16 January 1976

Dr. Melvin L. Eggers, Chancellor
Syracuse University
Syracuse, New York 13210

Dear Chancellor Eggers:

We are pleased to submit herewith the Final Report on the Feasibility of Renovations to the Hall of Languages, Syracuse University.

Michael Greenlee and I want to make special mention of the cooperation of your Office of Space and Facilities Systems, especially Dr. Harvey Kaiser and Albert Hennings, and of Kenneth Goodrich, Dean of the College of Arts and Sciences.

Many of our staff, even other than those directly involved in the study, have watched its progress because of their interest in the University as alumni. We all hope that the Feasibility Study will help to bring about the actual construction that it envisions.

Very truly yours,

SARGENT-WEBSTER-CRENSHAW & FOLLEY
Architects Engineers Planners

Frederick S. Webster, FAIA
Partner

FSW:bg
The Hall of Languages was the first building of Syracuse University. It was constructed in a rural setting on the edge of the city. As the terminus of University Avenue, it became the center of the University facade that the community sees and acts as an axial gateway to the Quadrangle. For years the Hall of Languages was Syracuse University and even today when people think of the University, the image of the Hall of Languages comes to mind. It has been a strong element of the University identity and has great emotional distinction as well as historical distinction. Its architectural significance has been recognized by being listed in the National Register of Historic Places.

In continuous use since 1873, and even though adequately maintained and structurally sound, the building should be renovated to more adequately serve the needs of the College of Arts and Sciences and to preserve its architectural enrichment of the University. The use of modern systems of environmental comfort, lighting, plumbing and the renovation of the structure according to the guidelines of present standards of safety and accessibility will prepare the Hall of Languages for its second century of service to the University Community.
INTRODUCTION

Sargent-Webster-Crenshaw & Folley was requested to investigate the feasibility of renovations to the Hall of Languages at Syracuse University. The factors to be reviewed include:

- an analysis of all building systems
- a review of all applicable codes
- a conceptual study of accommodating the developed program for the College of Arts and Sciences into the existing shell
- a visualization of the construction methodology
- an estimate of the costs and time involved in the reconstruction
EXISTING BUILDING ANALYSIS

STRUCTURE
This is a load bearing masonry structure with a handsome Onondaga limestone exterior. The foundation walls were exposed on the east and west elevations for inspection. The foundations appear to be excellent and no problems are anticipated. The superstructure masonry is in good condition, needing only repointing in some areas.

The major center roof is spanned by composite trusses of giant wood members and iron tie rods. A system of wood rafters completes the framing of the trussed area and the framing of the roofs of the two wings. A few deteriorated roof members will require replacement. The roof sheathing is water stained, many layers and patches are evident in the roof membrane.

Some replacement of sheathing and complete reroofing will be required.

The floor system is wood flooring on wood joists spanning either between bearing walls or unprotected cast iron beams and columns. Replacement of this floor system will be mandatory.

The foundations, the bearing walls, and the general structure of the roof system appear at this time to be free of any serious structural problems.

CIRCULATION
Approaches to the building are through narrow stairways. Some exterior stairways are unusable in the winter. Circulation is strongly directed to the second floor as the primary entrance level. The second, third and
fourth floors are mixes of academic and office functions. The first floor is awkward to get to and disconnected from the rest of the building, making it very much a basement.

The paths of internal circulation are narrow. The vertical circulation is discontinuous and inadequate for the bursts of activity between classes. The curved stair at the entrance is dangerous and uncomfortable to use. The wooden construction and openness of the stairs create a potentially serious hazard in an emergency. Unsightly metal fire escapes have been tacked on the south elevation to alleviate dead-end corridor problems, but their unsightly appearance detract from the building.

GENERAL

Some deterioration of exterior woodwork is evident.

Exterior glazing of old wood windows is difficult to maintain and many sills need replacement.

The wood floors are showing their age and they add to the fire safety problem in the building.

The building is totally uninsulated.

The building is inaccessible to the physically handicapped.
ENVIRONMENTAL COMFORT

High pressure steam is reduced to low pressure in the old boiler rooms. The building is heated by a two-pipe steam system with cast iron radiators under every window. Return piping on the first floor lies on grade and is in poor condition. It is virtually inaccessible.

Many of the manual valves on the cast iron radiators do not work. With lack of adequate temperature control, the only relief available from the constant supply of heat is to open windows where this is possible. The drafts and temperature extremes inside the space are very uncomfortable and are wasteful of energy. The exhaust systems for the toilet rooms are window mounted fans which are poor solutions to this problem. There is virtually no air circulation in the classrooms unless windows are opened. The mechanical system will need complete revision.

Electrical

The building is fed with 400 ampere, three phase, four wire service. Branch feeders from a fusible distribution panel go to circuit breaker panels on east and west wings of each floor. Wiring is all surface mounted, since the original building predates electric power.

Branch circuits are EMT, Wiremold and Romex. The number of receptacles is inadequate, and none are grounding type. Luminaires are chain suspended fluorescent, controlled by pull chains, rotary switches or throw switches. Light levels are uneven and generally below recommended classroom light level.

Plumbing

The men's toilet room is on the first floor; the women's on the third floor. Fixtures and valves are antiquated.
and in need of modern replacements. Sanitary lines are exposed from the third floor fixtures. Plumbing is in poor shape and totally inadequate for the heavy usage of this building.

Fire Protection

A relatively recent system of sprinklers is installed throughout the structure. The piping and fixtures of this system would be worth reusing in the renovated structure.
NEW YORK STATE BUILDING CONSTRUCTION

CODE

The floors, stairways, ceiling and roof structure are combustible materials. The new construction will have to accomplish a code classification of 2a or better.

In order to meet this standard, the bearing walls, stairway enclosure and columns and beams will have to have a two-hour classification; floor construction will have to have a one-hour classification and the roof may have a 3/4 hour composition rating.

The population of the building will require at least three continuous exit stairways which must be totally enclosed and must be constructed of non-combustible materials. Two stairways should go to the roof.

Decorative stairs in addition to those required may be open. The building is now totally inaccessible to the physically handicapped. In order to create a barrier-free structure, the following will be required:

- Reserved parking space not more than 200 feet from entrances
- Parking space to be 10'-0"
- Walks and curbs to accommodate the handicapped
- Ramps not to exceed a slope of 1" in 12'
- Eliminate door thresholds
- Provide elevator access to all floors
- Provide a drinking fountain and telephone for handicapped use
- Provide one W.C. and one lavatory accessible to the physically handicapped for each sex at each floor of the building.

A fire alarm system will be required.

A totally sprinklered interior will be provided as is generally provided in major University buildings.

The number of toilets and toilet rooms will have to be increased.
PROGRAM

College of Arts and Sciences

Office of the Dean of the College of Arts and Sciences

Dean
Secretary
Waiting
Conference
Assistant Dean for Faculty and Planning
Research Assistant
Computer Room
Faculty File Room

Assistant Dean for Students
Recorder
Director of Academic Counseling
Conference
Secretarial Space
Waiting Room

Reception Room
Main Office
Student Records Office
Assistant Recorder
Records Recoordinate
Office Supervisor
Student Files
Xerox and Mail

Supply and Storage
Kitchen
Inactive File Room

Counseling Office and Secretary
4 Counseling Offices

English Department

Department Chairman's Office
Secretarial Space
Supply and Equipment Work Room
Conference Room
Conference Room/Department Library
(33) Faculty Offices

Foreign Languages and Literature

Department Chairman's Office
Secretarial Space
Supply and Work Room
Conference Room
Conference Room/Department Library
(34) Faculty Offices

Honors Doctoral Program

Director's Office
Study Lounge
Main Office

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### Classroom and Seminar

<table>
<thead>
<tr>
<th>Rooms</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 classrooms</td>
<td>20 to 60 students</td>
</tr>
<tr>
<td>10 to 15 max. classrooms</td>
<td>90 to 150 students</td>
</tr>
<tr>
<td>2 lecturehalls</td>
<td>200 students</td>
</tr>
</tbody>
</table>

- Faculty Lounge
- Student Lounge Areas
- Toilet Rooms
- Elevator
- Mechanical Spaces
- Janitor's Closets
BUILDING CONCEPT AND DESIGN

The primary objective of the renovation program is to preserve the fine proportions and graceful exterior appearance of this stone structure, while providing the College of Arts and Sciences an efficient, functional, meaningful building that presents the College to the University community. All proposed renovation work will preserve the exterior and its contextual meaning within the University fabric. The work will give the College a "new building" uniquely designed to suit their present and anticipated future needs while giving the University a second century of use from the Hall of Languages.

A major objective is to create an interior that is as meaningful and memorable as the exterior. A central focal point of the renovation will be a major entrance hall that centralizes the lounge/public spaces around an open loft volume. The major dramatic space will create a sense of arrival and passage through a major University building. This would be a gallery displaying work in the College of Arts and Sciences to the entire University community. It will serve as a visual anchor for the occasional visitor by continually maintaining his orientation within the building. The opening of the floors to one another will express the generosity of volume within the structure.

Widening corridors, increasing the number of stairways, and upgrading the entrance paths will improve accessibility and circulation convenience. The renovation will maintain the historical access to the building.
through the four corners of the building and the central doors on the front. The renovated circulation should reinforce this pattern with all exit stairways located adjacent to these entrances. Exterior paths of circulation will be renovated to allow either first or second floor access at the corners. The main entrance circulation leads primarily from the first to second floors expressing the fact that these are the public floors, while the third, the mezzanine and the fourth floors are more private in function. The circulation avenues on the east and west sections will be widened to lend spaciousness and convenience to these constricted internal spaces. All improvements in circulation make it a dramatic ceremonial gate through the University Avenue axis to the University Quadrangle. 

The construction of the Bird Library, the Newhouse Centers and the proposed Student Center will reinforce the function of the Hall of Languages as a gateway to the rest of the University.

The building will be zoned vertically according to functional circulation patterns. The first and second floors are closest to the established paths of exterior circulation. These paths will be reinforced by upgrading of exterior stairways. Therefore, the first and second floor will be the concentration of academic spaces and student lounges. These floors will be strongly linked to one another by the stair in the major entrance space. The third floor will be a mix of academic spaces and administrative offices. These are functionally the next most active spaces. By using excess building volume, a new mezzanine level will
be created to significantly increase usable building floor areas. This mezzanine floor and the fourth floor above are almost exclusively administrative and academic offices. The major lecture space on the fourth floor will be maintained as the Dean's colloquial room and as a major lecture space. The most active spaces are nearest the ground level, the less active spaces are assigned to the upper floors according to their functional priorities.

In addition to improved circulation, functional activity zoning and a dramatic central hall space, a major benefit of the renovation will be an increase of net usable building area from the present 49,500 square feet to 59,800 square feet.

The addition of an elevator and grade level entrances creates a barrier-free structure completely available to the physically handicapped. Toilets for each sex on each floor will improve convenience and meet code requirements.

To recall and amplify the building's historical precedence, existing masonry walls will be exposed and new finishes will be carefully selected. Heavy woodwork and mouldings will be recalled in detailing.

All floor construction will be replaced. All exit stairways will be enclosed and constructed of non-combustible materials. These changes with the renovation of the sprinkler system will significantly improve the fire safety standards of the building.

To improve the energy efficiency of the structure, all deteriorating wood windows will be replaced with modern, double-glazed units. The entire building envelope will
be insulated. Improvements in ventilation systems and electrical fixtures will further increase energy efficiency.

The hazardous and unsightly fire escape cages will be replaced by a handsome covered stair in the present location of the wooden porches. Tuck pointing all deteriorating exterior masonry will seal and strengthen the exterior skin.

Electrical
New service must be 1600 ampere, three phase, four wire, which will require a new transformer-switchgear room. Classroom, lecture room and office lighting will be recessed, fluorescent fixtures with low brightness louvers and lenses. One row of fluorescent downlights will be used in corridors, positioned to highlight exposed brick bearing walls. Receptacles will be available throughout the building with capacity for audio-visual equipment. A manual fire alarm system will be provided with automatic operation by operation of a sprinkler system, or by smoke/fire detectors in normally unoccupied areas.

Plumbing
New toilet rooms with more fixtures will be provided for each sex on each floor of the building. One W.C. and one lavatory in each toilet room will be designed to accommodate the physically handicapped. Drinking fountains will be installed on every floor. The total building will be sprinklered as is generally done on every major university structure.
CONSTRUCTION METHODOLOGY

Considerations of cost, safety and convenience would prohibit a phased renovation of the building. The building would be unusable for the 60 weeks of construction. The cost of moving and the inconveniences of temporary alternative facilities will have to be considered in the total planning for the project.

Using the third floor as a working platform, the mezzanine floor will be installed. This will improve the lateral bracing strength of the building when the existing floor system is removed. All doors and windows will be removed before major removal work proceeds. Redundant bearing walls and interior partitions will be removed. Some temporary shoring of the bearing walls may be necessary until the new floor levels are installed. New beams will be brought in through the window openings and installed in carrier pockets in the bearing walls. A composite concrete slab with a steel deck form will be used at grade. Concrete will be pumped to all floor levels. Opening the minor rafter space of the low roof may be necessary to position large scale building equipment. New roof sheathing and a new roof membrane will be completed. The installation of new glazing will enclose the building so all interior partitioning, fixturing and finishing can be completed without delay due to outside weather conditions. The delivery of the completed structure is of critical importance to the College and its on-going programs.
STRUCTURAL CONCEPT

With the introduction of a new mezzanine level, the floor to floor heights become a limiting factor. The system must also be able to achieve a '2a' classification. The more the existing internal bearing walls can be utilized, the more structural economy will be realized. Four lines of internal north-south bearing walls will be maintained in addition to the entire exterior masonry bearing walls. As much of the east-west bearing walls will be maintained as will fit within the functional building utilization to stabilize the north-south walls. Wide flange beams will be brought through removed windows and installed in carrier pockets created in the patched bearing walls. Steel deck will span between these beams to be used as formwork for the six-inch slab that will span between the beams. The ease of pumping concrete to all floor levels and its inherent fireproof qualities plus the ease of installation of steel beams into the bearing walls make this composite system an economical, appropriate structural solution to the design problem. The steel will be protected by a rated ceiling or spray fireproofing.
ENVIRONMENTAL SYSTEMS

Campus access systems of high pressure steam and chilled water will be used as a major energy source. These will be distributed around the building as fluid systems to alter space temperatures according to needs sensed by individual room thermostats. Possible terminal systems are: fan-coil units with a central ventilation system; variable air volume systems with perimeter radiation; or a combination of these.

Space for the equipment could be found as room terminals, above circulation spaces, above toilet rooms, and in the central truss space. All possible means of conserving energy will be designed into the project and shall include but not be limited to the use of night, weekend, and holiday temperature setback, insulating glass and thermal insulation for the building envelope, and the utilization of electricity to generate domestic hot water to cancel the summer season need for steam service. Exhaust from toilet rooms and smoking lounges will be made up with the introduction of outside air through the central ventilation system.

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COST ESTIMATE

Renovation of Hall of Languages

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Construction</td>
<td>24.00</td>
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</tr>
<tr>
<td>HVAC</td>
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<td>Electrical</td>
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<td>Plumbing</td>
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</tr>
<tr>
<td>Fire Protection</td>
<td>1.75</td>
<td>1.25</td>
</tr>
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</table>

1. Construction
   - Building 67,586 x.f. x 42.28 = $2,857,600.
   - Demolition 809,767 c.f. x .20 = 162,000.
   - Site Demolition 3,400.

2. Demolition

3. Site Development


5. Contract Reserve - 5% of Line 4 Above 154,000.

6. SUBTOTAL CONSTRUCTION COST $3,231,000.

7. Furniture and Equipment 335,000.

8. Architect/Engineer Professional Fees 356,000.

9. Insurance During Construction 11,000.

10. Miscellaneous Costs 702,000.

11. Incidental Reserve - 3% of Line 10 Above 21,000.

12. SUBTOTAL OF INCIDENTAL COSTS 723,000.

13. TOTAL PROJECT COST (Line 6 + Line 12) $3,954,000.

Equivalent New Building

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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<tr>
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<td>1.25</td>
<td>1.25</td>
</tr>
</tbody>
</table>

1. Construction 50.75 x 50.75 = $3,432,000.

2. Demolition .50 x 405,000 = 202,500.

3. Site Development 60,000.

4. Construction Cost 3,897,000.

5. Contract Reserve - 5% of Line 4 Above 195,000.

6. SUBTOTAL CONSTRUCTION COST $4,092,000.

7. Furniture and Equipment 335,000.

8. Architect/Engineer Professional Fees 247,000.

9. Insurance During Construction 14,000.

10. Miscellaneous Costs 596,000.

11. Incidental Reserve - 3% of Line 10 Above 18,000.

12. SUBTOTAL OF INCIDENTAL COSTS 614,000.

13. TOTAL PROJECT COST (Line 6 + Line 12) $4,706,000.
It is the conclusion of this report that it is feasible to renovate the Hall of Languages according to guidelines established in the University program. The net usable floor space in the building will be increased by 20%. The number and variety of usable spaces will be so altered. Spaces of major impact and attractiveness will be created to provide a meaningful new context for the Hall of Languages while preserving its handsome, historically and emotionally significant exterior.