SFSU

THE FOURTH WALL

[San Francisco State University]

CREATIVE ARTS DEPARTMENT ADDITION

[The Fourth Wall]

SFSU

A Design Thesis Submitted to the Department of Landscape Architecture and Architecture of North Dakota State University

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Degree of Bachelor's of Architecture

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[Abstract]

The project is an institute for the production and study of multi-dimensional media and the relationship it creates with its creators, inhabitants, and architecture. The thesis will examine the relationships between the production and effects of this multi-dimensional media, as well as the production of the architecture that is used to harness these relationships.

[Typology]

The project is an institute for the production and study of multi-dimensional media and the relationship it creates with its creators, inhabitants, and architecture.

[Theoretical Premise]

The thesis will examine the relationships between the production and effects of this multi-dimensional media, as well as the production of the architecture that is used to harness these relationships. It is through this examination that design metaphors, analogies, and or tectonics will be developed.

[Project Justification]

How does the creation process of these medias become connected with its creators, viewers, and architecture? The effect of these medias on the design process itself as well as the design needs to be studied. This project will aid in the discovery of how these creative energies are produced, harnessed and released into the world through architecture.

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[Proposal]

THE NARRATIVE

The intention within this design problem is to create, (using space, void, sound, and texture) forms that will facilitate the creation of two-dimensional and three-dimensional media. Juxtaposed next to these will be forms that are created to analyze and comprehend this media.

Today's western culture is being transformed by the multi-dimensional media that is encountered in every day of every hour of every minute of every second of everyone's life. Smothered by this media, informing us what to behave like, and how to live our lives, we seldom seem to notice how much we are suffocated by the pressures of fitting into a culture that is determined by these medias. Can controlling the forms that these medias are produced in affect the outcome and consequently affect how popular culture reacts and interacts with this media and the forms that it was created within? Can the boundaries of these forms expand and morph into the media and have this media become one powerful source?

The users that will inhabit the space so often determine the forms of contemporary architecture. Today's culture has become infatuated with time and money. Everything must be achieved faster and cheaper. Whether it is walking through a building or waiting in line, one wants to achieve this as quickly as possible. One could care less of what a building looks like as long as they can get in and out as quickly as possible; and make as much money as they can.

A general lack of appreciation has become overwhelming to the forms and spaces that everybody interacts with every day. How did this become so? Have the two-dimensional and three-dimensional medias influenced the culture to behave this way? It is time to ask an important question; how does multi-dimensional media affect the way a culture behaves and consequently how they interact with the environment around them? Using cultural, sociological, and technical premises these issues will be addressed.

By exploring the relationships stated above a complex matrix of forms can be created to facilitate the creation of multi-dimensional media. The analysis of the impacts of this media with its users and how this affects the way that they interact with the environment. More importantly how this affects the very form that created the media they are influenced by.

This matrix will only act as a catalyst for these forms to be created, but it is important to understand how this will influence the media that is produced. The creation of multi-faceted and multi-dimensional media has the ability to steer culture in any direction that the culture may want. These forms of media are seldom looked upon as a catalyst for such change, but the things that we see, hear and smell everyday determines the way that we live and grow. The parallax between how a culture is transformed via multi-dimensional media and how architecture is transformed via the culture and media has become obvious.

What are the goals of contemporary architecture? Are they as simple as creating a nice environment for us to live, work, and play in? Or is there a more complex underlying theory beneath? Behind all good architecture lies good design and good reason.

A design problem that researches the needs and wants of a culture and how that culture is transformed in order to develop spaces that will enrich and enhance this transformation is such a reason. How can one design a space without first becoming familiar with who will inhabit that space and what their characteristics are? To take it a step further how can one design a space without understanding the essence of its inhabitants and where all these characteristics are derived and influenced from? Not only will the spaces and voids described in this problem be able to address this issue, but they will also play a vital role in future development as well.

The metamorphosis of contemporary culture needs to be documented and what better way to do so than in the form of architecture. Where else can one create a timeless piece of art that will continue to evolve with the times?

These spaces and voids will be used to aid in the creation of culture modifying media and also aid in the research and education of such media. A complex of this sorts needs to be available for creative energy to be harnessed and released in to a culture that better understands these energies roots and powers. The location of these matrices must be located in an area saturated with diverse culture in order to truly understand the diversity involved here. These spaces and voids are for the masses to be creative and see what this creativity does to impact the world. The masses must have an outlet to release and study the energies within our culture and this design problem will achieve this very thing.

USER CLIENT INFORMATION

According to a San Francisco Chronicle ad from May 2005, San Francisco State University will receive a $10 million dollar donation towards the development of a performing and multi-dimensional arts building as an addition to the Creative Arts Department. The donation will come from alumnus Manny Mashouf and his wife. They both received undergraduate degrees from the University as well as their son.

This institution will be designed for people interested in the process of creating multi-dimensional media and how this media affects the world and more specifically the architecture it was created in. This institution is for those willing to take the time to become familiar with how architectural forms shape what is created inside of them and how these creations affect society and our world today.

More specifically the project will be overseen and owned by San Francisco State University. This University already has been serving our culture by producing many art, fine art, and theatrical works. The University and more specifically the Cultural Arts department are currently experience a wide growth in the number of students interested in these areas. Many of the current facilities are sub par and undersized so a catalyst for the re-birth of the department is necessary. With an already increasing demand for more improved spaces a new institute of this sorts will only bring more eager students.

The University will be the sole owner of the institution. New spaces will be devoted to the educational portion and new spaces will be available for lease to independent movie producers as well as independent music producers. Facilities will be made available for the production of small independent films and their subsequent soundtracks. Also, spaces will be provided to facilitate the production of artists through the use of multiple studios. In all, the institution will be a complex that will not only merge many different types of media creation but also many different types of backgrounds and cultures.

The University will not only improve their already well recognized Cultural Arts Department but they will also be able to bring outside revenue into the University by allowing the creation of these medias and the viewing and educational buildings to support it all.

User groups will include:

- The enrolled students at San Francisco State University
- Staff of San Francisco State University
- Independent movie production casts and crews
- Music production crews and band members
- Artists
- Guests (Art Shows, Movie Openings, Music Performances, Museum)

REQUIREMENTS

Students will require a unique matrix of spaces that will allow them to not only create media but also be able to study it as it evolves and changes the way the inhabitants of the space interact with it and how the architectural forms interact with it. Other unique spaces will include the juxtaposition of not only a wide variety of activities to occur in these spaces but also address the multiple types of users that will be interacting with and within the space.

The students and staff are searching for improved quality of spaces that their Cultural Arts department can work within. More specifically they need more and larger facilities than they are currently using. More classrooms as well as production facilities are needed. A larger auditorium is needed along with new auxiliary spaces. Larger studios are needed, for not only the production of music and film but also art. A museum will be used to showcase accomplishments of the media created on and within San Francisco State University. The museum will also feature interactive elements allowing the inhabitants to see how what is being created evolves and changes everything around it. Also, there will be educational facilities to further extend the research and knowledge of how creative energies are harnessed, used to create, and consequently affect.

The spaces created need to be of the utmost quality. The University has a very strong relationship within its local community as well as the greater regions around it. The University serves as a representative of the greater good of its students, staff and visitors. The architectural forms created must be timeless; however this does not mean that they can't evolve within time and within the cultural changes of its inhabitants.

The number of students that attend San Francisco State University are 28,000. The number of professors and staff at the University are 1,800. Furthermore, the number of staff and students in the Cultural Art Department is 3,000 according to the San Francisco State University demographics web page. For the most part the members of this department will be the primary users of these new forms.

However, any member of San Francisco State University can register and sign up for classes in this department much like other universities. The new movie/music hall will allow up to 1,200 people as opposed to the 700 maximum now on campus. The production studios will allow the making of one to two film productions depending on size and the same goes for the music production facilities.

Peak usage will be from 8 am to 5 pm, however the maximum number of patrons will probably occur at night when there is a film opening or concert. The only new parking requirements will be those to accommodate handicap users at the front of the facilities. Some student parking will have to be moved to accommodate for this new construction but it will be re located to a nearby spot to be used for these new facilities. Existing student and visitor parking will continue to be used.

MAJOR ELEMENTS

- Music/Film Performance Hall
- Music/Film production facilities
- Art Studios
- Museum
- Educational facilities

SITE

These architectural forms are to be created in San Francisco, California. Specifically the forms will be located on the campus of San Francisco State University. This University is located just outside the heart of the city. Nearby landmarks include Golden Gate Bridge and Park and the San Francisco City Zoo. The University is located just inland from the Pacific Ocean.

The University is on the top of an elevation change from the beach towards the hills of San Francisco. Located just off of Lake Merced Boulevard the University has a good infrastructure of access to and from the site. Located on a University campus there are many pedestrian and bike paths that lead to and from the site as well. From within the University people are offered a wide variety of great views and smells of the surrounding environment.

More specifically the site of the new facilities will be located on the corner of Font Street and Lake Merced Boulevard. Everybody can reach the campus easily. The BART and the MUNI connect the campus to the rest of the city. These are the two main means of transportation within the city of San Francisco.

There are many advantageous climatic phenomena that can be taken advantage of with a site such as this. With such close proximities to so many natural and man made landmarks the design possibilities are endless. Also, with such diverse micro climates the site can manifest these into design elements.

The site constraints for the proposed facilities include street boundaries on all sides. To the South of the site are the dormotories and student living facilities that are owned and operated by the University. To the East of the site lies the existing Creative Arts Department. To the North and to the West lie other educational facilities. The Humanities department as well as other social science classes are held in these halls. Lake Merced is located farther to the West and even a little more to the West of that is the Pacific Ocean.

To the far East begins the slopes upward towards the hills of downton San Francisco. Currently there is a large multi-story parking garage located two blocks to the North. Currently this parking lot is used by students during the day and for sporting events at night. This same pattern can be used now for students during the day, however, during the night the garage can be used as parking for events at the "Fourth Wall." The parking garage is quite large so even if there is a sporting event and a creative art event on the same night there still should be plenty of parking available for all those who shall come. Also, the typical street parking will still be available for all of thos who want to. There are also other parking lots scattered throughout the campus that can be used as overflow.

The demographics for San Francisco State University are as diverse as the surrounding Bay Area. There are a wide variety of cultures and backgrounds that attend this University. There are students from all across the world, of all ages and of all races. The creation of such diverse art in this area has an obvious correlation to the diverse students and staff.

The economic status of this area along with the city of San Francisco has been stable and in fact growing quite recently. Tourism has always been a mainstay of economic resource for the area and will continue to do so in the future. Along with Los Angeles, California, San Francisco has been the financial leader of the west coast since the Twentieth Century. Finance is a very important aspect; the city is still headquarters to two of the country's largest commercial banks as well as a Federal Reserve Bank and the Pacific Stock Exchange. San Francisco is also an area of large agricultural and mining resources. San Francisco helps form one of the largest ports on the West Coast and is a major center of trade with East Asia, Hawaii, and Alaska. Finally, let's not forget all of the Bay Area's contributions to the technology world; the Bay Area is home to many manufacturers of computers and communications equipment.

Money obviously makes the world go around. So, with the pledge of money and an ever growing community, this project will not only be able to be built feasibly but also maintained easily. These facilities will also help serve as a source of outside income that will not only be able to fund current events but also help fund future additions and/or renovations or any other such events.

The unemployment rate of this area has varied over the last twenty years from anywhere to 6% to 7.5%. Currently the unemployment rate is just under 7%. Considering the large population of San Francisco and its appealing climate and proximity to the border these numbers are in fact quite good when compared proportionally to the rest of the nation. Vacancy rates of offices have been flat since about 2000, indicating that the market has been all right for businesses that have been in the bay area.

However the number of new businesses in 2004 was somewhere around 3,300, and there was only 750 closures. The median incomes per household have increased over the last ten years in proportion with the rest of the nation. All of this data illustrates the fact that San Francisco is on a general upwards slope economically. Businesses are growing and more and more money is being made. The implementation of these new facilities will only help create new jobs and opportunities for students and adults alike.

Another reason for the consistent economic quality for the city of San Francisco is its airport. The San Francisco International Airport employs about 50,000 people. The airport also is estimated to bring in $2.8 billion in revenues from international traffic. The airport helps bring international and national visitors and business to the already growing economy.

With the constant influx of so many diverse culture traveling and living throughout the city there is money to be made and knowledge to be gained. The dynamic of this West Coast economy will only help such a project flourish and stay well maintained.

More recently, San Francisco has had an economic boom in a relatively new industry. The digital arts and cinema industry is experiencing tremendous growth in the Bay Area. Companies like newcomer Wild Brain, or local hero Dolby now using digital technology, make San Francisco a digital arts powerhouse in the center of the leading region where Lucas Films, Pixar, Electronic Arts and others are based.

In fact, earlier this year George Lucas started another business venture in San Francisco; the Industrial Light & Magic Company will now handle all of its operations in San Francisco. This indicates that there are new jobs on the market for the grads of the growing Cultural Arts Department.

It is for all of these historic and economic reasons that the Bay Area and more specifically San Francisco State University is a prime location to house such a facility as this. Technology and the performing arts have always played a major role in the development of San Francisco and at no time has that been clearer than right now. The performing arts, cinema, and artistic cultures of San Francisco are beginning to show their true colors.

The culture of the Bay Area is brimming with integrity and purpose and it is clear that new facilities need to be created to harness the energy that is building in the city and the culture.

HISTORY

San Francisco State University just recently celebrated its 100th year anniversary. The University has a rich collection of alumni that include many film and theatre actors as well as famous authors and artists. The University has also participated in many culturally important events such as the invention and collaboration of many state of the art technologies and procedures for the aid in creation of art and media that have helped weave the cultural fabric of San Francisco and the state of California.

The state of California and more specifically the city of San Francisco are often looked at as the leaders of popular culture as we know it today. Whether it's art, shopping, sports, or education San Francisco is at the helm of popular culture so what better place to facilitate the creation and study of these things and how they affect us. Also, this region has a large population and a large amount of visitors. This institution is being created for the benefit of everyone so it is important to put it in a place that can be accessed by large amounts of people. Since the 1960's San Francisco has served as a catalyst for musicians, filmmakers and artists on the rise. These trends have only continued to grow and will keep growing.

With an already stellar list of alumnus from San Francisco State University the Creative Arts Department speaks for itself as far as first class instructors and students from the earyl days of the University to the current days. Now, to go along with these first class staff and students will be in first class facilities.

San Francisco State University has been a leader in political and social movements. There have been many historic protests and marches held on the campus and organized by the students. The University is and always has been on the cutting edge of technology and the future of the world, as we know it today. It is clear that this University stands for involvement and making a difference in an ever-changing world. This will be assisted by the addition of a culture changing, evolving building, that will change with the times and the output produced by its inhabitants.

Since the University, the City, and the State are diverse and have evolved in so many ways it will be important to use this as a design analogy. The history of technology shows that the progress made is not proportional, in fact, it is exponential and changing at this very second. Also, the history of the University and City is so diverse and has changed so rapidly from a gold mining town to a financial and tourist leader in the nation. More specifically the University has changed and evolved tremendously over it's 100 year history. All of these things considered reinforces the fact that these new Creative Arts Department facilities need to be state of the art and also have the ability to evolve and change with the times.

With so much change so rapidly, especially in a design related field, these facilities need to be able to change with the times, accept new technologies and help propel the University into the 22nd Century.

PROJECT EMPHASIS

The thesis will examine the relationships between the production and effects of this multi-dimensional media, as well as the production of the architecture that is used to harness these relationships. It is through this examination that design metaphors, analogies, and or tectonics will be developed from the examination.

The relationship that architectural forms have with its inhabitants and the activities that are associated within these forms is very important. Can multi-dimensional media be created without being influenced by its surroundings? The relationship that architecture has with this media is very interesting.

The medias or output is influenced by all of the input that goes into the production phase. Which includes but is not limited to the space and voids the media was created in and the characteristics of its creators. In a culture with people and media that is constantly evolving how can the architecture keep such a rigorous pace with this transformation?

Using design metaphors derived from the evolution and adaptation of mankind spatial relationships will be created that will embrace the transformation of mankind and it's output, as it will transform as well.

Also, using analogies and metaphors derived from the production of electronic media spatial sequences will be created. Using proportions of 1.44:1 such as those proportions used in film today the line from cyber reality to reality will be blurred. The transitions from which people view the world through the media to the actual way that they view the world will be more related and blend into how the culture of the world today behaves.

Another analogy and metaphor that will be used as a design element will be the sequence of events common to all auditory and visual performances as well as daily life. The sequence of introductory/ information phase transitioned into rising tempo and conflicts, then reaching some climatic point, only to be followed by a lull in activity and then to be repeated again. This sequence of events is modeled after in all auditory and visual media as well as in the viewing of multi-dimensional art. This sequence also occurs in everyday life. People encounter a sequence like this, or similar to this everyday. These relationships and proportions although seldom noticed does affect the way our culture behaves.

So, drawing from these sequences and relationships the spaces and voids of these architectural forms will mimic them and embrace the routine events and make them unique. These forms will take the normal emotional roller coaster that people have everyday and evolve it into a physical one as well.

In spatial forms that are used to create such art it is important to have a high quality of artistic value in the forms. Art is influenced by many outside factors including the forms that the art is created in. The balance of using quality design to create quality art and media must be maintained in order to have an efficient building that produces quality art and media.

Simply put, the design of the spatial forms that created and nurtures other design forms must be carefully articulated and properly designed, otherwise the staff, students, and art will suffer.

There will also be an emphasis on dynamic features that embrace the natural phenomena of the site; which includes wind, water and solar features.

PLAN FOR PROCEEDING

It is important that a base of knowledge is created in order to have a successful design. A large amount of qualitative and quantitative data needs to be gathered. This data needs to be thoroughly analyzed and criticized and developed upon as this project progresses. Statistical and scientific data will also be gathered and studied upon. Further into the design process, graphical analysis such as interaction matrices and interaction nets will be used along with Venn diagrams.

A site visit already has been made and more will need to be done in the future. Site visits are important to not only record photographs and context but also recognize the phenomena of the site. Examining events as they occur on and around the site is very important in the research and design processes.

It will be important to document all the data correctly. One or more sketchbooks will be devoted solely to this project along with digital photography and scanned images to be stored on a computer. Notebooks will also be used to record literature and Internet research.

Another facet of the research process will be the use of case studies. It will be important to research a wide variety of buildings and forms from all over the world. Numerous and varying case studies should be used and studied to aid in design and development of the requirements for developing a program. Interviewing staff and students of the University should also be used to help develop the program of the facilities.

[Schedule]

AUGUST:
- Week 4 - Begin studio design work: Research Site

SEPTEMBER:
- Week 1 – Site Visit (San Francisco)
- Week 2 – Statement of Intent due
- Week 3 – Studio work continues
- Week 4 – Abstract due

OCTOBER:
- Week 1 – Studio work continues: Begin Proposal
- Week 2 – Proposal Draft Due
- Week 3 – Studio Projects Due
- Week 4 – Final Proposal Due

NOVEMBER:
- Week 1 – Research
- Week 2 – Research
- Week 3 – Research
- Week 4 – Program Draft

DECEMBER:
- Week 1 – Research
- Week 2 – Final Program
- Week 3 – Research
- Week 4 – Research

JANUARY:
- Week 1 – Design Development
- Week 2 – Design Development
- Week 3 – Site Visit
- Week 4 – Site Plan

FEBRUARY:
- Week 1 – Floor Plans
- Week 2 – Sections
- Week 3 – Perspectives
- Week 4 – Details

MARCH:
- Week 1 – Site Model
- Week 2 – Model
- Week 3 – Design Complete
- Week 4 – Presentation/Renderings

APRIL:
- Week 1 – Presentation/Renderings
- Week 2 – Presentation/Renderings
- Week 3 – Presentation/Renderings
- 24 - HELLO!!!

[Studio Experience]

PREVIOUS STUDIO EXPERIENCE

SECOND YEAR
- Nadja Palenzuela – 3 Design Elements – Human Scale
- Bakr Aly Ahmed –School for the Handicapped – Geo
- Dome – Hotel/Resort - Church Addition

THIRD YEAR
- Mohammed Elnahas – Bridge – Art Museum – Cultural Center
- Vince Hatlen – Tire House – Montessori School – Masonry Competition

FOURTH YEAR
- Frank Kratky – Nolli's Figure Ground – Urban Design
- Don Faulkner – High Rise – Marvin Windows Competition

FIFTH YEAR
- Ganapathy Mahalingham – Audioscape – Rivulets of Equal Fathom – Thermalscape – Cones of Vision – Nestling in the Mother

UNDERGRADUATE THESIS
- **Bakr Aly Ahmed – The Fourth Wall**

[Theoretical Premise Research]

POST STRUCTURALISM

The theory of poststructuralism has become a vague and loosely defined theoretical premise. In the architecture field it can be loosely defined as a theory or method of analysis, including deconstruction and some psychoanalytic theory, that deny the validity of structuralism's method of binary opposition and maintain that meanings and intellectual categories are shifting and unstable. Or more simply put it is the opposing viewpoint of structuralism.

In an article written by Dr. Mary Klages of The University of Colorado at Boulder entitled "Structuralism/Deconstructivism" she lays down the groundwork, for what this theoretical premise means and how this theory affects the environment around us. Basically, structuralism is a method of analyzing phenomena characterized by contrasting the elemental structures of the phenomena in a system of binary opposition.

Examples of these binary systems in architecture include; light/dark, object/space, inside/outside, represented/real. The structure and/or framework of these oppositions along with other things are what lay the framework for the structuralist ideal. This ideal emphasizes symbols and these symbols are organized to gain distinction from other symbols and thus a complex matrix is formed.

Deconstruction or Poststructuralism is the antithesis of these aforementioned theories. Peter Eisenman describes Postructuralism as the opposite of the Metaphysics of Architecture. To him the metaphysics of Architecture is there is a common set of expectations that are regarded as the constituent concerns of architecture, that include; shelter, structure, use, durability, order, beauty and meaning.

A poststructuralist approach would try to dislocate or displace itself from the metaphysic of architecture. In a way, to free itself from repression.

The famous theorist Jacques Derrida looks at these aforementioned binary oppositions that have been laid out into a fundamental structure as falsities. Instead of looking at these oppositions as light or dark, or, object or space meaning that there is one or the other a deconstructionalist or postmodernist seeks to break down this barrier. Simply put, one can't exist without the other so there should be no or. There is no 'light without dark' and there is no 'object' without 'space.' A post structuralist wants to erase these boundaries and these organizational groups. With the erasure of the oppositions one can show that the values and order implied by these binary oppositions is also not rigid.

"Only after disaster can we be resurrected, it's only after you've lost everything that you're free to do anything...," quoted from Tyler Durden in 'Fight Club' This is what I believe the essence of postructuralism to be.

Postructuralism in my eyes is the erasure of all the accepted limitations and organizations in the architecture field. We only know what order, hierarchy, or scale is because we've assigned or mediated a symbol to these. However, every reader will still have a different view or opinion on what these 'words' or symbols mean, so why are they used as a framework in the architecture field. In order to be truly innovative as designers we should have no limitations or no boundaries and this is what poststructuralism does. It breaks free from the organizational framework that has become structuralism and foundationalism.

MATHEMATICS

There are a wide variety of different ways that mathematics can be applied in the field of architecture. The most common ways are clearly used for practical purposes, such as figuring out square footage and other area calculations. Some more complicated ways that mathematics are used in architecture is in the figuring of structural and thermal loads. However, mathematics can also be used as a form creation tool.

Mathematics can be used as a form generator in the field of architecture. History has shown that mathematics can play a major role in the development of architecture. From the ancient Egyptians to the Greeks, math has helped propel their designs to built structures.

One of the common mathematical applications that is used as a form generator in contemporary architecture that was also used in historic architecture is the Fibonacci sequence.

This sequence was derived from the Italian mathematician Leonardo Fibonacci. Originally Fibonacci was observing the breeding habits of local rabbits when he discovered this sequence. It is a sequence of numbers in which each number equals the sum of the previous two. Here is a brief example of the infinite sequence; 1, 1, 2, 3, 5, 8, 13,... This sequence that is developed is also used to derive another common form generator, the golden section or the golden ratio.

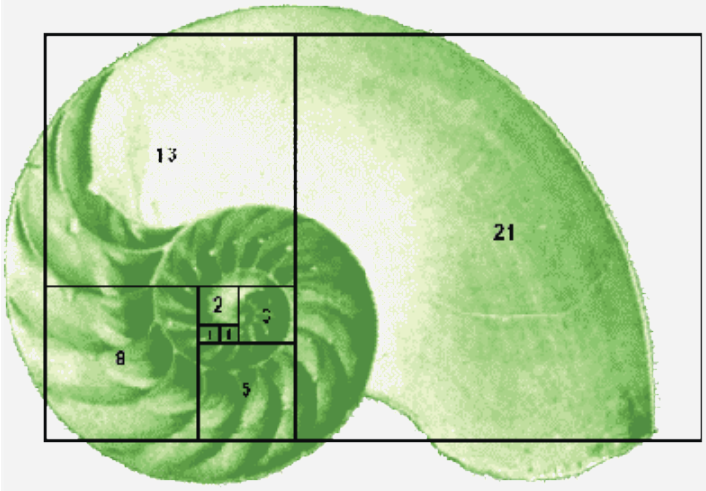
These two mathematical applications are commonly used in the geometry of architectural features. If you have a rectangle whose sides are related by phi for instance,

13 x 8, that rectangle is said to be a Golden Rectangle or have the Golden Section. It has the property that if you create a new rectangle by 'swinging' the long side around one of its ends to create a new long side, then that new rectangle is also a Golden Rectangle or Golden Section.

In the case of the 13 x 8 rectangle, the new rectangle will be (13 + 8 =) 21 x 13. You can see this is the same thing that's going on in the number list that was previously mentioned in the Fibonacci Sequence, but when you discover it geometrically it looks downright magical. If you start with a square (1 x 1) and start swinging sides to make rectangles, you wind up with Golden rectangles.

Not only are these two mathematical applications found in the built environment but they are also found in the natural as well. For instance, the Fibonacci sequence can be found in; flower petals, seed heads, apples, cauliflower florets as well as pinecones.

Not only do these mathematical applications provide aesthetically pleasing proportions but also they provide an endless amount of possible spatial configurations to be used in the design process.



METAPHYSICS

The metaphysics of Architecture has a strong relationship to the sciences. In Christopher Alexander's, 'Nature of Order' he explains this relationship and the resulting properties this metaphysics implies in the field of architecture.

Physics itself deals with materials and the properties that these materials have. One realizes that all things are made up of these materials. The question now is how does one differentiate one material from another and more specifically how does one individualize themselves from other things. In other words how does one separate the 'I' from everything else?

Alexander proposes that one can achieve this through a variety of things and one of them is through architecture. Alexander believes that the experience of finding oneself in the world is the experience of wholeness. Making the 'I' generates whole structures. Wholeness is out there in the world, but reflects the in here because I am part of the world.

Wholeness is the way the 'I' lives, and is natural, but can be inhibited or blocked in structures by working from mental pictures or abstractions, which are partial. Specifically, in urban form and architecture, wholeness, or centers, places where the 'I' is strong, can be analytically specified according to fifteen geometric properties.

These geometric properties that can help establish the metaphysics of Architecture are:
1) levels of scale
2) strong centers
3) boundaries - help produce center, and focus attention
4) alternating repetition - intensifies centers
5) positive space -space swelling outward, never leftover
6) good shape - beautiful, powerful

7) local symmetries
8) deep interlock and ambiguity - center hooked in their surroundings, entangled
9) contrast
10) gradients - variation slowly across space
11) roughness - morphological (not an inferiority)
12) echoes - deep family resemblance
13) the void -
14) simplicity and inner calm - slowness, majesty, quietness;
15) not-separateness - being at one with the world

These geometric properties along with the intensity that these properties are available in the architectural world develop the metaphysical relationship a human 'I' has with their surroundings. Their presence corresponds with buildings and urban landscape in which people themselves feel alive and discover the 'I'.

Alexander says, if our cities are to be living environments, if they are to form a continuous structure of wholes at every structural level, then we must design and build cities so that one experiences the 'I' at every turn.

In summation, the metaphysics of architecture relates to the feelings and interactions people have with their surroundings. In this physical world people are constantly trying to derive who they are or the 'I'. This can be explained through architectural forms and relationships. With the use of these 15 properties not only can an architect develop architecture a person can relate to but also discover in.

EXISTENTIALISM

It seems today that the people of this world are striving to find 'themselves' more than ever before. The common trend to define a purpose in life leads to the development of many theories on life and the actions in life. Many of these theories are new and some are old. Existentialism has been around for a long time and is continuing to be a leader in philosophical trends of life and architecture.

By definition, Existentialism is a philosophy that emphasizes the uniqueness and isolation of the individual experience in a hostile or indifferent universe, regards human existence as unexplainable, and stresses freedom of choice and responsibility for the consequences of one's acts.

Since the early Twentieth Century the leaders of the Existentialism forefront have believed that people are entirely free and therefore responsible for what they make of themselves.

Existentialism views the individual, the individual's experience, and the uniqueness of the individual as the basis for understanding the nature of human existence. The philosophy has a belief in freedom and accepts the consequences of individual actions. An existentialist achieves all this while still knowing that it is the responsibility of the human to make these choices. An existentialist is very subjective and therefore views humans, architecture and everything else as objects. To an existentialist the universe is ambiguous and not defined in the sense that religions often define a context for the universe and humans. It is no coincidence that most existentialists are also atheists.

The philosophy of Existentialism allows for the evaluation of humans and their actions to only be done by other humans. We as humans are responsible for all that is done and all that is created.

In famous and well recognized philosopher Sartre's book, "Studies in Christian Existentialism," he defines a model of what existentialism is to him and this is now commonly followed by all existentialists. He wrote, "existence precedes and rules essence", which is generally taken to mean that there is no pre-defined essence to humanity except that which we make for ourselves.

If an individual and all of their experiences and creations lead to the further understanding of the individuals existence then so can the creation of Architecture. The creation of architecture and the experiences that individuals have inside of said architecture can also serve as a basis for understanding the nature of human existence. In architecture the most essential of humankind activities take place, from; sleeping to eating as well as recreation. So, what better way to understand the individual and humankind than to study the spaces that we create and interact with everyday.

Architecture can serve as a barometer for measuring the state of humankind. The architecture that we create defines who we are as individuals as well as defines who we are as a whole, as a people, as humankind.

TRANSCENDENTALISM

Philosophical movements have been changing the way the world has turned since the time of man. In a world full of great intellectualists and philosophers new ideologies are born every day. Few philosophical movements however truly stand the test of time. This is not the case for Transcendentalism.

The philosophical movement of Transcendentalism has been around since the mid nineteenth century, when Ralph Waldo Emerson and Henry Thoreau began the movement in New England.

By definition, Transcendentalism means asserting the existence of an ideal spiritual reality that transcends the empirical and scientific and is knowable through intuition.

In Ralph Waldo Emerson's essay "Nature" written in 1936 he says, "We will walk on our own feet; we will work with our own hands; we will speak our own minds...A nation of men will for the first time exist, because each believes himself inspired by the Divine Soul which also inspires all men." Emerson and Thoreau proclaimed that this philosophical movement was strictly an idealist conception. They believed that this was up to the individual and that the idea of a Transcendental Party was impossible.

However, there were others that took this philosophical ideal as a much more literal approach. These philosophers thought that Transcendentalism could be used to cause social reform. They thought that a Utopian social change could occur. Although some disagree, one thing is for sure, Transcendentalism truly points out an individual's actions and their effect.

As defined in the "Transcendentalist" Ralph Waldo Emerson lists traits that a Transcendentalist follow. Some of the criteria on his list included:

- Sociable
- Respect for intuitions
- An appreciation for nature, specifically nature's symbolism
- United with every trait and talent of beauty and power
- Idealistic
- Reject routine, because there is not much virtue in it

It is not completely obvious how the philosophical movement of Transcendentalism plays a role in the field of Architecture. There is, however, symbiotic relationships that are formed between an architect and a transcendentalist.

Architecture is often a media that people use to find themselves. People use architecture to define their individuality and their interactions. The way that we as a people interact and experience spatial elements determines who we are as people.

Architects take their intuitions and use their talent to form beauty and to create structures of power. Architect's also closely draw upon natural elements for form creation as well as design elements. An architect is idealistic in the fact that they stay whole, respect themselves, and design for the ideal. Also, architecture tries to break molds, routines and boundaries to keep the field moving forward.

The philosophies of a Transcendentalist can be great attributes for an architect to possess. These traits will keep an architect centered and focused on their intuition.

TECTONICS

In the field of architecture there are a lot of philosophical movements that aren't necessarily grounded in reality. These philosophical movements can often be described as idealistic. There are however some philosophical movements that are heavily grounded in reality. One of these is the philosophy of tectonics.

By definition tectonic philosophy means the art or science of construction, especially of large buildings. Another related philosophy in the same field is architectonics. Architectonics is about having qualities, such as design and structure, that are characteristic of architecture. These philosophies have been around for ages, however, there is a new and emerging philosophy that is also similar to these two. The art of Digital Tectonics is a new wave of architectural philosophy.

Digital Tectonics is also commonly referred to as Digital Techtonics. This philosophy is not as 'realistic' as the other tectonics due to the simple fact that it does not consist of a tangible or pragmatic building. This new and emerging digital culture is laying many new paths in the field of architecture. With the advancement of computer software whose limitations, now, are almost null and also the development of the virtual world. The digital recourse of the architecture world is an exponentially growing phenomena.

The new digital technologies that allow everything from innovative form creation to construction documents to virtual reality have created their own sort of tectonics. Currently these two very different cultures, reality vs. idealistic are forming a bond.

The opposition that previously existed between the digital culture, ephemeral images and a tectonic culture of pragmatic and 'real' buildings has since given way to the new collaboration between the two domains. This collaboration has lead to digital tectonics or digital techtonics. Computer linked fabrication techniques have become an integral part of the design process, all the while new digital tools are allowing engineers and architects to understand in more detail than ever the true behavior of a building.

In the very same way that tectonics involves the very real and hard data of the science of construction digital tectonics achieves the same thing, just on another realm of tangible media. The touch of a brick in tectonic philosophy is synonymous with the senses evoked in a virtual architecture world.

According to articles published by Asymptote Architects of New York, virtual reality is now a reality. Asymptote Architects have helped create virtual reality for the Guggenheim Art Museum in New York. This reality is available through the internet as well as through interactive pods at the museum.

Asymptote representatives now say "objects, spaces, buildings, and institutions can now be constructed, navigated, comprehended, experienced, and manipulated across a global network. This is a new architecture of liquidity, flux, and mutability predicated on technological advances and fuelled by a basic human desire to probe the unknown."

The two very different philosophies were at a time competing with each other. Now, the two philosophies are working together as a team to improve architectural tectonics.

TECHNOLOGY

There are many unanswered questions humans strive to answer everyday. We live in a world where the unknown is as common as the known. It is for this reason that many technological advances are reached. If we as a people do not understand something than we shall build something that can help us understand it better. From the development of the microscope to understand the previously hidden micro-world to the development of the space shuttle to try and understand the infinite space around us, we strive to answer the unknown.

The evolution of the human being through this time is so minute it would go unnoticed if not compared to the eons previous. However, one very recognizable evolution is that of technology. The growth of our technological bounds, especially recently, has become exponential.

The Aerospace Industry has developed software that enables designs that, in the past would have seemed impossible to draft, but are now easily drafted and produced into accurate construction documents.

The program C.A.T.I.A., which stands for Computer Aided Three-Dimensional Application. This program was originally developed in France by Dassault Systems to assist aerospace engineers in building complex curved shapes. CATIA is a parametric system; the relationships among components built into the model. For instance, when a designer makes a change, all the other components that are affected by that change are adjusted automatically in a sort of ripple effect. This software can also simulate the behavior of materials when they are under stress.

It was in 1994 that Frank O. Gehry and one of his associates realized the potential of a program such as this in the architecture field. Frank Gehry is famous for his curvilinear sketches and organic designs. It was tough for Gehry though to translate these two-dimensional drawings/concepts into three-dimensional construction documents that were accurate.

With Gehry's unconventional approach to materials used within construction and also his use of curvilinear shapes this program was a perfect fit for Gehry and his firm.

Gehry then begins the designs of these buildings by building a paper model, this way he was able to truly characterize the free flowing shapes he wants the building to have. He then used an optical digitizing system that was able to record his three-dimensional model and then transplant that information into CATIA. CATIA was then able to rationalize all of this data and then mill another model from this data.

CATIA uses complete numerical control and is able to define these radical three-dimensional surfaces by using descriptive geometrical and mathematical formulas that can then be applied by steel manufacturers to fabricate the building.

This program also allows for accurate take offs to be calculated for the construction process. In Frank Gehry's Barcelona Fish for example, of the thousands of steel connection only 2 were off, and these were only off my 3 mm. Like Gehry, many Architects are now using the advancements of technology as their 'philosophy.' Limitations are few and true conceptual freedom is available with this.

FORM CREATION

The sources of architectural forms are numerous and range from natural to technological and everything in between. However, when discussing when these forms originate from a linear discussion is nearly impossible. When discussing such a topic one often delves into topics relating to the philosophical and spiritual world. Some commonly referred to sources of forms are; man made artifacts, precedent, structural systems, and cultural paradigms to name a few.

The question is; are these true sources of form? In the purest sense of the word do these sources mentioned actually generate a spatial form or entity or are they just modifiers. Opinions may vary but there might only be one true source of architectural form.

That source would be nature. Natural forms such as the spider web, trees, anthills, and beaver dams. The other commonly listed sources are actually all derived from natural forms.

For instance, man-made artifacts aren't a true source as these artifacts are all made from natural elements that were already created and now only modified. Site conditions are an obvious so called source that is actually generated from nature and its evolution. The nature of materials is basically the same as nature. Aesthetics relies on such things as proportion and symmetry, which are all, derived from nature and the human body. The same principles are used that were first observed in nature. Geometry is again shapes taken from what is seen in the natural environment.

Environmental performance criteria can be broken down into natural entities as well. Such as thermal requirements depend solely on the natural climate as well as lighting requirements rely heavily on the availability and position of the sun.

Codes and regulations are used to protect from natural disasters such as fire, wind and storm and also accommodate the natural forms that life forms were given. Time is originally derived from the sun and cycles of the universe once again leading back to the natural phenomena.

Structural systems can also be related back to nature; most structural configurations are derived from the natural forms mentioned before, such as the spider web, trees, and anthills.

It is clear that the commonly referred to "sources of nature" are truly just modifiers. Considering nature as the origin everything since then has been derived from said nature and only modified to accommodate all of these requirements and restraints. It is doubtful that a saturation point will be reached as far as sources are concerned.

A saturation point of modifiers however can be reached, as there is a limited amount of things that can simply modify what has already been created.

Philosophers, professors, scholars, students and architects alike may all have a different opinion on how forms are truly generated, but one thing remains constant throughout and that is that this is a field of design and creativity and beautiful forms will still be made.

ENVIRONMENTAL PSYCHOLOGY

For a long time many theorists and philosophers have been proposing new architectural theories, theories that describe an ideal of the architecture world. This analysis and resulting 'classification' of a type of architecture has been happening since man and architecture began. However, it wasn't until more recently that some philosophers, theorists and psychologists alike began to study the effects of the built environment on human beings.

This new area of study became known as Environmental Psychology. Originating sometime in the 1940's Environmental Psychology is the study of how changes in physical space and related physical stimuli can affect the behavior of individuals. This interdisciplinary theory examines, analyzes and postulates theories on the interaction between individuals and the built environment that surrounds them.

There is one main concern for the development of this practice and that is that it is hard to find objective results in a lab situation. Clearly, the best results in studies of an area of architecture such as this is by actually embracing and interacting with materials and forms in there native environments instead of similar environments in a lab. Research has been hampered by methodological concerns about the validity of lab findings. As researcher Helen Ross said: "We know a great deal about the perception of a one-eyed man with his head in a clamp watching glowing lights in a dark room but surprisingly little about his perceptual ability in a real-life situation."

The potential for an area of research such as this could be profound. Already research and results that have been reported are changing the way the built environment is constructed. What better way to cross check or reference a design criterion or idea buy back checking it against data that has been proven in how or why humans interact with spaces how they do.

Proxemics is a sub category to Environmental Psychology. Originally started in the 1950's this is the study of comfort levels between humans in the built environment. Anthropologist E. T. Hall wrote "The Hidden Dimension" which developed and popularized the concepts of personal space. He broke personal space into four zones.

- intimate (0 to 18 inches)
- personal (18 inches to 4 feet)
- social (4 feet to 12 feet)
- public (12 feet and beyond)

It is ultimately the goal of Environmental Psychology to influence and orientate the design profession (architects, construction, interior design, planners etc.) in the right direction of human consideration in design. The combination of thoughtful design for aesthetic use, practical use and human use is a great tool that could be use to greatly advance the design professions as well as improve the built environment.

Other than a handful of renowned architects and designers few treat their designs as responsible for the social, cultural and functional impact of their designs. In general, most architects view their work as an art form and can be 'disinterested in the long term effects that their building has on society. Phillip Johnson is one famous architect who was renowned for believing that his job was an art form and he was not interested in how his buildings affected society twenty years later.

There is no disputing that architecture and design in general effects the daily life of humans. So, is it not important as architects to have a grasp on how these designs truly affect the humans that interact with them. The ability to design spaces that please aesthetically, functionally and socially would be a triple threat.

URBANISM

In an ever growing population the field of architecture and designers have a very important job. Architects and designers greatly influence the quality of life for all humans. With such a large population, where does everybody live, work and play? This is the new and emerging job of the designer. As we all know urban sprawl is becoming a major concern in the field of design. Cookie cutter houses and developments are popping up all over the place. Granted, with the increase in numbers of people so rapidly new facilities need to be built, but aesthetics should not be sacrificed.

By definition urbanism is the study and practice of creating humane communities for living, work and play. But urbanism has morphed into more of a wider practice. It now encompasses the economics, politics, social and cultural aspects of cities and communities.

In order for Urbanism to be true and measured, it assumes that there is a clear literal and spatial difference between what is considered rural versus urban. In todays world this is not difficult, so the practice of urbanism for the most part is accurate.

Amin and Thrift (1997) argue in 'The Ordinary City' that the urbanscape can best be understood as a site of co-presence of multiple spaces, multiple times and multiple webs of relations, tying local sites, subjects and fragments into globalizing networks of economic, social and cultural change.

Why are there studies such as this? Why is it important to understand urbanism? It is important because the order of a city or community can be very important in determining the design aspects of that area for the present as well as for the future. When designing for a community how could one not be concerned with the social and economic implications of their design?

Through these studies designers can determine what works good and why. With data to back up their design solutions designers can have free reign to design communities that are not only effective on an aesthetic level but also on a social, economic and political level.

In new Urbanism there are some basic criteria that are common in the layout of a successful community. These criteria could also be applied to the layout of a college campus.

The area has a discernible center. This is often a square.
Most of the dwellings are within a five-minute walk of the center, an average of roughly 2,000 feet.
There are a variety of dwelling types -- usually houses, row houses and apartments -- so that younger and older people, singles and families, the poor and the wealthy may find places to live.
At the edge of the neighborhood, there are shops and offices of sufficiently varied types to supply the weekly needs of a household.
Streets within the neighborhood form a connected network, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination.
The streets are relatively narrow and shaded by rows of trees. This slows traffic, creating an environment suitable for pedestrians and bicycles.
Buildings in the neighborhood center are placed close to the street, creating a well-defined outdoor room.
Parking lots and garage doors rarely front the street. Parking is relegated to the rear of buildings, usually accessed by alleys.
Certain prominent sites at the termination of street vistas or in the neighborhood center are reserved for civic buildings. These provide sites for community meetings, education, and religious or cultural activities.
All help form a self governing community or campus

[Case Studies]

Community Performing Arts & Learning Center

Pima Community College: Green Valley, Arizona
Designer: Antoine Predock

Introduction

The Community Performing Arts and Learning Center is a joint venture project located in Green Valley, Arizona. The three partners in this venture are; Pima Community College, Pima County and the Community Performing Arts Center Foundation. The project is broken up into two phases and the purpose of these buildings is to meet the new needs of the College as well as the needs of the community arts program.

Project

The first phase of the project created 9,886 sq. ft. The Pima County portion is 3,855 sq. ft., bringing the total size of this phase to 13,741 sq. ft. The project also provides offices for the Community Performing Arts Center Foundation. The center offers:

- Computer labs
- Lecture spaces
- Rehearsal studio
- Laboratory
- Conference rooms
- Welcome/Information center

The second phase of the project will expand the facilities with a Performing Arts Center that can hold 500. A 250 seat outdoor amphitheater is also added to the site and expands into the landscape of the site.

The entire site is approximately 20 acres. For the construction of the Learning Center approximately six acres was allocated for buildings, road and parking.

Details

The Master Plan for this project elaborates on the concept of overlapping and shared uses. This is accomplished by layering the floor plan. The purpose of the large volumes of the theatre is to not only house the events inside but also prevent the prevailing southwest winds from entering the site. The shared courtyard allows all of the facilities on this complex to extend into the site and perform an easy transition that truly combines architecture with landscape architecture. The copper clad theatre blends in nicely with the colors of the dessert. The material choices for this project represent the southwest as well as form a symbiotic relationship with its surroundings. The layout of the buildings on this site allows for an internally protected courtyard as well as shaded walkways. This interesting feature allows classes to spill outside into the courtyards and further emphasize the symbiotic relationship these buildings have with the outdoors.

Summary

The relationship between built form and natural form was very important in this project. These facilities took what was given to them and embraced it and turned it into useful elements in the design. For instance, the outdoor space that blends seamless from the exterior into the interior really take advantage of the climate. The choices of materials really form an interesting relationship with the natural surroundings of the area. Also, with some open clearstories as well as cleverly placed open passageways a passive cooling system is used to embrace the sometimes hot rugged climate, by introducing some wind and fresh air into the spaces.

Rosenthal Contemporary Arts Center (CAC)
Cincinnati, Ohio

Designer: Zaha Hadid

Introduction

This art center is unique when compared to other contemporary centers. This Contemporary Art Center focuses on Interaction. The CAC has over a 64-year history in the Cincinnati area. Lois & Richard Rosenthal have been contributors to the CAC for quite a while. They wanted this center to encourage viewers to interact with the spaces more than normal.

Project

The center is 6 stories in height. The center has a total of 87,000 sq. ft. 17,000 sq. ft. of the total is dedicated to gallery space. Also included:

- Children's education center
- Hands on space
- Performance space
- Coffee shop
- Offices
- Bookstore
- Art Galleries

The total site allotment is 11,000 sq. ft. The site is in a dense urban area in the heart of downtown Cincinnati, Ohio.

Details

The building is mainly composed of a concrete and steel structure with lots of glass. The interior of the building is composed of numerous ramps and different elevations. These walkways and differing elevations accommodate the varied sizes of media that may need to be showcased in the facilities.

The building is mainly composed of rectilinear shapes and they are configured in an almost jigsaw puzzle configuration. These rectilinear shapes seem to float out over the lobby and allow there to be unobstructed viewing of all the presentation spaces.

Summary

The rectilinear shapes and the layering of these shapes reinforce the dense urban fabric that this building interacts with. The heavily glazed facades encourage interaction from destined visitors to passer Byers.

Being in a harsh urban area such as downtown Cincinnati the relationship between pedestrians and the buildings that make up this urban fabric is often a hard line. The building accomplishes the blurring of this line. The open glass facade on the ground floor helps bring the exterior in to the interior. Zaha commented that everybody should be able to view art, so she took it upon herself to design a building with an entry sequence where she could get visitors even if they weren't intending to visit the Center at the beginning. The flat southern facade gets a lot of exposure from the sun and the design allows for the capturing of this light and then diffusing it through the back of the building, which would otherwise be dark due to the fact that there are no windows for the most part on the north, east and west sides.

This Center is able to take forms similar to the area, but arrange them differently to form a unique space that still blends with downtown.

Tacoma Art Museum
Tacoma, Washington

Designer: Antoine Predock

Introduction

In Tacoma, Washington people like to get things done locally. That is why when the Tacoma Art Museum decided to bring Antoine Predock in to design their new facilities it was quite controversial.

Since Predock was looked upon as a true outsider he decided to take the approach that he will design this facility to emphasize things that the locals may have taken for granted since they are so intrinsically involved.

Members of the Tacoma Art Society have always said that the world class exhibitions that they bring to the area needed to be in a world class facility. The original Tacoma Art Museum was constructed in 1935, and finally, they have a new building that is world class.

Project

The building is 3 stories in height and is approximately 50,000 sq. ft. The new Art Museum has over 12,000 sq. ft. of exhibition space which nearly doubles that of the old building. Spatial elements include:

- Art Galleries
- Storage Systems
- Covered Loading Dock
- Space for Art Handling and Prep.
- Permanent Collection Display/Storage
- Education Department
- Art Resource Center
- Auditorium

Details

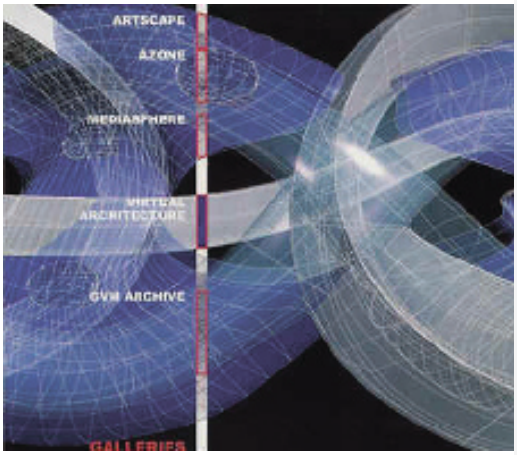
The Art Museum contains a total of five different galleries, one of which has up to thirty foot high ceiling space. The 1,800 sq. ft. auditorium provides space for lectures, film, and performances. During the warmer months, outdoor performances and other outdoor events take place on a third floor outdoor terrace and also on a ground level plaza.

The stainless steel and glass building also holds an 8,000 sq. ft. educational wing. This wing not only houses facilities where professionals can expand others knowledge but it also houses spaces for numerous hands on activities.

One of the design solutions that Predock felt the locals took for granted was light. Predock saw a design opportunity in the misty haze of light the area gets. He designed a building that disappears into the soft light of the northwest. Also, considering the harsh industrial context Predock was able to use similar materials and forms of the surrounding industrial yards.

Summary

This Museum proves that there are limitless form creation tools that nature and context can give a designer. Simply based on the site and the site characteristics an architect can develop a form solution that blends harmoniously with the surrounding environment yet still stands on its own and keep its own identity. Selection of materials also helps form symbiotic relationships within a context. Also, the manipulation of light, itself, can create interesting and unique spatial characteristics.



Virtual Guggenheim Art Museum
New York, New York

Designer: Asymptote

Introduction

Within the term Architecture there are often times assumed criteria that goes along with this term. Some common criteria that are associated with this word and action are; form, enclosed space, permanence, and structure. It should be brought forward that these are associated with the physical environment that architecture presents itself in. Until recently this physical environment was the only way that architecture could be described, or for that matter accessed.

Now, with the advances of technology a new architectural experience has evolved. The digital architectural environment has shown its face and is now another way to interact within the architectural world. Digital architecture is by no means a practice that is used by many architects. The practitioners of environments such as this are few and far between. However, a lot can be said about the possibility of these environments not only on their own, but also in coordination with the physical environment.

Project

This project involves the addition of a virtual reality environment in the Guggenheim Art Museum in New York. This feature allows access to all of the Guggenheim Museums throughout the world. This virtual reality employs all of the traditional aspects that a Guggenheim Museum would have. Such things include; common amenities, archives and access to all collections that a normal visitor would have.

This environment also gives advantage to art installations that are already digital or meant for the virtual experience. This is the ultimate environment for digital media to be deployed and experienced through. This virtual environment includes:

- Scanbar Interface
- Galleries
- Information Plazas

Details

This digital environment has another major difference between the physical. This space is ever evolving, it can mutate, grow, stretch and become a spatial form much different than the physical museum. This also gives the experience multiple levels and the availability of a new journey for the visitor every time they come.

Summary

With the implementation of a digital environment inside of a physical environment the best of both worlds truly does exist. Architecture is used to stimulate the senses, to evoke emotion, to influence and to evolve. With the inclusion of a digital environment these objectives can be meet on a physical level as well as on a much different digital level. With advances such as this the expansion of information and feelings architecture can bring to the table continues to grow. With the collaboration of these two elements the sky is truly the limit for what the architectural experience can bring to society. In times that are forever changing it is important for architecture to stay on pace with these changes and continue to be an integral part in the growth of society.

Akron Art Museum
Akron, Ohio

Designer: Coop Himmelb(l)au

Introduction

The Akron Art Museum was founded in 1922. Since 1970 the main focus of the Art Museum has been modern art, more specifically paintings, sculpture and photography. Two large endowments have allowed for the subsequent purchasing of new art as well as the subsequent need for new facilities. Averaging over 50,000 visitors a year the Akron Art Museum serves not only as a place for visitors to come a view the art but to also learn. The Art Museum facilitates numerous classes and workshops as well. The Akron Art Museum serves as a beacon for the art community. The current project is an addition to the existing facility.

Project

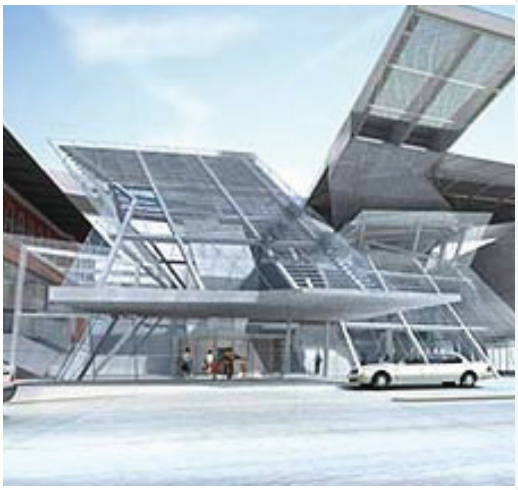
The total area of the new site is approximately 91,318 sq. ft. Located in the downtown area of Akron, Ohio this is a large site for the community. The total floor area for the addition is approximately 88,737 gross sq. ft. The main construction materials of this project are; glass, concrete, steel and aluminum. The spatial elements of this addition are:

- Art Galleries
- 13,000 sq ft of permanent collection galleries for painting, sculpture and photography

- Over 7,000 square feet of galleries for changing exhibitions
- Permanent children's gallery
- Large classroom for children's activities
- Video orientation room
- Museum shop
- Grand lobby
- Museum library
- Auditorium for lectures, films and music
- Café with indoor and covered outdoor dining
- Space for art storage and exhibit fabrication
- Covered double-bay loading dock

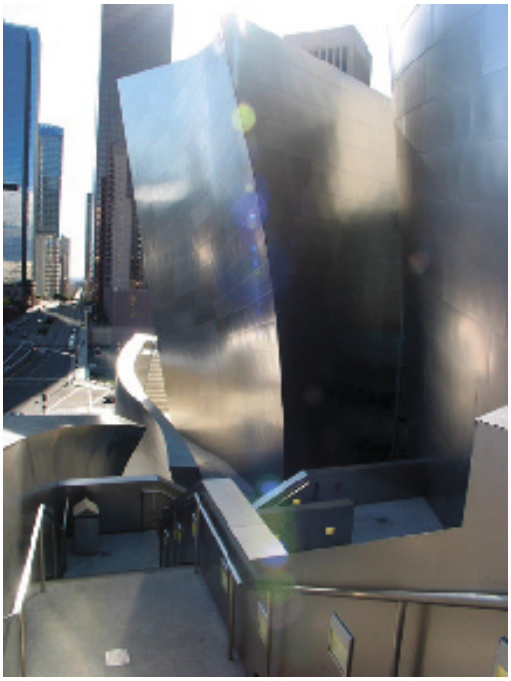
Details

This project focused on the juxtaposition of a new art museum added on to an Art Museum that was constructed a long time ago. The original museum is over 80 years old. Technology and art has changed drastically since then, so the design reflects this hard core juxtaposition.



Summary

This project is very unique in its ability to take the drastic changes that have happened; historically, socially, culturally and artistically over the past 80 years since the original Museum was constructed and demonstrate this drastic juxtaposition through design. This project illustrates one of the many ways that an addition can be linked to an original building. This example shows drastic difference in juxtaposition and how it is used to symbolize a metaphorical change. The use of glass is very inviting and allows the opportunity for some brilliant light manipulation throughout.



Walt Disney Concert Hall
Los Angeles, California

Designer: Frank O. Gehry

Introduction

In his book Iron: Erecting the Walt Disney Concert Hall, author Gil Garcetti determines, "The Walt Disney Concert hall will be a feast for your eyes, ears, and spirits."

Located on a very important site, both historically and culturally, the Walt Disney Concert Hall serves as a beacon for the Los Angeles Philharmonic. Though this project may have taken a surprising sixteen years from conception to completion it still remains a timeless design of architecture that will serve as a representative to the culture and society of the area.

The design of this concert hall truly embodies the free flowing and organic nature of music and the theoretical premise that music presents.

Project

The graceful curves of Frank Gehry's design are mainly constructed of steel. The curvilinear and organic shapes of his design are truly reflected in his selection of materials. Through the aid of specially designed computer software and an ingenuitive mind Frank Gehry was able to capture an initial conceptual idea and carry it through from schematic design to construction documents. This hall truly demonstrates the symbiotic relationship between technology, evolution of the field, and creativity. Spatial elements of this design include:

- Auditorium
- Theatre
- Gallery
- Office Space
- Board Rooms
- Rehearsal Halls

Details

According to the Walt Disney Concert Hall website fact sheet, the dramatically curved exterior of Walt Disney Concert Hall is clad in 22 million pounds of primary steel joined out of 12,500 individual pieces that range from 13 inches to 110 feet long. No two pieces are identical, and some weigh as much as 165,000 pounds. Placed end to end, the steel pieces would stretch 49 miles. In contrast to the harsh steel exterior, the auditorium and many of the smaller performance areas in the four-story concert hall are filled with the warmth of Douglas Fir wood featured on floors, walls and ceilings.

Summary

The Walt Disney Concert Hall is a great example of how the advancements in technology can help create a truly unique form. The organic forms along with a careful consideration for selection of materials allows this Concert hall to be memorable but not look strange when juxtaposed next to the urban fabric of Los Angeles. Careful consideration was taken to have effective acoustical conditions inside as well as in the outside performing areas. In a typically rectilinear downtown area Gehry's response to form and function is a very interesting play on the contrast between the surrounding building forms. Also, by using top of the line acoustical software Gehry was able to produce audioscapes that truly mesmerize. After all, beautiful buildings don't do much if they don't work. The Walt Disney Concert Hall blends beauty with precision, form with function and organic with rectilinear.

The New Modern Art Museum
Fort Worth, Texas

Designer: Tadao Ando

Introduction

Located in the widely celebrated downtown cultural district of Fort Worth, Texas, the New Modern Art Museum is a vibrant new addition to the already spectacular downtown.

In an Arcspace interview Tadao Ando said, "I try to relate the fixed form and compositional method to the kind of life that will be lived in the given space and to local regional society. My mainstay in selecting the solutions to these problems is my independent architectural theory ordered on the basis of a geometry of simple forms, my own ideas of life, and my emotions as a Japanese."

Project

The Museum is located on approximately 11 acres of land. This large site accommodates quite a large addition to the existing Art Museum. The existing building was already 42,000 sq. ft. While the new addition is approximately 153,000 sq. ft. The existing available gallery space was approximately 10,000 sq. ft. The new addition will add approximately 53,000 more sq. ft. of gallery space. The building also includes a 5,600 sq. ft. educational center. This educational center houses multiple hands on activities as well as workshops. Also, the building contains a 250 seat multi-purpose auditorium. This auditorium holds concerts and film screenings. Spatial elements include:

- Auditorium
- Galleries
- Classrooms
- Studios
- Workshops
- Grand Lobby
- Outdoor Water Feature
- Indoor / Outdoor Dining

Details

The facilities contain slightly over forty-five feet high transparent glass walls. These walls are framed by a metal structure, which is then surrounded by a concrete envelope. This combination of materials allows visitors a wide range of spectacular views. Some of these views allow breathtaking snapshots of the very large reflecting pond. There also are a tremendous amount of views that are centered upon the outdoor sculpture garden. The grounds are also very beautifully landscaped. The landscaping took careful consideration of the local vegetation and native plants. The southern culture of the Fort Worth area has great pride in their heritage and culture, and this building helps transcend this heritage through time. In all the facilities carry over 2,400 works of art.

As with most art spaces light played a major role in the design. There was a strong desire to use diffused and reflected light throughout. There are very large cantilevered concrete roofs that shade the exterior grounds, while supporting structures that have clearstories to allow the natural light in above.

Summary

This large scale project incorporates a variety of key design concepts. The main one revolves around light and the manipulation of light. With sensitive artwork the correct manipulation of light becomes very important. Another important design concept was related to the outdoor features. The large reflecting pond mediates a certain calmness around the site and allows for a tranquil exhibition of the artwork. The graceful transition from the interior to exterior spaces reflects the serenity of the calm interior and calm exterior.

UFA Cinema Center
Dresden, Germany

Designer: Coop Himmelb(l)au

Introduction

Located in the heart of Dresden, Germany this Cinema Complex serves as the new center for the town. The town was in desperate need of revitalizing a declining urban area and a multi-media center such as this was just the answer to re-energize the area and increase interaction.

Project

The building includes a Cinema Block which contains a total of eight cinema viewing areas. The total seating is approximately 2,600 which accounts for about 825 seats per viewing area. Other spatial elements included in the project are:

- Cinema Block
- The 'Crystal"
- Cafe
- Public Square
- Skybar

The crystal refers to the main glass shell that encompasses a portion of the building and acts as a foyer and reception area for the public. The skybar is located at the top of this 'Crystal' and provides some unique vantage points that would be otherwise unattainable.

The total site area of this lot is approximately 1,850 m2. The Cinema Center has a total volume of 53.735 m3. It was designed as part of a competition to revitalize the area in 1993. The approximate costs of the project were thirty-two million dollars.

Details

The status of the Dresden area to this point was one of monofunctionality. Coop Himmelb(l)au felt that a new urbanity could arise throughout the city if a new media hub was placed in a central location. The interweaving of public spaces and passageways was designed to revitalize not only the exterior but also the interior. With all of the links a certain density was created that also aided in the energizing of the building.

Overall, the design is characterized by two basic shapes or ideas. These two shapes are the aforementioned Cinema Block and the 'Crystal." It is through the layering and texture of these two basic elements that the content of the complex becomes just as available to the city of Dresden as the city of Dresden becomes available to the complex. Designers wished to maintain a certain dialogue between the city and the building and this was accomplished through this transparency as well as layering. Also, with the jutting forms and cantilevered spaces the interior is truly blended with the exterior creating public spaces that blur the boundaries.

Summary

This unique design that serves as a hub for the city illustrates how the manipulation of spaces can revitalize and energize a city or community. The shapes of this form promote movement and give a certain buzz to the community. Also, since the complex serves as a node for media it is a place to share ideas and to spread art throughout. Through the use of glass and concrete the building accomplishes the strong nodal feature that it strived for as well as providing a building that blurred the lines between exterior and interior as well as public and private. This design also illustrates how the connections that take place where forms connect truly creates an energetic feel throughout the spatial enclosures. The outdoor public square also helps blur the line between the outside and in.

City of the Arts and Sciences
Valencia, Spain

Designer: Santiago Calatrava

Introduction

Located in the dry region of Valencia, Spain, Calatrava was picked to design an urban recreation center of the city. This center was to have cultural as well as scientific aspects to reflect the growing culture of the community as well as the country. It is called the city of Arts and Sciences because of its large scale. The project is set in an old river bed that had dried up.

Project

Located on a site that reaches near 350,000 square meters the design is unique for not only its architectural qualities but also for its planning qualities. According to Arcspace Santiago Calatrava had this to say about the project, "As the site is close to the sea, and Valencia is so dry, I decided to make water a major element for the whole site using it as a mirror for the architecture."

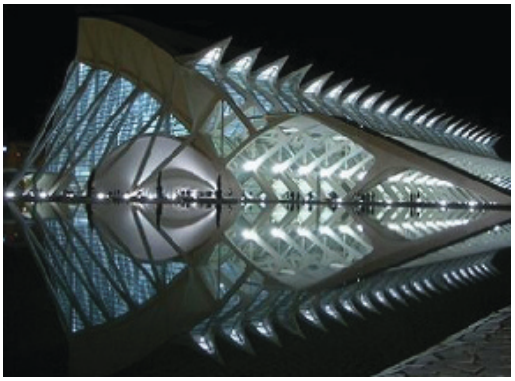
There is also a very large promenade that passes through the center of the city. Calatrava was able to use his other passion as a design solution in this case. He also designed two bridges that are used to cross a water feature and reach from promenade to the outskirts of the city. Spatial elements of the project include:

- Science Museum
- Art Museum
- Plazas
- Bridge
- Outdoor/Indoor Gardens
- Oceanographic Center
- Exhibition Space
- Recreational Areas

Details

The complex is mainly constructed of concrete and glass. Also a mainstay throughout the design is the use of small tiles. These tiles and the concrete used are a main production industry for the Valencia area. So, not only was Calatrava raised in this area but he was also self conscious of their economy and used materials to support the area. The walkways and promenades serve as an ordering technique for the whole site. The shallow reflecting pools are used for aesthetic beauty but also to help remind everybody of the important past of an area that had once experienced a great flood. The walkways and promenade also offer up exhilarating views to the ocean as well as towards the city.

The overall architectural ensemble also helps revitalize the area. Before Valencia was this disconnected and unorganized city. The area was also vastly underdeveloped and needed a world class complex such as this to revitalize the area and boost the economy. The tremendous amount of detail that has been put into ordering the site and creating links to the city have greatly increased the utilization of this area. The previously disconnected area is now connected and flowing with energy much like the water features that run throughout.



Summary

Calatrava was able to show through innovative design, careful material selection and careful planning that an architectural feature can serve multiple purposes, such as, an economy booster, re linking a disconnected city, as well as creating beautiful architectural shapes that create a complex that intrigues and performs. The space are functionally correct and beautiful, a perfect blend of performance and aesthetics. With material selection Calatrava makes his forms possible and also familiar.

[Summary and Application]

SUMMARY

Case studies are a very important step in the research portion of any design. Through the careful and thoughtful research of buildings with similar typologies many things are accomplished. First and foremost it is visually stimulating, looking at well designed and constructed buildings not only stimulates the imagination but also can be used as a motivation tool. A designer can see the wonderful buildings and facilities that have already been created and fuel his desire to accomplish something great in his design.

Secondly, through properly done case studies a designer can be able to lay out his programmatic elements. By researching previous space allotments that were given to similar programmatic elements that the projects have in common a designer can see what works well and what doesn't work well.

These studies also should that a relationship does exist between what a building looks and behaves like with what activities are carried out in the interior. This reinforces the importance of the theoretical premise and proves how influential architecture can be.

Some design decisions that could be drawn from a case study include but are not limited to:

- Lot Size Needed
- Percentage of Lot Coverage
- Stories (Height)
- Square Footage
- Outdoor Space
- Seating Requirements
- Construction Materials
- Forms

APPLICATION

All of the data that is gathered through the case studies can then be applied to the design of the current project. By building a base of knowledge or a foundation if you will. A designer can then design and build on top of that. Just like in real world construction the better and the stronger the foundation the better the project will probably be. That is why it is important to do case studies and study similar built solutions.

With all of the data that I have gathered through my research I will be able to build my sturdy foundation from which my design will be built upon. It is also important to choose a variety of projects not only typologically but also through location.

There were some very common traits that were carried through on all of the case studies that I did. There were also a wide variety of unique characteristics that gave a broad representation of the large palette of similar buildings that there are out there.

All of the data that I have gathered will be siphoned through and then analyzed in order to aid in the design of my project. I must interpret these similarities and differences and see why there are common traits and why there are differences. I must also interpret what information can carry over from my research into my project.

DIFFERENCES

There are obviously a lot of differences from one building to another, but there are some key design decisions that should be commented on and how this will affect my design.

First and foremost each case study had a very different approach in solving site issues. There was a wide variety of solutions from very natural to hard core urban context. The more natural the site was already than a more natural design was made. Where as in a more urban site the design remained very urban. There was no cross design involved, for instance, in an urban setting involving natural design solutions and in the natural setting having a more urban design solution.

Another main difference was how the context of the design was represented. For instance, what was the juxtaposition between the new building and either the existing building or the surrounding buildings. All of the case studies had a different approach in how to address contextual elements. These design solutions ranged from similar elements that reflected the context to very dissimilar solutions that were complete opposites of the context. It shows that in order for a building to be successful that it doesn't always have to look like what is around it. It may in fact, look as though it doesn't belong their and still be a successful building. It is important to note that it might not be successful to mix and match here, for instance, don't have two contextual design approaches in one design, either fit into the context or do not.

Another main difference was the scale of these projects. Mainly determinant on the site, the size of these projects ranged from 30,000 sq. ft. to 150,000 sq. ft. This enforces the fact that accurate research needs to be done to determine allocations for space and people. It is important to accurately determine estimated amounts of users in the future and possible expansions.

SIMILARITIES

Of course in relationship to some differences there will always also be some similarities. There were many design similarities that presented themselves throughout the case study process.

Firstly, all of the case studies showed that these projects in fact involved heavy research. It was within this research that all of these projects were determined to become thoughtful solutions via site, aesthetics, socially, culturally and historically. It is clear that all of these case studies were designed with care and respect to the local community as well as to the needs of the patron. It is also clear that these buildings were designed with the utmost detail and consideration for long lasting aesthetic appeal. This could be the most important factor when designing and will be a mainstay in my project throughout the design process.

Another similarity throughout all of the buildings that were researched was in material selection. In almost all of the buildings glass was a major component in the design solution. With the exception of the Walt Disney Concert Hall glass was used as the major building component. Next, was the use of steel. Obviously, the Walt Disney Hall was for the majority constructed of steel, but there were key steel elements in all of the buildings. The last material that was carried throughout all of the research was concrete. A flat grey concrete was used as a solution throughout all of the designs. This material provides a sort of blank slate that can be used as a variety of different metaphorical design solutions as well as for functional purposes.

The last main similarity was the use of creative forms. All of the case studies that were researched had very unique forms. The forms however weren't just unique for that sake, they all still served an important function they were just able to accomplish this through a very creative and unique design solution.

DESIGN IDEAS

Through all of the research and analysis that I have done I have been able to determine some possible design ideas or criteria to be carried out through my project. By analyzing the spatial and functional elements of these buildings as well as discovering their similarities and differences I will be able to piece together design criteria and ideas to be experimented with and implemented throughout my design process.

Respect

It will be very important for my design to respect not only the context of the site but also the Universities history, economics and sociocultural aspects. As described in this document the history and culture of San Francisco and more specifically San Francisco State University is rich and vibrant and plays a vital role in the community. It will also be a key design responsibility to respect the needs and wants of the students and professors of the University.

Site

Someofthekeydesigncriteriathat Ihavedeveloped for the site include preservation. Although there currently aren't many natural plants on the site it will be important to maintain what is already there and if this can't be accomplished to al least re plant the same amount of natural vegetation if not more. Since one of the natural phenomena that is associated with the San Francisco area are earthquakes I have decided to embrace this instead of discard it. A conscious effort will be made to include some design elements that accentuate the natural phenomena of the site. This includes mainly the seismic conditions of the site, but it also includes other climatic data. This data includes the embracing of wind and sun patterns into the design elements.

Form

In a community and a University that is on the cutting edge of technology it will be very important to carry this through on the design. The forms that are created should be state of the art and unique. Lets not forget that these forms will been seen and interacted with on a daily basis by a wide variety of people. This building and the forms that compose it will serve as a representative of not only the Creative Arts Department but also of the University as a whole. This building and the forms that represent it will also serve as an important resource in recruiting activities to be held there as well as recruiting future students. The building will serve as a cultural, social, economic and aesthetic icon for the campus. The forms must be unique, intriguing as well as functional.

Performance

All of these design criteria are very important however, they don't mean much if the spaces that are created don't meet their performance criteria. In a building where there are a lot of performing arts as well as creative arts the performance of the spaces are vital for the art that is created to be successful. For instance, an acoustical analysis needs to be conducted in order for the auditorium spaces to perform to the highest standards and reflect the quality of the university as well as the Department. The thermal performance of the design will also be very important as the design will involve many passive heating and cooling techniques. The art studios must also be acoustically sound and performance oriented. In a facility that is going to produce as much media as this department will it is important that the spatial performance of the spaces in which this media is created to be at maximum performance.

[Historical Context]

History

San Francisco State University just recently celebrated its 100th year anniversary. The University has a rich collection of alumni that include many film and theatre actors as well as famous authors and artists. The University has also participated in many culturally important events such as the invention and collaboration of many state of the art technologies and procedures for the aid in creation of art and media that have helped weave the cultural fabric of San Francisco and the state of California.

The history of technology shows that the progress made is not proportional, in fact, it is exponential and changing at this very second. Also, the history of the University and City is so diverse and has changed so rapidly from a gold mining town to a financial and tourist leader in the nation.

More specifically the University has changed and evolved tremendously over its 100-year history. San Francisco State University has always been a leader in political and social movements. There have been many historic protests and marches held on the campus and organized by the students. The University is and always has been on the cutting edge of technology and the future of the world, as we know it today. It is clear that this University stands for involvement and making a difference in an ever-changing world.

The past can often times serve as a determinate for the future. One cannot forget where one came from or the history and traditions of the origins of that area. For San Francisco it is very important to remember the rich past of mining, banking and tourism. The rich art history should also be recollected, especially since a Cultural Arts Department will influence so many in the future. The buildings of today are the history of tomorrow.

Culture

The state of California and more specifically the city of San Francisco are often looked at as the leaders of popular culture as we know it today. Whether it's art, shopping, sports, or education San Francisco is at the helm of popular culture so what better place to facilitate the creation and study of these things and how they affect us. Also, this region has a large population and a large amount of visitors. This institution is being created for the benefit of everyone so it is important to put it in a place that can be accessed by large amounts of people. Since the 1960's San Francisco has served as a catalyst for musicians, filmmakers and artists on the rise. These trends have only continued to grow and will keep growing.

With the constant influx of so many diverse cultures traveling and living throughout the city there is money to be made and knowledge to be gained. The dynamic of this West Coast economy will only help such a project flourish and stay well maintained.

The demographics for San Francisco State University are as diverse as the surrounding Bay Area. There are a wide variety of cultures and backgrounds that attend this University. There are students from all across the world, of all ages and of all races. The creation of such diverse art in this area has an obvious correlation to the diverse students and staff.

Peoples rights and the way they choose to live their lives are very important design factors to keep in mind. It is very important to have the designs of the 21st century be respectful and available for people of all varied cultures

Economics

The economic status of this area along with the city of San Francisco has been stable and in fact growing quite recently. Tourism has always been a mainstay of economic resource for the area and will continue to do so in the future. Along with Los Angeles, California, San Francisco has been the financial leader of the west coast since the Twentieth Century.

Finance is a very important aspect; the city is still headquarters to two of the country's largest commercial banks as well as a Federal Reserve Bank and the Pacific Stock Exchange. San Francisco is also an area of large agricultural and mining resources. San Francisco helps form one of the largest ports on the West Coast and is a major center of trade with East Asia, Hawaii, and Alaska.

Finally, let's not forget all of the Bay Area's contributions to the technology world; the Bay Area is home to many manufacturers of computers and communications equipment. In an educational facility technological advances must always be kept in the forefront as a design consideration. A buildings forms must evolve as much as the evolution that is taking place inside of the forms. Since the area of San Francisco and more specifically California is considered a leader in the technology area it will be important for the facilities to incorporate the newest technological advances that the area has come up with.

These technological advances not only will put money back into the area of California but these advances can also aid in bringing revenue to the forefront for the university to take advantage of. The university can use this money from the production of things with this media or the creation of new advances to support the further research in these areas as well as fund other educational aspects

Present

More recently, San Francisco has had an economic boom in a relatively new industry. The digital arts and cinema industry is experiencing tremendous growth in the Bay Area. Companies like newcomer Wild Brain, or local hero Dolby now using digital technology, make San Francisco a digital arts powerhouse in the center of the leading region where Lucas Films, Pixar, Electronic Arts and others are based.

In fact, earlier this year George Lucas started another business venture in San Francisco; the Industrial Light & Magic Company will now handle all of its operations in San Francisco. This indicates that there are new jobs on the market for the grads of the growing Cultural Arts Department. Technology and the performing arts have always played a major role in the development of San Francisco and at no time has that been clearer than right now.

The performing arts, cinema, and artistic cultures of San Francisco are beginning to show their true colors. The culture of the Bay Area is brimming with integrity and purpose. It is at this time that a project such as this is very important to the area. With the growing economy, the influx of tourism and the growth of certain industries it is clear that all of these creative energies need to be harnessed and used for the good of the area. History has shown that the creative arts are important to this area and will continue to remain important. History has also shown that San Francisco is an economic powerhouse and also will continue to be such.

The history, culture and economic status all reinforce the growth of creative arts and the implementation of new creative arts facilities to embrace the continued growth in these areas.

[Goals]

Goals for the Thesis Project:

There are a wide variety of goals for this project. For this project to be as successful as possible these goals need to not only be met but also exceeded in expectations as well as quality.

A well designed research paper and program as well as a well designed project can be very rewarding on many levels. Not only will this research help on the development of this project but it will also help in the further development of my skills. For the research portion I plan to be very thorough and focus on variety of research topics. As far as design goals they are outlined as the following:

- Functional Program
- Proper space allocations
- Proper acoustical performance
- Proper seismic performance
- Proper thermal performance
- Good circulation
- Creative architectural forms
- Dynamics
- Embrace natural Phenomena
- Inspiring Pallette
- Sustainable

[Site Analysis]

Site

The new Architectural forms that are going to be designed for the Creative Arts Department of San Francisco State University are very important on a variety of levels. First and foremost these forms are serving a definitive and very necessary purpose. The University is continually growing and to allow for this as well as to improve the facilities to which people interact with is important.

Also important is the growth and spread of knowledge and art throughout this region. Within these new forms creative forms will be harnessed and released out into the region and the world to perpetually influence all around the world. It is clear that these forms will serve a great purpose and to better understand how these forms will influence it's inhabitants one must study where these forms will be ultimately be placed.

A site is very important for a wide variety of reasons. Not only does the site location often determine the type and frequency of users but it usually also shapes the design considerations. Depending on climate and many other factors a building will be shaped by its contextual elements as well as other micro and macro level climatic and site related phenomena.

With the design of solar panels, wind turbines and the use of some passive cooling techniques the advantages of this site will become truly aware to not only itself but also all of the patrons of the Fourth Wall.

These architectural forms are to be created in San Francisco, California. More specifically these forms will be located on the Campus of San Francisco State University. This University is located just outside the heart of the city of San Francisco. Some nearby landmarks include Golden Gate Bridge and Park and the San Francisco City Zoo. Also, the University is located just inland from the Pacific Ocean. The University is on the top of an elevation change from the beach of the Pacific Ocean towards the hills of Downtown San Francisco. Located just off of Lake Merced Boulevard the University has a good infrastructure of access to and from the site as this Boulevard serves as a major byway off of the highway those circles around the peninsula of San Francisco.

There is also a direct route from the heart of the Downtown area to the Campus. Located on a University Campus there are many pedestrian and bike paths that lead to and from the site as well. From within the University people are offered a wide variety of great views and smells of the surrounding environment. Cool ocean breezes and the wonderful smells of the beach and ocean are blown through the Campus everyday.

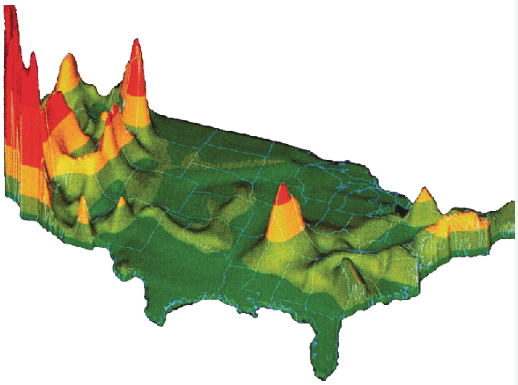
Since the Campus is located on the down slope from Downtown to the ocean the site is almost always bathed in sun. This constant sun along with the subtle breezes from the Ocean provides a wonderful climate that mixes rich sun with a mild temperature and relatively no humidity.

There is also very little noise pollution in this area. Since the ocean is flanking the site on one side and the hills flank the sit on another for the most point noise is reduced to activities that are taking place on the campus only, with little to no pollution from exterior applications of the surrounding context.

Another advantage of being on this down slope is that he site remains for the most part out of the fog. However, from this vantage point looking back towards the mountains and hills some breathtaking views are created as the peaks and hilltops surge through and reveal behind this fog creating a wonderful multi-layer textured site. More specifically the site of the new facilities will be located on the corner of Font Street and Lake Merced Boulevard. From this specific site everybody can reach the Campus easily. The BART and the MUNI connect the Campus to the rest of the city. These are the two main means of transportation within the city of San Francisco.

Seismic

A concern for any new construction in the San Francisco Bay area is the seismic considerations. A contributor to site amplification has to do with the soil type of the area as well as the location near major fault zones and runoff areas.



The successful design for seismic conditions can be broken down into three major criteria. These criteria are:

- Design must take a multi-hazard approach that accounts for the potential impacts of seismic forces as well as all the major hazards to which the area is vulnerable.
- Performance based requirements, which may exceed the minimum life safety requirements of current seismic codes, must be established to respond appropriately to natural hazards
- Work collaboratively and have a common understanding of the terms and methods used in the seismic design process.

Seismic Design Factors

According to Gabor Lorant, FAIA in his research paper "Seismic Design Principles" there are several seismic design factors as well as several design solutions. If the factors are know and the solutions are followed a safe and efficient building can be designed.

The Seismic Design Factors are:

Torsion: Objects and buildings have a center of mass, a point by which the object (building) can be balanced without rotation occurring. If the mass is uniformly distributed then the geometric center of the floor and the center of mass may coincide. Uneven mass distribution will position the center of mass outside of the geometric center causing "torsion" generating stress concentrations. A certain amount of torsion is unavoidable in every building design. Symmetrical arrangement of masses, however, will result in balanced stiffness against either direction and keep torsion within a manageable range.

Damping: Buildings in general are poor resonators to dynamic shock and dissipate vibration by absorbing it. Damping is a rate at which natural vibration is absorbed.

Ductility: Ductility is the characteristic of a material (such as steel) to bend, flex, or move, but fails only after considerable deformation has occurred. Non-ductile materials (such as poorly reinforced concrete) fail abruptly by crumbling. Good ductility can be achieved with carefully detailed joints.

Strength and Stiffness: Strength is a property of a material to resist and bear applied forces within a safe limit. Stiffness of a material is a degree of resistance to deflection or drift.

Building Configuration: This term defines a building's size and shape, and structural and nonstructural elements. Building configuration determines the way seismic forces are distributed within the structure, their relative magnitude, and problematic design concerns.· Regular Configuration buildings have Shear Walls or Moment-Resistant Frames or Braced Frames.
Irregular Configuration buildings are those that differ from the "Regular" definition and have problematic stress concentrations and torsion.

Variation in Perimeter Strength and Stiffness such as an open front on the ground level usually causes eccentricity or torsion.

Reentrant Corners in the shapes of H, L, T, U, +, or [] develop stress concentration at the reentrant corner and torsion. Seismic designs should adequately separate reentrant corners or strengthen them.

Seismic Design Solutions

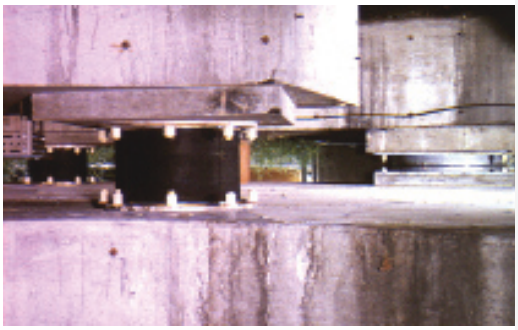
Diaphragms: Floors and roofs can be used as rigid horizontal planes, or diaphragms, to transfer lateral forces to vertical resisting elements such as walls or frames.

Shear Walls: Strategically located stiffened walls are shear walls and are capable of transferring lateral forces from floors and roofs to the foundation.

Braced Frames: Vertical frames that transfer lateral loads from floors and roofs to foundations. Like shear walls, Braced Frames are designed to take lateral loads but are used where shear walls are impractical.Moment.

Resistant Frames: Column/beam joints in moment-resistant frames are designed to take both shear and bending thereby eliminating the space limitations of solid shear walls or braced frames. The column/beam joints are carefully designed to be stiff yet to allow some deformation for energy dissipation taking advantage of the ductility of steel (reinforced concrete can be designed as a Moment-Resistant Frame as well).

Energy-Dissipating Devices: Making the building structure more resistive will increase shaking which may damage the contents or the function of the building. Energy-Dissipating Devices are used to minimize shaking. Energy will dissipate if ductile materials deform in a controlled way. An example is Eccentric Bracing whereby the controlled deformation of framing members dissipates energy. However, this will not eliminate or reduce damage to building contents. A more direct solution is the use of energy dissipating devices that function like shock absorbers in a moving car. The period of the building will be lengthened and the building will "ride out" the shaking within a tolerable range.



Base Isolation: This seismic design strategy involves separating the building from the foundation and acts to absorb shock. As the ground moves, the building moves at a slower pace because the isolators dissipate a large part of the shock. The building must be designed to act as a unit, or "rigid box", of appropriate height (to avoid overturning) and have flexible utility connections to accommodate movement at its base. Base Isolation is easiest to incorporate in the design of new construction.

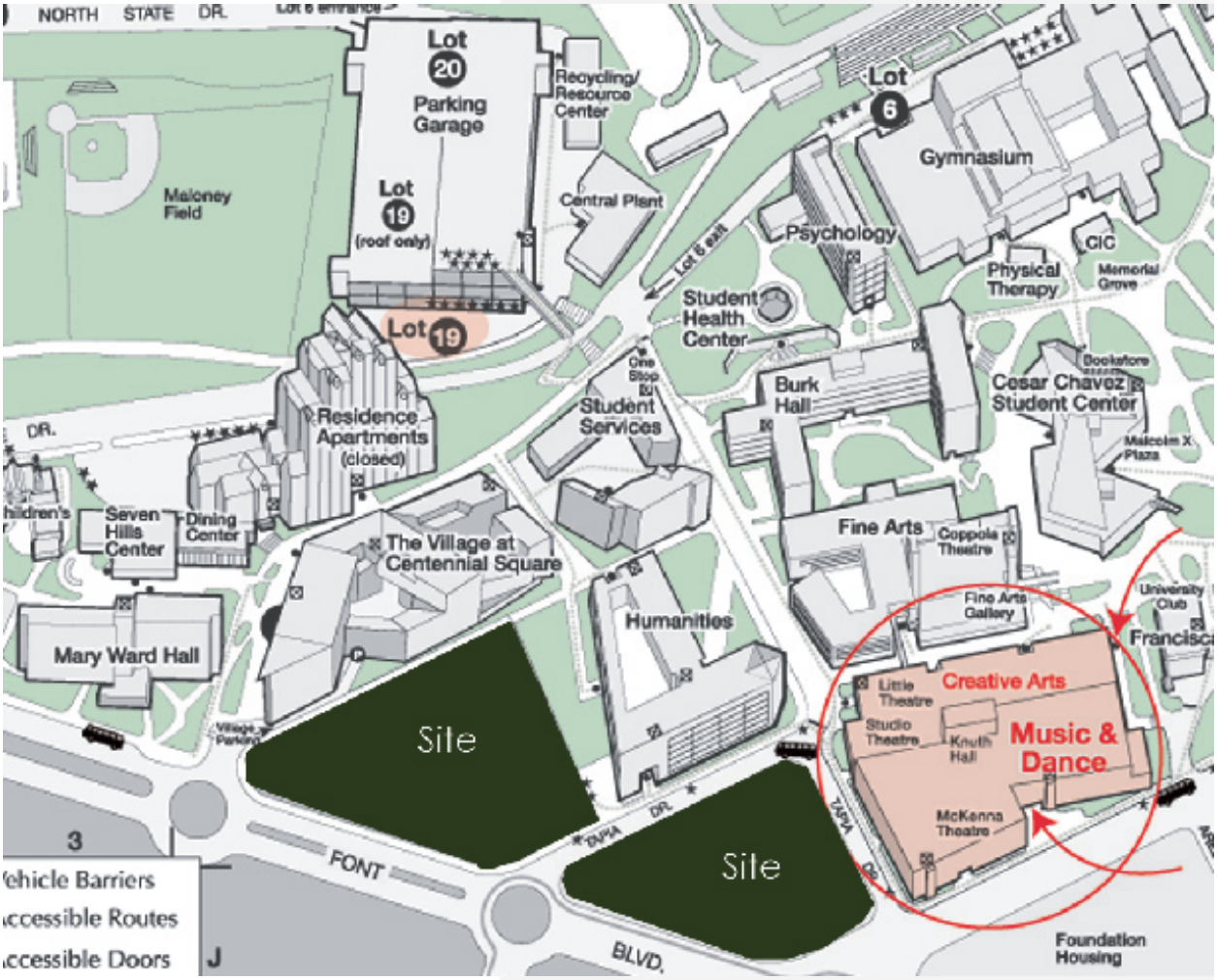
Existing buildings may require alterations to be made more rigid to move as a unit with foundations separated from the superstructure to insert the Base Isolators. Additional space (a "moat") must be provided for horizontal displacement (the whole building will move back and forth a whole foot or more). Base Isolation retrofit is a costly operation that is most commonly appropriate in high asset value facilities and may require partial or the full removal of building occupants during installation.

The materials used for Elastomeric Isolators are natural rubber, high-damping rubber, or another elastomer in combination with metal parts. Frictive Isolators are also used and are made primarily of metal parts.

The safety and security of the students, professors and all visitors at San Francisco State University is at the utmost priority. That is why it will be tremendously important to address these seismic factors and develop a seismic solution that works for San Francisco State University and the Creative Arts Department. Earthquakes are nothing new to the San Francisco area as they can experience up to 10 very small earthquakes in one day. In such a place as a University it is important for the students to feel safe just as much as it is important to design an innovative building for the users. The current soils of the site have some engineered fill in them already and are not very sandy so the implementation of these factors should not be too difficult.

San Francisco State University

The entire campus is highlighted in green with the Creative Arts Department specifically highlighted in turqouise. The Pacific Ocean is on the far left of this shot with Lake Merced Located in the middle.



Creative Arts Department

Located near the Cesar Chavez Student Center the Creative Arts Department is near the main hub of the University. It is located in a highly traveled area. The Creative Arts Department is also located near the other arts facilities such as the Fine Arts Department. Highlighted in green is the new site of the expanded Creative Arts Department.

San Francisco State University

The campus of San Francisco State University has a unique blend of natural and man made space. Landscaped terraces and paths weave in and out of the built environment.

San Francisco

This is one of the many views that are available from the campus looking back towards the city of San Francisco.

Main Entry

This building is the old business building and is one of the first buildings that individuals encounter when they enter the University. It is an old building but still quite welcoming.

Humanities Building

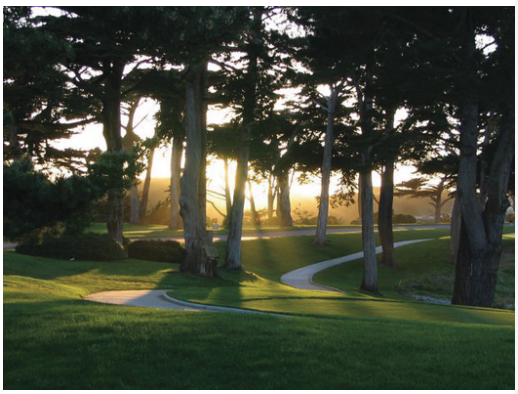
This building is currently the newest building on campus. It contains a collection of poetrty. This collection features more than 2,000 original recordings of poets and writers reading from their own works.

The Village

Located in Centennial Square this apartment complex is for Seniors and Graduate Students. Built in 2001 this complex also offers within its courtyard a full-service print shop. As well as a variety of places to eat and study.

Cesar Chavez Student Center

This student center acts as the hub for the campus, a popular venue for live music, ethnic celebrations, and political soapboxing.



Lake Merced Park

Located across the street from the campus this park and lake offers students the chance for a quick getaway to a scenic location. Here students can relax and enjoy the majestic beauty of the site.

Vegetation

The vegetation of the Bay Area has great biological variety due mainly to the great diversity in environmental conditions of the area. The interaction of maritime weather and Mediterranean climate to produce localized climatic zones, the development of diverse habitats and barriers to dispersal by mountains and bay, and the presence of a variety of geologic and soil conditions, such as nutrient-poor sand dunes and serpentine-derived soils. This combination of conditions allowed for a flourishing adaptive radiation of many closely related species.

This area is bathed in a wide variety of colors and scents from the diverse vegetation that is present. The hillsides are filled with lush green vegetation and tall growing flourishing trees and underlying greenery. The vegetation located around the beaches of the Pacific Ocean continue to be green but also start to introduce some colors. This vegetation is mainly sprawling low elevation greenery that spreads from the beach and blends into the vegetation of the rest of the city.

In the plateaus and valleys located between the beach area and the hillsides is where the vibrant colored vegetation shows its colors. These areas include mid elevation growing vegetation that implements diverse types of multi colored vegetation. This diverse selection of vegetation has a similar textured feeling to that of the topological and climatologically aspects of the site. A multi-layered textured site is only further emphasized with the variety of plant size, height, type, density and color.

The site already has some engineered fill on it, it is clear that due to the seismic conditions of the area that more engineered fill will be needed to be brought in to compensate for an otherwise silty and clayey soil area.

The vegetation that has been distributed throughout the Campus is also very diverse. The Campus has tried to reflect the diversity of the local area and carry this theme throughout the Campus. There are many different 'green' areas for students to go and interact with nature within a highly developed area. There are also several tree planting areas and flowerbeds. Along with these flowerbeds there are also hanging baskets of flowers and vegetation. All of these aspects provide another layer of texture and diversity within the site. The Campus has a nice blend of color and greenery to liven up the Campus and help bring in the natural world to a highly developed area.

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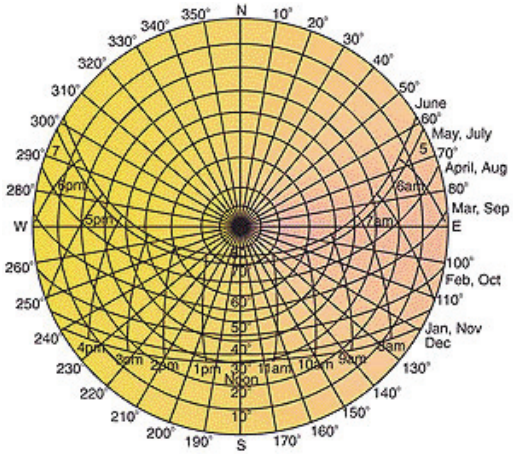
Existing Buildings

The majority of the buildings that are on the San Francisco State University Campus are older buildings. The main growth of the University took place in the 1960's and the 1970's so, a lot of the buildings that are on the Campus are from this era. The current buildings of the Creative Arts Department serve a basic purpose, which is to house educational facilities and facilitate the production of some media. However, the buildings for the most part are outdated and not large enough to meet the new requirements of the growing department and University.

Masonry construction is common throughout the entire campus as well as a sporadic use of concrete. Many of the buildings also have a glass feature. Although this feature may not be the key design consideration most of the buildings on campus understand and were designed to accommodate the sun phenomena of the area.

Also, like most campuses the only tall buildings are for living quarters. The majority of the educational buildings are four stories or less for reasons of accessibility and necessity.



Climate

The climate for the Bay Area is also very diverse. There are many different types of temperate zones. In general, the summers are hot, the winters are mild and humidity is low. Offshore breezes keep the coastal regions cool. San Francisco regularly has fog over the harbor until about midday. The Bay Area has sunshine an average of 354 days a year. The climate is as diverse as everything else in the area.

The specific site that San Francisco State University is located on is on the Western side of the mountainous area of San Francisco. This helps reduce the amount of fog that the University receives. The University gets nice breezes off of the coast as well as from Lake Merced. For the most part on this side of the mountain the University is bathed in sun and has a wonderful climate. Winds come primarily from the West during all seasons. The wind is the most prevalent during the summer and fall and could be used to aid in sustainable design quite easily due to the open path from the West.

There are many advantageous climatic phenomena that can be taken advantage of with a site such as this. With such close proximity to so many natural and man-made landmarks the design possibilities are endless. Also, with such diverse microclimates the site can manifest these into design elements.

Careful consideration of sun patterns must be taken into account in correlation with peak usage times in the facilities. It is important to keep in mind the thermal loads and other side effects associated with the sun. The fog and rain or lack thereof can also be taken advantage of. In an area that lacks a lot of cloudy days considerations can be made to produce environments that are uncommon to the area, but at the same time embrace the phenomena that is common to the area.

The quality of light in this area is very high. Since the fog for the most part stays to the downtown area and on the otherside of the hills the sun rays are usually unobstructed. Also due to the high amount of sunny days not only is the quality high but the amount is also high as well as frequent.

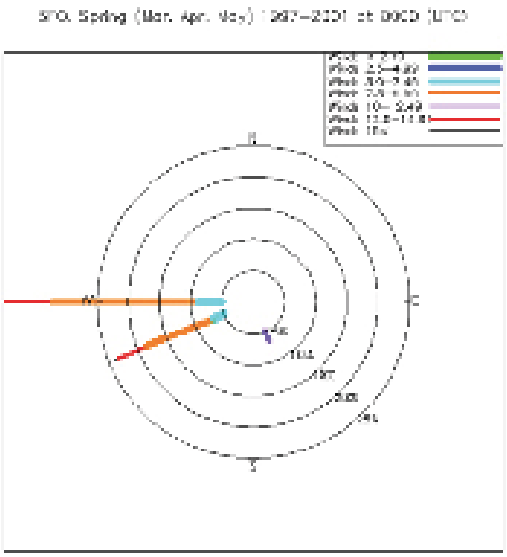
The air quality is also quite good in this area. a lot of the smog or pollution from the downtown area is blocked by the hills and the nice ocean air breezes into the site giveing it a nice smell as well as being clean and clear.

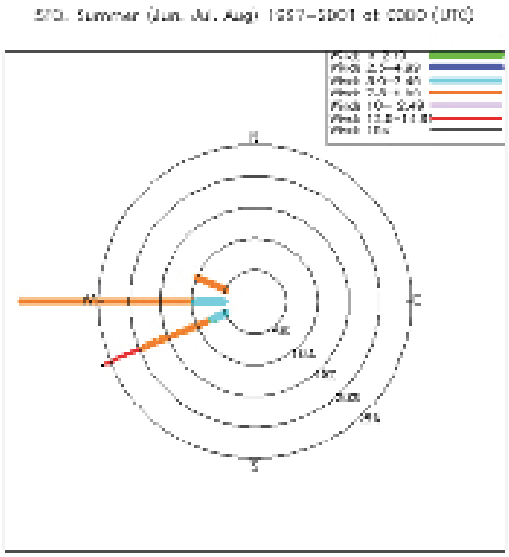
Water Features

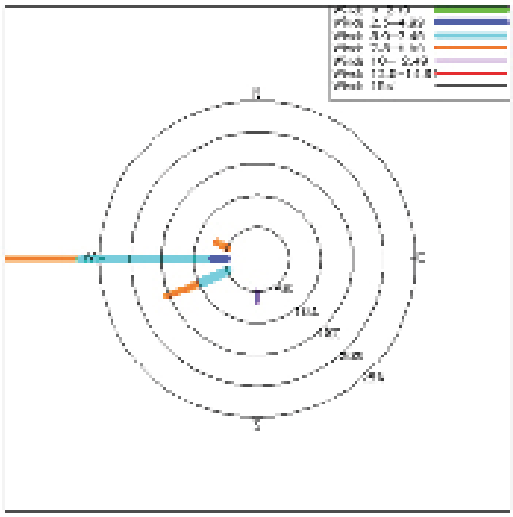
The two main water features on this site, the Pacific Ocean and Lake Merced, are quite similar but do have some differences. Both of these water features are to the West of the site. Lake Merced is located right in between the Campus and the Pacific Ocean. Both of the water features are well maintained and are surrounded by nice vegetation and are a popular feature for visitors to interact with.

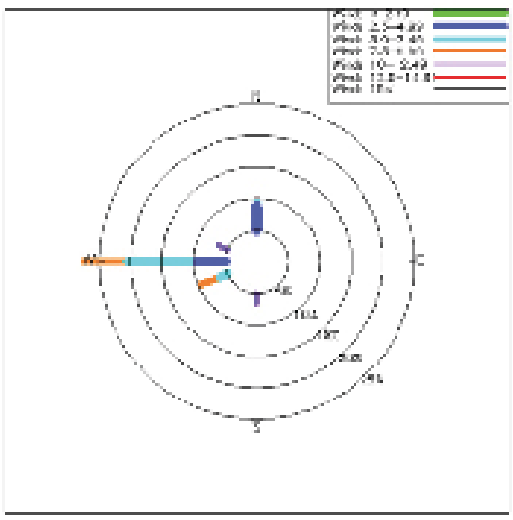
The interaction that occurs at Lake Merced is mainly peripheral. There really are no activities that occur on the lake. Most of the activities are limited to the scenic walks and vistas around the lake. Whereas, on the Pacific Ocean there is activity on the beach as well as in the actual water. Surfers, Boogie boarders and swimmers are commonly seen interacting with the site.

Another difference is that for the most part the water on Lake Merced is very still, whereas, the water in the Ocean is very active and can be turbulent. Both the water features do provide great views, smells and activities for patrons of the site to participate in. Both of the water features are also very clean for the most part and remain uncontaminated. The water features are clearly permanent and will provide activities and fertilization to this area for a long time to come.









Wind Roses

Not only can wind roses be used as form generators but they also aid in thoughtful consideration to where, how often, and at what velocity wind occurs at the site.

Mean (1)			
Month	Daily Max	Daily Min	Mean
Jan	56.5	44.6	50.6
Feb	58.7	46.4	52.6
Mar	58.9	47.4	53.2
Apr	59.0	48.0	53.5
May	58.8	49.7	54.3
Jun	60.1	51.5	55.8
Jul	61.1	53.5	57.3
Aug	62.5	54.8	58.7
Sep	64.3	54.6	59.5
Oct	64.5	53.3	58.9
Nov	60.7	48.7	54.7
Dec	56.7	45.2	51.0
Ann	60.2	49.8	55.0

	Means/ Medians(1)		
Month	Mean	Median	Highest Daily(2)
Jan	4.14	3.82	2.65
Feb	3.74	3.21	3.90
Mar	3.23	2.46	2.52
Apr	1.17	.95	1.45
May	.51	.17	1.44
Jun	.09	.02	1.66
Jul	.03	.00	.50
Aug	.08	.00	1.20
Sep	.17	.03	1.98
Oct	1.03	.73	3.15
Nov	2.61	2.21	2.12
Dec	2.97	3.02	3.43
Ann	19.77	17.94	3.90

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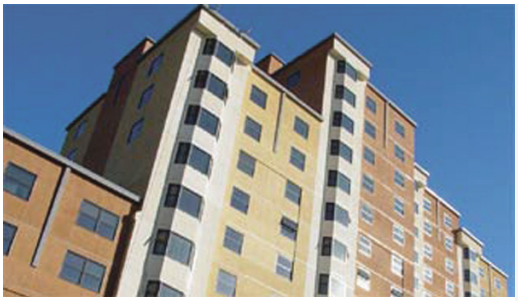
Temperature Chart / Rainfall Chart

The weather for this site is very mild. There is no real influx in rainfall or drastic temperatures. The climate stays cool and comfortable throughout the year and the rain keeps to a minimum.



The Towers

Also located in Centennial Square these apartments are designed for underclassmen as well as students majoring in the creative arts and industrial arts.

Lake Merced

Located across the street from the campus this lake provides entertainment to students as well as a relaxing place to venture to. The lake provides nice cool breezes as well as views.

Hensill Hall

This hall is connected to numerous buildings on the campus through skyways. It is one of the most famous buildigs on campus for the unique laboratories inside as well as for the data that has been recorded.

Administration Building

This building is one of the most recognized on campus, because at some point students must enter it. Located inside are all administrative services as well as the offices for the President and Vice President of the University.

Constraints

The site constraints for the proposed facilities include street boundaries on all sides. To the South of the site are the dormitories and student living facilities that are owned and operated by the University. To the East of the site lies the existing Creative Arts Department. To the North and to the West lie other educational facilities. The Humanities department as well as other social science classes is held in these halls. Lake Merced is located farther to the West and even a little more to the West of that is the Pacific Ocean. To the far East begins the slopes upward towards the hills of downtown San Francisco.

Currently there is a large multi-story parking garage located two blocks to the North. Currently students use this parking lot during the day and for sporting events at night. This same pattern can be used now for students during the day; however, during the night the garage can be used as parking for events at the "Fourth Wall." The parking garage is quite large so even if there is a sporting event and a creative art event on the same night there still should be plenty of parking available for all those who shall come. Also, the typical street parking will still be available for all of those who want to. There are also other parking lots scattered throughout the Campus that can be used as overflow.

The water table does not seem to have any constraints to it. For the most part the water table seems to fluctuate very little and previous precautions and a flat site allow this feature to not be a constraint. Also, although the site is near some hills it does not have a history of flooding or mudslides that can be popular in California. The site and larger surrounding area have no relative historical problem with flooding or mudslides.

Interaction

Since the site is located on a University there is obviously a tremendous amount of human interaction through and within the site. For the most part the site is very well maintained. As in most public area there are crews responsible for the cleaning and picking up of garbage and litter throughout the area. With the large amount of pedestrian and vehicular traffic as well as the large amount of resources used such as; paper, food etc. it is important to manage the cleanliness of the area. The University does a great job of keeping all of these factors in check and continuing to maintain a high level of standards throughout the community and Campus.

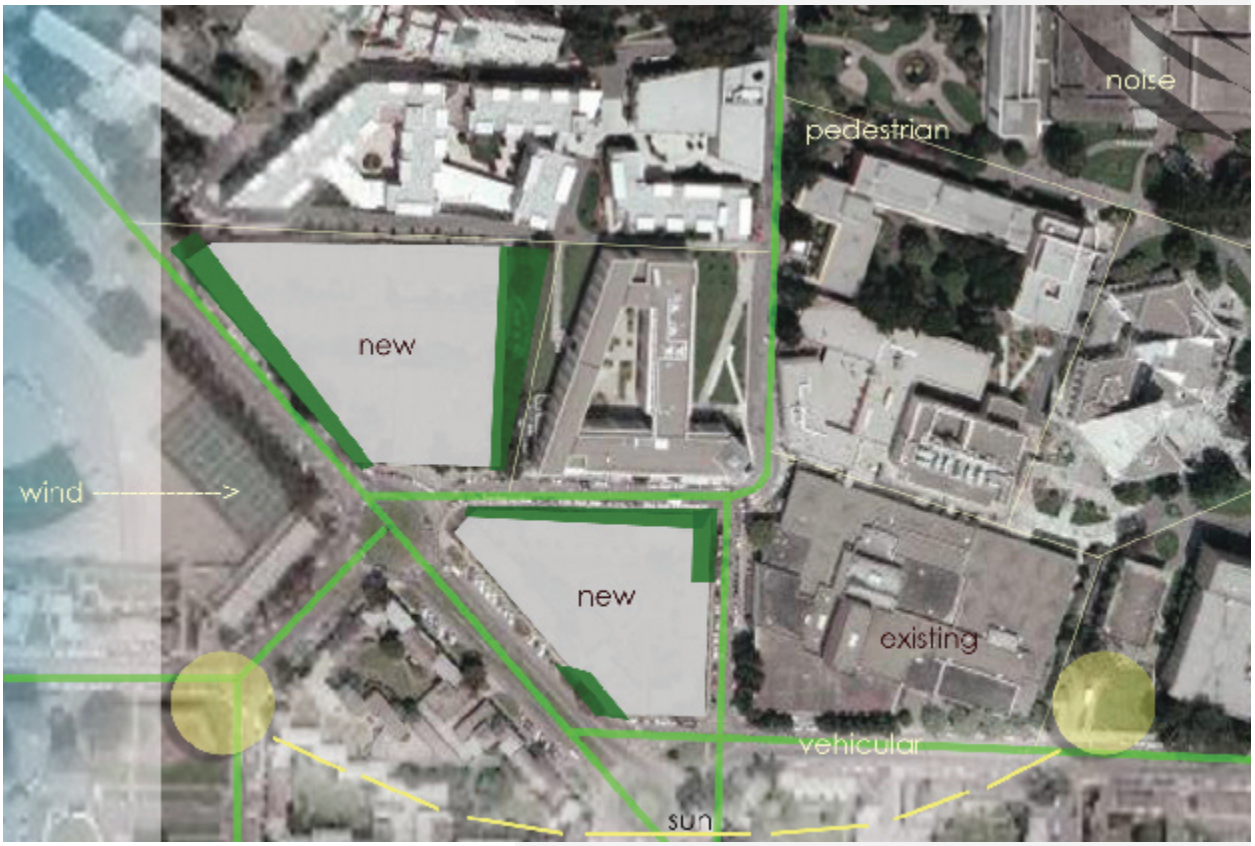
Most of the interaction on the site is pedestrian, whether it is students or staff walking through the Campus or riding their bicycles or roller blading through Campus.

There are also running and biking paths that continue through the Campus and off into the rest of the community. Most of the pedestrian use is from students and staff walking to and from classes. There are also several spots within the Campus where students and staff can go and relax and study or just interact with others on the Campus.

Vehicular traffic that runs throughout this site and Campus is very organized and well maintained. There is one major parking structure along with other auxiliary parking lots. These are located in the peripheral areas of the Campus to eliminate vehicular traffic from running through the heart of the Campus. Wear and tear on the buildings of this area is what one would consider normal. There are no buildings that are truly run down or unappealing.

Currently there is not an underlying grid for the Northern part of the Campus. This Northern part is where the main educational buildings are located and for the most part can be considered the 'old' area of the Campus. The newer editions to the University Campus went to the South. These new additions are mainly composed of dormitory and residence life for the students of San Francisco State University. This Southern area of the Campus does have an underlying grid.

The axial pattern that was developed is now clearly seen in the layout of the streets and the infrastructure of walks and paths. Font Street separates the Northern and Southern parts of the Campus from East to West. Since the site is located on Font Street a design opportunity presents itself to incorporate the new grid into the old part of the Campus, consequently creating a stronger link between residence life and educational life.



[Program]

Programmatic Requirements:

The square footage allocation for these facilities is as follows.

□	Total Lot:	180,000	sq. ft.
□	Total Floor Area:	316,000	sq. ft.
	Performance Halls	125,000	sq. ft.
	Storage	8,500	sq. ft.
	Reception Area:	15,000	sq. ft.
	Lounge	7,500	sq. ft.
	Reception Office	400	sq. ft.
	Main Offices:	2,800	sq. ft.
	Learning env.	24,000	sq. ft.
	Painting	12,000	sq. ft.
	Sculpture	6,000	sq. ft.
	T.V.	2,000	sq. ft.
	Radio	2,000	sq. ft.
□	Circulation:	25,000	sq. ft.
	Exterior	12,000	sq. ft.
□	Offices	5,000	sq. ft.
	Faculty	3,000	sq. ft.
	Dean	500	sq. ft.
	Technical	1,500	sq. ft.
□	Museum/Exhibition	20,000	sq. ft.
□	Mechanical/Utility	45,000	sq. ft.

[Budget]

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Preliminary Budget

According to a San Francisco Chronicle ad from May 2005, San Francisco State University will receive a $10 million dollar donation towards the development of a performing and multi-dimensional arts building as an addition to the Creative Arts Department. The donation will come from alumnus Manny Mashouf and his wife. They both received undergraduate degrees from the University as well as their son.

□	Total Cost	$60,000,000
□	Design · Design Development · Schematics · Construction Documents · Misc./Fees	$3,000,000
□	Construction · Materials · Labor · Misc./Fees	$56,000,000
□	Other · Fees · Taxes · Permits	$1,000,000

[Performance Halls]

Time of use: Evening Perfomances,
8 am - 5 pm for rehearsal and set up, school hours

Spatial Relationship: Reception area, reception offices, lounge, storage, restrooms

Equipment: Sound production/recording, stage props, film production/recording

Furnishings: Stage, Concert seating, Research area, light/film booth

Special Considerations: Acoustical Considerations, dynamic panels

Activity Description: Large performance space to hold concerts, theatre and other larger scale events. Medium hall to support smaller venues. Lecture Hall for guest speakers and lecturers.

Total Area: 125,000 SF

Users: Performing artists, staff, students and patrons

Number of Occupants: 1,200

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[Reception Area]

Time of use: During Receptions, typically evenings.

Activity Description: Gathering area for before and after performances, welcome center, food service capabilities.

Total Area: 15,000 SF

Users: Students, staff, patrons, catering and janitorial

Number of Occupants: 600

Spatial Relationship: **R**eception offices, lounge, performance hall, restrooms, storage

Equipment: Sound equipment for ambient noise.

Furnishings: Tables, chairs.

Special Considerations: Food service

[Reception Office]

Time of use: 1 person from 8 am - 5 pm
4 people during a performance

Activity Description: Reception area control, offices, reception desk, administraation.

Similar Spaces: Faculty Offices

Total Area: 400 SF

Users: Staff, coordinators, students w/permission.

Number of Occupants: 4

Spatial Relationship: Reception area, storage, lounge, performance hall, restrooms

Equipment: Office equipment

Furnishings: Desks, tables, chairs

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[Lounge]

Time of use: Before/After performances

Activity Description: Area for performing artists to eat, sleep, relax before/after performance

Total Area: 7,500 SF

Users: Performing artists, janitorial and staff

Number of Occupants: 12

Spatial Relationship: Reception area, reception offices, storage, performance hall, restrooms

Equipment: kitchen equipment

Furnishings: Sofas, chairs, tables

[Offices]

Time of use: 8 am - 5 pm, evenings of performances

Activity Description: General Use Offices

Similar Spaces: Faculty Offices

Total Area: 2,800 SF

Users: Performance Coordinator, Secretaries

Number of Occupants: 8

Spatial Relationship: Secretary, Reservations, Toilet rooms, Auxiliary Offices, Security, Graduate Students

Equipment: Office equipment

Furnishings: Desk, table, chairs

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[Security]

Time of use: 24 hours/day

Activity Description: Security Hub, video/audio control room, surveillance.

Total Area: 300 SF

Users: Security Officers

Number of Occupants: 2

Spatial Relationship: Coordinator, Secretary, Reservations, Toilet rooms, Auxiliary Offices, Graduate Students, performance spaces

Equipment: Surveillance equipment

Furnishings: Tables, chairs, desks

Special Considerations: Central Location

[Storage/Prop]

Time of use: 24 hours/day with proper access requirements

Activity Description: Storage for all movable equipment, extra furniture, accessories, expensive elements.

Total Area: 8,500 SF

Users: Staff, Janitorial and students

Number of Occupants: N/A

Spatial Relationship: Reception area, reception offices, lounge, performance hall, restrooms

Equipment: Props, music equipment, film equipment, tables, chairs, decorations etc.

Furnishings: Shelving, closets, bins etc.

Special Considerations: door sizes to accommodate large equipment, ventilation.

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[Painting]

Time of use: 8 am - 5 pm, 24 hours/day w/ access card

Activity Description: Painting Studios

Similar Spaces: Other Studios

Total Area: 12,000 SF

Users: Students and Staff

Number of Occupants: 45

Spatial Relationship: Learning Env., Toilet Rooms, Studios, Sculpture, Music, T.V., Radio

Equipment: Media Carts

Furnishings: Easels, desks, chairs, tables

Special Considerations: Storage, preservation, ventilation, fire protection

[Sculpture]

Time of use: 8 am - 5 pm, 24 hours/day w/ access card

Activity Description: Sculpture Studios

Similar Spaces: Other Studios

Total Area: 6,000 SF

Users: Students and Staff

Number of Occupants: 25

Spatial Relationship: Learning Env., Toilet Rooms, Studios, Painting, Music, T.V., Radio

Equipment: Media Carts

Furnishings: Sculpture wheels, refrigerators, kiln

Special Considerations: preservation, storage, ventilation, fire protection

SFSU

[Television/Film]

Time of use: 8 am - 5 pm, 24 hours/day w/ access card

Activity Description: Television and Film production

Similar Spaces: Radio

Total Area: 2,000 SF

Users: Students and Staff, Independent Filmakers

Number of Occupants: 20

Spatial Relationship: Learning Env., Toilet Rooms, Studios, Sculpture, Music, painting, Radio

Equipment: Sound recording/editing, video recording/editing, computers, mixing tables

Furnishings: desks, chairs, tables, sound room

Special Considerations: sound and light quality

[Radio]

Time of use: 8 am - 5 pm, 24 hours/day w/ access card

Activity Description: Radio recording and broadcasting

Similar Spaces: Television/Film

Total Area: 2,000 SF

Users: Students and Staff, radio hosts

Number of Occupants: 20

Spatial Relationship: Learning Env., Toilet Rooms, Studios, Sculpture, Music, painting, T.V.

Equipment: Sound recording/editing equipment, broadcasting equipment, computers

Furnishings: sound room, tables, chairs, desks

Special Considerations; sound quality, broadcast signal

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[Interior Circulation]

Time of use: 8 am - 5 pm, 24 hours/day w/ access card

Activity Description: Pathways and movement throughout the inside of the department

Total Area: 25,000 SF

Users: Anyone with access to buildings

Number of Occupants: N/A

Spatial Relationship: Interior of all spaces in the Creative Arts Department, exits onto exterior grounds

Critical Dimension: Width, Clearances, Clear Floor Space (Accessibility)

Equipment: Emergency Lighting, Water fountains

Furnishings: Benches

Special Considerations: Codes, ADA

[Exterior Circulation]

Time of use: 24 hours/day

Activity Description: Pathways and movement through the exterior grounds of the department

Total Area: 12,000 SF

Users: All persons on the SFSU campus

Number of Occupants: N/A

Spatial Relationship: The Creative Arts Department, streets, campus

Equipment: Emergency phones, lighting

Furnishings: Benches, landscaping

Special Considerations: Codes, ADA

SFSU

[Faculty Offices]

Time of use: 8 am - 5 pm, 24 hours/day w/ access card

Activity Description: Office Environment

Similar Spaces: Other Offices

Total Area: 5,000 SF

Users: Staff

Number of Occupants: 25

Spatial Relationship: Technical, Secretary, Toilet room, Student, Chapter Leader, Graduate, Dean

Equipment: Office Equipment

Furnishings: Tables, chairs, desk

Special Considerations: Meetings/Conference space

[Exhibition Space]

Time of use: 8 am - 5 pm, Performances

Activity Description: Art Galleries, Museum

Total Area: 20,000 SF

Users: Students and Staff, Visitors, Artists

Number of Occupants: 200

Spatial Relationship: Offices, Security

Equipment: media carts, projection equipment

Furnishings: movable partitions, benches, chairs

Special Considerations: security, preservation, storage, light quality.

[Mechanical/Toilet Room]

Time of use: As needed

Activity Description: Mechanical Equipment and utility

Total Area: 45,000 SF

Users: Authorized Personel, Janitorial Services

Spatial Relationship: Creative Arts Department

Equipment: Mechanical/Electrical/Data Equipment

Furnishings: Workstation

Special Considerations: Thermal Conditions, workspace, equipment access

Learning Environments

Time of use: 8 am - 5 pm, 24 hours/day w/ access card

Activity Description: Workshops, conference rooms, media labs, wood shop, printmaking

Similar Spaces: Studios

Total Area: 24,000 SF

Users: Students and Staff

Number of Occupants: 200

Spatial Relationship: Classrooms, Toilet Rooms, Studios, Painting, Sculpture, Music , T.V., Radio

Equipment: Computers, printers, plotters, scanners, digital equipment, projectors, media carts

Furnishings: Tables, Chairs, Desks, Work Stations, Cutting Tables, wood shop equipment, print making equipment

Special Considerations: Acoustics, Ventilation

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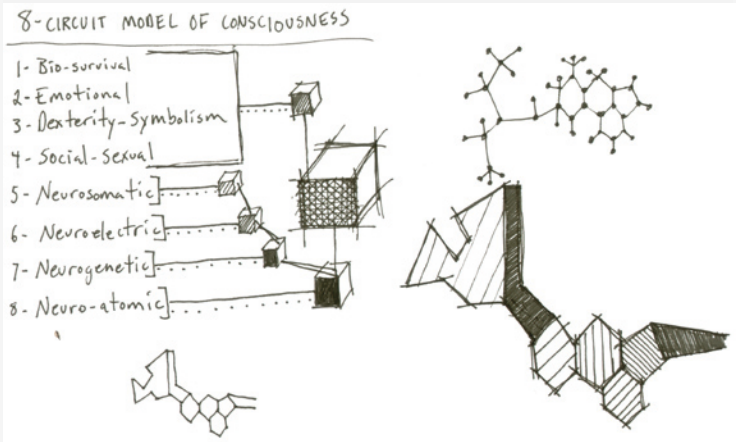
[Design Documentation]

[Concept]

SFSU

Schematic Design

Timothy Leary Knows All



Plan

Section

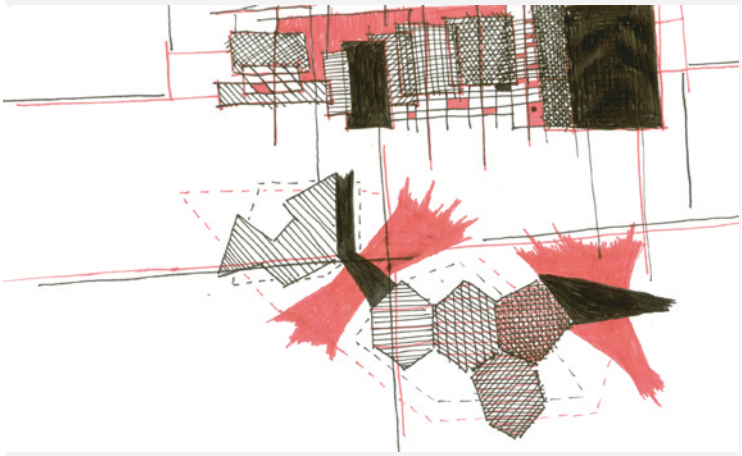
Density

Use

Relief

Node

Circulation



Juxtaposition

Void

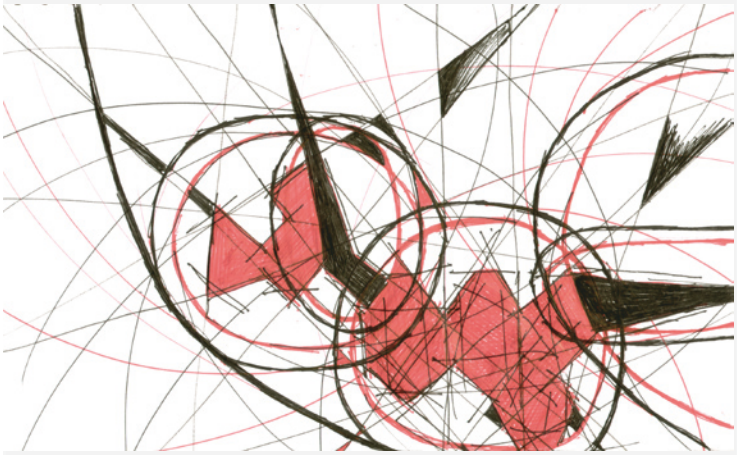
Interaction

Scale

Rythm

Form

Phenomena



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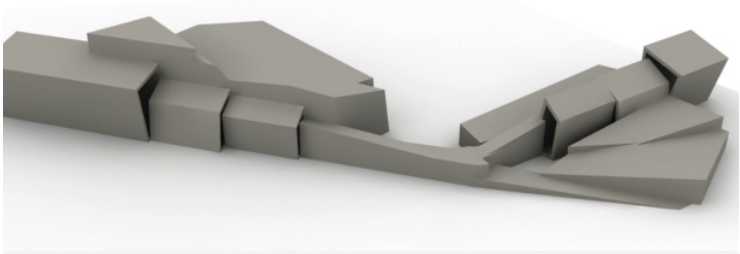
Schematic Design

Timothy Leary Still Knows All



Form

Articulation

Heirarchy

Site

Phenomena

Add

Move

Subtract

Circulation

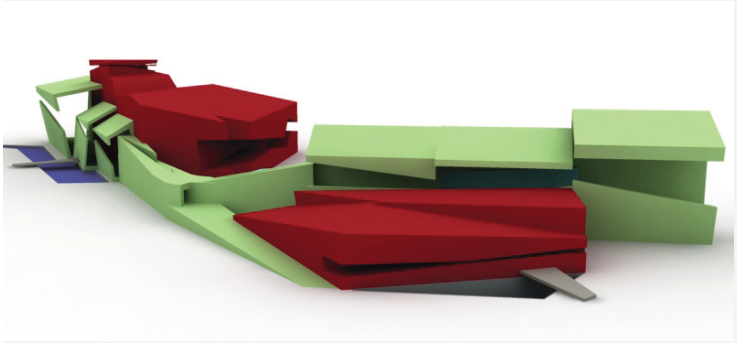
Dynamic

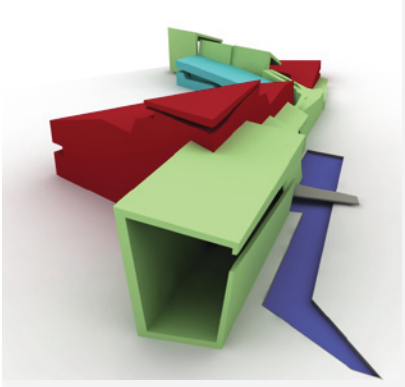
Sustain

Void

Rythm

Scale





{e}VOLUTION of Design through the {8}IGHT Gears of Heuristic Consciousness...

Design Concept:

In humans there is a natural collection of pre-defined 'Gears.' These 'Gears' represent different aspects of human consciousness. There are a total of eight 'Gears' in humans, four in the right lobe of the brain and four in the left lobe. By default humans only abstract from the four in the left brain. It is however possible to abstract from the other four. These other 'Gears can only be reached through some form of stimuli. It is proposed that the collection and harnessing of creative energy within The Fourth Wall will be the stimuli that allows the abstraction of these other "gears."

Concept to Form:

The existing Creative Arts Department and the addition directly adjacent to it represent the original four 'Gears.' The link that occurs between this section and the other section represents the *STIMULI* needed in order to abstract the remaining four 'Gears.' Therfore the other section of the complex represents the newly abstracted four "Gears' and culminates into the union between the left and the right lobes of the brain.

1	**BIO-SURVIVAL**	one dimensional perception - forward/backward
2	**EMOTIONAL**	two dimensional perception - up/down
3	**SYMBOLISM**	three dimensional perception - left/right
4	**SOCIAL**	four dimensional perception - transmission across time
5	**NEUROSOMATIC**	multi-dimensional space - further understanding of transmission
6	**NEUROELECTRIC**	consciousness of abstracting - mind becoming aware of itself, independence
7	**NEUROGENETIC**	collective unconscious - archetypes
8	**NEURO-ATOMIC**	constraints of relativity - true understanding, purpose

{e}VOLUTION of Design through the {8}IGHT Gears of Heuristic Consciousness...

THE FOURTH WALL

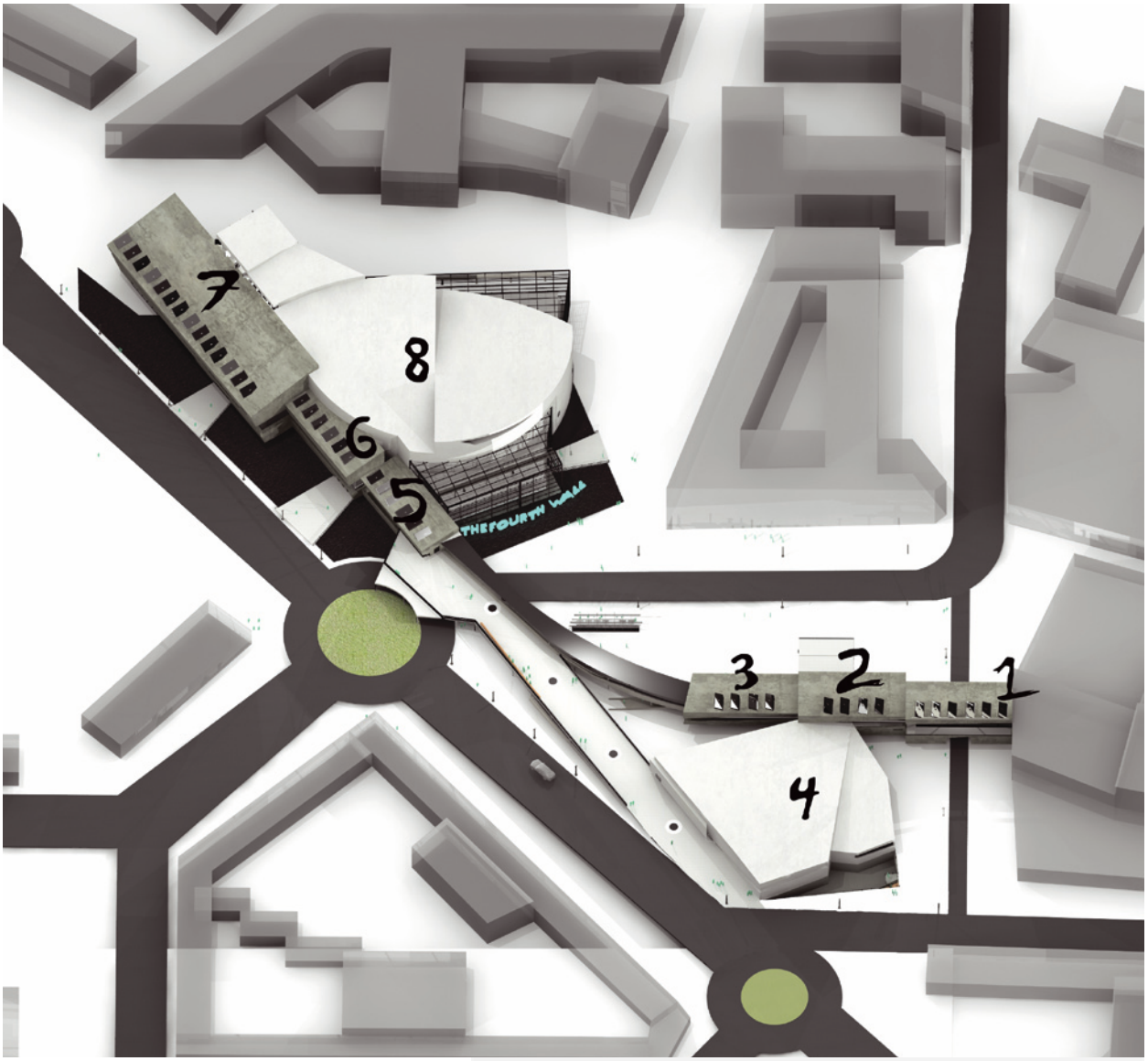
Broken Down

The Fourth Wall:

Is the imaginary invisible wall at the front of a stage, through which the audience sees the action in the world of the play or performance. In general it refers to the boundary between the fiction and the real world.

Breaking through the Fourth Wall refers to the fiction acknowledging that the real world exists and vice-versa.

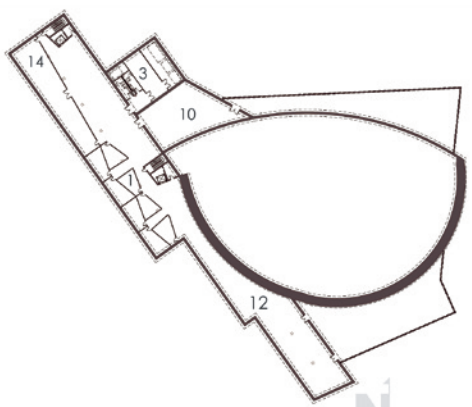
For this project breaking through the Fourth Wall signifies the acknowledgement of the other four gears and the movement towards achieving them through creative energy.

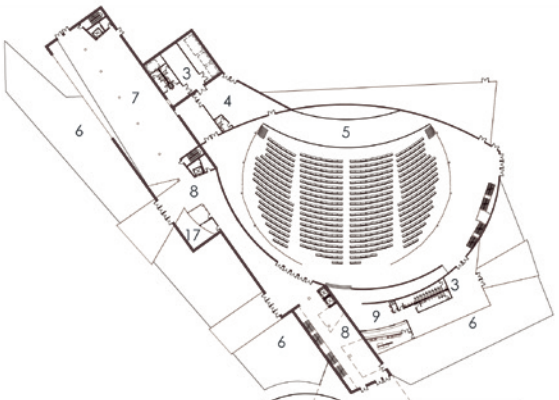


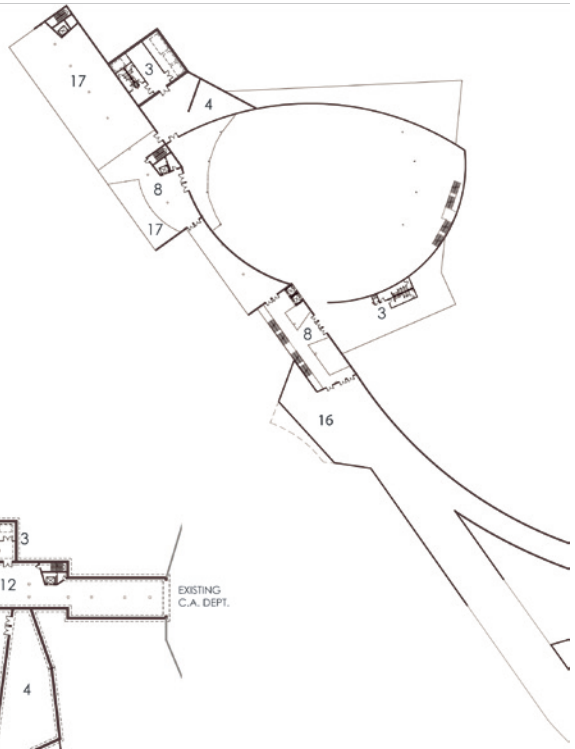
{the 4TH wall}

BROKEN DOWN

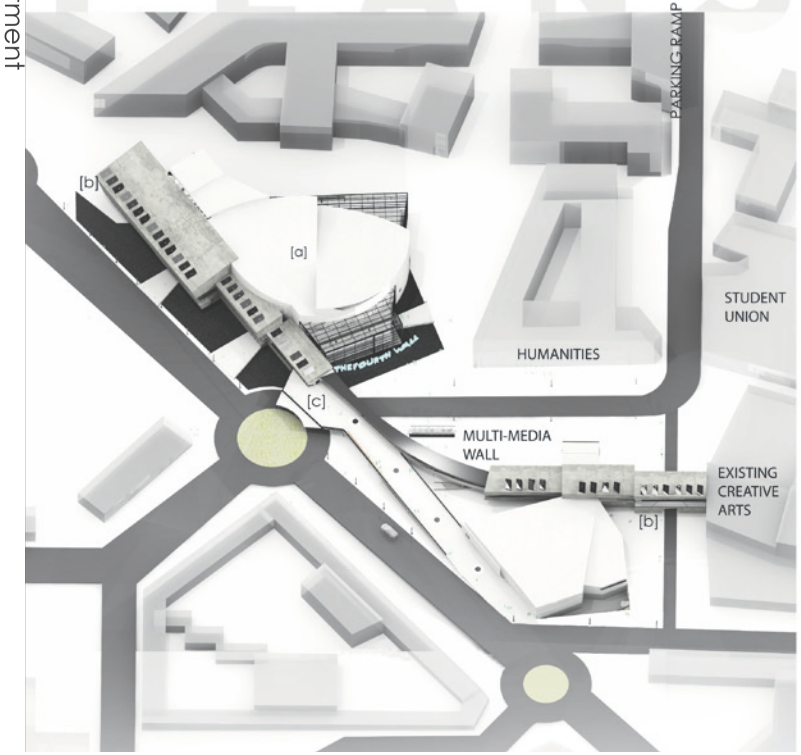
[Boards]







PLANS



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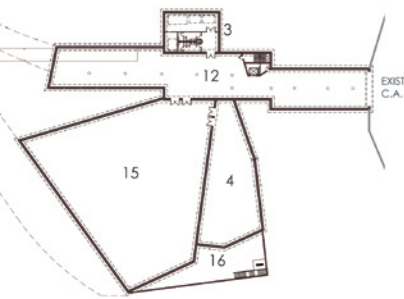
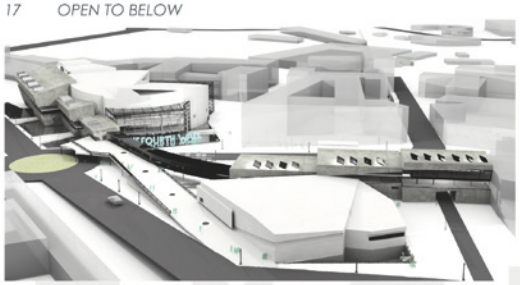
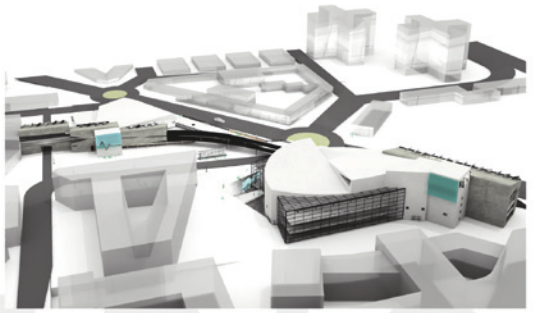
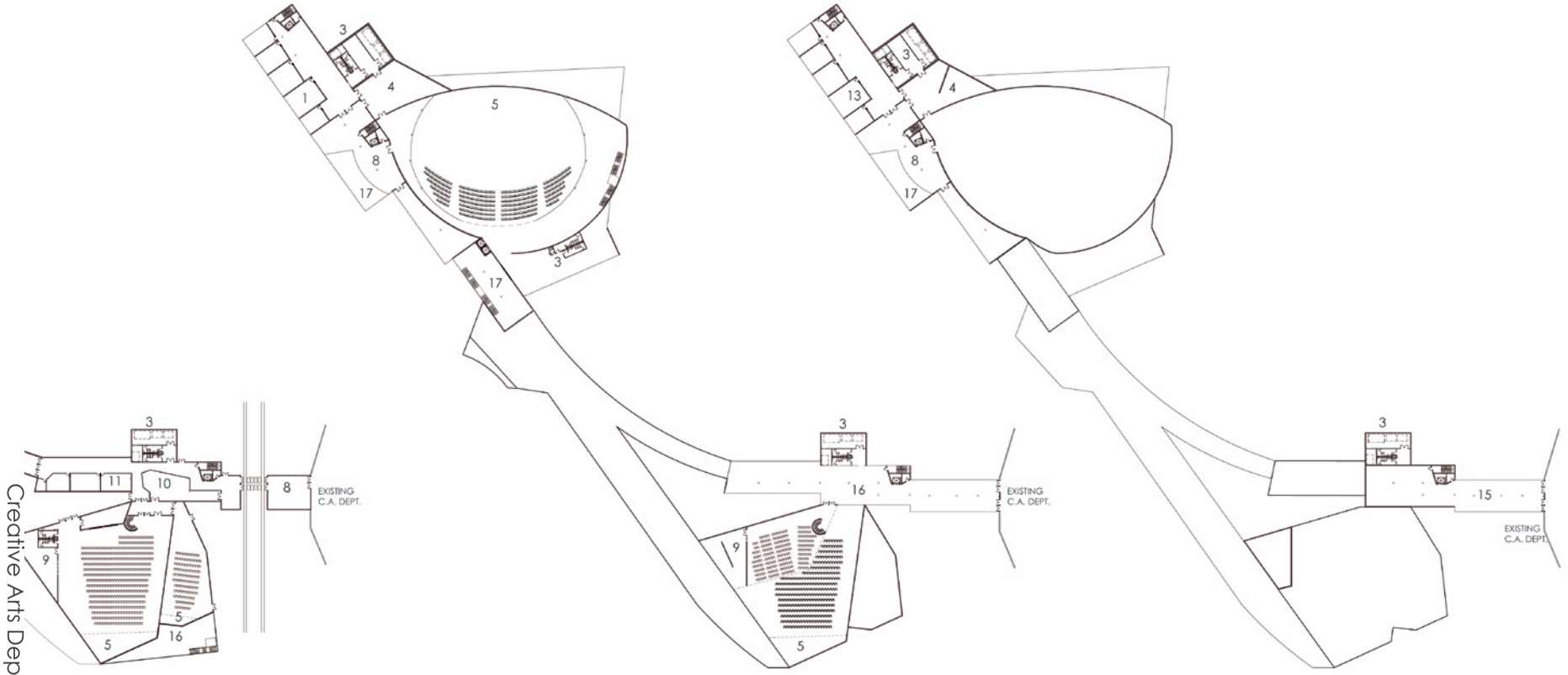


EXTERIO



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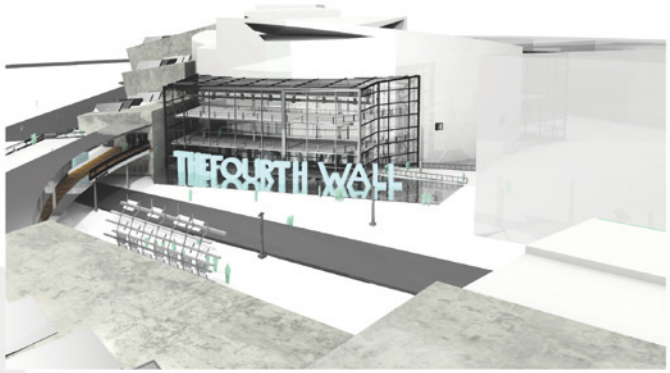
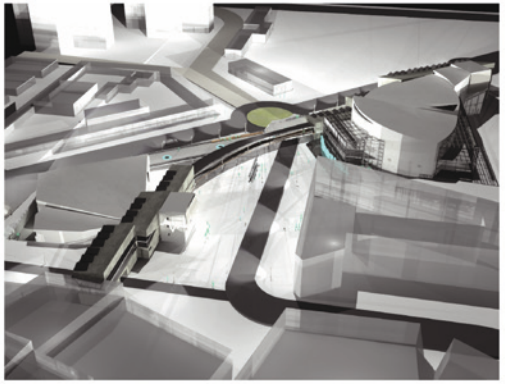
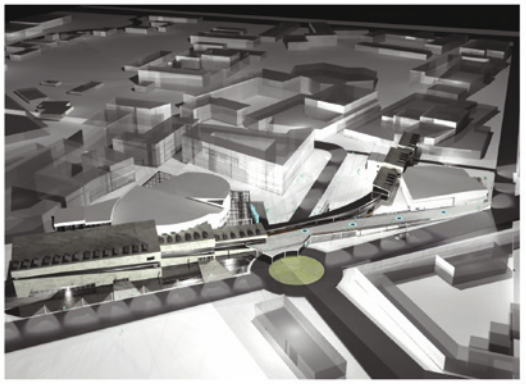

THE FOURTH WALL

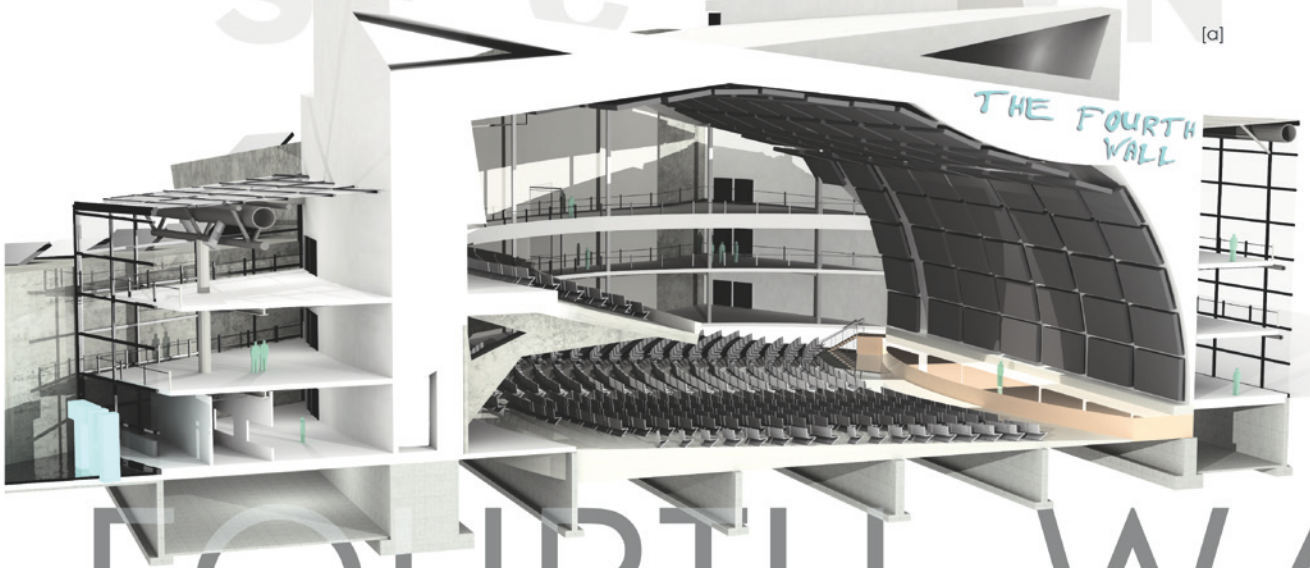




SFSU

SFSU

SECTION



THE FOURTH WALL

[SAN FRANCISCO STATE UNIVERSITY]

CREATIVE ARTS DEPARTMENT ADDITION

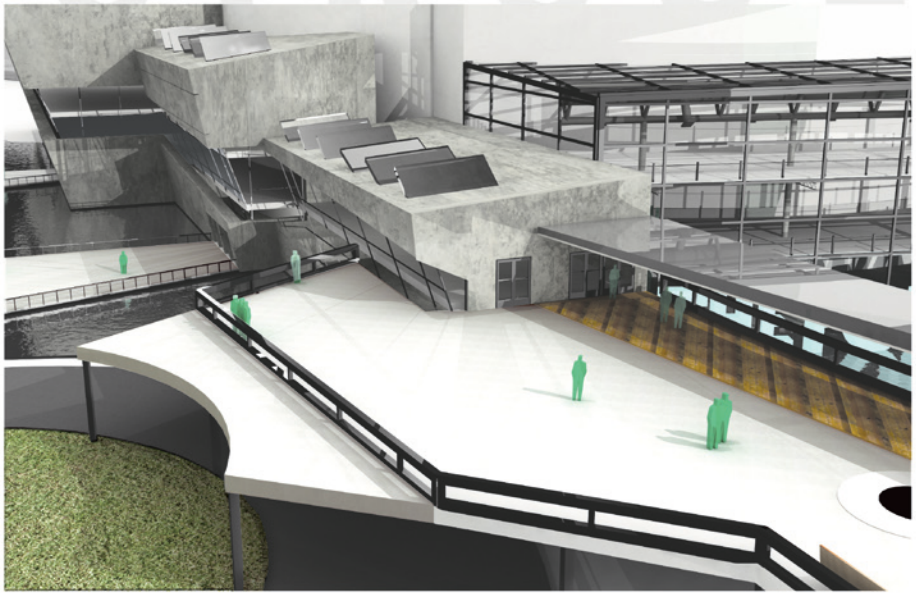
[P]rogram

San Francisco State University has recently put in motion events for an addition to their Creative Arts Department. This addition calls for an expansive increase in Performance Spaces as well as other art related studios and offices.

[4]ourth Wall

This design solution embraces all of the phenomena that San Francisco State University has to offer. By providing an inspiring pallette for the creation and observation of all forms of media, this design is able to embrace all of the creative and natural energies the University and

CIRCULATION



[c]

Adjoining onto the existing Creative Arts Department The [4]ourth Wall provides the growing department with the facilities that they need today and prepares them for the future.

The ***Circulation Link*** provides a dynamic bridge between the more private spaces and the more public spaces. This link also incorporates a plaza for relaxation and studies as well as provide overflow for the performance spaces. The link blends circulation from not only the two parts of the complex but also incorporates pedestrian traffic from the street level. Users are subjected to a variety of different view points as well as interacting with the natural phenomena of the site as they travel from interior space to exterior space. This link allows multiple levels of interaction as well as offer multiple scenic vistas and relaxing nodes.

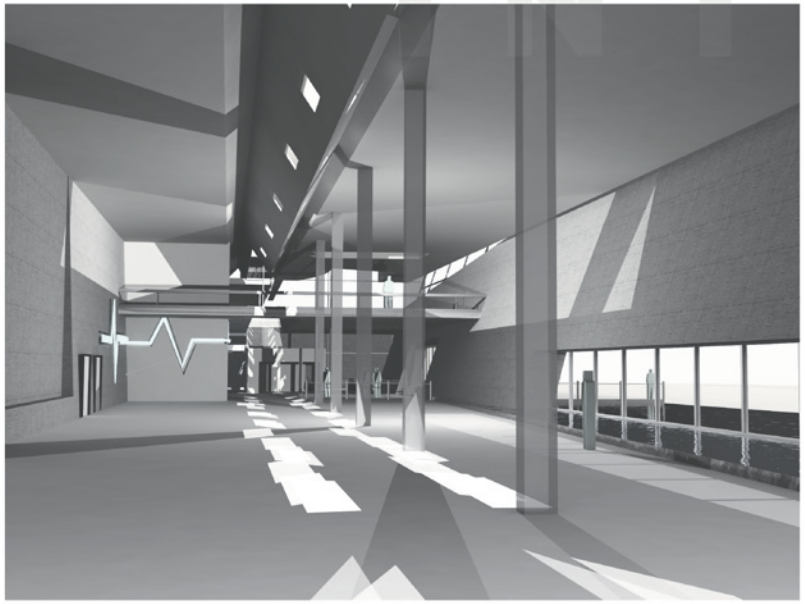
The Multi-Media wall is a node where everybody can see what is happening in the Creative Arts Department, and also a place to present some student work.

SFSU

The main ***Auditorium/Performance*** space affords the Creative Arts Department the ability to hold the major events that they have wanted for so long. This large space will be able to accommodate all types of performances while allowing great vantage points as well as excellent acoustical properties. The acoustic panels used in this space are dynamic and can be manueverd to optimize not only the acoustic properties of the space but also effect the intimacy required for each specific performance. This allows users to have different experiences within the same form and maximize the quality of output.

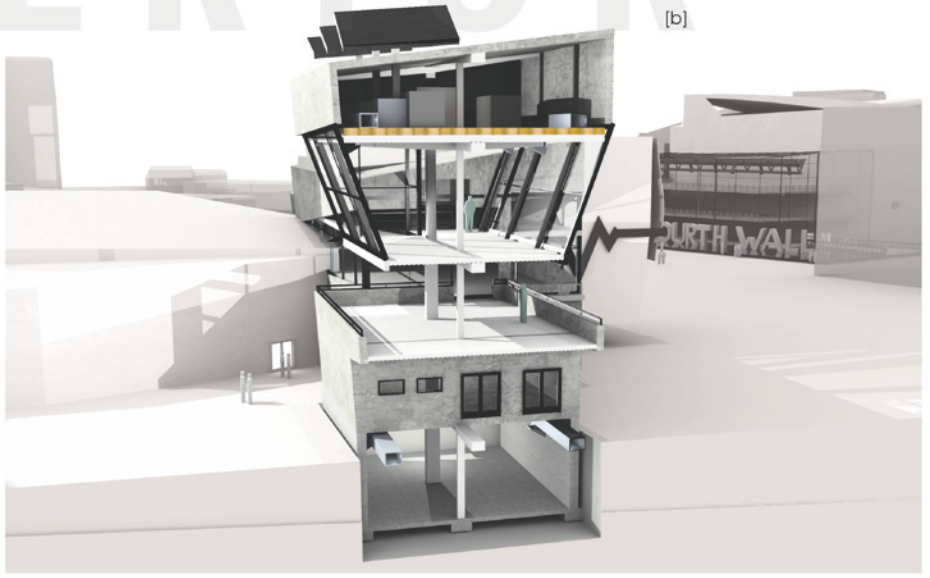
The performance space is flanked by interior garden spaces that not only provide refreshments and relaxation but also provide many unique views from across the reflecting pond onto the site.

INTERIOR

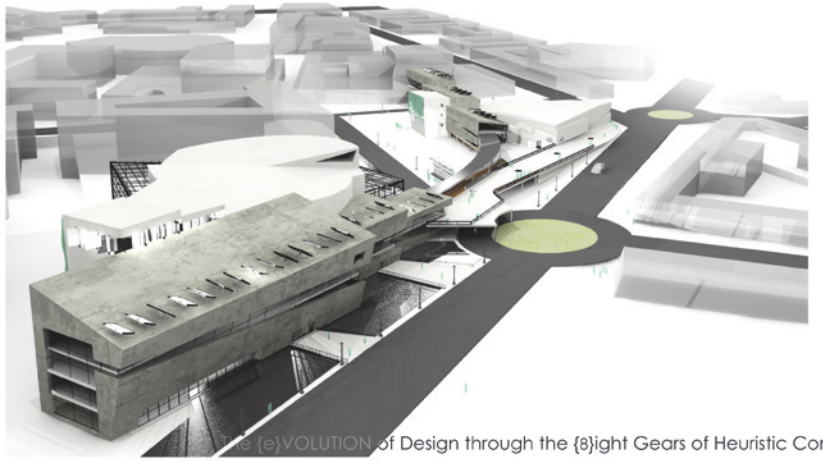


Interior spaces are developed to incorporate exterior phenomena into the enclosed spaces. With the introduction of water and wind elements into the interior a more transparent boundary between these two environments is created. Large open spaces are used to accommodate the wide variety of uses that can take place in these areas. The ***Main Entry*** and ***Exhibition Hall*** provides gathering space as well as a blank canvas for the different performances that are going on in the main performance space.

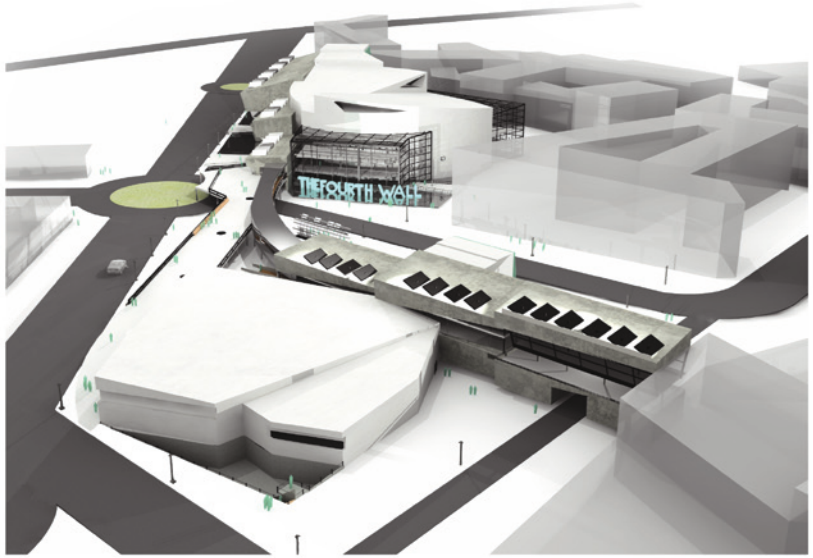
[b]



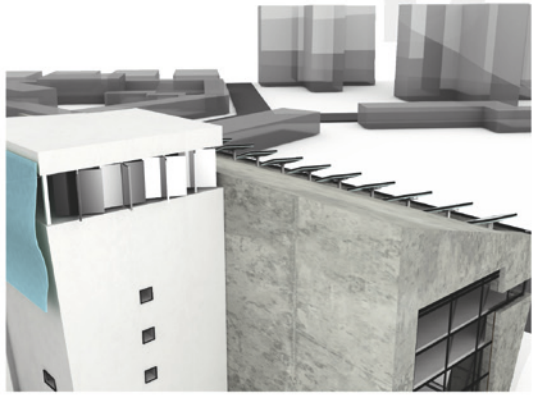
The ***Link*** between existing and new is a transparent and open module that gracefully bridges the old with the new. The space is also designed to be multi-functional and allow for art critiques and creation spaces. The link takes place underground, across the road, and on all subsequent levels above.



The {e}VOLUTION of Design through the {8}ight Gears of Heuristic Consciousness...

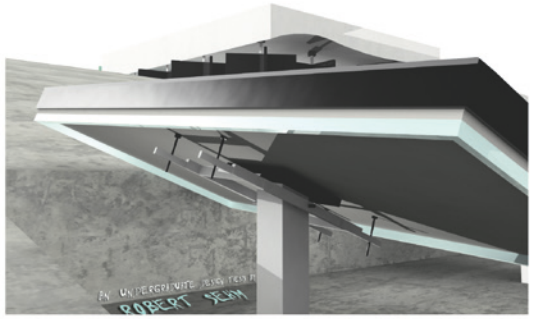


DETAILS



There are many dynamic features used throughout this design. These dynamic features not only help provide an alternate energy source for some uses inside of the building but they also add an aesthetic quality to the forms.

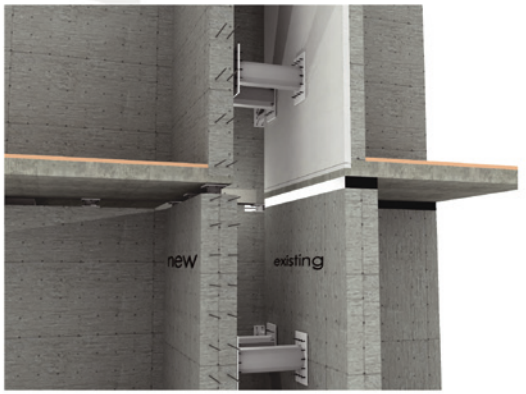
A ***Dynamic Fabric*** is used on the facade of the mechanical towers. This semi-permeable fabric is placed where exhaust louvers and wind turbines are. Not only does the fabric help conceal the exhaust louvers but it also becomes dynamic when the air forces hit it. This helps create a visually stimulating and dynamic facade. The same principles are used when the fabric is placed behind the ***Wind Turbines***. In this scenario wind passes through the turbines, providing an energy source, then hits the dynamic fabric.



The ***Solar Panels*** used are programmed to the sun path of the San Francisco area. This allows for the panels to remain at a perpendicular angle to the sun throughout the seasons as well as rotate during the day to maximize the amount of sun energy that is absorbed.

These panels also provide a dynamic feature that makes the forms not only more interesting, but also increases awareness. With these dynamic features the experience that one may have in the morning versus in the late afternoon can be quite different.

Also, in the evening these panels can be used to project light into the night sky. Further altering the effect that the complex has on users.

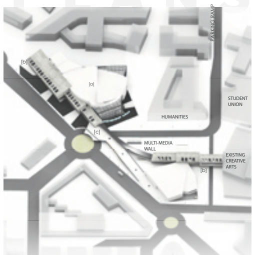


Isolation Pads are used to help control the seismic qualities of the site. It is very important to maximize the safety of the users of this complex. When bridging from old to new it is important to maintain structural integrity and not compromise design. The isolation pads allow for this transition to be made.

These isolation pads allow for the different structural elements to act independently but yet remain a part of the 'whole' structural system.

By absorbing the different seismic vibrations the isolation pads make construction such as this possible.

PLANS



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SFSU

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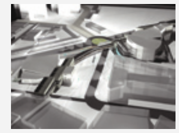

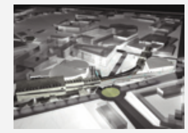

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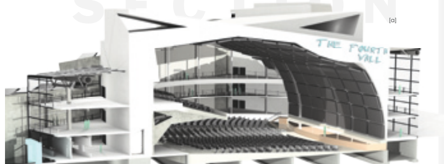

[a]

THE FOURTH WALL

[SAN FRANCISCO STATE UNIVERSITY]

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This design solution embraces all of the phenomena that San Francisco State University has to offer. By providing an inspiring pallette for the creation and observation of all forms of media, this design is able to embrace all of the creative and natural energies the University and Environment have to offer and allocate the means necessary to spread this media into the community and beyond.

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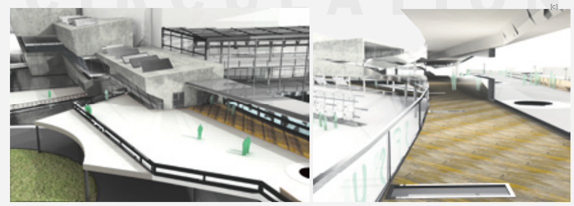

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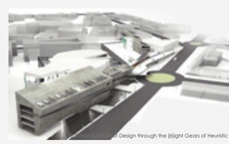

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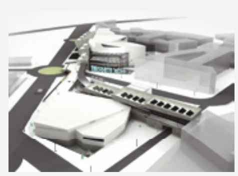

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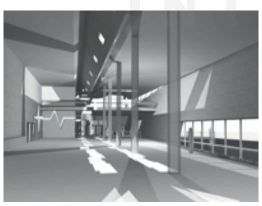

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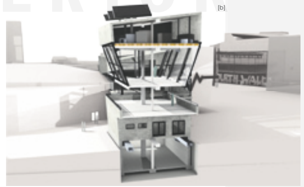

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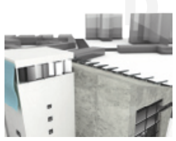

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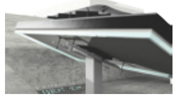

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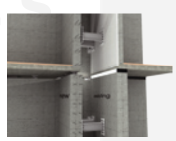

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Answers.com (2005). Environmental Psychology. Retrieved November 27, 2005 from http://www.answers.com/environmental_psychology

Answers.com (2005). Existentialism. Retrieved November 29, 2005 from http://www.answers.com/existentialism

Answers.com (2005). Fourth Wall. Retrieved November 23, 2005 from http://www.answers.com/fourth_wall

Answers.com (2005). Metaphysics. Retrieved November 28, 2005 from http://www.answers.com/metaphysics

Answers.com (2005). Transcendentalism. Retrieved November 28,2005 from http://www.answers.com/transcendentalism

Answers.com (2005). Urban Theory. Retrieved November 29, 2005 from http://www.answers.com/urban_theory

Arcspace.com (2002). Antoine Predock. Performing Arts and Learning Center. Retrieved on November 23, 2005 from http://arcspace.com/architects/Predock/predock_freatures.html

Arcspace.com (2002). Asymptote. Virtual Guggenheim. Retrieved on November 22, 2005 from http://arcspace.com/architects/asymptote/asymptote_features.htm

Arcspace.com (2002). Coop Himmelb(l)au. UFA Cinema Center. Retrieved November 22, 2005 from http://arcspace.com/architects/coop_himelblau/coop_himmelblau_features.htm

Arcspace.com (2002). Frank O. Gehry. Walt Disney Concert Hall Retrieved on November 24, 2005 from http://arcspace.com/architects/gehry/features.htm

Arcspace.com (2002). Santiago Calatrava. City of Art and Sciences. Retrieved November 21, 2005 from http://arcspace.com/architects/calatrava/calatrava_features.htm

Arcspace.com (2002). Tadao Ando. New Modern Art Museum. Retrieved November 20, 2005 from http://arcspace.com/architects/ando_features.htm

Arcspace.com (2002). Zaha Hadid. Community Arts Center retrieved on November 23, 2005 from http://arcspace.com/architects/ hadid/hadid_features.html

Abrahms, Leaman. (2002). Mayor's Office of Economic Development, San Francisco Economy. Retrieved October 11, 2005, from http://www.bayareaeconomics.com/publications/moed_q3_2002b.

Anolin, Michelle. (2005). University Snapshot: Quick Facts Retrieved October 8, 2005, from San Francisco State university Web site: http://www.sfsu.edu/prospect/facts.htm

Baker, Geoffrey. Antoine Predock, Architectural Monographs No. 49. John Wiley and Sons (1998)

Chavanne, Bettina H. (2004) "Vision and Reality" Retrieved on November 8, 2005. from www.dassaultfalcon.com/whatsnew/falconer.

Cowan, James. Architectural Acoustics: Design Guide. McGraw-Hill (2000).

Elder, Will. (2003). Presidio of San Francisco. Retrieved October 9, 2005, from http://www.nps.gov/prsf/nathist1/nathist/rare.htm

Ewing, Todd. (2005). San Francisco Center for EconomicDevelopment, Digital Arts and San Francisco. Retrieved October 10, 2005, from http://www.sfced.org/newsletter/newsletter_july_2005.htm

Gabor Lorant, FAIA (2005). Seismic Design Principles. Retrieved on November 29, 2005 from http://www.wbdg.org/references/ccbdoc.php?i=37&r=1

Giovannini, Joseph. Space for Art: Community Arts Center, Cincinnati. Lars Muller Verlag (2004)

Gehry, Frank O. Symphony: Frank Gehry's Walt Disney Concert Hall. Harry N Abrams (2003)

Google Earth (2005) [Computer Software] Satelite imaging (Earth Sat)

Hadid, Zaha. (2005) Rosenthal Community Arts Center. Retrieved on December 3, 2005 from http://www.zaha-hadid.com/

Klages, Mary (1997). Structuralism/Deconstructivism. Retrieved on December 1, 2005 from http://mural.uv.es/rovisan2/struc.html

Palahniuk, Chuck (Writer), and Fincher, David (Directer). (1997) Fight Club [Motion Picture]. United States. Fox Entertainment.

Predock, Antoine (2005), Tacoma Art Museum. Retrieved on December 4, 2005 from http://www.predock.com/tacoma2.html

[References]

Prox. Wolf D. (2005), UFA Cinema Center. Retrieved on December 3, 2005 from http://www.coop-himmelblau.at/coophimmelblau.html

San Fran (2003). San Francisco C.O. Climate Zone. Retrieved October 8, 2005, from http://www.climate-zone.com/climate/united-states/california/sanfrancisco-co/#

Schevitz, Tonya. (2005). 10 Million for Arts Pledged to San Francisco State. San Francisco Chronicle. Retrieved October 9, 2005 fromhttp: www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2005/05/30/BAG27D0P0A1.DTL

SFSU. (2004). Welcome to San Francisco State University,Photo Tour. Images retrieved October 11, 2005, from http://www.sfsu.edu/~puboff/tour/

Werner, Frank. Covering + Exposing; Coop Himmelb(l)au. Birkhauser 1st Edition Publishing (2001)

[Appendix]

B.A.R.T.: Bay Area Rapid Transit

Fourth Wall: The space separating the audience from the action of a theatrical performance, traditionally conceived of as an imaginary wall completing the enclosure of the stage.

Multi-Dimensional Media: All and any form of media that is created. Painting and other 2-D media. Sculpture and other 3-D media. Film and other 4-D media that transcends space/time.

MUNI: San Francisco Municipal railway

SF: Square Footage

SFSU: San Francisco State University

[Sustainable Design is ... .]

SFSU

What is sustainable design? It seems as though this is a question where the answer has been one of great interest this past century. Much like current design and construction processes a lot of energy has been wasted on the unattainable. In a field of innovation and where the life force of the creator relies on ones ability to be; evolutionary, creative, unique and boundless we must not try to separate sustainable design from 'regular' design, we must focus on design from a holistic approach. When limits are set and categories are developed certain bounds are placed and often irreplaceable. For instance, why do some design competitions require sustainable design solutions and some competitions specify no such requirements. Should not 'sustainable' be implied wherever the word design is used. Design should be design and sustainable design should be design. An adoption of the limitless characteristics of a current 'sustainable' design shall simply become design. Then we as designers, creators, and inhabitants can harness what is truly needed for the advancement of this world we know today.

For those however, that need a definition of what this new 'Design' is, then it is simple. This design, a design that encompasses all that is good for the art, artist, and inhabitant can be broken down into three essential components. Now, these components just like many good mechanical components cannot work well alone. These three components form a whole and this whole is the basis for what design is to become. Respect, Future, and Limitless are the three components to base this new evolution of design after.

Respect

Respect what? Again it is very important, especially in a design field to not be concerned about limitations. Respect what..? Respect everything. A lot of these principles have been key points for many pioneers of sustainable design such as William McDonough. However, it is important to not segregate 'sustainable' design from design. It should be common practice for all designers to use these all-encompassing components to drive their design to be as productive as possible on all levels; economic, social, and ecological. Once again respect should not be limited, but some of the key items that can be found in this component include; respecting the Earth. Mother Nature is ultimately responsible for our survival as human beings. So, is it not our duty as not only designers but also as human beings to be respectful to our life force. Now, without boundaries of what the designer does to incorporate this respect the variety of design solutions will not only benefit ecological and environmental aspects but also remain evolutionary and unique. A designer does not need to construct their building from rammed earth or straw bales in order for that design and building to be considered sustainable. In fact this is a very non-sensical notion and in the past has limited the creativity of many designers when a sustainable design was desired. Instead, the new 'design' will show a respect for Mother Nature, but not limit how that respect can be shown.

This respect can be carried through in a wide variety of design solutions for the benefit of all. These solutions include but are not limited to; the reuse of typical site condition materials. Instead of simply excavating soil from the site to be hauled away and stockpiled, this soil can be used as a beneficial design element. Whether this soil is reused in planting beds or reused as rammed construction materials doesn't matter. The fact that the designer realizes that without this precious Earth's commodities not only his job but also his mere existence would not be available. So, in order to show respect the designer will not impose his will too strongly or if the designer chooses to do this they will take further consideration to reimplement pieces they took away.

Another one of the Earth's precious commodities that should be respected is the sun. Obviously without the sun's energy and light our race would not exist. The use of light throughout design is often taken for granted instead of embraced. This should not be the case, a designer should respect the fact that the sun powers many things on this earth and it is important to use this benefit instead of exerting energy production through other sources whenever possible. The unnecessary consumption of valuable fossil fuels and electricity could be greatly diminished if designers considered and respected the sun's ability to aid in the design process.

The sun can also be used in another way. Obviously the sun produces energy and this energy can be harnessed by the use

of solar panels or other solar energy techniques, but this energy can also be harnessed in other ways. Through the creative use and design of wall thickness and materials a lot of energy can be saved. Tromb walls, which are basically very thick walls can be used to conserve energy. These walls in effect take the suns energy and store it inside of them and then release this energy at a later time when it is cooler.

Yet another commodity that we as a race are given but often take for granted is the Earth's wind power. For centuries turbines and other structures have been used to harness this other version of Earth's power. The use of wind forces cannot only be used to create alternate sources of energy but can also be used to create alternate sources of heating and cooling techniques. Adaptive and creative design solutions can accommodate for this wind force and harness it into energy for the rest of the design to use. Once again, diminishing the use of other valuable and limited energy sources. Through the use of other precious resources that the Earth provides us such as water we can use a combination of forces to creating heating and cooling effects that will use less energy as well.

Other forms of respect include economic and social respect. When designing a building it is very important to respect not only the current site conditions but also the site demographics. When it comes down to it the lifeblood of whether or not a building succeeds are the people. These people need to be able to interact with a space in which they fell respected and can give

respect. By being culturally sensitive and aware a designer can accomplish this and show their respect for the future inhabitants of their building. Also by considering and being respectful of the typology and purpose of the design a designer can be sure to accommodate the needs of the design to be sure the building is successful from a financial stand point, because if a building doesn't draw the people and show them respect and if the building doesn't produce money for the people and/or the owner than the life span of the design will be short and in turn be a waste of time and valuable energy and resources, This type of sustainability is often un realized and forgotten about, but can still play a vital role in the conservation of energy and materials.

One of the final ways that respect can be illustrated through design is the respect of tradition. Now, this is a broad term, but
also reinforces the limitlessness that is trying to be accomplished. By respecting the trade and the traditions of all the designers before and ahead of them a designer can create a thoughtful design that encompasses approved techniques, methods and ethics. It is vital for the designer to respect all laws that are written and/or unwritten. Through this respect comes reputation and not only increases the respect that the designer has for the field that they are in, but also increases the respect the client and owner's have for the designer. By respecting the past, designers can move into the future with an open mind.

Future

What does future mean? When determining what this component means and what all other components mean it is important to remember that these components rely on each other and often overlap and coincide. The future can be loosely described as what is to come. This is a vital component for all designers to consider when designing. Like previously mentioned it is important to respect the past, but it is also equally important to consider the future.

When designing it is important to consider and be considerate of the future. Now, granted the future in essence cannot be predicted but in order to practice 'sustainable' design or the new evolutionary 'design' it is important to at least think about it and plan for it. By being concerned for the future of the field of architecture as well as the future of the human race and the Earth we inhabit better design solutions will be made.

When considering the depleting natural resources that are available and the continued depletion of these resources into the future a designer will take this future into consideration and design to accommodate these issues. Alternate sources of energy can and should be used to aid in design. Alternate sources of materials can also be used to aid in caring for the future. Now, it is important for the designer and all else involved to not look at these actions like they are compromises, but simply alternate solutions. Some materials or construction

methods might have to be scrapped to accommodate these energy saving techniques, but this must not be looked upon as a negative action. Through creative design almost all problems can be solved with various different types of solutions. So, these solutions should not be looked upon as compromises but as solutions with the improvement of the future in mind. If we continue to use resources with the rate and disregard that we currently are soon these resources won't even be available. It is important to take this into consideration instead of take it for granted. Planning for the future might not always seem like the optimal solution, but respecting the past and respecting the future and our children's children will prove to be the catalyst for a new type of design that not only considers the future but also embraces it.

Limitless

What could limitless mean in relation to design and sustainability? Limitless in effect takes away all of the current categories and boundaries that exist and surround 'sustainable' design. A designer should not be preoccupied with the number or type of criteria that he must follow in order for his design to be considered sustainable. With no limits design will again be design, and this design will be sustainable but not referred to this as if it is the abnormal scenario, but instead the norm, THE DESIGN. The goal here is to take a step forward and create a world where all design is inherently sustainable. The design should know no bounds and not be limited by classifications or categories. The designer should not be judged on how many categories they

fulfill. A collective movement can be made toward this GREATER DESIGN. We as designers and creators need to break the bounds that segregate us into different categories and classifications and become what we truly are…DESIGNERS. With the elimination of the limits of being a sustainable designer versus a regular designer versus an economic designer, versus a social designer, we can become the all-encompassing designer. Designers that design for the good of the art, artist and inhabitant. Designers for the future.

Design

By definition Sustainability / Sustainable Design means; To keep in existence, maintain. To supply with necessities or nourishment. To support the spirits, vitality, or resolution of, encourage. Now should this be just the job of a sustainable designer, or should this be the job of all of those who are designers. Let us not be concerned with what classifications a designer falls into but instead concerned with the movement and the progress into the future as designers, designing together, designing with each other, designing for each other. The world needs this type of design to become the normality instead of the exception. In order for mankind to continue to grow as a race and as a planet we need to truly understand what is important. It is clear that

what is important is the need for a push towards greater respect on all levels, an understanding of the future and what needs to be done to preserve this very special privelige that we have. Finally, understanding that we as designers have no limitations in what we can do or want to do, we can accomplish anything that we want and we do not need the label of a sustainable designer to do it. All we need to do is understand that we hold a key to the future of the world and we must respect what we have been given and give back to human kind, Mother Earth and all those traditions and people that have come before and that will come after us.

Understanding the Process

Clearly the implementation of an ideal or perspective on design can't go without opposition or struggle. But the basic concepts in action here can serve as a major driving point for a new design mentality. It is a different world designing in today's world. The advancements in technology and the spread of knowledge on a global level has allowed us as designers to see on a grand scale how our creations affect the world. It is impossible to say the Le Corbusier or Mies Van de Rohe should have known or understood the impacts of their designs on the future. The technologies that we now have at our disposal were of no availability in past centuries. We now have the ability to understand and to track how we are depleting natural resources. We have seen and

continue to see how our disregard for natural resources cause cost increases and depletion. We have seen and studied how we could use Mother Earth as a beneficial resource, so why isn't there at least a movement towards this Utopian idea of design. If the famous architects of the past would have known what we know today, or have the technology for alternate solutions like we have today would they have ignored it like we currently are.

As designers and as co-inhabitors of this planet we need to rethink the current way that we go about our daily life and this includes the way we design. The implementation of 'sustainable' design as the typical instead of the atypical is the catalyst for a change in thought process that has the potential to revolutionize the design field and ultimately revolutionize the way we live our lives. It is fair to say that people vastly underestimate the power that design has on the way the world turns. When in fact, the decisions made by designers affect our lives exponentially.

The Answer

With the aid of three very essential components; RESPECT, FUTURE, and LIMITLESS, we can achieve something very special. Instead of designing for a sustainable world we will be designing for the world. Sustainability will be the norm and the world will reap the benefits of a movement with the greater good of mankind and the Earth as the forefront. What we do today will be felt tomorrow and one thousands years from tomorrow...

[References]

Answers.com (2006). Sustainable Design. Retrieved February 8, 2006 from http://www.answers.com/sustainable_design

Dictionary.com (2006). Sustainability. Retrieved February 8, 2006 from http://www.dictionary.reference.com/search?q=sustainability

McDonough.com (2006). The Hanover Principles. Retrieved February 6, 2006 from http://www.mcdonough.com/principles.pdf

Nesbitt, Kate. Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965 - 1995. Princeton Architectural Press (1996)

Todd, Nancy. A Safe and Sustainable World : The Promise of Ecological Design. Island Press (2005)