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WHS
Headquarters
Barrier Free
Access Study

Wisconsin
Historical
Society,
Madison

DSF Project
No. **10D2U**

2010

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Introduction

In June 2010, Isthmus Architecture, Inc. was selected to develop a Barrier Free Access Study for the Historical Society Headquarters in Madison, Wisconsin. The Headquarters Building is located at 816 State Street, Madison; on the lower campus of the University of Wisconsin in Madison. The building houses the Society's library and archives as well as the offices of most of the Society's programs.

The intent of this study is to analyze all of the existing entrances and possible entrances on the North, South, East and West facades; and to develop a recommendation for a barrier free entry that would meet the goals of the Historical Society and comply with the current American with Disabilities Act (ADA) guidelines. The Society's primary goal is to improve the accessible entry into the building which will become the main entrance into the building. The Society's secondary goal is to restore the East Entrance to its original historic layout and appearance as a monumental entrance.

The production of this study acknowledges the commitment of the Historical Society and the State of Wisconsin to preserve its building's historical significance while developing a sensitive, creative, and functional solution for present day programming and code issues and a continued connection to the surrounding campus.

Methodology

The process of developing the Barrier Free Access Study included setting goals, undertaking an analysis of the historic plans and understanding the evolution of the existing entries. In the process the team conducted a site survey of the four principle entrances at each façade, North, South, East and West; then sketched multiple options for each location and identified key issues associated with each option, which led to the development of two probable options that were further developed.

The process began with a meeting with select Historical Society staff to discuss the first steps in identifying goals, defining usage patterns and exploring ideas. One week later, in June, the architectural team conducted an on site survey of the existing building entries and adjacent interior and exterior areas. The site measurements were integrated with historic plans to create the base plans for the study.

One month after the survey, a second meeting with select Historical Society staff and a Division of State Facilities representative was held to review the accessible entry concept sketch options (dated 7-7-10) at each façade. All probable options were laid out for discussion, even those that had serious functional and historical issues. During the review, the Historical Society goals outlined in the first meeting were closely followed and discussed. Two options came out of the discussion to the forefront as the best probable solutions.

With the concept sketch review meeting complete, the architectural team continued with the development of the two probable options in AutoCAD. Two weeks later, the probable options (dated 7-20-10) were presented at a third meeting with select Historical Society staff including Sam Rowe, a physically challenged employee at the Society. Sam, adamantly but courteously, explained his aversion to the use of mechanical lifts, which was a prominent aspect to one of the concepts. It was decided to omit the lifts and modify the concept to include a ramp sequence, which was redrawn and resubmitted to the team (dated 7-22-10).

One month after the submission of the revised probable option, the fourth and final meeting with select Historical Society staff and a Division of State Facilities representative was held to review the Draft Barrier Free Study. This meeting consisted of a presentation of the overall study composition, review of cost estimates submitted by J.P. Cullen and Sons for the two probable options, and the discussion of the team's conclusion for the most optimal Barrier Free Entry (dated 8-25-10).

Building Entrance Overview

General

The Historical Society Headquarters Building is located at 816 State Street, Madison on the lower campus of the University of Wisconsin - Madison. The North elevation faces Langdon Street, the East elevation faces library mall, the West elevation faces Park Street, and the South elevation faces the State Street pedestrian mall.

The building sits elevated above library mall and the city sidewalk on three sides, the North, South and East elevations. A secondary level change occurs on the North, South and East elevations and is surrounded by a stone balustrade. For purposes of this report it will be referred to as the "walk." From this level, the building's first floor is approximately 4'-2" higher on the north and 3'-6" higher on the South and East entrances.

The site slopes up towards Park Street where the city sidewalk is within 6 inches of the 1965 addition's first floor. As a result at the fourth side, West elevation, there is a 6" level change between the city sidewalk and first floor at this elevation.

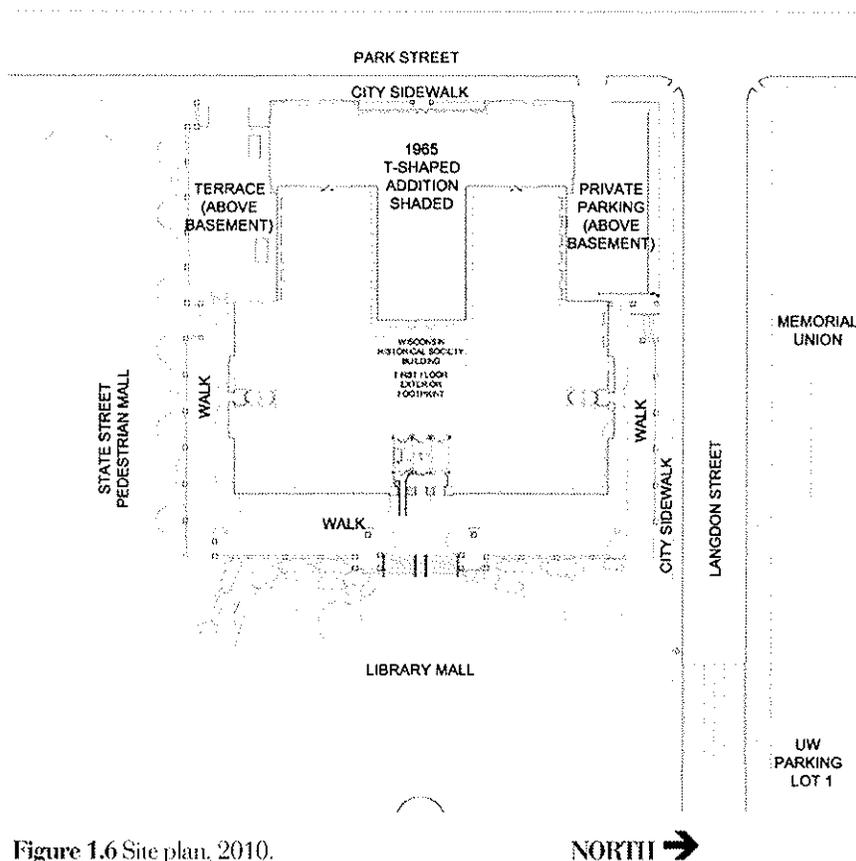


Figure 1.6 Site plan, 2010.

The closest accessible parking lot is at the Memorial Union across Langdon Street. The closest city parking garage is the State Street Campus Ramp on Frances and Lake Streets. The closest street parking is on Langdon Street. Therefore, the closest accessible parking is North and East of the building.

The existing wheelchair accessible entry ramp into the building is located on the East Elevation. There is an accessible drop off area in the North staff parking lot. Currently there are two possible accessible routes; the first accessible route approaches from the North city sidewalk up a ramp to the building walk and around the building's Northeast corner to the East entry. The Historical Society Staff also use this path around the Northeast corner of the building exterior in order to bring wheeled equipment/carts into the building from the North staff parking lot, except they would access the North walk at building down a ramp from parking lot. It is not a favorable route for the staff. The second accessible route approaches from the Southeast at Library Mall to the building walk and around the Southeast corner of building to the East ramp.

Currently, the entrance usage is evenly distributed between East, South and North. Typically, the North and South entry doors unlock at 7:45 am for staff entrance. A card reader is located at the East Entrance ramp for "closed" hour access.

Original Historical Configurations

In 1896, following a design competition, Ferry & Clas Architects of Milwaukee Wisconsin was commissioned to design a joint library for the University and the Society. The monumental entrance, a loggia comprised of three adjoining masonry arches, was located on the East façade. The three opening rhythm of the loggia continued into the building by three pairs of doors connecting the loggia to the entry vestibule and another three pairs of doors connecting the entry vestibule to the building lobby.

There were also prominent entrances on the other three facades. The North and South Entrances, on axis with each other, were articulated by a single masonry arch. The West entry, on axis with the monumental East Entrance, was also articulated by a single arch.

Below, the entrances are discussed per façade in order to understand the work that has altered each entry and its adjacent surrounds since the building's original completion in 1900. It is a list of chronological work per façade. There were three identifiable project periods that affected these areas; the first in 1954, the second in 1965, the third in 1975. The most significant to the overall building configuration was the 1965, T-shaped addition by Siberz, Purcell & Cuthbert Architects of Madison, Wisconsin. It in-filled the original central U-shaped court and added storage and exhibit space in the basement, an auditorium on the first floor and stack areas on the second and third floors. The other two periods will be explained at the corresponding entrance.

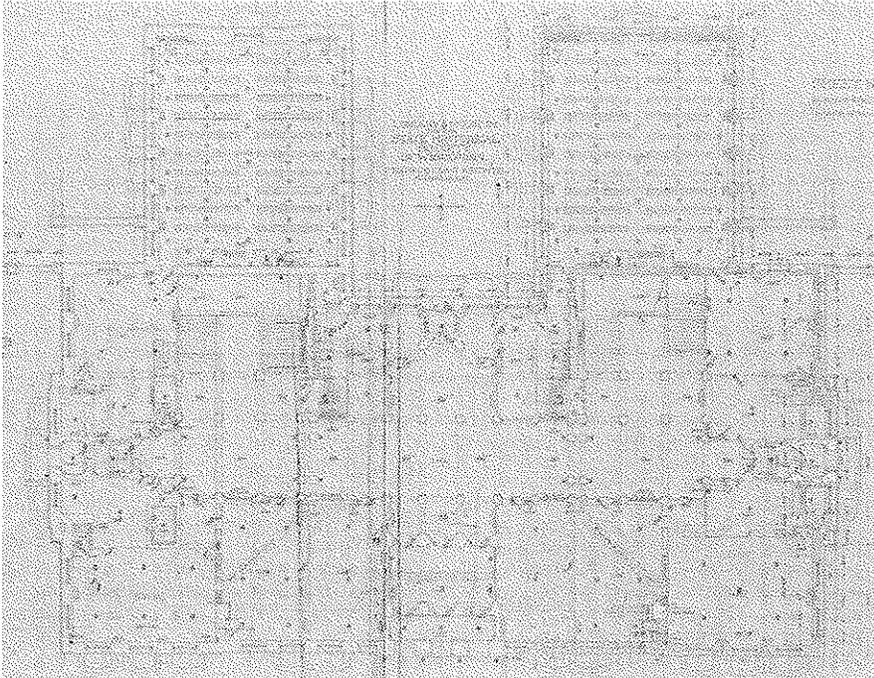


Figure 1.1 First Floor Plan, 1896. (Courtesy Wisconsin Historical Society)

Current North Entrance

The north parking lot was part of the 1965 T-shaped western addition; built on top of a new basement storage area. It included the addition of a loading dock cut through an existing masonry window opening at first floor level, a receiving room and a freight elevator. Currently, ten parking spaces are available in the lot.

The parking lot slopes down in an eastwardly direction starting at the city sidewalk level at Park Street down to the loading dock. At its lowest level it is still considerably higher than the walk at the building base. On the north edge there is a 5 foot wide planter separating the parking from the pedestrian walk with stone walls on the sidewalk side and concrete walls on the parking side.

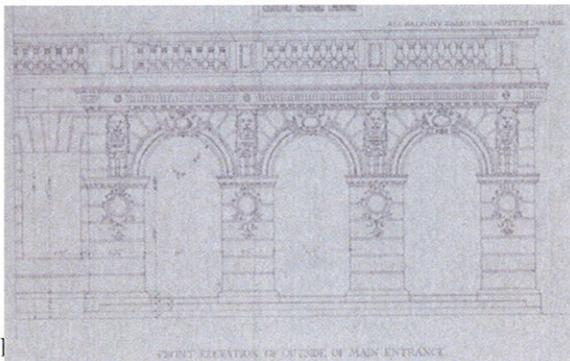
The North Entrance has two exterior concrete ramps, the lower ramp connects the level change from city sidewalk up to the walk at the buildings base, and the upper ramp connects the level change from building base to the parking lot. The ramps were designed by State of Wisconsin Department of Administration Bureau of Facilities Management, BFM, dated May 1975. The lower ramp from city sidewalk removed a portion of the original granite stairs, and the upper ramp to parking lot removed a portion of the original balustrade. Neither meets current code requirements of 1:12.

Current East Entrance

In 1954, when the University moved their library functions from the building, significant interior remodeling occurred throughout the building. At that time, the flanking door pairs at either side of the central entrance doors were in-filled with masonry and stone, thus altering the transition from loggia to entry vestibule. Coat rooms were built at these two flanking locations. They were

constructed above the original marble stairs that stretched the length of the entry vestibule. Thus, approximately a third of the original entry stairs at the center of vestibule are visible and usable for pedestrian entrance. The areas designated for coat rooms are currently landings with half height walls on either side of the central stair.

The existing East accessible entry ramp was designed and installed by BFM in May of 1975. It consists of two sections of ramp; one on the exterior and one in the interior, neither of the ramps meet the current accessibility codes for slope. The exterior concrete ramp connects the walkway at the buildings base to an intermediate landing at the southern loggia masonry arch. Two original granite slabs, loggia marble floor pattern and door heights were altered to accommodate the new floor height. After 35 years of exposure to the elements, the exterior concrete ramp is deteriorating. The interior portion of the ramp connects the intermediate landing to the first floor level in the defunct coat room area.



Wisconsin



Figure 1.3 (right) East Entrance 2010

Current South Entrance

The brick terrace, including the balustrade, was part of the 1965 T-shaped addition and was built over new museum exhibit space in the basement. It is thought that the balustrade foundation wall is an extension of the southern basement exterior wall; however, further investigation is needed to confirm. The terrace is an intermediate level between the walk at the building base on the Southeast, East and Northeast and the city sidewalk level at Park Street.

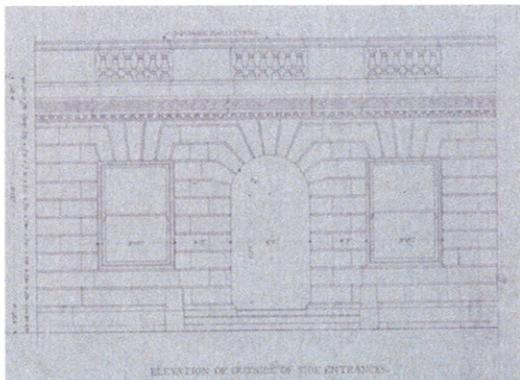


Figure 1.4 (left) South Entrance Elevation (North is similar), 1896. (Courtesy Wisconsin Historical Society)

Figure 1.5 (right) South Entrance 2010

Current West Entrance

The 1965 T-shaped addition in-filled the original central west courtyard with an auditorium transforming what was once a grand entrance into what is considered now the back door. Another resultant was the loss of an entrance with close proximity to the main lobby. The separation of the West Entrance from the main lobby renders this entrance incompatible with the accessibility goals set forth by the team.

Sketch Study Options

Synopsis of Sketch Entrance Scenarios

Each entrance discussion reflects the conclusions reached at the work sessions in relation to the presented drawings attached in Appendix A. Reference pages R-I and R-II will aid the reader in location each option and provide an overview of the changes in elevation at each entrance. The concept sketch options, ranging from insensitive to historically sensitive options, deliberately studied a wide spectrum of possibilities for barrier free building entry.

The East and West Entrance options were eliminated after the concept sketch stage. While the North and South Entrances were developed further into the probable option stage. The entirety of the study per Entrance is listed below.

East Entrance

The concept sketch study below is in conjunction with Appendix A, drawings E-I, E-II, E-III and E-IV dated 7/7/10.

East Entry Drawings E-I and E-II

- Creating a new entry through window at left side of main entry loggia is unfavorable due to the disruption of the existing East façade symmetry.
- Restoring the East entry three door pairs is very desirable.
- Taking space out of storage room, potentially usable space is unfavorable.

East Entry Drawing E-III

- Creating an L-shape exterior ramp would garner some merit for this design.
- Taking space out of the storage room is unfavorable, but the accessible corridor could serve as a separate entry after building hours for a future café etc.
- Placing the entrance door on the interior side of the loggia and not on the front façade is much more unobtrusive.
- Restoring 2 of the 3 pairs of door openings is not desirable

East Entry Drawing E-IV

- Not a favorable option because it destroys the overall character of the main exterior entry stoops and because of the significant length of the interior ramp.
- Restoring 2 of the 3 pairs of door openings is not desirable

West Entrance

The concept sketch study below is in conjunction with Appendix A, drawing W-I, dated 7/7/10.

West Entry Drawing W-I

- Not a viable option because of the significant distance and separation between the Park Street entry and the main lobby.

North Entrance

The concept sketch study below is in conjunction with Appendix A, drawings N-I, N-II, N-III and N-IV dated 7/7/10.

North Entry Drawing N-I

- Restoring original stair between city sidewalk and walk is favorable.
- Repurposing of existing planting area as ramp while maintaining western portion of planter to screen parking lot from adjacent city sidewalk at its highest elevation is favorable.
- Existing parking can be re-striped for accessible parking spot.
- Suggest to add stairs for direct access from parking to building walk towards entry.
- There is currently excess space on the west side of the Sellery Room. The kitchen can possibly be relocated to the north of the freight elevator or in the existing closet. The kitchen needs to function for light catering (dishwasher and plate storage).
- Lowered new entry vestibule will require structural reconfiguration below.
- The exterior window masonry opening extended for a door is the most significant change.
- Minimal interior reconfiguration. Use of existing door into Entry corridor is optimal.
- Lift is optimal location for staff to access existing parking with carts and supplies as alternate to freight elevator.

North Entry Drawing N-II, N-III, and N-IV

- Loss of parking space is not favorable. (N-II and N-IV)
- Length of exterior ramp into building is not favorable. This amount of switchbacks will cause issues with snow removal. (N-II)
- Entry into building from parking seems like a “back door option” and is not optimal. (N-III)

South Entrance

The concept sketch study below is in conjunction with Appendix A, drawings S-I through S-X, dated 7/7/10.

South Entry Drawing S-I and S-III

- Ramp from sidewalk (State Street Mall) to walk does not interrupt traffic flow
- Original balustrade elements may be reused
- Near an existing entrance
- Removal of a portion of original balustrade is not desirable
- Desirable location near the elevator
- Exterior ramp into building omits the need to alter the original window sill

- Omitting useable program space is not desirable
- Switchback exterior ramp is not desirable
- Structural rework of the first floor structure is not desirable

South Entry Drawing **S-II**

- Reuse of the original balustrade elements is desirable
- Exterior lift is not desirable and enclosing lift is costly
- Motorized unit maintenance and after hours operational issues is not desirable
- Original balustrade elements may be reused
- Near an existing entrance
- Removal of a portion of original balustrade is not desirable
- Combination of existing entrance and accessible entrance is desirable
- Desirable location near the elevator
- Exterior ramp into building will slightly alter the original window sill
- Changing useable program space into public space is not desirable
- Structural rework of the first floor structure is not desirable

South Entry Drawing **S-IV and S-VI**

- Short length of ramp at existing terrace level is desirable
- Entry into lobby framed by stair and columns is desirable
- Near existing elevator
- Loss of space in stacks and relocation of mezzanine stairs is not desirable
- Changing useable program space into public space is not desirable
- No adjacency to an existing entry route is not desirable

South Entry Drawings **S-V and S-VI**

- Short length of ramp at existing terrace level is desirable (minimal level change if terrace is made into parking – see S-VII)
- Entry into lobby framed by stair and columns is desirable
- Near existing elevator
- Loss of space in stacks and relocation of mezzanine stairs is not desirable
- Changing useable program space into public space is not desirable
- No adjacency to an existing entry route is not desirable

South Entry Drawing **S-VII**

- The addition of a public accessible parking space near accessible building entry is desirable
- The addition of 6 parking spaces is desirable
- Short length of ramp at existing terrace level
- Entry into lobby framed by stair and columns is desirable
- Exterior lift is not desirable and enclosing lift is costly
- Motorized unit maintenance and after hours operational issues is not desirable
- Near existing elevator
- Structural work to raise existing terrace approximately 14" to street level is costly
- Terrace level change will require rebuilding balustrade

- Changing useable program space into public space is not desirable
- Costly but beneficial

South Entry Drawings **S-VIII and S-IX**

- All-in-one access to building is desirable
- Enclosing lift is costly
- Motorized unit maintenance and after hours operational issues is not desirable
- New tower, separate from original building, is desirable
- Structural reworking of basement roof , affecting basement ceiling heights and programmable space is not desirable
- No ramps is desirable
- Does not interrupt flow of traffic on terrace/parking
- No adjacency to an existing entry route is not desirable
- Could be perceived as a second class citizen entrance

South Entry Drawing **S-X**

- Does not interrupt flow of foot traffic on terrace
- Structural reworking of basement roof , affecting basement ceiling heights and programmable space is not desirable
- Removal of a portion of original balustrade is not desirable
- Switch back exterior ramp is not desirable

Probable Option Studies

Probable Option Study One – North Elevation

Concept sketch North Drawing **N-I** was selected to be developed in CAD for a probable option study. The study below is in conjunction with Appendix B, drawings N-1, N-2, and N-3 dated 7/20/10; and N-4, N-4, N-6, N-7 and N-8 dated 7/22/10.

North Entry Drawings **N-1, N-2 and N-3**

- The lift forces the user to be dependent on mechanical equipment. Mechanical problems or power failure will cause lift malfunction and users can be stranded without another option – not desirable.
- From a user's standpoint, the configuration at the North Entry through the Sellery Room would be more optimal with a ramp instead of a lift.
- Suggest two runs of ramp, one run inside and the other run outside. Positive aspects of running portion of ramp on the exterior:
 - The upper exterior ramp landing reduces the transom height over door. Otherwise, it is a very tall transom when the door is dropped to grade.
 - The length of interior run is reduced, which minimizes the amount of space taken out of the Sellery Room.
- The exterior ramp can be screened with plantings that will fit into the current walk configuration without disruption to pedestrian flow.
- The loss of approximately 5'-0" in the Sellery Room is not significant or obtrusive in a

- manner that will cause much “ripple effect” in current interior building configuration.
- The City of Madison zoning code requires all parking lots with less than 25 spaces, public or private, have at least one accessible parking space and one accessible van parking spot; therefore the lot will require re-stripping to accommodate the code.
 - Stairs between parking and walk are cramped and undesirable
 - The motorcycle spot can be removed to allow wider spots. The lot currently has 10 parking spots. The agency will have a maximum of 7 vehicles in the near future. Note: the lot option is configured per Madison zoning. If the spots become wider, it might require possible zoning variance since the required back up length does not exist for wider spots.
 - The dumpsters might require reconfiguration to maximize parking lot use.
 - Remove the existing door into the Sellery Room. Salvage door and hardware. The opening into the new corridor will be easier for all users without a door.
 - An entry at the west side of the existing North Entry is less obtrusive than an entrance on the East façade.

North Entry Drawings N-4 through N-8

- Ramp inside the planter will provide an opportunity to restore the deteriorating stone wall.
- Recommend the entry from city sidewalk to ramp be flipped from that drawn. This relocates the ramp entry to a higher grade, which reduces the length of the ramp.
- The straight run of ramp at all locations is more desirable than switchbacks.
- The new stair perpendicular to the parking lot on N-5 is more desirable than placing the new stair parallel to the parking lot and the side of the building on N-6 and N-7.
- The drawbacks for utilization of this North area: the dumpsters remain visible similar to the existing condition and the parking ramp is entered at the middle of the parking lot versus at the Eastern edge.

Probable Option Study Two – South Elevation

Concept sketch South Drawing S-VII was selected to be developed in CAD for a probable option study. The study below is in conjunction with Appendix B, drawings S-1, S-2, S-3 and S-4 dated 7/20/10.

South Entry Drawing S-1, S-2, S-3 and S-4

- This solution is more costly.
 - Additional structure for the parking. Would likely require columns in the basement. This study is based on feasibility, not a structural system design.
 - The 1960's balustrade would need to be lifted to accommodate higher grade.
 - The building reglet for waterproofing would need to be raised to accommodate higher grade.
- The stair in the Rare Books Room is a built-in stair stack that connects to other levels. Moving this stair at first floor would disrupt the flow of the stacked stair. Therefore the entry vestibule is drawn at this location (S-1) in order to avoid existing stair.
- The ceiling height below the existing monumental stair is 6'-8" +/- (80") and the minimum allowed per IEBC is 7'-0" (84"). Therefore, a portion of this entry sequence ceiling height would require a variance.

- Another door into Rare Books Room will need to be provided. A door from the new Vestibule is not optimal because of security; a better option might be around the Auditorium coat room. Currently there is another door to access Rare Books Room on the West End between the original and the 1960's building.
- The ramp that is tucked into the parking lot is preferred option. (S-3) It will require space taken out of basement below for structure and waterproofing.
- The basement area below the new parking lot should be maintained for storage or another use, even though the new building will receive its current contents. However, since it is in the process of re-use, the structure for ramp and parking may not impede as much on current usage.

Recommendations

Goals

Restatement of the two main goals is as follows:

The primary goal is to improve the accessible entry into the building which will become the main entrance into the building. The secondary goal is to restore the East Entrance to its original historic state as a monumental entrance.

Impact to Historical Elements

Both probable options at North and South have minimal effect on the historic character of the Building and are generally feasible. The secondary goal to restore the monumental East Entrance to its original state is met with either option.

The North option will require extending an in-filled masonry window opening to accommodate a new door and transom which will alter the building symmetry around the North entry masonry arch. There is a significant length of ramp on the exterior, but it can be screened by plantings that will fit into the current walk configuration. A portion of the original balustrade will be removed for the ramp landing at the city sidewalk.

The South option will require a new reglet cut into the original building perimeter due to a higher grade level. It also will remove a portion of historic masonry to extend window opening for new door and transom as well as removes an original window.

Accessibility and Main Entry

The North entry option has a direct connection to the Memorial Union, its parking lot and to Langdon Street parking. It is in close proximity to an existing well-used entry and therefore it is on a known path of travel. This entry is on the opposite side of the building from the existing elevator; therefore, it will require travel across the building's interior length.

The separation of the South entry drop off from the existing loading dock area is desirable. The South entry is closer to the existing elevator. However, most accessible users approach the building on the North and East side because of proximity to surrounding accessible parking options, therefore, they will have to travel around the building exterior to reach the entry near the elevator versus traveling across the interior length of the building first floor. The placement of accessibility signage will necessitate review, but the South will require more accessibility signage around the building.

Parking

Both the North and South barrier free entry options would be close to a Society parking lot. The biggest decision is the importance of additional parking and the availability of drop off space isolated from the loading dock area.

If there are two parking lots, there are many practical issues that will require program coordination. Possibly the North lot could be executive parking and loading dock, and the South lot could be staff, catering and accessible spaces.

The South parking lot would require additional structure above the existing terrace and basement. A new reglet would need to be cut into original building perimeter due to higher grade. It will also require lifting and resetting of 1960's balustrade and stairs. A solution to control lot access would be a combination of signage, bear claws, and pass card.

Repercussions on Current Interior Building Configuration

The North option upgrades the Kitchen, creating a wheelchair accessible height sink and approach, and addressing the catering needs. The loss of space in the Sellery Room will not have a "ripple effect" on the current interior building usable office space. A furniture study of the Sellery Room might prove helpful to study the optimal use of space. Occupancy for the room will be 44 people maximum; therefore, one entry into the Sellery Room is permitted by code. The loss of storage space in Receiving Room and Loading Dock area will need to be addressed. The Basement Mail Room will require reconfiguration to accommodate the lowered floor structure at Entry Vestibule.

The South option would claim two work stations from the Foundation office (total office space loss of 259 square feet). This office space for staff relocation would need to be found elsewhere within the building. A variance is required for corridor ceiling height below stair. It is 4" shorter than allowed minimum of 7'-0" (per IEBC). It also requires reconfiguration of Rare Books Room ceiling (original Mezzanine floor above) and mechanical ducts. Another entry door into Rare Books Room will need to be provided.

Costs

The following costs are based on the attached schematic drawings. They are ballpark estimates at best. The South entry option cost assumes that the existing underground structure has structural capacity to handle loads for the proposed parking above. A thorough structural evaluation must be made to confirm this assumption.

The North entry option assumes that the existing MEP does not need major reconfiguration due to the relocation of the kitchenette. Assessment of the MEP systems in this area must be made to confirm this assumption.

The GC General Conditions includes the following fees: 18% A/E Fee, 2.5% Contractors Bond, 14% GC OH&P, 10% Unallocated Funds, 10% Contingency, 4% DSF Fee, and 2% FFE Fee.

North Entry Option: Drawings N5 through N8

1. GC General Conditions	\$ 476,669
2. Parking lot and parking lot access route	\$ 246,544
3. City sidewalk access route	\$ 111,846
4. Building entrance access route	\$ 85,281
5. Building renovation (Sellery Room)	<u>\$ 92,088</u>
Total	\$1,012,428

South Entry Option: Drawings S1 through S4

1. GC General Conditions	\$ 629,965
2. Option #1 – access ramp adjacent to building (S1)	\$ 89,939
3. Option #2 – access ramp & new stair (S3)	\$ 85,733
4. Parking Deck	\$ 493,294
5. Building entrance renovation work	\$ 29,883
6. City sidewalk access ramp	<u>\$ 69,234</u>
Total Option #1	\$1,312,315
Total Option #2	\$1,309,109

Conclusion

Isthmus would conclude that both probable options have merit, but that the North Entry more successfully meets this project's primary goal to improve the accessible entry which will become the main entrance into the building. The relationship to Langdon Street and the surrounds is easier to consider as a main entrance, the lower cost, and the minimal amount of interior building disturbance all weigh favorably toward the North option. Probable option North Drawing **N-5** dated 7/22/10 was selected as the basis for the Barrier Free Study Solution. This final solution incorporates the final meeting comments as previously noted and is located in Appendix C, drawing N-0 dated 8/25/10.

The conclusion's biggest drawback is the amount of functions being served from the constricted North Parking lot. Public functions, accessible spaces and drop off, as well as private functions, of loading dock, staff parking, and garbage dumpsters, occur at the same lot. There is a very reasonable argument that in the future, these private and public functions need separation. Possibly, the South parking should serve private functions such as, relocated freight, inter library loan and staff parking. The South is a more remote area; therefore it is more fitting for these private functions of the building. The North parking, a more visible area, is more fitting to serve the public functions of accessible entrance and main entrance as established in this project.

If the option of the South were chosen, a few outstanding issues would require addressing: the North area would still have non-code compliant ramps, a variance for the South entry corridor ceiling height below the stair would be required, and a structural analysis and system design would be required for the South parking lot.