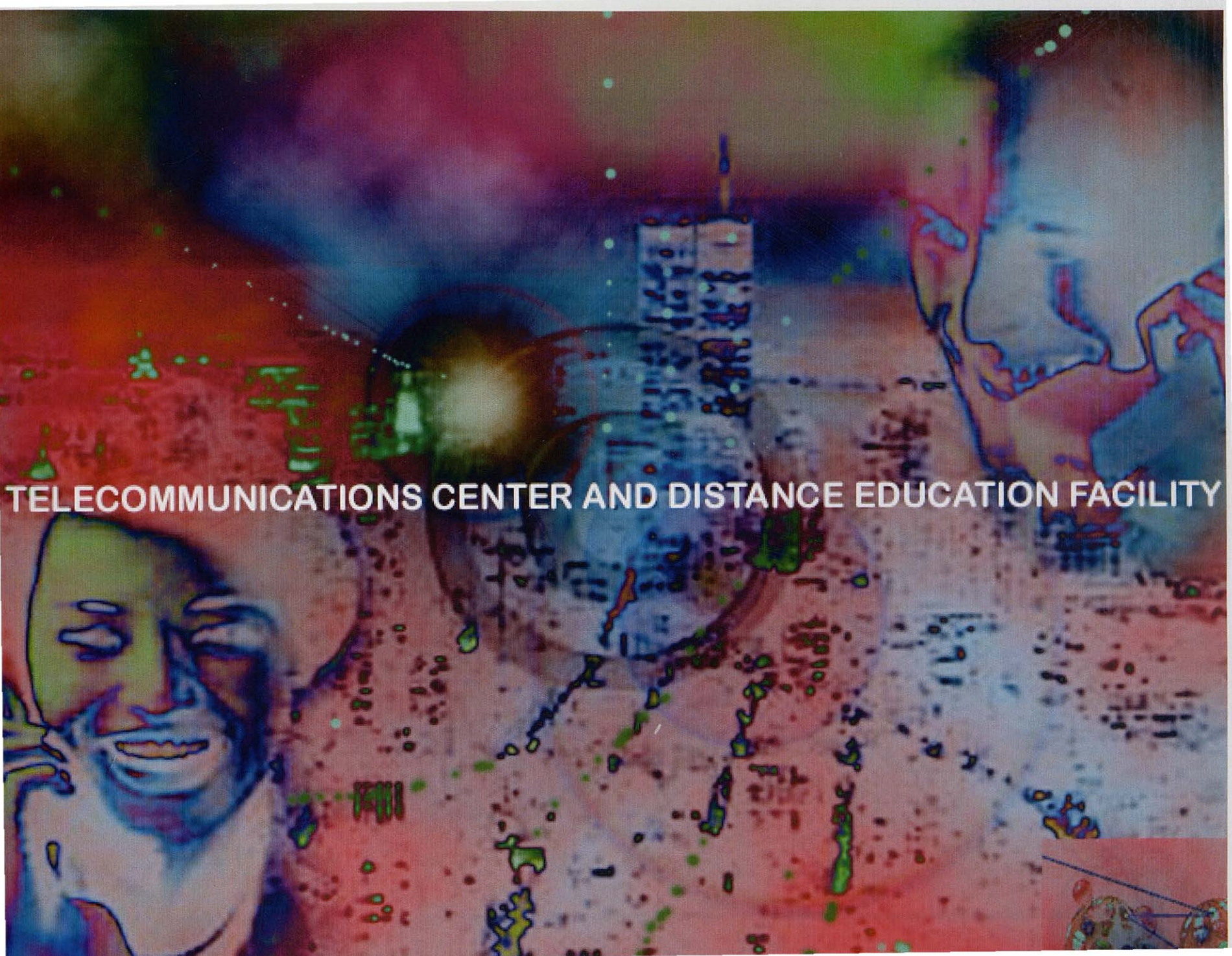
TELECOMMUNICATIONS CENTER AND DISTANCE EDUCATION FACILITY

Metaphor: A Communication Tool
By:

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A Thesis in Architecture

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Chairman of Thesis Committee

Advising Instructor

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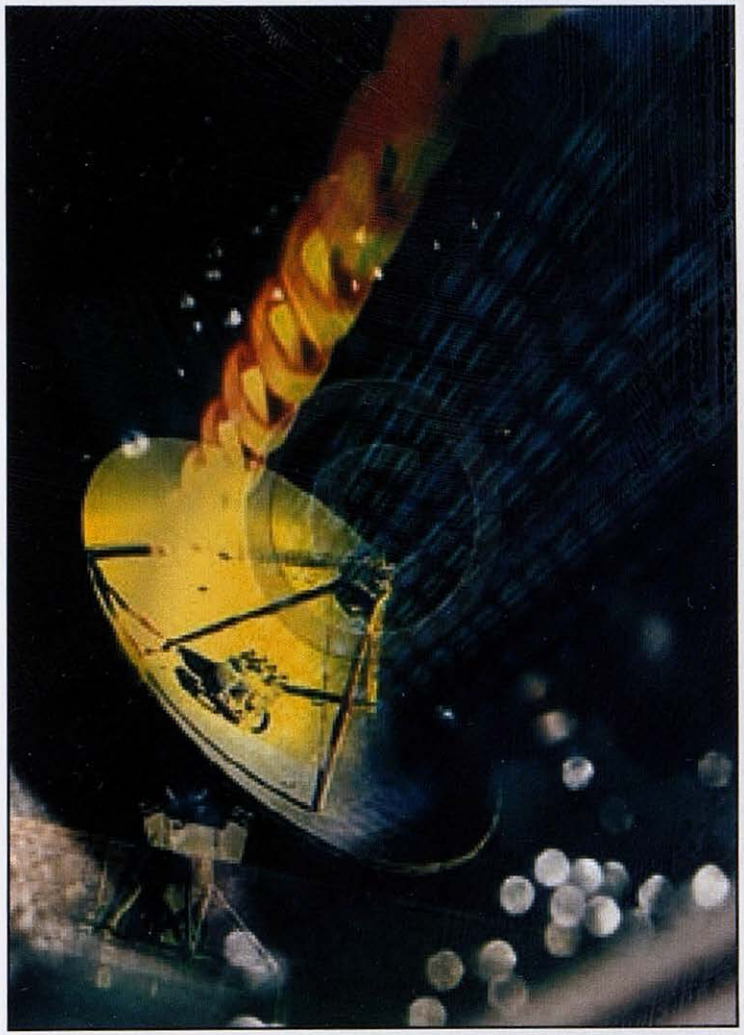
PREFACE:

The idea of communications and learning has always interested me. I grew up in Amarillo, Texas and my drafting professor told me that the most important thing in the life of an architect is being able to communicate ideas. Since then, the idea of communication and the different media presentation technology has advanced the way people communicate ideas with one another. Therefore I plan on doing a telecommunication/ distance learning facility for Amarillo, to benefit the community, Amarillo College, and the medical profession.



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ABSTRACT:

Thesis Statement:

The tendency of a built environment to engage the viewers mind leads to the use of metaphor as a means of understanding , to help make associations as to what is being communicated by the environment through the structural and organizational elements.

Facility Type:

The facility is a distance learning/ telecommunications center for Amarillo, Texas. The facility will be of use for large companies, medical profession, and colleges in the Amarillo area and will have the capabilities to distribute information through different media types.

Scope of Project:

This facility is a telecommunication center for receiving and distribution of information though different media types and will include: 1) Auditorium, 2) Classrooms, 3) Conference areas, and 4) Administration Offices. This highly technically advance facility will include outdoor plaza areas and parking to create a functional whole with its surroundings.

Context Statement:

The proposed distance learning/ telecommunications center will be located in Amarillo, Texas on 9th street adjacent to Amarillo College West Campus, and across from the Medi-Park district. The Medi-Park district is a very tranquil society that is dedicated to patient recovery and learning different technology advancements which will further enhance their field.

SUPPORTING THEORY:

The application of metaphor can be found all around us. The definition of metaphor, according to the Webster's Dictionary, is a figure of speech in which one thing is likened to another different thing by being spoken of as if it were that other; for example, all the world is a stage. Metaphor is a influential and suggestive tool that is used in many different fields of study. It appears in literature and is also found to be used in architectural designs. In both of these fields, metaphor is used in terms of comparison which is the driving force of metaphorical usage. Metaphors used both creatively and conceptually can be seen as being a very powerful tool for all who are aware of its uses. This thesis will attempt to explore how communication occurs through a built environment by engaging the viewers mind to make associations and interpretations through the use of metaphor.

The application of metaphors whether in architectural designs or in literature, is all based upon interpretation. In Aristotle's book, The Art of Poetry, it mentions, "The greatest thing, by far, is to be master of metaphor. It is one thing that cannot be learnt, and it is also a sign of genius."[1] Metaphors are individualistic interpretations which can be construed to have different meanings. Therefore, what one's interpretation is, does not have to be the same as the next person. When we use metaphors we have to keep in mind that the interpreter can compare it to anything he or she feels comfortable with. According to Miall:

> *Roger Tourangeau finds the standard semantic view deficient, arguing that no standard procedure for interpreting metaphors can be established. Instead, he underlines the flexibility of the process which requires us to select from our beliefs about the modifier of a metaphor and apply them, trimmed or extended to its subject...* [2]

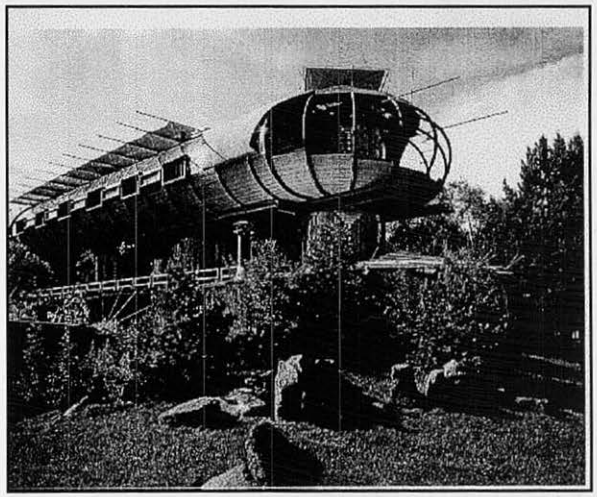
The work of Bart Prince, a contemporary architect, can be interpreted in many ways. His Prince residence in Albuquerque, New Mexico, is interpreted by many as being a hovercraft, or a dirigible, even a spacecraft. According to Gertrude Stien, it was not his intention to make the

1. Wheelright, Phillip. Aristotle: (The Odyssey Press Inc. 1951) Pg. 315
2. Miall, David S. In Metaphor: Problems & Perspectives : (New Jersey, 1982) Pg. xiv

residence look like this (illus. 1):

> *Despite the irresistible tendency to associate his [Prince's] buildings variously with snails, swollows, dirigibles, or spaceships, they have nothing to do with such associations and should be seen instead as the direct expressions of their geometric, and spatial syntax. Prince's architecture "represents" itself, not something else.*[3]

By creating a residence that totally does not conform with the natural surroundings the residence will definitely stand out and receive attention. The building communicates to the viewer and the use of metaphor helps make interpretations and associations as to what is been seen. According to Sharon L. Pugh, we have to, "draw parallels between unrelated phenomena to gain insight, make discoveries, offer hypotheses, wage arguments, and accomplish other such useful purposes." [4] When the built environment communicates an idea or many ideas it is useful to use metaphor as a means of comparison.



ILLUS. 1. Christopher Mead: Bart Prince Residence, pg. 6.

Through the use of metaphor in a building design, we engage our minds in order to understand what is being

3. Mead, Christopher. Houses by Bart Prince: An American Architecture for the Continuous Present: (N.M. 1991) Pg. 5
4. Pugh, Sharon L. Bridging: A Teachers Guide to Metaphorical Thinking: (Urbana, Ill. 1992) Pg. 4

SUPPORTING THEORY:

communicated either through the structure or the layout of the building. This ability for a building to engage our mind acts like a communication device between people and their surrounding environment. The Guggenheim Museum in Bilbao, Spain by Frank Gehry is a good example of a building that engages the viewer and its environment as seen in illustration 2. According to the Boston Sunday Globe, the museum is seen as a " futurists sculpture, a great sailing ship, a series of dancing volumes, that strike, sag, and sour."[5] The dancing volume is very dramatic especially at an elevated view as seen in illustration 3. By this description of the building one can see that through the use of structure and built form the museum was definitely engaging the viewers and the environment. According to Karen Stein:

> *The site is a transition zone between downtown and the riverfront; an architectural language that makes as a sculptural symbol for the city, with a blossoming flowerlike form at the center; an internal plan of galleries that is Guggenheim*

Illus. 2 &3. Frank Gehry, Guggenheim Museum
http://www.bm30.es/homegug_uk.html

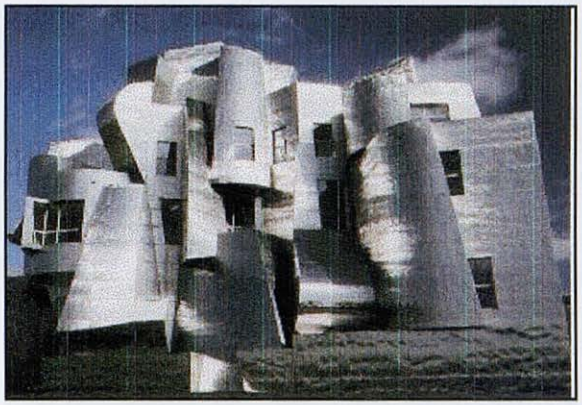
5. Boston Sunday Globe " The Guggenheim Museum." 8 March 1998: B-3

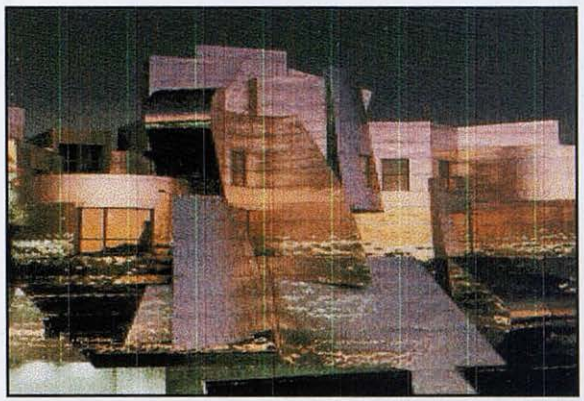
SUPPORTING THEORY:

like in its organization around a grand, multistory central space." [6]

The metaphor of a blooming flower was extrapolated by the architect which made the space even more interesting. The abstract order of the facility seems to engage the viewers and communicate ideas to them, similarly to the University of Minnesota Art Building and Teaching Museum in Minneapolis as seen in the west façade during different times of the day (Illus. 4&5).

The use of metaphor as a communication device is a captured embodied emotion of the architect. The message or metaphor that a building is trying to communicate is carried out vicariously through the buildings design. Some architects use direct or tangible metaphors while other use intangible metaphors as a way of communicating ideas. Through the use of direct metaphors, the engagement of the mind is very limited, where what we see is direct use of the metaphor. For example, two examples of literal interpretations are located in Los Angeles: The





Illus. 4 & 5 Frank Gehry, University of Minnesota Art Building and Teaching Museum, Minneapolis, 1990.
Http://www.Universityofminisota.com

6. Stein, Karen D. "Project Diary: Guggenheim Museum Bilboa, Spain" Architectural Record Oct. 1997: Pg. 75-86.

SUPPORTING THEORY:

Big Donut Drive-in and the Hot Dog Stand These two eating establishments are very distinct in their appearances. The Donut drive-in (illus. 6) has a huge donut on the roof and the Hot Dog Stand (illus. 7) looks like a hot dog. These two examples are eye catching, but they are not as interesting because the architect leaves no room for interpretation.

However, indirect use of metaphor, is where what the building communicates is questionable, and this type of metaphor is the most interesting because it engages the mind. According to Anthony C. Antoniades, "The best metaphors and their best uses are those that cannot be detected by users or critics."[7] For example, the architect Erik Gunnar Asplund used the metaphor of the skull in his design of the Stockholm Public Library. According to critics, this idea can only be seen in section, therefore, it would be considered a secret of the architect because it is not known if the idea of skull is used or not. According to Stuart Wrede:

Illus. 6 Henry J. Goodwin, Big Donut Drive-In, Los Angeles, 1954.
Poetics of Architecture: Theory of Design. Pg. 46

Illus. 7 Hot Dog Stand, Los Angeles, c. 1938.
Poetics of Architecture: Theory of Design. Pg. 64

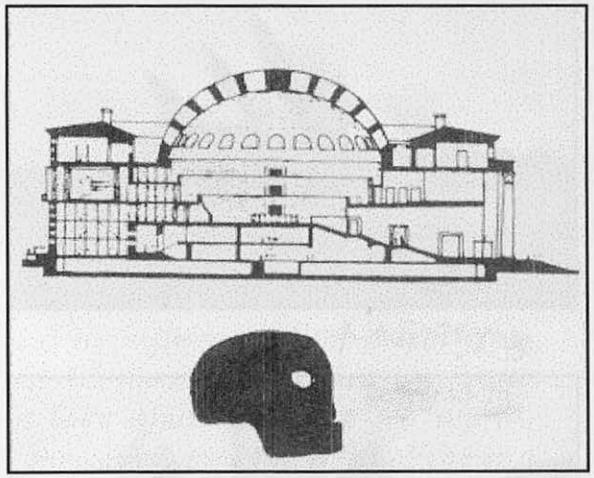
7. Antoniades, Anthony C. Poetics of Architecture: Theory of Design: (Van Norstrand Reinhold, 1990.) Pg. 30

SUPPORTING THEORY:

> *In the front façade drawing of scheme one, there appears, silhouetted above the entrance, a curious symbol, a baldhead in profile with a projecting goatee for which there is no explanation. I would suggest that in fact it represents the key to Aspulnd's symbolic vision of the design, that he conceived the building as a metaphor of the mind and that the almost spherical rotunda symbolizes the interior of the cranium (illus. 8).*[8]

These indirect metaphors are considered the best because they force the interpreter to use his or her imagination to see if the architect used a metaphor and make associations accordingly.

Some of the best forms of communication has come from the building structure being very massive, and strong in form that it is hard to miss. The Sydney Opera House in Australia designed by Jorn Utzon, is a good example of a structure that has become an icon for the country because of its bold form. The building communicates in a way that it has become a point of association for the country. The inspiration for the building came from Utzon love for the sea (illus. 9). The bold arch forms grab



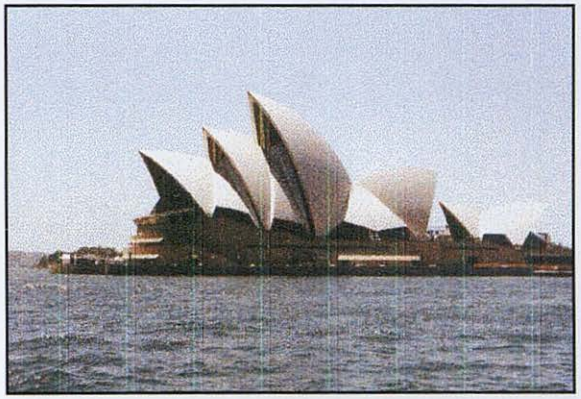
Illus. 8 Erik Gunnar Asplund, Stockholm Public Library.
The Architecture of Erik Gunnar Asplund. Pg. 110

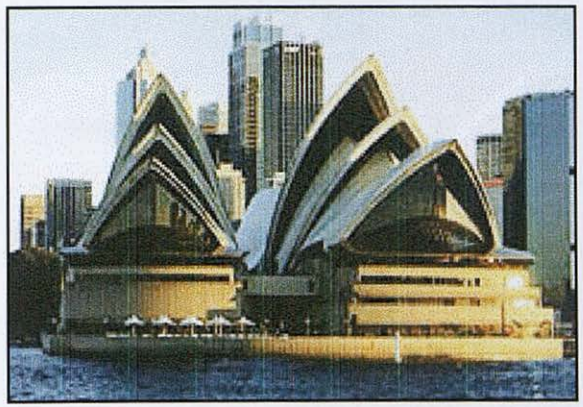
8. Wrede, Stuart. The Architecture of Erik Gunnar Asplund. (Cambridge, Massachusetts, 1980) Pg. 109

SUPPORTING THEORY:

your attention and engages your mind to make associations as to what is seen. To some people the building looks like snails on the ocean sea, and to others it resembles three turtles on each others back (illus. 10). According to Charles Jencks, "as a piece of literal communication the building tells you little and dissimulates much."[9] through the use of metaphor, the building was successful in engaging millions of people to come and admire this magnificent structure.

Kennedy International Airport in New York, by Eero Saarinen, is an example of a building that communicates through a use of metaphor all the way through the buildings design (illus. 11). According to Chris Ambler, "TWA is an isolated pictorial, which is a direct association of the visual image." [10] The metaphor that is most apparent in this design is that of a bird which is appropriate for an airport. Eero Saarinen, goes further in the use of the metaphor of the bird, and he relates the internal pathways of passenger travel according to the arteries of the



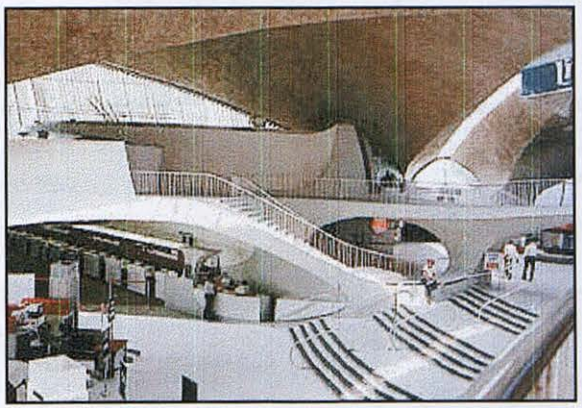


Illus. 9& 10. Jorn Utzon, Sydney Opera House, Sydney, Australia. 1973.
http://www.bio.uts.edu.au/sydney/sydney.html

9. Jencks, Charles. The Language of Post Modern Architecture: (N.Y. 1977) Pg. 40
10. Ambler, Chris. Architecture and Identity: (Boston, 1997) Pg. 105

bird (illus. 12). The building communicates flight all the way through the design, even to the furniture that is used inside. This metaphor was carried deep in the design and was the source of inspiration. From the furniture, the circulation, to the exterior form, the idea of flight was well portrayed by Eero Saarinen.

Visually stimulating buildings, and the metaphors used to describe them, are all a part of physical architecture, what we perceive is what we explain or describe. The structure of a building has a great influence on what we associate the building with and how we interpret it. This communication process will help me design a telecommunications/ distance learning facility by using metaphor as my vehicle.



Illus. 11&12. Eero Saarinen, TWA Terminal, New York. 1956.
http://www.helos.fi/saarinen/

THEORETICAL ISSUES AND RESPONSE

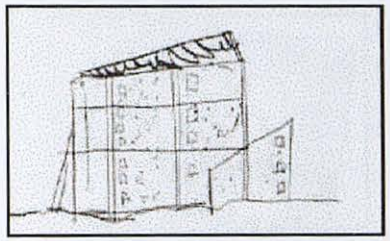
In order for architecture to be associated with metaphor, several issues need to be addressed. The three most important issues are engagement, communication, and perception.

Issue: Engagement:

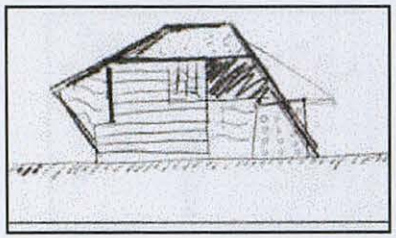
Through the use of metaphor as the vehicle for the design, the facility should engage and stimulate the viewers mind.

Issue: Design Response:

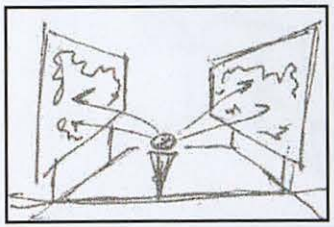
1. The exterior skin of the building can be a direct use of metaphor or image where the viewers mind and senses are engaged through materials and textures.
2. The use of media both on the interior and exterior shall assist in the engagement and stimulation of the viewers mind.
3. Through the use of bright colors the building will help in the stimulation of the environment.



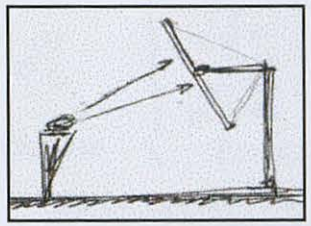
1A. Engagement through elements embedded in texture



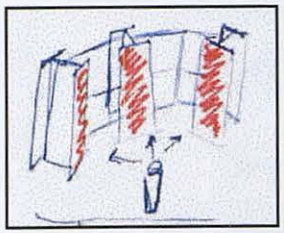
1B. Engagement through different materials



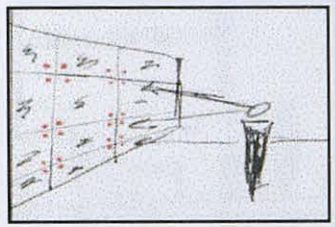
2A. Engagement through screens



2A. Elevated screens



3A. Structure painted red



3B. Connection details expressed

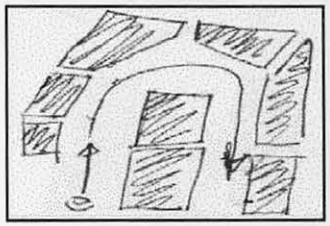
THEORETICAL ISSUES AND RESPONSE

Issue: Communication:

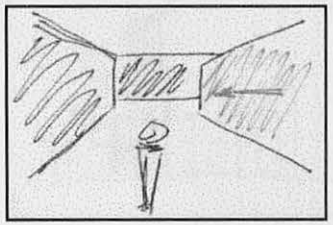
Communication process is one that occurs at many different levels. In order for clear concise communication to occur, their needs to be some order to the organization and layout of the building. Therefore, spatial organization needs to be clear in order for optimal communication to occur between users.

Design Response

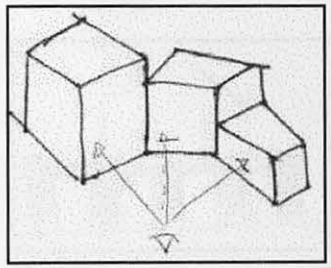
1. The building should have a clear circulation pattern for the different users.
2. The building should have varying volume heights that help the users associate different spaces with different users.
3. Visual communication in the facility should occur through the use of transparent materials in different departments.



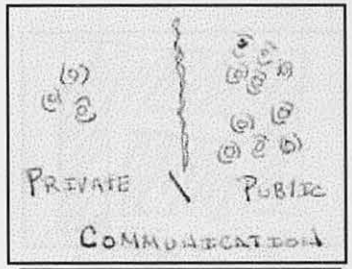
1A. Open circulation



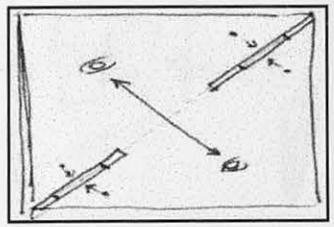
1B. Color identified with path



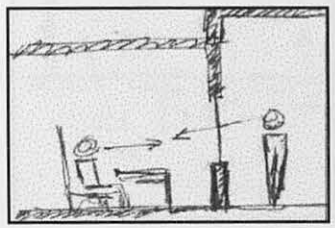
2A. Varying volumes



2B. Public vs. private communication



3A. Visual communication through spaces



3B. Visual communication through glass

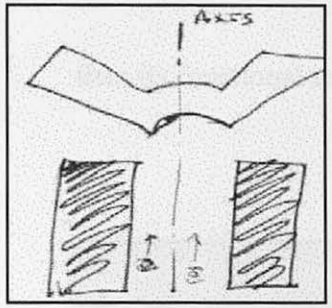
THEORETICAL ISSUES AND RESPONSE

Issue: Perception:

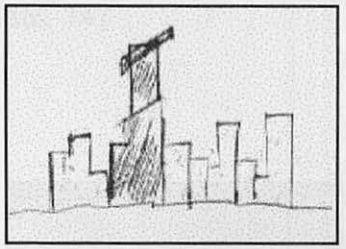
The overall environment, in which a building is placed effects our overall perception of the facility. Perception is a long process, and is seen not by itself, but is also associated with events and its surroundings. According to Richard Rosinski, " to describe the architectural experiences, is to describe the basic process of perception."[11] When we look at a whole picture if we take apart of it away, we loose the perception we are trying to obtain along with the meaning. Therefore, the building needs be perceived as a whole with respect to its environment.

Design Response:

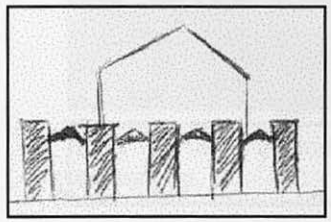
1. The building should be a focal point for the built content surrounding the site.
2. The massing of the building should be conceived as complete through its use of repetitive materials and elements.
3. Through the use of screens, the building perception and image will constantly be changing but still keep the theme of communication apparent.



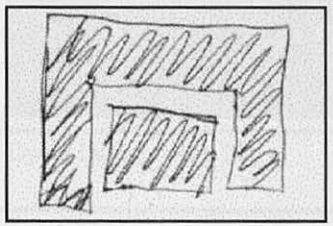
1A. Node at end of axis



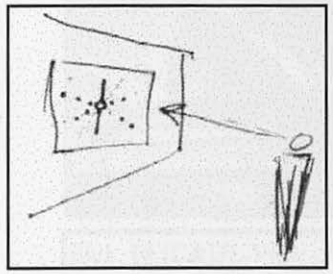
1B. Hierarchy



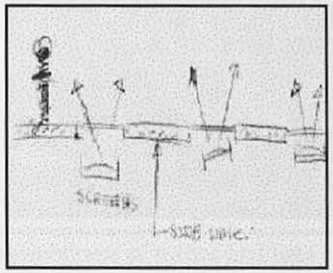
2A. Repetitive elements



2B. Complete whole



3A. Changing image



3B. Screens below sidewalks

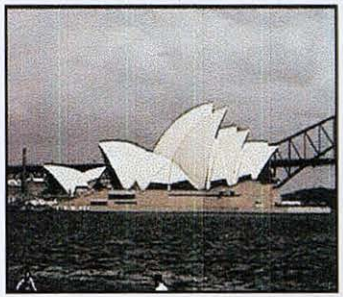
11. Rosinski, Richard. The Development of Virtual Perception: (California, Goodyear Publishing Company, Inc. 1977) Pg. 50

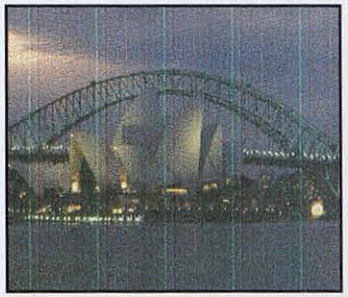
The Sydney Opera House, Australia
Jorn Utzon, 1957-1973

The metaphor of the sea was the driving factor for the design of the Sydney Opera House, by Jorn Utzon. This building is perceived by many and now has become the icon that is most commonly associated with Australia.

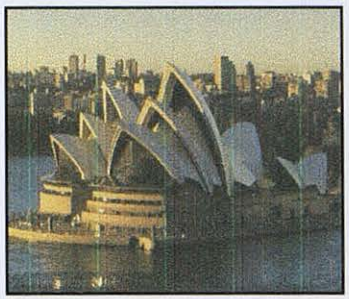
Many people who see the facility see that the building looks like three turtles on the backs of each other, or that there are three nuns hats on top of each other. This building engages the mind to use multiple metaphors to associate the facility with. The concrete forms definitely grab your attention and is something extraordinary to see. With the massive spherical shells the building from a distance looks like a ship that is ready to sail (illus. 13).

Through the use of the metaphor in his design of the opera house is not directly related to music, but is more in tune with the context, the sea. Many people who view the building relate the metaphor with the context than its functional aspects (illus. 14).





Illus. 13 (A&B). Exterior view of Opera House, looks like a sailing ship.



Illus. 14 (C&D). View of shells, resemblance of turtles and hats.

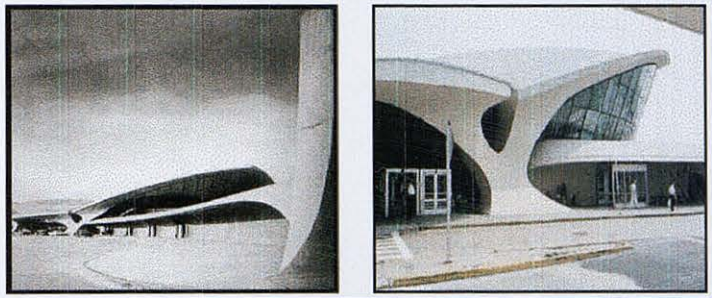
A. Schramm, Tracey. http://www.soh.nsw.gov.au/
B. Http://www.anzac.com/aust/nsw/gif/soh2.jpg
C. http://www.vc97.attjens.co.jp/VC_74/AUSTRALIA/opera.htm
D. http://www.anzac.com/aust/nsw/gif/soh1.jpg

Trans World Airlines Terminal, New York
Eero Saarinen 1956-62

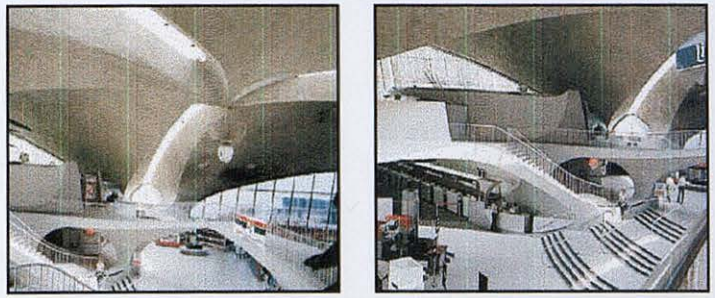
The TWA Terminal use of metaphor was unique in the sense that Eero Saarinen used the metaphor as the ordering and layering system for the facility. The metaphor he used was that of flight which was very appropriate for a facility of this type. Through the analysis of all the parts and systems of a bird he used this information as a design guide for the airport. The exterior building is commonly associated with looking like a bird (illus. 15) and on the interior of the building he creates the internal walkways and circulation to go along with that of the arteries of a bird (illus. 16). According to Eero Saarinen,

> "All the curves, all the spaces and elements right down to the shape of the signs, display boards, railings and check-in desks were to be of a matching nature. We wanted passengers passing through the building to experience a fully-designed environment, in which each part arises from an other and everything belongs to the same formal world."[12]

Through this intensive exploration of the metaphor for the facility, a design can become a total experience of a single idea or concept. This building has created an environment with a common theme of flight.



Illus. 15 (A & B). Eero Saarinen, Exterior view, TWA Terminal



Illus. 16 (C & D). Eero Saarinen, Interior spaces, TWA Terminal

12. Sharp, Dennis. Twentieth Century Architecture: A Visual History: Pg. 245.
A. http://www.scandinaviandesign.com/eero_saarinen/index4.htm
B, C, D. Helos, Pekka, http://www.helos.fi/saarinen/.

BIBLIOGRAPHY:

Ambler, Chris. Architecture and Identity. (Boston, 1997)

Antoniades, Anthony C. Poetics of Architecture: Theory of Design. (Van Norstrand Reinhold, 1990.)

Boston Sunday Globe, March 8, 1998.

Jencks, Charles. The Language of Post Modern Architecture. (N.Y. 1977)

Mead, Christopher. Houses by Bart Prince: An American Architecture for the Continuous Present. (N.M. 1991)

Miall, David S. In Metaphor: Problems & Perspectives (New Jersey, 1982)

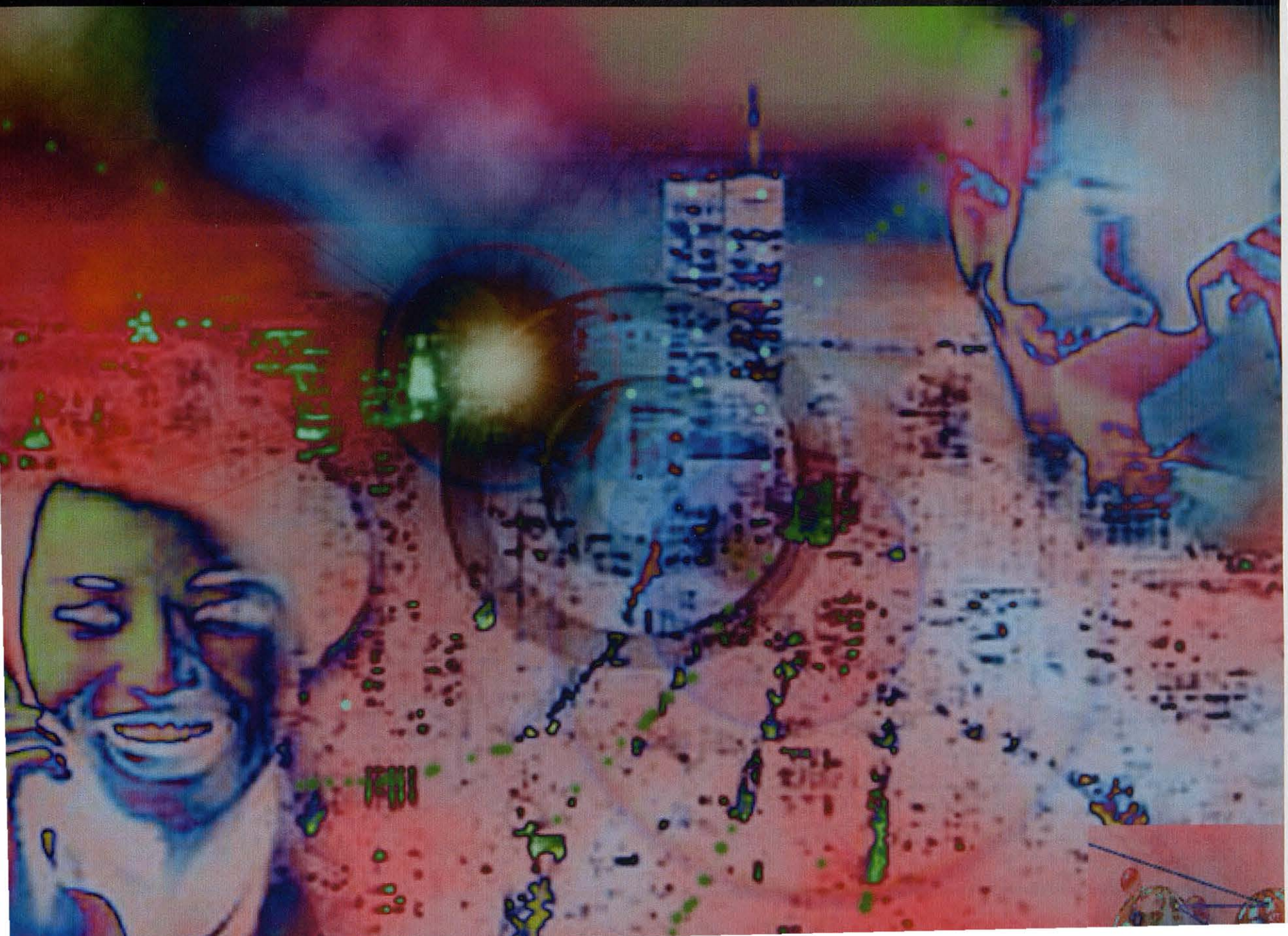
Pugh, Sharon L. Bridging: A Teachers Guide to Metaphorical Thinking. (Urbana, Ill. 1992)

Stein, Karen D. Project Diary: Guggenheim Museum Bilboa, Bilboa, Spain. *Architectural Record.* October 1997.

Wheelright, Phillip. Aristotle: (The Odyssey Press Inc. 1951)

Wrede, Stuart. The Architecture of Erik Gunnar Asplund. (Cambridge, Massachusetts, 1980)

FACILITY: TELECOMMUNICATIONS &COMPUTATIONS CENTER



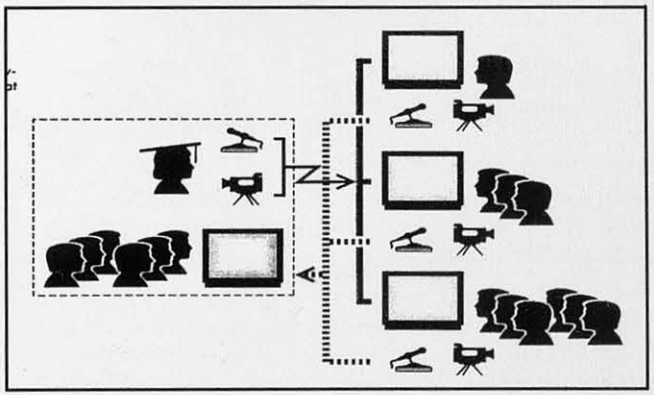
FACILITY ANALYSIS:

Facility Description

A Telecommunications and distance education facility is a facility that relies highly on technology and communications. Through telecommunications, we deliver distance education. Telecommunications is the technology used for linking people between two or more locations. There are five types of teleconferencing which are audio, telephone, computers, video, and business television.[13] Through these five types of media we are capable of delivering distance education which is, instructional delivery that does not constrain the learner to be in the same location as the instructor.

Today, with the fast pace environment that we live in, it is essential that we have assess to use different information via a multitude of media's, without actually being present in a single place at any point in time. It is easier to move information that it is to move people.

However, their needs to be a facility where all of this information can be accessed and distributed to others. This type of facility will benefit others by saving travel time an be useful for holding large audiences for the distribution of information. The facility will be adaptable for businesses, associations, hospitals, and institutions to discuss, inform, train, educate or present. This telecommunications/ distance education facility will become the hub station for the distribution of information to people all over the world (illus. 17).



Illus. 17 Robert Heinich II. Instructional Media & Technologies for Learning. Pg. 301

13. Heinich, Robert II, Instructional Media & Technologies for Learning. (U.K., Prentice Hall, 1996) Pg. 284

FACILITY ANALYSIS

Mission Statement:

The mission for this telecommunications/ distance education facility is to create an environment where information and communication occurs at many levels and is easily accessible to the public and the private sector. This facility will make it possible for the medical community, Amarillo Community College, area businesses, and the public to discuss, train, inform and educate people all over the world through the use of telecommunications.

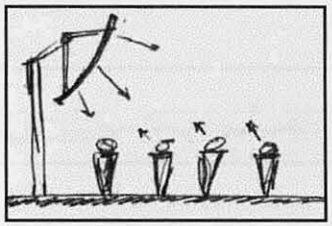
FACILITY ISSUES AND RESPONSES

Issue: Communication:

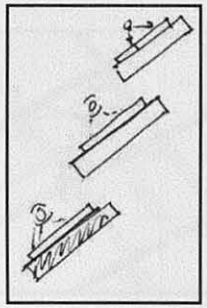
GOAL: This facility should have the capabilities to communicate and distribute a myriad of information.

Design Response

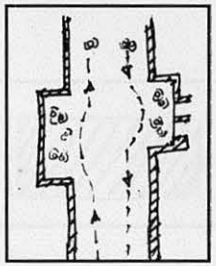
1. Information will be communicated to the users through the use of screens and interactive touch screens.
2. Varying degrees of information will be communicated through sub spaces off of the main circulation.
3. Communication will occur about a space to the users thorough the use of materials, ceiling height, and color.



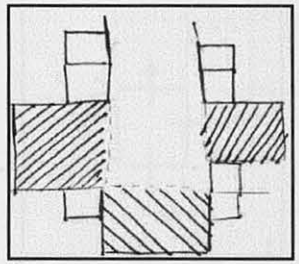
1A. Interaction: people and screen



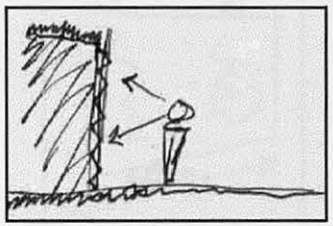
1B. Interactive screens



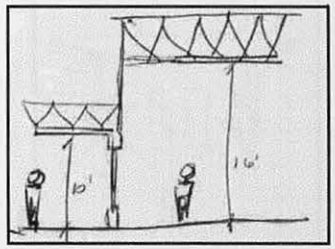
2A. Recessed spaces along path



2B. Sub-spaces within smaller spaces



3A. Materials engage the viewer



3B. Different ceiling heights, different level of communication

FACILITY ISSUES AND RESPONSES

Issue: Flexibility

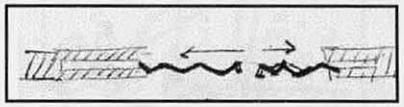
GOAL: The facility should have the capabilities to create flexible comfortable environments.

Design Response

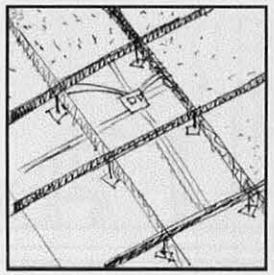
1. Wall and floor systems should be flexible for different organizational layouts of rooms.

2. The building should be flexible for further growth and expansion.

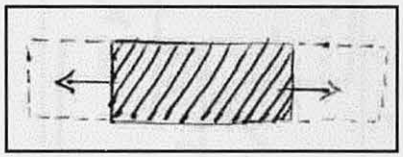
3. The facility should be flexible in the arrangement of screens in order communicate different ideas of importance to the users.



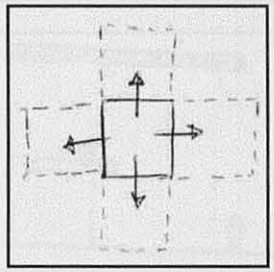
1A. Flexible wall system



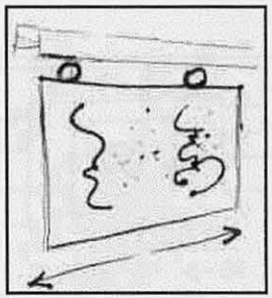
1B. Flexible floor panels



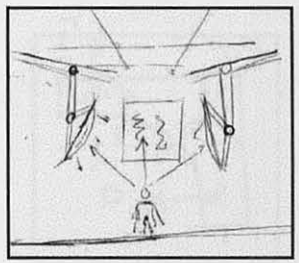
2A. Expansion of building linear



2B. Expansion of building in multi-directions



3A. Moveable screens for flexibility of space



3B. Multi-screen enclosure

FACILITY ISSUES AND RESPONSES

Issue: Interaction

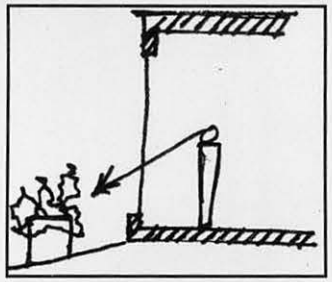
GOAL: The facility should promote interaction between people by engaging their minds.

Design Response

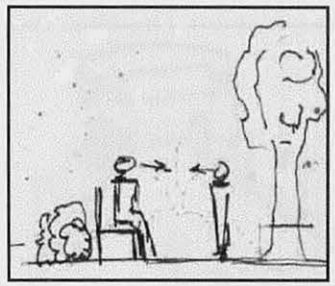
1. The facility should be organized so that interaction occurs between people and their environment by creating outdoor open areas.

2. Social interaction should occur through the overlapping of interior spaces.

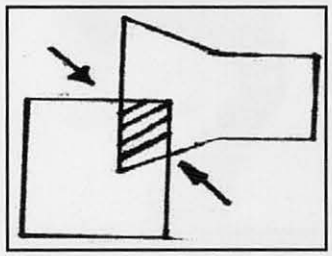
3. Sequence of spaces will help organize people to a focal point.



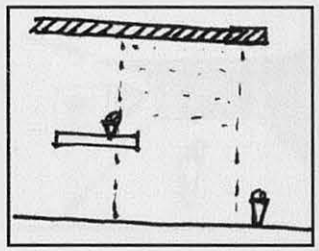
1A. Interaction with exterior



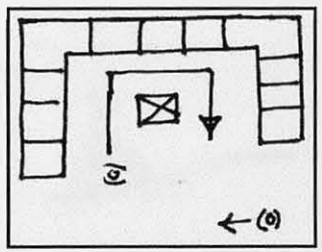
1B. Interaction of people & environment.



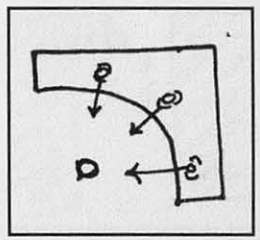
2A. Interlocking spaces



2B. Overlapping interior spaces



3A. Path around element



3B. Space organized around element

FACILITY ISSUES AND RESPONSES

Issue: Circulation

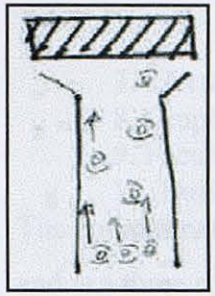
GOAL: The circulation for the facility should communicate clearly to the users of the building.

Design Response

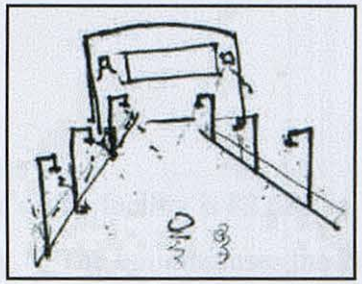
1. Major pedestrian paths should be visually interesting and clear to the users through the use of technology such as lights and screens, to help orient the user to the entrance of the facility.

2. Circulation between different departments need to be distinct through the uses of materials and/or signage.

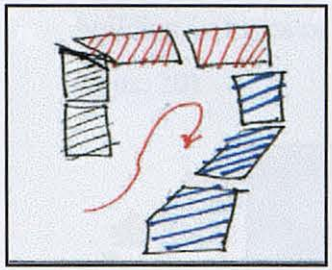
3. The circulation of all spaces should be in compliance with ADA requirements.



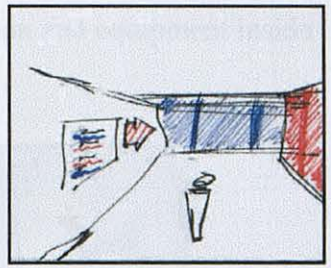
1A. Clear path to building



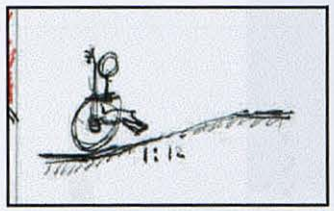
1B. Path to bldg. through lights



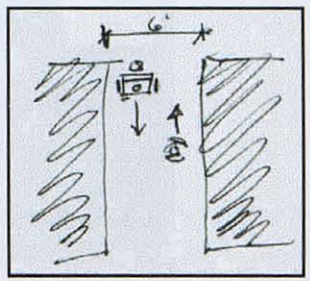
2A. Colors for departments



2B. Signage and color for circulation



3A. H.C. ramp slope 1:12



3B. Hall width 6'-0" for H.C. access

CASE STUDY

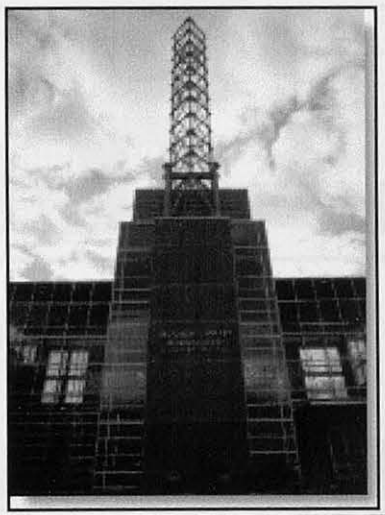
Bulmer Telecommunications and Computations Center, Troy, New York
Einhorn Yaffee Prescott, 1994

The Bulmer Telecommunications and Computation Center was for the Hudson Valley Community College. The president of the college main purpose was to combine training and production in television and computer technologies preparing students for these types of career opportunities.

The facility has a telecommunications tower on the front façade, next to the two story lobby space, to act as a symbol for technology for the college (illus. 18). The facility is broken up into the following ten department were different communication process occurs for the preparing and distributing of information.

1. Photography
2. Videography
3. Electronic Communications
4. Auditorium (illus. 19)
5. Center for effective Teaching
6. Classrooms and Labs
7. Electronic Arts
8. Graphics
9. Faculty Offices
10. Building Services

The approximate gross area of the facility is 82,680 sq. ft. and is a three story building.[14] The building uses the latest technology in communications and is a very flexible building in terms of expansion and equipment inside (illus. 20)

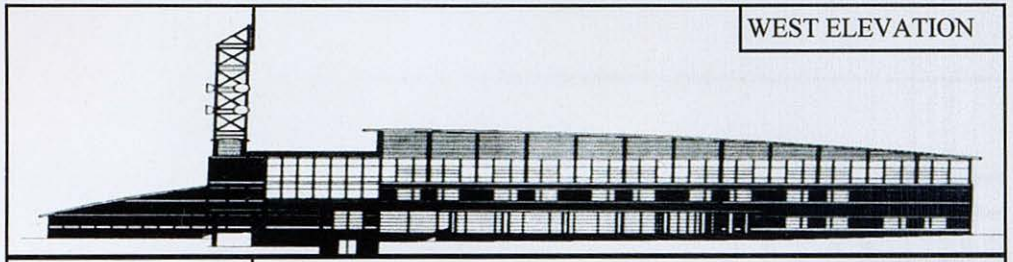


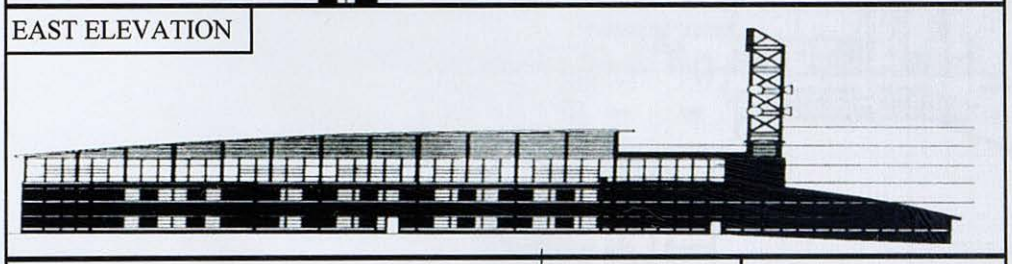
Illus. 18 Exterior view of telecommunications tower.
HTTP://WWW.HVCC.EDU

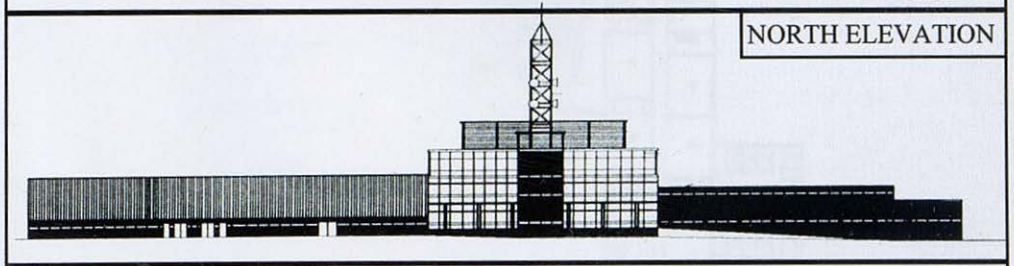
14. "New Media is Hudson Valley Coomunity College's Message" Architectural Record Oct. 1997: Pg. 61

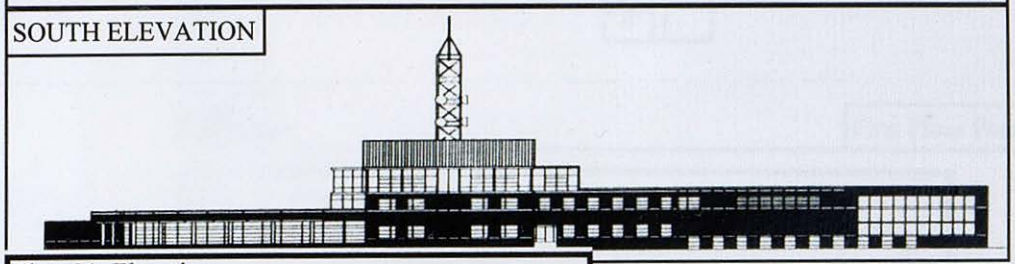
Bulmer Telecommunications and Computations Center

Illus. 19 & 20. Auditorium and Conference room
Http://www.Hvcc.edu



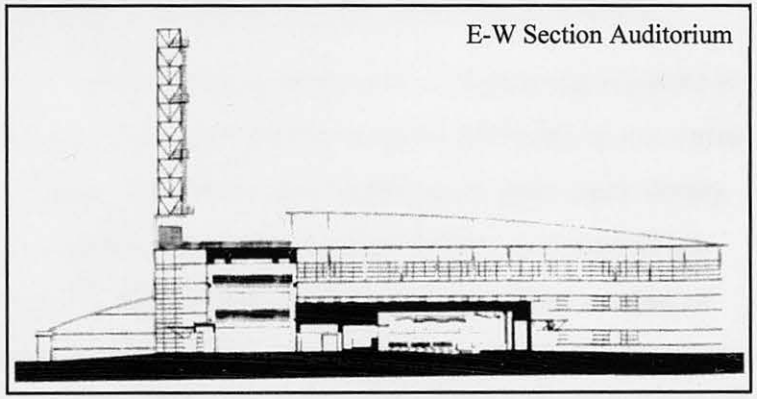


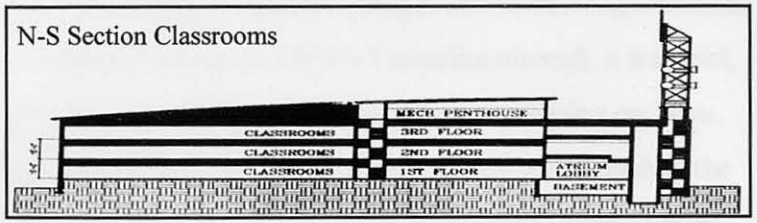


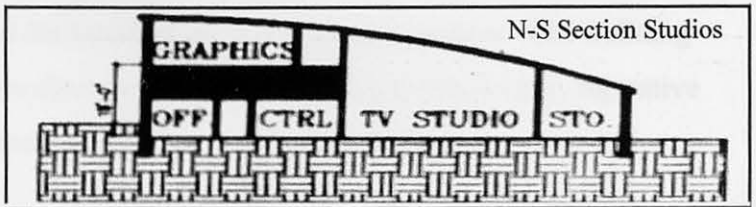


Illus. 21. Elevations.
Design Phase Report. "Computation and Communications Building."

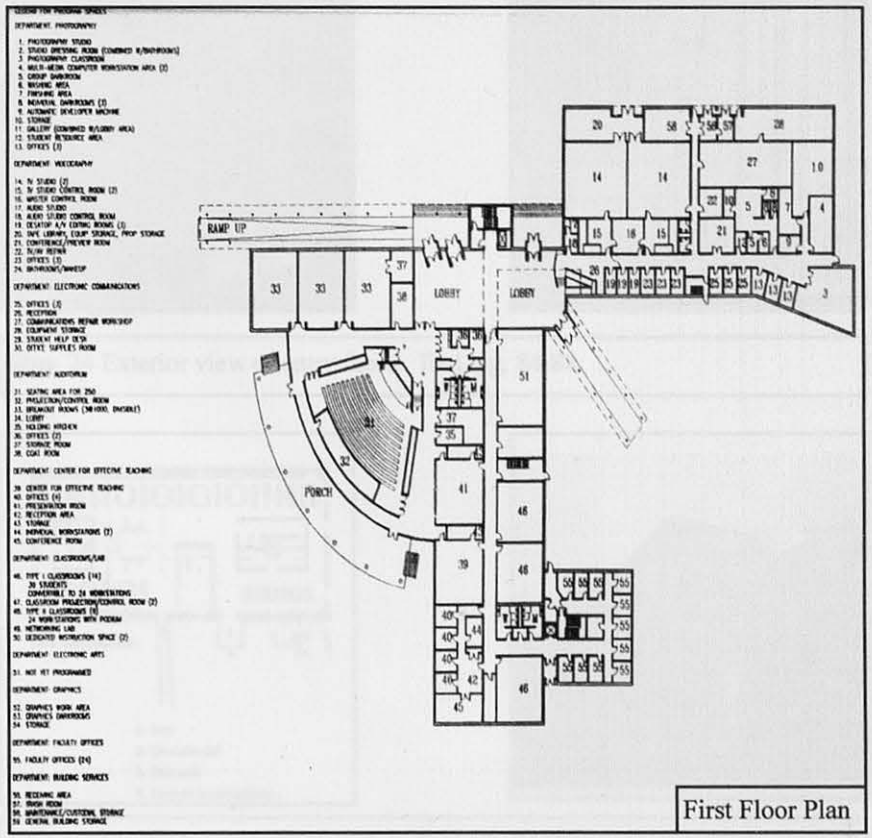
Bulmer Telecommunications and Computations Center







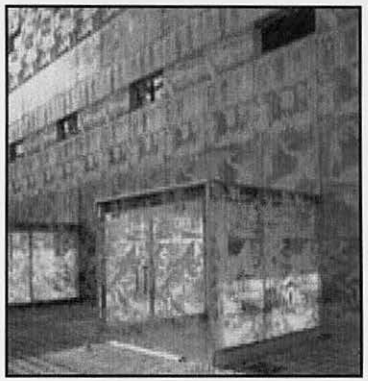
Illus. 22. Sections.
Design Phase Report. "Computation and Communications Building"

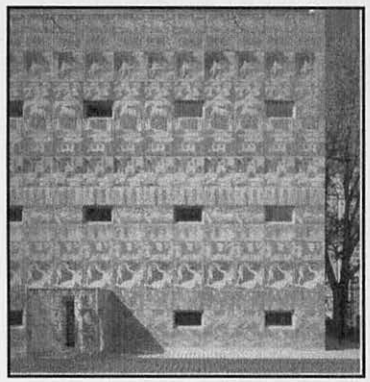


Illus. 23. Floor Plan.
Design Phase Report. "Computation and Communications Building."

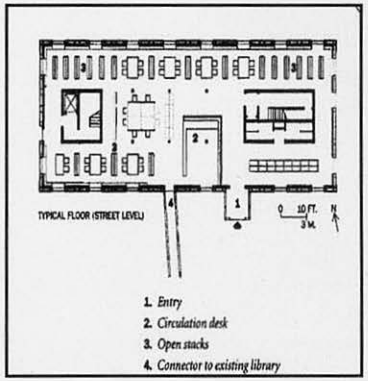
Eberswalde Technical School Library, Former East Germany Herzog & De Meuron's, 1999

This library took the idea of portraying a picture to the next level and literally wrapped the building in a series pictures. The library is a 16,000 sq. ft. open stack library for a small campus that teaches forestry and applied sciences.[15] The building is three stories and has a series of bands on the exterior all the way around. Each of the bans consist of a single repeated images of : technology, natural and applied sciences, 1950's Canadian aircraft, a train set, a beetle, students studying, and a women laying on lawn. The images are some what controversial which makes the facility even better because it engages your mind to look at the building and make interpretations. The building produces tension between real or illusionary, figurative and the abstract, surface and depth.





Illus. 24 Exterior view of entry faced. Ibid. pg. 84-88



Illus. 25 Floor plan and exterior view. Ibid. pg. 84-88

15. "Library is a Virtual Mosaic of Images" Architectural Record Aug. 1999: Pg. 84

BIBLIOGRAPHY

Design Phase Report. "Computation and Communications Building"

Handbook on Organization and Management of Distance Education Study Centers Unesco, Bangkok, Thailand. 1990

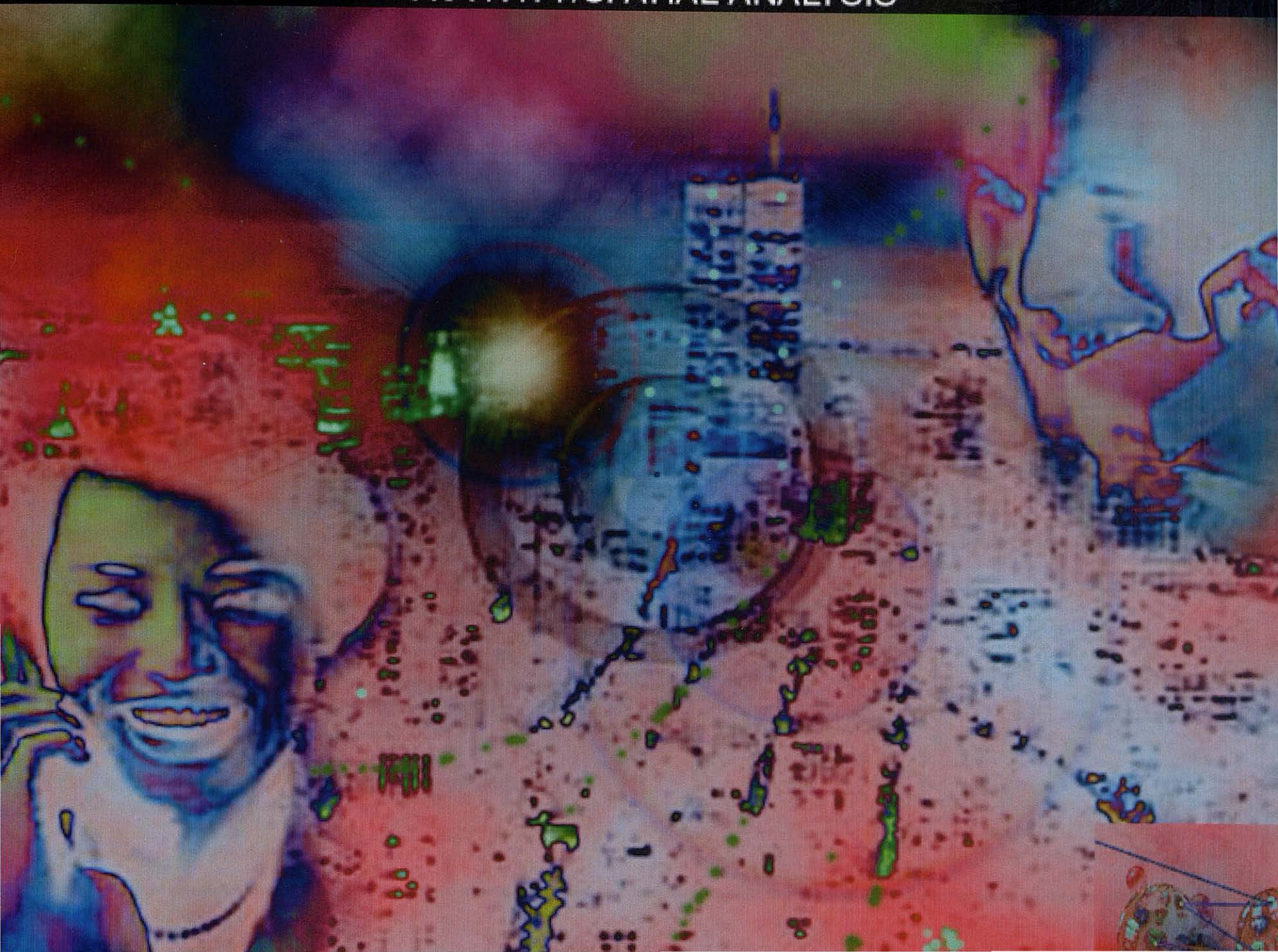
"Library is a Virtual Mosaic of Images" Architectural Record Aug. 1999:

McFarlane, Robert E. "Two-way Teleconferencing: Room Design Comes First" Architecture Record. 1983 Sept.

"New Media is Hudson Valley Community College's Message" Architectural Record Oct. 1997

Robert Heinich II. Instructional Media & Technologies for Learning. Pg. 301

ACTIVITY/SPATIAL ANALYSIS



ACTIVITY/SPATIAL ANALYSIS

Auditorium

Square Foot: 4000

Users: Teachers, Staff, Students, Visitors

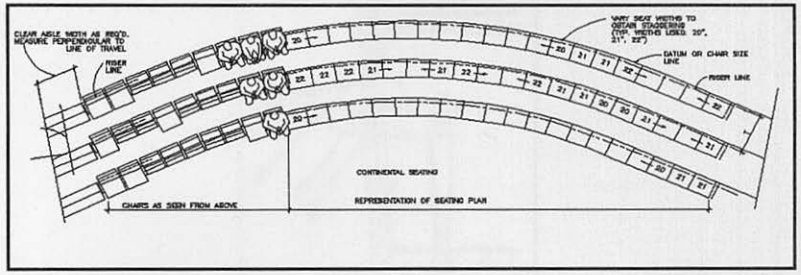
Number of Users: 250

Activity: This area shall will be used for listening to presentations, seminars, and lectures that require a large audience seating capacity.

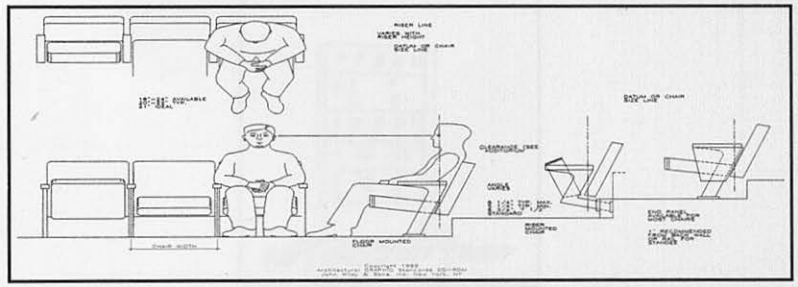
Space Analysis: The floor in the auditorium should be sloped away from the lectern at 1:12 ratio, and will have continental seating with tablet arms. The space will also have two entrances and two exits that lead out to some common outdoor areas. The lighting in this spaces should be flexible such as spot lights to accent different areas such as the speaker and should be able to be controlled from the lectern. The acoustical panels will also be able to move and adjust to different audio levels and presentations. The auditorium will have a constant air volume system which will allow different temperature control depending on the occupancy of the space.

Adjacency/Separation: Adjacent to the lobby, and in close proximity to restrooms.

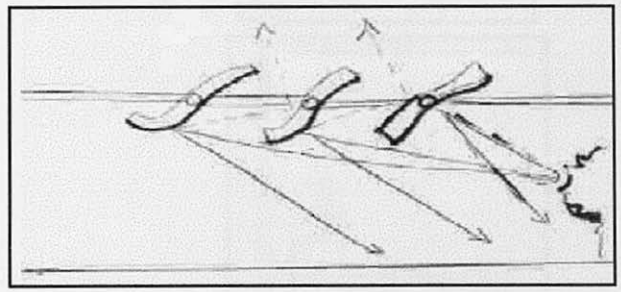
Private/Public: Public



1. Continental seating. Architectural Graphic Standards CD-ROM



2. Seating & views. Architectural Graphic Standards CD-ROM



3. Adjustable louvers for sound control

ACTIVITY/SPATIAL ANALYSIS

Control Room

Square Foot: 500

Users: Staff

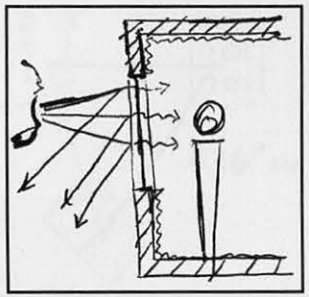
Number of Users: 1-2

Activity: This space will control lights, sound, and different presentation media's for the auditorium and will be opposite the lectern.

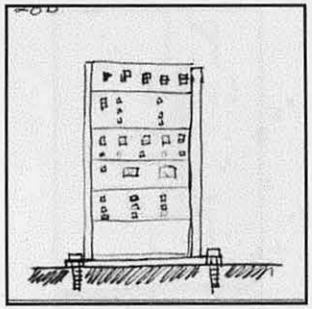
Space Analysis: This area should have permanent built-in equipment racks, to prevent from movement and damage to the equipment. Walls needs to have an absorptive material, to prevent any outside noise. Can lighting system will be used with lay in acoustical tile. Sound proof glass will also be required to look out from this space to the lectern for monitoring of the presentations.

Adjacency/Separation: Inside of auditorium

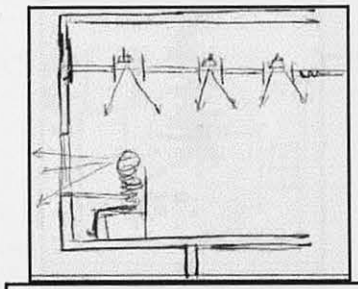
Private/Public: Private



1. Soundproof glass



2. Equipment rack bolted to floor



3. Section through control room

ACTIVITY/SPATIAL ANALYSIS

Kitchen

Square Foot: 150

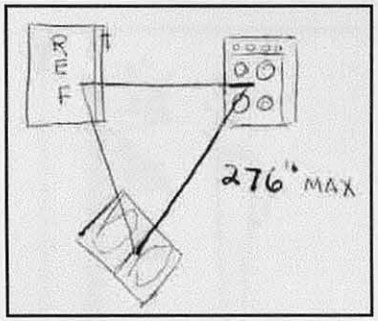
Users: Chief's, Caterers

Number of Users: 3-5

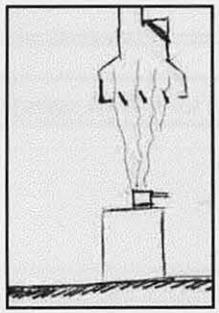
Activity: This area will be used for preparation of food and drinks after lectures and presentations.

Space Analysis: This space will need to have the structural system fire coated and will also need to contain sprinklers for emergencies. The kitchen will have cabinets and countertops to store supplies. Electrical outlets need to be located above the counter for all appliances. The space will also need to have adequate ventilation system to reduce aroma from spreading to the rest of the facility.

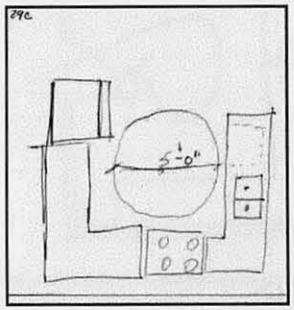
Adjacency/Separation: Adjacent to the lobby and auditorium, and access to delivery area.



1. Typical kitchen layout



2. Exhaust fan



3. H.C. kitchen layout

Storage Room

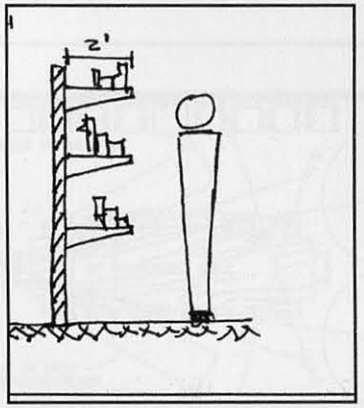
Square Foot: 500

Users:

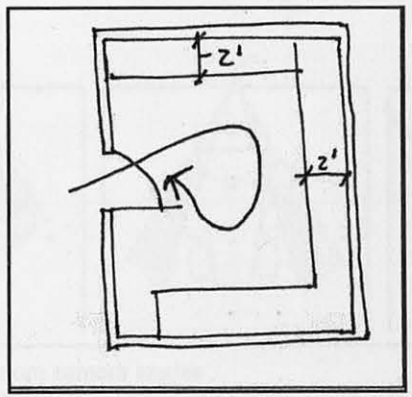
Number of Users:

Activity: This area will be used for storage of tables, chairs and some kitchen supplies.

Space Analysis: The storage room will have a variable air volume system with fluorescent lighting system. The floor system will be a composite vinyl tile for easy movement of equipment. Shelves and countertops will also be required in the space for storage.



1. Storage shelves for supplies



2. Storage room plan, easy movement

Adjacency/Separation: Adjacent to the kitchen.

Private/Public: Private

ACTIVITY/SPATIAL ANALYSIS

Conference Room

Square Foot: 4 rooms @ 1000 sq. ft. = 4000

Users: Teachers, Staff, Students

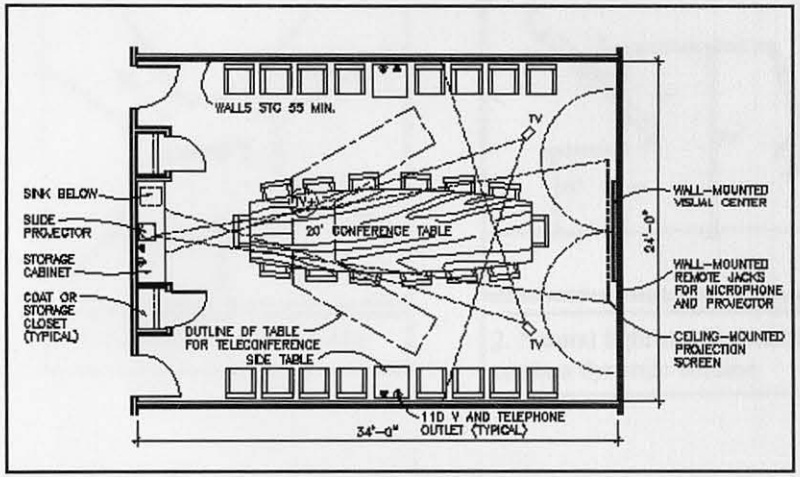
Number of Users: 25/room

Activity: This area shall be used for teleconferencing to other sites as well as overflow area from the auditorium.

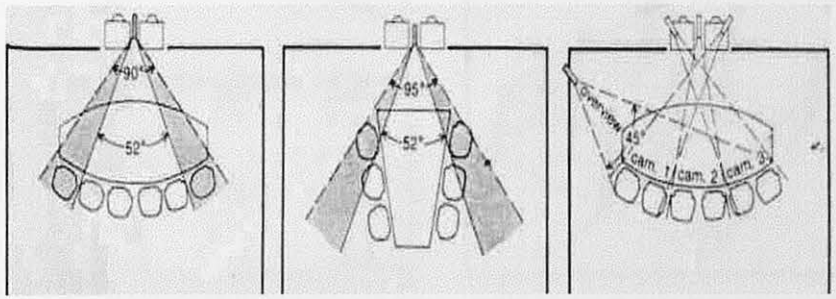
Space Analysis: The wall systems in all of the conference rooms need to have one or two acoustically soundproof partition walls, depending on adjacency. Each conference room will have a telephone, computer outlet, speaker system mounted in the wall, projection screens and a large conference table. All lighting systems need to have the capability to be dimmed. Wall system needs to be metal stud framing with absorptive material on top of the gyp board. The space will also have a constant air volume system. Following diagrams will illustrate possible table configurations and optimal camera, and TV angles.

Adjacency/Separation: Adjacent to the auditorium and other conference rooms.

Private/Public: Private, but accessible off of auditorium.



1. Conference room layout Architectural Graphic Standards CD-ROM



2. Conference room camera angles
Nissen, Robert J. "Two-way Teleconferencing: Room Design Comes First", Architectural Record, Sept. 1983. Pg. 112-119.

ACTIVITY/SPATIAL ANALYSIS

Lobby

Square Foot: 1000

Users: Faculty, Visitors, Students

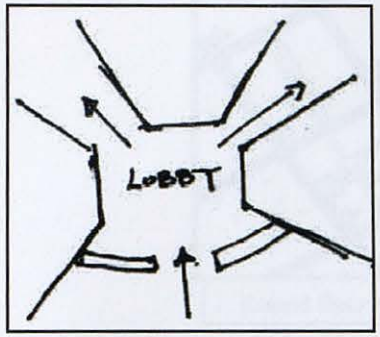
Number of Users:

Activity: This area will be used for a general gatherings and the main circulation space to other areas of the facility. Through the arrangements of chairs and tables, this place will also become an area for social interaction for students.

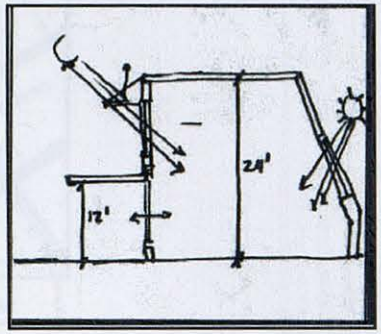
Space Analysis: The lobby will be a transition zone for other activities in the facility and from the exterior to the interior. This space will be a two story space with exposed structure to help give the volume definition. The space should have 50% natural light and use recessed can lighting that can be dimmed in areas for displays and receptionist area. The space will have a constant air volume handling unit that will allow for an array of temperature control depending on occupancy load. The exposed structure will help in the support of video screens and other media equipment.

Adjacency/Separation: Adjacent to the auditorium and classrooms.

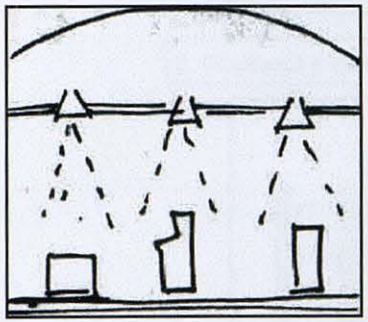
Private/Public: Very public, high traffic area.



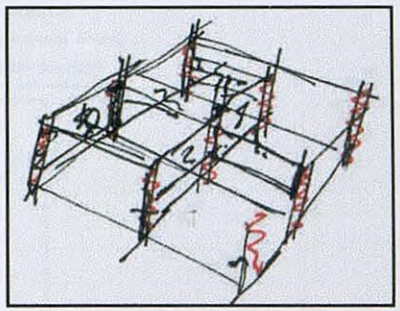
1. Transition zone form lobby



2. Natural light and high ceiling create a dynamic volume



3. Accent display areas by recessed can lights



4. Exposed structure for support of screens

ACTIVITY/SPATIAL ANALYSIS

Training Center for Faculty

Square Foot: 1000

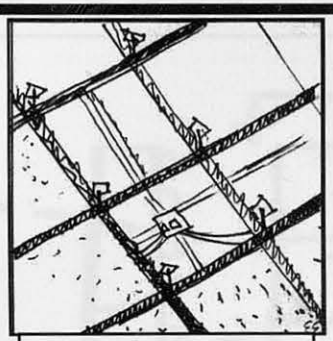
Users: Faculty, Staff

Number of Users: 15-20

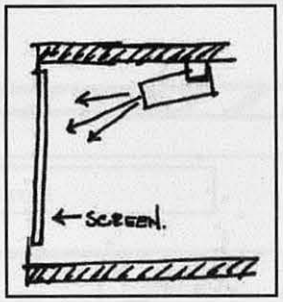
Activity: This area will be set up for training faculty and staff on the usage of new technology, and multi-media techniques.

Space Analysis: This space will have computer terminals that will require a raised floor system for wiring and flexibility for the future. The lighting system will be parabolic, low brightness light fixtures to reduce glare on computer screens. The lighting and audio system will be controlled from a lectern, and will have a presentation screen behind with rear projections. The wall system will be typical metal stud framing with gypsum board on each side.

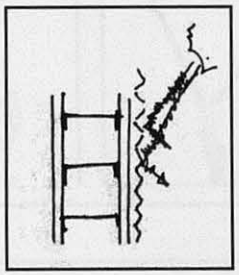
Adjacency/Separation: Adjacent to faculty offices



1. Raised floor system



2. Overhead presentation screen



3. Metal stud framing w/ sound proof insulation

ACTIVITY/SPATIAL ANALYSIS

Presentation Room

Square Foot: 1000

Users: Faculty, Staff

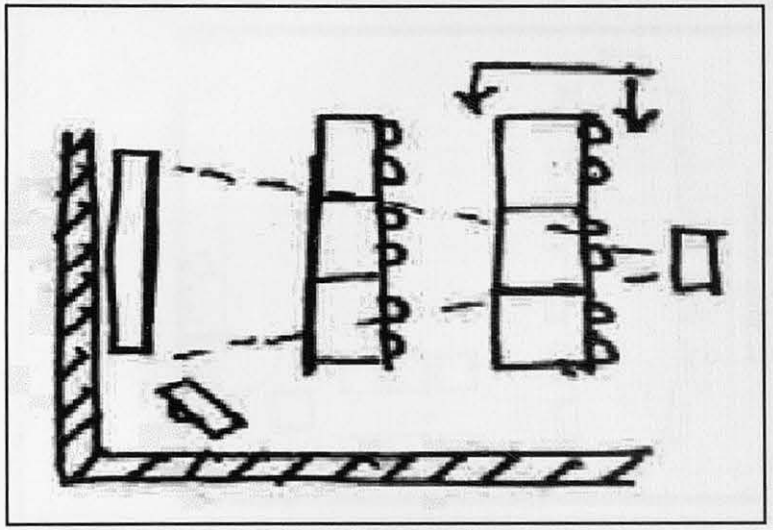
Number of Users: 15-20

Activity: This area should be used for delivery of presentations and lectures and act as a test run for the things prepared in the faculty training room.

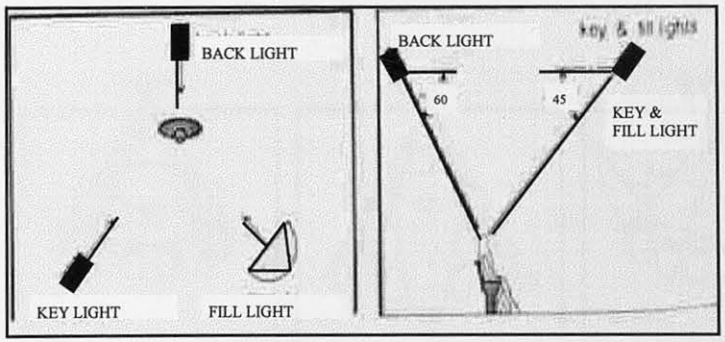
Space Analysis: The furniture in the presentation room will be a seminar tables and have a lectern to give presentations from. All of the lighting, media, and audio systems will be controlled from this space. The lighting system should be strip lights, and have lay-in acoustical tile. This space will be similar to the training center for the faculty but without the computers.

Adjacency/Separation: Adjacent to training room.

Private/Public: Private



1. Presentation room layout



1. Lighting layout
Nissen, Robert J. "Two-way Teleconferencing: Room Design Comes

ACTIVITY/SPATIAL ANALYSIS

Conference Room for Training Center

Square Foot: 400

Users: Faculty

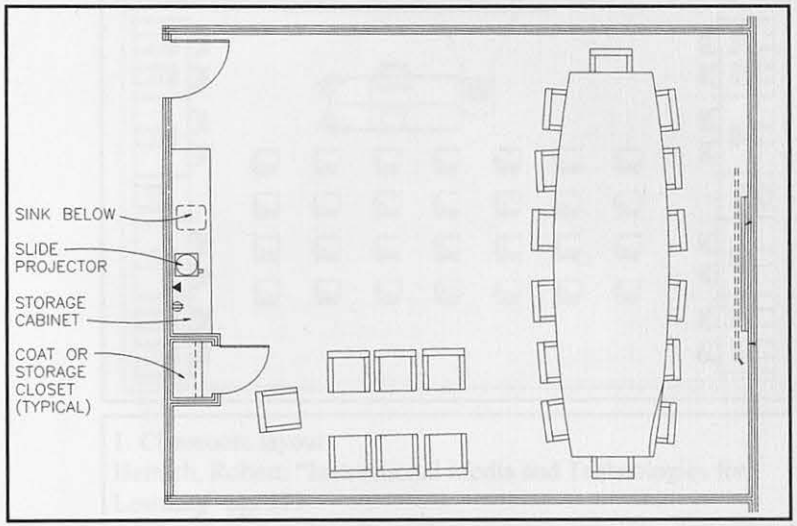
Number of Users: 10-12

Activity: This area should be used for a small gatherings of faculty to talk about issues and prepare presentations for other teachers. It will also serve as a hospitality center for people attending the training sessions.

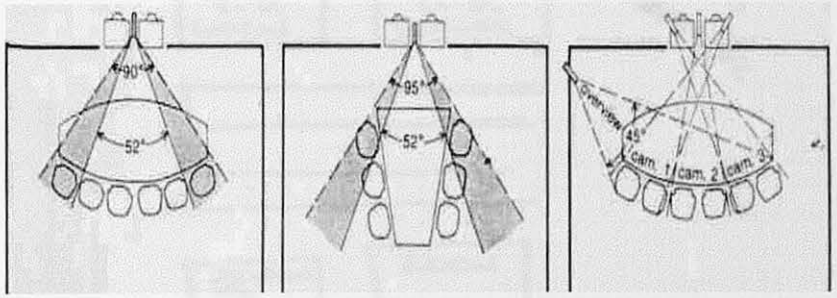
Space Analysis: This space needs to include a sink, refrigerator, and a coffee machine, for hospitality purposes. The space should be arrange with lounge furniture, conference table for general discussions. Lay-in acoustical tile and variable air volume system is preferred. The floor shall be a composite vinyl floor, and the walls will be a typical metal stud framing with gypsum board and insulation.

Adjacency/Separation: Adjacent to presentation room.

Private/Public: Very private



1. Conference room layout Architectural Graphic Standards CD-ROM



2. Conference room camera angles
Nissen, Robert J. "Two-way Teleconferencing: Room Design Comes First", Architectural Record, Sept. 1983. Pg. 112-119.

ACTIVITY/SPATIAL ANALYSIS

Classrooms

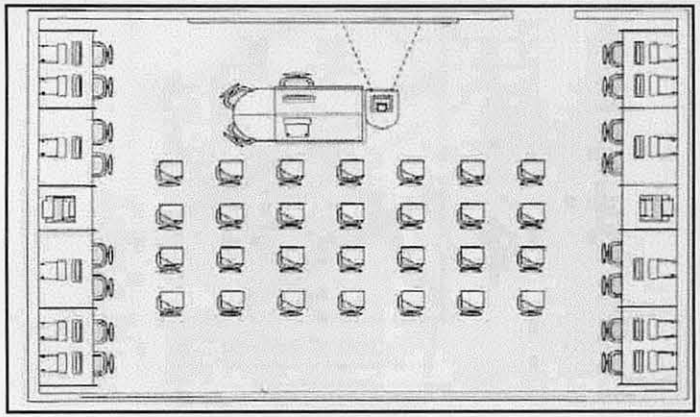
Square Foot: 12 @ 900 sq. ft. = 10,800

Users: Faculty, Students

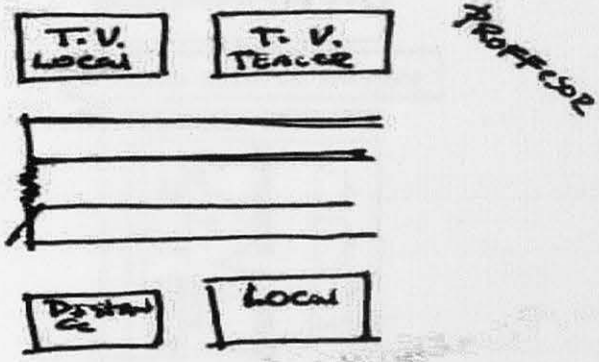
Number of Users: 25/classroom

Activity: This area will be used for presentation of material by the teacher to the students.

Space Analysis: The classroom will have a variable air volume system for ventilation and parabolic lighting to reduce glare on computer screens. Each classroom will have a lectern at the front of the room where all of the lighting, audio, and media could be controlled. Above the lectern will be recessed can lighting to help accent the teacher. Structural roof beams will be required for all classroom to support the load of four 32" TV's. The floor system should be a raised panel system for easy access and flexibility for the future. Materials for the walls will be a 3/5" metal stud framing with qyp. Board and a sound deading board. Views form the classroom will be from one window all to the exterior.



1. Classroom layout
Heinich, Robert: "Instructional Media and Technologies for Learning" pg. 379



2. Distance education classroom with four 32" TV's.

ACTIVITY/SPATIAL ANALYSIS

Computer Center

Square Foot: 3 @ 900 sq. ft. = 2,700

Users: Students, Visitors

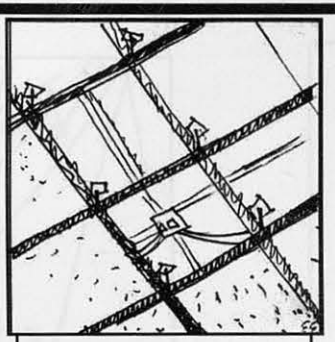
Number of Users: 25-30/ room

Activity: This area will be used for accessing information form the Internet, and doing homework on the computer for class.

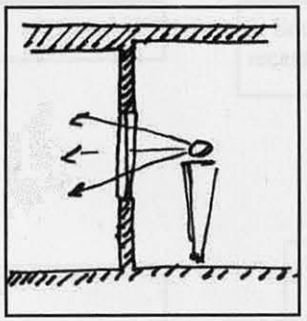
Space Analysis: Their will be twenty-five work stations per room and will sit on a raised floor system where all the wires will be. The lighting system will be parabolic low brightness lighting system which will be set into the lay-in acoustical tile. All three computer centers have a front window where students waiting outside can see inside to see when computers are free. All three rooms will be arranged in a different layout. The computer center will be on a variable air volume system.

Adjacency/Separation: Adjacent to the lobby but separate from classrooms and teaching area.

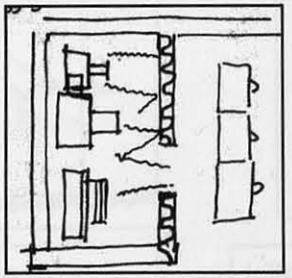
Private/Public: Semi-Public



1. Raised floor system



2. Window wall to see into space



3. Printer room insulated to stop noise

ACTIVITY/SPATIAL ANALYSIS

Study Center

Square Foot: 900

Users: Students

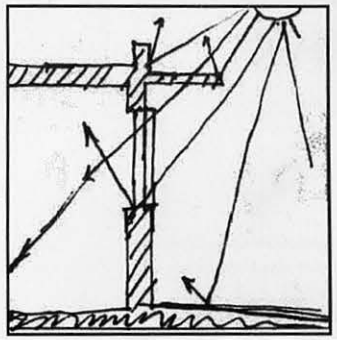
Number of Users: 40

Activity: This area will be used for relaxing, studying, and social interaction.

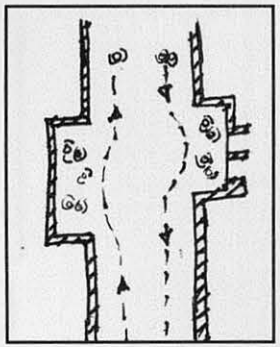
Space Analysis: This space should have 50% natural light to provide a relaxing environment which people could use to reconnect to the natural surroundings. This space will be open and have a higher ceiling height to distinguish it form the path it is serviced from. Recessed can lighting will be used to help accent certain areas. The space will have tables and chairs for people to study.

Adjacency/Separation: Adjacent to the faculty offices

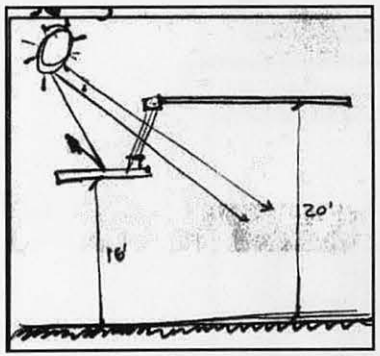
Private/Public: Public



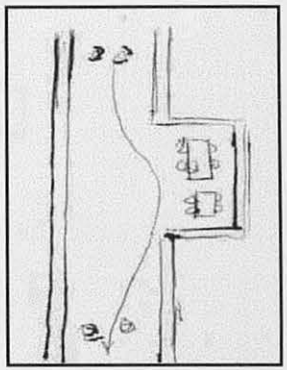
1. Natural light



2. Social interaction created by recessing spaces from path



3. Ceiling height change



4. Recessed area for studying

ACTIVITY/SPATIAL ANALYSIS

TV Studios

Square Foot: 3,000

Users: Faculty, Students, Staff

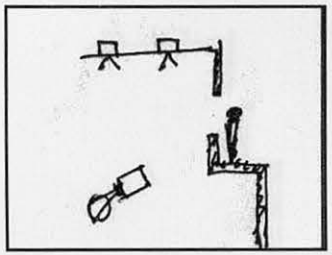
Number of Users: 15

Activity: This area will be for teleconferences, studio production, videotaping classes and conferences, and instructional video.

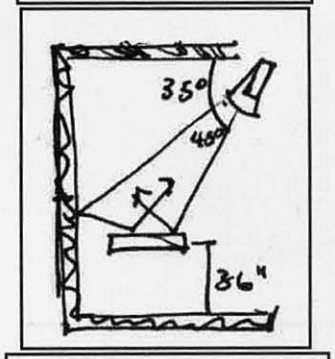
Space Analysis: this space will use a constant air volume system to provide for a comfortable environment depending on the occupancy of the room. The wall system will be a concrete wall with sound absorbing material not to exceed NC-30. Their will be at least a 15' ceiling height and have a flexible grid system for the placement of spotlights and other equipment. The floor system in the studio needs to be fairly smooth for the easy movement of equipment.

Adjacency/Separation: Separate from auditorium and lobby.

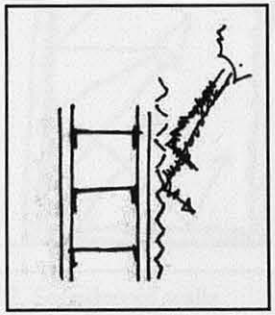
Private/Public: Semi-Private



1. Track lighting



2. Lighting angle 30-40 deg.



3. Double insulation

TV Control Room

Square Foot: 350/ studio = 700

Users: Faculty, Students, Staff

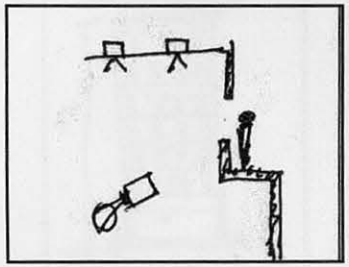
Number of Users: 3/studio

Activity: This area will be used to direct and control live studio productions and for monitoring, recording, and switching from audio to video.

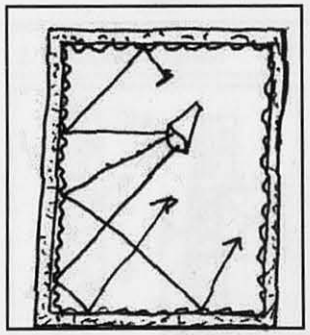
Space Analysis: This space needs to be a static free environment, and have lay-in acoustical tile to reduce sound vibration. The walls will be concrete with sound absorptive material similar to the studio. All equipment in the room will be fixed, and therefore need proper structural support. The space will also need a soundproof window and door to keep out unnecessary sound. The space will have constant air volume system.

Adjacency/Separation: In TV studio, but isolated.

Private/Public: Semi-Private



1. Section through studio



2. Soundproof walls

Master Control Room

Square Foot: 300

Users: Staff

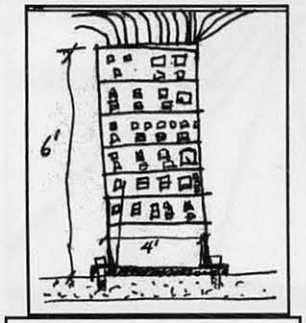
Number of Users:

Activity: All video and audio signals from the control rooms, and classrooms will be located here.

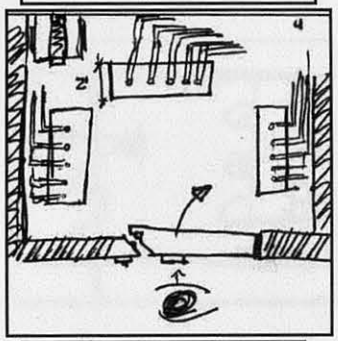
Space Analysis: This space should be a static free environment and have its own temperature control unit with a back-up generator. All wiring will be feed into the equipment racks which will be secured to the floor. The floor will be made of concrete.

Adjacency/Separation: Adjacent to the faculty offices and secure from unwanted users.

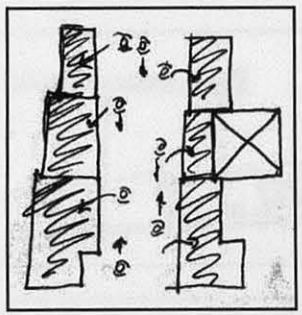
Private/Public: Very Private, no traffic area.



1. Control panel



2. Relation diagram



3. Secure zone from public

Audio/Video Editing Room

Square Foot: 2 @ 100 sq. ft. = 200

Users: Faculty, Staff, Students

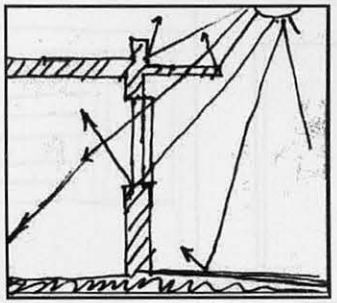
Number of Users: 2-3/ room

Activity: Have students and staff use editing equipment for putting together a production.

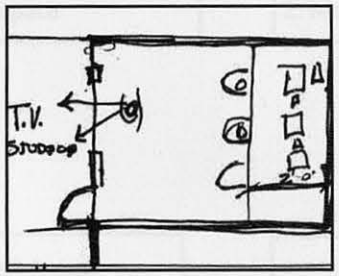
Space Analysis: This space needs to have indirect lighting to help illuminate the space. The walls will be typical metal stud framing with gypsum board and insulation material on top of that. The space needs to have a countertop for editing equipment and seating for three people. Variable air volume system will be appropriate for the area.

Adjacency/Separation: Adjacent to videography studios.

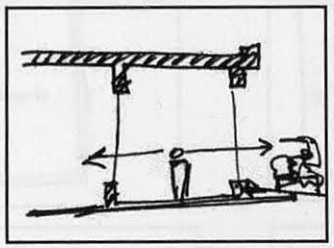
Private/Public: Semi-Private



1. Natural light



2. Space layout



3. Views to exterior and TV studio

Video Storage

Square Foot: 600

Users: Faculty, Staff, Students

Number of Users:

Activity: This area needs to be separated into three zones or rooms for the storage of stage props, equipment, and tape storage.

Space Analysis:

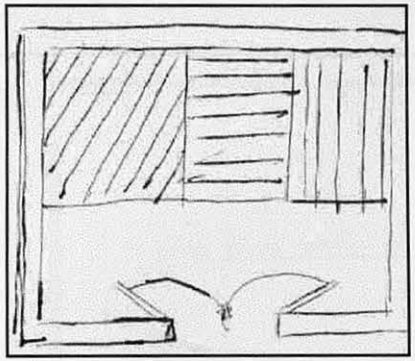
Tape Storage: The tape library storage area needs to have moveable shelves, and its own temperature control unit. The walls can be typical metal stud framing with gypsum board.

Equipment Storage: The cabinets in the space need to be lockable for safety. The floor in this zone can be smooth such as composite vinyl tile for easy movement of equipment. The walls need to have peg boards to help store wires and cables.

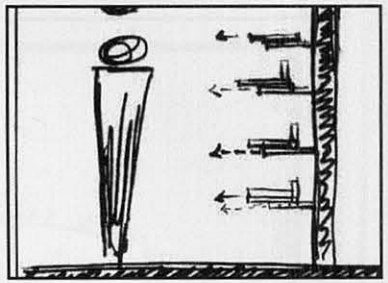
Prop Storage: This area needs to have at least 13' high ceiling for large props, and double doors for easy movement. The wall can be typical metal stud framing with gypsum board.

Adjacency/Separation: Adjacent to studios for easy access to various tapes and stage props.

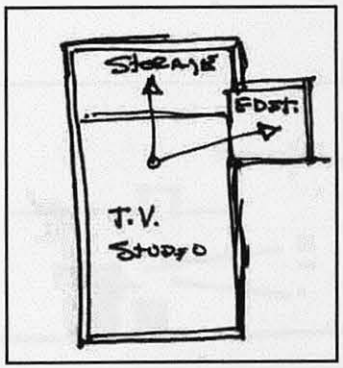
Private/Public: Private



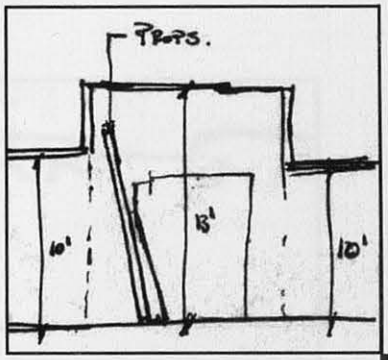
1. 3 zones one space



2. Moveable shelves



3. Relationship diagram



4. Varying ceiling height

Videography Conference Room

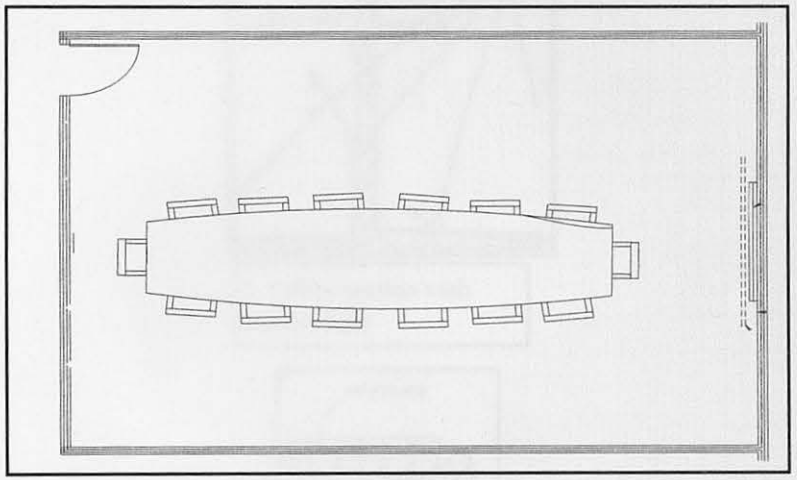
Square Foot: 400

Users: Faculty, Staff, Clients

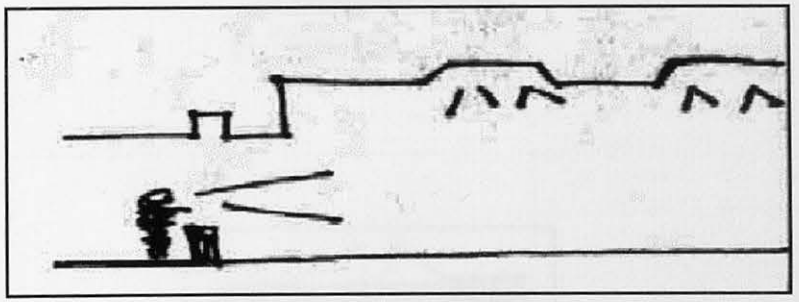
Number of Users: 8

Activity: The conference room will be used for previewing presentations and critiques.

Space Analysis: This space should conference table with views to a ceiling mounted, electric front projection screen. All equipment in the space needs to be portable therefore proper electrical and networking capabilities is required. The floor can be carpeted, and the walls can be metal stud framing with extra insulation on the interior space. Recessed canned lighting should be placed near the lectern from where presentations are given. A variable air volume system will be used.



1. Conference room layout Architectural Graphic Standards CD-ROM



2. Conference lighting section

Adjacency/Separation: Adjacent to studios

Private/Public: Semi-Public

Faculty Offices

Square Foot: 23 @ 120 sq. ft. = 2400
3 @ 120 sq. ft. = 360 (videography offices)

Users: Faculty

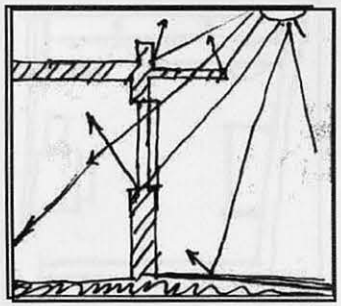
Number of Users: 1/ office

Activity: This area will be used by the faculty to do paper work and counseling.

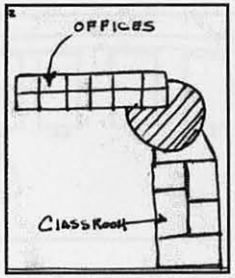
Space Analysis: Each office space should have two chairs, computer, work desk, and storage shelves. Parabolic lighting fixtures should be used to reduce glare, and each office should have operable windows for ventilation purposes. Each office will have a VAV system to provide control by the user. The wall system will be a typical metal stud framing with gyp. board.

Adjacency/Separation: Faculty offices will be adjacent to the classrooms and receptionist and the videography offices will be adjacent to the TV/Video repair.

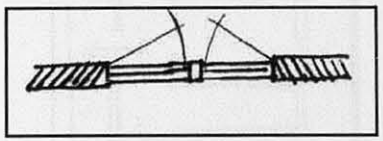
Private/Public: Semi-Public



1. Office section with natural light



2. Office zone



3. Operable windows

ACTIVITY/SPATIAL ANALYSIS

Office Supply Room

Square Foot: 400

Users: Staff

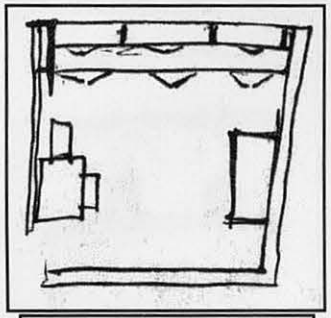
Number of Users:

Activity: This area will be used as a place to store and get office supplies for the faculty.

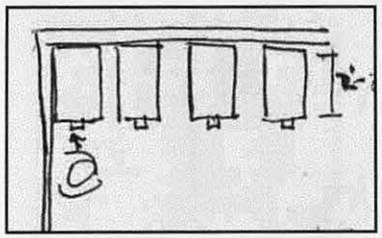
Space Analysis: The space will need to have cabinets, copier machine, and filing cabinets. Fluorescent lighting system will be appropriate with variable air volume system. The space should have composite vinyl tile and the walls will be typical metal stud framing with gyp board.

Adjacency/Separation: Adjacent to the receptionist.

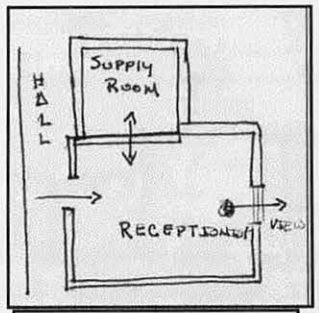
Private/Public: Private



1. Room layout



2. File room



3. Relation diagram

ACTIVITY/SPATIAL ANALYSIS

Receptionist

Square Foot: 200

Users: Staff

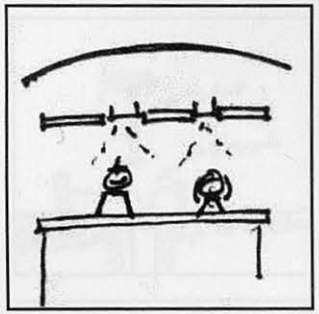
Number of Users: 3-5

Activity: This area will be used for answering phones and general secretarial duties.

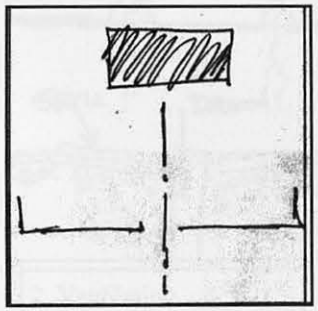
Space Analysis: The space will be accented by the use of recessed can lights to distinguish it from the main lobby. Each desk will be equipped with a computer and should have parabolic low brightness lighting system to reduce glare on computer screens. The ceiling height for this area will be twelve feet, which is lower than the main lobby.

Adjacency/Separation: Adjacent to the lobby and the faculty offices.

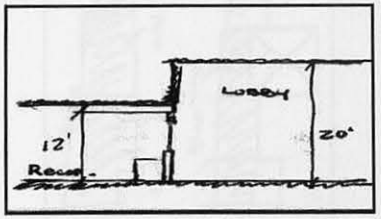
Private/Public: Semi-Public



1. Reception area w/ recessed lights



2. Relation to entrance



3. Low ceiling height

ACTIVITY/SPATIAL ANALYSIS

Custodian/ Maintenance

Square Foot: 400

Users: Staff

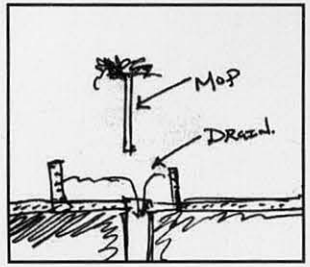
Number of Users: 2

Activity: This area will be used for the storage of cleaning supplies and janitors cart.

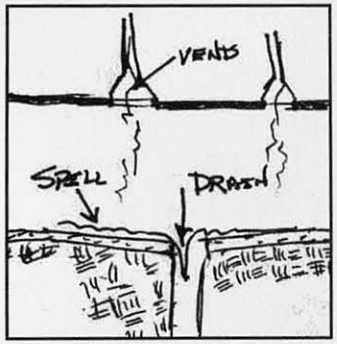
Space Analysis: This space should have proper ventilation to prevent hazards, and ant the structure needs to be fire protected. No acoustical tile is needed, and workers florescent lights will do. A floor drain is also required for the mops, and spillage of cleaning solutions.

Adjacency/Separation: Adjacent to the building services.

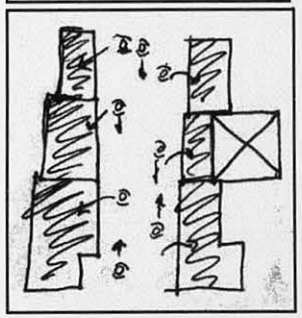
Private/Public: Private



1. Mop drain



2. Ventilation



3. Recessed area/ private

BIBLIOGRAPHY

Callender, John. Time Savers: Standards for Building Types. 3rd. Eddition. McGraw Hill, New York, 1990.

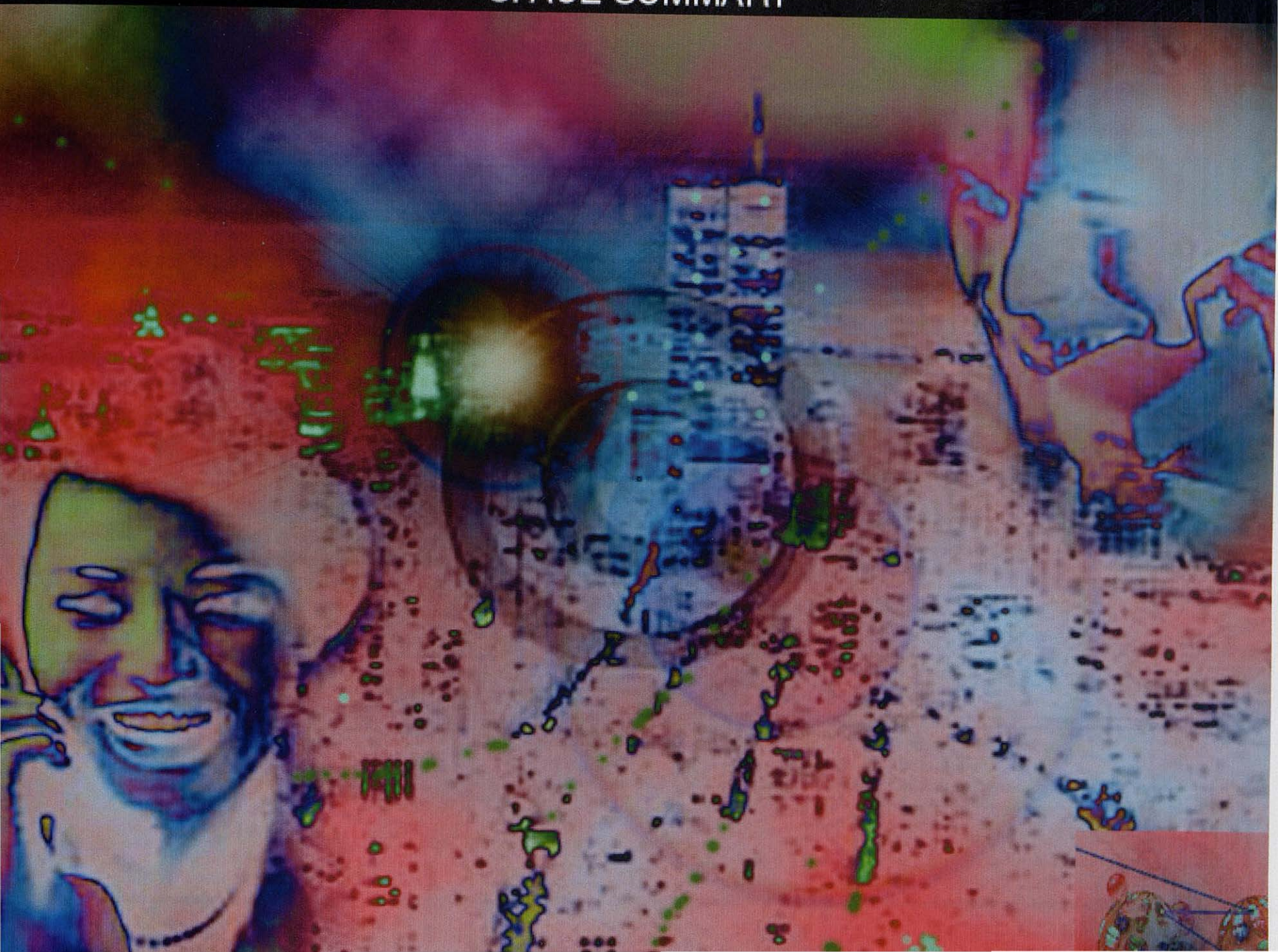
Design Phase Report. "Computation and Communications Building"

Hoke, John Roy. Architectural Graphic Standards. John Wiley &Sons, Inc., New York, 1994

Iano, Joseph. The Architect's Studio Companion. 2nd. Edition. John Willey & Sons, Inc. New York, 1995.

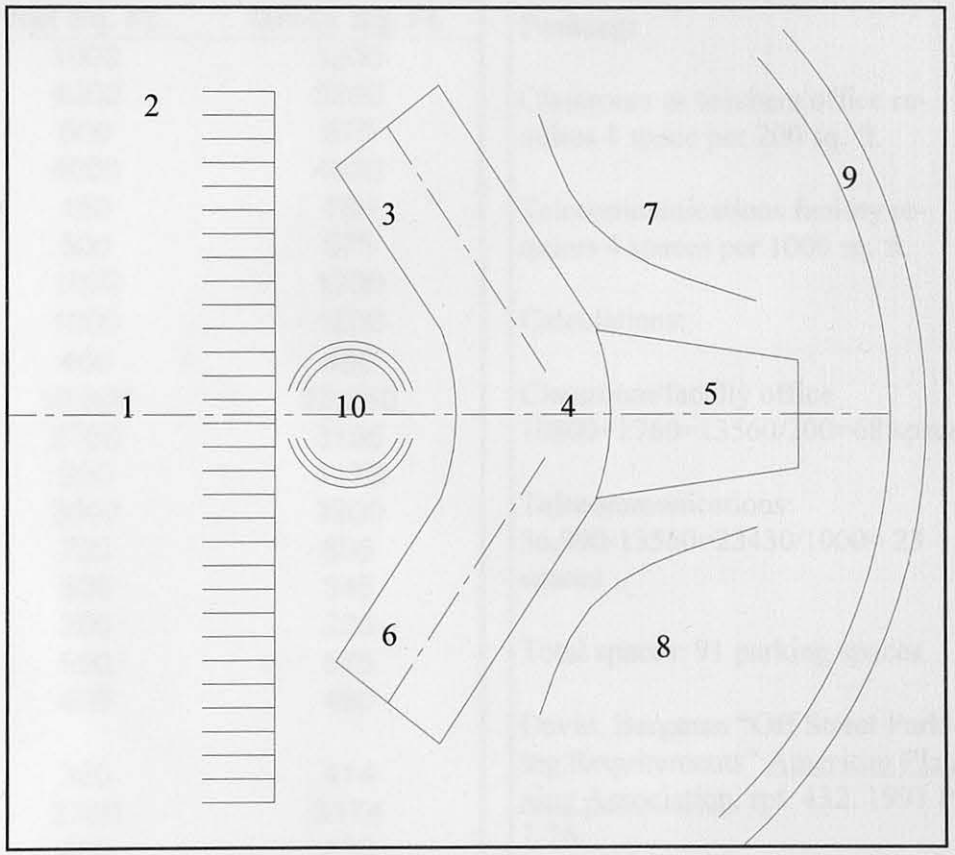
Robert Heinich II. Instructional Media & Technologies for Learning. Pg. 301

SPACE SUMMARY



SPATIAL ORGANIZATION

The spatial organization of the facility will be symmetrical about an axis which will be the terminating node of the site. The facility will become a focal point by lying at the end of the node and by the use of materials and means of construction. Parking will be in front of the building which will be separated by an outside courtyard. Off of the main axis will be the lobby which will serve as the transition space from outside to inside and all other spaces in the facility. Continuing on the axis will be the auditorium which will have access doors to two outside zones which could be used for presentations at night. The facility will be separated in two wings, were one wing will have classrooms, and study center, and the other wing will have more private areas like TV studios and conference rooms. Also incorporated into the design will be a retaining pond for collection of runoff from the site.



1. Main axis
2. Parking
3. TV studios and Conference rooms
4. Lobby
5. Auditorium
6. Classrooms and offices
7. Outdoor presentation area 1

8. Outdoor presentation area 2
9. Retaining pond
10. Outdoor courtyard area

SPACE SUMMARY

Space:	Number of Users	Net Sq. Ft.	Gross Sq. Ft.
Lobby	50	1000	1300
Auditorium	250	4000	5200
Control Room	1 2	500	575
Conference Room (4)	25/room	4000	4800
Kitchen	3 5	150	180
Storage Room		500	575
Training Center	15-20	1000	1200
Presentation Room	15-20	1000	1200
T.C. Conference Room	10 12	400	480
Classroom (12)	25/room	10,800	12,960
Computer Center (3)	25/room	2700	3105
Study Center	40	900	1170
TV Studios (2)	15/room	3000	3900
TV Control Room (2)	3/studio	700	805
Master Control Room		300	345
Audio/Video Editing	3	200	230
Video Storage		500	575
Videography Conference Room	8	400	480
Videography Offices (3)	1/office	360	414
Faculty Offices (23)	1/office	2760	3174
Office Supply Room		400	460
Receptionist	3 5	200	240
Custodian	2	400	460
Total		36,170	43,828

Parking:

Classroom or teachers office requires 1 space per 200 sq. ft.

Telecommunications facility requires 4 spaces per 1000 sq. ft.

Calculations:

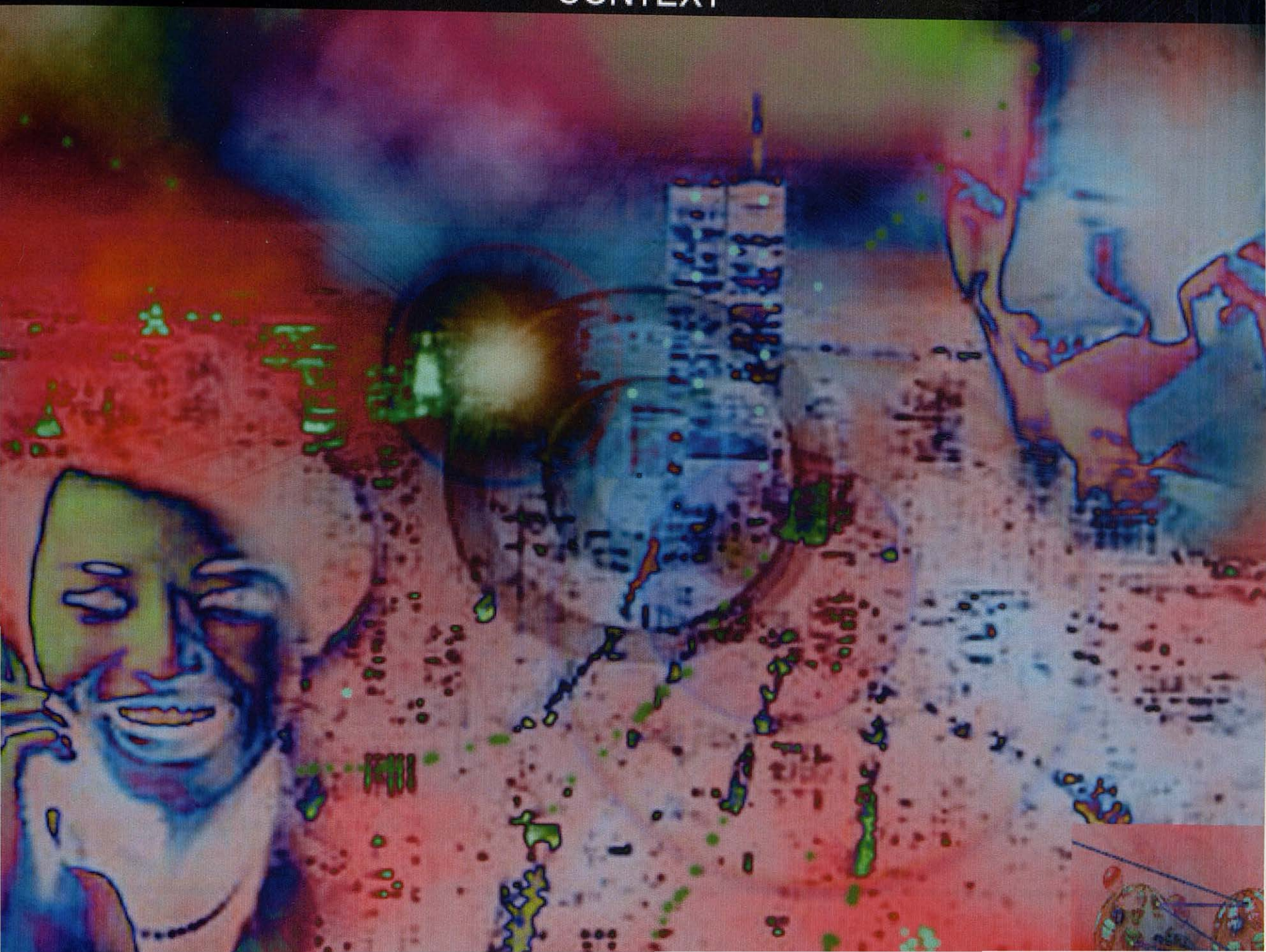
Classroom/faculty office
10800+2760=13560/200=68 spaces

Telecommunications:
36,990-13560=23430/1000= 23 spaces

Total spaces: 91 parking spaces

David, Bergman "Off Street Parking Requirements" American Planning Association. rpt. 432. 1991 Pg. 7-26.

CONTEXT



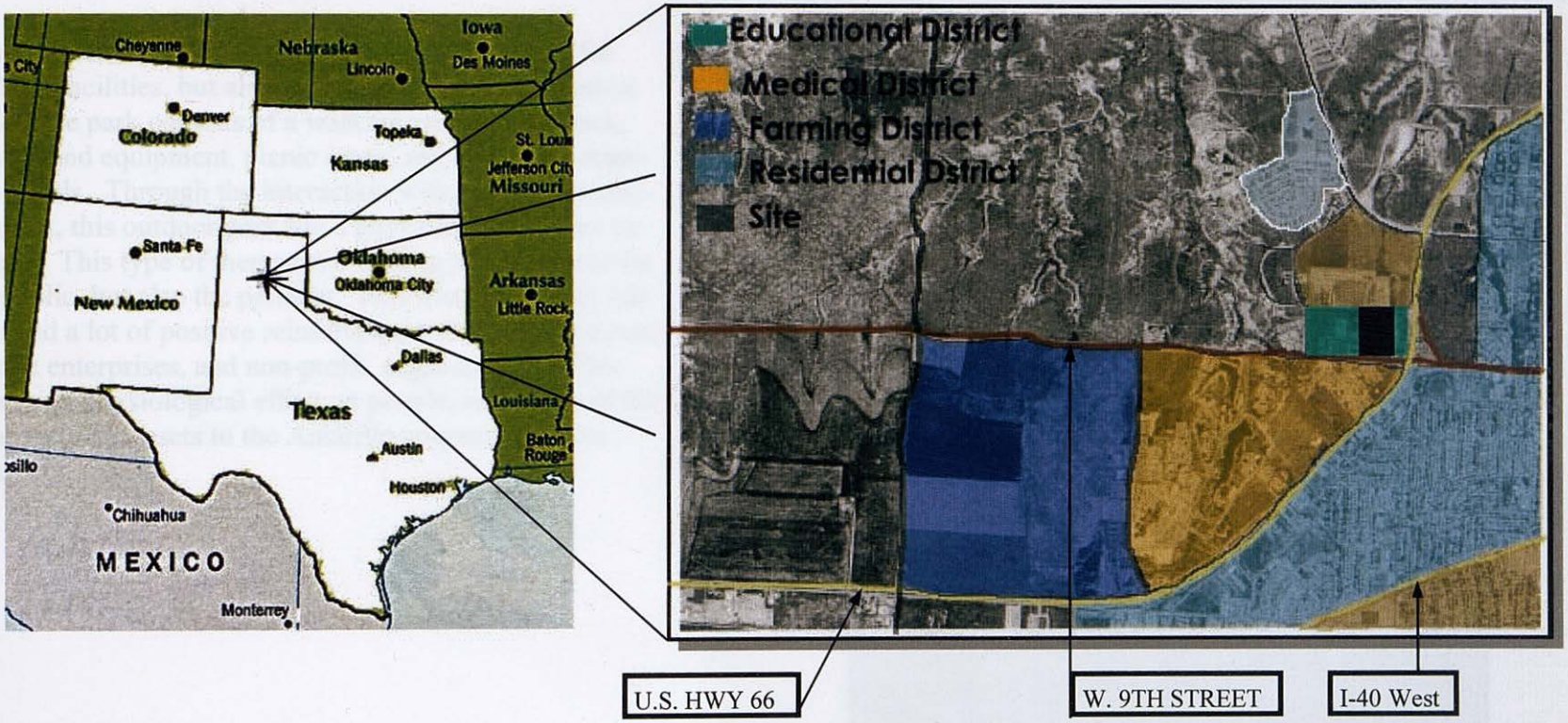
CONTEXT DESCRIPTION

Context Analysis

The proposed site for the telecommunication/distance education facility is in Amarillo College West Campus in Amarillo, Texas. Amarillo has been ranked number one in the United States for mid-size cites for startup businesses. Amarillo is a readily accessible in relation to time to four other states, New Mexico, Colorado, Kansas, and Oklahoma. It also has a major interstate (I-40) which almost runs from coast to coast, which offers Amarillo its revenue and unique identity. Since the introduction of the Amarillo Economic Development Corporation the business economy has been growing, and will soon be know as the worlds tilt rotor technology center after the addition of Bell Helicopter (illus. 26). With Amarillo leading in technology, the telecommunications would be great for area business and the economy to have conferences using the latest communication technology. Amarillo has 48 large businesses and 2 colleges which are all potential users for the facility. The site for the facility will be adjacent to two major districts, the educational district and the medical district (illus. 27).

Illus. 26 Picture of helicopter with tilt rotors for propulsion. Http://www.amarillo.com

DISTRICTS



The site is adjacent to a medical district and educational district which makes the location of the proposed telecommunication center and distance learning facility to be optimal. Two reasons why this site is good is because of the campus and the medical district. The college currently offers trade classes to teach students more about the real world. Some of the classes offered on this campus range from automotive repair, CAD, to nursing. The telecommunications facility will further enhance the students knowledge in communications and television production. Also, the medical district in this area is composed of two hospitals, cancer treatment center, plastic surgery, sports medicine, etc. All of these clients and many more in the area are all potential users of the facility to give lectures and seminars in the break troughs in health, or surgery. This facility will enable doctors to reach people all over the world to discuss issues and learn.

Illus. 27 District map Amarillo

PHYSIOLOGICAL CONTEXT

The medical district in Amarillo is not just a center for medical facilities, but also has about fifty acres of public park. The park consists of a walking and jogging track, playground equipment, picnic areas, and two water retention ponds. Through the interaction with the natural environment, this outdoor park has a physiological impact on people. This type of therapeutic healing not only benefits the public, but also the patients. This Medical Center has received a lot of positive reinforcement from corporations, private enterprises, and non-profit organizations. This area has a physiological effect on people, and is one of the most valuable assets to the Amarillo community (illus. 28&29).

Illus. 28 view of Medi-park

Illus. 29 Elevated view of Medi-park from BSA parking lot

CLIMATE

Day Temperature:

350 days of sunshine

July (hottest day's) 89 degrees

December (coldest day's) 50 degrees

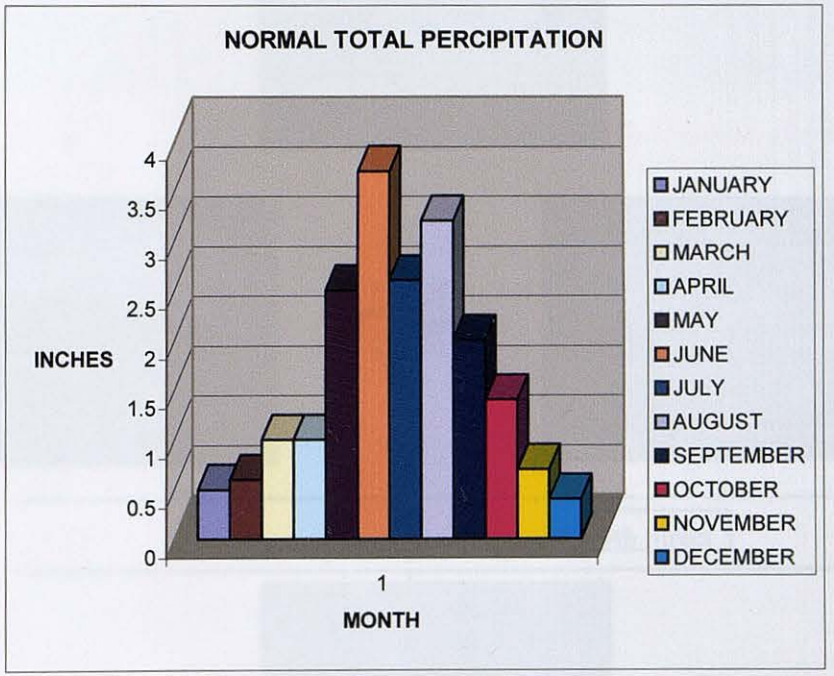
Climate: Mountainous

Rainfall: 20" average annual rain (illus. 30)

Wind speed: 13.6 MPH (NW)

Altitude: 3,672

Topography: This area has an elevation change of 120' from the highest point to the lowest.



Illus. 30. Annual precipitation
Data gathered from : Texas Almanac 1998-1999, Pg. 117

SITE DESCRIPTION

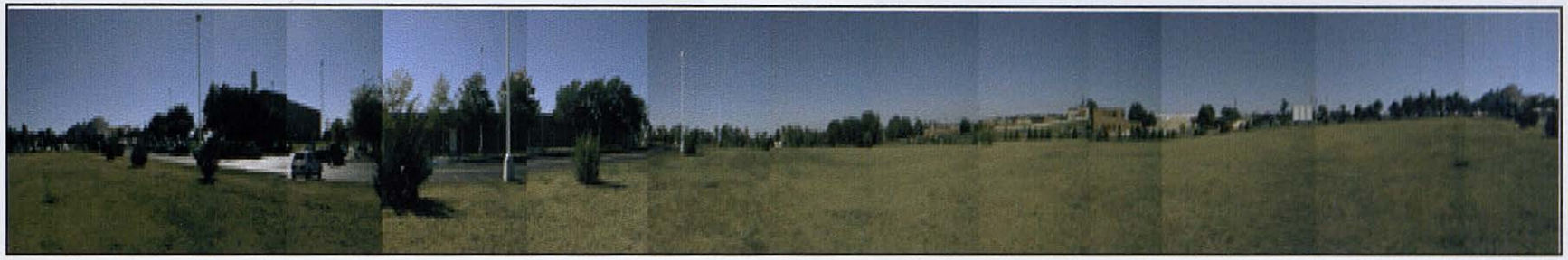
The site is located on the northwest potion of the city of Amarillo, approximately six miles from downtown. It is north of Interstate 40 and is in close proximity to U.S. Hwy. 66. The facility will be located off of 9th street and Amarillo Boulevard. The land is currently vacant land with Amarillo College on the west, the Veterans Hospital and the Medical Center is on the south side across 9th Street, and on the east side of the site is small medical offices (illus. 31). The site has parking spaces and area lights on the west side, and has power lines and utilities running in the alley on the east side.

N

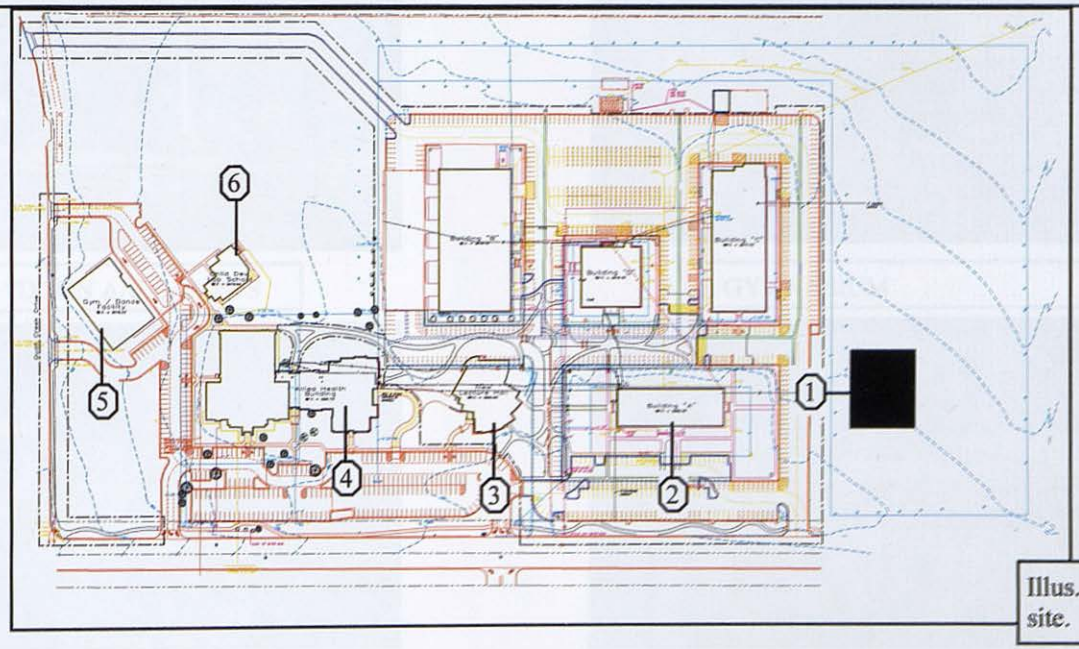
9th Street

Illus. 31. Views around site

SITE VIEWS



Illus. 32 This is a 360 degree panoramic view of the site from standing in one spot. The small dark spots on the fist and last frames are the same. The starting frame is from the right to the left, moving counterclockwise. Some of the key views from the site are down the parking lot looking to the east.



Illus. 33 built context near site. See page 59 for views

BUILT CONTEXT

1. MAIN AXIS FOR THE PROPOSED FACILITY

2. VIEW OF BUILDING "D" ON A/C CAMPUS

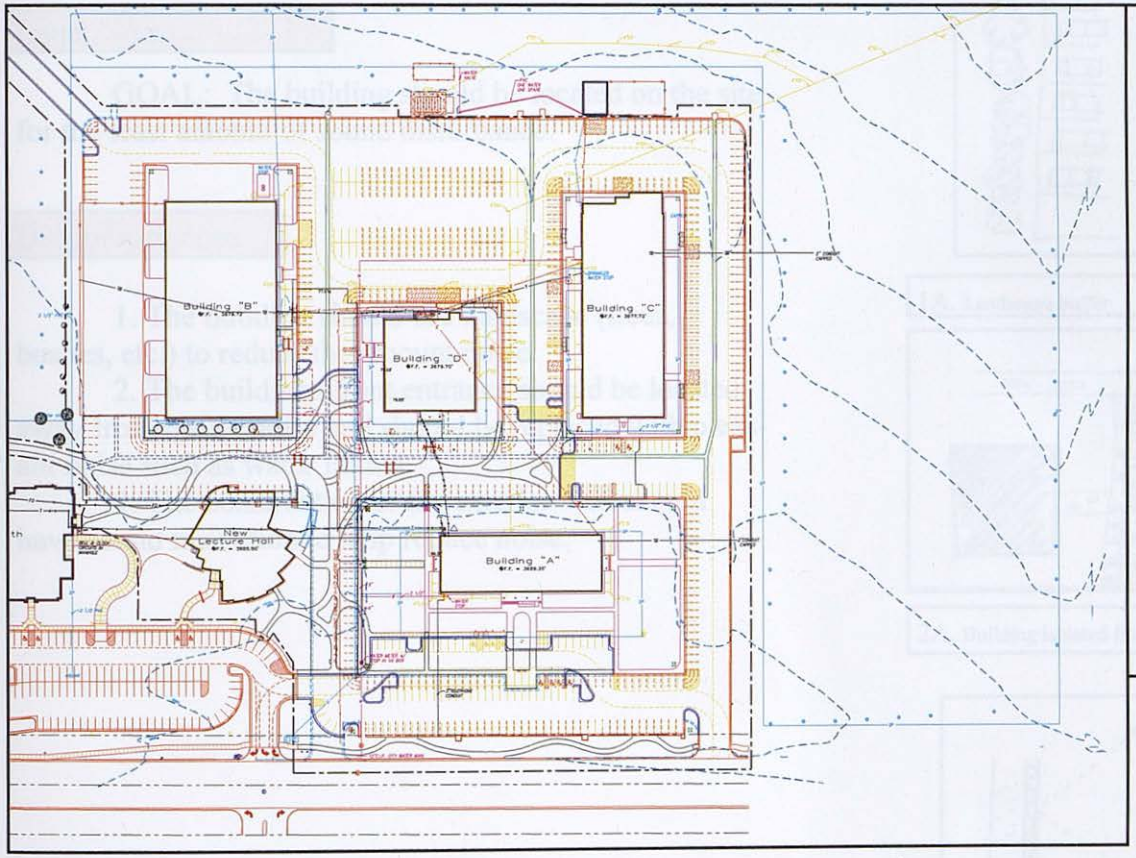
3. LECTURE HALL

4. ALLIED HEALTH BUILDING

5. GYMNASIUM

6. AMARILLO DIAGNOSTIC CLINIC

SITE ANALYSIS



LEGEND

Ingress/ Egress

Noise

Wind

Utilities

Views

Pedestrian Traffic

Vehicular Traffic

Existing Buildings

Plants/Shrubs

Drainage

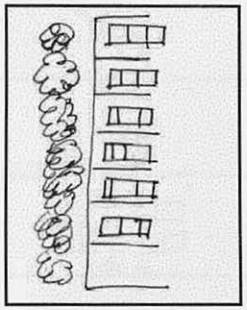
CONTEXT ISSUES AND RESPONSE

Issue: Noise

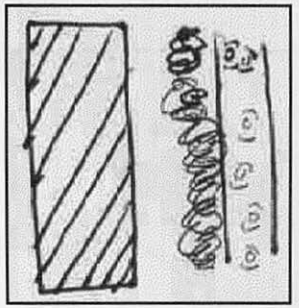
GOAL: The building should be located on the site for the least amount of sound disturbance.

Design Response

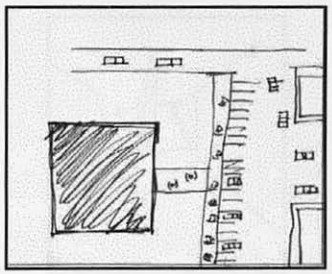
1. The building should use landscape (trees, bushes, etc.) to reduce the amount noise.
2. The buildings front entrance should be located away from traffic noise and should be replaced with pleasant noise such as water falling.
3. The construction of the exterior wall should have sound insulation to help reduce noise.



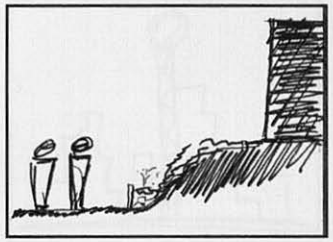
1A. Landscape buffer



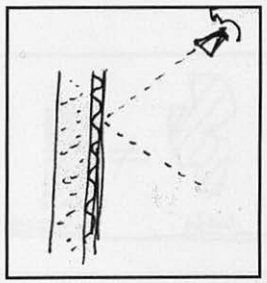
1B. Pedestrian buffer



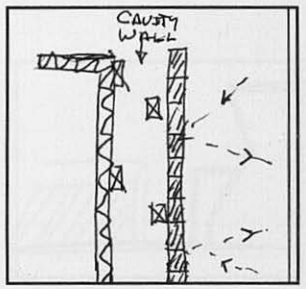
2A. Building isolated from traffic



2B. Water element as buffer



3A. Structural wall with insul.



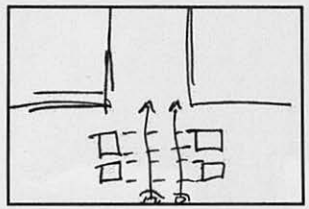
3B. Cavity wall

Issue: Image

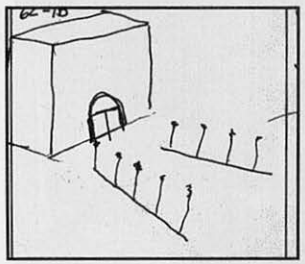
GOAL: The new facility should have a distinct identity upon arrival.

Design Response

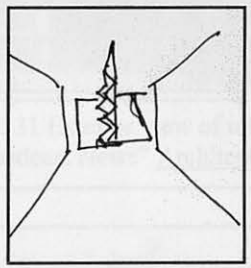
1. The new facility should create a welcoming environment upon arrival.
2. The new facility should be a recognizable landmark for the context.
3. The new construction of the facility should be different from area context.



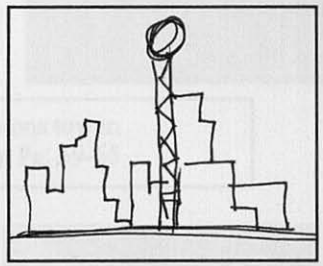
1A. Entry feature



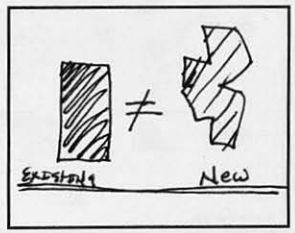
1B. Change in scale to entry



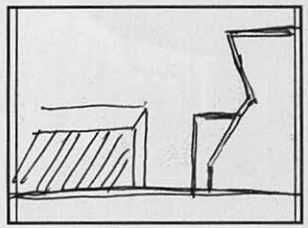
2A. Recognizable landmark



2B. Hierarchy



3A. Existing vs. new

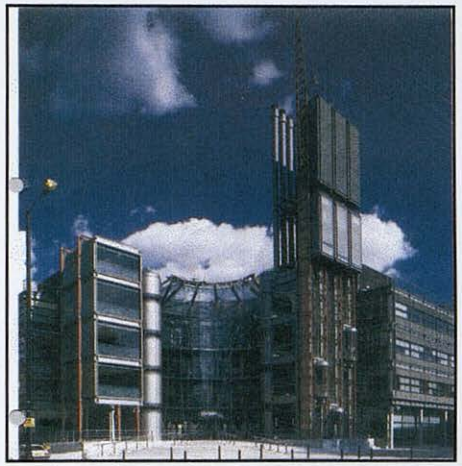


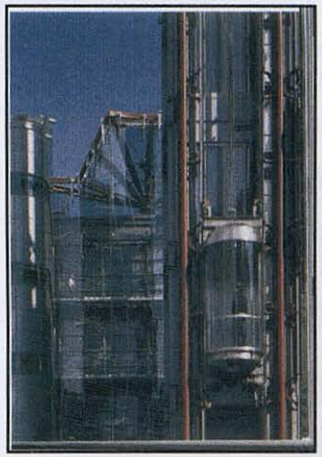
3B. Scale

CASE STUDY

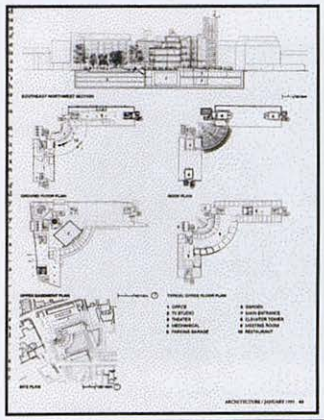
Channel 4 Headquarters, England
Richard Rogers Partnership, 1994

The channel 4 headquarters is located in Westminster, England. The buildings uses high tech language to symbolize the advancement in television technology. The exposed structure and glass connections help enhance this feel. Richard Rogers also expresses some of the vertical circulation systems with colors to help draw attention to the facility. This facility communicates to the viewers through its use of materials and exposure of the structure.





Illus. 31 Exterior view of telecommunications tower.
"Broadcast News" Architecture 1995. Jan. Pg. 59-65

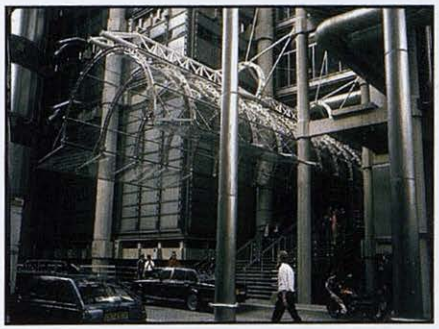


Illus. 32 Plans and interior view.
"Broadcast News" Architecture 1995. Jan. Pg. 59-65

Lloyds Building, England
Richard Rogers, 1984

The Lloyd building in London, England was one of the most remarkable buildings for its time. This building is a twelve story insurance office headquarters. It was the fist building to be constructed around an atrium with glass galleries around the space. The atrium goes up to a sixty meter high glass barrel vault that is a dramatic feature on the interior. On the exterior of the building the dramatic feature is the elevator shaft which is made from metal bands with transparent glass above each band (illus. 33). Richard Rogers expresses connections in every way possible in the building (illus. 34). This high tech building is out of context from the area surroundings which makes it stand out.

Illus. 33 Exterior view with circulation fully expressed.
http://www.greatbuildings.com/cgi-bin/gbi.cgi/



Illus. 34 Views of detailed connections.
http://www.greatbuildings.com/cgi-bin/gbi.cgi/
Lloyds_Building.html/cid_1758372.gbi

BIBLIOGRAPHY

Howard, Davis. "Lloyds New Building" Architectural Design. 1984 March/April.

"Broadcast News" Architecture. 1995 January.

"Texas Almanac" Dallas Globe News 1998-1999

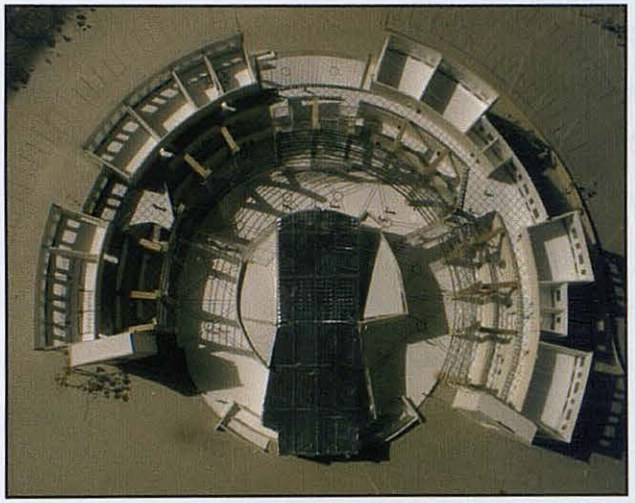
http://www.greatbuildings.com/cgi-bin/gbi.cgi/Lloyds_Building.html/cid_1758372.gbi

Http://www.amarillo.com

CONCLUSION

PROCESS:

The process for the design of a telecommunications/distance learning facility was quite difficult to tackle. From the schematic phase to the final, the process was long and difficult. For a long duration of the project the placement, and the organization of the auditorium gave me difficulties. In the final design, the auditorium bacame the center of my metaphor, the satellite dish (illus. 34). This would be where people would gather as a large group and then break away and disperse the information the learned. During all phases of the design this space has been developed to my satisfaction but much work is still needed to be done in the development of it. One of the main reasons that I had problems with the design of this space was because it is desing within itself. As I go through the process of my design I will highlight the areas of difficulties as well as the things that were suggested from my professors.



ILLUS. 34. The concept developed from a satellite dish . This metaphor was translated to both plans and section.

SCHEMATIC DESIGN REVIEW:

Most of the ideas that were presented in design schematic phase were used just as a starting point for the designing of the telecommunications/distance learning facility. The plans and the whole process was mainly to establish a parti. The concept that stared to develop was that of a curvilinear building. I kept on coming back to the idea of having a center and having the facility go around it. However, the idea of using the satellite dish as a metaphor for the entire design did not really get developed until this semester.

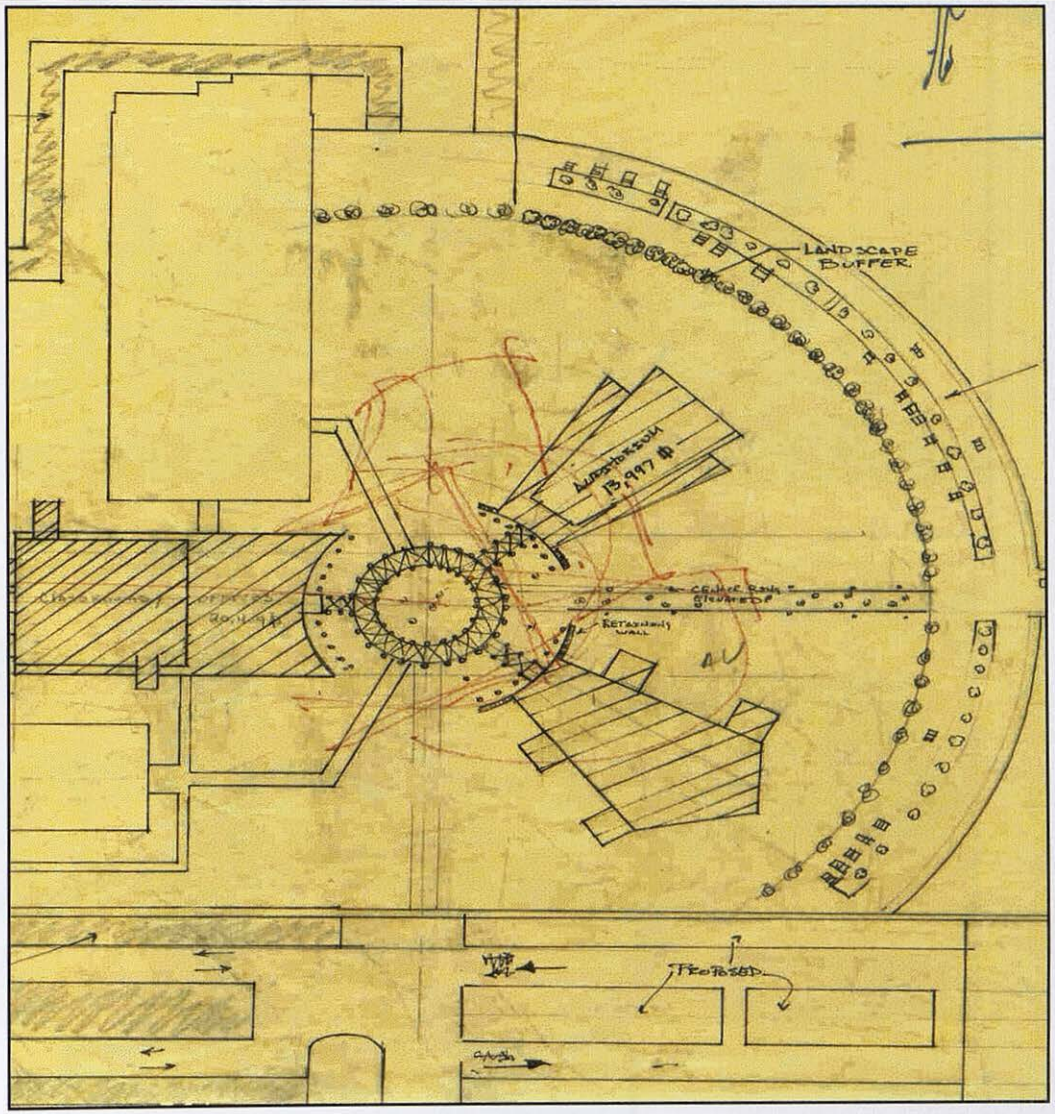
I looked at the idea of spitting up the facility into three buildings that would have a common center. The idea behind this was to create a central space where everyone could come and the go to the desired building. I set up the facility into three different buildings, the administration, auditorium, and the classrooms. I then tied each of the buildings together a sky bridge that would overlook the center (illus. 35).

The concept of parking being radial around the facility was probably the only thing that stayed consistent throughout the whole design. This was created to be a buffer zone. It separated the main facility from the traffic by placement of landscape elements.

The classroom building was placed in the between two of the existing buildings. I felt that this would tie the whole facility together. However, it was a bold node to the end of the axis.

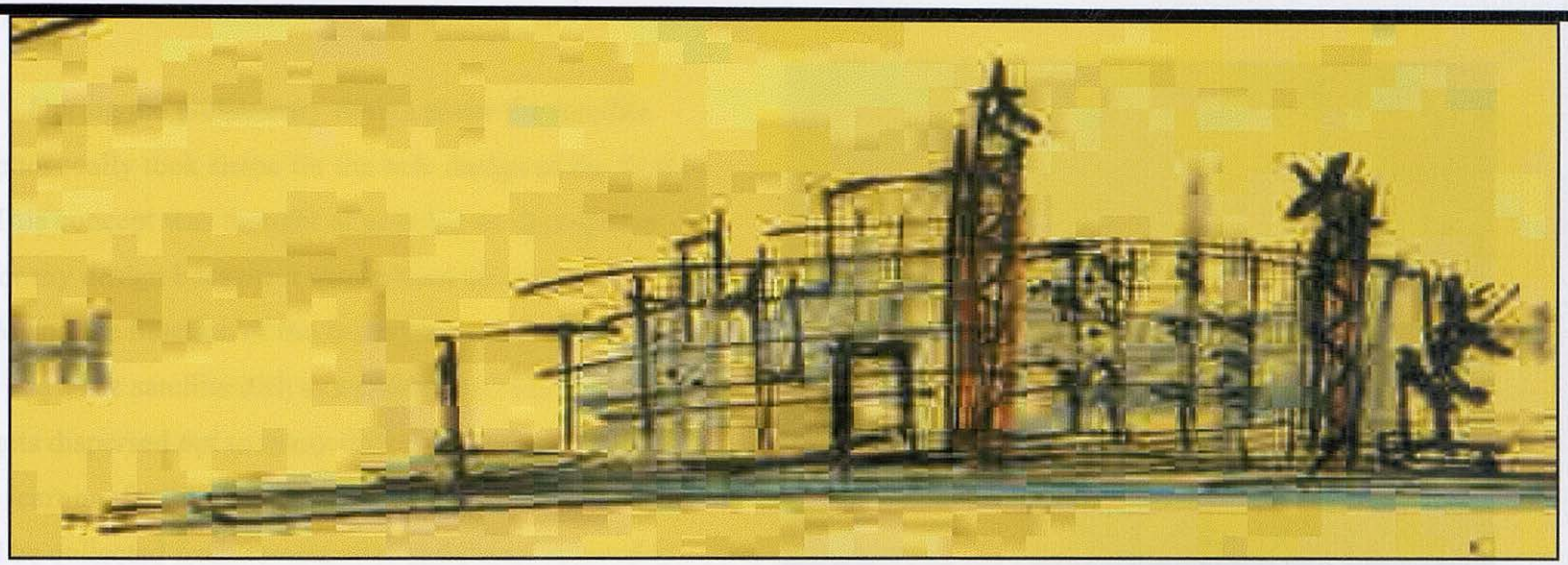
In the elevations I had envisioned a high-tech use of materials to help the facility stand out. I saw the faciility as having many layers, which would lead to the use of many different roof heights (illus. 36).

SCHEMATIC DESIGN REVIEW:



Illus. 35. Schematic site plan where the idea of the satellite was emerging.

SCHEMATIC DESIGN REVIEW:

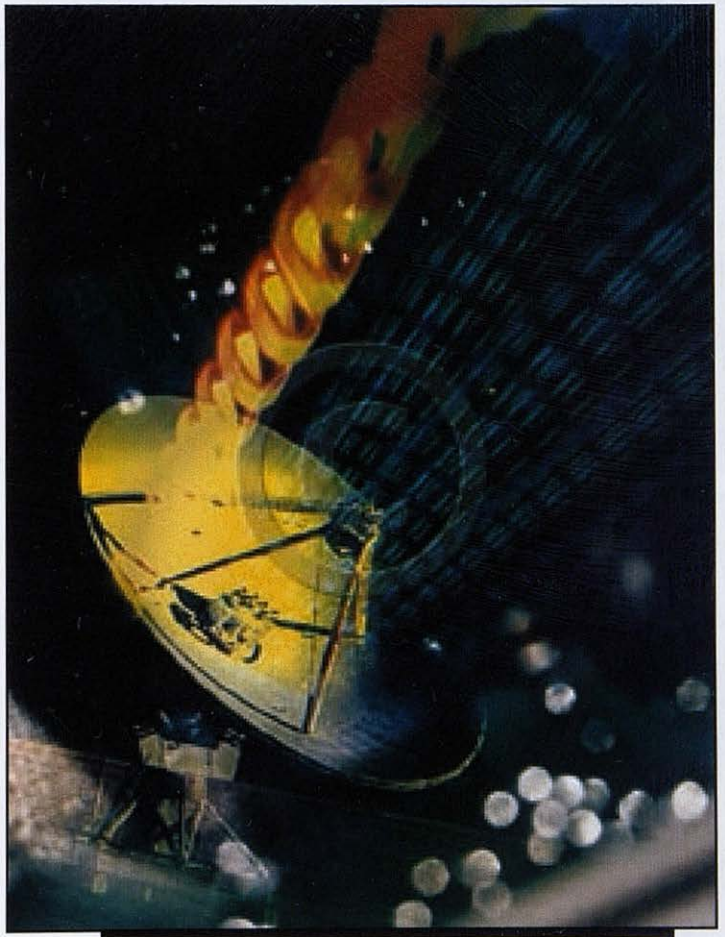


Illus.36. Elevations studies, during schematic phase.

PRELIMINARY DESIGN:

During the preliminary design phase the satellite metaphor really took shape for the hole design of the facility. This concept was thought of as being an appropriate one for my design because it symbolized the actions of people and the function of the facility in two main ways. First, I saw the satellite dish as a collector of information that gets dispersed out to many different medias. The distance learning facility has a similar concept. Information could be collected from remote sites and then dispersed to different computers and screens. As information comes in it also has the capabilitites of sending out. Second, the people are foreseen as the transmitters and receivers of the information. They come in by car use the facility and take the information they have gained and shared it with others (illus. 37).

I placed the auditorium in the center to symbolize where the most concentrated amount of information is going to reach people at that site. This also allowed for me



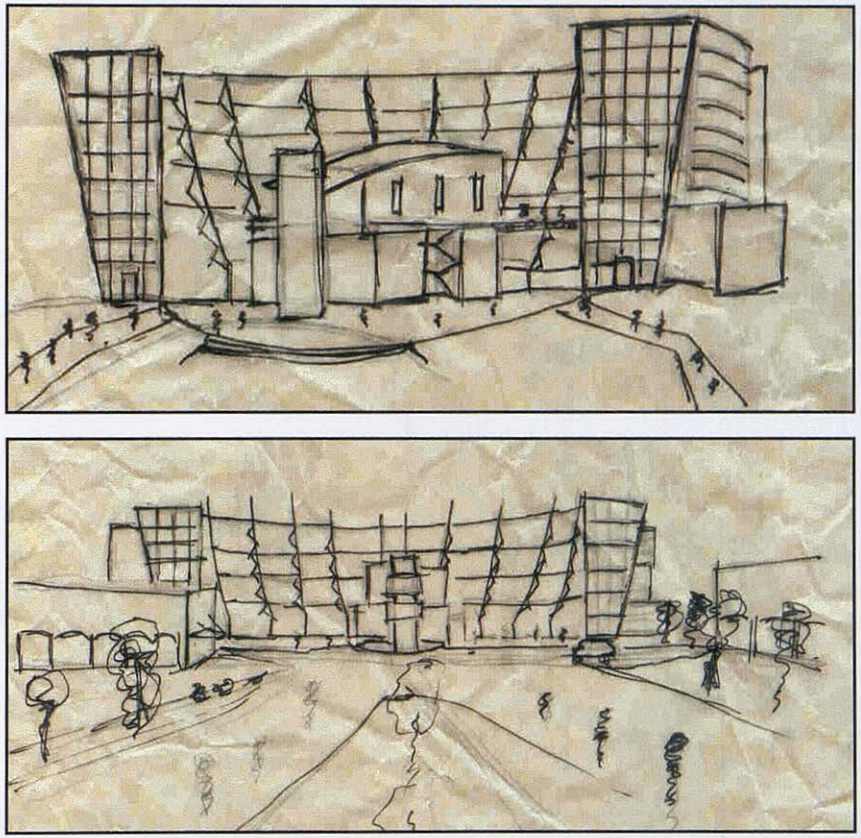
Illus 37. The concept was derived from this picture. Information comes in and vise versa. White dots represent collectors (people).

PRELIMINARY DESIGN:

to create an interesting series of walkways to the upper auditorium space. During the review it was said that the auditorium need to be a bigger volume for acoustical reasons. I then further studies the possibilities of going below grade, to get the extra space, however this was not working to well with the design. I also ran in to problems with creating a second floor balcony area for the auditorium. The main difficulty was the site lines.

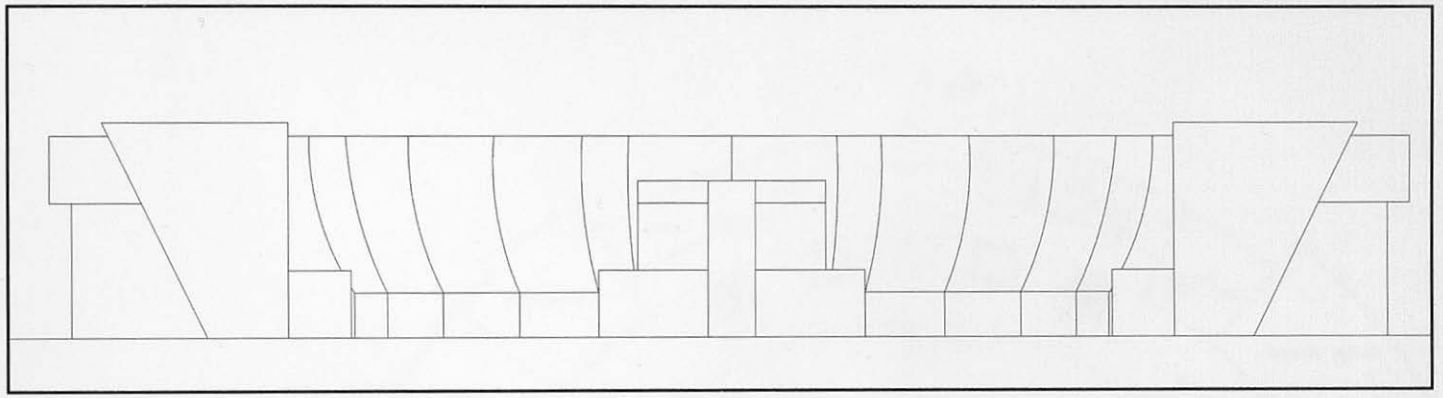
From the perspectives you can see that the auditorium space does not fit in really well with the circular building (illus. 38). The bowl shape tends to overpower the auditorium space which makes the whole design look uncoordinated. However, during the preliminary stage of the design I was able to come up with the overall organization of the main building and develop the entry of the facility.

By placing the facility as a terminating point along the axis, I really made the building stand out. This would allow me to place landscape in-between the existing buildings and create an outside mall that would help the tie the whole campus together with this outside mall.

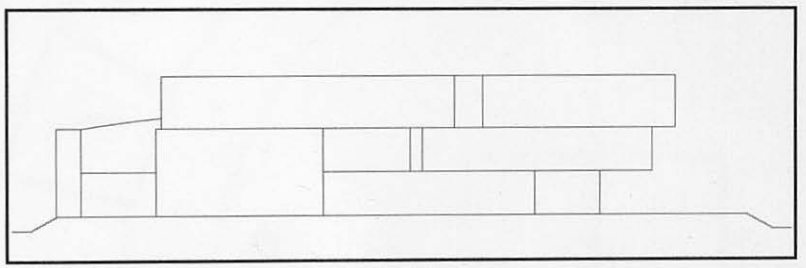


Illus. 38 Perspectives of the preliminary design of the facility. The auditorium, in the center, does not fit with the design and was later redesigned in the final design.

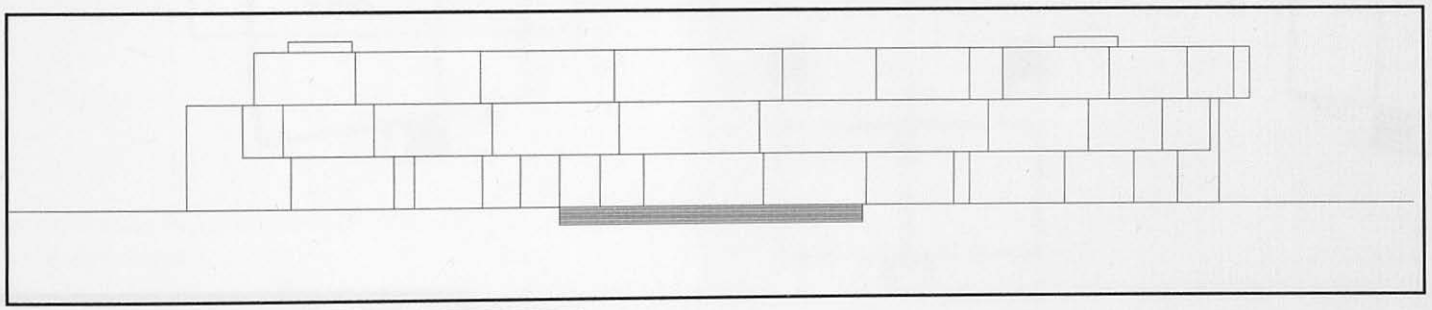
PRELIMINARY DESIGN:



WEST ELEVATION



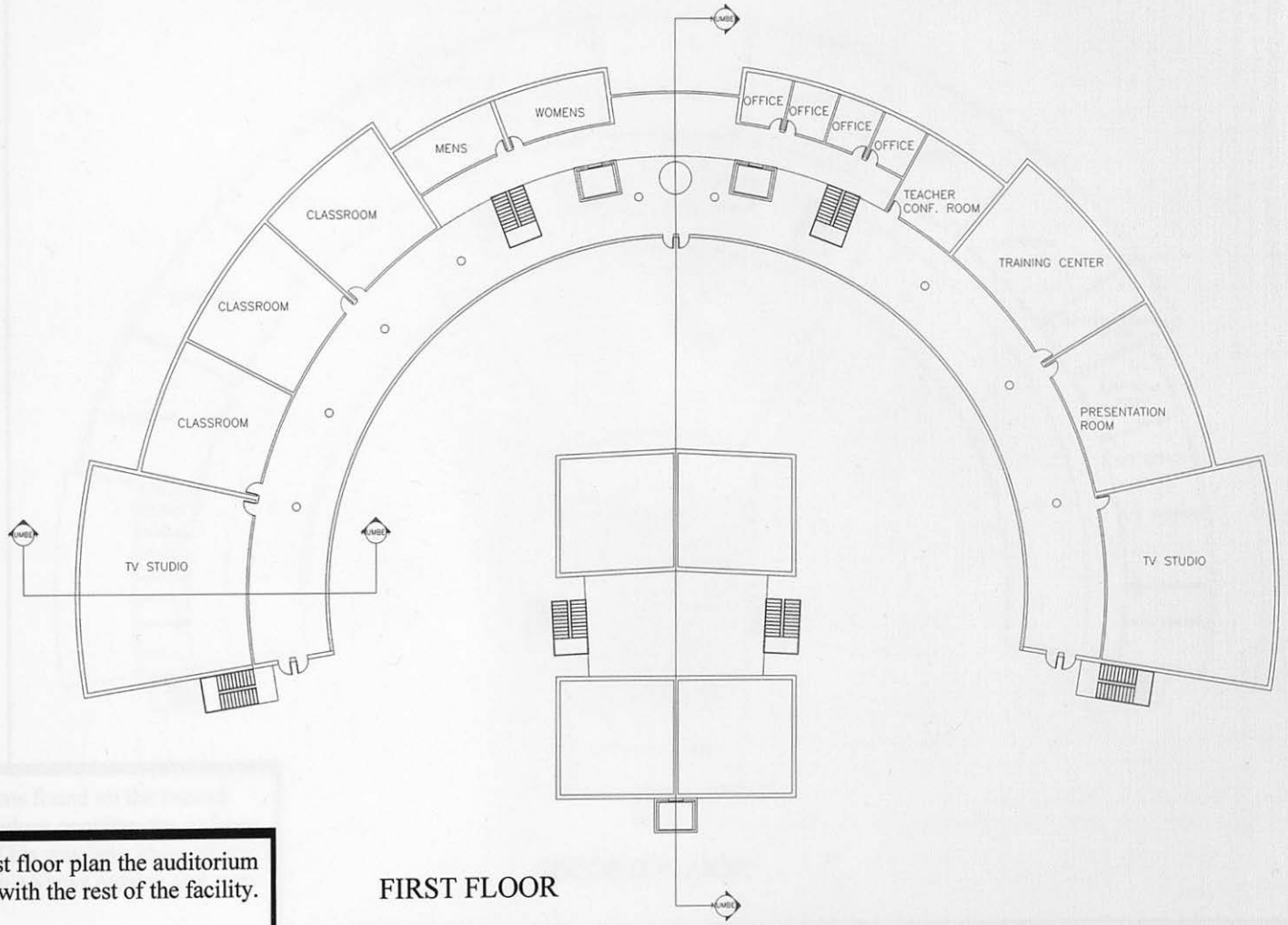
NORTH ELEVATION



EAST ELEVATION

These were the preliminary elevations. The study of windows was not done at this time. The massing of the buildings changed to the final design.

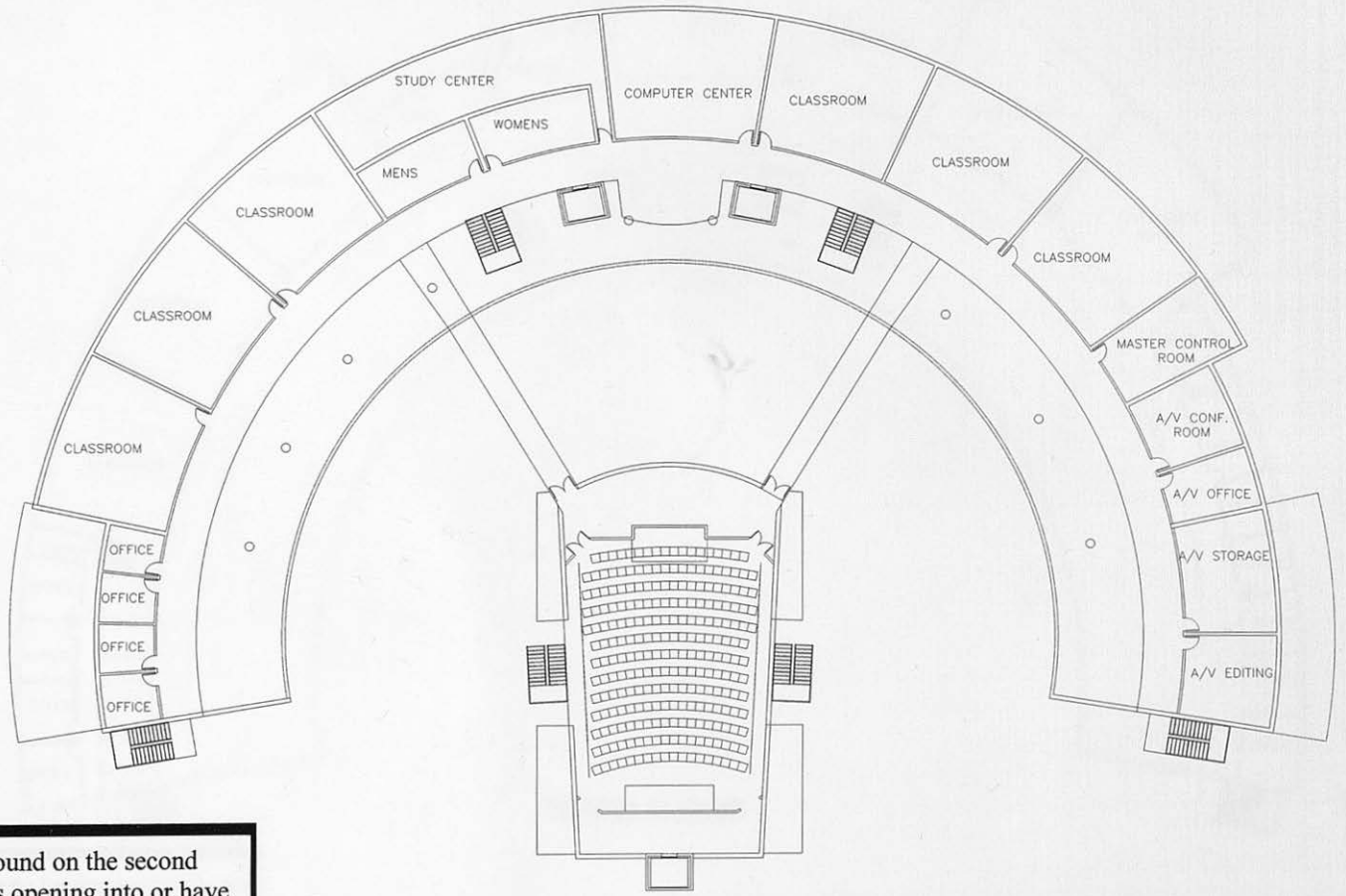
PRELIMINARY DESIGN:



FIRST FLOOR

As one can see in the first floor plan the auditorium space does not go along with the rest of the facility.

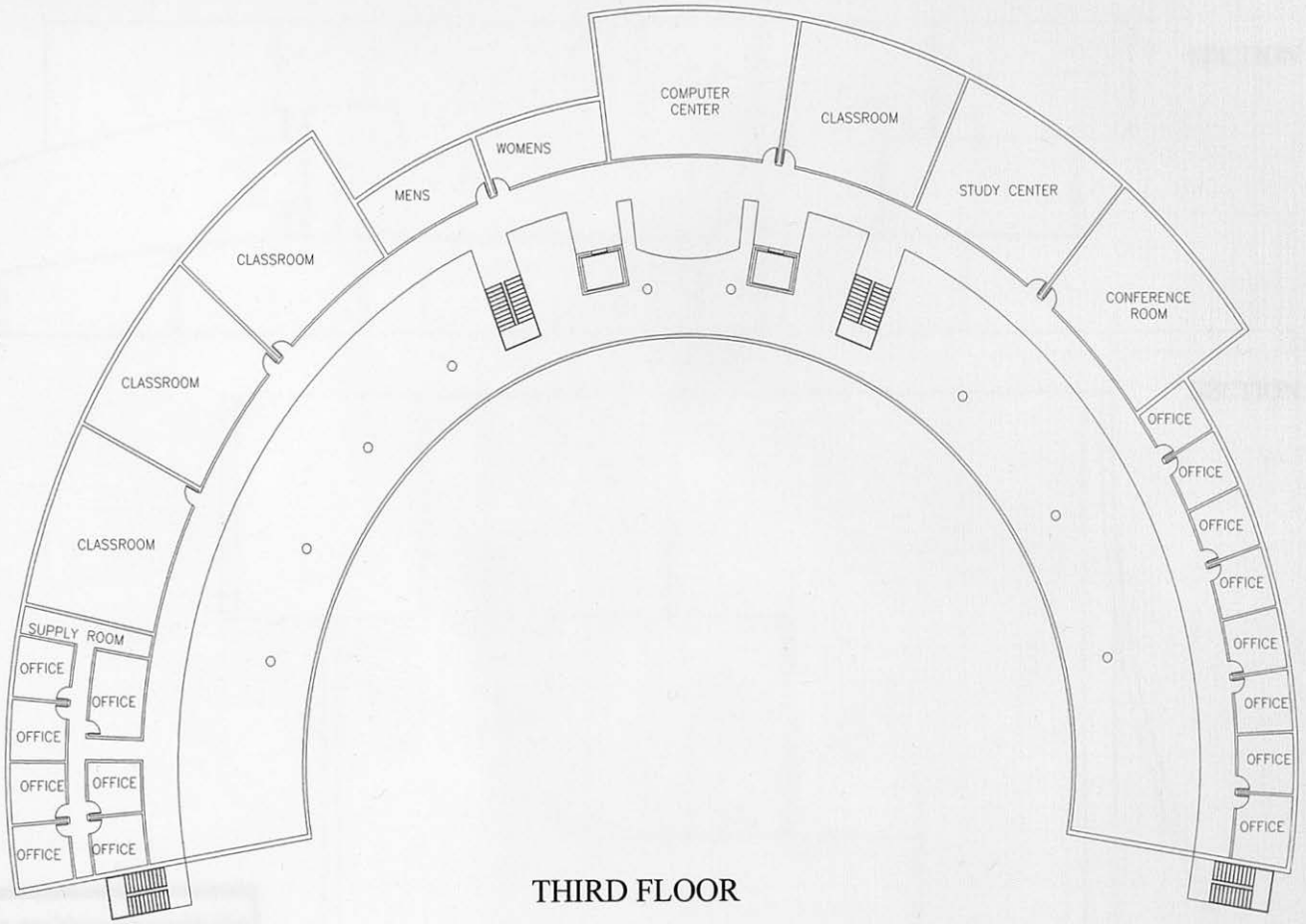
PRELIMINARY DESIGN:



SECOND FLOOR

One of the major problems found on the second floor was that the sky bridges opening into or have views of the restroom. This was later changed and I opened up the space with a views outside and seating areas.

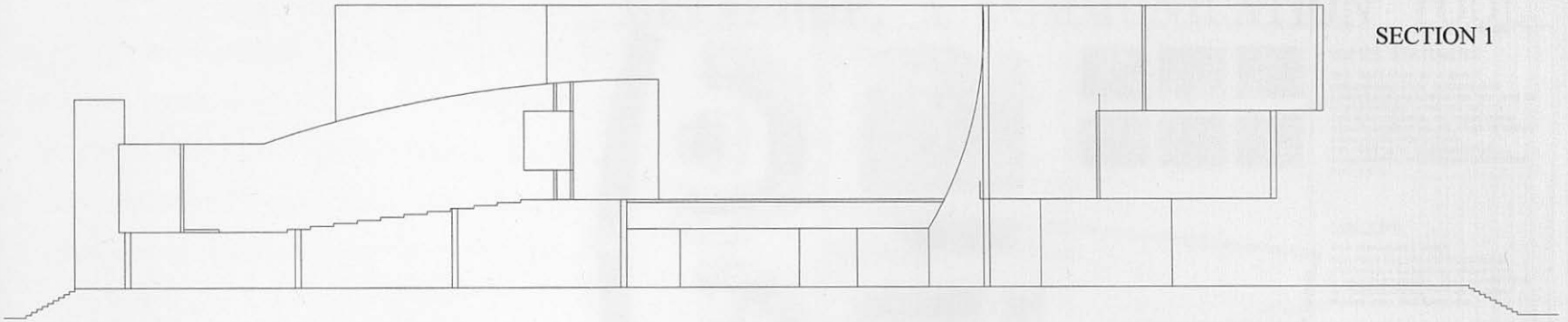
PRELIMINARY DESIGN:



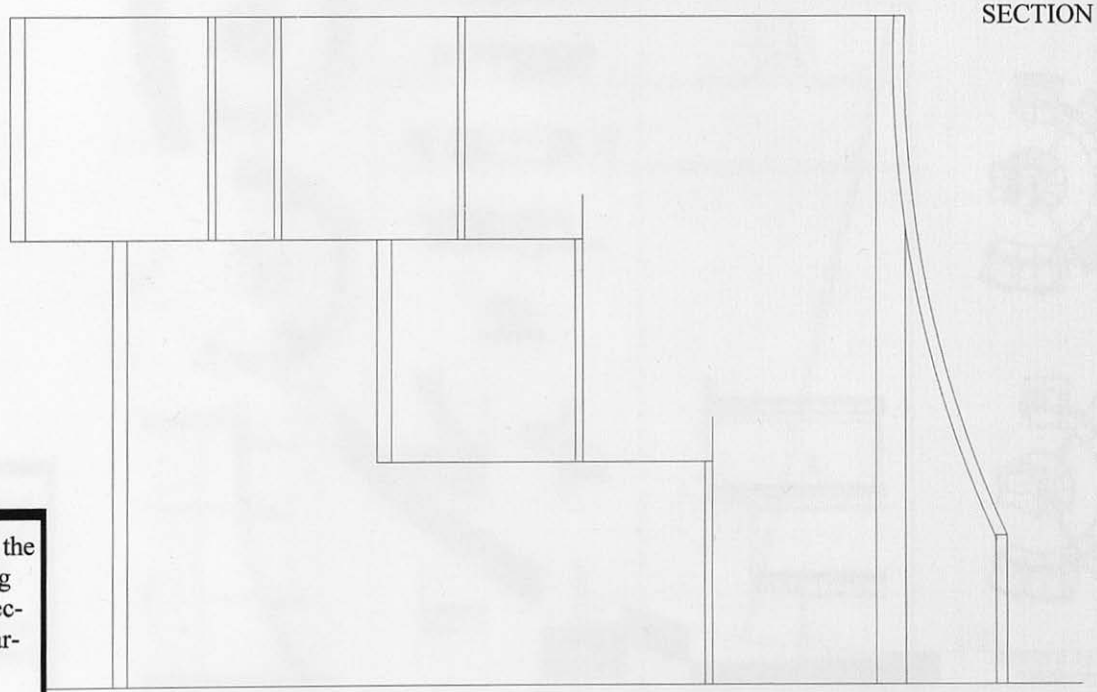
THIRD FLOOR

The third floor was split up into having more spaces in-between the offices, and were dispersed on the third floor during the final design phase.

PRELIMINARY DESIGN:



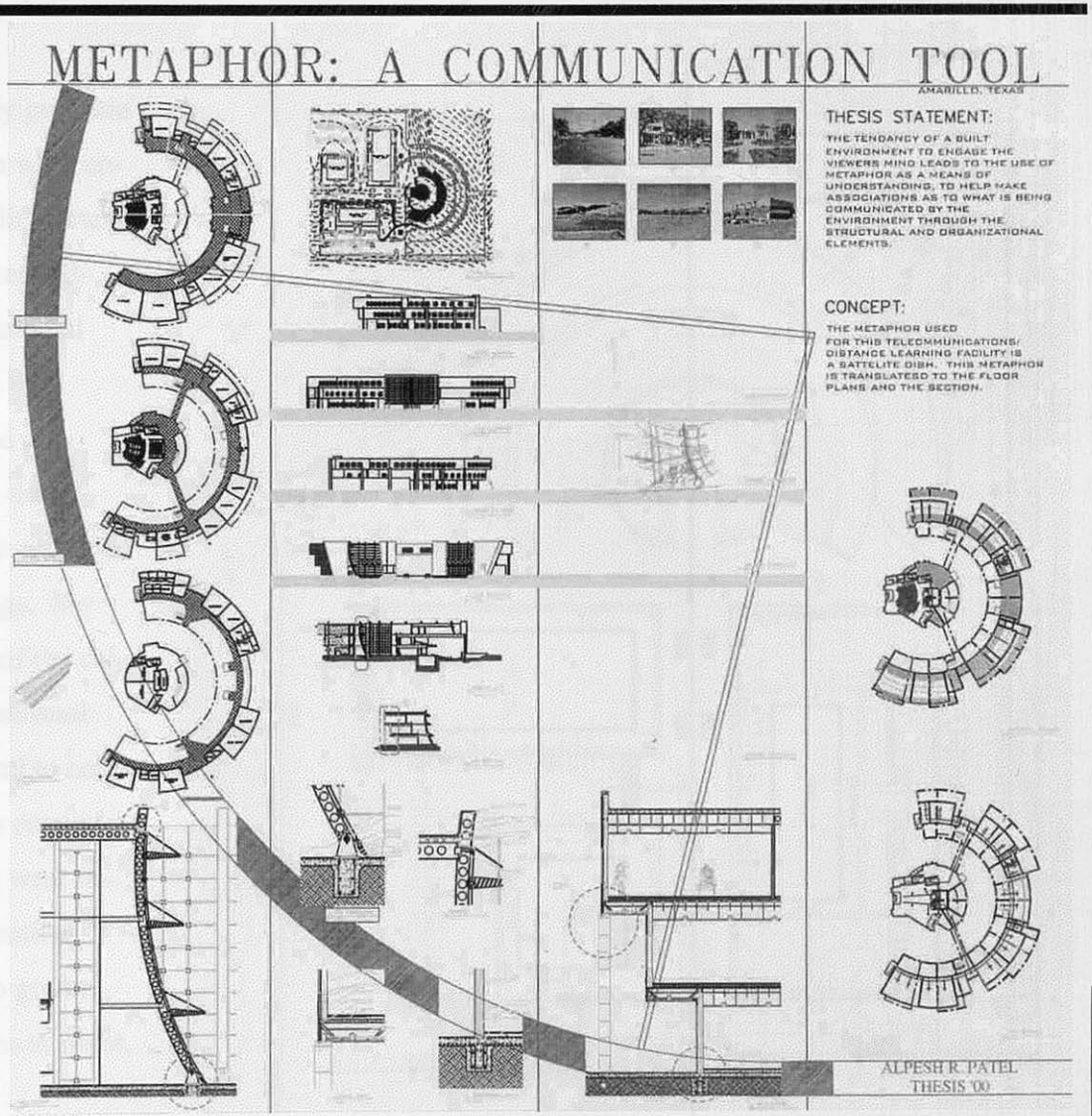
SECTION 1



SECTION 2

In the section above, the main problem was with the auditorium space. The site lines were not working and the first floor had a lot of usable space. In section 2 you can see how the satellite curve was staring to take shape.

QUILIFICATION:

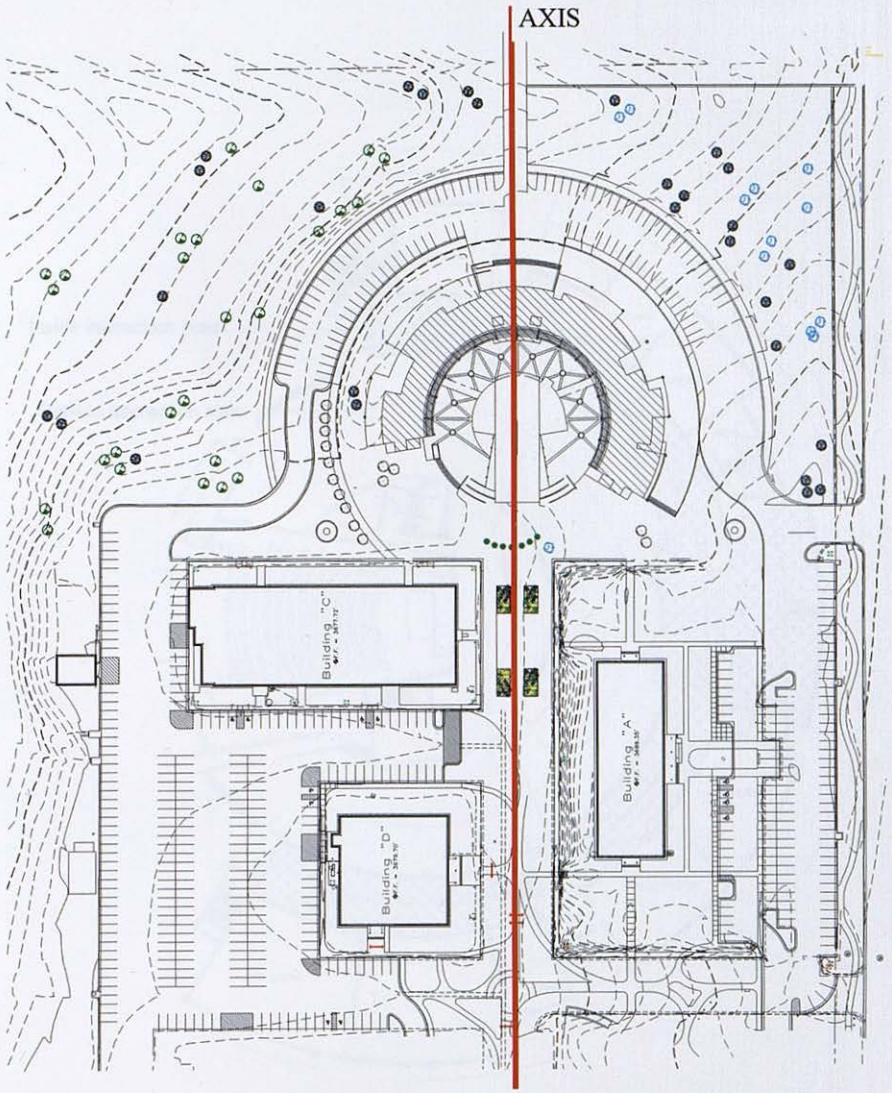


During the qualification review, this was the layout that I pinned up. The overall composition was tied together with the use of the large arc, which symbolized the metaphor for my design.
One of the things that they did have me look at was the auditorium, they believed that it was to complex and could be redesigned

RESPONSE TO ISSUES: ENGAGEMENT

The main issues that were present in my program were addressed in my design. The main issues were engagement, communication, perception, flexibility, interaction, noise and image. Some of the issues were addresses conceptually, while others were done tackled with design. .

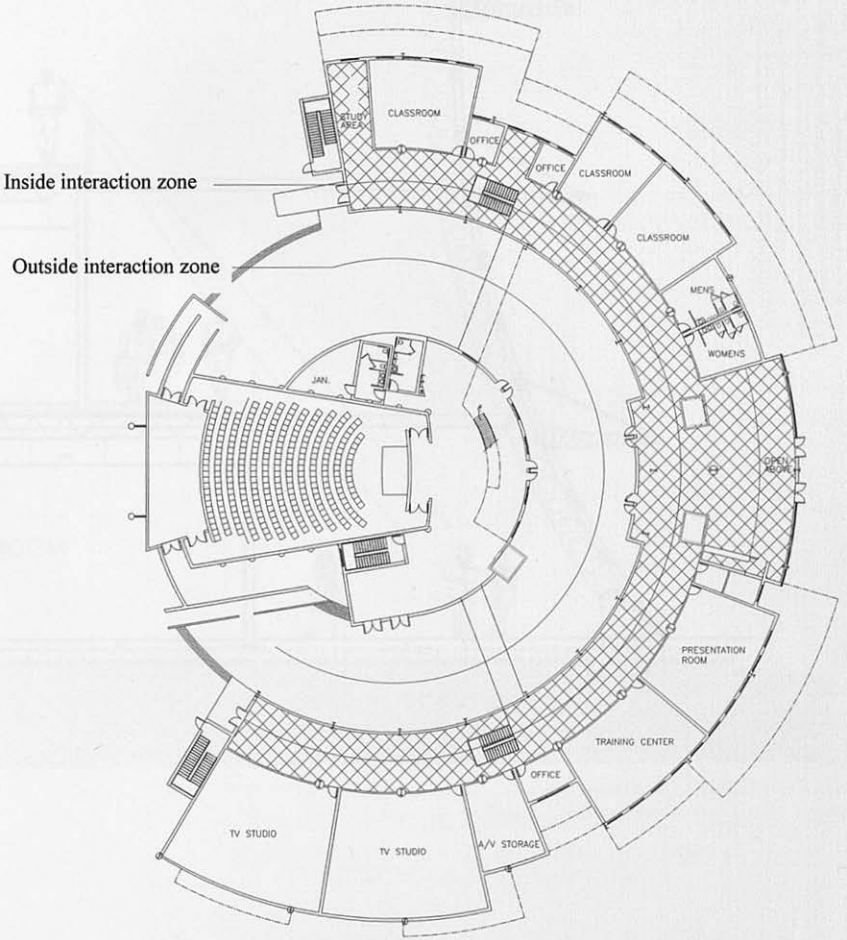
The issue of engagement was addressed all through out the design. One of the main ways that I tacked this issue was to place the facility at the end of an axis which was created by the existing buildings. My facility would provide a hierarchy for the rest of the college because it is three stories tall and has an unusual form to it. This would engage the viewers mind to come toward the building and experience it. Also to engage the people I placed a transparent screen on the west façade of the auditorium. This will be an information screen to help the users see where they need to go for classes. The screen is also used for productions at night.



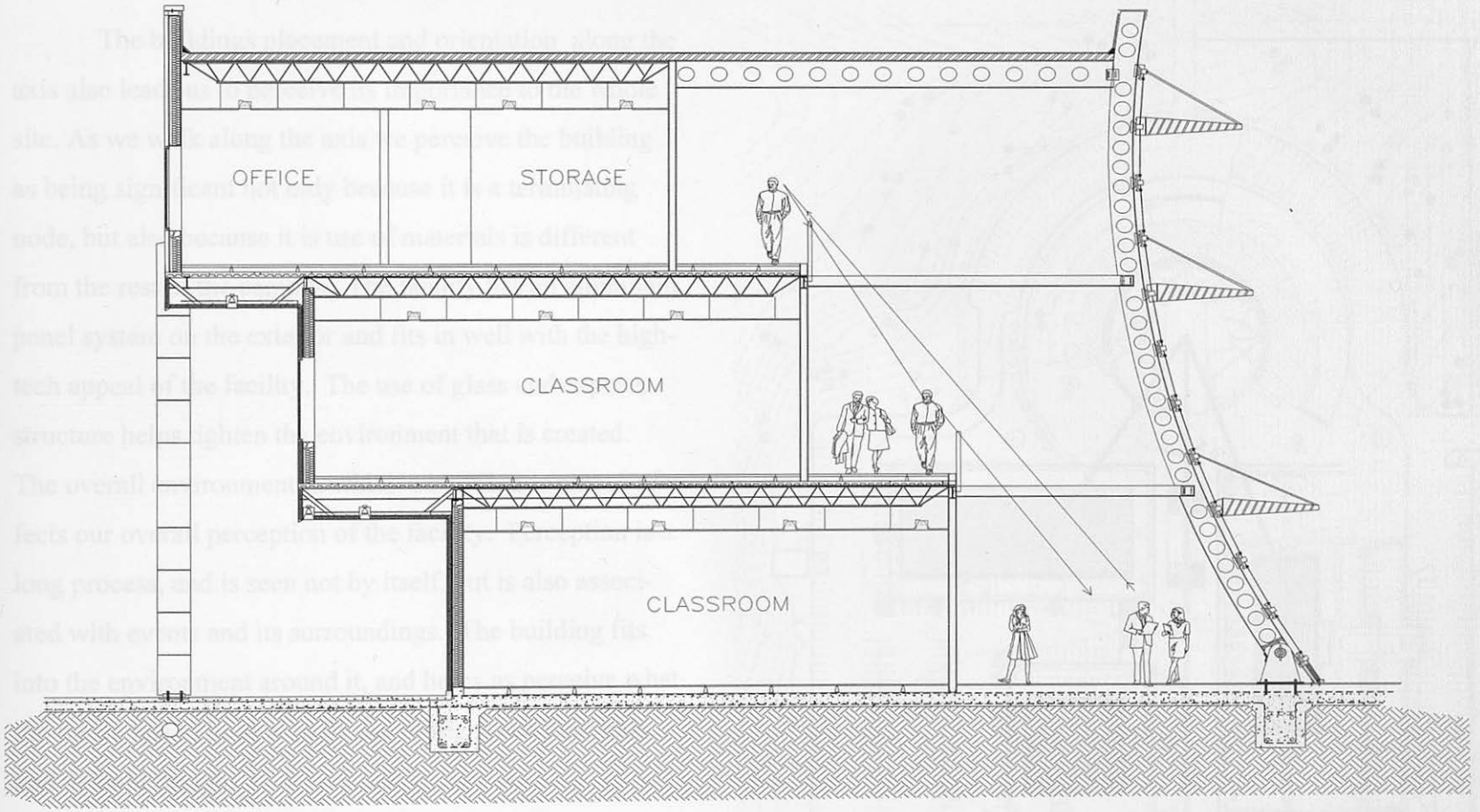
ISSUES: COMMUNCICATION

When the building engages us it also communicates to us. I wanted communication to occur at a more personal level, communication between people. I tried to create many areas both inside and outside where personal interaction would occur. The outside courtyard area in-between the auditorium and the facility is a good space for social interaction to occur.

Inside of the facility one of the major ways that I was able to show communication was through the circulation. If you are on the ground floor you can see all the way across the facility and all two levels above you too interact with people. This also leads less confusion as to where you are and where you need to go in the building. Through out each floor you are also able to see outside and this also brings a level of communication to a person.



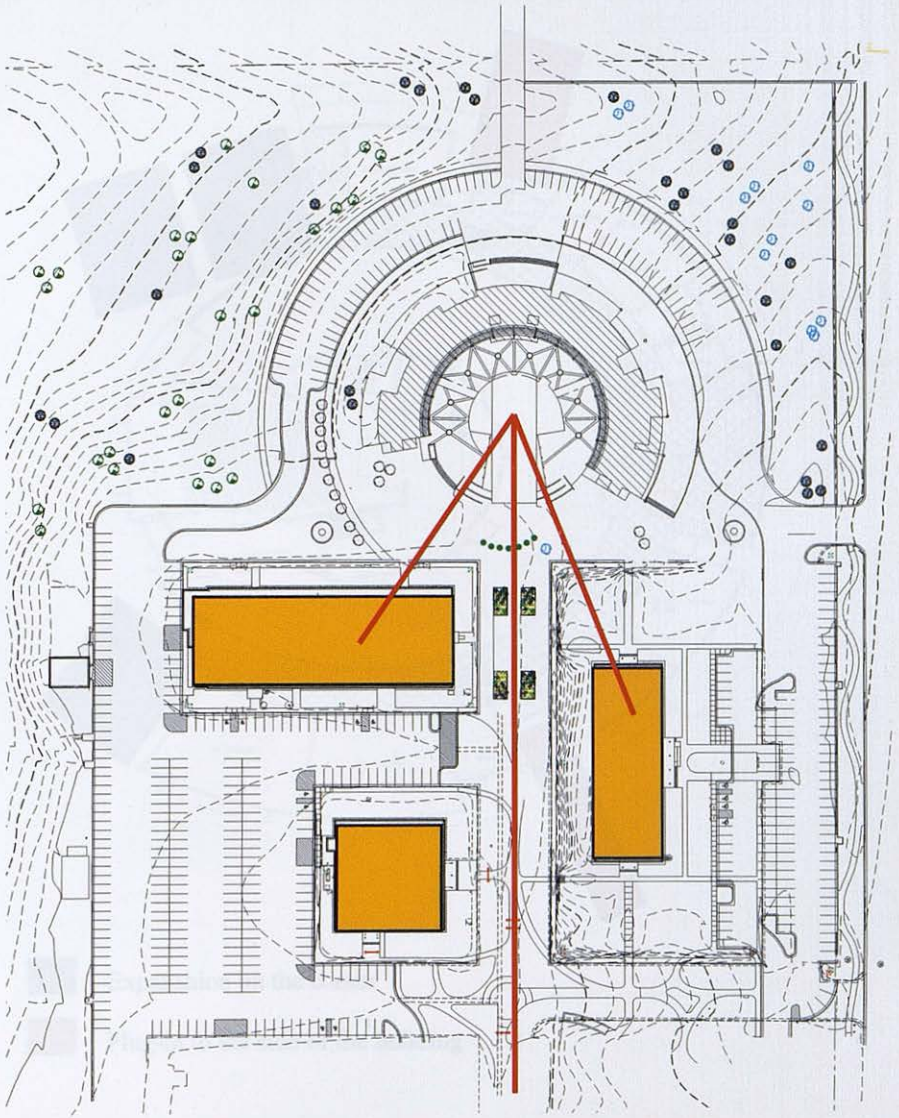
ISSUES: COMMUNCICATION



The open space in the entry of the facility allows for people to communicate on all levels. This also allows them to see where they need to go.

ISSUES: PERCEPTION

The buildings placement and orientation along the axis also leads us to perceive its importance to the whole site. As we walk along the axis we perceive the building as being significant not only because it is a terminating node, but also because it is use of materials is different from the rest of the campus. The facility has an aluminum panel system on the exterior and fits in well with the high-tech appeal of the facility. The use of glass and exposes structure helps tighten the environment that is created. The overall environment in which a building is placed effects our overall perception of the facility. Perception is a long process, and is seen not by itself, but is also associated with events and its surroundings. The building fits into the environment around it, and helps us perceive what the future has to hold with its use of high-tech materials and its bold design.

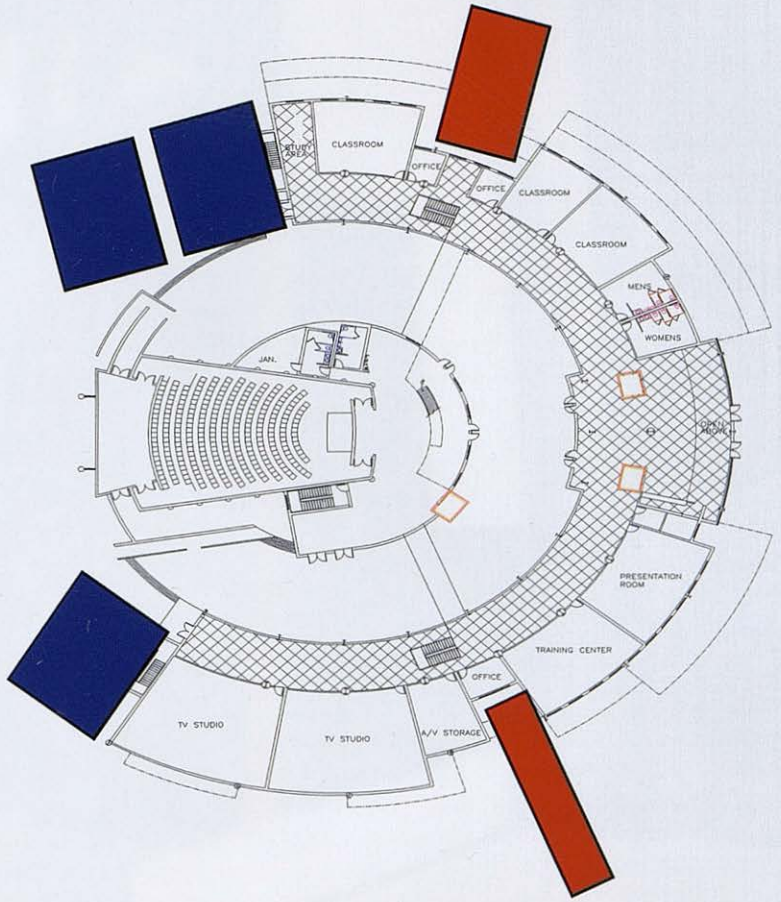


Existing buildings

ISSUES: FLEXIBILITY

The facility is organized in such a fashion that it can be flexible in many aspects. The facility could add another floor on to the third floor if needed, and it could also continue to wrap around and complete the circle form more. Also the facility has the capabilities of adding on rooms like units on the first floor, and then expanding up as necessary. The outside curve of the facility has a series of notches were one or more rooms could be attached to. This is like a plug-in system were a unit could be attached to the exterior as the facility expands.

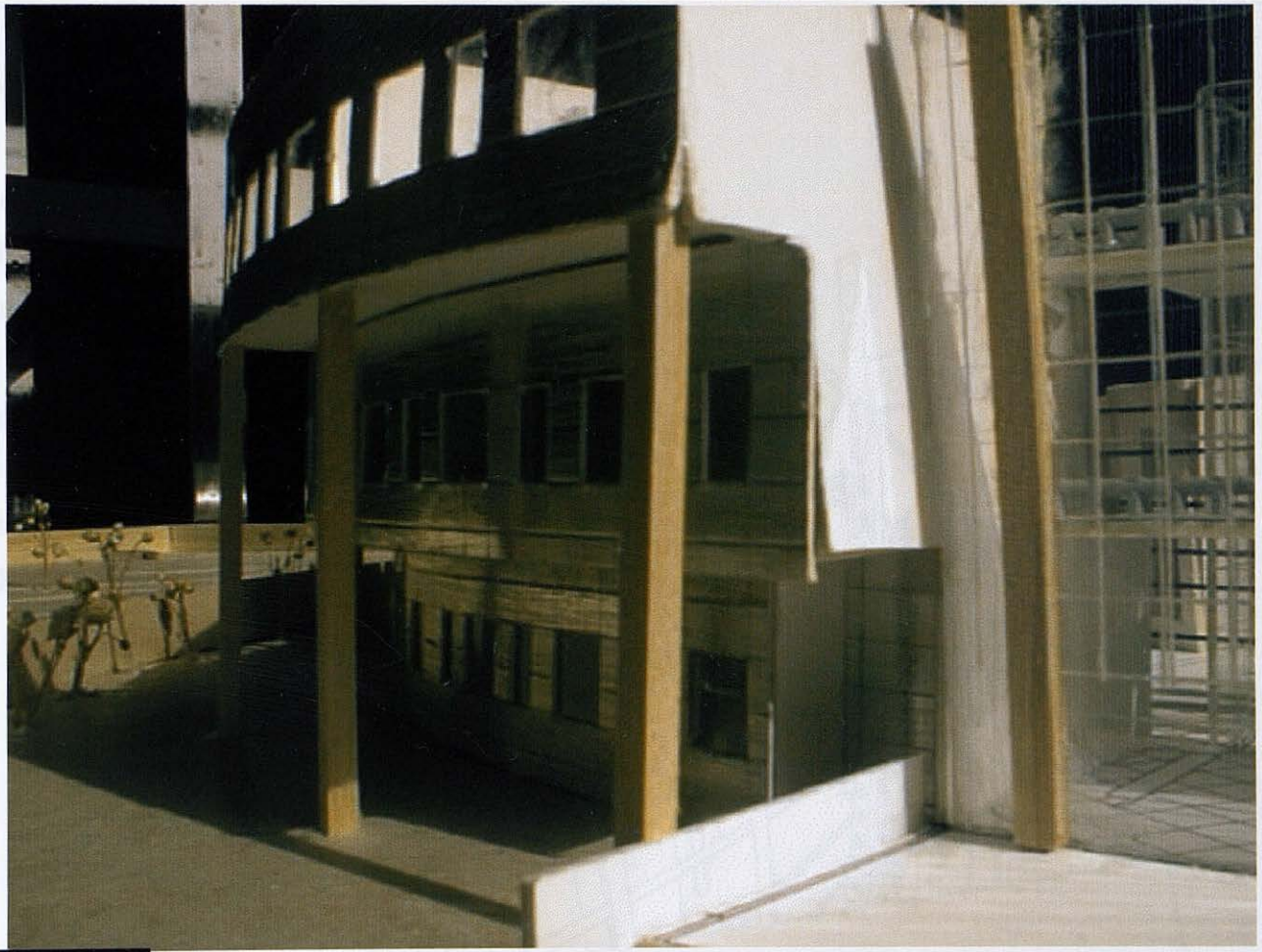
The conference rooms in the auditorium also has the capabilities to move the partion wall so that it can be one big space.



Expanshion on the corner

Plug-in to the side of the building

ISSUES: FLEXIBILITY

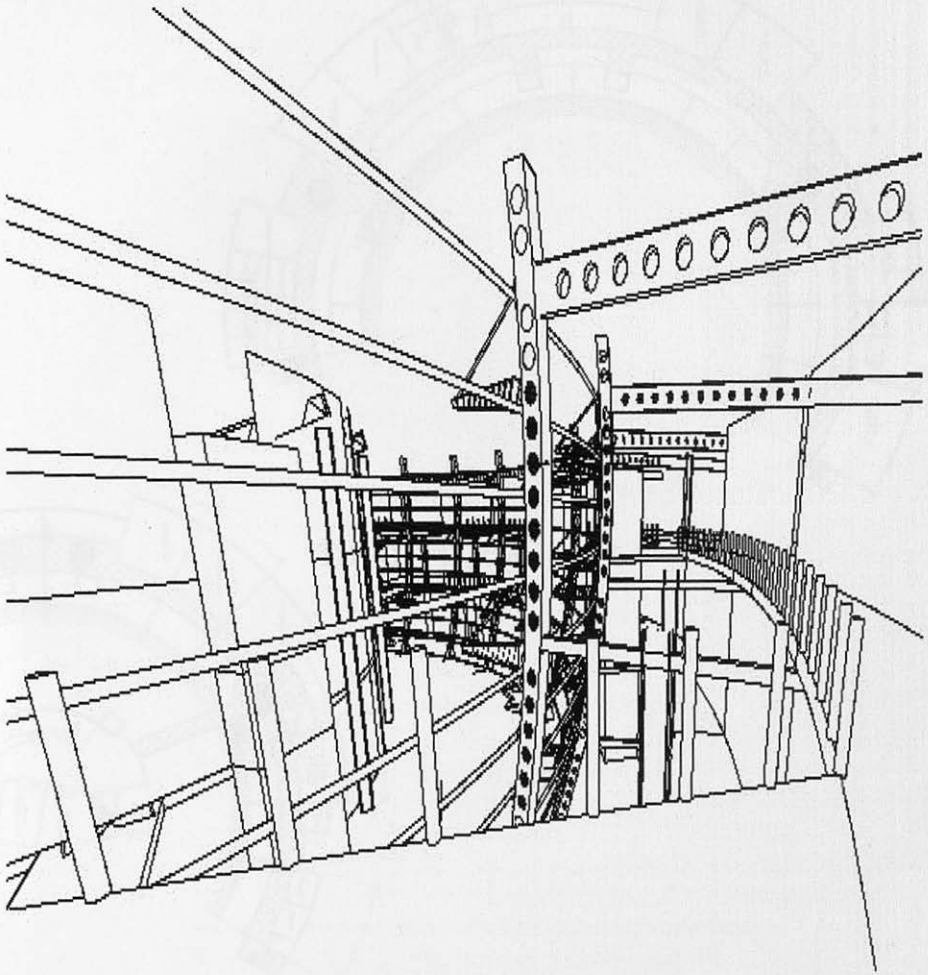


The structure used for support of the third floor will also help with providing support for areas below when expanded.

ISSUES: INTERACTION

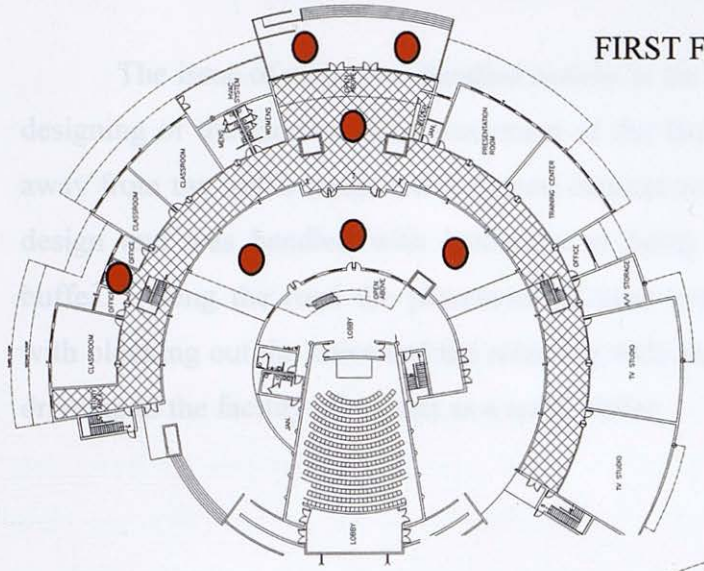
The building allows for multiple interaction to occur between the users an the environment. The glass curtain wall and the terraced floor plates, multiple interaction occurs both visually and physically. As you can see from the third floor view one can see outside as well as who is walking on the other two floors. This space becomes very dynamic and allows for multiple interaction to occur.

Social interaction zones are also set up on all three floors. These areas are also study areas off of the main circulation zone.

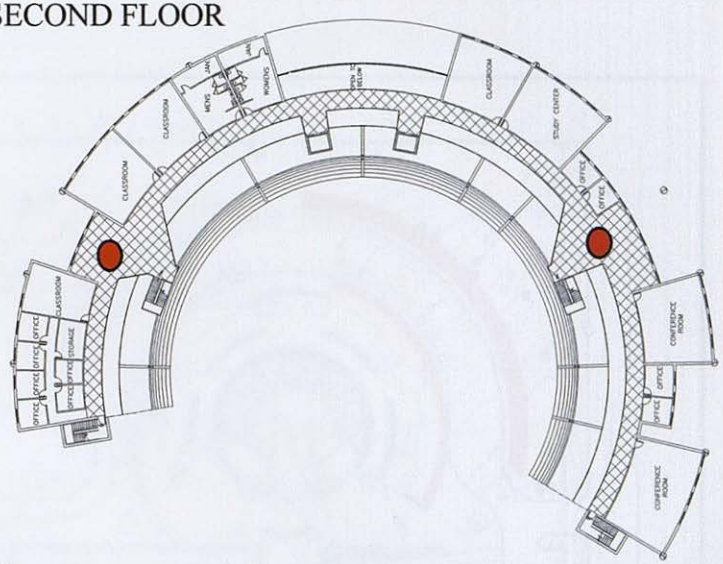


ISSUES: INTERATION

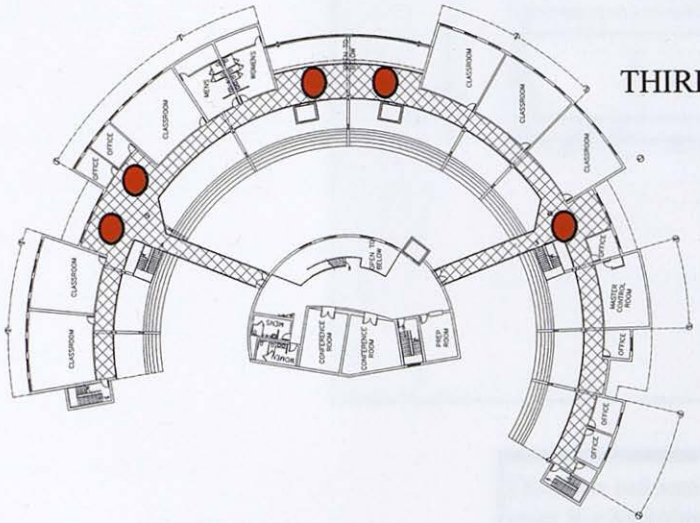
FIRST FLOOR



SECOND FLOOR



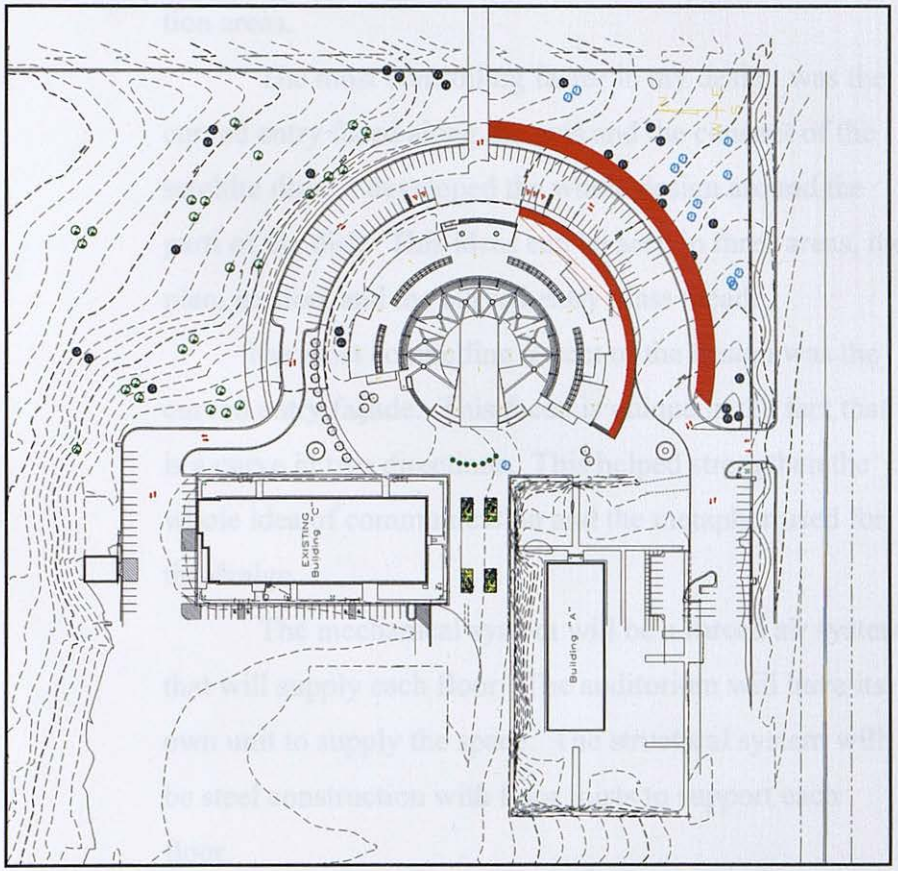
THIRD FLOOR



Interaction zones outside of the learning spaces.

ISSUES: NOISE

The issue of noise was handled mainly in the site designing of the facility. The placement of the facility away from the traffic noise was a crucial element in the design and was handled with landscape as being the buffer. Along the road the placement of trees helped with blocking out the noise and the retaining wall on the drive up to the facility all so acts as a noise buffer.



The outer red area is the landscape buffer and the inner is a retaining wall.

DESCRIPTION:

The conceptual basis of the design was the satellite dish. The idea of the dish being used as a means of dissimulating and receiving information helped me develop the whole idea for the facility from plans to section. The approach to the facility can be seen as a way of bringing in information to the facility through people, and then after the people use the facility the information obtained is transferred out with them, similar to a dish. This idea works not only from the parking lot, but also from the main axis because it is used as a means to draw in information and disperse it.

The facility is laid out into three floor levels. The main floor level is where most of the information is used as a teaching tool. There location of the studios and the teacher's facilities help with the idea of communication as a tool. The second floor is mainly classroom spaces with offices as well as an entrance into the auditorium. The covered walkway helps bring in people to auditorium second floor where the conference rooms are. The third floor has more classrooms as well as more an office administration areas.

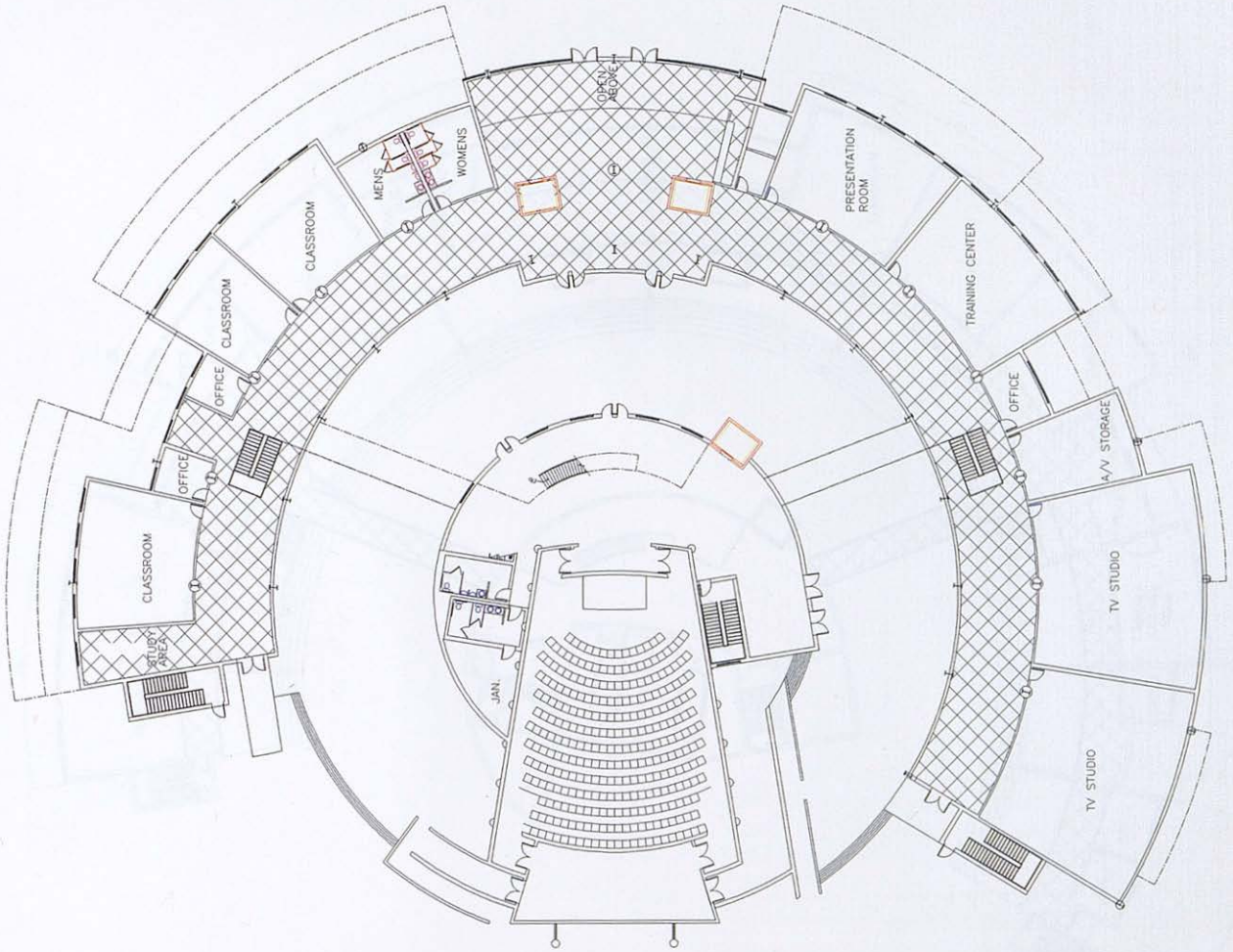
The most controlling factor in my design was the curved entry faced along the axis and the concept of the satellite dish. I developed the whole design around the parti of the dish. This ideas can be seen in three areas, the plan, section, and the curved entry glass façade.

The most compelling aspect of the design was the curved entry façade. This faced is unique in the fact that it is a curve in two directions. This helped strengthen the whole idea of communication and the metaphor used for the design.

The mechanical system will be a forced air system that will supply each floor. The auditorium will have its own unit to supply the space. The structural system will be steel construction with floor joists to support each floor.

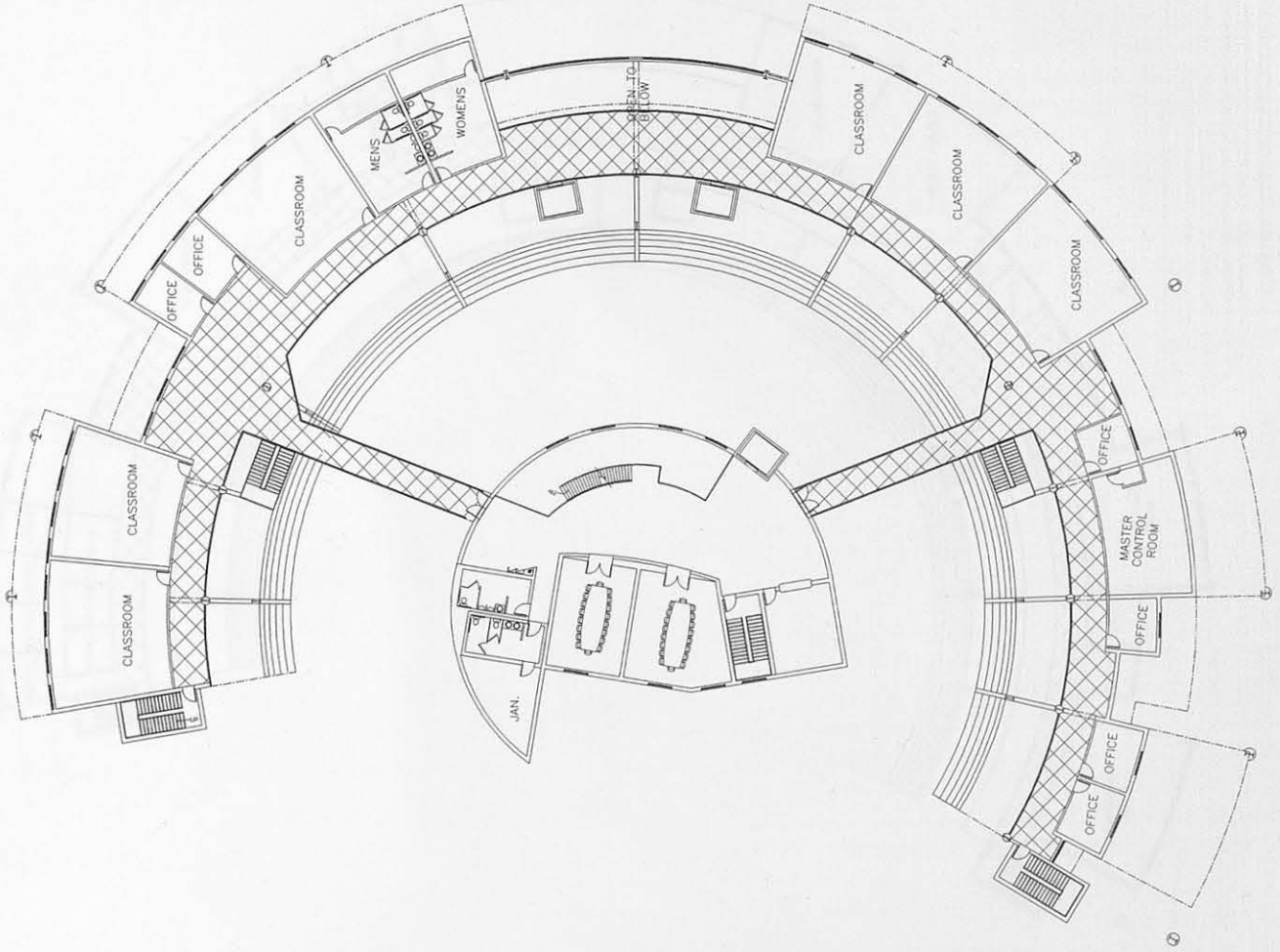
The following pages will show the overall drawings produced and the final model.

FINAL PRESENTATION



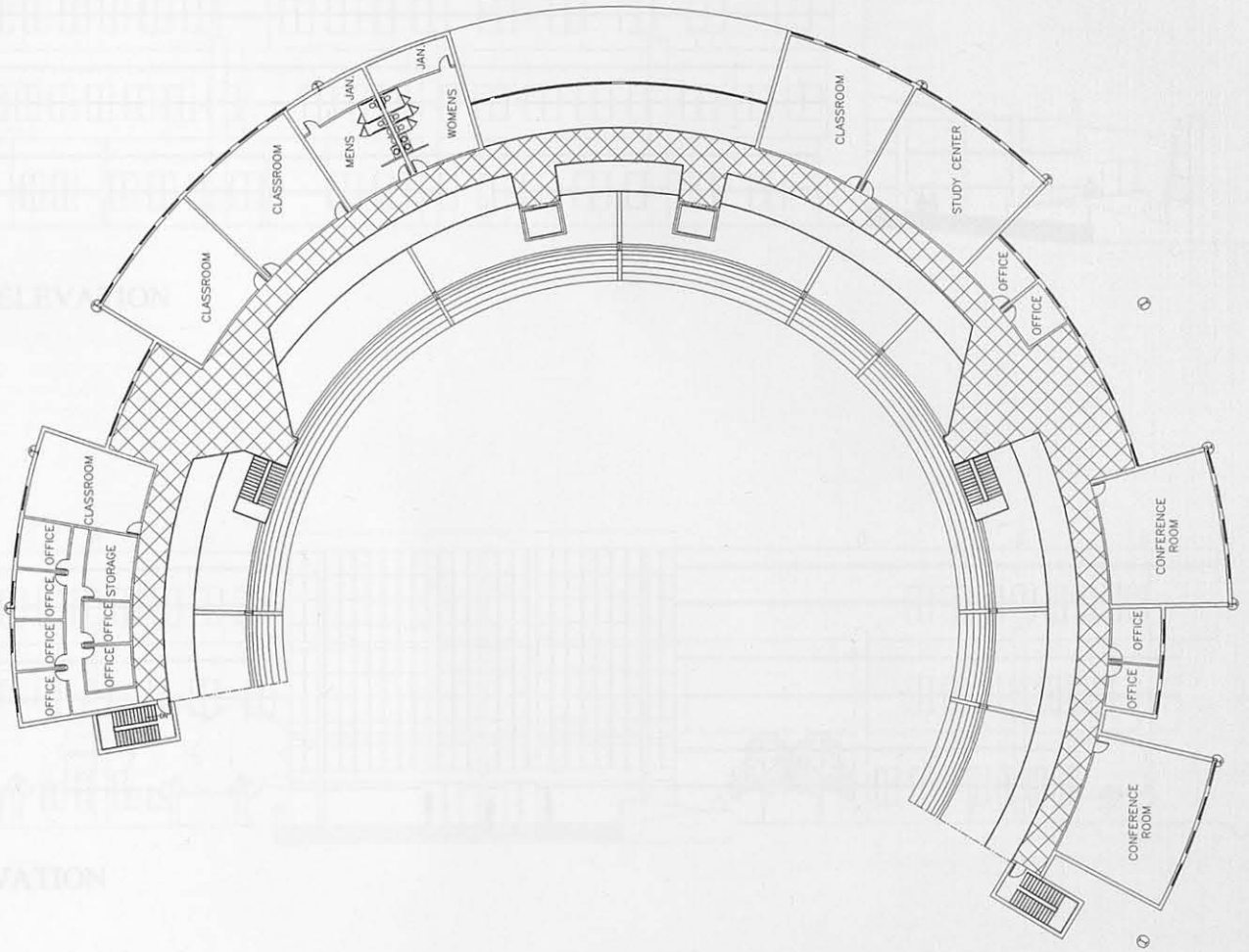
FIRST FLOOR

FINAL PRESENTATION



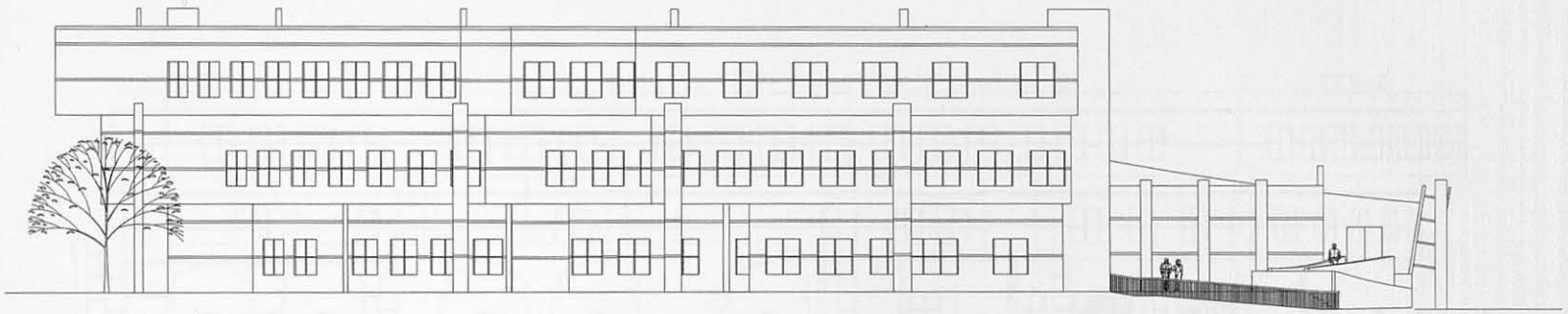
SECOND FLOOR

FINAL PRESENTATION

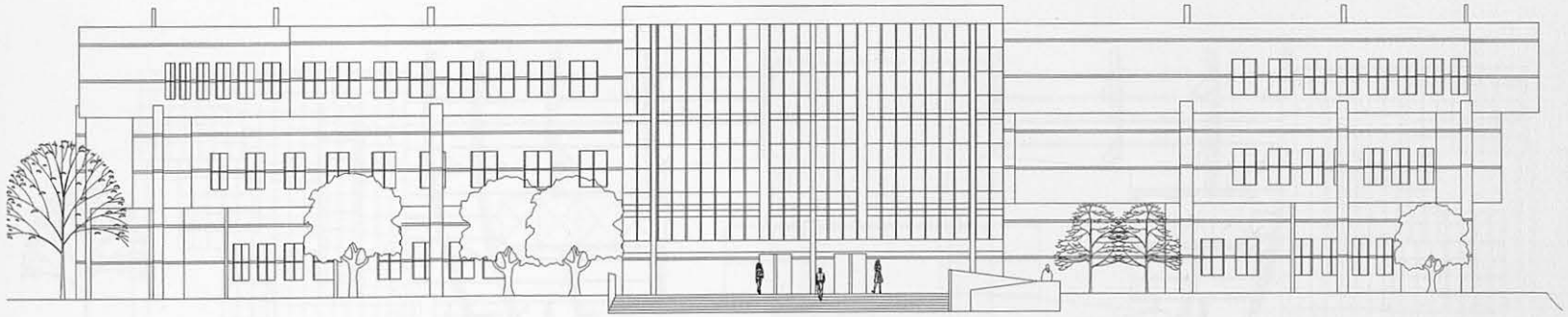


THIRD FLOOR

FINAL PRESENTATION

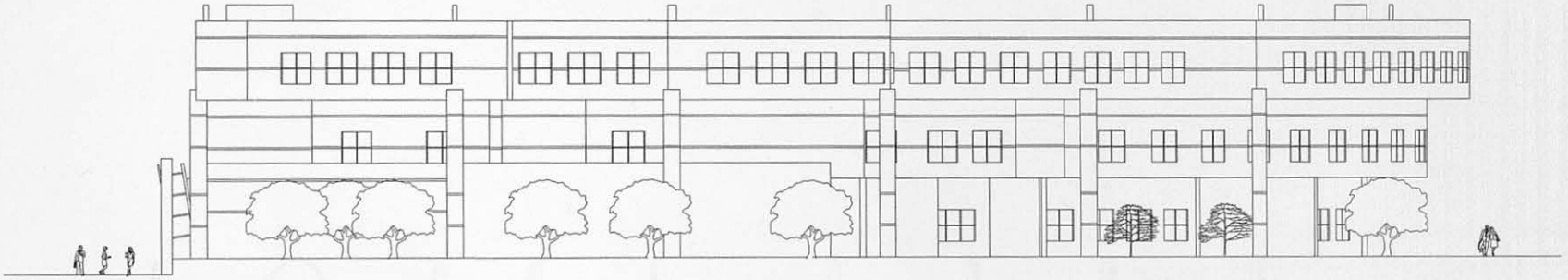


NORTH ELEVATION

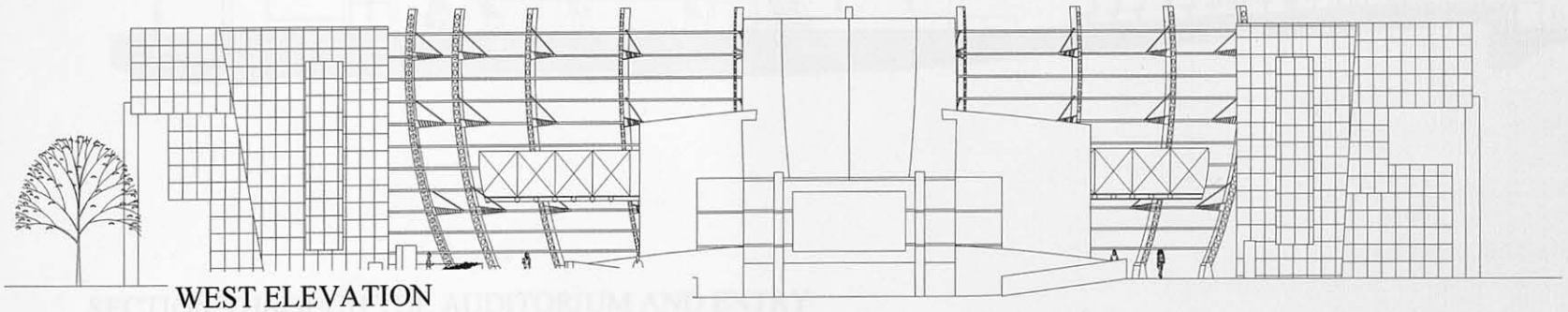


EAST ELEVATION

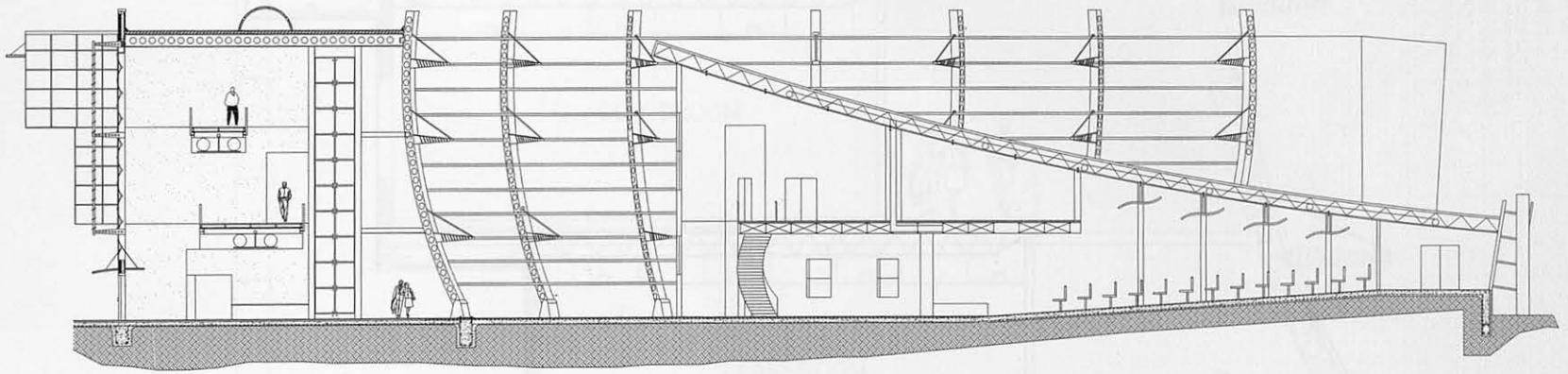
FINAL PRESENTATION



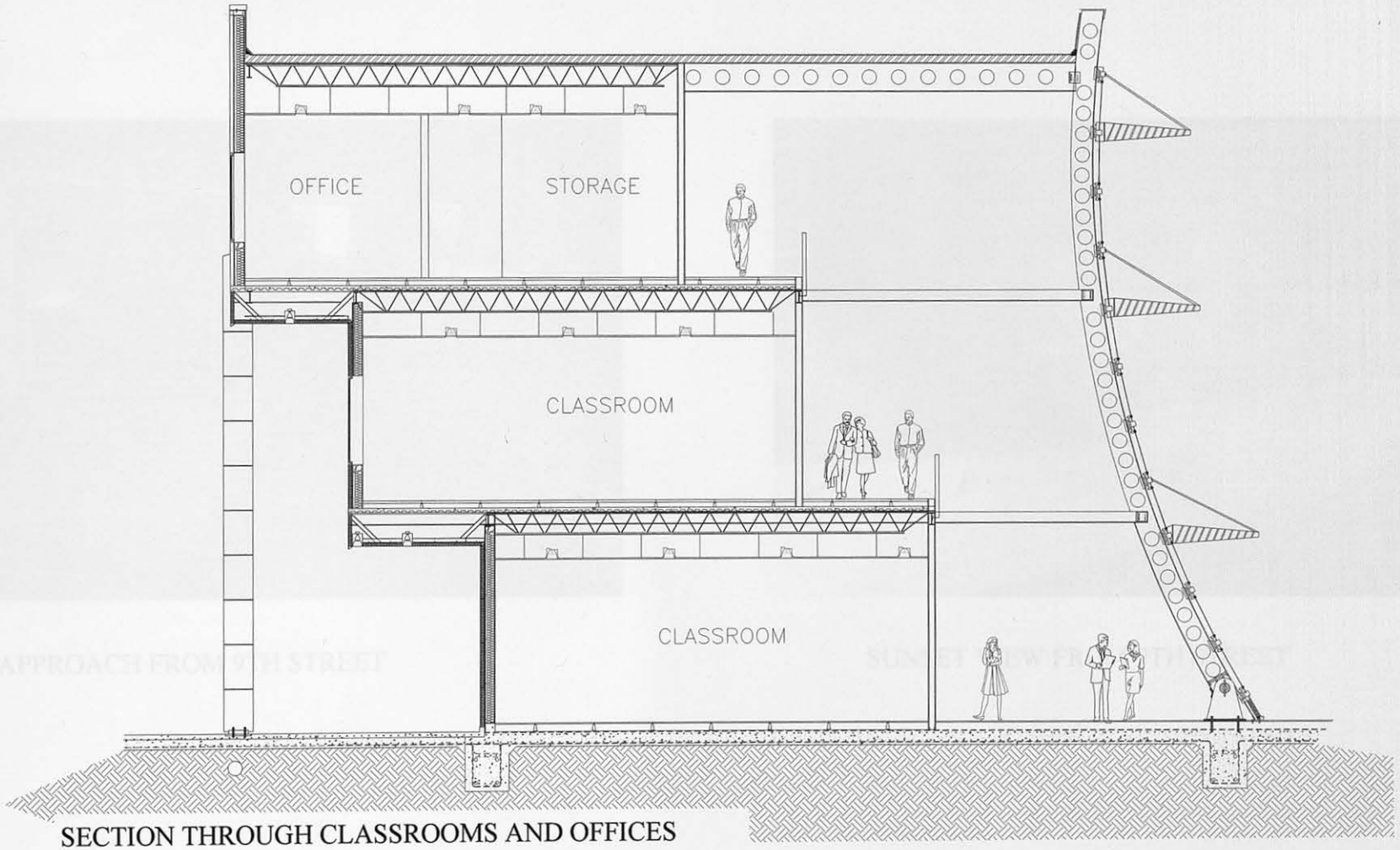
SOUTH ELEVATION



WEST ELEVATION

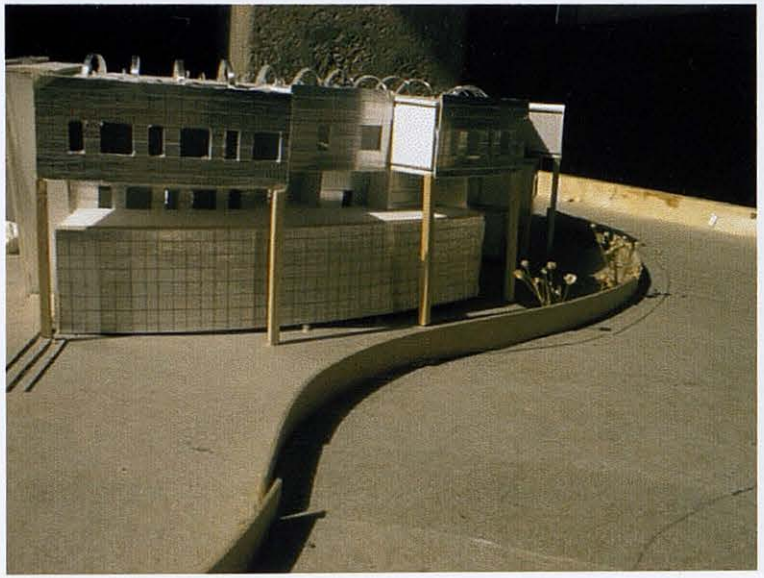


SECTION THROUGH THE AUDITORIUM AND ENTRY

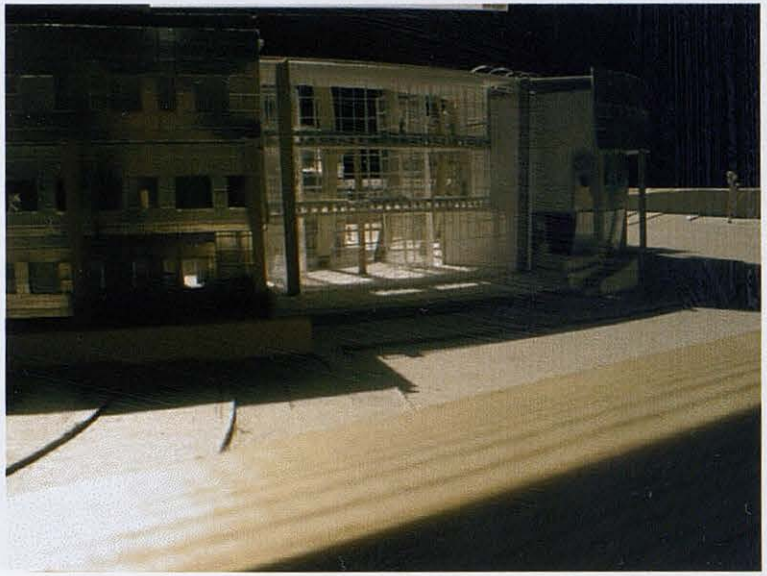


SECTION THROUGH CLASSROOMS AND OFFICES

FINAL PRESENTATION

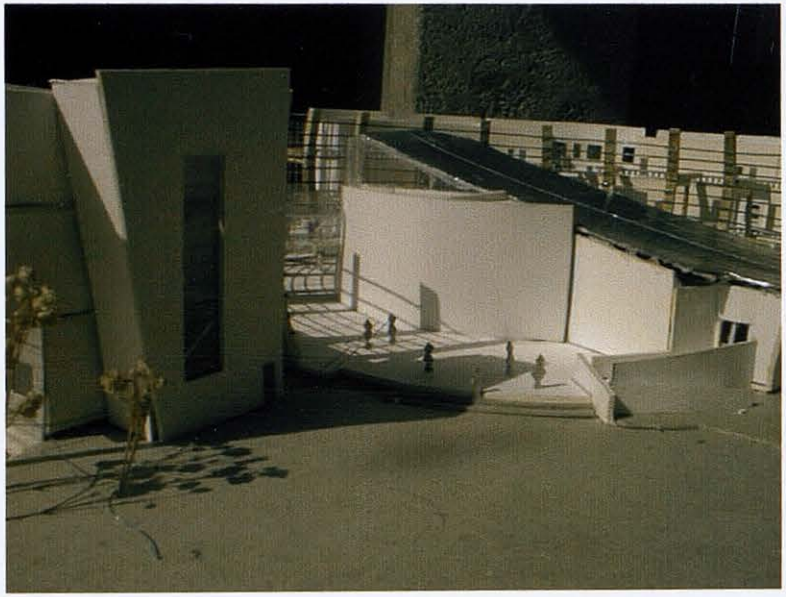


APPROACH FROM 9TH STREET



SUNSET VIEW FROM 9TH STREET

FINAL PRESENTATION

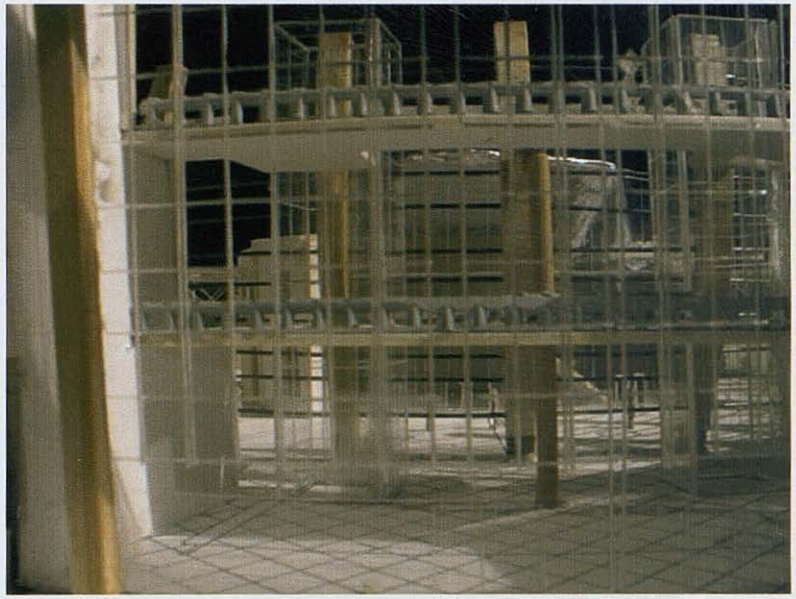


APPROACH FROM EXISTING BUILDINGS

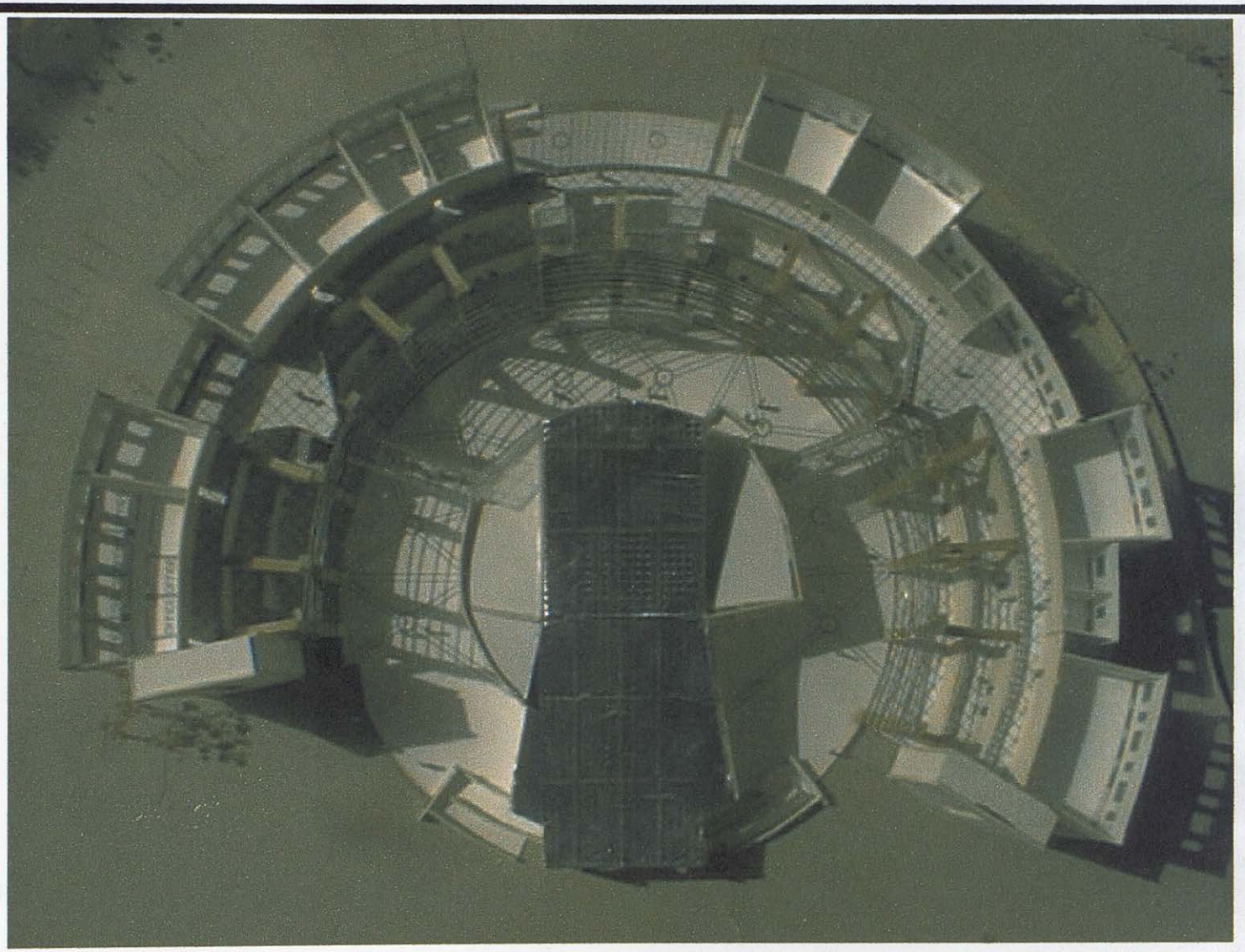
APPROACH TO FACILITY

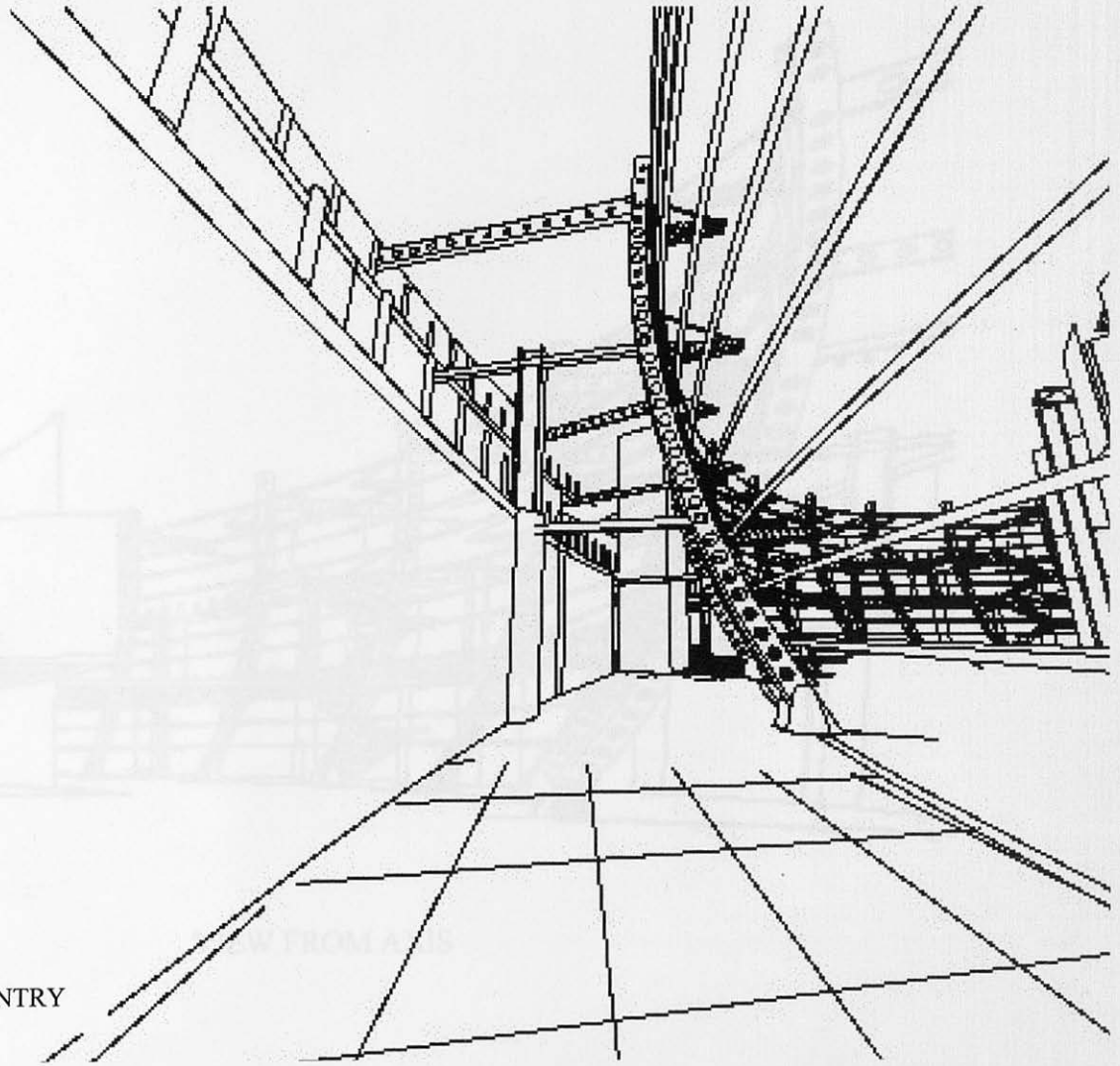
FINAL PRESENTATION

VIEW FROM THIRD FLOOR

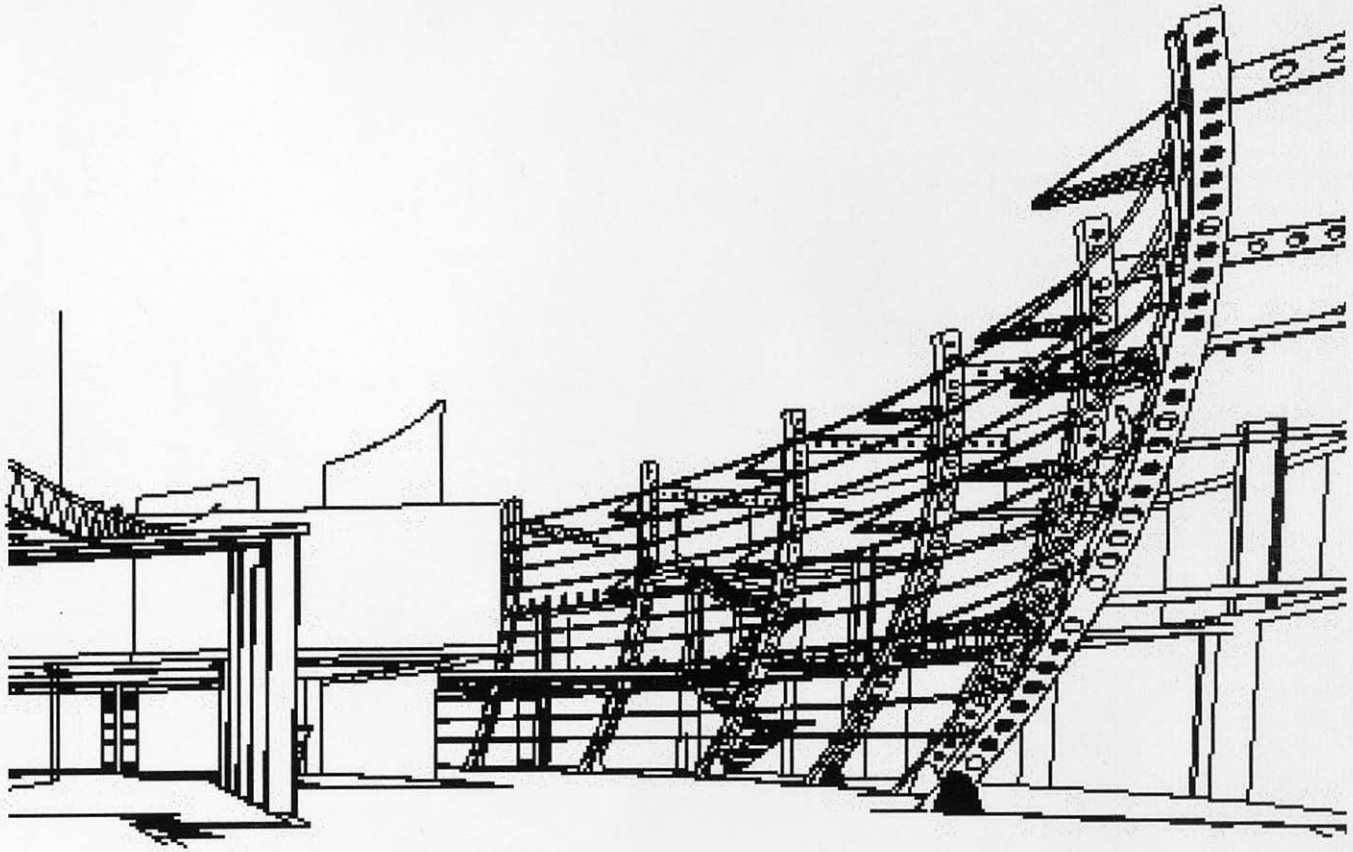


EAST SIDE ENTRANCE





INSIDE FIRST FLOOR, APPROACH TO ENTRY



VIEW FROM AXIS