

**Proposal for an addition to the Design Center  
in support of a new design foundation program  
for the Iowa State University College of Design**

by

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## INTRODUCTION

The 2003-2004 academic year is the 25<sup>th</sup> anniversary of the College of Design at Iowa State University. At this time, the college has decided to reevaluate one of its major original goals - to create a collaborative and multidisciplinary curriculum encompassing all design disciplines. The college has also embarked on a fund-raising campaign to make capital improvements to the existing Design Center building. The desired result of these efforts is to develop a Foundation program and to build an addition to the Design Center to house this program. Due to my educational background, as a former student of the Foundation program at the Kansas City Art Institute as well as a graduate of the School of Art and Art History at the University of Iowa, and as a current graduate student in the Architecture Department at Iowa State University, I have been exposed to many different design education philosophies. Because of this exposure, I have become interested in the development of the Foundation program for the College of Design.

### History of the College of Design:

Iowa State University's College of Design was created in 1978, when four long-standing departments in other colleges were brought together to create new, dynamic and collaborative experiences for everyone associated with the new college. Landscape architecture had been part of the College of Agriculture since 1915. Architecture began in 1919 as part of the College of Engineering. Founded in 1920, Art and Design had been part of the College of Home Economics curriculum (now the College of Family and Consumer Sciences). Community and Regional Planning was introduced in 1947 as part of the Department of Landscape Architecture. By combining all of these programs under one roof, the College of Design joined a small, elite number of comprehensive design schools offering outstanding opportunities for both disciplinary and interdisciplinary design education. (Iowa State University College of Design).

### Mission of the College of Design:

To provide an organization for direct interaction among students, faculty, and professionals involved in all aspects of the visual arts, design, and the planning of structures, communities and environments;

To improve educational opportunities for the increasing number of young people entering programs in the design profession;

To provide opportunities for all students in the university to undertake studies in art, design, and the built environment;

To foster creative thought, scholarship, and research *on an interdisciplinary basis*, as well as on an individual basis;

To serve as a design resource for the university, the community, and the state (Iowa State University College of Design).

In the preceding mission statement, providing a collaborative and interdisciplinary environment is emphasized as a major goal of the college. Unfortunately, due to the roots of the departments in separate colleges, the existing pedagogical structure does not encourage interdisciplinary activity. As a result, there has never been a shared sense of purpose, nor a common basis for design instruction among the departments in the College of Design. From the first year of study, most of the courses offered by each department are reserved for its majors and there are very few interdisciplinary opportunities. Additionally, the architecture of the Design Center building itself does not provide opportunities for the interdepartmental contact between faculty and students that is necessary to form a collaborative environment.

A Foundation program and building addition, through its architecture and its pedagogy, has the potential to transform the College of Design. The

intention of this proposal is to design an addition to the Design Center which will serve and embody a new Foundation program for the College of Design. This proposal is informed by research into Foundation education, as well as the author's personal educational experience and architectural precedents representing notable design education buildings. The desired outcome is that this new architectural and pedagogical structure will foster an interdisciplinary environment in the College of Design.

## FOUNDATION EDUCATION

Foundation education is based on the premise that, at a fundamental level, all art and design disciplines share the same basic concepts and methodology. It is a single course of study, the purpose of which is to “lay the foundation” for further, more advanced and specialized study. The primary goal of a Foundation course is to unlock the student’s creativity and analytical abilities and to nurture these qualities. In the Foundation studio students are exposed to basic design concepts and to a spectrum of processes, materials and tools. The course encourages logical and intuitive experimentation through the execution of assigned exercises. Students then receive feedback on their work from faculty and classmates.

In the Foundation studio the individual interest and personal ideas of the professors are not emphasized. The professor serves only as a guide and source of information for the students. Nor is the education concerned with developing in the student a personal expressive language. The focus is on exposing students to basic concepts and skills and encouraging them to shed their preconceptions in order to create original creative work. The education is process-oriented, not product-oriented; the goal is not to create art, but to develop creativity and encourage critical thinking by exercising these faculties. The education does not attempt to instill a style or establish dogma, but is decidedly anti-stylistic. In fact, like the Bauhaus pedagogy on which it is based, the Foundation philosophy consciously avoids exposing students to stylistic and historical influences.

### *The Bauhaus*

The Bauhaus was formed in Germany in 1919 when Walter Gropius merged the Weimar Academy of Fine Arts with the Decorative Arts School. It was founded “as a state school in which fine arts, crafts, industrial design, and architecture were taught as parts of an all-embracing aesthetic discipline (523 Trachtenberg, Hyman).”

The education and design philosophy of the Bauhaus represented a reaction against academism. The stylistic and educational approach, typified by the French Ecole des Beaux-Arts, academism dominated the practice and education of western art and design from the middle of the seventeenth century until the early twentieth century when it was supplanted by the modernist philosophy developed by the artists, designers and educators of the Bauhaus, among others (Young 9). According to Albert Boime, academic education had its roots in the medieval guilds. It borrowed from the guilds the apprenticeship system, under which a student entered the workshop of a practicing master and learned technical expertise through on-the-job training. The academy added to this practical training a theoretical emphasis derived from the study of classical and renaissance precedents which were considered the height of artistic achievement (3-4). This historical education was imparted through lectures based on classical and renaissance texts and drawing classes in which students produced studies from copies of historical works. With pedagogical roots in the guild apprenticeship system and curricular roots in historical emulation, academic instruction encouraged in its students a fundamentally imitative attitude. The academic artist was to adapt the great works of history to contemporary situations, following the example of his master.

While academic education looked to the past, the objective of the Bauhaus was to educate people who had the ability to “discern the fundamental character of the world in which they live” and who could “create forms which express their world (Dearstyne 69).” This attitude marked a dramatic shift; the emphasis was no longer on the adaptation of traditional forms, but moved toward developing new forms based on modern needs and means of production.

The most popular interpretation of the goal of the Bauhaus, as stated by Marvin Trachtenberg and Isabelle Hyman in their survey of the history of architecture, is that it attempted to “bridge the gap between artistic and industrial realms in pursuit of an ideal machine-age environment (523).” However, the Bauhaus boasted an extremely talented and visionary group of faculty and not everyone agreed with the ideas and goals put forth by its director, Walter Gropius.



In fact, Jurgen Tietz notes that the early years of the Bauhaus in Weimar were characterized by a strong craft-oriented and Expressionist direction, which he attributes to the presence of Johannes Itten on the faculty (33). In the early Bauhaus pedagogy architects, sculptors, and painters were trained to work as they did in the middle ages—with their hands. The central idea of the Bauhaus proclamation of April 1919 was the revival of a Gothic ideal in which all branches of art were united in the realization of architecture as embodied by the cathedral. Tietz explains that later, in 1921, Theo van Doesburg, a progressive and influential artist, came to Weimar and due to his influence the Bauhaus philosophy shifted toward a more technical and machine-oriented approach (33). This philosophy would be more fully realized when in 1925, under considerable political pressure, the Bauhaus relocated to the city of Dessau. In reality there never was a single unified Bauhaus idea. Instead, the Bauhaus was a vital community of visionary individuals, constantly trying to find a new path and constantly evolving their theories through experience and experimentation.

Despite these philosophical shifts, the Bauhaus curriculum was always linked extremely closely with practice and industry. A strong relationship with industry is mentioned by Gropius in the Bauhaus Manifesto of 1919 and in later years, the student workshops came to functioned not only as technical training grounds but also as laboratories, developing new designs for industrial production. In a letter to his mother, Howard Dearstyne relates his first impressions as an American visitor to the Bauhaus:

“It is interesting, too—one must learn a trade here—rug-making or ironworking or furniture-building... later, when the students have gotten along in modern design, they actually start to build. That is they cooperate in the design of buildings that will actually be built (Dearstyne 29).”

At the Bauhaus there was a decided effort to rectify the separation of theory and practice established by the academic system. To this end two masters, the “form master” and the “technical master” were in charge of each workshop. Theory

and practice were taught concurrently, rather than in the academic model where theory was presented in lecture, then applied to activity in the workshop.

The presence of two masters was seen as a necessity due to the lack of individuals who combined both formal and technical mastery. It was thought that only through this cooperative educational system could such individuals be trained and that eventually this method would create people who combined the mastership of craft and art that was a goal of Bauhaus instruction (Dearstyne 45).

### *The Bauhaus Basic Course*

The preliminary course of study presented at the Bauhaus was known as the Basic Course. This became the model for what is now commonly known as Foundation education. Frank Young attributes the origin of the word foundation as it applies to design education to Walter Gropius:

“[Gropius] thought of the Bauhaus curriculum (Figure 1) as analogous to a building, with each term being equal to a floor. The first term, the preliminary course, was obviously the foundation of the figurative building. Symbolically, it took on greater importance as the body of information on which all succeeding studies were based (Young 8).”

The Basic Course was created by the Swiss painter and educator, Johannes Itten. In 1919, Walter Gropius visited Itten's art school in Vienna and, impressed by his teaching methods, invited him to teach at the Bauhaus (Itten 8). The pedagogy that Itten brought with him established the Basic Course.

Through his experience as an elementary school teacher Itten came to value the natural creativity and originality inherent in all children. His course functioned as a kind of remedial class intended to relieve students, most of whom were academically-educated, of their deeply-ingrained attitudes and preconceptions and to unlock creativity (Itten 8-9). The preliminary course became required for all students as the preparation for further study at the Bauhaus.

I. Instruction in crafts (Werklehre):

STONE	WOOD	METAL	CLAY	GLASS	COLOR	TEXTILES
Sculpture workshop	Carpentry workshop	Metal workshop	Pottery workshop	Stained glass workshop	Wall-painting workshop	Weaving workshop

A. Instruction in materials and tools

B. Elements of book-keeping, estimating, contracting

II. Instruction in form problems (Formlehre):

1. Observation	2. Representation	3. Composition
A. Study of nature	A. Descriptive geometry	A. Theory of space
B. Analysis of materials	B. Technique of construction	B. Theory of color
	C. Drawing of plans and building of models for all kinds of constructions	C. Theory of design

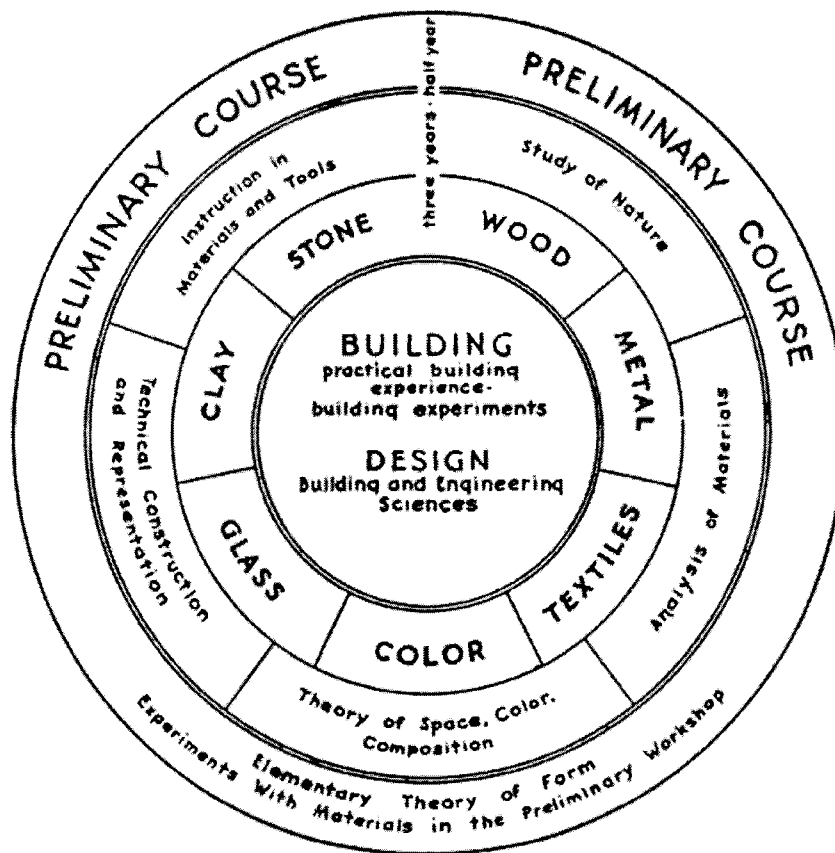


Figure 1. Diagrams of Bauhaus curriculum.

In his book on the subject, *Design and Form: The Basic Course at the Bauhaus*, Itten describes the three main tasks that were set for him as the Master of the Preliminary Course:

- “1. To free the creative powers and thereby the art talents of the students. Their own experiences and perceptions were to lead to genuine work. The students were to free themselves gradually from dead conventions and to take courage for work of their own.
2. To make the student’s choice of career easier. Here the exercises with materials and textures proved a valuable aid. In a short time each student found out which materials appealed most to him; whether wood, metal, glass, stone, clay or yarn best stimulated him to creative activity.
3. To convey to the students the fundamental principles of design for their future careers. The laws of form and color opened the objective world to the students. In the course of the work the objective and subjective problems of form and color were integrated in many ways (9).”

Itten’s course focused on visual expression and all concepts were presented within the framework of the expressive possibilities of contrast:

“Light and dark, material and texture studies, form and color theory, rhythm and expressive forms were discussed and presented in their contrasting effects. (Itten 12)”

Similar to the academic teaching method, Itten had his pupils study and reproduce the master-works of the past. Unlike the academic approach, in which precedents were faithfully reproduced in meticulous detail, Itten’s students were expected to look analytically and critically at these works and in their reproductions, more appropriately termed studies, to capture the compositional, rhythmic and textural essence of the work (Itten 148). This approach was fundamentally different from the academic one because it involved analysis and synthesis rather than

mindless, if accurate, copying. The bulk of the course included many other drawing exercises, both perceptual and conceptual, that focused on the communicative capacity of marks, tone and pattern. One important precedent set by Itten, which would become more important under his successors, was including basic experimentation with materials in the curriculum. In Itten's version of the Preliminary Course, this experimentation took the form of two-dimensional montages, the object of which was to attune the student's senses to the contrasting tactile and visual properties inherent in all materials (Itten 45-46).

After Itten's departure from the Bauhaus in 1923, Laszlo Moholy-Nagy took over the teaching of the Basic Course (Gropius 88). He was a painter and sculptor and his students were encouraged to experiment in abstract geometric sculpture. These exercises which were composed of various materials, were directly related to the material exercises of Itten's course. However, the focus was now on the physical, rather than visual properties of materials and on exploring spatial relationships rather than creating two-dimensional compositions. Many of these student works investigated the visual and physical compositional concept of asymmetrical balance that, according to Dearstyne, gave them a dynamic quality not seen in academic sculpture (88). In the execution of these studies, the use of simple hand tools in the manipulation of materials now replaced the hand-drawing focus of Itten's previous course.

In 1928, a former student of the Bauhaus, Josef Albers, became the director of the Basic Course. Albers had started teaching his course as a supplement to Moholy-Nagy's, but after the move to Dessau, Albers became a full instructor, teaching the first semester of the Basic Course while Moholy-Nagy conducted the second (Gropius 88). Albers's course was concerned primarily with the study of materials and his classes visited practicing workshops to gain exposure to traditional and industrial methods of production.

Howard Dearstyne, as an American student at the Bauhaus, places Albers's version of the Basic Course into the context of his previous architectural education at Columbia:

“He didn’t require us to draw in minute detail the five orders of architecture; they were never so much as mentioned in his class. He didn’t set us to copying, in charcoal, plaster reproductions of classic sculpture, possibly because the Bauhaus boasted none of these; he didn’t have us make elaborate watercolor renderings of grandiose and painfully symmetrical imitations of French and Italian Renaissance buildings; he didn’t ask us to digest the writings of Vitruvius, Vignola, or Palladio; in fact, he emphasized the uselessness of reading anything (except possibly his own articles).

What Albers did was to seat us at long tables in the workshop wing of the Bauhaus and confront us with some unlikely materials such as wire, wire mesh, paper, corrugated cardboard, sheet metal, match boxes, newspapers, or whatnot. We were supposed to do something with these—just *basteln*, or play around with them, to see if we could make something out of them or discover something about them. . . . Whatever we produced, Albers appraised it for what it was worth, without reference to established art canons. The course was a voyage of discovery on, as yet, an uncharted sea, and we discovered values in unexpected places (Dearstyne 90-91).”

Albers believed that an understanding of materials was the basis of design. He thought that only through a thorough and intimate knowledge of the performance and physical properties of materials could a designer perceive function and thus achieve economic forms (Dearstyne 92). Albers’s version of the Basic Course began with low pressure experimentation, an approach borrowed from Itten, but, like Moholy-Nagy’s course, with a focus on materials rather than visual language. This course of study put hands-on investigation and discovery before theoretical doctrine, encouraging an inventive and observant approach. The student was not burdened by a preconception of what the finished product should be but was encouraged to experiment freely. Students worked primarily with their hands to achieve a more intimate contact with their materials and a more direct realization of their investigative ideas.

The Basic Course was an introductory-level class which presented practical and theoretical work simultaneously. The goal of the course was to develop the creativity of the student and free him from convention. The theoretical basis of the course was the introduction of visual and spatial principals. Practical teaching was offered in the form of drawing exercises and experimentation with materials but did not involve specialization with any particular tools or media. With the Basic Course, the concept of a shared basic design curriculum was created, in which students would develop critical thinking skills before they were allowed to consider themselves artists.

Bauhaus design theory, which rejected the imitation of traditional and historic forms in order to develop new forms that would serve and embody the realities of a modern world, extended to educational theory. David Spaeth, relates that the Bauhaus educational philosophy encouraged students to aspire to personal innovation rather than imitation of a master or emulation of history:

“Under Gropius and the Bauhaus masters, students were urged to discard their preoccupations and approach each problem as if it were completely new, from zero, studying both functional requirements *and* the technical means necessary to realize a solution. (Dearstyne11-12).”

This philosophy lies at the heart of contemporary Foundation education - to challenge the student to find original solutions based on the application of their own logic and creativity to the given problem. The Basic Course encouraged each student to engage in intense personal evaluation and discovery. Its goal was to develop students that could think creatively and independently and who would be equipped to design for the realities of their own day rather than in the image of the past. The pedagogy of the Basic Course remains relevant because it rejected previous design education models which taught technical skills and retainable knowledge. Instead, it intended to develop in its students analytical, innovative and creative problem-solving capabilities. These qualities and abilities will never go out of style and are as necessary today to any designers working in our rapidly

changing world as they were for the students and faculty of the Bauhaus in the 1920's who were aspiring to envision a modern design philosophy: an answer to antiquated and irrelevant historicism of the academic tradition.

After the closing of the Bauhaus in 1933, its teaching methods were brought to the United States by masters and former students. Josef Albers taught at Black Mountain College in North Carolina, Laszlo Moholy-Nagy at the Institute of Design in Chicago, Walter Gropius in the Department of Architecture at Harvard, Mies van der Rohe in the Department of Architecture at the Armour Institute in Chicago and former students became teachers at the Laboratory School of Industrial Design in New York and the Southern California School of Design (Gropius 215). The Bauhaus Basic Course represents the origin of the concept of Foundation education as it is still thought of today. Due to the influence of the Bauhaus, it has become almost universal opinion among art and design institutions that all students benefit from an exposure to the basics during the first year of study (Young 9)."

### *The Education of the Author*

In addition to the preceding historical study, my experience as a student of the Foundation program at the Kansas City Art Institute and of the Bachelor of Fine Arts program at the University of Iowa gives me personal insight into the value of a Foundation program, both as a successful design education model, and as a vehicle for creating and fostering a collaborative and interdisciplinary educational environment.

At the University of Iowa there is no Foundation course. The coursework that constitutes basic art and design education is split into six studio art courses. Basic Design and Basic Drawing, each a 2-credit-hour course, form a core prerequisite curriculum for all art majors. Majors must also choose two 2-D introductory electives and two 3-D introductory electives, each of which is a 3-credit hour course. Although these classes, taken as a whole, are viewed to constitute a basis for art and design education, they are taught independently by faculty from different departments within the college and are not interrelated.



Basic Drawing is a drawing course descended from the academic model. It focuses primarily on perceptual drawing from the still-life and from the live model and includes some conceptual drawing. The Basic Design course is Bauhaus-inspired. Projects and concepts are introduced in the form of structured problems; each is clearly presented in a typed document which explains the objective of the assignment and describes the format, media and materials to be used for the execution of a solution to the problem. The first half of the course consists of paper cutting and folding exercises adapted from the Albers Preliminary Course. These activities result in spatial and material experimentation. A second stage of drawing exercises follows which develops manual drafting skills and teaches technical drawing conventions.

In addition to these two core classes there are also the 2-D and 3-D electives. These each focus on a particular discipline: Graphic Design, Sculpture, Painting, Ceramics, Photography. These courses include instruction in specialized tools and processes associated with a particular discipline rather than teaching basic concepts. These courses represent a guild style of workshop education where the focus is on developing technical skills and competency with particular tools and media in a shop set up for a specific craft.

The studio spaces where the different basic courses are taught are scattered throughout the 1930s-era Art Building. Because of space limitations and the value of tools and equipment in some of the specialized workshops, students have extremely limited access to the studios and they are locked up overnight. This is referred to as a “hot desk” situation in which the individual student does not have access to a personal workspace but can occupy the studio only during the class period and appointed open work hours.

In some ways the organization of introductory curriculum at the University of Iowa is very similar to the current situation at Iowa State’s College of Design, where students take a mixture of core studio classes rather than a shared Foundation course. However, the curriculum at the College of Design is even more disconnected because, unlike at the University of Iowa, where all students take Basic Design and Basic Drawing, in the College of Design, students from each

discipline take a completely isolated set of courses that relate only to the major and suggest no common ground among design disciplines at all.

My experience in the Foundation program at the Kansas City Art Institute forms my personal point of reference for Foundation education. As is typical of all Foundation courses, the one at KCAI is not discipline-specific but could be characterized as “pre-disciplinary or non-disciplinary”, presenting basic concepts and material with no focus on or preference for any particular art or design discipline. Based on Itten’s version of the Preliminary Course, the Foundation studio at KCAI begins with extensive observational drawing - primarily self-portraits in charcoal but including shadow studies of geometric objects, figure drawing (gesture and modeled) and blind contour. This course of drawing, which makes up roughly half of the semester, develops manual and perceptual skills. Later, more conceptual issues in 2-D and 3-D composition, abstraction, visual language, color theory and perspective are addressed. In addition to this main studio experience there are three supplemental orientation workshops with projects focused on introducing students to the various technical facilities available on campus: the woodshop, the computer lab and the photo lab.

Material is presented in the form of multiple small projects with rapid turn around allowing for frequent critiques and analysis and covering many concepts. Throughout the entire course of Foundation study the class engages in, what I call, student-focused critiques. Rather than a typical situation with a panel of faculty judges, in the case of student-centered critiques, the studio instructor takes a background role as arbitrator while students are assigned to comment upon the work of their classmates. This type of critique allows students to gain experience with presenting their work while developing confidence and critical language without feeling intimidated by faculty. Students gain much from this experience, learning to be better at self-criticism by being forced to comment on the work of others rather than passively listening to the comments of instructors.

The Foundation experience at KCAI is an intensive one that presents all basic material together in a holistic way, rather than splitting it up into multiple courses as is the practice at the University of Iowa and at Iowa State. It is taught

as a nine credit-hour class where the studio remains accessible to students at all times and each student has his own cold desk space. The term “cold desk” refers to a space to which one student has sole ownership and unlimited access.

Because students have 24-hour access to the studio space and there is a heavy allocation of credit-hours to the single Foundation studio course, a strong sense of studio community develops in the Foundation course at Kansas City Art Institute. Students spend a large amount of time with the same group of 20 classmates. When the Foundation studio is completed and students enter their major departments, they have established friendships and relationships that they take with them. Despite the location of the departments in many different buildings on campus, students seek out friends in their studios and, along the way, find out what is going on in the Painting department or in Photography or Sculpture. At the University of Iowa, with less intense basic classes and a hot desk studio situation with very limited access, this sense of community and connectedness simply does not develop.

## **THE COLLEGE OF DESIGN FOUNDATION COURSE**

The Foundation program that I propose for the Iowa State University College of Design will build upon and reinforce the multidisciplinary alignment inherent to Foundation education. It will do so in an effort to establish interdisciplinary relationships and interests among students and faculty that encourage continued interaction and collaboration in the collegiate environment and in practice. This will meet the objective from the College of Design Mission, unfulfilled since the founding of the college in 1978.

A non-disciplinary Foundation program taught by a multi-disciplinary faculty will result in interdisciplinary and cross-disciplinary thinking and endeavors by both students and faculty in the College of Design. The term non-disciplinary refers to a pedagogy and subject matter that transcends disciplinary divisions. The Foundation philosophy recognizes that, at least at a basic level, all art and design disciplines share fundamental concepts, processes and vocabulary. Students benefit from being educated in this way, gaining an understanding of the common ground shared by all disciplines.

Foundation students will not pursue a particular discipline. Instead, the course of study will have a broad scope; it will develop a wide range of skills and provide exposure to multiple materials and methods of making. This exposure will help students to make a well-informed decision about which department within the College of Design they will enter upon completion of Foundation studies.

The faculty of the College of Design has personal interests and areas of expertise that are not limited to a single design discipline. They will not be assigned one-per-studio in the traditional way, but instead, faculty from different departments will rotate in and out. This allows each professor to bring their personal talents and expertise into play when they are required, while allowing beginning students to become personally acquainted with members of all the departments. This arrangement would allow the current faculty of the College of Design to actively participate in the new program and would provide the possibility for team-teaching, bringing faculty from different departments into closer contact.

Such contact could develop into subsequent collaborative interests or research amongst faculty members of different departments. Through this exposure to a wide range of faculty, students will learn about each of the majors offered in the college and develop personal contacts with faculty members within each department.

Lessons will be presented in a structured problem format, much like the one used in the Basic Design course at the University of Iowa and described by Frank Young. These are brief problem solving exercises where students are presented with a clearly defined problem with specific boundaries. Students must work through a process of investigation and ideation to develop a solution. These solutions are then discussed by the class with direction from the professor, in order that all students benefit from lessons learned and unique approaches taken in the solution of the problem. Key skills and concepts, common to all design pursuits, are presented through this lesson format. Many problem sets are presented over the course of the semester. Each begins with a short introduction to the emphasized concept, immediately followed by intensive learning through engaging the problem. Young states that this format “places practice before, or at least concurrent with theory... [the student] learns and understands by doing (2).”

The structured problem includes a description that sets the task and defines the tools and materials to be used. Projects and language are abstract enough to avoid preconceived solutions; Instead of asking students to produce a still-life painting, students might be asked to produce a color composition. Students are challenged to use logical reasoning and intuitive creativity to arrive at solutions within the given boundaries. It is intended that these exercises under the framework of the following Problem Solving Methodology as suggested by Young:

1. Define the problem
2. Research precedents
3. Ideation – consider alternative solutions, develop multiple concepts
4. Constraints – time, materials (appropriate/available), technical skills, cost
5. Implement – execute, fabricate, give form to the solution

6. Evaluation – effectiveness, innovation, craftsmanship, presentation
7. Refine – improve solution
8. Presentation – communicate visually and verbally (2-3)

These brief but focused assignments instill in students the use of a logical and rigorous design approach by providing for the repeated application of a problem-solving methodology. This lesson format, because of the brevity of individual assignments also creates the opportunity to cover a broad spectrum of basic topics and concepts quickly. It also gives students a chance to critique and question their own and their classmates' work frequently and become more aware of their intentions on each project as they progress. Through student-centered critiques as practiced at Kansas City Art Institute, students will come to understand that they can form their own conclusions rather than relying on faculty opinions. Student-centered critiques are less imposing than faculty-juried ones and are a better way for students to develop community, confidence and critical thinking and language skills.

In order to achieve its goal of fostering an interdisciplinary attitude throughout the College of Design the Foundations program must create within the studios a learning community and a sense of sharing and cooperation among students that allows them to learn and benefit as much from each other as from faculty instruction. As my experience of the Kansas City Art Institute Foundation program illustrates, students that bond in such a way carry these relationships with them into different departments and will continue to work and communicate with their friends and associates across departmental boundaries.

The Foundation Course represents a period of exposure for novice design students. They are exposed to new ways of thinking, new processes and materials, and multiple basic art and design concepts. These principles, some relevant to all disciplines, others directly related to only a few, are an important part of the course. Through an exposure to this broad range, all Foundation students gain a knowledge and understanding of the ideas that form the basis of all design disciplines. With this shared knowledge, designers from different disciplines can

speak the same language. This opens doors for better understanding and collaboration between disciplines in the collegiate and professional realms. The basic content of the Foundation course includes issues and exercises in: drawing systems, visual perception and communication, 3-D form and composition, color theory, physical structures, and materials and processes.

Collaboration and cooperation between the design disciplines is a reality of modern design practice – especially in the case of environmental design. Those designers who can see and work outside of professional and disciplinary boundaries are at a great advantage. They are able to conceive possibilities outside the scope of a narrow disciplinary focus. The Iowa State University College of Design Foundation program will encourage disciplinary cross-fertilization among students and faculty in both education and in research, as well as create a strong sense of the shared basis of all design professions. These attitudes would, given the cooperation of the departments and faculty, transform the college from the bottom-up. Faculty would have more interdepartmental contact and students, educated in the new system from the beginning, would advance this thinking as they progress through the college.

## ARCHITECTURAL PRECEDENTS

The scope of this project includes the proposal of an addition to the Design Center that serves and embodies the new Foundation program at the College of Design. What follows is a series of studies of notable buildings designed to house design education programs. These buildings serve not only to provide the spaces in which educational activities take place but to embody the educational and design philosophies of their respective institutions. The goal is to discover the links between pedagogies and the built environments intended to support and represent them. An understanding of these links helps to inform the design of the Foundation Addition.

### *The Palais des Beaux-Arts*

The buildings of the Ecole des Beaux-Arts were constructed over time on a campus of older buildings. According to Middleton the main building, the Palais des Beaux-Arts (Palace of Fine Arts), included exhibition areas for competitions, and storage space for works sent from Rome as well as areas for a student museum, a library, exhibition rooms, and an assembly hall (28). The different activities of the school were separated into different buildings: the Loges, small rooms used for competition work, had their own building while the main building, hosted exhibitions and official functions. Regular instruction was provided in the buildings of the Etudes Quotidiennes (everyday studies) in the restored convent church opposite the Palace.

It is not insignificant that the main building of the Ecole des Beaux-Arts was called a palace, in fact, it was designed to be one. The building provided a place to house the competitions, the culmination of academic study, rather than studios and classrooms, where that study took place. This demonstrates the academic concern with creating monumental architecture (and art), a testament to the greatness of the institution. As the French Academy represented not only an educational entity but the ultimate authority on aesthetics and taste, its primary edifice took the form of a



palace rather than a school. It was considered adequate to relegate day to day operations and the actual spaces of instruction to minor and existing buildings on the campus.

It is only natural that the Palace, as the physical embodiment of the French Academy would conform to the historical and compositional principals formulated by that institution. The building's large courtyard and symmetrical facade (Figure 2) and plan (Figure 3) typify the architectural tenets evinced by the Academy. The preoccupation with the forms of the past is obvious in the exterior decoration of the building; it was executed in a style based on the architecture of the Italian Renaissance. The prominent incorporation of the Arc de Gallon, a historical structure, into the façade of the Palais clearly demonstrates the gravity with which history was viewed. Not only did the exterior take a historical form but the interior was filled with classical precedents as well:

“The visitor who approached the hemicycle through the Palais des Etudes had to pass through a room filled with plaster casts of ancient statuary and architecture. All this indicates a measure of agreement about what the incipient artist, whatever his skill, was to be presented with as exemplary (Middleton 9).”

The bulk of instruction was not even conducted at the Academy; only lectures and drawing classes were offered there. Albert Boime notes that the student of the Ecole des Beaux-Arts “neither painted nor carved at the Academy,” receiving all practical instruction in the atelier (studio/workshop) of his master with whom he lived and worked (4). Boime relates that, “for many (students) the atelier became a second home (49).” The Palais was a symbol, projecting the authority of the French Academy and the weight of the historical canon that it endorsed through a language of historical forms. The building was a physical representation of the doctrine of the institution rather than its course of study.

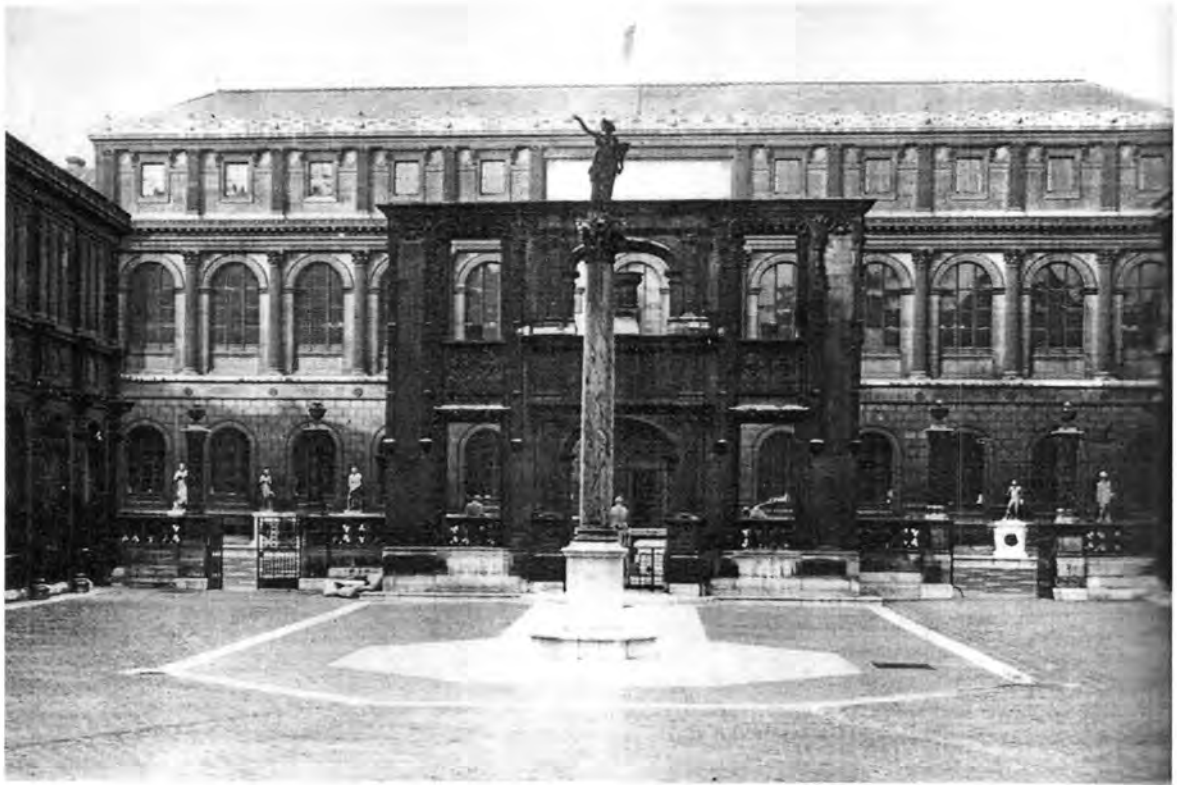
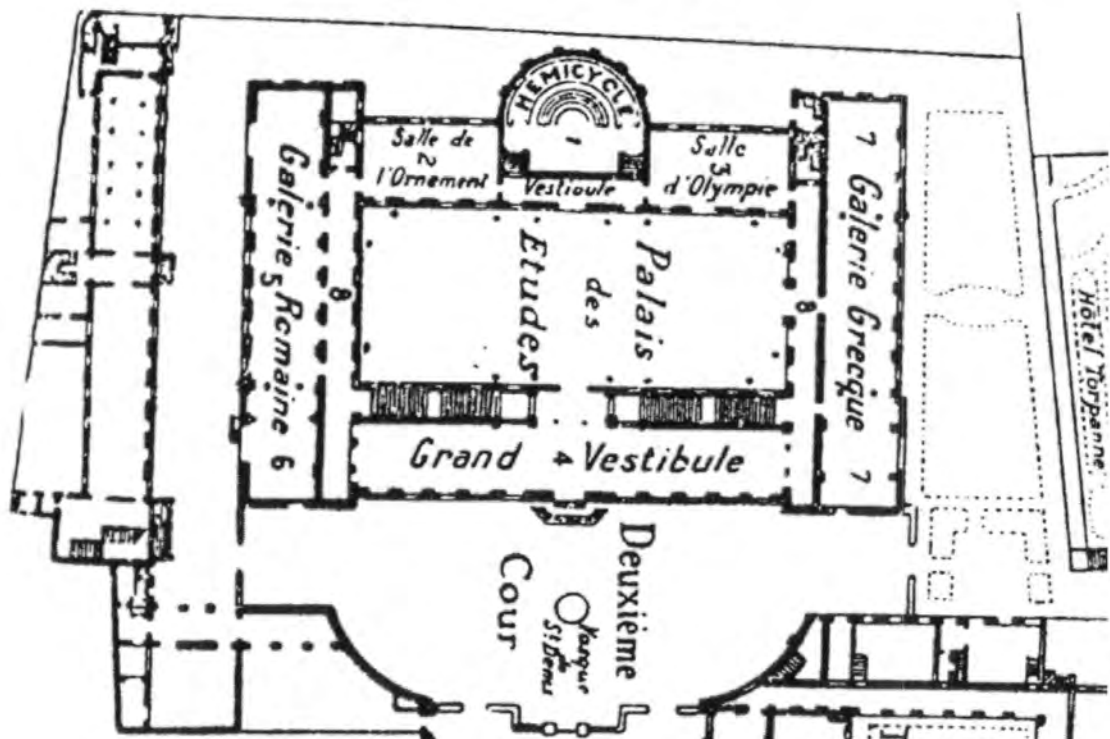


Figure 2. Palais des Beaux-Arts, façade.

Figure 3. Palais des Beaux-Arts, plan.



### *The Bauhaus, Dessau*

When the Bauhaus moved from Weimar to Dessau in 1925, the lack of suitable buildings provided a great opportunity: a chance for students and professors to work together to design, fabricate and construct the building that would house their school. Thus the Bauhaus building in Dessau represents the culmination of the Bauhaus ideal, the unity of arts in architecture.

Unlike the formal symmetrical organization of Palais des Beaux-Arts, which is geared toward creating a stately exterior appearance, the asymmetrical plan of the Bauhaus, visible in the aerial view (Figure 4), represents a logical arrangement of spaces based on function and adjacencies. This plan consists of three “L”-shaped arms radiating from the center. Each part of these arms is dedicated to a particular purpose. Despite an overall consistency of formal language, each programmatic element is expressed in a subtly different way, making the organization of the school apparent from the exterior. The dormitory (Figure 5) is housed in a balconied multi-level vertical block that communicates its residential nature. The classrooms and workshops occupy lower, horizontal wings, and the workshops (Figure 6) are differentiated from the classrooms by a glazed curtain wall system that floods the interior with daylight. This curtain-wall treatment references the factory buildings which Walter Gropius designed earlier in his career. Connecting these elements, at the center of the building, are the three-storied entrance (next to the workshops), the administration and architecture department (bridging a road) and a one-story unit containing the theater and canteen. The Bauhaus was not only a school but a community of artists and designers and the Bauhaus building was designed to support this community. The central location of communal spaces, between the major instructional and living spaces, provides a common ground and social center shared by students and faculty alike. This arrangement creates opportunities for chance meetings and exchanges as one moves throughout the building.

The Bauhaus building physically represents the school's conceptual break with the backward-looking historicism of the academies. In contrast to the symmetrical organization of the Palais des Beaux-Arts, the Bauhaus building has a dramatically asymmetrical organization. Its spiral plan creates a visual dynamic, hinting at the creative activities going on inside, and reinforcing the three dimensional qualities of the building. One must move around the building through time to experience it wholly and understand its organization. The Bauhaus does not have the classical dominating frontal façade but instead creates spatial relationships as one approaches. Instead of a palace of the arts, clad in the trappings of an ancient temple, the Bauhaus, with its modern (for the 1920s) materials and minimalist geometry, is a factory of ideas, an embodiment of the marriage of art and machine production that its pedagogy promoted.

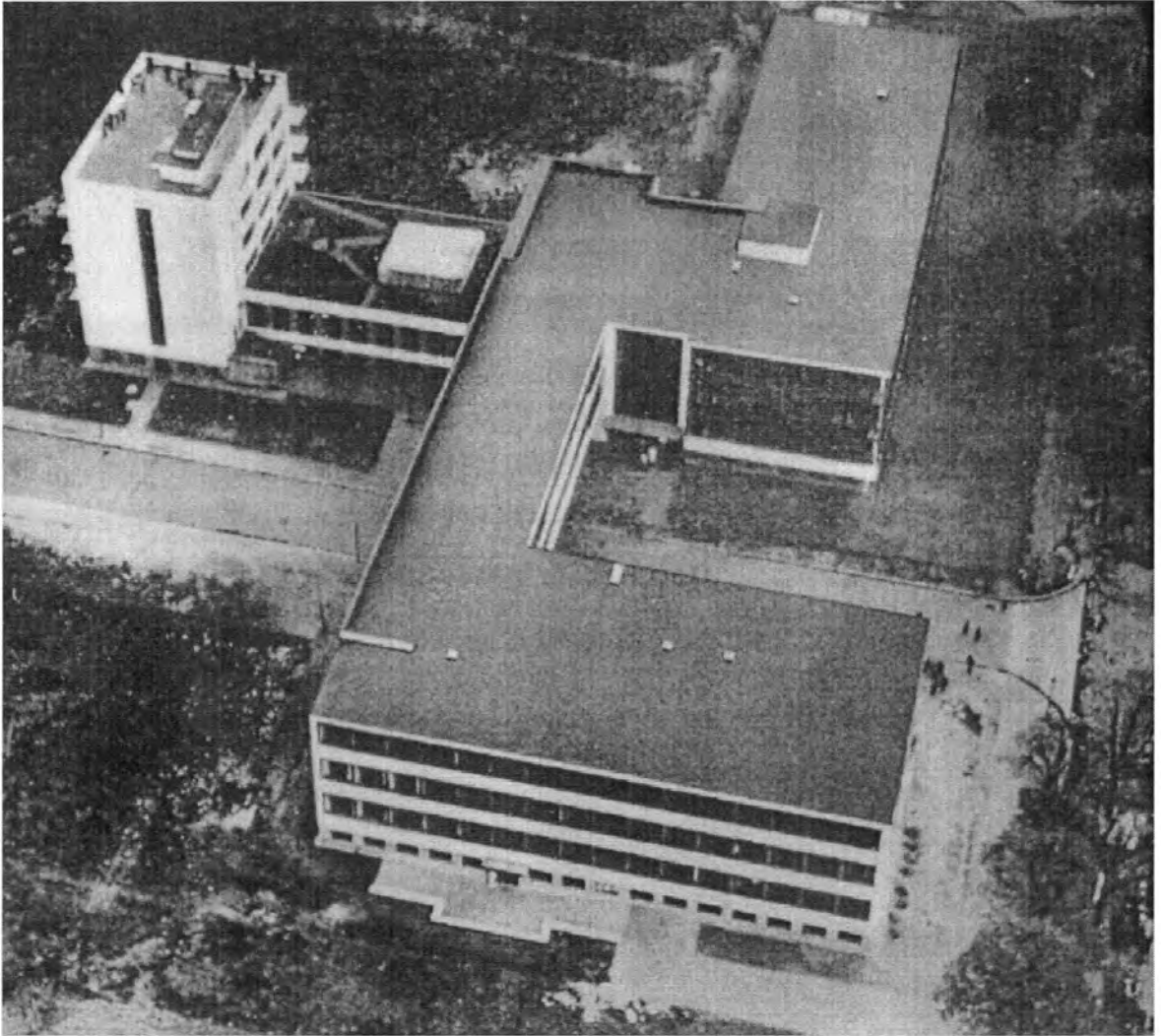


Figure 4. The Bauhaus, aerial view.



Figure 5. The Bauhaus Dormitory Tower

Figure 6. The Bauhaus Workshop Block



### *The Yale Art and Architecture Building*

Designed by architect Paul Rudolph, who was also the head of the department at the time, and completed in 1963, the Yale Art and Architecture Building is one of the most notorious buildings ever built. Condemned by critics, the building even suffered arson at the hands of dissatisfied students in the 1970s. Eventually, Rudolph himself became convinced of his failure because, after the fire, he suggested turning the building into a sculpture museum rather than restoring it to its original function. (Monk 23)

According to Phillip Nobel in his introduction to *The Yale Art + Architecture Building*, throughout Rudolph's term as chairman there, the architecture school at Yale was a place of investigation of expressive alternatives to functional modernism (Stoller 6). In this sense it represents a reaction against the theories advanced by the Bauhaus and represented in the building at Dessau. Uniquely, as both client and designer, Rudolph took the opportunity to realize his own personal vision with this project. He was the chief proponent of a late version of modernism that was preoccupied with the evocative properties of space and light as an antidote to the logical functionalism of the international style (Trachtenberg, Hyman 548). As Monk relates, Rudolph's goal was to create spaces that would transcend function and "activate the imagination" (9). Rudolph aspired to create in his architecture a theatrical experience through the manipulation of mass and space.

The meticulously rendered building section (Figure 7) communicates the complex spatial relationships in the building which boasts thirty-six level changes. It is organized around a central sky-lit core space defined by four large concrete columns which support the building structurally and by carrying the mechanical services. Below grade, sculpture and basic design studios surround a central auditorium. The library lies at street level and its reading area is overlooked by a two-story exhibition space with a jury pit and a mezzanine level which houses administration. Starting at the fourth level is the dramatic space of the architecture and design studios (Figure 9). Comprised of five levels, each connected by a few steps, the studios form a single large space above which run two parallel

mezzanines connected by bridges. Painting and Graphic Design studios are located on the top two levels with access onto an open terrace.

The Yale Art + Architecture Building was not designed to be the architectural expression of the function of a program but an exercise in space and light, an inhabitable sculpture. The spaces were intended to transcend function, as Rudolph explains:

“As the years go by, it is hoped other interests and activities will take place within the spaces, but the space itself will remain (Rudolph, 120).”

The design strives to create powerful experiences but it is not a particularly pleasant building for the people who have to be there every day. The organization of the building led to serious functional problems. Not only do architecture and design students get the best spaces, but the functional needs of the other disciplines are ignored; the painters and graphic designers suffer from overexposure to southern light while the sculptors are confined to the cave-like basement. The complex arrangement of spaces and masses means there is easily discernable logic to the circulation system and way-finding is very difficult. Rudolph claimed, according to Phillip Nobel, that the circulation system was intentionally obscure and that it would be easily learned by the small number of faculty and students for whom the building was intended (Stoller 5).

The building is an example of Rudolph's expressive, anti-high modernist convictions. It was intended to inspire the students in Yale's architecture program and to suggest the possibilities of architecture as a dramatic exercise in space form and light.



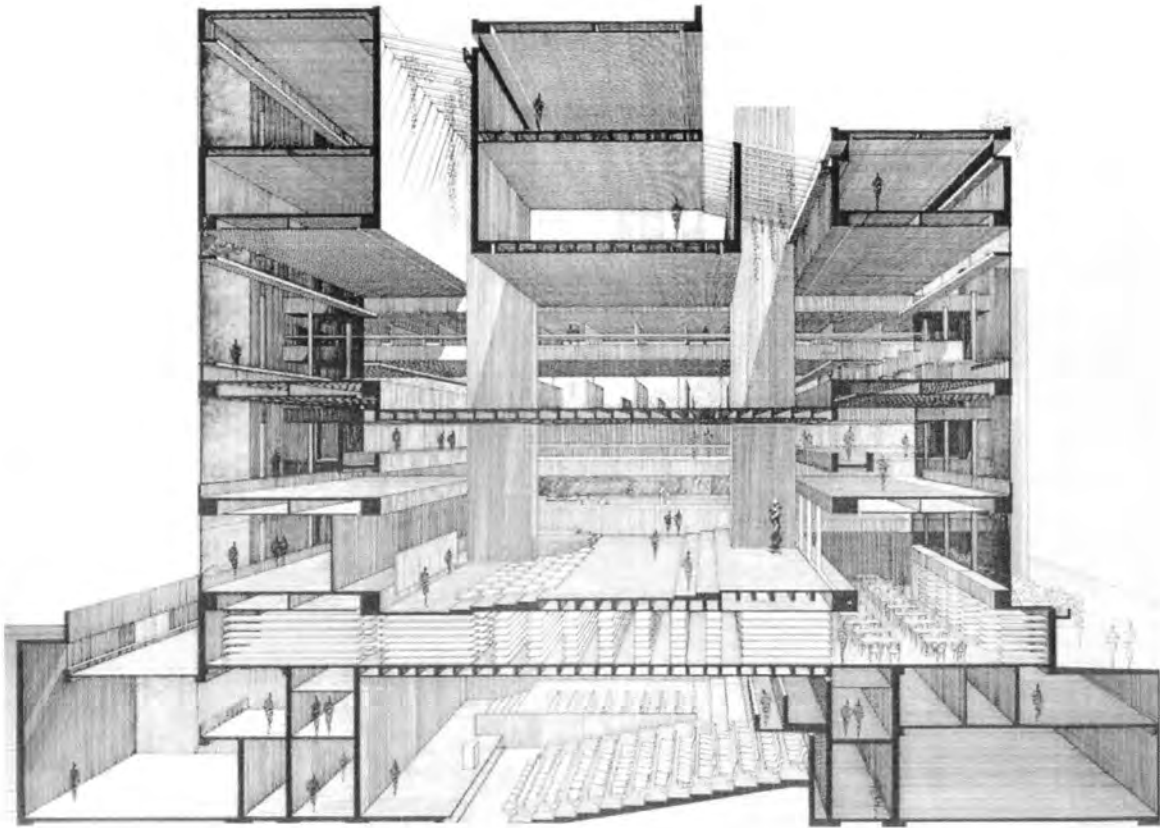


Figure 7. Yale Art and Architecture Building, section drawing.



Figure 8. Yale Art + Architecture, exterior view.



Figure 9. Yale Art + Architecture, architecture and design studios.

*Gund Hall, Harvard Graduate School of Design*

Designed by Australian architect and graduate of the GSD, John Andrews, Gund Hall opened in 1972. The building houses studios, office and support spaces for environmental design education. The primary objective in the design of Gund Hall was, according to Andrews, to create a building that would unify all the disciplines of environmental design:

“Our basic goal was a building which reflected the integration of all aspects of environmental design studies . . . Contact amongst the disciplines is essential (95).”

In order to achieve the desired integration of disciplines, the arrangement of spaces within the building was conceived with the goal of encouraging personal contact and community among the various groups within the Graduate School of Design:

“. . . the building had to facilitate contact by bringing students, faculty and administrators into a physical relationship with each other which provided opportunities for them to develop their own informal learning and social contact as they chose (Andrews 96).”

To this end the studios are arranged, in section (Figure 10), in the form of stepped “trays” under a long-span roof which creates a large primary space (Figure 11) with smaller specialized spaces arranged around it. The single roof, under which all disciplines are located, is intended to create a building in which “everybody (is), in spatial terms at least, equal.” (Andrews 98) The arrangement of the studios in trays was conceived as a logical response to site constraints that did not allow all the studios to be placed on a single level. This arrangement creates a single, visually continuous space that could not be achieved with a conventional multi-storied building while still fitting within the limits of the site.

Andrews states the importance of the spatial relationships created by the scheme:

“The essence of the building – integration of disciplines, contact, equality, open-endedness, inquiry, flexibility – is represented by the arrangement of the studio space. A student standing on the top level can shoot a paper airplane to ground level and in the course of retrieving it discover all that is happening in urban design. It is that openness to simple curiosity, to inquiry, to cross-fertilization that the building represents.” (Andrews 99)

While the building creates a huge exposed space, Andrews points out that the overlapping nature of the trays offers a gradient of privacy depending on where a student chooses to situate his or herself (99). To the rear of each tray are positioned faculty offices, seminar rooms, lounges and other spaces that benefit from a proximity to the studios.

The design of Gund Hall responds to the desire to support connection and interaction not only in the form of the grand studio space, but also with the arrangement of more mundane support spaces:

“A series of lounges were installed outside the toilets . . . the lounge spaces on each floor sit between the studio spaces and the administration offices. . . Everyone will have to pass the lounges, which are primarily open, comfortable spaces. The faculty member will see a colleague having coffee there and stop for a chat, a student will nail him about his last lecture, the dean will wander by with the registrar.” (Andrews 96)

The inclusiveness of the organizational scheme applies not only to the members of the GSD but also extends to the greater Harvard campus and community. The ground floor of Gund Hall serves as an active public circulation and display space that interacts with the street:

“(Much of) the ground floor consists of a generous amount of circulation space offering any student the opportunity to shortcut through the building and become involved, at least visually, with what is happening there. . . The use of the ground floor, except for the library and lecture theatre, as one articulated circulation-cum exhibition area ensures the area will be continuously alive. . .” (Andrews 99)

Another major concern was to make the building flexible. The logic behind this decision is based on the constantly changing nature of design practice and thus design education. Andrews states that:

“No one can possibly foresee what disciplines will be important to environmental design twenty-five years from now, or even ten. It seemed foolish to design a building based on a specific academic program at a particular time, especially for courses such as these. The building had to accommodate the unknown.” (96)

Phillip Nobel characterizes the Harvard GSD as an educational institution that strongly endorses functional modernism (Stoller 6). Gund Hall can be seen as a demonstration of this design philosophy and thus a confirmation and further development of the approach endorsed by the Bauhaus. The form of the building is a straight-forward response to practical and functional concerns combined with the architect's philosophical view that the disciplines of environmental design should be united. In this scheme the internal spatial organization of stepped trays in a single shared space is externalized in the form of the single sloped roof.

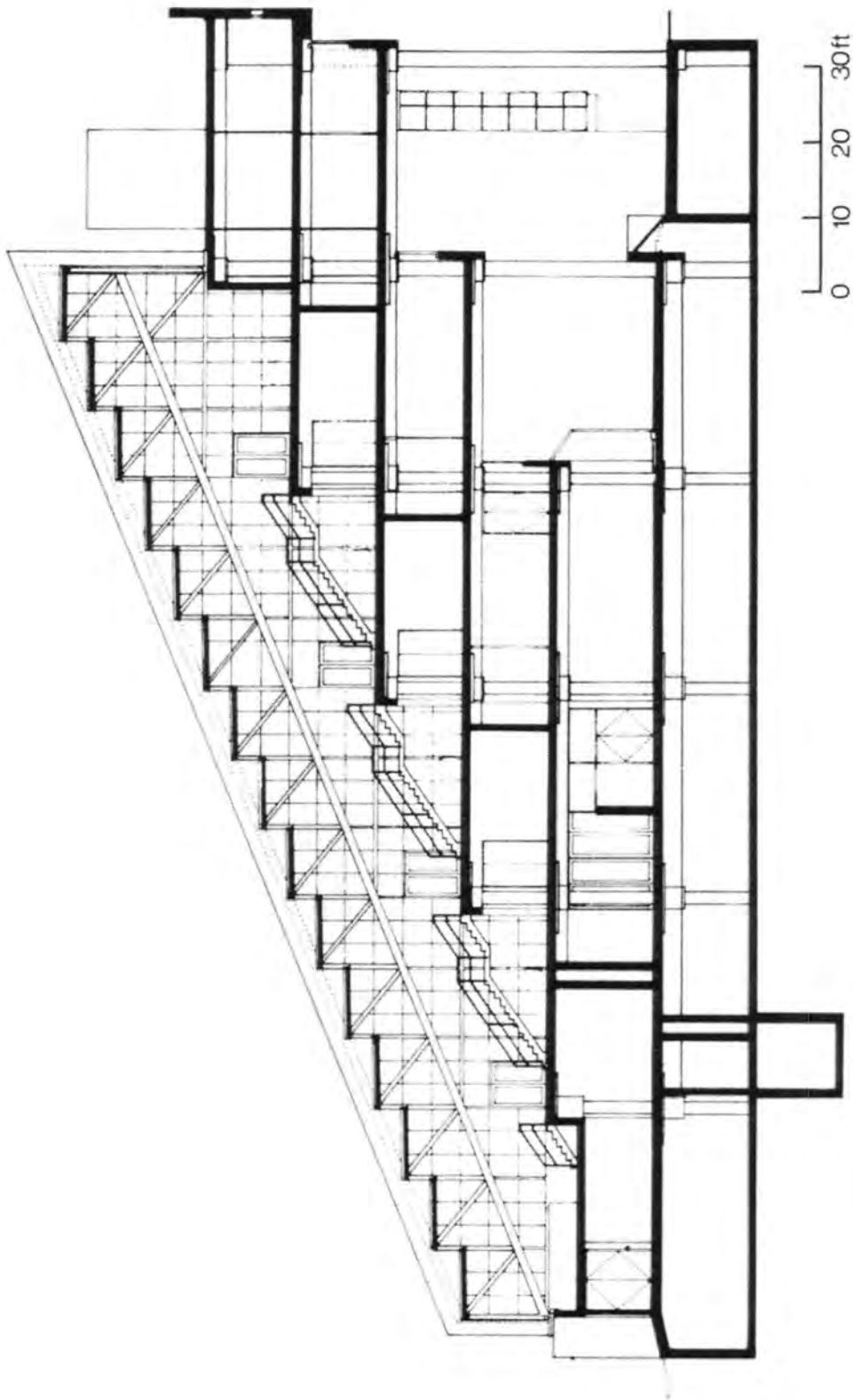


Figure 10. Gund Hall, section.



Figure 11. Gund Hall, exterior view.



Figure 12. Gund Hall, interior view.

### *Evaluation of the Architectural Precedents*

Each of the previous precedents acts as a symbol of the design approach taught at its respective institution. Both the Palace of Fine Arts and the Yale Art + Architecture building are intended to create spatial and visual effects. The Palace, with its grand scale and use of historical ornament, attempts to overawe the occupant and evoke the prestige and indisputable authority of the French Academy. The Art + Architecture Building, through its spatial arrangement and use of surface texture, massing and lighting is intended to create dramatic and inspirational spaces that demonstrate the expressive possibilities of architecture. Neither building was designed primarily to support instruction but to stand as an example of the beliefs of its respective institution as to how design was to be approached. Interestingly, the organization of the architecture and design studios in the Art + Architecture Building, the space which was the primary focus of Rudolph's attention, creates a dramatic space but is also based around a pedagogical idea. The Bauhaus and Gund Hall represent a completely different approach. The rational designs of these buildings relate directly to the pedagogies taught within them and to the Foundation pedagogy suggested by the author for the College of Design. Not only are The Bauhaus and Gund Hall derived from a rational design approach but they demonstrate the logic of their organization and construction externally.

The importance of creating connections among the constituent groups in the College of Design has been previously discussed. Both the Bauhaus and, more importantly, Gund Hall serve as examples of space organization strategies which attempt to achieve these goals. The Bauhaus does this through the location of shared public spaces, creating an active social hub at the center of the building. In the Case of Gund Hall, as has been demonstrated, the entire conception of the building is centered around providing an environment of contact, exchange and cooperation that serves to unify the GSD.

In addition to fostering an environment of connectivity, the architecture of the Foundation Addition to the Design Center must also nurture the strength and



identity of each individual studio community. Problematically, the stacked arrangement of trays in Gund Hall, although it is intended to provide spatial equality, inadvertently suggests a hierarchy. Additionally, the large roof and articulation of spaces distinguishes no individual studio identity but creates a single image of a united GSD. Although this situation is appropriate for a graduate education program where studios may be less important than the individual student, it does not support the intended pedagogy of the College of Design Foundation program.

In many ways the Foundation Addition will emulate desirable aspects of the Bauhaus and Gund Hall. Four main design intentions are derived from the examples of these architectural precedents:

1. The Foundation Addition will be designed using a rigorous and logical approach, reflecting the principals taught by the Foundation pedagogy, and will outwardly demonstrate the logic that underlies its conception.
2. The studios will be arranged in an open manner with audio, visual and spatial connections so as to encourage mixing and social contact among occupants in order to foster an environment of cooperation and collaboration.
3. The design will capitalize on social spaces as agents that can strengthen and reinforce the environment of cooperation and collaboration.
4. The architecture of the studio spaces will create a non-hierarchical organization which articulates and supports the individual identity of each studio.

## THE DESIGN OF THE FOUNDATION ADDITION

### *Analysis of the Design Center Site*

The Design Center site is located at the northwestern edge of Iowa State University's main campus (Figure 13). Town Engineering Building is located immediately to the north and Howe Hall is located across an open field to the south. The site (Figure 14) is bounded to the west by wooded land that slopes away and by Bissel Road, a major pedestrian and bus artery, to the east. The eastern façade is prominently visible to those traveling west from the center of campus on Osborn Road. The building cuts across its site creating a natural division: the western half of the site, which does not relate to the pedestrian nature of the campus, serves as parking space while the eastern half, the side on which the main entrance is located, is a flat open lawn that provides unobstructed views of the building from campus.

The orientation of the Design Center on its site is problematic for several reasons. Set far back from the road and major sidewalks, and forty-five degrees off of the north-south campus grid, the Design Center does little to engage the street or relate to surrounding circulation patterns. Its recessed main entrance is neither easily visible nor easily accessible from Bissel Road and the green space in front of the building is too large and ill-defined to serve as a comfortable human-scale space.

### *Analysis of the Design Center Building*

The Design Center is composed of two five-story blocks organized around a central atrium space. This space serves to visually and spatially unite the college. The atrium is a vital space providing all major circulation through the building and containing public spaces on every floor. Balconies and open walkways create audio and visual connections between all upper levels and the atrium floor. The atrium is most successful at the main floor (Figure 15), where major entrances,

departmental offices, the gallery, the library, the café, internet-connected computer stations and café style tables and chairs are located. This central space, called the Forum, serves as a place of common ground, of mixing, of chance encounters, functioning in much the same way as the support spaces in Gund Hall were intended to. The Forum has become a vibrant social space for the students, faculty and administration of the College of Design as well as for many others who visit from elsewhere on the Iowa State campus. Mark Engelbrecht, Dean of the College of Design, emphasizes the importance of the Forum:

*“Learning within the College of Design takes many forms, and one of the most important is an active association with the vitality emerging from a community of creative people and events. This is why I think our Forum, the central place, should become our most meaningful ‘classroom.’ ”*

(Iowa State University College of Design)

As successful as the ground floor level of the atrium is at establishing a sense of community in the College of Design, on upper levels the current layout creates undesirable divisions. Although the circulation corridors and balconies are open to the atrium space, individual studios (Figure 17) are walled off and locked. Due to this condition, the studios are cut-off and isolated from the openness of the atrium, undermining its potential as a social connector. In addition, because the studios are disconnected from the atrium a sense of territoriality and ownership develops and visitors are not welcome in the studios. It is impossible for students or faculty to see the work and activity that is going on in each studio (Figure 18) as the doors are locked for reasons of security.

In addition to this separation there is, as in any multi-story building, a vertical separation between each floor. The basement is uniquely disconnected from the rest of the building. It does not interact with the atrium nor is it accessible from the primary circulation stair near the main entrance at the center of the building. For practical reasons of noise and accessibility the shop spaces are all in the basement but this arrangement marginalizes the art students, relegating them to the dark

remote location. Mid-level students are located on the second, third, and fourth floors and graduate student and faculty workspaces occupy the fifth floor. Even more remote are the introductory-level studios for architecture and interior design, located across the street from the Design Center, in a makeshift space in the Armory. Distance separates these students from the amenities available in the Design Center and precludes them from becoming involved with the community atmosphere within.

### *Design Goals*

The Foundation Addition will bring first year design students into the space of the Design Center. It will provide the studios and support spaces for a design Foundation program which will form the core of the first year of study for all students at the College of Design. Additionally, the design will address the site problems previously noted. It will improve circulation and way finding, address the street and define exterior spaces. The form and scale of the addition will relate to the context of the Design Center building itself and will improve and expand existing programmatic elements in order to enhance the social environment of community and exchange therein. Expansion of the Design Café and the wood shop, and improvement of the gallery and addition of display space to the atrium are all considered necessary to strengthen interdisciplinary, collaborative attitudes in the college. The addition will create a visible presence for the Foundations program and it will foster connections between the program and its students and the major departments within the college. Studio spaces, which replace the current first year studios located in the Armory, will provide cold desk work spaces for all first year students and will be organized so as to provide an environment of collaboration and exchange while nurturing individual studio culture and identity. Importantly, the addition will be designed with sensitivity to the environment. Day lighting and solar gain strategies will be employed to reduce the energy consumption of the building. The design of the addition will be approached with a logical function-based method and the built form will communicate this logic.

*Program*

STUDIOS – Studios will provide individual work spaces for 300 students. The incoming Freshman class numbers 600 students so this arrangement provides for a Foundation studio term in the Fall and one in the Spring. Each studio shall include a shared instruction/workspace. All studios will be day lit. 40,000 sq.ft.

SUPPORT SPACES – These multi-purpose spaces support studio activities. They serve as lounges, critique spaces and shared workspaces. Must be immediately adjacent to studios. 2,250 sq.ft.

WORKSHOP – workshop with worktable space for 20 students and room for general power tools and hand tools. The shop must provide storage space for projects, tools and materials and must be accessible for use by the entire college. 3,000 sq.ft.

GALLERY – flexible space for display of work in all media. The gallery must have full lighting control and must be made a more visible presence in the atrium. 2,000 sq.ft.

CAFÉ – Expand or replace the existing Design Café to provide more work space for staff and more prompt and convenient service for patrons. Provide additional café-style seating on Design Center main floor. Create a stronger visual and spatial connection to the Forum.

SERVICES – necessary service spaces such as corridors restrooms and mechanical spaces will be provided as necessary for the support of the major functions.

### *Design Response*

The decision to attach the Foundation Addition to the south east of the Design Center was based not only on a desire to address existing site problems, but to expose the addition to the sun and, most importantly, to make it visible to the campus (Figure 19). The form of the addition reaches out to engage with the street edge while helping to enclose and define the field to the north (Figure 20). The main entrance is pushed toward the east, providing a more legible entry from the campus side. The addition provides a foreground for the Design Center, anchoring a building that currently sits in the middle of a flat empty field. Locating the addition on the southeast side of the Design Center makes the addition, and the fundamental change in pedagogy that it represents visible to the rest of campus. This location also gives access to maximum solar exposure to provide natural light and support a hybrid solar heating system. In this scheme the addition lies on the active, student and pedestrian-oriented side of the Design Center.

Internally the scheme interacts with the ground floor atrium space and the basement (Figures 21 & 22). The open plan studio space of the addition is placed on the basement level bringing Foundation students into closer contact with the workshops and making the basement a much more active and connected part of the Design Center. A glazed connector spine is placed between the studios and the existing building. This continuation of the Forum includes the new entrances to the building and provides additional day lit space for tables and seating. Within the connector a light well and open stair reach into the basement to create a spatial continuum from the main floor and provide natural light and convenient and visible access from the main entrances to the basement level. Within the atrium, the café and gallery are reorganized in order to make them more visible and successful parts of the Forum. Major circulation (Figure 23) is routed past both of these spaces and the ends of the gallery are opened up to attract the interest of passers-by while the café takes a similar form to a mall food court stand, open to the main atrium space.

## *The Studio Scheme*

*“The studio is perhaps the original “learning community.” These families of learners, students and critics, will always form the foundation of our academic life, indeed, the fundamental expression of our creative lives and we need to do all that we can to nurture this amazingly powerful vehicle for becoming.”*

- Mark Engelbrecht,  
Dean, Iowa State University College of Design  
(Iowa State University College of Design)

The single studio, the “learning community”, is the heart of the College of Design and of the Foundation program. The task with the design of the studio space was to create an open and connected space, similar to that of Gund Hall, while preserving the identity of each studio. The importance of the individual studio as the primary social unit leads to a built form that articulates and defines each studio space both internally and externally. The design creates a single unified space where all studios are united but each studio is an individual. In this scheme there is no hierarchy and the sum is truly greater than the parts. Each studio is effectively a stand-alone structural unit that is then joined to the whole of the addition and to the rest of the Design Center.

The grouping of the studios into a grid gives them a singular external identity. From the outside, at the building scale, the regularity of forms creates a unity whereby the studios are experienced as a single geometric system. On the inside, however, each studio space is clearly identified and defined by its roof and columns. The external form of the studio roofs responds to the simple geometry of the Design Center. Reacting to its massive scale through a repetition of form which allows the addition to hold its own against the existing building without competing with it. From the outside, the new studio space becomes a low land form that acts as a foil to the large object of the Design Center.

Much like Gund Hall, the function and organization of the interior of the addition, as visible in the diagram (Figure 25), is communicated externally in the form of the roof. In this case, however, the message is one of many studio spaces united in a single system rather than one huge roof suggesting one single space. Each studio space is capped with a pyramidal roof set on four columns while flat-roofed buffer spaces, which contain services and circulation, run between. This arrangement provides ample access and space for changes to systems and the organization of spaces overall is very flexible and able to accommodate change.

The overall roof form serves to identify the spatial limits of each studio, while maintaining an extremely open unified space. The studio support spaces are incorporated into this scheme as subdivisions of a single studio unit, these spaces are divided by full-height walls that, while they create a visual break across the large studio floor neither cause nor imply any real separation. The shape of the roofs above each studio works to contain and focus the voices of the occupants, making it easier for people to be heard within their own studio while cutting down on the noise that leaks into surrounding studio spaces. It is hoped that the level of noise will create a background murmur of activity and discussion that will animate the space.

### *The Green Roof*

In the near future designers will, by necessity, have to be more concerned with the environmental impacts of their work. To this end, it is appropriate that the Foundation Addition both use and demonstrate low-energy systems. The studio roofs (Figures 26 & 27) incorporate a south-facing glazed cavity system that admits diffused daylight while using a hybrid-solar system to control solar gain. This arrangement takes advantage of the cost-free natural lighting and heating qualities of sunlight

Each glazed cavity contains operable louvers (Figure 28) which can be adjusted to admit more or less light or can be closed down to black-out the individual studio. As each pyramidal roof is composed of one glazed face oriented



to the south-east and one oriented to the south west, in the morning, the east-facing louvers must be closed down while the west-facing ones are opened to achieve a comfortable lighting level in the studio. In the afternoon the inverse is true. The louvers are controlled from within each studio by simple hand-operated cranks connected one each to the south-east facing louvers and the south-west facing louvers. By this means students and instructors can control the lighting level within their own studio. This system requires people to interact with the building and react to the outdoor environment. It is hoped that, through operating this system, students will begin to develop an understanding of one of the natural systems of our world. This system makes the building a teaching tool. The occupant becomes physically involved with the building and with the daily passage of the sun through the sky

The glazed cavity also takes advantage of natural thermal behavior to mitigate unwanted solar gain in the warmer months (Figure 29) and harvest solar heat in the winter months (Figure 30). Another feature of the roof is that between each pyramidal studio roof, the flat roof that articulates the circulation below is planted with a green roof. This green roof serves to emphasize the landscape-like appearance that the studio roof system is intended to evoke while retaining the runoff from this large expanse of roof. The green roof also possesses excellent insulating properties and provides evaporative cooling in warm outdoor conditions as the moisture retained in the plants and the soil evaporates in the sunlight.

### *Layout and Furnishing of the Studio*

The arrangement of the studios (Figure 31), even at the smallest scale, is important for supporting studio functions and creating the desired environment of community. Each studio is organized around a large centrally-located round table which forms the physical and communal center of the studio. This is where the class as a whole meets. Here new material is presented by the instructor, a still life is set up for the students to draw from, a group model is built, class discussions are held, impromptu critiques are conducted. As the students all draw toward the

center of the studio and gather around the table, a smaller, more intimate environment is created, where the instructor and the class can speak in conversation and everyone can hear and be heard with ease.

Student desks are organized by fours in a pinwheel shape. In this manner students are very close to one another without creating distraction. Since the ratio of students to faculty is high it is beneficial for students to have these mini-communities so that they begin to learn from one another. In this group of four, each student's work is visible to the others and it is easy for a student to ask his or her desk-mates for advice or to clarify an assignment. This simple act of arranging desks starts to build the friendships and relationships that will carry through the student's educational career at the college and lead to later interdisciplinary collaboration. Each desk will have a built-in locker so students can leave materials and supplies at their desk and each student will also have larger locker that is remote from the studio. All studios will have close access to the Support Spaces which will be used for critiques, for overflow workspaces, and as lounges. Student chairs will be wheeled so that they can easily move between their own desks, the studio's big table, and the support spaces.

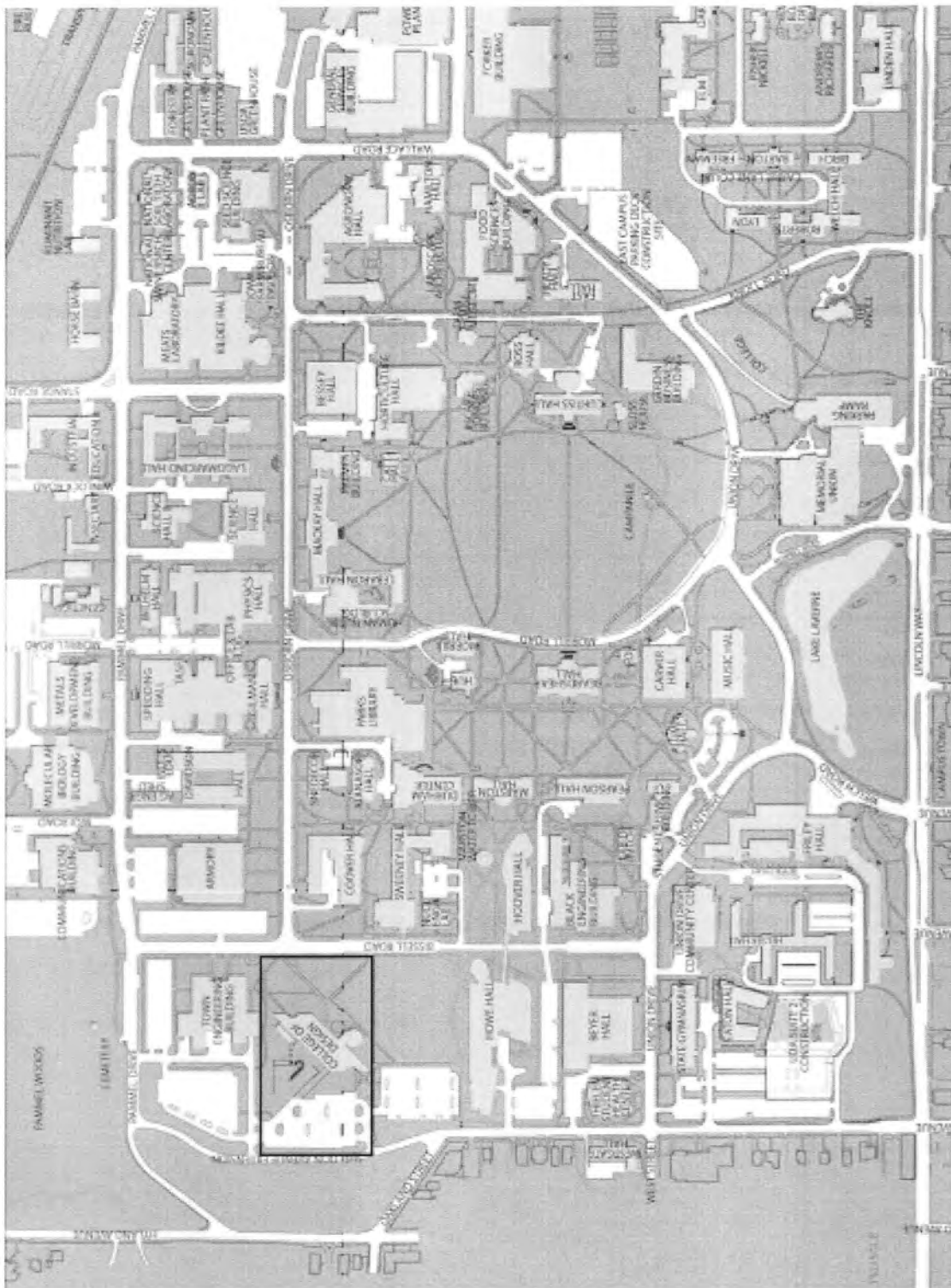


Figure 13. Iowa State University main campus.

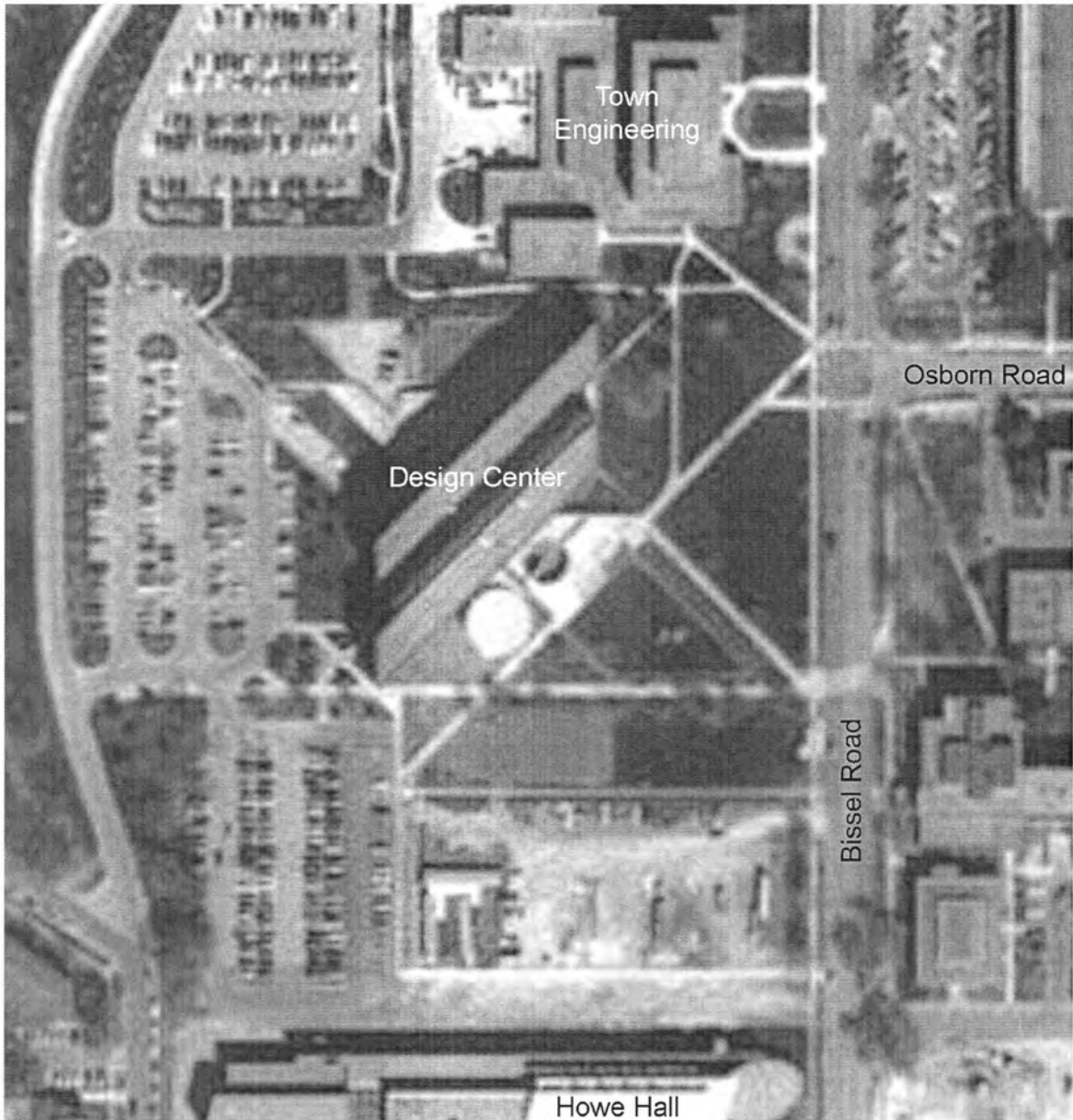


Figure 14. The Design Center site.

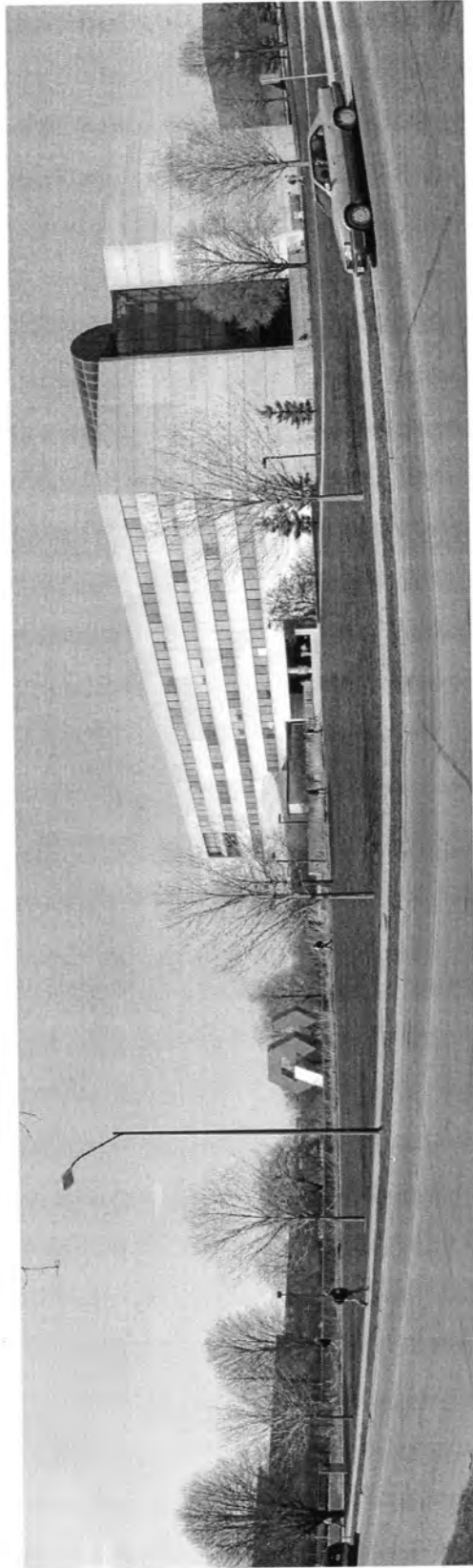


Figure 15. View of the Design Center from Bissell Road.



Figure 16. The Design Center atrium, ground floor Forum.

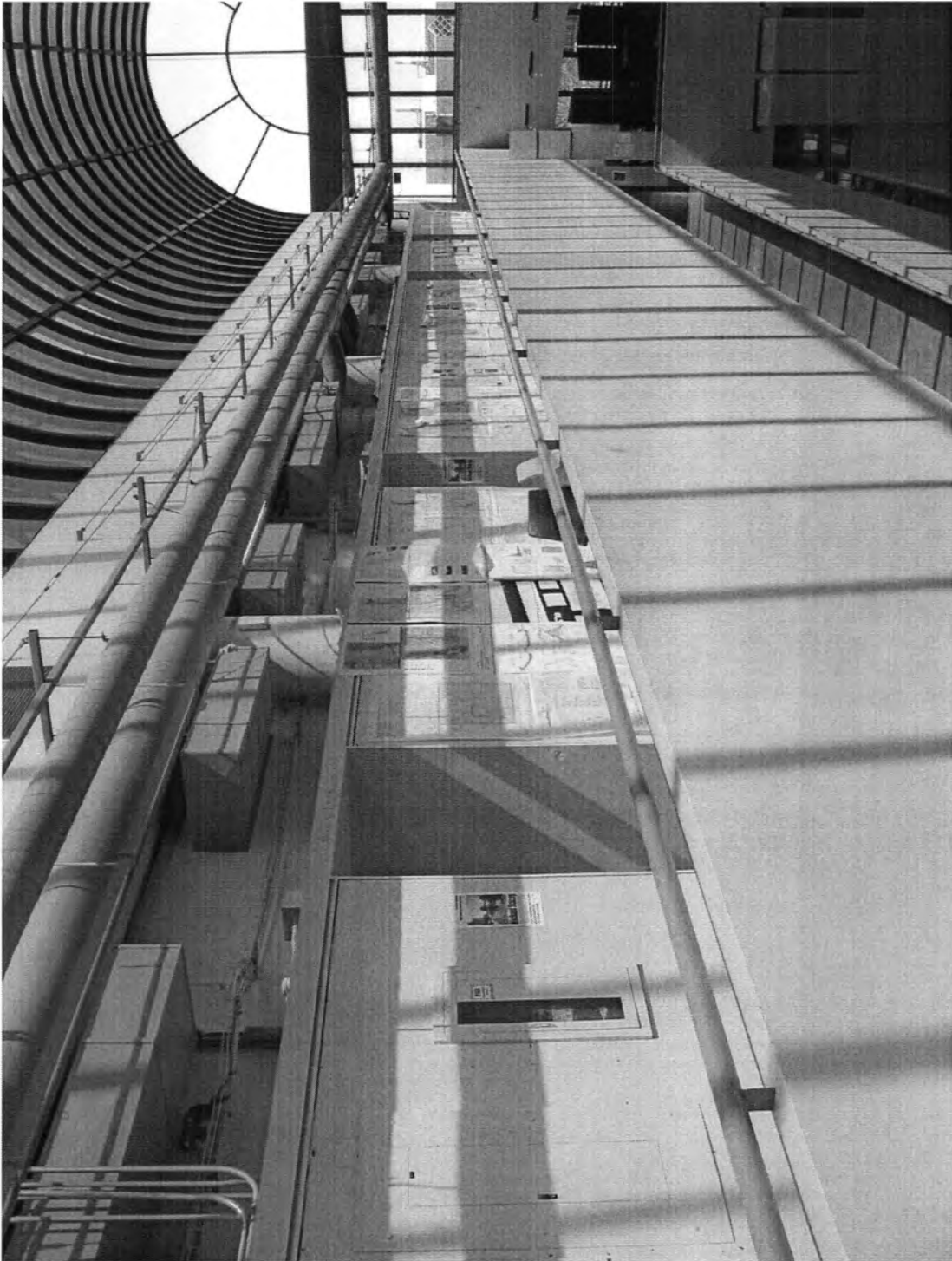


Figure 17. The Design Center atrium, upper floor corridors.





Figure 18. Typical Design Center studio space.





Figure 19. Site analysis diagram.



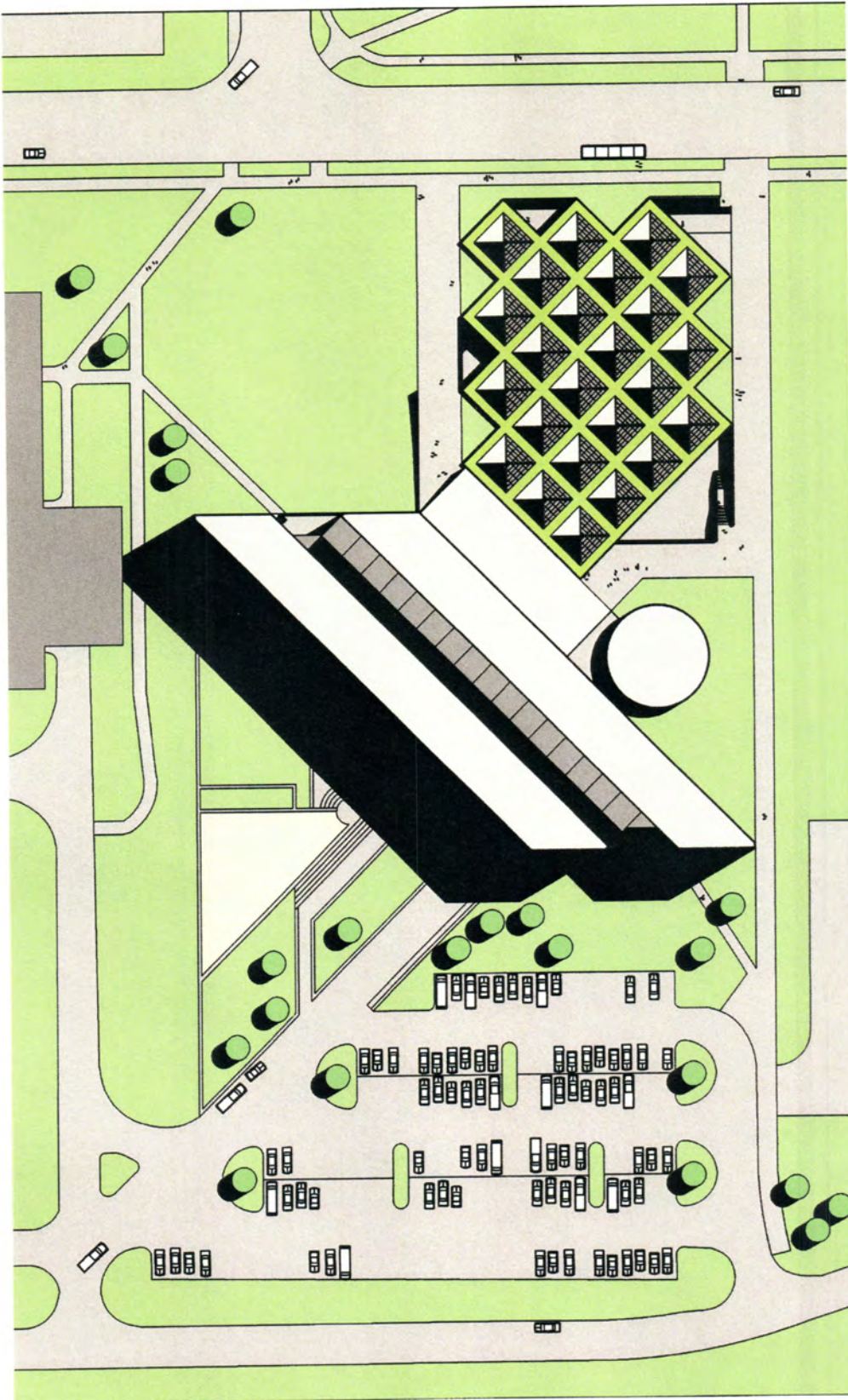


Figure 20. Plan of the Design Center site including the proposed addition.

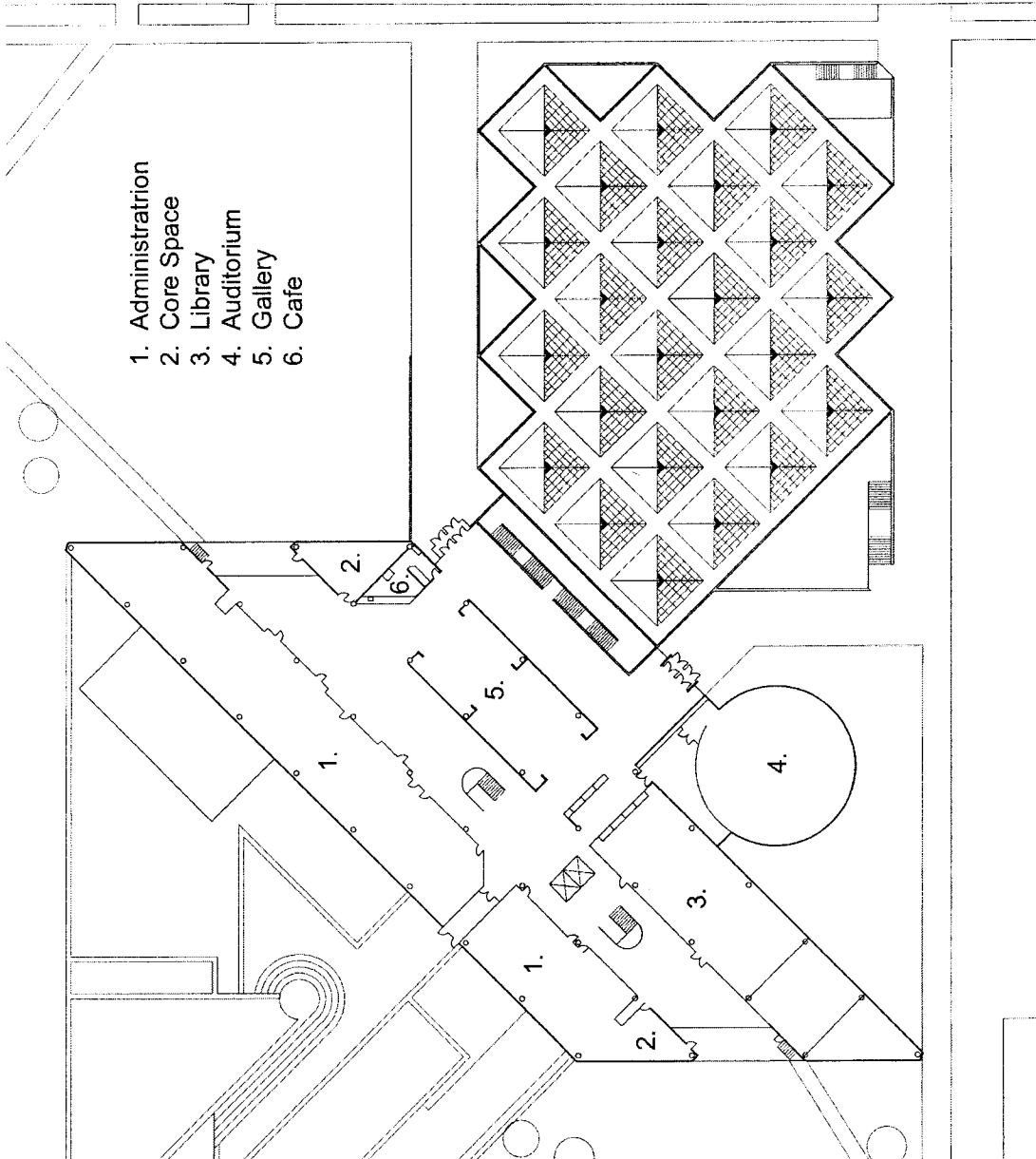


Figure 21. Foundation Addition Main Floor Plan.

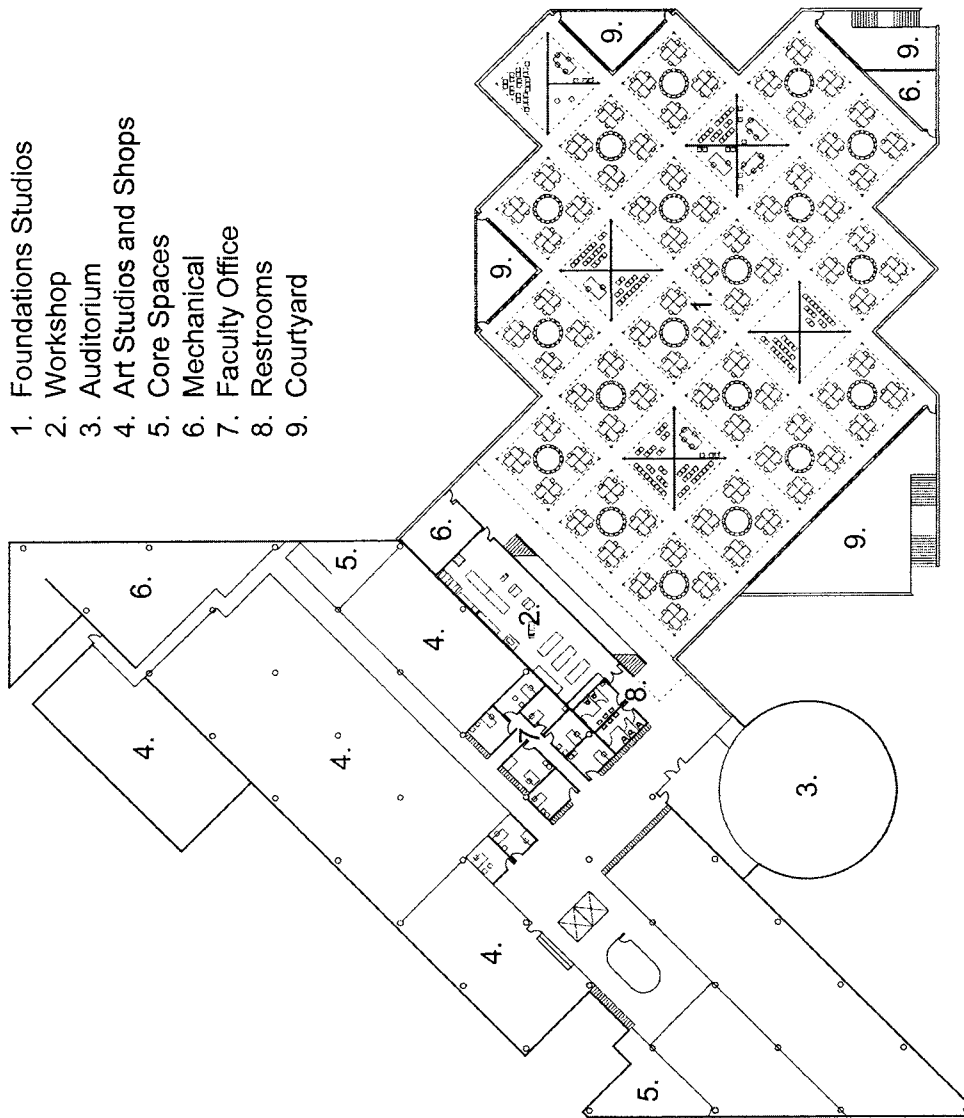


Figure 22. Foundation Addition Basement Plan.

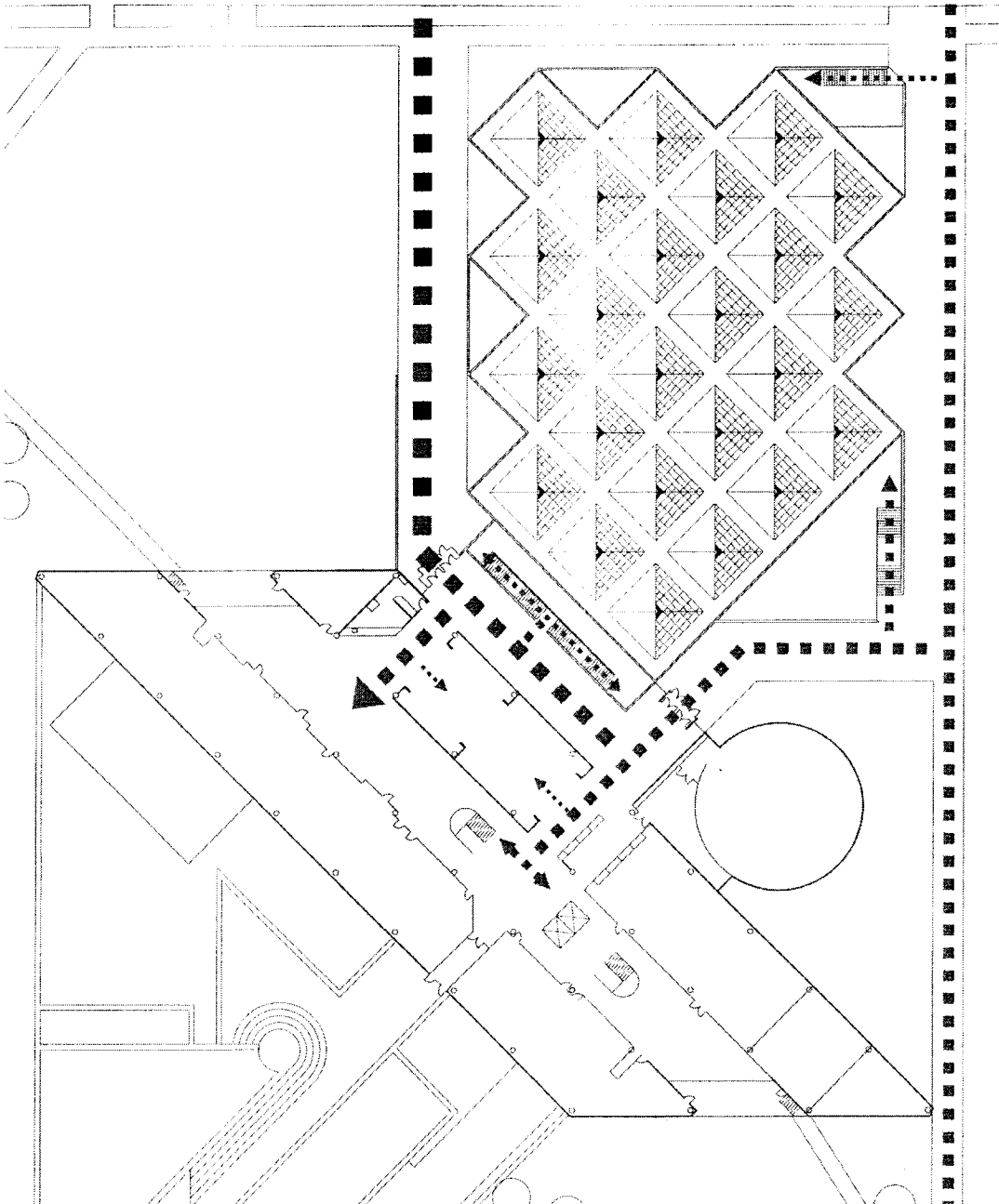


Figure 23. Main floor circulation diagram.

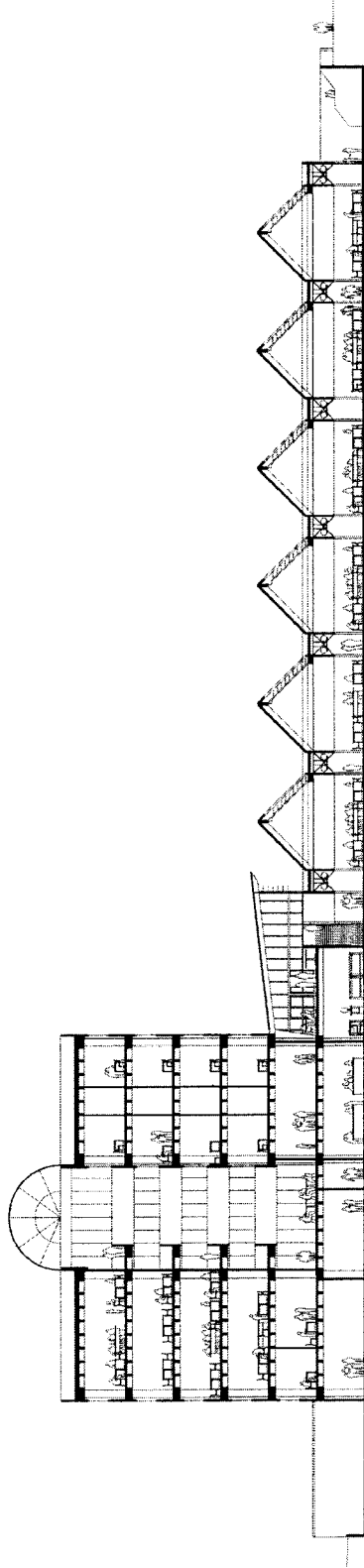


Figure 24. Building section.



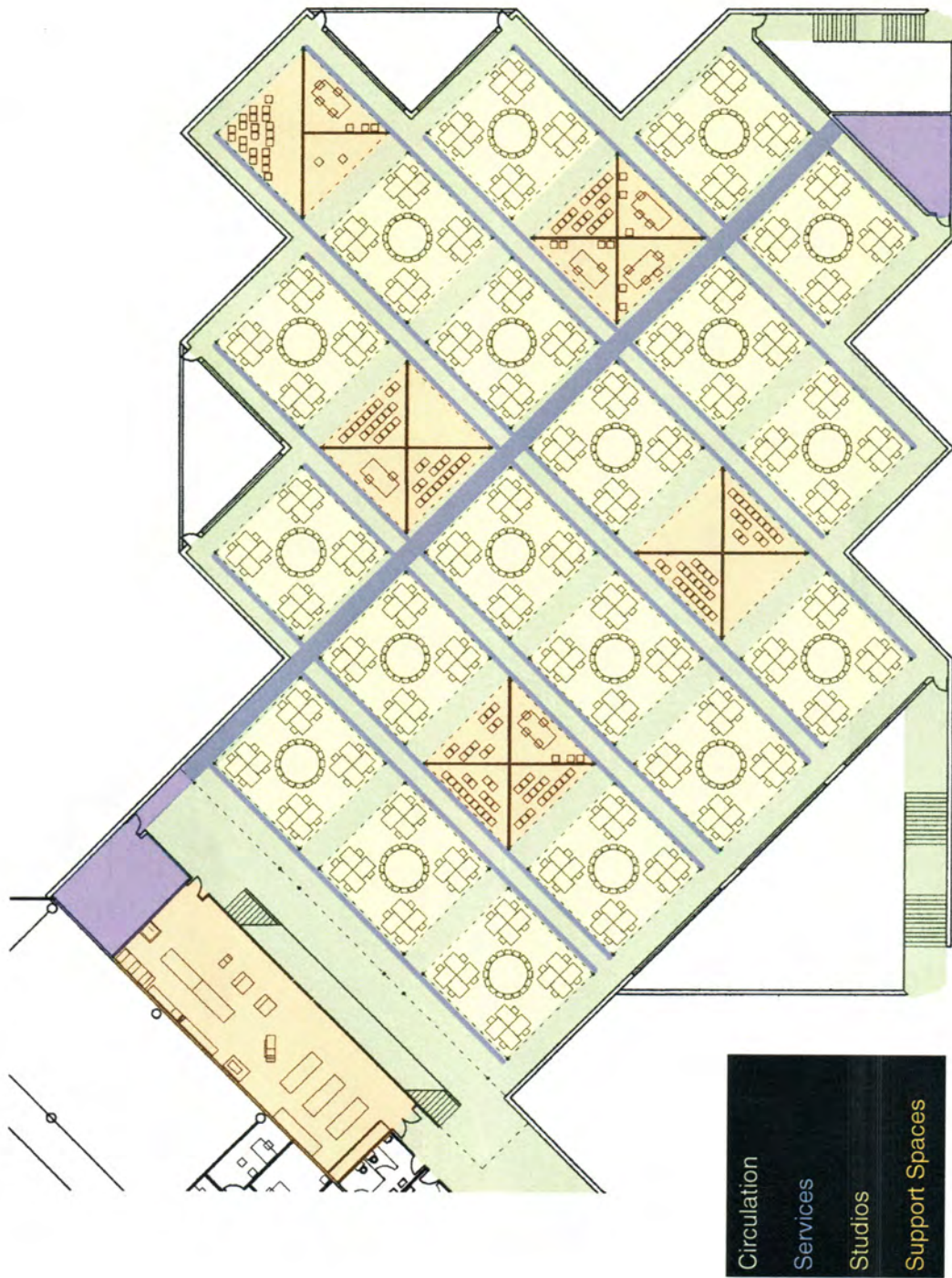


Figure 25. Organization diagram of studio spaces.

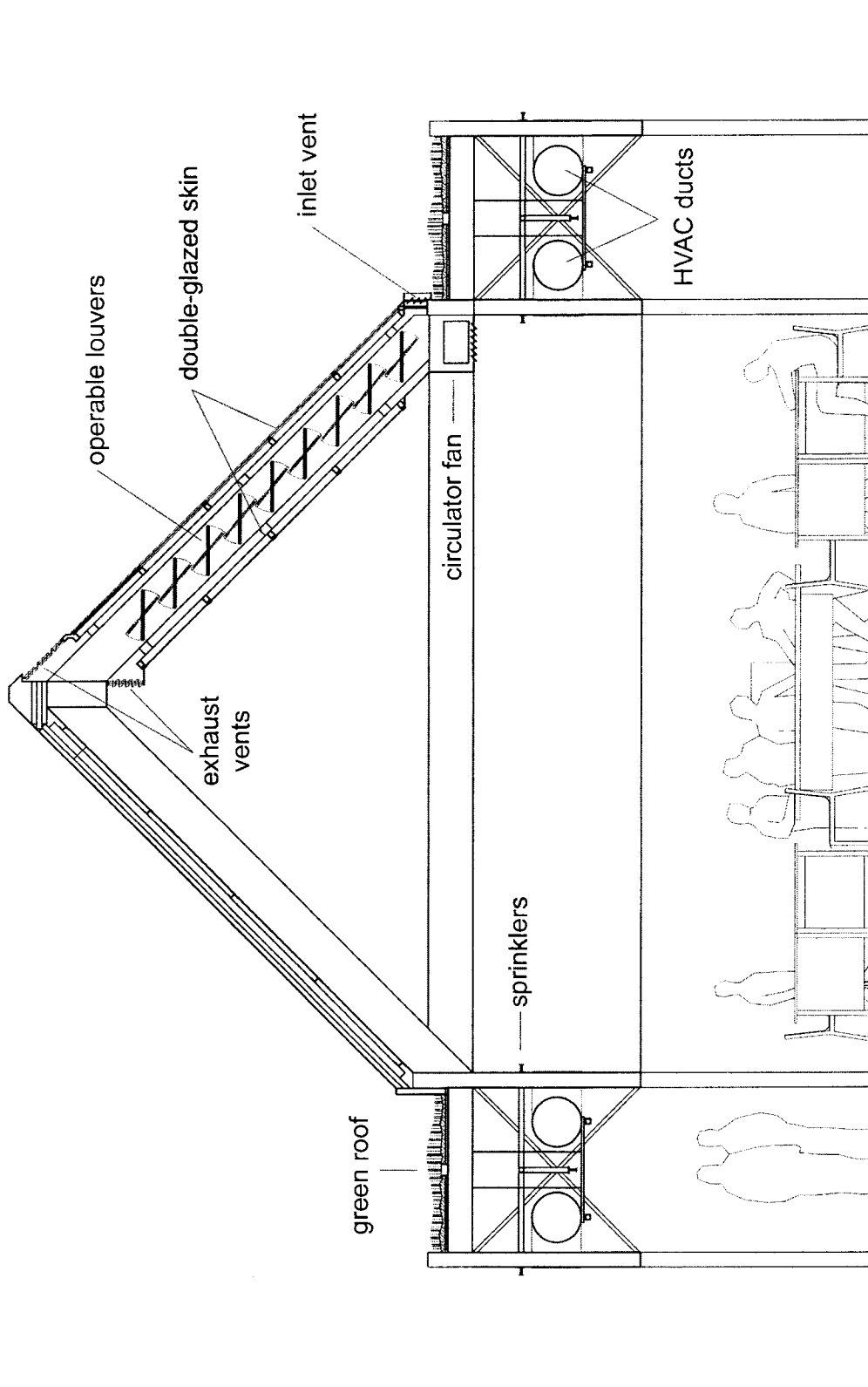


Figure 26. Detail section of a typical studio unit.



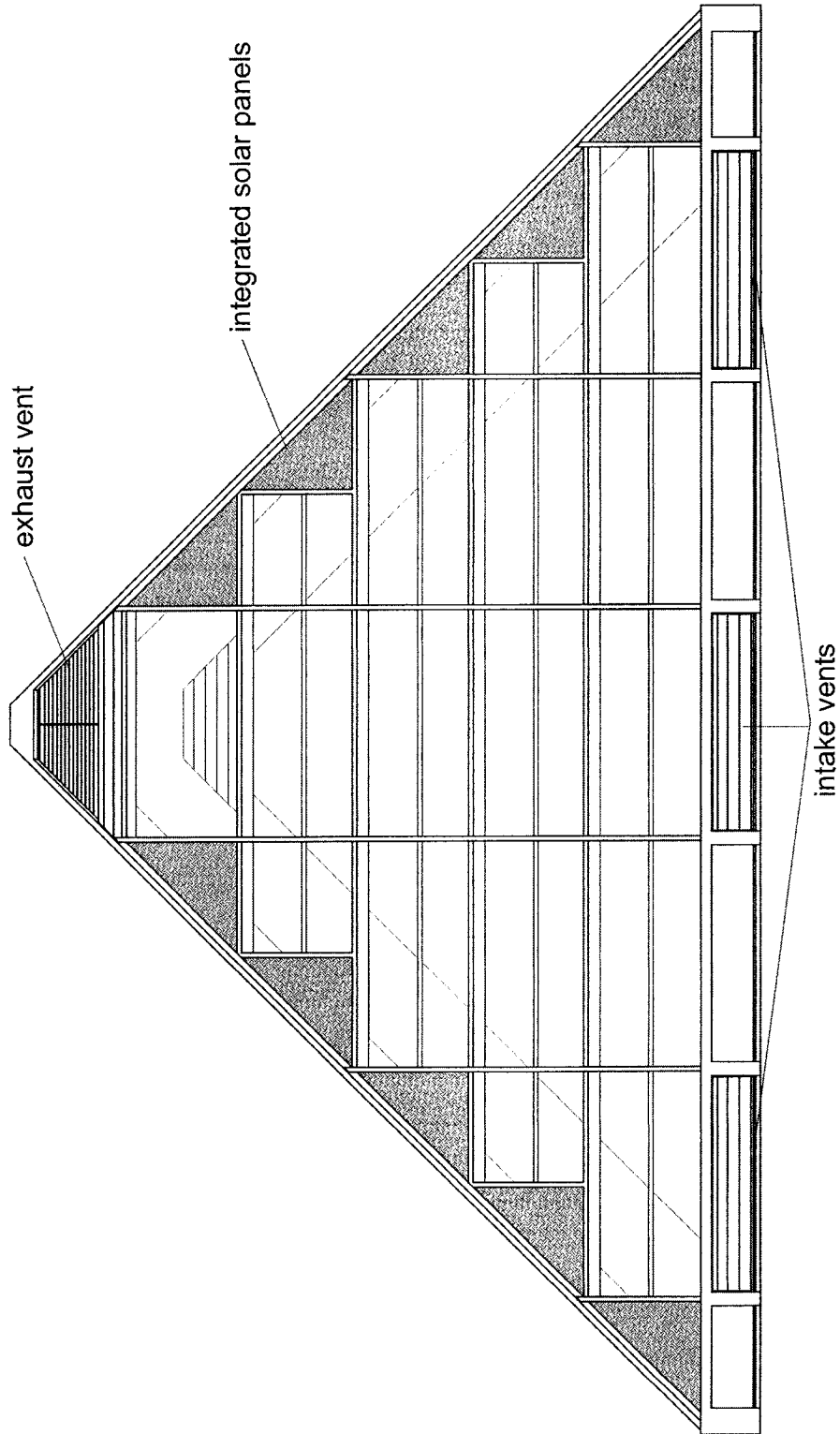


Figure 27. Studio roof exterior elevation.

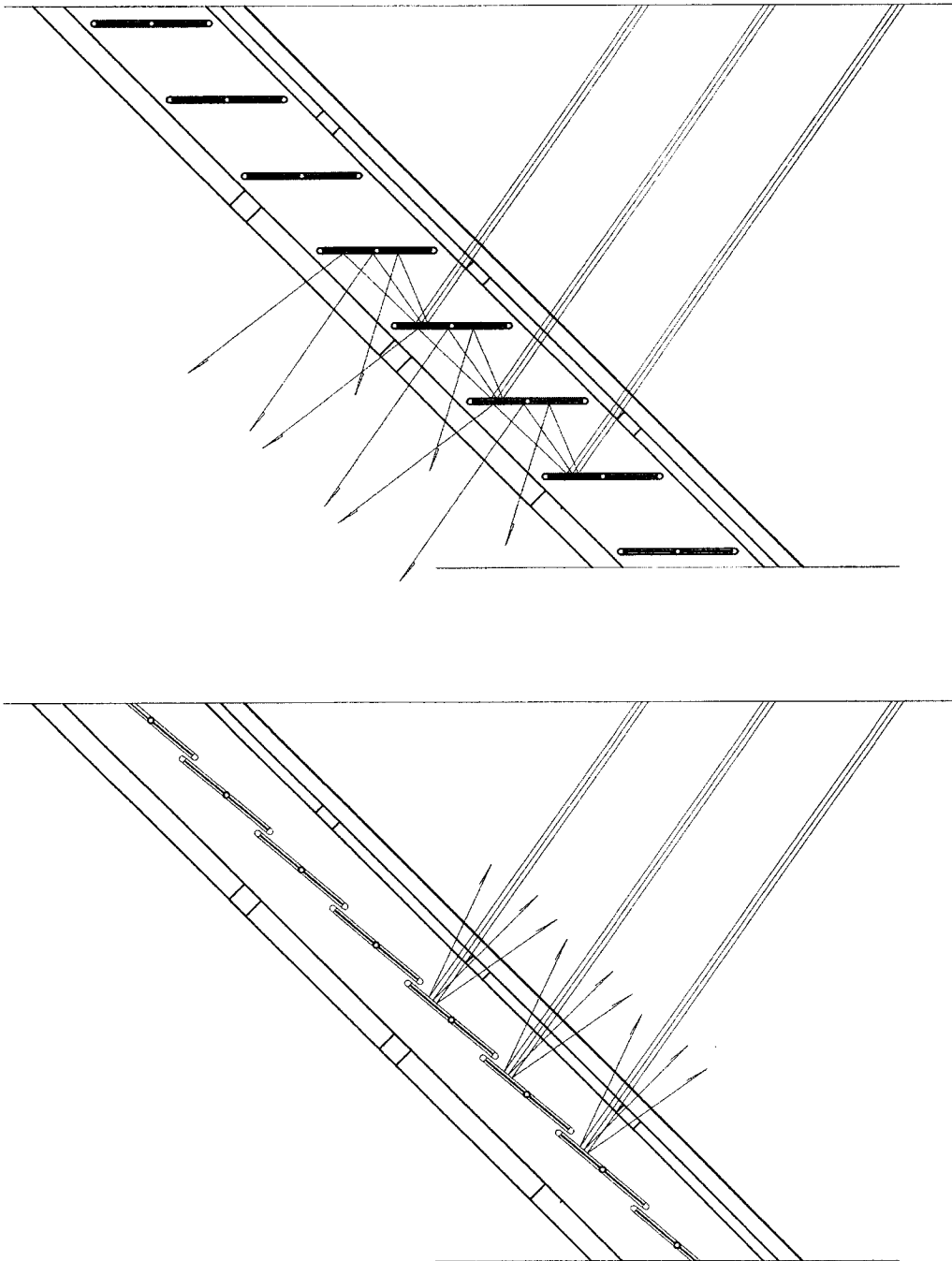


Figure 28. Louver Diagram.

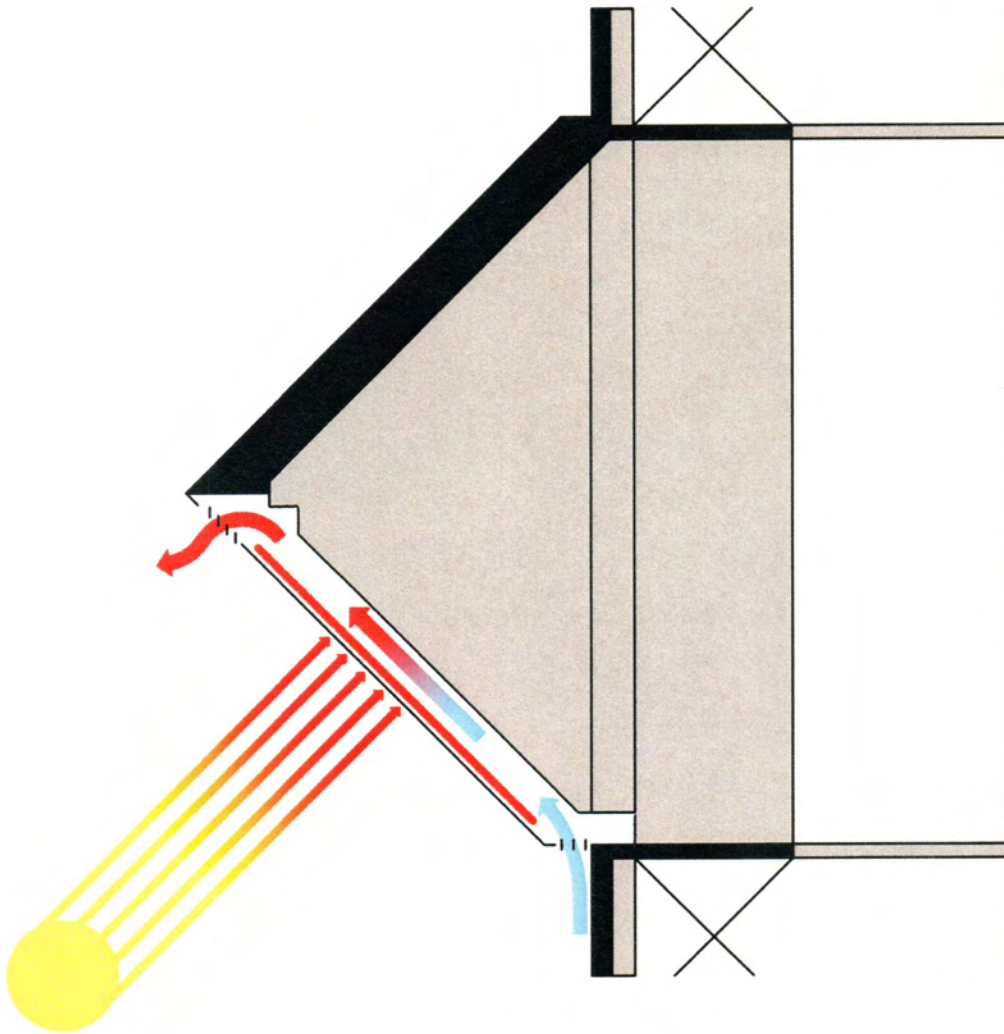


Figure 29. Solar chimney diagram.

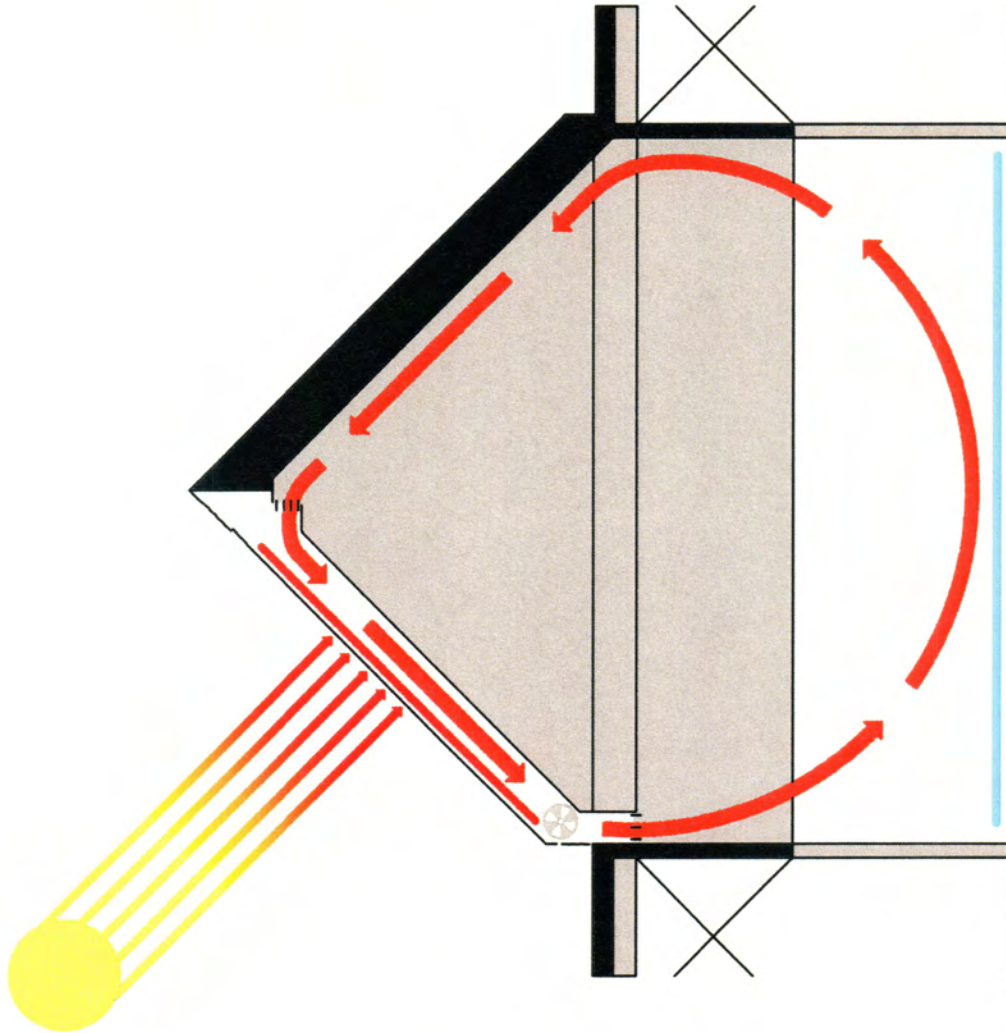


Figure 30. Solar gain diagram.

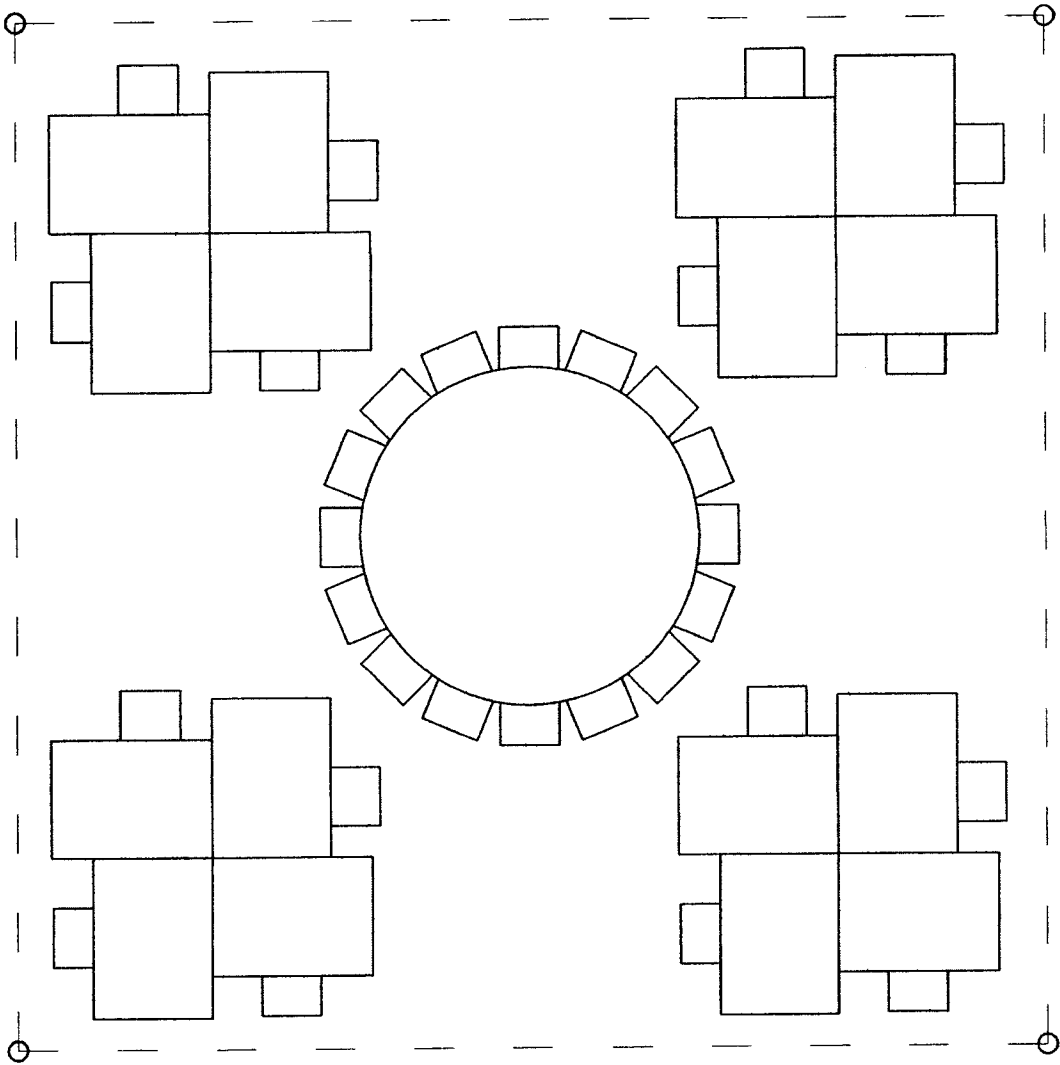


Figure 31. Typical studio unit plan.

## CONCLUSION

This proposal suggests an educational mode that teaches Design as a single unifying discipline. Foundation is a fundamentally broad program of study which touches on issues across many design disciplines. It challenges students to assess and solve problems in a self-conscious way, with a combination of creativity and logic.

The Foundation program is based on the model of the Bauhaus Basic Course which, although it was developed at the beginning of the last century, remains relevant. The fundamental philosophy of the Bauhaus, that design should not only address the issues and realities of the day, but embody the spirit of its time, was a timeless one. The educators of the Bauhaus developed an educational approach that encouraged students to liberate themselves from their academic sensibilities in order to envision and create a new modern world. The program that they established serves as an excellent example for basic design education today where the goal is to, above all else, relieve students of their preconceptions and allow them to see their world with a more critical and educated eye.

The proposed design and pedagogical system builds upon the underlying unity among all design disciplines that the Foundation education philosophy embraces to support a cooperative and interdisciplinary attitude among the various departments in the College of Design. The architectural scheme does this by bringing all first year design students together within the Design Center, by tapping in to the successful community space of the Forum and by providing a single unified studio space that, while fostering openness and connectivity, also maintains the importance of each studio as the primary social unit in the College of Design.

## IMAGES

Figure 1. (Gropius, 23)

Figure 2. (Middleton, 136)

Figure 3. (Middleton, 104)

Figure 4. (Kentgens-Craig, 13)

Figure 5. (Kentgens-Craig, 186)

Figure 6. (Sharp, 34)

Figure 7. (Monk, 39)

Figure 8. (Stoller, 17)

Figure 9. (Stoller, 72)

Figure 10. (Andrews, 97)

Figure 11. (Andrews, 100)

Figure 12. (Andrews, 98)

Figures 13 & 14. (Iowa State University)

Figures 15-31. Courtesy of the author.

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