

# **Prague Institute of Photography**

**The history, theory, and debate behind museums,  
archival systems, and research institutions**

Mical Vertical Studio  
Rensselaer Polytechnic Institute School of Architecture  
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# Introduction

To be written later. This page is meant to serve as an introduction to the book for someone who picked it up and is wondering what its purpose is. There will be a brief introduction to the studio, to the topic of the studio (the Prague Institute of Photography) and a description of how and why we chose to research specific areas of institutional theory (museums, archives, laboratories, etc.) to help us formulate ideas for our designs for the photography museum. An introduction to the layout of the book and brief summaries of each chapter will also be included.

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## About this book

## About the studio

"Architecture, like the photograph, records, remembers, and memorializes, as a subjective recording medium whose content changes over time. This studio will draw upon photographic terminology and its potential within architectural thought, the significance of the negative and negation in photography and modernist aesthetics, the evolving role of mechanical reproduction in representation and construction, the varied concepts distinguishing static and moving images relevant and prevalent in contemporary media-architecture.

"This studio will investigate the ascendancy of the mechanical image in determining the spatial logic of modernity, specifically focusing on the relationship between concept, image, and space in the historical context of Prague Castle (Pražský hrad). The research phase will focus on the difficult relationship between photographic theory (Benjamin, Barthes) and architectural theory (Teige, Vesely), not to reduce architectural space to an image, but to understand and design within the sensual and metaphysical conditions to master that which in architecture cannot be photographed. The studio will engage the mass mediation of modernist avant-gardes in the specific cultural contexts of the Czech Republic, from Devětsil (functionalism) through Poetism (surrealism) in both photography and architecture. Students will develop a theoretically informed critical stance towards the architectural image, as a means of establishing historically informed design speculation. The final architectural design project is an institution sited along the castle which will include the Czech national photographic archives for research and museum of Czech photographic images and devices, integrated as the Prague Institute of Photography.

"The studio methodology will involve constantly working between different modes of representation, between analysis and imaginative projection, and

especially between concept to image to space, to develop significant individual insights, to historicize mass media and spectacle, and to engage built architecture as the surplus or excess of its representations. Research skills (how to look, and how to find) will drive student's architectural propositions.

"Throughout the semester, students will be expected to perform detailed development of significant concepts, images and spaces, saturated with meaning, to be set within the layered historical context of Prague - where surviving Gothic, Renaissance, Baroque, Enlightenment, and Modern projects co-exist in the most photographic and metaphysical of cities.

"Studio efforts in the first phase will culminate in a series of dense and saturated projective architectural images, drawn from and inspired by the Czech avant-garde (and their Bauhaus sources). The importance and influence of the Czech avant-garde in pioneering modern architecture (from Art Nouveau to Czech Cubism to the Werkbund "BABA" exhibition to Functionalism to Surrealism) was suppressed until the 1990s, but this period is one of many "alternate modernities" to emerge in recent scholarship, which students will examine in designing a space for research on the photographic image.

"Studio efforts in the final phase will involve the iterative model-based development of atmospheric, extra-ordinary, and memorable image-spaces within a sophisticated design of the Prague Institute of Photography adjoining the site of Prague Castle. The individual studio projects will demonstrate these insights, through tangible and clever tell-tale details in models and drawings."<sup>1</sup>

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1. Mical, studio syllabus.

To be written later. Information that will need to be placed here includes: Why and when the Czech government decided to build a (new?) photography museum in Prague. Why was the Prague castle vicinity chosen for the location of the Institute of Photography? Background information on the Czech government's needs and proposals for the museum (i.e.- what type of photographs did they intend to store here, what other services did they want included with the museum, etc.). Any other relevant preliminary information the Czech government would give to an architect when they commissioned him/her to design a proposal for the museum should be included here as well.

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## About the proposed Prague Institute of Photography

# A brief history of Prague and the Prague Castle

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## A brief history of the Czech avant-garde movement in art, architecture, and photography

# Research

## Introduction

In museums, there have always been fundamental questions driving the functional design of the spaces. For ancient Egyptians, the museum was a place of safeguarding; a treasure box. Today, there has been a radical shift from not only purpose but also content. The ripples of our leap into an age of technological, digital, and experimental art can be felt in all aspects of the museum and its design. Now, more than ever, the solutions to museum commissions must be found within the tensions of the old and new, and the ever-shifting relationships between art and the museum, art and the public, and the museum and the socio-political atmosphere.

Architecture's role in the modern museum cannot be precisely defined. Many precedents exist that portray the ever-shifting ideals and attitudes toward the museum. From creating spaces for the art to creating art for the spaces, architects must understand the functionality of the museum to be designed. Many theoretical questions can begin to stimulate new ideas about the purpose and details of the museum. While museums claim timelessness, the institution is less than two-hundred years old, and is therefore still young in its abilities.

With this in mind, the traditional content of the museum is losing relevance in an era of media hyper-saturation and high interactivity. In reviewing recent museum renovations and openings, interactive and engaging exhibits are gaining importance over the traditional objective display of artifacts. This becomes manifest in the organization of exhibits as well as the method of display. This has amazingly optimistic architectural implications, however. The importance of the form is gaining on function in these buildings, and the architecture is responsible for engaging the patron as much as its content.

In our research, we found museums whose programs varied from each other in several ways, dependent on location, culture, and intention of the institution. Still, there were certain aspects of the program that remained constant: back of house functions such as administrative offices, teaching studios or education centers, conference rooms, and storage space were common in many of the precedents we found. Visitor services such as museum shops and cafes, information booths, and public plazas or halls were common, and of course there was always plentiful exhibition space. Also necessary to the successful running of a museum are such infrastructural elements as bathrooms, water fountains, seating, and ticketing centers.

Several of the museums had either an auditorium or a cinema, and had gallery space divided for permanent versus traveling exhibits. Those particularly dedicated to research and learning had technology centers for either professional or public use, and sometimes for both. Other potential program spaces that could be useful are a children's center or daycare within the museum, and design studios as well as teaching studios. It is probable that these programmatic elements would be successful in transforming a purely observational institute into a multi-functional, comprehensive facility for learning, as many museums today have become.

## Museums

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## ***The Box and the Object***

### ***Questions to ask yourself:***

*What of the original museum typology is relevant enough to keep as a guiding factor?*

*Are the museums of today or of the past more like Pandora's box?*

*Are museums neutral?*

## ***Art Institutions in Conflict...***

### ***Questions to ask yourself:***

*Does a museum have to have a 'position'?*

*What is the nucleus of a museum: the people or the art?*

*What spatial ramifications do politics have on the museum?*

*How can a museum's architecture change the relationship between the art and the public?*

## **Theory and debate**

### ***The Box and the Object***

Taken from a case studies book about a group of handpicked museums, Montaner's introduction to this book is a useful view into the origins and evolution of museum typologies. He states that the modern museum is a direct descendent of the ancient Greek Museion, that was, among other things, a sacred space devoted to artistic creation and remembering creations of the past. The first typology to be associated with the museum was an opaque box, similar to a treasure trove. At first, 'museum' collections consisted of all things rare and intriguing, however later, around the end of the 18th century, collections became more of a reflection of the private collector. Around this time there was also a shift from private to public, a distinct preference of the transparent space afforded by galleries and tribunals as opposed to the smaller, more intimate collector's studies, private chambers, and secret storage rooms.

Montaner also writes that since the first appearance of the public museum around the end of the 18th and early 19th centuries, there has existed a tension between the museums role to instruct, educate, and "transmit academic taste" of the times to the people, and the museums obligation to preserve and maintain antiquities. However, the tension did not inhibit the perfection of the museums "architectonic theme" consisting of lateral thermal windows giving natural light, overhead cupolas, and overhead skylights.

Avant-garde architecture began to question the typology of the opaque box and took up an approach that dematerialized and de-solidified the shape and structure through transparency and shape shifting. North American architects questioned and explored the typology through a turn back to being opaque, but dealing with the interior in a different manner. Around the 1970s, there was a return to the linear typology

with a fresh interpretation. As of late, museum design has sought to recall "the primary experience of the museum" and to use these typological values as a stepping stone for explorations of contemporary solutions.

### ***Art Institutions in Conflict between Monoculture and Cosmopolitanism***

This article is actually a series of responses to the top of the title by various people, including artists, curators, etc. Muschamp's first response focuses on the shift from museums as culturally vibrant places of education and influence to expensive, characterless business ventures. He describes how today MoMA's budget tips heavily toward marketing and public relations, and often positions in the marketing and publicity department have more influence than curators and artists.

Noever believes that for every museum to be successful, it must take a unique stance on the relationship of art institute to art. For him, the artist and art should be at the center of the museum and not the visitor. "A museum is still a place where you have to question certain things, and an art institution is one of the very few places where we are able to analyze situation of our society."

Ambramovic, who is an artist, responded with a different opinion. As an artist, she feels that without the public, her work does not do what it should. The public brings her art to life and the fundamental problem is not so much the relationship between the museum and the art, but the museum and the public.

Cooke, who is curator of Dia Beacon, believes there is yet another conflict at play aside from the relationship between museum, art, and public: the issue of scale in this time of globalization. For her, there is too much branding of artists and artwork by country and by regional identity. She also brings up the point that Dia Beacon, located 1.5 hours north of NYC, has the advantage of location and space over urban mu-

seums. People must make time to take the trip up to visit, and there are fewer distractions and visits aren't generally drop-ins.

### ***McDonald's or MAK***

In this short article, Jetelova expresses her fear that we are on a fast track toward losing a museum's solidarity thanks to an increased focus on digitalization and globalization in the culture that helps establishments like McDonald's flourish. Exhibits would be condensed, compiled and conformed into something everyone can digest. This would change the role of the artist by forcing him to produce what the masses want if he wants to buy into the museum. If he doesn't, the masses don't receive his art and his art is nothing without a public. Eventually, Jetelova predicts that, "the kind of museum we are familiar with would no longer exist. Instead, many mobile and economically efficient versions of it would emerge, and their programs could be ordered any time, like a Big Mac, or taken out of vending machines and consumed wherever we wish."

### ***Museums and the Democratic Order***

Bordering on a brief history of the museum, Levin begins to look at the different functions that museums can fulfill. Although the museum is a late-18th-century innovation, there have been many precedents throughout history. By examining the ideas of museums from the "cabinets of curiosities" of the Age of Discovery to the first national museum of the US, the Smithsonian, many interesting ideas about museums are raised.

Levin uses the word "edutainment" to describe the realm of museums during the industrial age. As museums became havens for tourism, the necessity for more hands-on, interactive museums grew. Ideas from other successful tourist attractions such as Yosemite and Disney World began to influence museums; this is where the lounges, restaurants, bookshops, info

centers, and many other external commodities began to enter the world of the museum. It was important to view the museum as a public space, not merely a private collection. Yet museums have always favored the "politically and economically dominant caste over the less privileged."

One last important concept was the mention of the impulses that drove the ancients to start collecting. Levin notes these four: cupidity, curiosity, egotism, and sensory pleasure. The same impulses would drive later generations, and it can be questioned whether they still play a role in the museum of today.

### ***Place of Reflection or Place of Sensation?***

A main argument of Belting in this article is that three things are being lost in today's world: the experience of things, the experience of places, and the experience of ourselves. He favors an effort to initiate a regrowth of these concepts within the museum. Social spaces are often being forfeited in the name of technology, where advertising is prevalent. Museums should take advantage of this remaining social space as a part of its "aura." At the same time, it is important to remember that the exhibition is what is on display, and the space should not make the exhibition irrelevant. A new definition of space within museums may account for space for reflection. "What do people in museums do anyway? And what could they do? Can they be more than visitors?" All of these important questions force a realization of the opportunities available within the museum that does not simply need to include an exhibition of artwork.

### ***The Museum as an Exhibition Machine***

This interview with Jean Nouvel was based on his Culture and Congress Centre in Lucerne, but also provides some important insights into the architectural realm of the museum.

### ***McDonald's or MAK***

#### ***Questions to ask yourself:***

*What's the role of technology in new museums?*

*Is the museum more of an anchor today than it was in the past?*

*How do travelling exhibits relate to permanent collections?*

*What does the temporal atmosphere of many of today's exhibits do to the overall feel of a museum?*

### ***Museums and the Democratic Order***

#### ***Questions to ask yourself:***

*What impulses are driving the necessities for museums?*

*How can we negate the traditional image of a museum? (Example: Colonial Williamsburg)*

*How can museums become a place for tourism as well as favor all of the social classes equally?*

### ***Place of Reflection or Place of Sensation?***

#### ***Questions to ask yourself:***

*How can you get local citizens interested in your museum, not just tourists?*

*How can social aspects influence the museum?*

*What are the aims of people who work with the concept of the museum without accepting its traditional formulation?*

## ***The Museum as an Exhibition Machine***

### ***Questions to ask yourself:***

*How can you give a museum its own presence within a space?*

*Eternal question: Should one build a space that actually isn't a space, in which everything is possible, or should one create a place that artists have to come to terms with?*

*Is there a way to make access to the art both natural and direct while remaining inviting?*

## ***Of Holograms and Storage Areas...***

### ***Questions to ask yourself:***

*How can we break down the traditional notion of the image?*

*Do images need to be viewed sequentially and objectively?*

*What is the role of memory/construction of in viewing images (personal or cultural)?*

## ***Objects of Memory...***

### ***Questions to ask yourself:***

*What feeling do you wish to imbue your patron with?*

*How involved in the subject matter will the patron be?*

*What general strategies for arranging subject matter can be found? Temporally and spatially?*

Nouvel's views on the architect's job in a museum include creating a space for the artists and curators to put on a show, not imposing an architectural ideology upon the space, and showing what there is to be shown. As more and more museums move to travelling exhibitions, the spaces themselves must also change. Nouvel mentions that even though everything is variable, to him it is important for galleries to always appear to the public as though they were designed specifically for whatever objects are being exhibited.

Nouvel also mentions the presence of the museum within the chaos of the city. This seems completely relevant in placing a new museum in the heart of Prague, and begins questioning the ways to give a museum its own presence. The presence of art in public spaces and our daily lives is also important to Nouvel.

This interview is fairly short and worth a quick read to begin thinking outside the box about architectural implications of designing museums. No one has all of the correct answers, but Nouvel has many thought-provoking statements throughout his interview.

## ***Of Holograms and Storage Areas: Modernity and Postmodernity at Vienna's Jewish Museum***

This article deals solely with the re-modeling of Vienna's Jewish Museum. While it is very long and borders on case study, it has valuable descriptions of how the exhibits are presented, in an interactive, image based manner. Also, the article goes into great depth on the socio-cultural repercussions of the museum, while valuable, will not be discussed here. The focus is on the first 8 or so pages.

The museum uses many integrated, permanent "anti-exhibits" to draw upon memory of the history of the Jewish experience in Austria. These are largely image based, while some are object centric. The image was chosen

for its power of memory. While there are other examples, such as an architecturally integrated wall embossed with images, the article focuses on attention on a series of holographic displays. The intent and subject matter, as well as the method of display are quite interesting. The holograms are of pictures and pictures of objects, and work in a flickering way, as fragments of image, depending on where the viewer is standing. The intended effect is to assemble a history of the Jewish people in a fragmentary way, analogous to how we experience memory. The value one can distill from this is that the display of images can be more than 2-D cataloguing, and can touch experience in more than a purely objective manner.

## ***Objects of Memory: History and Narrative in French War Museum***

This article is not as relevant in the sense of empirical knowledge, or layout issues in museums, but is valuable in that it discusses attitudes in which the museum's collection could be displayed. In this case, war museums, the discussion focuses on methods of display and their effects, from engrossing dioramas to purely factual chronologies. Both deal with the evocation of memories, or nostalgia.

It should be said, when discussing this article, that war museums are heavily dependent on images and attract a diverse crowd, researchers, war-buffs and people looking for nostalgia (school trips). As such, war museums need to carefully craft their collections for an intended effect.

The article speaks of dioramic displays (akin to photos) being used to instantly bring a memory to life, to simulate a moment. These are displayed in a spatial way. One moves through the lines, from the supply train to the trenches. This differs from the chronological display of the objects and documents. The dioramas serve to "materialize memory (59)" and engross one in a narrative, while the effect of the chronologi-



cal display of documentation may serve to educate and is more memorially distant. The article goes on to discuss in some depth the strategies employed by specific French war museums to create a mood, or collective memory of the wars.

### ***Misplacing Memory: The Effect of Television Format on Holocaust Remembrance***

This paper deals with the use of the spectacle of TV and its associated methods to draw in and educate in a new way, one different than the static nature of previous museums, one more suitable for our attention deficient culture. One can gather from this strategies and reasons for using multi-media and dynamic displays for the conveyance of themes and materials in a more (blizzard of) information age oriented way.

The author walks us through the museum, and we are presented with the manner in which the museum experientially engages the patron in the subject matter, which in any other format, the patron would be extremely hesitant to elect to engage. In a heavily scripted and morally challenging narration, via a talk show host figure, one is guided through a heavily interactive series of experiences. These include kaleidoscopic "Nintendo speed" movies, video clips, sounds, etc. All of these seem to be given in a blurred, disorienting way, building up a library of hate, shocking the patron. This is the ultimate goal, to shock the patron into recognizing prejudice.

The author calls the effect of the museum "hyper-television," because if it were just like television, people would watch the History Channel instead. The article goes on to describe the more sober sections of the museum and to analyze the television culture this necessity for dramatization comes from. The value of this article is that it recognizes the challenges of enveloping the patron in the historical nar-

rative, the new function of the museum (where once it was only to present the patron with the artifacts). It gives ideas as to how one may go about grabbing and holding a reluctant patron through an otherwise painful (substitute other adjective) collection.

### ***The Boundaries of Memory: The United States Holocaust Memorial Museum***

This article is an in-depth look at the US Holocaust Memorial Museum, from planning to effect. While bordering on text-case study, it offers a breakdown of how the exhibits are organized, and how the experiential effect is created and manipulated. A main focus of the museum is a collection of 5,000 surviving photographs documenting the people and events surrounding the holocaust.

Patrons are put in situations and given narrations that again are meant to shock. They are presented as segments. It is organized as "a play in three acts (408)", each act a segment of the chronology of the holocaust. The permanent exhibit winds through many spaces and structures. But always images are paramount. The designers used photographs to constrict a personal link between patron and victim. It goes into some depth in describing and analyzing the use of photos and their connection to the museum exhibits at large.

An anchor of the exhibit is a multi-story "tower" of photographs, all from a private collections. Together they reconstruct the experience of one Lithuanian Jewish family. This collection is notable because the patron circulates through it, as it is hung on four walls up three stories. It serves as a break from the pain, and injects some life into a story of death, because it touches a family's history; however the patron is aware that most of the faces had become victims. This article explores the specifics of space and sensory involvement in a highly experiential and image-centric museum.

### ***Misplacing Memory... Questions to ask yourself:***

*In an interactive media culture, do traditional print media have the power to hold our attention?*

*What strategies can we employ to infuse the information age?*

*How can we break down the patron's resistance to the subject matter?*

### ***The Boundaries of Memory... Questions to ask yourself:***

*What do you want the patron to focus on, the image? Or it's back-story?*

*What strategies of thematic organizations and exhibition will create the above, or the rise and fall of involvement you require?*

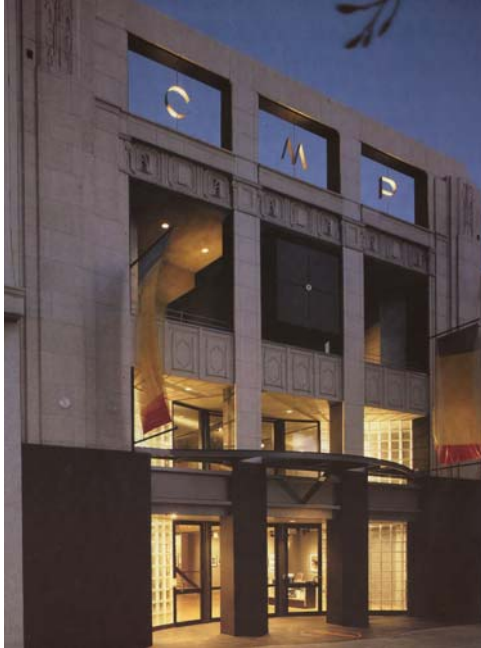


Fig 2.1.1: Exterior facade.

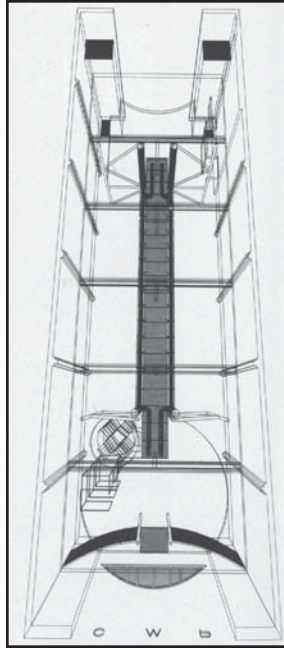


Fig 2.1.2: Plan perspective.

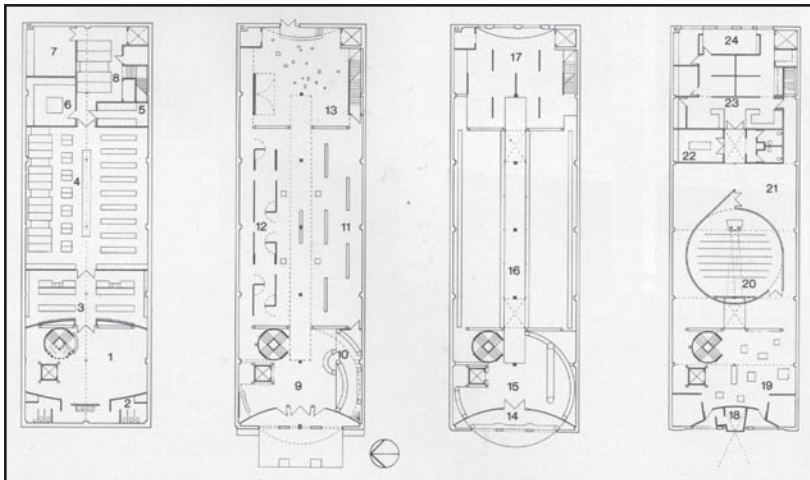


Fig 2.1.3: Floorplans.

#### Lower level

- 1 Exhibit space
- 2 Bathroom
- 3 Study room
- 4 Library
- 5 Darkroom
- 6 Restoration
- 7 Workroom
- 8 Storage

#### Ground floor

- 9 Entrance
- 10 Reception/bookstore
- 11 Permanent collection
- 12 Temporary collection
- 13 Camera exhibit

#### Mezzanine level

- 14 Balcony
- 15 Cafe
- 16 Mezzanine gallery
- 17 Exhibit space

#### Top level

- 18 Camera obscura
- 19 Interactive exhibit
- 20 Auditorium
- 21 Exhibit space
- 22 Conference room
- 23 Administrative office
- 24 Director's office

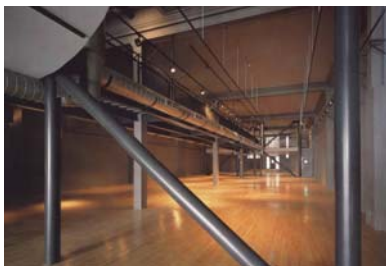


Fig 2.1.4: Main gallery space (pre-exhibit).

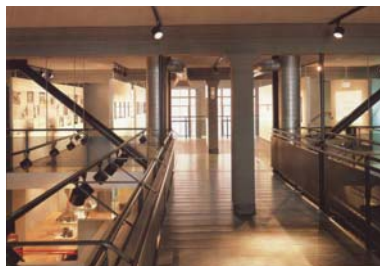


Fig 2.1.5: Mezzanine-level exhibit space.

## Historical precedents

### *California Museum of Photography University of California, Riverside*

#### Critical Design Issues

- Incorporating historic elements with modern exhibit space
- Taking advantage of long enclosed walls for controlling natural light

In 1986, Stanley Saitowitz renovated a 1930s Art Deco department store into the California Museum of Photography. Saitowitz's design demonstrates a strong connection between the building and its contents. The design uses form and materials to create architectural metaphors reflecting the process of seeing photography.<sup>1</sup> For example, the dark interior is rendered in seven shades of gray to mimic the gradations present in traditional B&W photography. Additionally, the curvilinear entry canopy correlates with the geometries present in a camera lens. Wood floors were used in order to provide warm, reflected light from the overhead spots.

The building contains a double-height gallery space, walk-in camera obscura, 100-seat auditorium, and research support areas including a library and study rooms. The museum hosts a variety of education and research programs as well as gallery openings. In order to support these, additional spaces such as darkroom, and conference room have been included in the program along with administrative support offices. The museum also includes a small bookstore and cafe.

The museum has central axis organization which is reinforced by the separation between the permanent and temporary exhibit spaces on the main level. This axis is further reflected by the mezzanine that longitudinally cuts the through upper gallery space. This organization also takes advantage of the long narrow footprint (45' x 145').

1. Ellis, 27.



## National Museum of Photography Oslo, Norway

### Critical Design Issues

- Incorporating modern exhibit space within a historic environment
- Division of programs within a single level design

To design the National Museum, Sverre Fehn readapted the fourth floor of a historic 1861 naval building in Horten, Norway. Working with the existing 4x5m brick vaults, Fehn created urbanlike conditions with a central promenade that extends the length of the 158m museum.<sup>1</sup> This museum is a good example of incorporating historic architectural precedent with contemporary ideas. Fehn was able to emphasize the existing structure while integrating it with modern exhibit space.

The museum contains a permanent exhibit on the history of cameras, a gallery for changing/revolving photography exhibits, cafe, library, and administrative offices. There is also a cool/controlled storage located above, in the wood raftered level. The museum is very long and narrow. The entrance is centrally located allowing for a natural division and controlled access between programs.

The main materials used throughout the project are the existed brick, glass, steel, and oak. The gallery space has whitewashed brick that allows for a neutral background for the displayed photographs.

1. Fehn, 14.



Fig 2.1.6: Temporary photography gallery.



Fig 2.1.7: Permanent exhibition.



Fig 2.1.8: Photography gallery.



Fig 2.1.9: Exterior elevation.

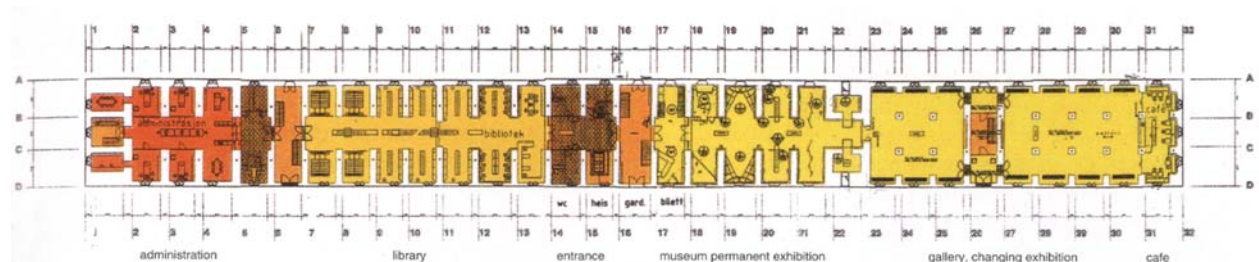


Fig 2.1.10: Floorplan.



Fig 2.1.11: Aerial view.

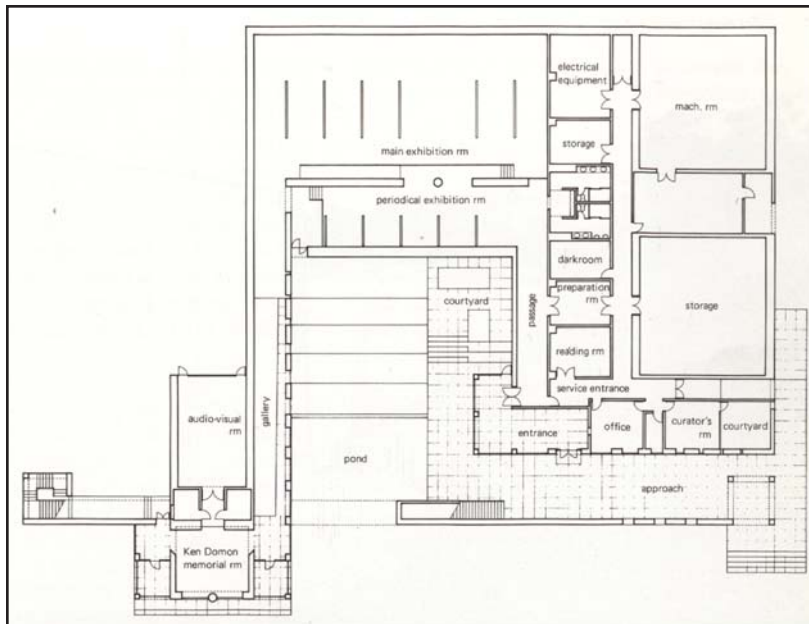


Fig 2.1.12: Floorplan.



Figs 2.1.13 & 2.1.14: Gallery.



Fig 2.1.15: Courtyard.

## Ken Domon Museum of Photography Sakata, Japan

### Critical Design Issues

- Controlled circulation separating gallery from supportive programs
- Partially underground gallery to control natural light

Yoshio Taniguchi & Associates were selected to design the Ken Domon Museum, the only museum dedicated to one single artist. Construction was completed in July of 1983. The design worked toward reflecting the natural changes occurring in the surrounding site caused by the changing of the seasons which is also prevalent in Domon's photography. The plan organization is reminiscent to a Japanese garden plan. The building's internal circulation is arranged around the exterior courtyards. The visitor is guided through the space as a reflection of the passage of time.<sup>1</sup>

The building consists of three main program areas: exhibition, memorial, and supporting spaces. The exhibition space is the first space experienced by the visitor. The gallery spaces are windowless allowing better preservations of the photographs. This is also achieved through partially burying the space underground. The gallery design was kept simple in order to provide an appropriate background for the photographs. The exhibition space is divided into permanent and periodical areas which are separated by vertical circulation. The gallery area links to a long, narrow gallery-passageway that opens into the memorial room, which functions as a lounge.

The supporting spaces include a darkroom, audiovisual and administrative areas. With the exception of the audio visual room, these areas are contained in one area in order to not interfere with the museum experience.

1. Taniguchi, 160.



**Center for Creative Photography  
University of Arizona, Tucson**

**Critical Design Issues**

- Incorporating a continuously growing archive collection
- Providing a variety of spaces to support educational research

The mission of the Center for Creative Photography is to provide a integrated program of preservation, access, and education that celebrates the history of photography and its contemporary practice.

The museum was founded through the University receiving the archives of significant American photographers—including Ansel Adams. These archives include photographs, negatives, albums, work prints, manuscripts, audio-visual material, contact sheets, correspondence, and memorabilia. It is important to recognize the range of materials and media types and their preservation requirements.

In addition to the archives, the museum has a print collection of more than 90,000 works by 2,225 photographers. The museum uses its galleries to show works from its collections. The museum is run by nineteen full time employees plus part-time students, volunteers, and temporary employees. This allows the gallery to change exhibits three times a year.

The Center's library holds more than 30,800 volumes on the history of photography. It also houses more than 100 periodicals, rare books, and hundreds of hours of videotaped lectures and interviews.

**Population served (annual average)**

Gallery visitors	30,000
Library visitors	12,100
Gallery/tours	300, serving 5,200
Public programs	20, serving 2,445
Print viewing	560, serving 4,180
Researchers	70



Fig 2.1.16: Entrance.



Fig 2.1.17: Front facade.



Fig 2.1.18: Entrance.



Fig 2.1.19: Entrance.



Fig 2.1.20: Gallery.



Fig 2.1.21: Gallery.

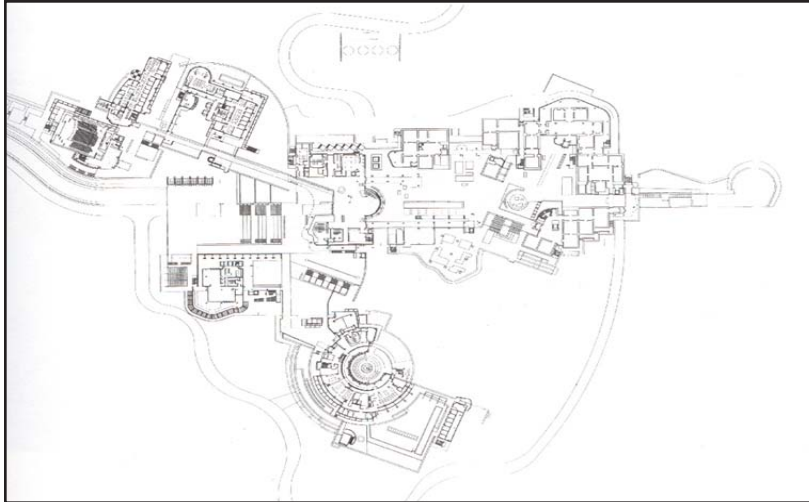


Fig 2.1.23: Ground floor plan.



Fig 2.1.24: Exterior view of complex.



Fig 2.1.25: Gallery space with skylight.



Fig 2.1.26: Entryway at night.



Fig 2.1.27: Exterior view.



Fig. 2.1.28: Entry hall.

## *The J. Paul Getty Center Los Angeles, California*

### Critical Design Issues

- Enormous complex utilizes two natural ridges on the site to designate space.
- Complex is considered "museum as campus"<sup>1</sup> with its extensive exhibit space as well as research facilities.

The design of the J. Paul Getty Museum in Los Angeles was submitted by Richard Meier as part of a competition held in 1984. Construction began in 1987; the museum was finally opened to the public on December 16, 1997.

The Getty Center complex is vast, comprised of many buildings containing a varied program, all of which is dedicated to research and education in the visual arts.

The complex is defined by two grids, each of which is based on the position of one of the two naturally occurring ridges in the topography of the site. Meier divided these grids based on a 30-inch square; most of the wall and floor elements correspond to this measurement.

The Getty Center houses a comprehensive accumulation of the arts; included in this is a collection of European and American photography. The foundation is based on the research and experience of these artworks, as well as on the dissemination of information via the internet and exchange of artwork.

1. Gerhard, 53.



## Museum of Contemporary Art North Miami, Florida

### Critical Design Issues

- Built to activate cultural activity in the town center (site was previously a parking lot).
- Cubist collage of geometric volumes.

The Museum of Contemporary Art in North Miami, also known as MoCA NoMi, was designed by Charles Gwathmey of Gwathmey Siegel & Associates Architects. The complex was completed in 1996; the site where it now sits was originally a parking lot in the town center. It is located between City Hall and the Police headquarters.

The Museum's aim is to give a wide-ranging audience access to modern art. They have exhibitions of the works of local talent, as well as hosting those of internationally renowned contemporary artists. Although the MoCA NoMi does not feature photographic work exclusively, all of their current and upcoming exhibitions (as of Feb. 2009) feature photography from a variety of artists.

The single-story building was hugely successful and well received by the inhabitants of the city of North Miami. It creates an experience that is "one of constant discovery" and lends an "intimate yet spacious feeling"<sup>1</sup> to those who utilize the space. The Museum of Contemporary Art was constructed as a cubist collage of four volumes, each of which is separately articulated, yet simultaneously interconnected with the others. These four main spaces are the large exhibition gallery, smaller art pavilion, outdoor art courtyard, and public plaza with reflecting pool.

1. Gwathmey, 4.

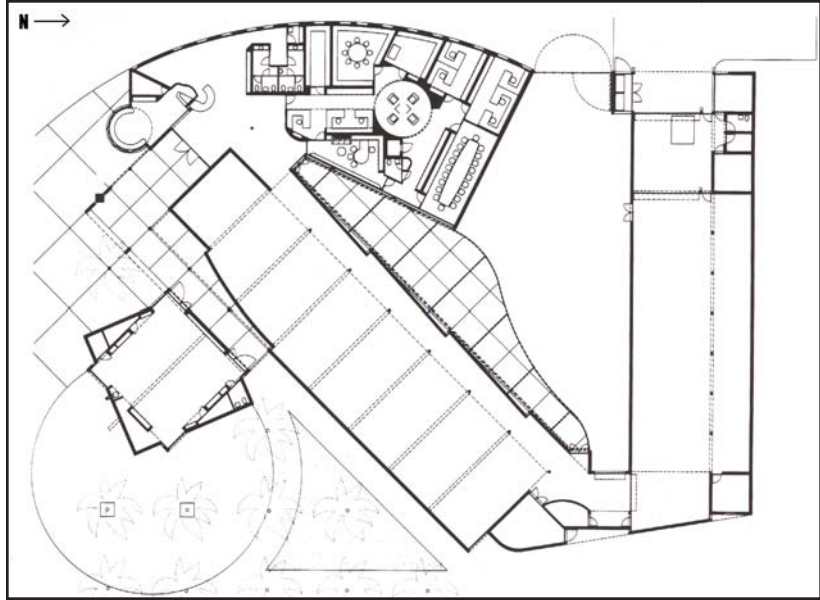


Fig. 2.1.29: Floor plan.

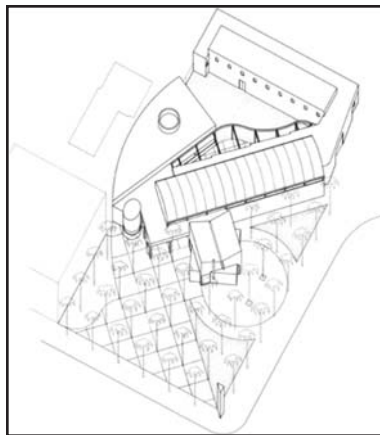


Fig. 2.1.30: Axonometric of complex.

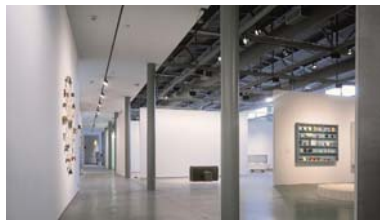


Fig 2.1.31: Exhibition gallery, seen from lobby.

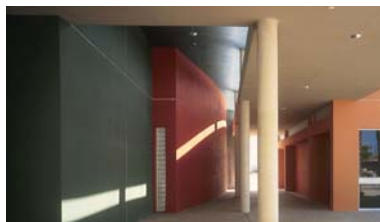


Fig. 2.1.32: Entry arcade.



Fig 2.1.33: Gallery with movable partitions.



Fig 2.1.34: Walkway to front entrance.



Fig 2.1.35: Entrance to museum, east facade.



Fig 2.1.36: Exterior view.



Fig 2.1.37: Museum cafe, from above.



Fig 2.1.38: Exhibition gallery.

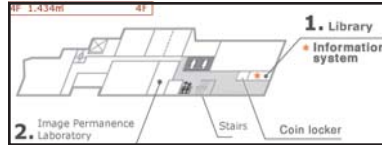


Fig 2.1.39: Fourth floor plan.

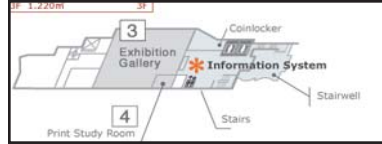


Fig 2.1.40: Third floor plan.

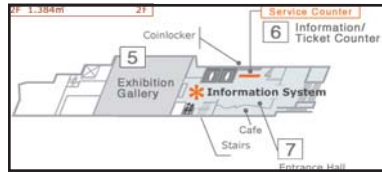


Fig 2.1.41: Second floor plan.

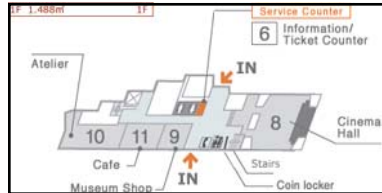


Fig 2.1.42: First floor plan.

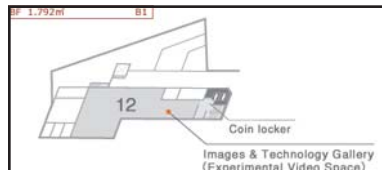


Fig 2.1.43: Basement floor plan.



Fig 2.1.44: Exterior view.

## Tokyo Met. Museum of Photography Tokyo, Japan

### Critical Design Issues

- First museum in Japan dedicated to photography in general.
- Located in/near Ebisu Garden Palace, a focal point in Tokyo's urban redevelopment project.

The TMMP opened initially at a temporary location in 1990; it was moved to the current building near the Ebisu Garden Palace in 1995. It is the first photography museum in Japan, with five floors dedicated not only to the exhibition of works by a variety of photographers, but also to research and education on the subject.

The library at the Museum contains a great number of books on photography collections as well as volumes on photographic history and technique. There is a laboratory for the preservation and restoration of photographs, in which investigations are also made into the science of photographic restoration.

The museum's collection of approximately 20,000 photographs can be viewed either in the Print Study Room, or in the two large exhibition galleries, one of which is dedicated to the museum's permanent collection and the other to travelling exhibitions. All of the photographs, books, and other resources belonging to the TMMP can be found through the Museum's information system, accessible at various kiosks throughout the museum. In addition, there is a center for workshops in photography, including photo-taking and darkroom techniques. Overall, the TMMP provides a comprehensive facility for those interested in any and all aspects of photography.



**Andy Warhol Museum**  
Pittsburgh, Pennsylvania

Critical Design Issues

- Renovated older building into a modern art space
- Largest single-artist museum in USA

The Andy Warhol Museum was completed in Pittsburgh, birthplace of the artist, in 1994. The original Frick & Lindsay Co. building, built in 1911, was renovated by Richard Gluckman of Gluckman-Mayner Architects. It is one of the four Carnegie Museums of Pittsburgh, and a joint venture of the Dia Center for the Arts and The Andy Warhol Foundation for the Visual Arts.

The museum is a "building within a building." In renovation, Gluckman could not manage to run appropriate HVAC systems through the original building's ceilings or walls, so new walls were constructed four feet within the original shell and HVAC was run behind these'. The walls of circulation spaces are in earth tones; exhibition spaces have white walls.

Though not exclusively a photography museum, the Andy Warhol Museum has an extensive collection of Warhol's work in photography. Aside from what is on display, there are archives of his work comprising 10,000 sq. ft. of the 85,000 sq. ft. building. The museum offers a variety of tours and workshops, among other educational programs.

1. Henderson, 94.



Fig 2.1.45: Main hallway, ground floor.



Fig 2.1.46: Gallery space.



Fig 2.1.47: Theatre for video viewings.



Fig 2.1.48: Front door to museum.



Fig 2.1.49: Exterior of museum.



Fig 2.1.50: Stairway backlit by window.

### *Historical precedents- program list and floor areas*

#### **California Museum of Photography**

**Total: 22850 SF, 4 Levels**

<b>Program</b>	<b>Sq. Ft.</b>	<b>%</b>	<b>Includes</b>
Main Gallery	3265	15	Permanent & Temporary Exhibits
Auditorium	1300	5	100 seats
Additional Exhibition Space	6524	28	Camera Obscura, Camera & Interactive Exhibits
Library & Study Rooms	3000	13	
Research Support	1094	5	Darkroom, Restoration, Workroom
Storage	800	3	
Administrative Support	2175	10	Conference room, Office
Bookstore/Reception	2175	10	
Café	1817	8	
Bathrooms	700	3	

#### **National Museum of Photography - Norway**

**Total: 25900 SF, 1 Level**

<b>Program</b>	<b>Sq. Ft.</b>	<b>%</b>	<b>Includes</b>
Permanent Exhibit	5380	15	
Temporary Photography Gallery	7750	30	
Library	5380	20	
Entrance	1620	6	
Administrative Support	4860	20	
Café	1000	5	
Bathrooms	810	4	
Attic Storage	Not Known		Not included in total SF

#### **Ken Domon Museum of Photography**

**Total: 18880 SF, 1 Levels**

<b>Program</b>	<b>Sq. Ft.</b>	<b>%</b>	<b>Includes</b>
Gallery	5000	25	Permanent & Temporary Exhibits
Memorial Lounge	800	5	
Audio Visual Room	2000	10	
Administrative Support	2000	10	Preparation Room, Darkroom, Offices
Storage	4000	22	
Mechanical Rooms	4000	22	
Reception	200	2	Conference room, Office
Bathrooms	800	4	

#### **Center for Creative Photography**

**Total: 52000 SF, 3 Levels**

<b>Program</b>	<b>Sq. Ft.</b>	<b>%</b>	<b>Includes</b>
Gallery	5000	10	Permanent & Temporary Exhibits
Auditorium	2500	5	249 seats
Library	2000	4	
Collection Storage	8400	20	Preparation Room, Darkroom, Offices
Research & Study	850	2	
Conservation Lab	1500	3	
Other	31750	56	Not specified

#### **The J. Paul Getty Center**

**Total: 940000 SF, Levels vary per building**

<b>Program</b>	<b>Sq. Ft.</b>	<b>%</b>	<b>Includes</b>
Gallery/Exhibition Space	191,500	13	Permanent & Temporary Exhibits, Sculpture Courtyard
Auditorium	41,000	4	450 Seats
Research Institute	63,000	7	Library of 900,000+ volumes/sources
Dining	82500	9	Museum Café, Cafeteria/Restaurant
Education Center	50000	5	
Conservation Institute	52000	6	
Gardens/Plazas	322000	34	Arrival Plaza, Sculpture Courtyard, Central Garden
Landscaping/Miscellaneous	212,000	22	Helipad, various terraces & buildings, roadways



**Museum of Contemporary Art, North Miami Total: 23000 SF, 1 Level**

Program	Sq. Ft.	%	Includes
Exhibition Space	12000	52	Permanent Exhibition Gallery; Installation Pavilion
Lobby/Reception	1000	4	
Museum Shop	500	2	
Teaching Studios	725	3	
Administrative Offices	1000	4	
Storage/Loading Dock	4300	19	Public Plaza; outdoor sculpture courtyard
Other	3400	16	

**Tokyo Metropolitan Museum of Photography Total: 75500 SF, 5 Levels**

Program	Sq. Ft.	%	Includes
Exhibition Space	10800	14	Permanent & Temporary Exhibits
Cinema Hall	5300	7	
Library	3000	4	
Museum Shop	1000	1	Image Permanence Lab, Print Study Room, Image&Tech Gallery
Research & Study	15600	21	
Café	1000	1	
Administrative Offices	9800	13	Restrooms, coin lockers, entrance hall, info desks, circulation
Patron Services/Other	29600	39	

**The Andy Warhol Museum****Total: 85000 SF, 8 Levels**

Program	Sq. Ft.	%	Includes
Exhibition Space	35000	41	Warhol art collection
Theatre	3000	3	
Archives/Storage	10000	12	110 seats
Administrative Offices	8200	10	
Research & Study	15500	18	Education department, Study Center
Museum Store	1600	2	
Café	2400	3	Restrooms, circulation
Other	9300	11	

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## Introduction

The archives of a museum provide an opportunity to service, protect, and house artworks that are not currently on exhibit at the museum. This section will outline the priorities of archival design as well as case studies that analyze these particular characteristics and qualities.

Archive theory is the preprocessed analysis of the specific functions and purpose of archives with respect to the nature of design work and operation. The archive layout understands the specific aspects for consideration in the design process, as well as their functions through a more conclusive perspective. Physical storage, as well as file access and orientation, begins to drive the design decisions as certain priorities (such as storage size, availability, orientation, and arrangement) arise from the client and programmatic requirements of the archive. Finally, the digital storage, which serves as a medium for protecting and documenting the hard copies of the artworks, provide various file formats to suit reproduction and public access from large database servers.

Each aspect of archive theory highlights specific design challenges by providing necessary information to analyze the various functions and conditions.

The case studies in the following sections seek to explore real-life examples and existing design approaches to archiving. These include unique and diverse approaches to physical storage, file access and display of archived material. The constraints implicit in the archival process have forced the development of truly innovative architectural solutions. Note that most archives are part of a larger facility, building, or complex. Therefore, archival buildings are often more diverse than expected, as other factors have played into the design process: display, study, environmental concerns, meeting or public areas, food preparation, etcetera. The mixture of these otherwise unrelated functions with the highly regimented archival demands have thus initiated many unique and inventive solutions.

## Archival systems

<i>Introduction</i> . . . . .	27
<i>Theory and debate</i> . . . . .	28
<i>Historical precedents</i> . . . . .	32
<i>Further reading</i> . . . . .	40

## Theory and debate

### *Organization*

A museum should have an adequate supplemental space outside of the exhibit space (roughly 4-5 times the size of the exhibit space) that houses the functions necessary for storing, shipping, receiving, organizing and accessing documents and artworks that are not on display in the exhibit space.

While a museum is responsible for displaying only a portion of the collections, the archive's responsibilities cover a wide range of functions necessary for safely and adequately preparing and storing the artworks for delivery to both the exhibit spaces and other museums that request the artworks. These include:

- Shipping and receiving areas for both loading trucks and for documents to be manually transported to the exhibit space. There needs to be a way of choreographing the movement of artworks between the archives and the given gallery.
- Processing centers for taking in artwork to be documented and sorted, and eventually placed within the stacks. This is based on the function of the sorting and organizational systems employed by the archive design.
- Cleaning centers for restoring damaged/degenerating artworks. These should consider the necessities of artwork regeneration, which include light control, and adequate space to both operate and store the necessary cleaning/restoration supplies.
- Security zones to permit/deny access. Organization of circulation should be articulated to consider how accessible each area of the archive should be.

- Printing areas must also be considered if reproduction and distribution is to be a part of the archive operations.

Regarding the location and conditions of photography archives, certain things must be considered as a general guideline for ensuring the care and safety of the artworks. The Society of American Archivists identifies specific dangers to archives, which include the following: temperature, light, humidity, fire, flood, vermin, and theft. The major design challenge is controlling the environment around the archives to remain consistently within a desired range for the preservation of every item in the collection.

Security should also be considered when it comes to the availability, location, orientation and storage of records and artwork. How should the digital archives be protected and accommodated for as opposed to the physical? A physical archive needs to accommodate for live, display-quality artworks, while a digital archive's purpose is to provide an official digital documentation to serve as both a back up to the original (along with the negative) as well as a resource for reproduction of artworks for promotional and educational purposes.

### *Digital storage*

Printed photographs fade over time. Therefore, digital copies must be made to preserve them at their best possible quality. Because digital storage is designed for multimedia presentation, photographs as well as textual documents and audiovisual media, it has the potential to exceed physical archiving.

The equipment used in digital archival storage utilizes compression and rapid access. Through rapid access, a single item can be located and reproduced quickly. Compression allows large masses of data to be stored in small spaces.<sup>1</sup> Photographs in particular can be stored as JPEG files, which are

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1. Bush, 89.

small and easily accessible. They are an alternative to .RAW and .TIFF files, which are not compressed file formats and thus require more hard drive space and longer access time for computers. However, JPEG files compress the digital image so that subtle amounts of data are lost.

One solution is to use the JPEG 2000 plug-in for Adobe software, which saves a compressed format with a resolution difference that is virtually undetectable from the uncompressed format. Another option is to carry a JPEG file for computer access in addition to a .TIFF or .RAW file for printing.<sup>2</sup> Figures 2.2.1 through 2.2.3 compare typical JPEG and .TIFF file sizes for various digital images.

The Prague Institute of Photography is currently programmed to house 800,000 photographs. Assuming these photographs are of the standard 5x7 dimension and will be scanned at 600 DPI, the required server capacity will be approximately 35 terabytes. However, the expansion of the archive must be anticipated. If the photograph dimensions are overestimated to be 8x10 and scanned at 600 DPI, the required server capacity will be approximately 75 terabytes. Commercially-available servers can range from 2 to 8 terabytes in capacity, 357.4 to 784.1 cubic inches in volume, and 10.0 to 24.4 pounds in weight.<sup>3</sup>

Because it is impossible for every computer to contain the entire digital archive and its multimedia software, electronic archives must be databases attached to a network. According to Hockey, "the core of [a network-based] system would be one or several linked host sites where master copies of the editions would reside. The master copies would consist of transcriptions of the text and digital images of the source material."<sup>4</sup> Shillingsburg further expands

on the advantages of network access by explaining that "the integrity of the archive will be protected by its single location... each [machine] will need the navigation software... but will not have to have room for the whole archive," and "archives can be made available at any location on the networks and be maintained and updated locally by the editor."<sup>5</sup>

The digital files contained within the electronic archive still manifest themselves physically. The CD-ROM remains the preferred medium because it is easy for publishers, archivists, and librarians to handle. However, its constraints include limited space, especially when images and other non-textual media are being stored. The CD-ROM is a closed system because the user cannot write to it. Furthermore, its quality depreciates over time.<sup>6</sup>

Digital files should be available for immediate publishing. When printing replicas from .RAW or .TIFF files, museums use commercial-grade inkjet printers, 3'x4' or larger.<sup>7</sup>

### Physical storage

Designers need to ask themselves several important questions when beginning to design an archival system: how large is the collection, what is the desired retrieval rate of artifacts from the collection by the client, and how much space is available? Spatial concerns may not be an issue depending upon the size of the collection. Retrieval of archived items may be the priority for a museum, but not for a small private collection. For a large collection of artifacts, the architect needs to evaluate the relativity of space and efficiency to the priorities of the client. Answering some of these global design issues will allow the designer to better be informed when it comes to specification of the storage system.

### Critical design issues:

*What files are digital images stored as, and how do they compare in size?*

*What is the digital storage capacity of the Prague Institute of Photography?*

*What are the benefits of a network-based archiving system?*

*How are digital files physically available?*

35mm film scanning: Pixel and file size of a standard 35mm frame				
Scan resolution	Pixel dimen.	Mega-pixels	JPEG file size	TIFF file size
2000 DPI	2700 x 1800	4.8	2.2 - 3.8 MB	14.2 MB
3000 DPI	4050 x 2700	10.9	4.3 - 7.1 MB	32.0 MB
4000 DPI	5400 x 3600	19.4	6.7 - 10.8 MB	56.9 MB

Fig 2.2.1.

300 dpi print scans			
	Pixel dimensions	JPEG file size	TIFF file size
3 x 5	900 x 1500	650 KB - 1 MB	3.9 MB
4 x 6	1200 x 1800	1.1 - 1.6 MB	6.3 MB
5 x 7	1500 x 2100	1.6 - 2.3 MB	9.2 MB
8 x 10	2400 x 3000	3.2 - 4.5 MB	21.2 MB

Fig 2.2.2.

600 dpi print scans			
	Pixel dimensions	JPEG file size	TIFF file size
3 x 5	1800 x 3000	2.4 - 3.5 MB	15.8 MB
4 x 6	2400 x 3600	3.6 - 5.2 MB	25.3 MB
5 x 7	3000 x 4200	4.8 - 6.9 MB	36.9 MB
8 x 10	4800 x 6000	9.1 - 14.3 MB	84.4 MB

Fig 2.2.3.

2. Keefe, interview.

3. Newegg.com.

4. Hockey, 13-14.

5. Shillingsburg, 31.

6. Hockey, 11.

7. Keefe, interview.



Fig 2.2.4: Vertical storage with moveable units.

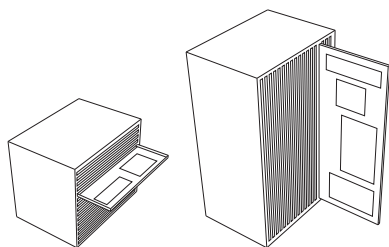


Fig 2.2.5: Vertical and horizontal storage types.

In the Prague Institute of Photography, we will focus most on the storage and preservation of hard and digital copies of photographs as well as storage of negatives used in producing the original photographs. In consulting Gaylord and Spacesaver, two companies specializing in storage media, there are three predominant ways to store photographs: vertically, horizontally and digitally.

#### ***Vertical physical storage***

Vertically stored images prevent stacking, a potential situation for damage. Custom cases are often utilized in this system where vertical drawers pull-out to reveal the artwork mounted on the drawer (Figs. 2.2.4 and 2.2.5).

#### ***Horizontal physical storage***

Horizontal storage of photographs (Fig. 2.2.7) mimics the way a basic paper filing cabinet would work. Generally, a basic shelving system is installed be it closed storage units or open shelving. The photographs themselves are stored in acid free, lignin-free containers. Each of these containers hold a selection of photographs. These containers are then arranged within the global filing system (shelving/closed units). These boxes come in a variety of sizes and capacities. Retrieval of items requires more human interaction with the artifacts, increasing the potential for damage. When searching for photographs organized using horizontal storage, one must locate the correct compartment, disturb the sealed package, and expose the contents of the specific storage container to the elements and hands.

#### ***Digital storage***

Digitally, photographs are stored as duplicates. For instance, it is imperative to store the original, \*.raw image file, followed by any digital manipulations of the original raw image as separate files. Key to the physical storage of digital information becomes the size of retrieval machines and large-scale digital storage devices such as servers. Because file sizes are often large when dealing with digital photographs, larger physical components are necessary for viewing and retrieving power. The designer will have to consider off-site digital storage in the event that the collection will be duplicated in another physical location as a back-up measure.

#### ***Storage units***

If the priority is to minimize space and maximize efficiency, mobile cases are often employed. These moveable cases shift using either embedded or surface-mounted tracks. When a piece of artwork is desired, the correct unit is located, then shifted to create a temporary aisle (Fig. 2.2.6). Closed-unit systems can be used to control the climate within the unit. By specifying a closed, climate controlled case, archivists can contain a unique environment amongst several units, allowing artifacts with differing climate requirements to be stored adjacent to one another. This saves on unnecessary heating and cooling costs as well as space.

Static storage systems are often least efficient in their space consumption. By nature, all elements of the collection are accessible at all times, thus consolidation of the system is 0%.



### *Efficiency and access*

The question remains- which storage system works best for your specific design situation? There are many unique ways in which the aforementioned systems can be integrated into a building design. For example, movable systems work using recessed or surface mounted tracks. Storage units are then mechanically shifted along these tracks. In order to maximize efficiency and minimize the amount of space the system will consume, the entire archival system can be linked with computers to simply retrieve a particular case containing the desired archived item. Additionally, these motorized systems allow the possibility of storage units to move along a loop, similar to a dry-cleaning facility where clothes are catalogued and retrieved automatically by a rotating mechanism that brings the article of clothing to the customer, rather than the customer searching for the article of clothing.

All storage units may not need to be accessible at all times. This is especially important when considering a design for an archival space. If a motorized system is used, it may allow units to cycle into otherwise unoccupied space below grade, or within the very construction of the building such as chase spaces, walls, and ceilings.

In all cases, the designer must first consult the client to conclude the specific programmatic requirements as they relate to the size of the collection to be stored and the retrieval needs of the client.

### *Critical design issues:*

*What will be archived?*

*How much space will the collection require?*

*Which type of storage is appropriate: climate controlled cases, boxes, open shelving?*

*What are the retrieval priorities of the client? Are they interested in rapid retrieval of artifacts? Is this a private collection in which retrieval is less significant?*

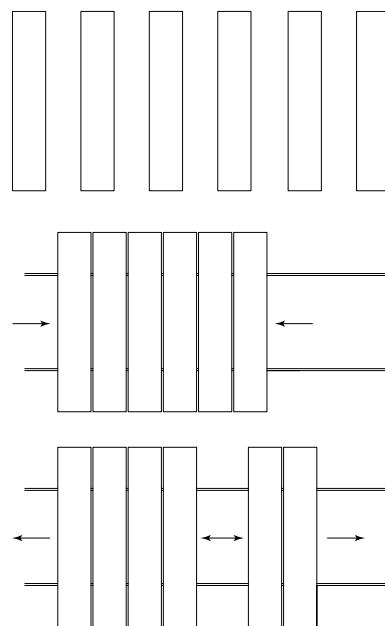


Fig 2.2.6: Moveable units versus stationary units.



Fig 2.2.7: Horizontal storage solution for fossils.

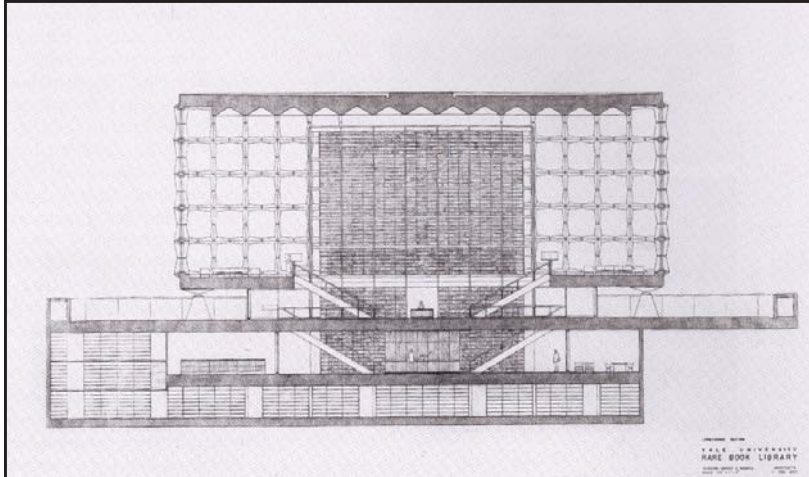


Fig 2.2.8: Section showing the exterior cladding and interior book storage.



Fig 2.2.9: Interior view.



Fig 2.2.10: Exterior view.

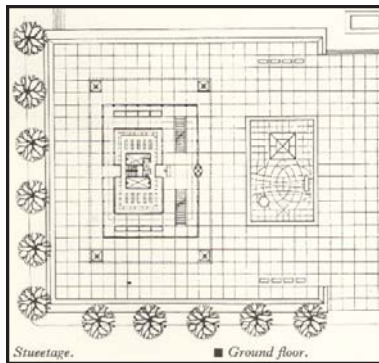


Fig 2.2.11: Ground floor plan.



Fig 2.2.12: Interior view.

## Historical precedents

### *Beinecke Rare Book & Manuscript Lib. Yale University, New Haven*

#### Critical Design Issues

- Climate control of valuable books and manuscripts
- Use of filtered natural light
- Dedicated reading and classrooms
- Unique display of rare books

The Beinecke Rare Book & Manuscript Library at Yale University, designed by Gordon Bunshaft of Skidmore, Owings and Merrill, is one of the world's largest libraries devoted entirely to rare books and manuscripts. It was built between 1960 and 1963, and serves as a research center for scholars and students, both affiliated with Yale and not.

There are two main areas for storage of volumes. The first, and most arresting of the two, is the six-story steel and glass central tower. This structure is entirely climate controlled and is served by its own devoted HVAC system. There is room inside for roughly 180,000 volumes. The second storage area is located underground and is capable of holding another 600,000 volumes.

The inhabited building is also highly monitored for temperature and humidity, and contains reading rooms, classrooms, and offices. The exterior facade, constructed of Vermont marble, granite, bronze and steel, filters light so that the rare materials can be viewed without damage.

It is important to note here that the books and manuscripts housed here are far more voluminous than the photographs around which our program is centered. Also, the massive storage area in the center of the Beinecke Library holds books only around its perimeter, not in rows of shelves like a typical archiving system. The volume here, which houses HVAC and mechanical space in its center, is based more on display and effect than on storage efficiency.



## Desert Broom Branch Library Pheonix, Arizona

### Critical Design Issues

- Lessen the obstruction of the surroundings
- Use of filtered natural light
- Enable physical future expansion of collections

The Desert Broom Branch Library of the Pheonix Public Libraries, designed by Richard and Bauer, is located in Pheonix, Arizona. One main concern when designing this building is to create a structure that does not obstruct the views of the surrounding and blends in with the horizon of the desert. The flat roof extends 60 feet from the building to shade visitors and create nice outdoor spaces for visitors.

The roof contains four colored, protruding cubes that contains the HVAC and mechanical units. This roof is also punctured in many spaces to bring in light. Colored glass filters the light that penetrates the interiors of the library. This prevents the collections from being damaged by harsh light. The light is unfiltered over the exterior spaces since direct light would not cause harm to the outside areas.

The walls of the library are wrapped by a line of low windows that allows the view of the surroundings without bringing in harsh light that brings harm to the books and materials.

The southwest wall of the library is created so that it can move further away from the building to enable future expansion of the library. Any archiving systems or libraries will eventually have to need for more space for their expanding collection of materials. By having a built in element to allow for this expansion, the building will be more efficient.



Fig 2.2.13: Front elevation that illustrates the horizontality.



Fig 2.2.14: Exterior view.



Fig 2.2.15: Floor plan.



Fig 2.2.16: Meeting room.



Fig 2.2.17: Entrance.



Fig 2.2.18: Reading room along southwest wall.



Fig 2.2.19: Night view.



Fig 2.2.20: Interior view.



Fig 2.2.21: Entry doors.

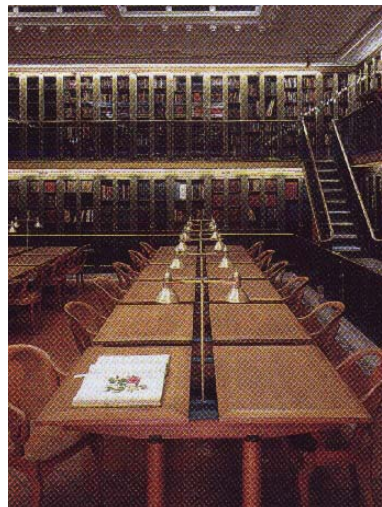


Fig 2.2.22: View of reading room.

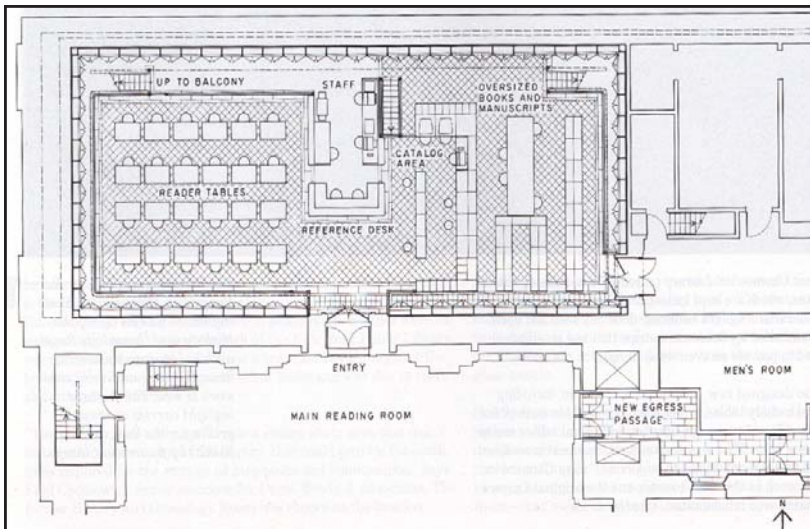


Fig 2.2.23: Ground floor plan.

### *Brooke Russell Astor Rare Book and Manuscript Reading Room at the New York Public Library*

#### Critical Design Issues

- Climate control of valuable books and manuscripts
- Use of filtered natural light
- Dedicated reading rooms and classrooms

The issue with archiving rare books and manuscripts (and in our case, photographs) is that they are best suited to dark, humidity-free, hermetically sealed environments. This sort of environment is essentially counter to the environment required for scholarship and examination of documents.

Prior to the Davis, Brody & Associates renovation of this NY Public Library room, the rare book collection was scattered throughout multiple rooms, and environmental damage combined with the theft of rare items spurred the library to commission a centralized archival and study room. There were many changes made to create the desired environment. Specialized archival bookshelves were fitted around the perimeter of the room and on the mezzanine. Scrubbed air is introduced through a completely separate HVAC system, while filtered fluorescent lights were fitted in the ceiling and along the underside of the mezzanine. The glass doors to the archival bookshelves are tinted and UV filtered, and the shelves themselves are completely sealed off to guard against off-gassing and air transfer.

The architects also designed the furniture for the room, opting for smaller, individual tables rather than ones spanning the length of the room. This has a dual effect: first it provides a smaller, more manageable work area, and secondly, it creates a more open floor layout.



**National Library of Scotland  
Edinburgh, UK**

**Critical Design Issues**

- Environmental control of valuable books and manuscripts
- Use of filtered natural light
- Designed for easy future expansion

The National Library of Scotland consists of many buildings in the city of Edinburgh. The main library, located in the George IV Bridge Building, was designed by Reginald Fairlie. This building houses the main reading rooms along with the multimedia room.

The exterior of the building consists of classical materials and form. There are also very few small windows that limit the amount of light penetrating the interiors. This prevents the books from being harmed by harsh light.

The general reading room contains journals, newspapers and most of the post-1850 books. The north reading room is where one can find the manuscripts, music, rare books, and the pre-1850 books. The media room is for the microfilm and multimedia. The silent reading room is free from any electronics.

Our main concern would be the north reading room. Since the materials in this room are very precious, there are guidelines that have to be followed by those in this room. There cannot be any source of moisture in the room including wet garments. Also, visitors must be careful with the materials in terms of not writing, or leaning on them and using only pencil.

The building is designed with thoughts of expansion in mind. The spaces were laid out in a way that it can enlarge to accommodate more storage space and expand the reading rooms for the public. This ability to accommodate more material is very important for any growing archiving facility or library.

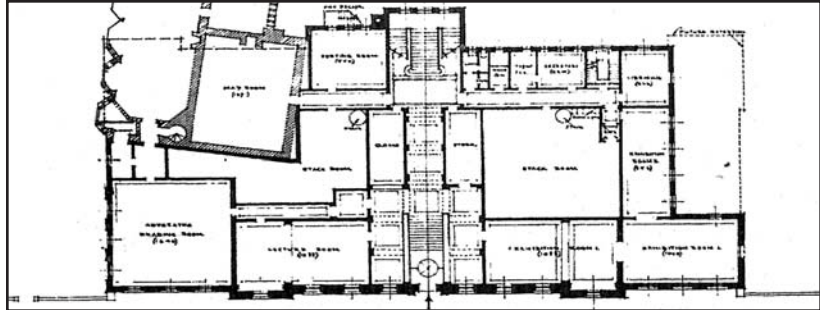


Fig 2.2.24: Ground floor.

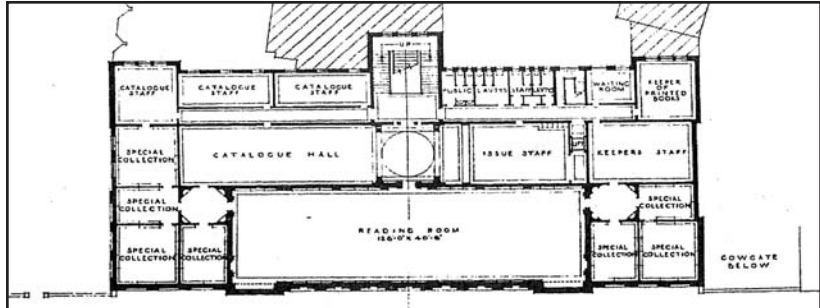


Fig 2.2.25: Second floor.



Fig 2.2.26: Entrance.



Fig 2.2.27: Exterior view.



Fig 2.2.28: Facade detail.

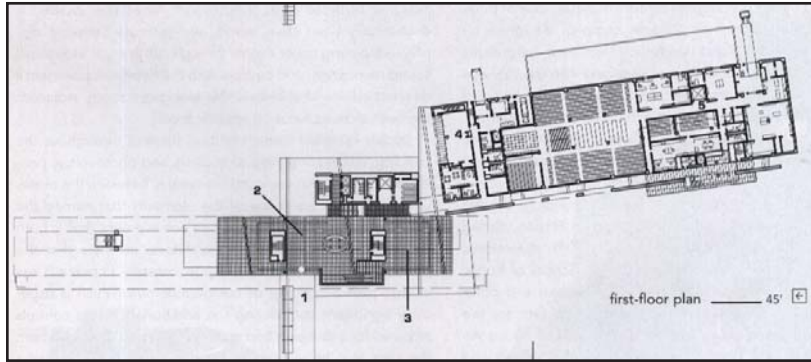


Fig 2.2.29: First floor plan.

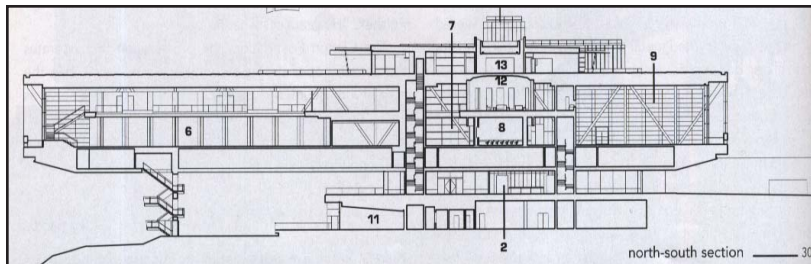


Fig 2.2.30: Longitudinal section.



Fig 2.2.31: Site plan.

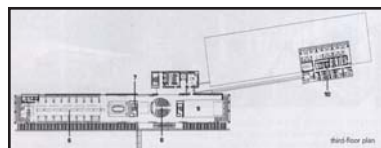


Fig 2.2.34: Third floor plan.



Fig 2.2.32: Exterior view.



Fig 2.2.35: Interior view.



Fig 2.2.33: Interior view.



Fig 2.2.36: Interior view.

## William J. Clinton Presidential Ctr. Little Rock, Arkansas

### Critical Design Issues

- Archives are located below grade (climate control)
- Limited access for protection (3720 visitors per week)
- Use of filtered natural light

The William J. Clinton Presidential Center in Little Rock, Arizona is designed by Polshek Partnership Architects. It is made out of glass, steel and concrete. Its shape is influenced by the bridges near the river. But the earth-bound archive building is very different from these bridges. It is clad with stone to add security to the presidential documents contained inside.

The archiving area is also located below grade for better climate control. The west facade has a screened interlayer that blocks 50% of light and heat along with 99% of UV rays that is harmful for the material.

The interior environment features demand controlled ventilation and radiant floor heating and cooling. The archive area is three stories high. The books, artifacts, and papers are stored in a wooden book racks. This area is protected from visitors. Only archivists and researchers are allowed in here. Archivists occupy the light filled glass and steel structure above the archives. Artifacts and papers are covered with a veil of perforated metal screens that reduce solar gain in this glass box.

The center also contains research desks, an orientation theater, lobbies, a great hall, and a museum for visitors.



**Ballard Lib. & Neighborhood Civic Ctr.  
Seattle, Washington**

**Critical Design Issues**

- Publicly-accessible archive area
- Environmental sustainability
- Daylighting available in all public reading spaces

The Ballard Library and Neighborhood Civic Center in Seattle, Washington is designed by Bohlin Cywinski Jackson. It is the largest library in Seattle. It is also a civic center that allows the public to pay bills, taxes, etc without making the trip downtown. These facilities sparks an interest in the library within the general public.

There are photovoltaic panels on the roof and facades to generate energy that sustains the library. There are large windows on the north facade that brings in a large amount of indirect light to the reading rooms.

The HVAC systems are located in the suspended ventilation ducts along the ceiling. The material that is used for the facade also protects the materials inside from UV rays and direct sunlight. The spatial organization is based on the amount of natural lighting.



Fig 2.2.38: Exterior views.

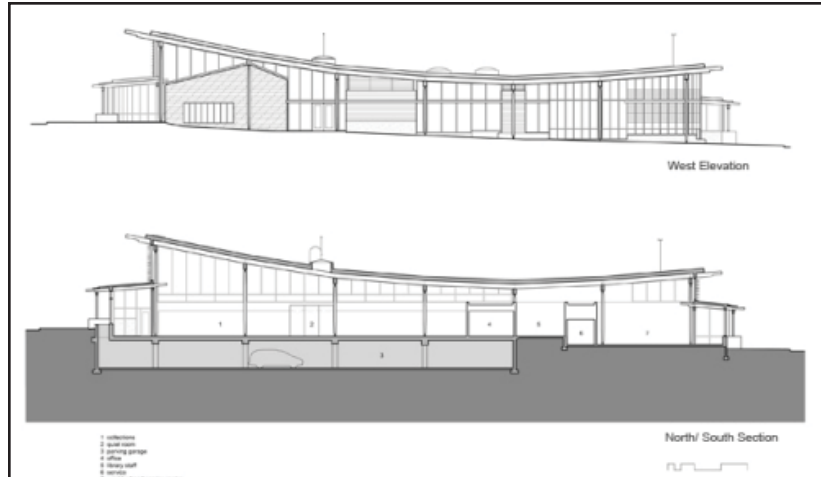


Fig 2.2.37: Sections.

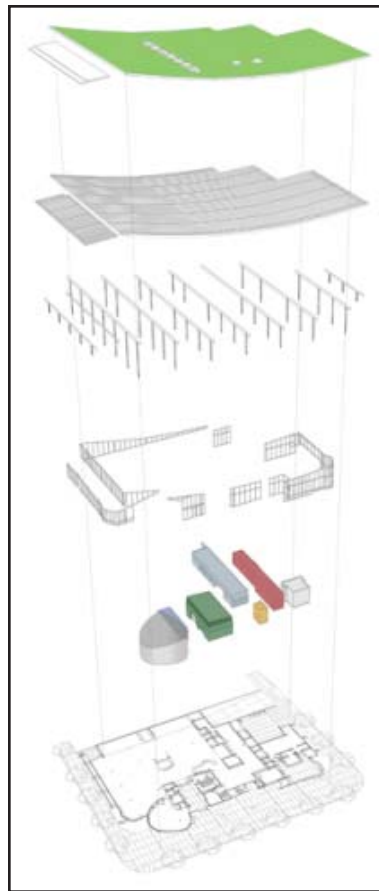


Fig 2.2.39: Axometric diagram.



Fig 2.2.40: Ground floor plan.



Fig 2.2.41: Interior view.

# *Historical precedents- program list and floor areas*

## *Beinecke Library*



Program	Sq. Ft.	%
Book storage	5000	14
Offices	1800	5
Reading rooms	6000	16
Lounges	4000	11
Open space	9700	27
Catalog room	1800	5
Sculpture garden	1700	5
Microfilm room	300	1
Kitchen	760	2
Mechanical	2800	8
Circulation	2340	6
<b>Total</b>	<b>36200</b>	<b>100</b>

## *Desert Broom Library*



Program	Sq. Ft.	%
Book storage	5610	36
Entry	730	5
Service desk	320	2
Staff	2430	16
Teen area	1300	8
Lounge	1600	10
Computer resources	730	5
Children's area	650	4
Meeting room	730	5
Garden terrace	1300	8
<b>Total</b>	<b>15400</b>	<b>100</b>

## *Brooke Astor Reading Room*



Program	Sq. Ft.	%
Book storage	700	20
Offices/reference	450	13
Reading area	1000	30
Catalog area	450	30
Circulation	800	24
<b>Total</b>	<b>3400</b>	<b>100</b>

Program	Sq. Ft.	%
Catalog	700	20
Staff	450	13
Reading area	1000	30
Special collections	450	13
Circulation	800	24
<b>Total</b>	<b>3400</b>	<b>100</b>

*National Library of Scotland*



Program	Sq. Ft.	%
Archives	58450	35
Offices	25050	15
Orientation theatre	20040	12
Great hall	10020	6
Education suite	5010	3
Museum	10020	6
Circulation	16700	12
Residences	12760	8
<b>Total</b>	<b>167000</b>	<b>100</b>

*Clinton Presidential Center*



Program	Sq. Ft.	%
Reference	150	1
Quiet room	300	2
Children's area	450	3
Multipurpose area	1350	7
Circulation	2100	11
Offices	450	3
Conference	450	3
Civic center	3600	19
Reading rooms	7500	40
Storage	2250	11
<b>Total</b>	<b>18600</b>	<b>100</b>

*Ballard Library*



## Further reading

"Accreditation Commission's Expectations Regarding Institutional Planning- 1 Jan 2005." *American Association of Museums*. 8 Feb 2009.  
[<http://www.aam-us.org/museumresources/accred/upload/Planning%20ACE%20%282005%29.pdf>]

Becker, Karin. "Picturing Our Past: An Archive Constructs a National Culture." *The Journal of American Folklore*. Vol. 105. No. 415. (1992): pp.3-18.

- This article examines how photographs are archived in the Nordic Museum and are used to document cultural aspects.

Breakell, Sue and Victoria Worsley. "Collecting the traces: an archivist's perspective." *Journal of Visual Arts Practice*. Vol. 6. No. 3. (2007): pp.175-189.

- Two archivists attempt to explain the importance and purpose of the archive.

Ernst, Wolfgang. "Dis/continuities: Does the Archive Become Metaphorical in Multi-Media Space?" *A History and Theory Reader*. Ed. Wendy Hui Kyong Chun and Thomas Keenan. New York: Routledge, 2006. pp.105-123.

- More insight is provided into multimedia archiving and the future of classifying digital images by image-based retrieval instead of text-based retrieval.

Gaylord Brothers Library Supplies- <http://www.gaylordmart.com/listing.asp?H=3>

- The Gaylord company specializes in general storage solutions. This is a good source for size and capacity information for several different types of storage schemes.

Healy, Susan. "The classification of modern government records in England and Australia." *Journal of the Society of Archivists*. Vol. 11. Issue 1/2. (1990): pp.21-26.

- This article explains how textual documents are organized within the English and Australian government archives.

Society of American Archivists. *Describing Archives: A Content Standard*. Chicago, Illinois: Society of American Archivists, 2004.

Spacesaver- <http://www.spacesaver.com>

- Spacesaver is an innovative storage solutions vendor. They provide solutions for many different types of program including public safety, museums, and the government.

Sperberg-McQueen, C.M. "Textual Criticism and the Text Encoding Initiative." *The Literary Text in the Digital Age*. Ed. Richard J. Finneran. Ann Arbor: University of Michigan Press, 1996. pp.37-61.

- This essay propounds the importance of platform-independent software for archiving and explains the formatting of electronic scholarly editions through TEI.

Tucker, Jennifer. "The Historian, the Picture, and the Archive." *Isis*. Vol. 97. Number 1 (2006): pp.111-120.

- This article delves into the historical methods and techniques of collecting photographs.



Introduction

Research labs and think tanks have the potential to have a significant influence on the intellectual world. They create a more accessible platform for the acquisition and sharing of new information. In the following studies, research labs and think tanks will be identified and evaluated.

Research labs are pursuits of knowledge that are funded and supported by the government, various interest groups, and businesses. The various experiments performed can be carried out by individual researchers or by research groups. Research labs create a suitable environment to perform experiments and to examine and evaluate the results of these experiments.

Think tanks usually exist within larger organizations, institutes, and corporations. Their focus is on sharing and spreading ideas, thus creating extensive social networks as a way for intellectuals to work together and further the process of discovery. These social networks also give researchers access to many resources closed to the general population.

This information will serve as an in depth study of the research that is occurring in the fields of photography, visual arts, and material culture, as these are the topics most closely related to this project. What is of particular interest is the way in which researchers approach design problems and how they relate their work to its context. The case studies that follow will examine the spatial conditions that make such research possible. Due to limited information on research facilities devoted entirely to photography, a variety of facility types will be investigated. The focus of these studies will be on finding commonalities between research facilities and applying this knowledge to the field of photography.

Laboratories,  
housing, and other  
facilities for scholars

*Introduction* . . . . . 41  
*Theory and debate* . . . . . 42  
*Historical precedents* . . . . . 44  
*Further reading* . . . . . 59

*"A method based on the document is prejudiced: fated to neglect the majority of people, for they were nonliterate and, within the boundaries of literacy, to neglect the majority of people, for they did not write. Even today in societies of almost universal literacy, it is a rare soul who bequeaths to future historians a written account of his thought... How can you study a society if you attend only to the expressions of a small and deviant class within the whole?"*

- Henry Glassie, *Folk Housing in Middle Virginia*

## Theory and debate

### *Approach design problems*

This method of research involves analyzing the current designs and methods that are currently available. Through the analysis of current methods and design available, all the problems of what available is brought into light. The problems discovered are the driving force for seeking for a new, better methods. In this field of research, the scholar would need access to the current designs and methods or production of photography/visual arts/material culture in order to analyze the current designs/methods to prove that his thesis is correct.

The fact of the "problem" is not necessarily that there is a fault in the specific design or method, although it may easily be the case, but rather the lack of or the restriction to do more than given may also be a driving force to discover new methods and designs. For this type of research, the scholar would need a lab or studio depending on their field of research. The space is more or less the same, since both spaces would need equipment and space to produce results.

So, what differs the lab from the studio besides the difference in equipment is the quality control of the room (ventilation, light, humidity, sound, etc.) With the need to find better ways of designing and doing, the further advancement of technology may develop as well as a sideways step to finding different ways of designing and doing as well.

### *Investigate contexts*

Investigating contexts is a way for the scholar to really look into history to view and analyze the set of circumstances or facts that surrounded a particular event, situation, etc. Truly diving into the culture of that time to find the answers to what were the cause and effects that lead to whichever point in time (culture, design, ideologies, etc.). Scholars would need access to all forms of lit-

erature, visual arts, and material culture in order to get the most rounded view of the contexts as possible.

So in order to get the most rounded view of the researched context, all forms of documentation need to be looked at. From formal literatures to letters, as well as photographs to the material culture (physical objects – clothes, tools, artworks, etc.). An archive would be necessary with all the 2D and 3D objects, as well as equipment to access objects (example: Computers to look at electronic journals and microscopes to look at film). Also, a big thing to consider is where the investigations are done- depending on the format of documentation, the room may have to be quality controlled to a certain degree as well as a way to preserve the artifacts.

### *Contextual research (Analysis of design strategies)*

Contextual research takes the investigation of contexts a step further. In the investigation of contexts, it was a way of gaining more insight into the culture, the actual context of the time period. In contextual research, the actual analysis is taken place. Whether taking the already investigated materials and applying it their research or to look at the research materials available to discover a truth. The equipment needed would be similar to that of someone investigating contexts, but doing contextual research is much more narrow than just learning about contexts. There is a specific concentration and focus. So a studio space would be needed to gather and organize the documents.

### *Analytical vs. propositional*

The analytical aspect allows for the scholar to really analyze the given history through documents, photographs, and material cultures to reason and break up the culture into parts and interrelated subjects. This allows for the scholar to really look deep and find patterns and things that might not usually be discovered by looking at the surface. This would really rely on the re-

sources available as well as the equipment needed for the scholar or organize his thoughts. Whether it's some sort of database (computer program) and/or some physical separation.

In the propositional aspect becomes almost the opposite approach to the analytical. Although both do analyze and look at the historical documents (literature, photos, materials), the propositional aspect starts off with some sort of thesis. Then through the research of the documents, the scholar is able to either prove true or prove false the thesis. This thesis obviously can't be something arbitrary, but something really considered as something that needs to be dealt with, that the truth must be uncovered about. Then through research, more evidence is found to back up the thesis or to prove it false. In either case, resources need to be available as well as equipment to document findings.

In order for the different methods of research to be conducted, there needs to be many different types of spaces. Yet what else needs to be considered is that not all scholars are going to be studying or researching the same thing at the same time nor are there going to be the same amount of scholars using the resources all the time. So when designing a think tank or research lab, certain topics need to be thought of and questions answered. Which spaces can be interchangeable? What spaces need to be close in proximity? For example, can individual office spaces and lounges be interchangeable and changed depending based on need? What about orientation due to the actual program within the space (ex. dark rooms can't be on the roof with sunlight)? The overall question is: how can this research facility change and evolve with time and the amount of occupants?

### *Specifics of spaces required in research laboratories*

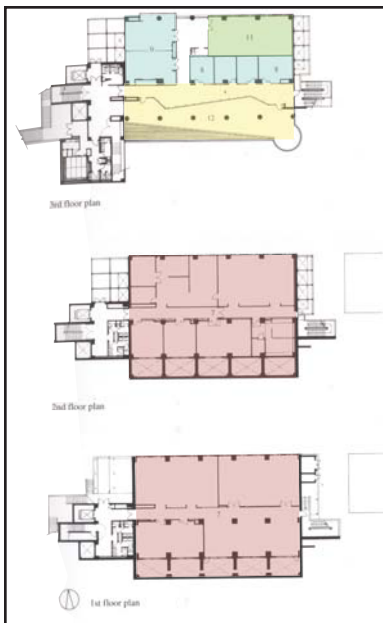
Space needed	Arch. considerations	Technical needs
Lounges	<ul style="list-style-type: none"> <li>- Located in a space where it won't disrupt individual workers.</li> <li>- Close enough to other spaces so it is easily accessible when needed.</li> </ul>	<ul style="list-style-type: none"> <li>- Furniture</li> <li>- Kitchenette</li> <li>- Television</li> <li>- Photo laboratory</li> <li>- Music room/Game room</li> <li>- Foosball table (mandatory)</li> </ul>
Housing	<ul style="list-style-type: none"> <li>- Affordable</li> <li>- Close to research grounds, but far enough away to "get away from it all."</li> </ul>	<ul style="list-style-type: none"> <li>- Storage areas</li> <li>- Laundry room</li> <li>- Electrical systems room</li> <li>- Heating room</li> <li>- Parking area</li> </ul>
Conference/discussion Spaces	<ul style="list-style-type: none"> <li>- Large conference room is needed for lectures/conferences with many people attending.</li> <li>- Areas for informal/formal discussion (allow for the exchange of ideas between scholars).</li> <li>- Informal/formal spaces close enough to offices and individual workrooms.</li> </ul>	<ul style="list-style-type: none"> <li>- Stage</li> <li>- Permanent seating</li> <li>- Removable seating</li> <li>- Acoustics</li> </ul>
Individual offices	<ul style="list-style-type: none"> <li>- Private work space</li> <li>- May be small compared to others</li> <li>- Located near location/discussion space</li> <li>- Natural lighting improves quality of space</li> </ul>	<ul style="list-style-type: none"> <li>- Desk and chair</li> <li>- Windows</li> <li>- Acoustics (keep out sounds)</li> </ul>
Labs/studios	<ul style="list-style-type: none"> <li>- Size of space depends on function (digital photography = small space; material culture = large space)</li> <li>- Away from discussion spaces</li> <li>- Close to lounges</li> <li>- Private research area</li> </ul>	<ul style="list-style-type: none"> <li>- Quality control of room (light, humidity, ventilation, etc.)</li> <li>- Work space</li> <li>- Tools and machines</li> </ul>
Libraries/archives	<ul style="list-style-type: none"> <li>- Large enough to contain all information</li> <li>- Away from direct sunlight to preserve old documents</li> <li>- Close to labs/studios</li> </ul>	<ul style="list-style-type: none"> <li>- Quality control of room (light, humidity, ventilation, etc.)</li> <li>- Tools and machines</li> <li>- Organization system</li> </ul>
Cafeteria/food court	<ul style="list-style-type: none"> <li>- Something on location for when scholars can't leave premises</li> <li>- Something nearby to take a break from institute</li> </ul>	<ul style="list-style-type: none"> <li>- Vending machines</li> <li>- Water fountains</li> </ul>



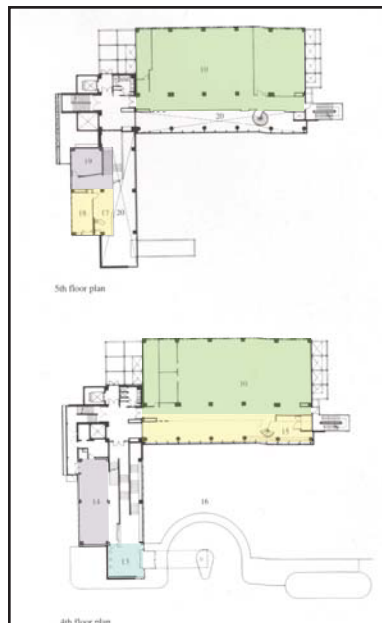
Fig 2.3.1: Exterior view.



Fig 2.3.2: Interior view.



Figs 2.3.3, 2.3.4: Plans.



## Historical precedents

*Research and Development Center-  
Nittetsu Mining Co., Ltd.  
Hinode-town, Tokyo*

### Critical Design Issues

- A steep cliff running through the site was a challenge to be designed around that brought to mind the gulch of Prague Castle.
- Mixing research areas, communal work areas, and social spaces allows for the easy exchange of ideas.

The Research and Development Center of the Nittetsu Mining Company was built to support the creation of new materials based on basic ore research and the development of various mechanical pieces of equipment. The reinforced concrete structure supports five above grade levels that differ in profile to respond to a severe change in grade. A mechanical deck allows the building flexibility in the nature of the experiments being performed and accommodates daily maintenance work done to the building.<sup>1</sup>

1. Meisei, 68.

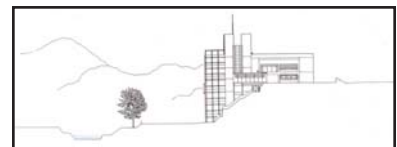


Fig 2.3.5: Elevation.

### Plans legend:

- Laboratory
- Research
- Communal work
- Social
- Private work



*Fuji Xerox, Ltd. Corporate  
Research Labs  
Nakai-town, Kanagawa, Japan*

Critical Design Issues

- Close proximity between research areas, communal work spaces, and social spaces are critical to the creation of an environment of information and idea sharing.
- Isolation of lab spaces allows experiments to be conducted without interruption.

The Fuji Xerox Research Labs are dedicated to research in the areas of image technology, network technology, and document disposal. The steel framed reinforced concrete structure supports six above-grade floors and one sub-grade floor. In addition to creating a functional research lab, the architects sought to create a structure that could co-exist with the natural environment. Ample social areas were provided to encourage chance encounters and the exchange of information between researchers.<sup>1</sup>

1. Meisei, 86.

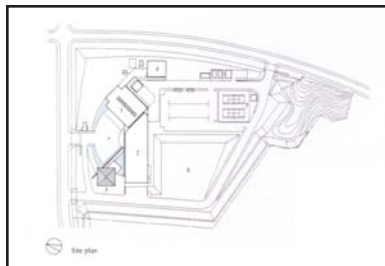


Fig 2.3.8: Site plan.



Fig 2.3.6: Exterior view.



Fig 2.3.7: Interior view.

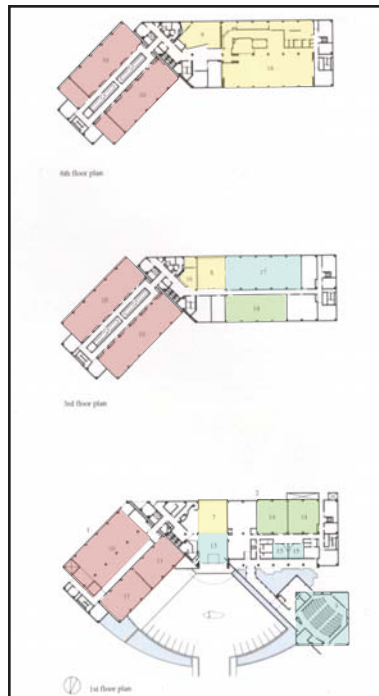


Fig 2.3.9: Plans.

Plans legend:

- Laboratory
- Research
- Communal work
- Social
- Private work



Fig 2.3.10: Reading room.

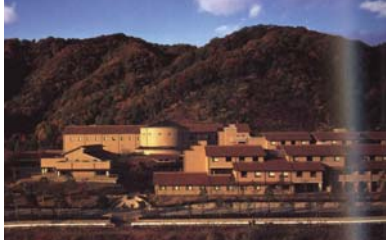


Fig 2.3.11: View from south.



Fig 2.3.12: Reading area.



Fig 2.3.13: Lecture hall.



Fig 2.3.14: Conference room.



Fig 2.3.15: South elevation.

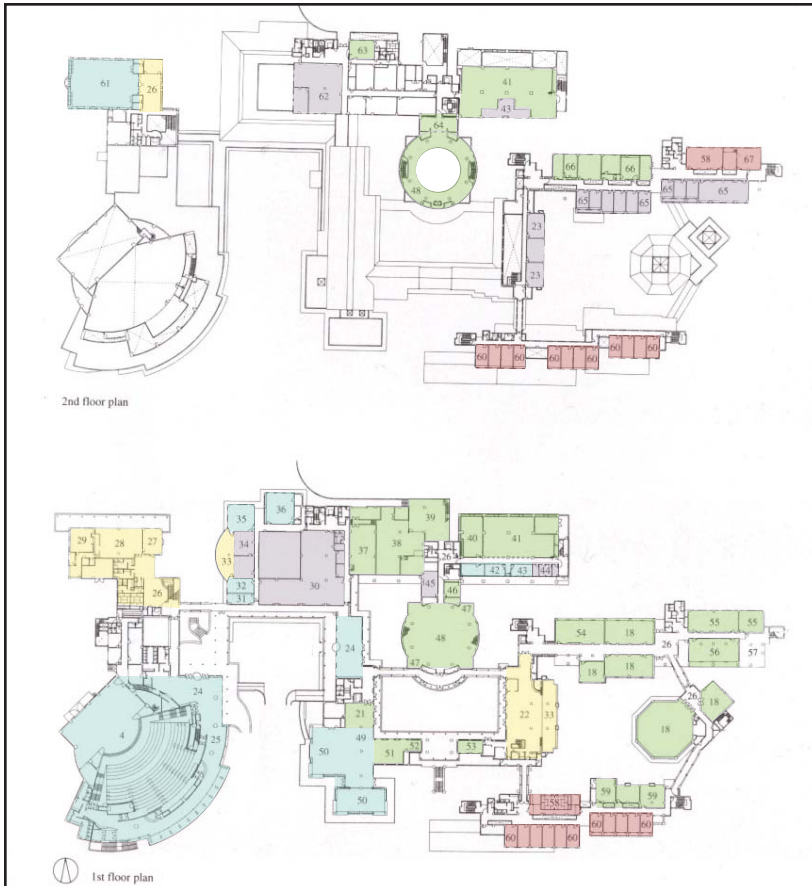


Fig 2.3.16: Plans.

## International Research Center for Japanese Studies Kyoto, Japan

### Critical Design Issues

- The massing of the project in relation to the mountains is an interesting site strategy in light of the topography of Prague.
- Ample space dedicated to libraries, reading areas, and media rooms supports a more scholarly than experimental atmosphere.

The International Research Center of Japanese Studies is dedicated to the "scholarly, comprehensive research of Japanese culture". The reinforced concrete structure supports three above grade levels and one sub-grade level. The sprawling project serves as a home to resident researchers, and thus boasts ample community leisure spaces and research areas as well as personal office spaces. Based on the scholarly nature of the research done at this facility, research amenities such as libraries and media rooms are more prevalent than laboratories.<sup>1</sup>

1. Meisei, 208.

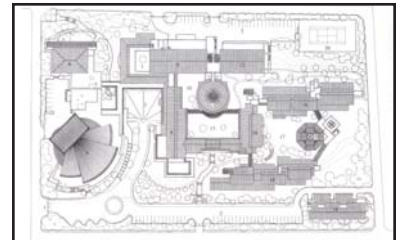


Fig 2.3.17: Site plan.

### Plans legend:

- Laboratory
- Research
- Communal work
- Social
- Private work



*Univ. of Iowa Medical Education and Biomedical Research Facility  
Iowa City, Iowa*

Critical Design Issues

- Student work areas that contain study space, social space, and classroom.
- Communal 4 story atrium with public spaces.

The Medical Education and Biomedical Research Facility is the first part of a Health Services Campus at the University of Iowa.

The facility is designed to together the health sciences schools and colleges along a main pedestrian pathway.

The main entrance to the campus is the four story atrium located at the south end of the building. This atrium contains a cafe, seating areas, and a 250 seat auditorium.

Off of the atrium are classrooms of varying sizes and four student communities. The student communities are two story spaces that are situated between the main corridor of the facility and the quadrangle of the site. Each of the student communities contains a classroom, student support offices, a social area, a shared study area, private study areas, and a staircase.

The upper levels of the house classrooms, laboratories and a 125 person seminar room.



Fig 2.3.18: West facade.

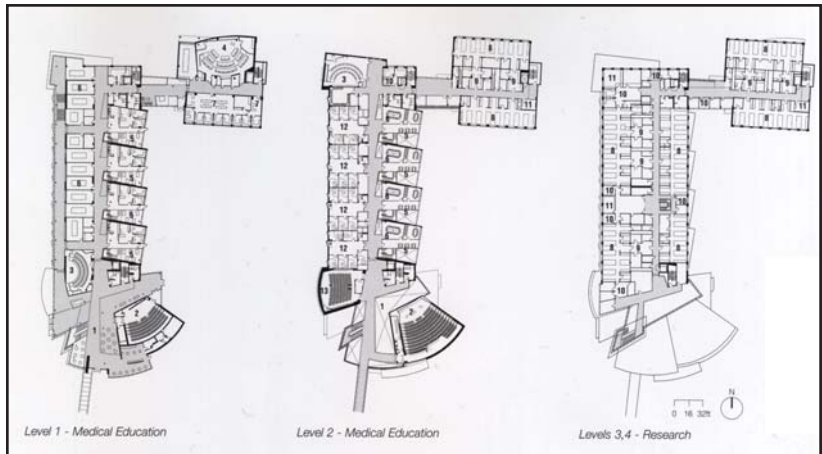


Fig 2.3.19: Floorplans.



Fig 2.3.20: Atrium.



Fig 2.3.21: Student communities.





Fig 2.3.22: View from northwest.

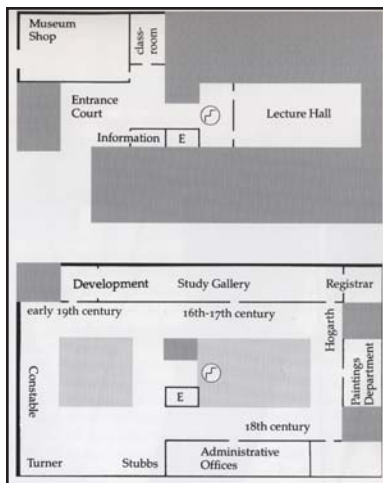


Fig 2.3.23: First and fourth floor plans.

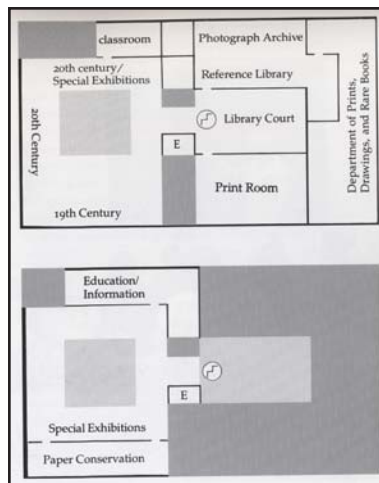


Fig 2.3.24: Second and third floor plans.



Fig 2.3.25: Library court.



Fig 2.3.26: Reference room.

## Yale Center for British Art Yale University, New Haven

### Critical Design Issues

- Organized around two central meeting places the main court and the library court
- Contains comerial space as well as study and museum spaces.

The Yale Center for British Art was founded in 1966. Its intent was to create a permanent home for the collection of British Art that was given to the University by Paul Mellon.

The center is organized around to central courts. The first is the four story main court into which you enter from the street. The second is the library court located on the second floor. The library court also contain the main stair which is enclosed by a cylindrical concrete wall. Both of the courts act as light wells allowing for the exterior windows to be small.

Within the center there are exhibition spaces, educational spaces, libraries, and retail spaces.

Louis Kahn had designed the facade of the center to be able to change appearances. "On a dull day the burnished steel panels are soft and light-absorbant, like bales of good gray English cloth. The building is solemn. In bright light the windows in the facades shine with reflections; they serve as mirrors."<sup>1</sup>

1. Robinson, 11.

***Pestalozzistrasse Hall of Residence  
Reutlingen, Germany***

**Critical Design Issues**

- Student residence enclosing a central courtyard.
- Apartments for groups of five or six individuals, single room accommodation for one or two persons, and a caretaker's apartment.
- Accommodation for a total of 107 students.
- Guesthouse with self-catering units for visitors to the Export Academy seminars.

***Site and position***

The student hall of residence was built together with a small guesthouse for the university. It is situated on an open area of green next to the university buildings, set back quite a way from neighboring buildings and traffic noise. The central grassy courtyard enclosed by the building is a public area overlooked and used by all the residents. A public footpath crosses the courtyard, giving access also to non-residents. In 1993 the complex won an award for good architecture from the BDA, the Association of German Architects.

***Building type/organization***

The central courtyard, open to the south, is enclosed by seven three and four story blocks. Apartments are on four levels, reached via two flights of stairs; on each level five or six single rooms are grouped into separate apartment units. Open galleries in front of the apartments serve as corridors and in summer these can be used as an extension of living space. Generally, as a space saving measure, there is no hall space in the apartments; the individual rooms lead directly off the lounge and face away from the noisier courtyard side.

***Construction***

The subsoil has widely differing load bearing capacity and reinforced concrete piles were driven on the valley side of the site. The support structure

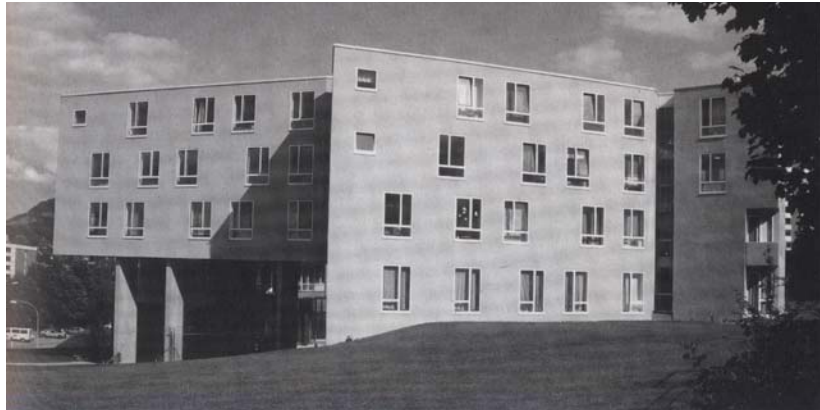


Fig 2.3.27: Street facade.

***Accommodations***

Five-room apt.: 5 single rooms each 12.5 m<sup>2</sup>, lounge with wall cupboards 33.6 m<sup>2</sup>, 2 shower baths with WC each 3.3 m<sup>2</sup>, total floor space: 102.7 m<sup>2</sup>.

Six-room apt.: 6 single rooms each 12.5 m<sup>2</sup>, lounge with wall cupboards 47.8 m<sup>2</sup>, 2 shower baths with WC each 3.3 m<sup>2</sup>, 1 separate WC 1.8 m<sup>2</sup>, total floor space: 131.2 m<sup>2</sup>.

One person accommodation: room, shower bath and kitchenette, total 17.6 m<sup>2</sup>.

Two person accommodation: room for 2 people, with bathroom and kitchen, total 41.4 m<sup>2</sup>.

Accommodation in the guesthouse: 27 self-catering units with shower bath and kitchenette, each 17.6 m<sup>2</sup>.

Communal Areas with kitchen: 68.8 m<sup>2</sup>.

Lobby: 19.3 m<sup>2</sup>.

Music room: 12 m<sup>2</sup>.

Office: 7.2 m<sup>2</sup>.

WC and anterooms: 3.5 m<sup>2</sup>.

4 laundry rooms: 11.4 m<sup>2</sup> each.

Bicycle room with storage in basement: 230.9 m<sup>2</sup>.

Total floor space for communal and services areas: 387.3 m<sup>2</sup>.

Parking: 35 car parking spaces at ground level.



Fig 2.3.28: External stairs.



Fig 2.3.29: Staircase with lounge area.

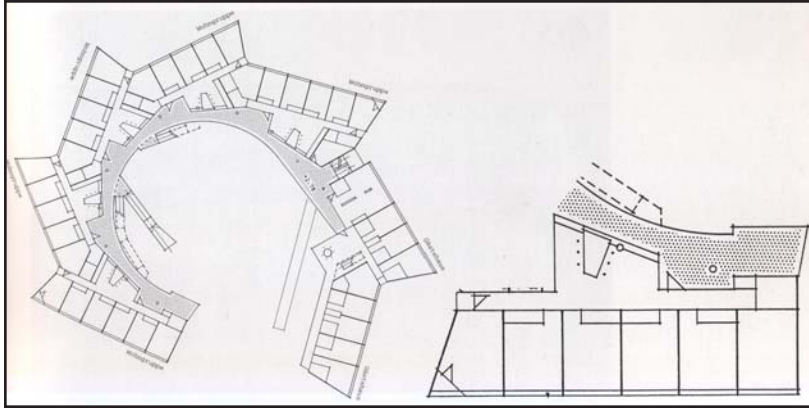


Fig 2.3.30: Typical floor plan and floor plan of a six-room apartment..

is of reinforced concrete. The walls are partly constructed of formwork blocks. The roof is a non-ventilated flat roof with foil insulation. Exterior walls have insulated rendering. Walls in the rooms are plastered and painted. Linoleum was used for flooring in the living areas, bathrooms were tiled.

### *Services*

The building is connected to the district heating supply. It is heated with a hot-water heating system and domestic hot water is heated centrally. Interior bathroom areas have automatic air extraction fans. The building is wired for telecommunications and cable TV.

### *Fittings and furniture*

Rooms are part furnished. The lounge has built-in kitchen units and a dining area. The shelves and cupboards are painted in various colors.

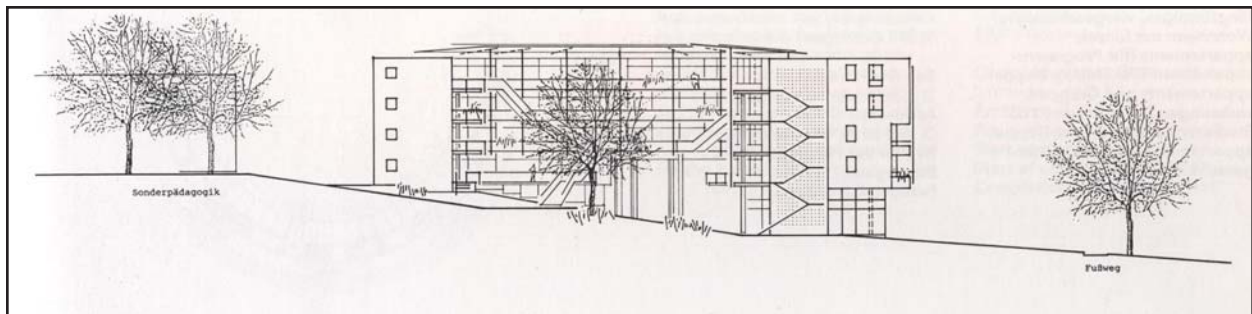


Fig 2.3.31: Section through staircase.

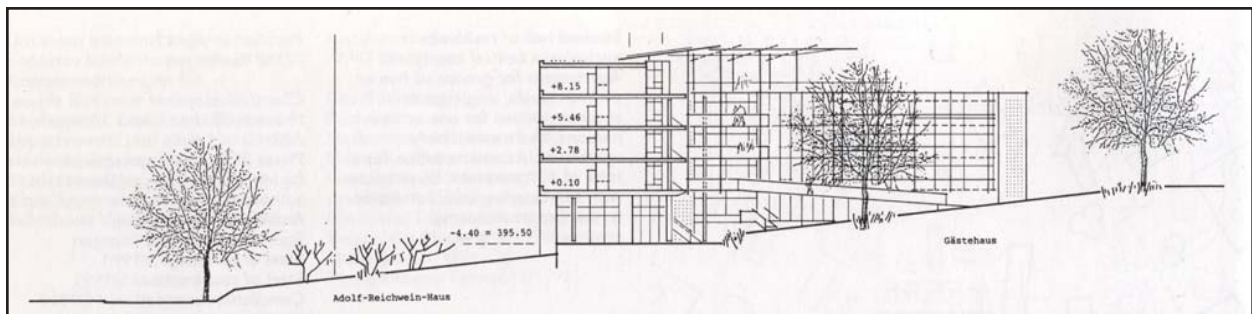


Fig 2.3.32: Section through rooms.



### *Konstanz Jungerhalde Student Hall of Residence, Germany*

#### Critical Design Issues

- The complex consists of a total of 17 identical two-story terrace units, arranged in five rows of different lengths.
- Each terrace unit can accommodate six students, with a total of 102 places.

#### *Site and position*

The site is located on the outskirts of the town of Constance, in a residential area, in sight of the university. Both universities in the town can easily be reached on foot or by public transport. The low eaves height of the buildings is in line with surrounding development. In 1993 the project won an award for good architecture from the BDA, the Association of German Architects.

#### *Building type/organization*

The two-story buildings (with attic story) are raised on pile foundations, and grouped around courtyards so as to form public, semi-private and private areas. The same principle governed the design of the interiors. All the terrace units have individual entrances, linked to the other units via exterior walkways. Each unit has six students rooms.

#### *Accommodation units*

The five rows contain between two and five terrace units. The accommodation units are arranged as follows: Ground floor: entrance area with integrated kitchen and staircase, communication area and two student rooms. 1st floor: two student rooms and sanitary area. Attic: two student rooms with general purpose room (wash and drying machines). 6 separate single rooms at 11.17 m<sup>2</sup> each, totaling 67.02 m<sup>2</sup>. Kitchen/hall/dining area 19.72 m<sup>2</sup>. Bathroom/WC 6.77 m<sup>2</sup>. Hall/stairs 5.62 m<sup>2</sup>. Gallery 3.58 m<sup>2</sup>. Storeroom 3.56 m<sup>2</sup>.

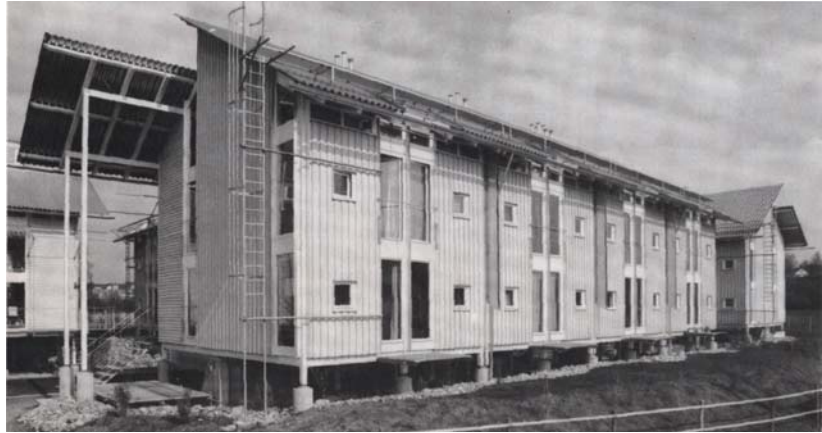


Fig 2.3.33: East elevation of block A.

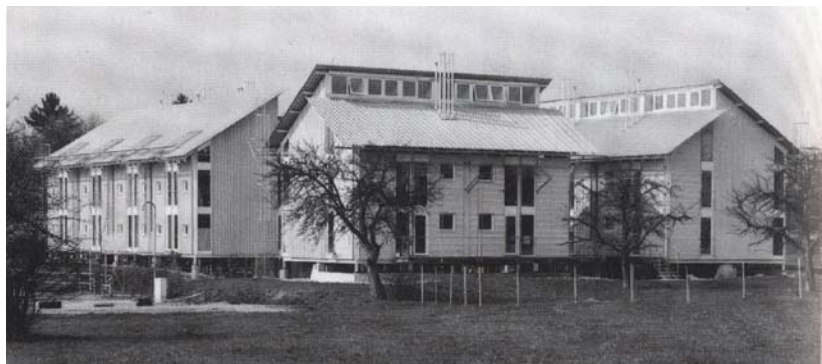


Fig 2.3.34: General elevation from the north.

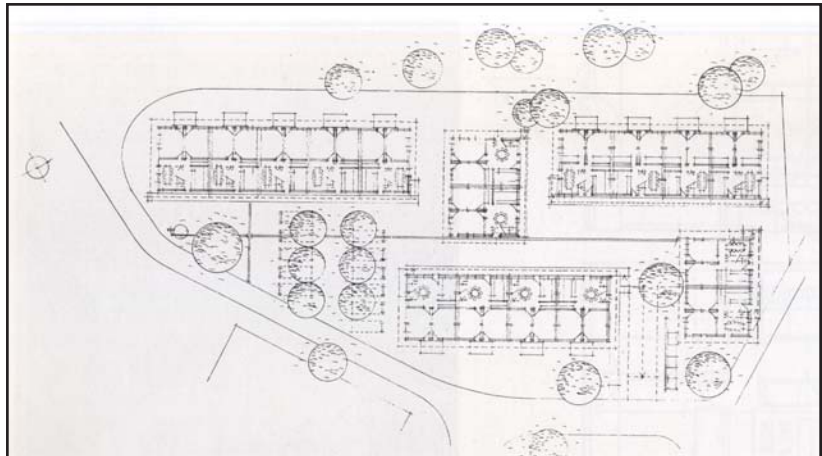


Fig 2.3.35: Site plan.

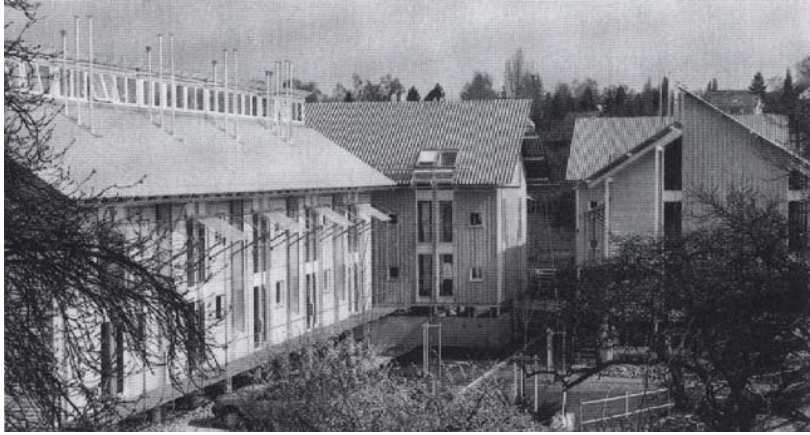


Fig 2.3.36: Exterior corridors.

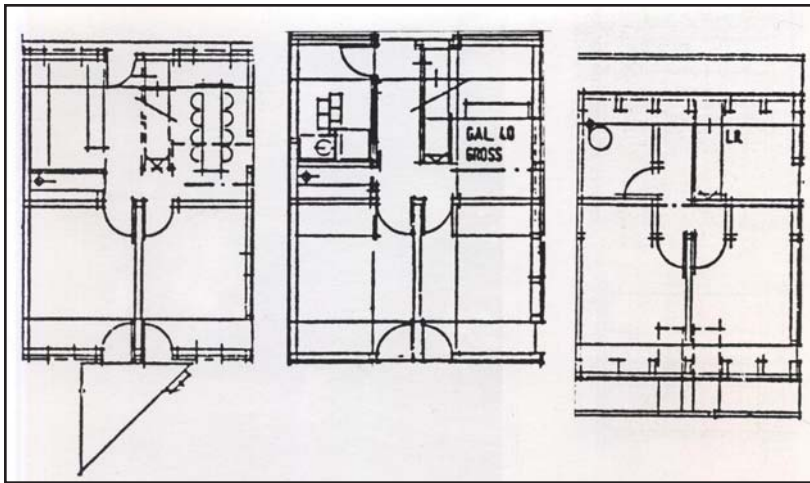


Fig 2.3.37: Plans, left to right: 3rd floor, 2nd floor, ground floor.

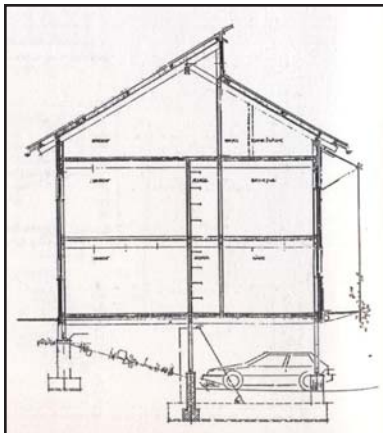


Fig 2.3.38: Section.



Fig 2.3.39: Canopies, block B.

### *Communal areas/facilities*

The kitchen on the ground floor also serves as a lounge; here, too, is a storeroom. On the first floor is a desk on the open gallery leading to the dining area. On the second floor a room with washing machine, dryer and mechanical services for the heating system. On site, for the use of all inhabitants, is also a bicycle room and storeroom for the caretaker.

### *Construction*

As the site is close to an area of wetland, there were considerable problems with the foundations. The pile foundation option was chosen. As a result the cost of foundation works increased the overall building costs. The rows are simply and cheaply built as timber frame structures (F 30, fire walls F 90 B). Colored metal decking and timber cladding. The roof construction has visible skeleton rafters, with a tongue and groove cladding and thermal insulation with corrugated aluminum sheeting. The exterior walls have thick thermal insulation, interior walls are also wooden framed, with a double layer of cladding. Floors have visible timber beams, on top of which is a supporting layer of 28 mm tongue and groove cladding, weighted with a layer of gravel. Floating screed floor with rubber flooring. Stairs are simple steel construction with beechwood stringers. Wooden window frames of pie, side/bottom hung sash windows. Main door: pine frame, 56 x 87 mm with insulated glazing. Interior doors: heavily sound insulated interior doors, consisting of a pine block case 40 x 120 mm, with rabbet on three sides, door surface laminated pressed panel. Sanitary module with automatic air extraction system.

### *Services*

Mechanical services are kept simple. All pipes are visible. The sanitary module is entirely of glass, with a spot pattern for screening on doors, and as anti-slip protection on floors. Each block has its own heating system. Gas (water) circulator independent of air tempera-



ture in rooms, with exhaust pipe and hot-water heater, 120 liters, connection to natural gas supply. Heating and tube grid and hot-water pipes as visible two pipe system.

### *Fittings and furniture*

Rooms are furnished, the furniture was specially designed for this hall of residence. In order to give the students the chance to arrange their rooms as they like, all the furniture was fitted with castors, to facilitate moving it. In the ground floor entrance area is a built in kitchen unit with sink and drainer and a cooker. Moveable refrigerator and dining are for six persons. Each terrace row has one coin operated washing machine and dryer in the attic story.



Fig 2.3.40: View of dining area on ground floor.

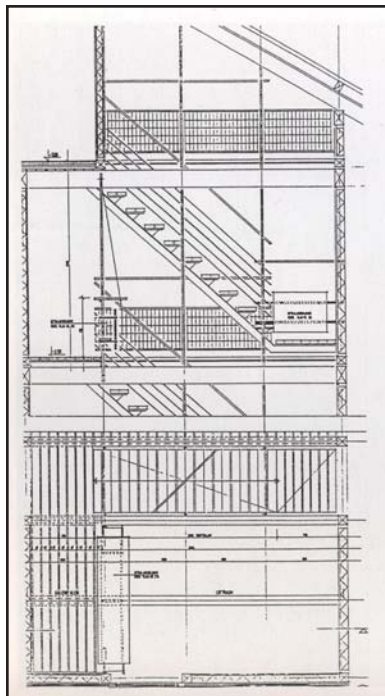


Fig 2.3.41: Stair detail in plan and elevation.

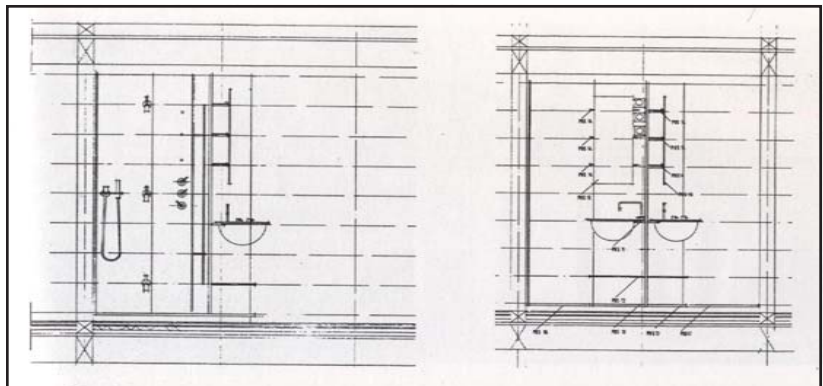


Fig 2.3.42: Elevations of glass sanitary module.

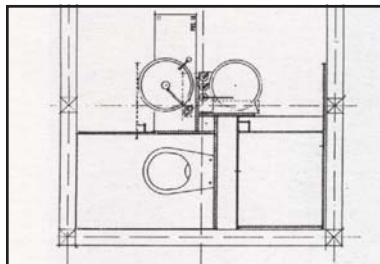


Fig 2.3.43: Plan of glass sanitary module.

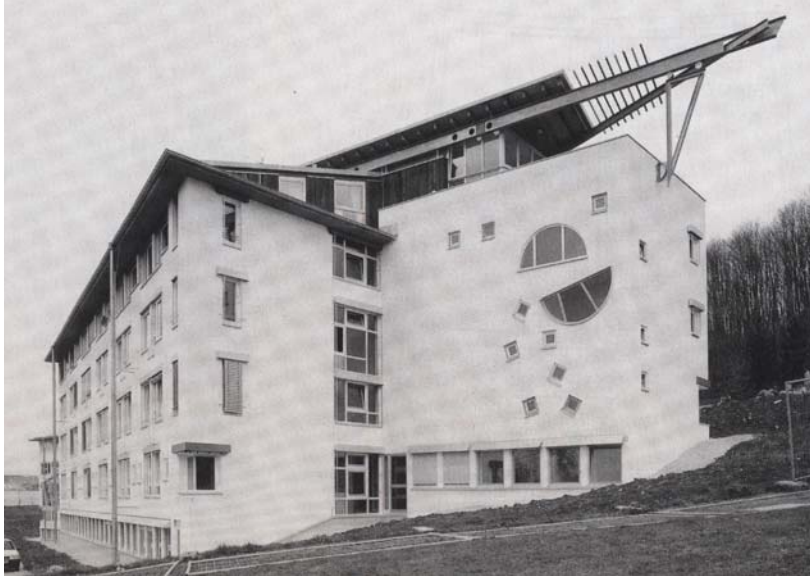


Fig 2.3.44: Elevation from southwest.



Fig 2.3.45: Common room in attic.

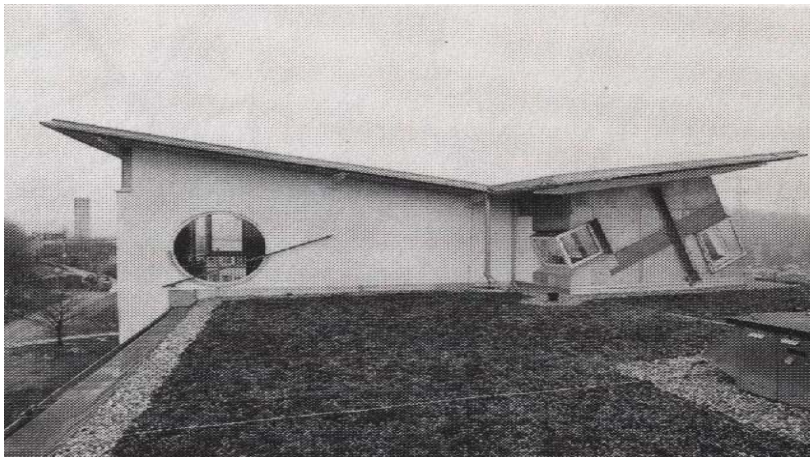


Fig 2.3.46: Roof garden.

### *Student Accommodations Nürtingen am Schelmenwasen, Ger.*

#### **Critical Design Issues**

- Accommodation for a total of 204 students in a five-to-six story hall of residence with two-person apartments.
- An additional three apartments are available for guest lecturers; a number of the apartments are suitable for the handicapped.

#### **Site and position**

The University of Nürtingen, with its historic buildings, is situated in the town center. The new part of the university, together with the halls of residence, is about 2.5 km away on the southern edge of town, towards Neuffen.

In plan the building has an extended linear form and in elevation its height follows the steep west-facing slope of its campus location.

#### **Building type/organization**

Apartments lead off a central corridor, which is widened and heightened in one section to create a communal area. The north and south wings have a central staircase, with access at ground level + 0, connecting to three floors up and down. Various communal areas such as cafeteria, TV room, reading area, games area, laundry and working area lead off the central staircase.

On each floor a maximum of 24 rooms share a tea kitchen. An emergency staircase provides vertical communication, linking in to the tea kitchens. The rigid linear arrangement of the rooms was broken up by widening corridor areas and introducing gallery levels.

#### **Accommodation units**

Two-person apartments: 2 study/bedrooms á 13.3 m<sup>2</sup> with shared shower facilities, washbasin and WC, 2.16 m<sup>2</sup>.



### *Communal areas/facilities*

Tea kitchen with sitting area on the corridor of each floor (approximately 14.5 m<sup>2</sup>). Large hall (203.86 m<sup>2</sup>), TV room (55.65 m<sup>2</sup>) with media room; cafeteria (68.9 m<sup>2</sup>); reading and games area; general purpose area (50.39 m<sup>2</sup>) and table tennis room (45.2 m<sup>2</sup>), and laundry room with washing and drying facilities (60.62 m<sup>2</sup>). Caretaker's apartment 84.5 m<sup>2</sup>.

### *Construction*

Exterior walls: lightweight concrete blocks.

Interior walls: supporting cross walls of 17.5 cm lightweight concrete blocks; intermediate concrete blocks; intermediate walls between two-person apartments of 12.5 cm lightweight concrete blocks. 2.95 m unit spacing, structural grid 5.9 m.

Flooring: linoleum in halls/corridors and study/bedrooms; industrial parquet in common rooms; tiles in wet areas.

Roof: shallow sloping reinforced concrete roof floor above first and second stories, planted. Over third story (north), corrugated steel sheet on steel girders, as one-sided sloping roof. Above third story (south) timber construction as two-sided sloping roof, asphalt roofing and green slate.

Stairs: main stairs, single-flight reinforced concrete stairs with stone ashlar slabs; emergency stairs, prefabricated, two-flight reinforced concrete stairs.

Doors: room doors, veneered solid wooden particle board doors; doors to stairs, steel/glass/solid sheet doors with glass window.

Solar protection: All rooms on ground floor have exterior roller blinds; slated blinds on the entire west and south sides, and partly on the east side. Cafeteria and large hall have awnings.

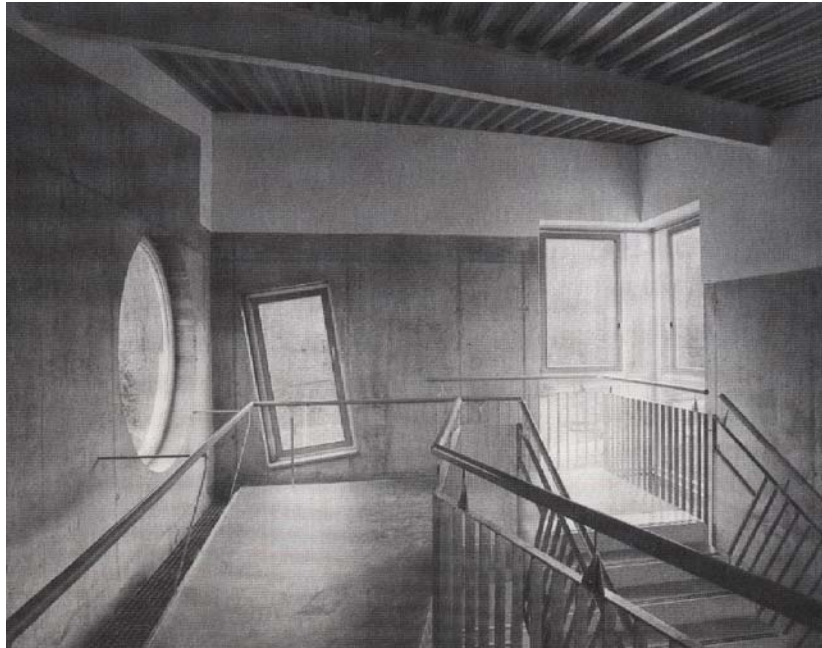


Fig 2.3.47: Stair corridor.

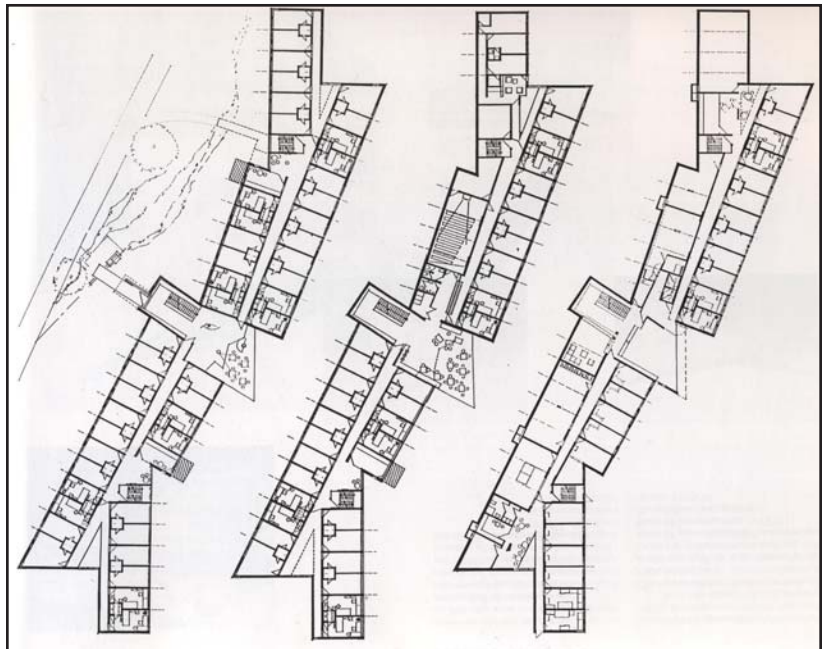


Fig 2.3.48: Plans of 1st, 2nd, and 3rd floors.



Fig 2.3.49: Rear view.

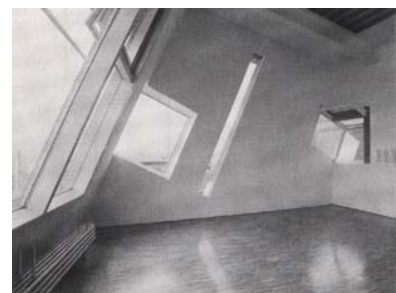


Fig 2.3.50: Common room in attic.

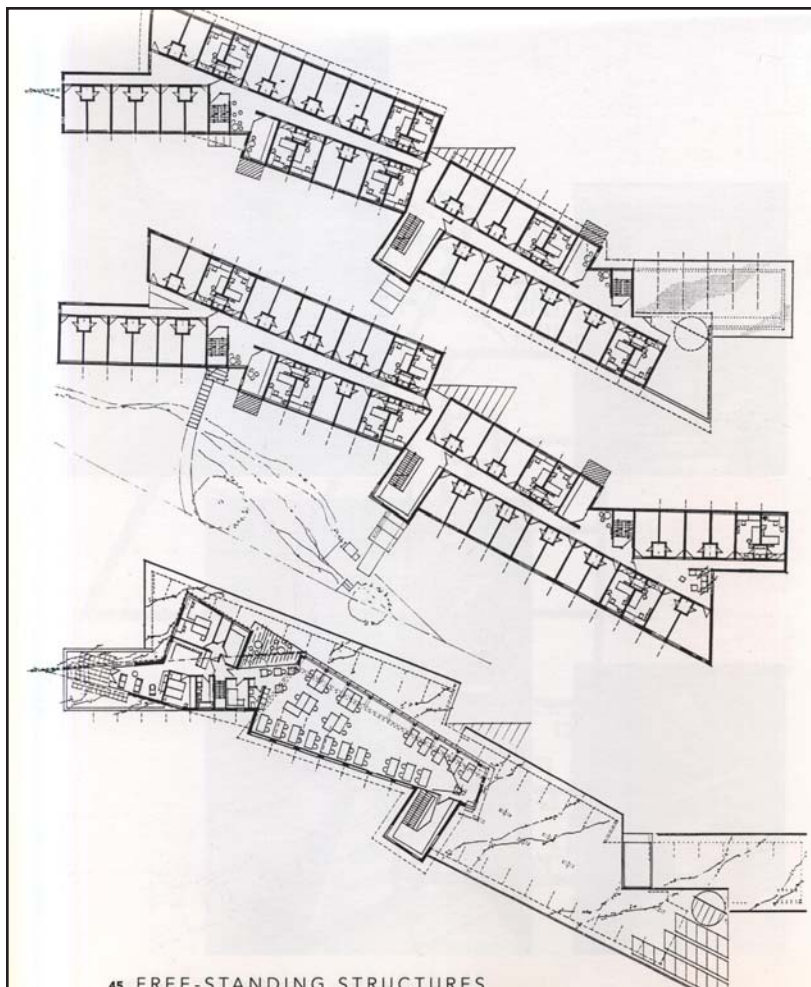


Fig 2.3.51: Plans of ground floor and two basement levels.

### *Services*

Heating is linked to system in adjoining university building. Hot water heating via heat exchangers; installations for solar collectors and buffer storage. The wet areas have automatic air extraction, the waste air is fed via heat exchangers, and the warmed fresh air is redirected into the rooms. All rooms have telephone and antenna points.

### *Fittings and furniture*

Rooms are fully furnished. All items of furniture, except for the built in cupboard, are free standing, to enable students to arrange the furniture as they wish. Tea kitchens are fitted with kitchen units and have shared refrigerators with 12 lockable compartments. Dining areas are also furnished and fitted. Laundry room: 4 washing machines and 4 dryers. Reading area: 2 tables, 6 chairs. Cafeteria with bar: 12 tables and 25 chairs. TV room: Television and 45 chairs. Large hall: 45 small folding tables, 180 upholstered chairs, lectern, projection wall as a room divider.

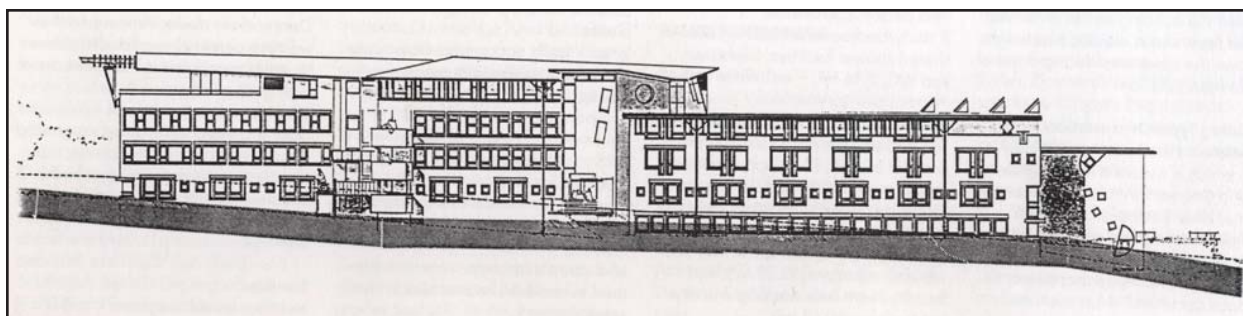


Fig 2.3.52: Elevation from west.

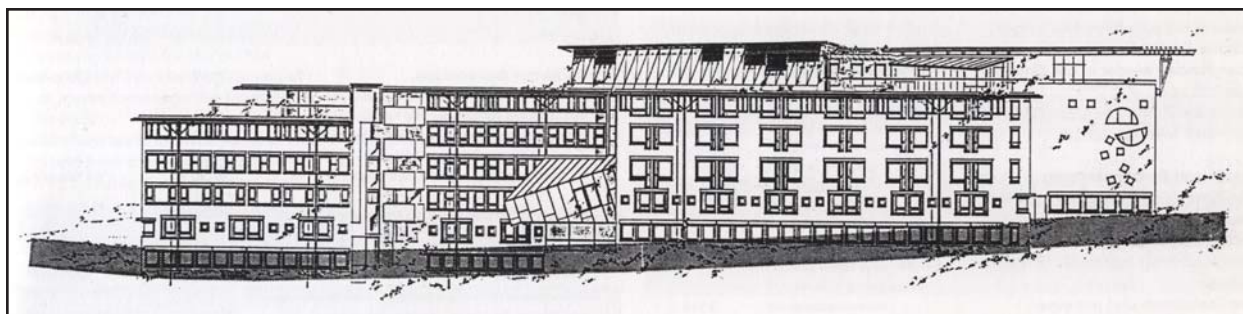


Fig 2.3.53: Elevation from east.

*Historical precedents- program list and floor areas*

Program	Sq. Ft.	%
Site	13020	
Building	1015	
Floor	3480	
Laboratory	950	27
Research	740	21
Communal work	210	6
Social	480	14
Private work	120	4
Circulation/mechanical	980	28
<b>Total</b>	<b>3480</b>	<b>100</b>

*Nittetsu Research & Development Ctr.*



Program	Sq. Ft.	%
Site	47800	
Building	4840	
Floor	20900	
Laboratory	6150	30
Research	1860	9
Communal work	2575	12
Social	4015	19
Private work	0	0
Circulation/mechanical	6300	30
<b>Total</b>	<b>20900</b>	<b>100</b>

*Fuji Xerox Corporate Research Labs*



Program	Sq. Ft.	%
Site	31132	
Building	10108	
Floor	15700	
Laboratory	1060	8
Research	4250	27
Communal work	3480	22
Social	990	6
Private work	1770	11
Circulation/mechanical	4150	26
<b>Total</b>	<b>20900</b>	<b>100</b>

*Center for Japanese Studies*





*Univ. of Iowa Research Facility*



Program	Sq. Ft.	%
Atrium	31000	23
250-person auditorium	4500	3
Classrooms	12500	9
Student communities	16000	12
Administration offices	500	0.5
Laboratory modules	38000	28
Laboratory support	12800	10
Research offices	12300	9
Clinical skills area	7400	5.5
<b>Total</b>	<b>135000</b>	<b>100</b>

*Yale Center for British Art*



Program	Sq. Ft.	%
Administrative offices	580	2
Museum shop	865	2.5
Classroom	500	1.5
Lecture hall	1000	3
Paintings department	865	2.5
Study gallery	985	3
Development	145	0.5
Registrar	145	0.5
Print room	1730	5
Library	5800	16
Library court	2600	7
Paper conservation	575	1.5
Education/information	720	2
Entrance court	2300	6.5
Retail	5680	16
<b>Total</b>	<b>35500</b>	<b>100</b>



## Further reading

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pp.62-68, pp.81-86, pp.200-208.

- This book contains examples of a wide variety of research facility types, limited to Japanese design.

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*Our Industry-Leading Facilities*. 2009. Hallmark Institute of Photography.  
[<http://hallmark.edu/facility/>]

- This website details the facilities located at the Hallmark Institute of Photography. It gives a general idea of what types of spaces and equipment are needed for the capturing and production of photographs.

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- This book contains a step-by-step guide of how film is prepared and how photographs are developed.

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- This article contained case study based information on the operation of laboratories and research facilities.

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# Conclusions

## Introduction

To be written later. The following chapter will include summaries of relevant data and questions from all the research in the chapters above broken down into the general categories seen to the right (or other additional categories). For example, the most important criteria from the archives section (necessary floor space, lighting conditions, shelving space, etc.) will be summarized. We weren't given any specific program and spatial requirements in the syllabus, so those requirements will be pulled from the research above and described here. However, not every research chapter above gave "finalized" guidelines either, so it is assumed that each person will decide separately what they should be. If not, then the studio will need to collaboratively draft a list of requirements and recommendations for everyone to follow and place it here.

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## Requirements for the proposed Prague Institute of Photography

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<i>Programming req'ts</i> . . . . .	XX
<i>Other spatial provisions</i> . . . . .	XX
<i>Circulation req'ts</i> . . . . .	XX
<i>Storage and organizational provisions</i> . . . . .	XX
<i>Lighting requirements</i> . . . . .	XX
<i>Other</i> . . . . .	XX

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Fig 2.1.1: Ellis, J. (1992). "Californian photo fit." *Architectural Review*, 190(1139), pp.28.

Fig 2.1.2: "Museum für Fotografie in Riverside [Calif.]." *Baumeister*, 1991 Mar., v.88, no.3, p.32.

Fig 2.1.3: "Museum für Fotografie in Riverside [Calif.]." *Baumeister*, 1991 Mar., v.88, no.3, p.34.

Fig 2.1.4: "Museum für Fotografie in Riverside [Calif.]." *Baumeister*, 1991 Mar., v.88, no.3, p.34.

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Fig 2.2.5: Author.

Fig 2.2.6: Author.

Fig 2.2.7: <http://www.spacesaver.com/>

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