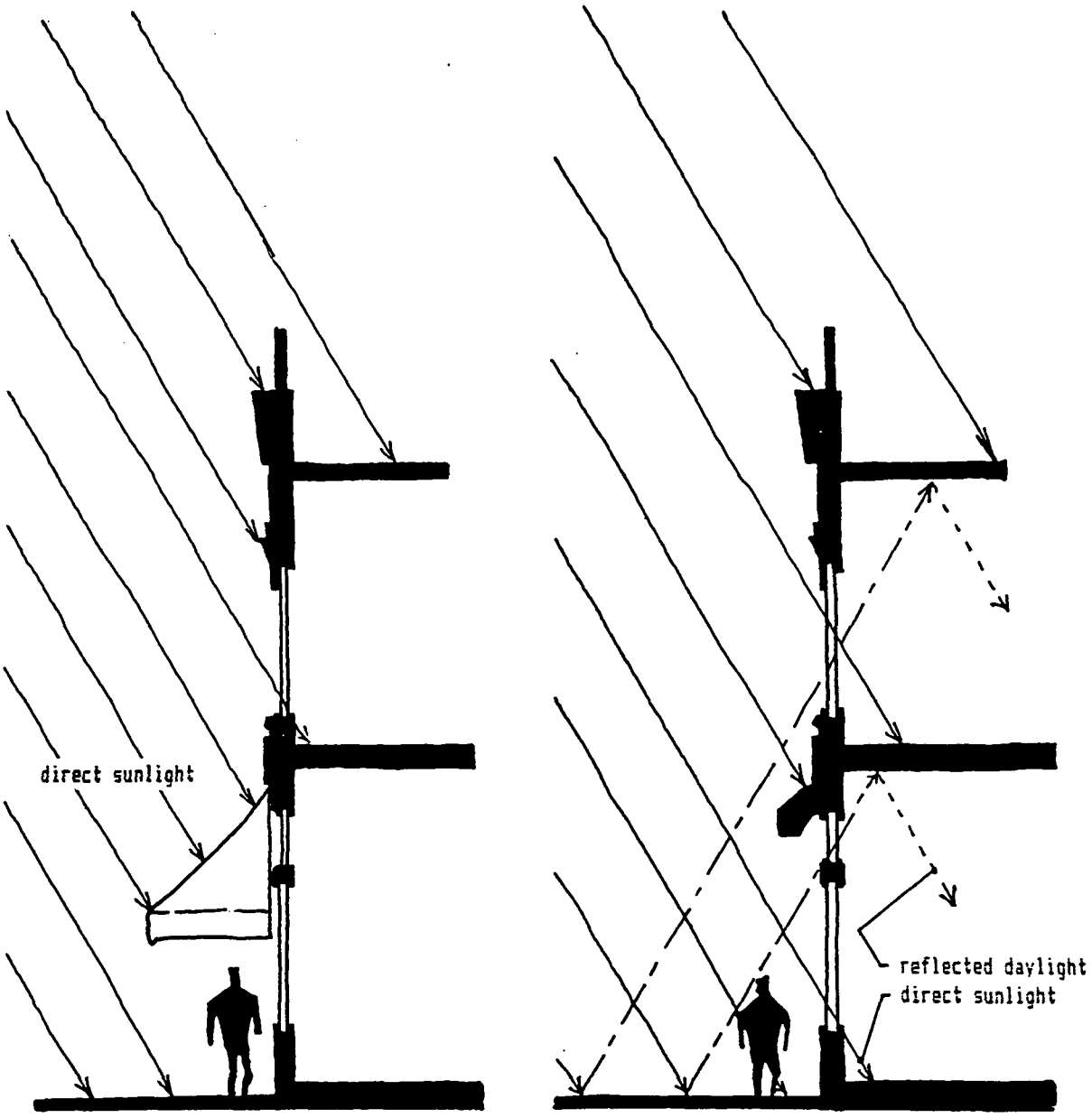
SIGNBOARD
Lettering painted on board attached above display windows

Figure 56. Alternatives for storefront signs

mounted over the display window or on a structural beam over the display window, on transoms above the display windows, lettering and graphics painted or applied to the display windows themselves, or on the leading edge of the display window awning. However, it is beyond the scope of this thesis to make specific recommendations for type style and other aspects of sign design other than suggesting that the lettering should be kept simple and easy to read. This can be accomplished by using bold, block style lettering with a high contrast background.

Transoms Transom windows serve to allow additional light (Figure 57) into the storefront and the transom bars or frames that separate the transom panels from the display windows break down the scale of huge single pane display windows. Historic photographs and drawings should be examined carefully for proportions and detailing. Transoms should be constructed with clear, non-reflective glass or decorative stained glass which may include signage or other graphics.

Awnings Awnings provide useful functions other than shading the storefront. They provide protection from the sun to shoppers outside the display window on sunny days (Figure 57) and provide shelter from precipitation on rainy days. The amount of sunlight or daylight penetrating the storefront can be controlled by adjusting the position of an operable awning. Awnings should be fabricated from soft canvas or vinyl and be mounted on retractable frames to allow manual operation.



AWNING EXTENDED / TRANSOM BLOCKED
direct sunlight prevented from entering structure at street level

AWNING RETRACTED / TRANSOM EXPOSED
direct sunlight allowed through display windows and reflected daylight passes through transom

Figure 57. Function of transoms and awnings

Awnings can be mounted above or below transom windows, but in no case should they conceal prominent architectural features. Awnings for upper story windows on south facing storefronts are desirable for providing additional shading and add visual interest to the upper level windows. Awnings on north facing facades do not provide sun protection, but add interest to the storefront and can provide rain protection to shoppers.

Street level features

The major elements that make up the street level features include the display windows, lower window panels, pilasters and columns, and entrances. As these features are closer to eye level and are encountered more frequently than the other features, extra consideration to their design and maintenance is required.

Display windows Display windows serve as a large display case for the merchandise sold in the store and should be as large and transparent as possible to allow views both in and out of the storefront. Articulation of the display windows by angling or recessing back from the plane of the storefront increases the views into the display area and helps to protect shoppers from inclement weather.

Lower window panels Lower window panels provide a base for the window frames as well as mask the area below the raised floors of the area behind the display windows. Decorative moldings and trim were common on turn of the century lower window panels and it is recommended that old

photographs be examined for dimensions and details in order to restore these features to their original character.

Pilasters and columns Pilasters and columns articulate the storefront and provide support for the structure above the display windows and entrances. Mid to late 19th century cast elements are less ornate than late 19th and early 20th century elements, therefore, it is important to examine old photographs or drawings and to research the date of build when restoring these features. Existing cast iron pilasters and columns should be cleaned and inspected for damaged or deteriorated sections. These can be repaired by casting replacement pieces from aluminum and then fitting them in. Stone pilasters should be cleaned and inspected. Damaged or deteriorated mortar joints should be repointed.

Entrances Entrances serve as the main interface between the inside and the outside of the storefronts. Some storefronts have more than one entrance, a main entrance used primarily by customers entering and exiting the store and a secondary entrance for access to storage or residences above the store. In any case where there are multiple entrances, the main entrance should appear dominant. This can be accomplished by positioning the main entrance closer to the center of the facade, making the main entrance more transparent (i.e., making it look more public), or enlarging the entrance area (e.g., using double doors). Some stores have a step that is about 6 inches above the side walk level

and is even with the main floor of the store. The step can be a hazard to store patrons, especially if they are visually impaired and it acts as a barrier to entry by those who are physically impaired. Alternative designs for entrances currently configured with a step should incorporate certain appropriate features described in widely accepted accessibility standards.

Architectural Feature Assessment Checklist

A checklist for the design and maintenance concerns addressing the range of preservation approaches is presented in Figure 58. The checklist serves as a summary to the aforementioned recommendations and can be used as a quick reference for the preservation treatment of the architectural features included in storefront compositions. The checklist should not, however, substitute for a carefully conducted analysis and resulting preservation treatment of the existing storefronts.

The architectural feature assessment checklist is threefold in purpose. The checklist should be used first as a means for taking physical inventory of the architectural features on a given storefront composition. This is assuming, of course, that the storefront is in existence. Second, the checklist can aid in documenting archival information, required for restoration work, by recording on the checklist whether historical documents are available or not. The third application of the checklist is for surveying the

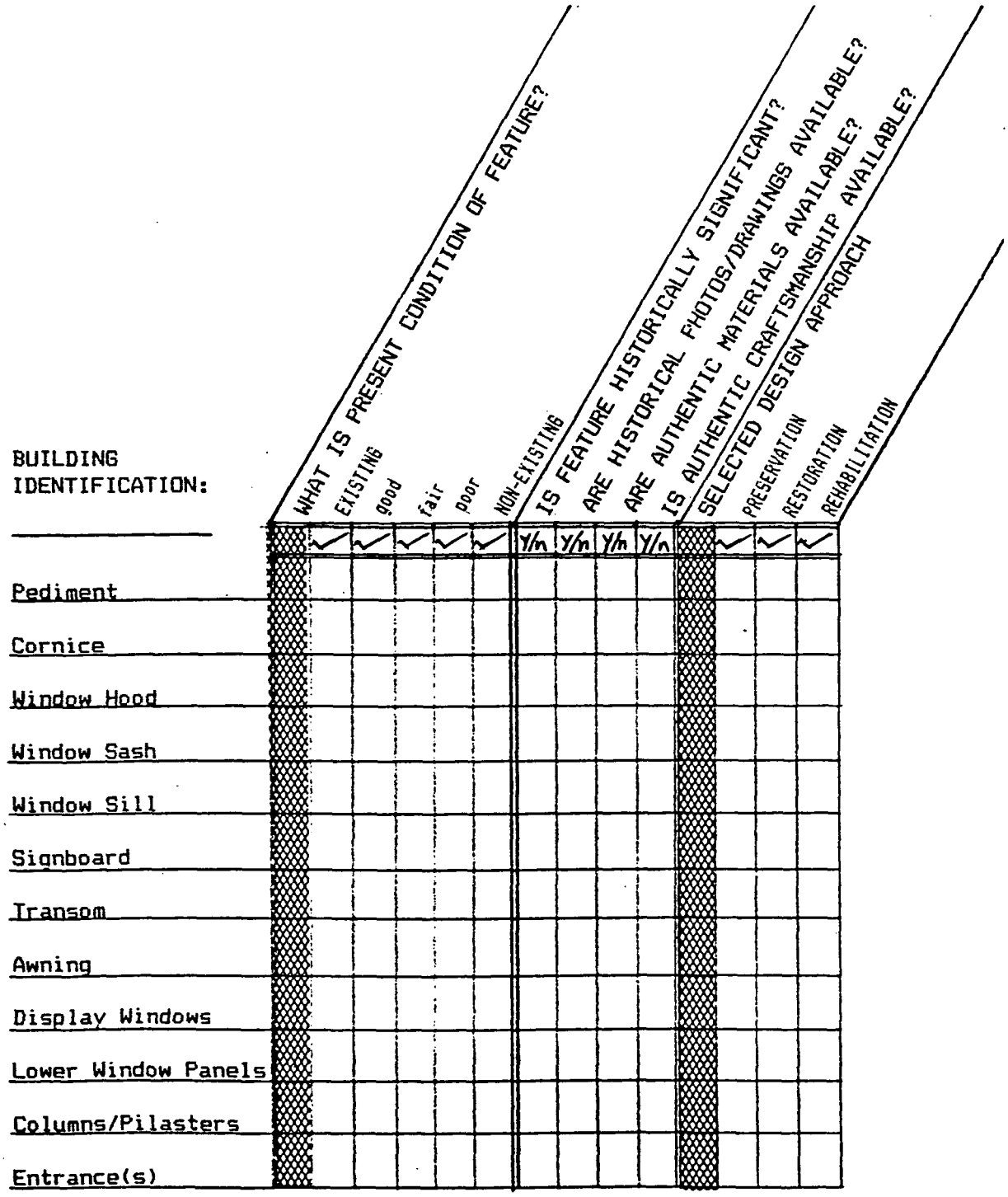


Figure 58. Architectural feature assessment checklist

architectural materials during routine inspections of the storefronts.

Incorporating the checklist into an annual, comprehensive cyclical inspection and maintenance program should greatly reduce the amount of benign neglect observed on all storefronts examined in this thesis. The architectural feature assessment checklist should not dictate the preservation policies regarding historic business districts. However, the checklist should be used as a tool in the analysis and decision making processes that are involved with formulating these policies.

Application of the Design Recommendations

Examples of applying the design recommendations to the storefronts facing the courthouse square are illustrated in Figures 59-62. These elevation drawings were developed by following the design recommendations described in this section and applying them to the elevation drawings generated during the analysis. A model (Figure 63) of the south half of the east elevation was constructed for evaluation of the recommendations in three-dimensional aspects and for color.

None of these new elevation drawings indicated any approach following the strict definition of preservation. This is largely a result from combining interpretation of the composite elevation drawings and first-hand inspection of existing conditions. While overall visual image characteristics (proportions, rhythms, and directional

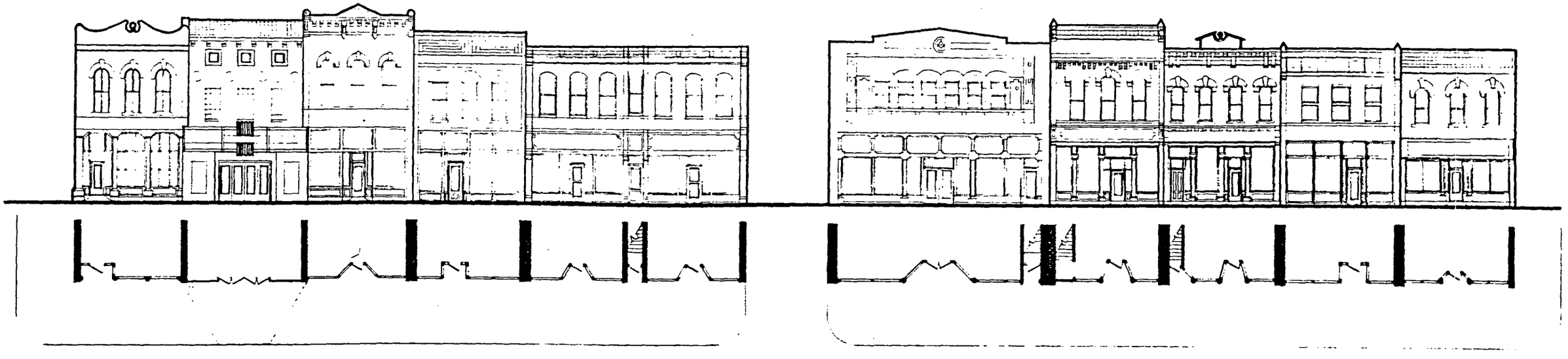


Figure 59. East elevation: recommendations applied

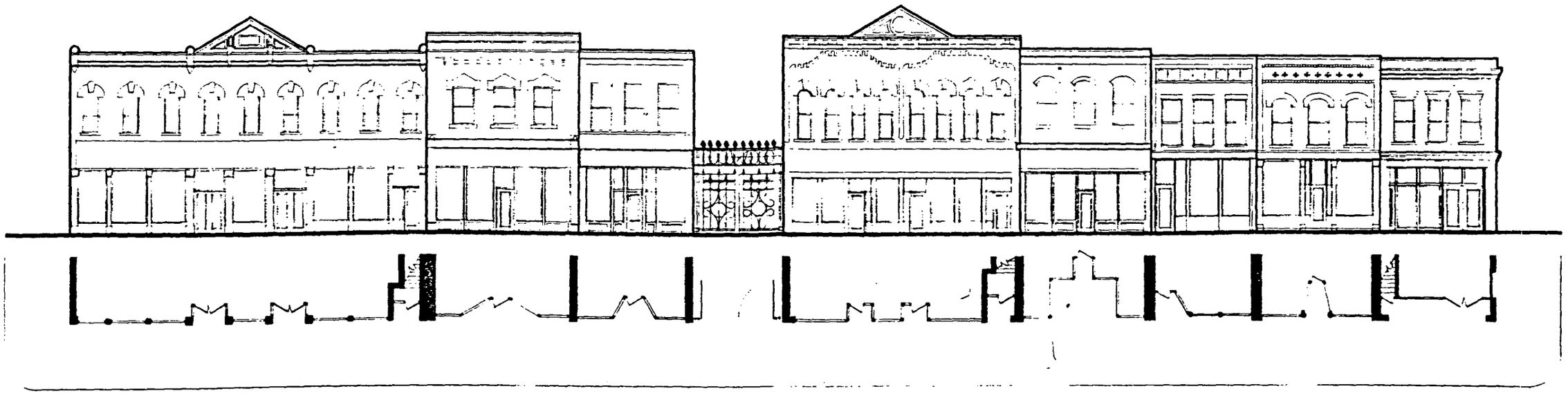


Figure 60. South elevation: recommendations applied

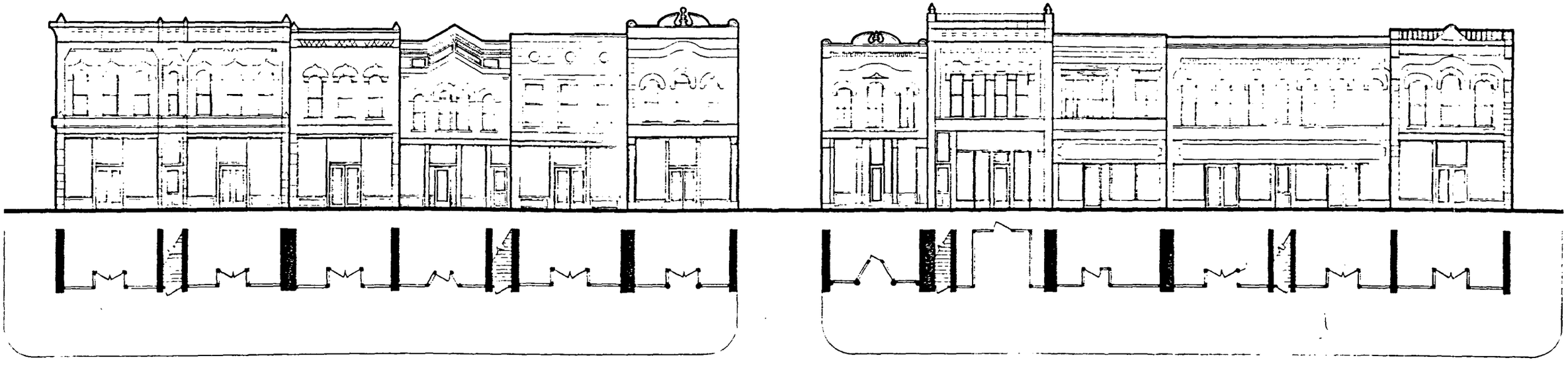


Figure 61. West elevation: recommendations applied

Figure 62. North elevation: recommendations applied

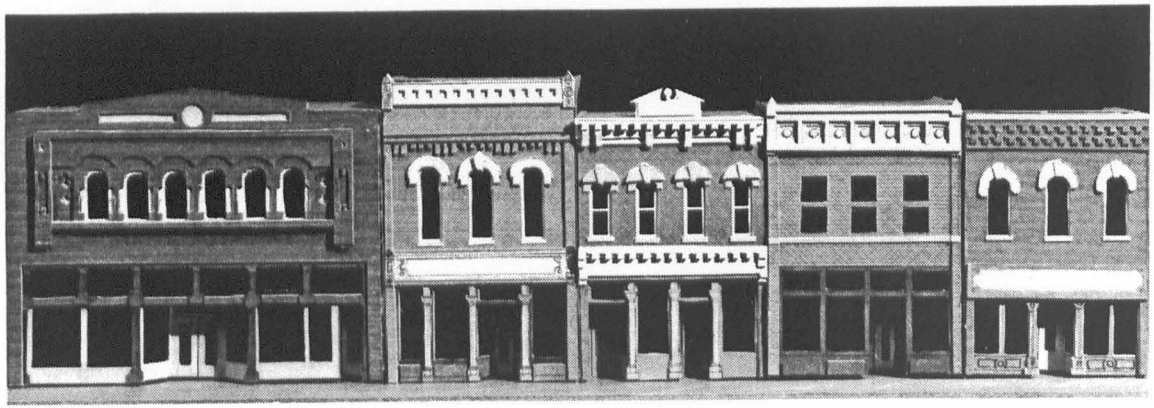


Figure 63. Model incorporating design recommendations

expression) were strong, as indicated by the matrix diagrams, the individual architectural features were weak in overall visual image, primarily resulting from benign neglect.

The majority of storefronts, roughly 70%, received rehabilitation treatment. Eight storefronts, approximately 15% of the total, were drawn to represent restorations and the remaining 15% were designed as infill replacement. Two of the infill storefronts, in a two bay configuration, replaced an existing two bay storefront on the east elevation (9a and 10a). The existing storefront's character bore little resemblance to the majority of storefronts in this context. Five of the remaining six one story facades, in accordance to the design recommendations developed earlier in this chapter, were designed as infill and in the form of two story structures. The sixth one story facade (4a, south elevation) was removed and replaced with a cast iron gate that would either fence in a pocket park or serve as a passage for pedestrian thoroughfare between the square and parking areas located behind the buildings on the south side of the square.

Little or no attention was given to the present use of each building as this analysis was academic in nature. In an actual situation, with real clients and real businesses, a thorough investigation of what businesses occupy each building and what their needs in terms of storefront design were would be warranted. The intent of this study was to analyze what had been constructed previously and how the storefronts facing

the courthouse square would appear if a theoretical set of visual image continuity guidelines were to be applied.

CHAPTER VII. CONCLUSIONS

Several steps were taken in developing the methodology for producing design recommendations applied to the storefronts facing the courthouse square. The analysis of archival sources and recording of extant conditions were conducted in a variety of ways: photographing existing conditions, examining historic photographs and constructing a set of accurate measured drawings, coupling verbal descriptions of the facades with graphic analysis, and studying scale models of the facades. The overall approach to studying the storefronts was to combine the aforementioned methods into an integrated approach. The integrated approach allowed the extraction and recombination of information analyzed in each respective specialized method. These specialized methods, in turn, complemented each of the others in this process.

Discussion of the Analysis Methods

The photographs of existing conditions provided the largest amount of essential visual information for the development of the design recommendations. Specifics such as type of material, color, shape and texture were documented by and studied from the photographs. The images produced from the slides provided the basis for the existing conditions elevation drawings.

Accurate measurement of the storefront plans rectified the storefront dimensions at street level with the roughly

scaled tracings of the storefront elevation drawings generated from the 35mm slides. This provided the base information required to develop partial plans of the storefronts which depict the articulation of the display windows, entrances, and pedestrian circulation in front of the building. The elevation drawings developed at this stage showed the major architectural features and overall visual image characteristics while leaving out the minor details such as cracked paint and spalled brickwork. These drawings allowed the study of the major design issues such as shape, rhythm, pattern, and relative building height by eliminating the minor details.

The existing conditions models were developed by combining the information from the photographs and the elevation drawings. While the photographs contained an overwhelming amount of visual information and the elevations contained abstracted information, the combination of this information, generated in model form, made the analysis of the overall visual image of the storefronts easier to accomplish. Simple modeling techniques depicting the existing conditions resulted in a more concise representation of the data collected from the photographs and measured drawings.

The matrix diagrams were useful in examining individual building components and visual characteristics that contributed to the overall visual image of the storefronts. Individual strengths and weaknesses in these features and

characteristics were clearly delineated and could be studied more objectively. The verbal descriptions of the features and characteristics and their graphic representations of the storefronts analyzed on the matrix diagrams complemented the more literal and visual interpretations extracted from the models and drawings. The point ratings tabulated in the analysis matrices guided the selection of appropriate design approaches. The higher the total point value, the more likely the approach would incorporate preservation or restoration approaches. Conversely, the lower the total point value, the more likely the approaches would draw upon rehabilitation or infill procedures. Combining the numeric point values of each storefront with its corresponding composite elevation diagram established a specific design approach for implementation into the storefront design.

It is important to realize, however, that each method used in the analysis could not stand on its own in the process of making design decisions. Each method contributed a specific interpretation of the problem which led to a more complete understanding of the visual image problems associated with the storefronts examined in this thesis.

Discussion of the Results

The final iteration of elevation drawings and accompanying scale models were generated by incorporating the design recommendations developed from the interpretations of the output of the visual image analyses. Four general design

approaches were extracted from a large range of defined approaches associated with the design treatment of historic buildings and landscapes: preservation, restoration, rehabilitation, and infill. The preservation and restoration approaches defined the conservative end of the spectrum for design alternatives, while the rehabilitation and infill approaches defined the more liberal end of the spectrum of alternatives in terms of historical representation and authenticity.

A graph combining the four definitions with the storefront analysis point totals from the matrix diagrams and the composite elevation diagrams facilitated the delineation of the four selected design approaches. The distinctions between the preservation and restoration approaches were well defined as were the distinctions between the rehabilitation and infill approaches. Rehabilitation and restoration approaches overlapped on the graph. The overlap indicates the judgement of the author by designating a particular design approach for a store front in spite of the point total generated in the matrix diagram. This also indicates that the point totals from the matrix diagrams should not be used as a singular input for making design decisions.

Upon completing the new set of elevation drawings, with the recommendations applied, it was discovered that 8 of the 16 storefronts that had originally been assigned restoration approaches were now representing rehabilitation approaches.

The infill and preservation designations adhered to the initial design approach selections, however. The increase in rehabilitations and related decrease in restorations of the remaining facades resulted from a combination of ambiguity encountered while interpreting the historic elevation photographs for detail and introducing the intuitive design input of the author. This shift in the demarcation between restoration and rehabilitation, on the graph, indicates that the derived balance point separating the two design approaches is arbitrary as long as the designer is allowed to experiment and explore alternatives appropriate to the design of the storefront compositions.

Although the objective nature of the analysis indicated the initial specific selections for the design approaches, the intuitive design input of the designer, while adhering to the design recommendations, influenced the final selection of approaches. This was reflected in the new set of elevation drawings and accompanying scale models. The concrete data generated from the analysis can therefore be coupled with the designer's intuitive input for producing valid design solutions.

Along with the design issues, other important issues that need to be addressed are those concerning the continuing preservation and care of the storefronts including the routine inspection and maintenance of the building at specified intervals in time. This can prevent costly repairs that

result from continual deferred maintenance. Implementation of a routine inspection and maintenance plan can also be beneficial in preserving the overall visual image of the storefronts as minor repairs and upkeep will distract attempts to insensitively "upgrade" or "modernize" the visual appearance of the storefronts, as has been done in the past.

If the materials themselves have deteriorated to the point where they must be completely removed and replaced with new materials, then it is important for those involved in deciding on approaches for repairs to realize the significance of the overall visual image of the storefront in the context of the other storefronts. Maintaining the overall visual image may be just as important as maintaining the building materials. "If various materials, features and spaces that give a building its visual character are not recognized and preserved, then essential aspects of its character may be damaged in the process of change" (Nelson 1987).

Recommendations for Further Study

Visual image is not the only problem that confronts the owners of buildings facing the courthouse square in Winterset. Larger scale issues of politics and economics, beyond the scope of this thesis, should not be overlooked in developing a comprehensive plan for the courthouse square district. The questions of whether or not a preservation program for the storefronts is in the best interests of the community of Winterset and how a preservation program, if approved, would

be funded if implemented are two of the major political and economic issues related to the treatment of the storefronts facing the courthouse square.

Planning and landscape issues should also receive attention. The current and proposed use of the buildings and the needs of those who use the buildings should not be overlooked. Decisions on what businesses are appropriate for storefronts facing the square and the development of the courthouse square district are two of the planning issues for the community of Winterset to consider. Landscape issues are important to consider as the storefront design treatments would be incomplete without addressing the needs associated with pedestrian and vehicular circulation. Plans for the design treatment of the courthouse square grounds and surrounding streetscapes including schemes for vehicle parking, pedestrian access to the square, plantings, benches, and trash receptacles are all important to consider when addressing the landscape design issues.

Graphic design issues regarding storefront signs and business identification were discussed briefly in one section of the design recommendations chapter. Other graphic design issues such as signs directing traffic to the downtown area and nearby historic landmarks and related tourism marketing literature should be considered as an integral part of any graphic design program developed for the courthouse square district.

Many issues are related to the general treatment of the Winterset courthouse square. It is overall visual image of the storefront compositions, determined from the analysis developed in this thesis, that affects the perceptions of people in the community and those visiting the business district as to the direction and well-being of Winterset. Addressing the needs for enhancing the visual image of the storefronts that face the courthouse square can contribute positively to solutions of the economic, political, and other related problems that challenge the community of Winterset as well as improve the overall visual image of the courthouse square district.

BIBLIOGRAPHY

Allen, Gary D. Winterset historic photographs. Private collection. Gary D. Allen, Winterset, Iowa.

Burns, John A. (1989). Measured drawings. In John A. Burns (Ed.), Recording historic structures. Washington, D.C.: The American Institute of Architects Press.

Butt, Thomas K. (1989). How CADD helped restorations: Documentation and design for a California town. Architecture, 11, 115-118.

Crawford, Gene. Winterset historic photographs. Private collection. Larry's Photography, Winterset, Iowa.

Feilden, Bernard M. (1982). Conservation of historic buildings. London: Butterworth Scientific.

Goldberger, Paul. (1980). To preserve the visibility of time. Old and new architecture: Design relationship. National Trust for Historic Preservation. Washington, D.C.: The Preservation Press.

Guytinco, Divina H. (1987). Image continuity in architectural facades. Unpublished master's thesis, Iowa State University, Ames, Iowa.

Harvey, Robert R., & Buggey, Susan. (1988). Section #630: Historic landscapes. In Hideo Sasaki, Charles Harris, and Nicholas Dines, (Eds.), Time-saver standards for landscape architecture: Design and construction data. New York: McGraw-Hill Book Company, Inc.

Jandl, H. Ward. (1983). Rehabilitating historic storefronts. Preservation Briefs, No. 11. National Park Service. Washington, D.C.: U.S. Government Printing Office.

Lebovich, William L. (1989). Photography. In John A. Burns (Ed.), Recording historic structures. Washington, D.C.: The American Institute of Architects Press.

Lee Valley Tools, Ltd. (1984). The Victorian design book: A complete guide to Victorian house trim. Ottawa, Ontario: Author.

Lu, Weiming. (1980). Preservation criteria: Defining and protecting design relationships. Old and new architecture: Design relationship. National Trust for Historic Preservation. Washington, D.C.: The Preservation Press.

National Park Service. (1982). Respectful rehabilitation: Answers to your questions about old buildings. Washington, D.C.: The Preservation Press.

National Trust for Historic Preservation. (1983a). Glossary. In Diane Maddex (Ed.), The brown book: A directory of preservation information. Washington, D.C.: Author.

National Trust for Historic Preservation. (1983b). Keeping up appearances: Storefront guidelines. Main Street. Washington, D.C.: Author.

Nelson, Lee H. (1987). Architectural character: Identifying the visual aspects of historic buildings as an aid to preserving their character. National Park Service. Preservation Briefs, No. 17. Washington, D.C.: U.S. Government Printing Office.

Niegowski, Lawrence D. (1989). S.I.D.D. Regional image survey report: Winterset. Unpublished manuscript, Iowa State University, Ames, Iowa.

Poppeliers, John C., Chambers, S. Allen, Jr., & Schwartz, Nancy B. (1983). What style is it?: A guide to American architecture. National Trust for Historic Preservation. Washington, D.C.: The Preservation Press.

Price, Edward T. (1986). The central courthouse square in the American county seat. In Dell Upton and John Michael Vlatch (Eds.), Common places: Readings in American vernacular architecture. Athens, Georgia: The University of Georgia Press.

Scrapbook. (1899). Winterset Review, December 27, 1899. Madison County Historical Society. Winterset, Iowa.

Weeks, Kay D. (1985). New exterior additions to historic buildings: Preservation concerns. Preservation Briefs, No. 14. National Park Service. Washington, D.C.: U.S. Government Printing Office.

Ziegler, Arthur P., Jr., and Kidney, Walter C. (1980). Historic preservation in small towns: A manual of practice. Nashville, Tennessee: American Association for State and Local History.

Zimmerman, Scott. (1990). "Recorded comments of John Sales, Chief Horticulturalist for the National Trust in England, at Stourhead, Wiltshire, England". Transcription of audio tape recorded during 1990 England Study Tour. Department of Landscape Architecture, Iowa State University. Ames, Iowa: Author.

ACKNOWLEDGEMENTS

This work could not have been completed without the help and encouragement from a number of others. Among those contributing directly were the members of my program of study committee to whom I am very grateful.

I wish to thank my major professor, Arvid Osterberg, for his guidance and genuine interest in the development of this thesis. His knowledge of historic preservation issues and related design considerations proved invaluable in the process. The sharp wit and constructive criticism of Professor Wes Shank was greatly appreciated as it helped to keep the train of thought on the right track. Many thanks go to Professor Bob Harvey whose international interests in preservation technology broadened my perspectives while working on this project. Professors Bob Findlay, Gerontology minor representative, and Jim Patterson, Energy Systems Engineering minor representative, provided additional insight to the problems encountered and their thoughtful input was always welcomed.

Many thanks are in store for my brother and sister-in-law, George and Karen, for inviting me to stay in their home in Ames while I was studying for my degree. Observing the antics of my niece, Katie, and her baby brother, John, provided the necessary relief from the tensions associated with graduate study. Also appreciated are my mom and dad, Mary and Bill, as well as my other brother, John, and sister,

Sarah, for their support and encouragement in my decision to leave the work force temporarily to pursue an advanced degree. Without them, this work could not have been completed.

I also wish to thank my classmates and fellow cribbage players at ISU and the professors that I took classes from and TA'd for as well as my colleagues at MacDon Industries Ltd., Winnipeg, for their support and encouragement. I appreciate them reminding me that all work and no play is not good.