

AN ART CENTER FOR THE
CAMBRIDGE ART ASSOCIATION

THESIS REPORT:

Submitted as partial fulfillment of the requirements for the degree of Master of Architecture.

TO: Professor L. B. Anderson
School of Architecture and
Planning
Massachusetts Institute of
Technology. September, 1952.

BY:

/ Robert A. Eckert, B. Arch.

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Partek (Arch) Nov 2, 1964

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100 Westgate
Cambridge, Mass.
September, 1952

Dean Pietro Belluschi
Department of Architecture
and Planning
Massachusetts Institute of Technology

Dear Dean Belluschi:

As partial fulfillment of the requirements for the degree of Master of Architecture, I respectfully submit this thesis entitled "An Art Center for the Cambridge Art Association" .

Sincerely yours,

~~R~~obert A. Eckert

AN ART CENTER for the
CAMBRIDGE ART ASSOCIATION

by

Robert A. Eckert

ABSTRACT

The Cambridge Art Association is a very active and fast growing organization located at 37 Palmer Street in Cambridge, Massachusetts. The activities and membership of the group are increasing rapidly, however, the basement space, which now serves as a combination gallery, studio, and social space, is very inadequate in all respects.

Included in this thesis is a program and design for the relocation and building of a new headquarters which would adequately serve the association and public. As a preliminary study toward this design, the results of an extensive research, regarding the many problems involved in gallery and exhibition design, is also included.

Acknowledgments, with appreciation, is given to the following:

Faculty and Staff Members:

School of Architecture and Planning,
Massachusetts Institute of Technology

School of Architecture
Harvard University

Students:

Graduate Class of Architecture, 1952
Massachusetts Institute of Technology

Miss Colgate:

President of the Cambridge Art Association

Miss Margaret Brown:

Margarett Brown Gallery

Mr. Hayes:

Architect on museum expansion
Cleveland, Ohio

Miss Barbara Hodder:

Secretary, Boston, Mass.

INTRODUCTION

HISTORY

The Cambridge Art Association was first organized in 1945 after a group of the local people discovered their mutual interest while selling old paintings for war bonds to help the war effort. The same spirit that was expressed during this drive has remained as the organization has grown in number and activities. It has made it a very democratic and energetic group which operates with a full program of educational and social activities.

PURPOSE

"The importance of art today is growing and will continue to grow as the public and educators recognize the value of art in the mental growth of every child and as more adults look to art for their leisure time, pleasure and as a release from the tension of the times." ¹

There is need in almost every community for a definite program for the person who would like to express himself in the field of creative art. A person subjected to the laissez-faire method usually found at a hobby shop may soon become lost and lose interest.

1. Victor D' Amico - Creative Art
The Museum of Modern Art
Volume XLX No. 1 1951

PRESENT ORGANIZATION

The Cambridge Art Association was organized to give this program to the people of Cambridge who are interested.

Its three main purposes are as follows:

- a. to help people derive satisfaction from participation in a creative activity
- b. to educate the public in understanding the importance of creative experience
- c. to stimulate art for the purpose of general education.

The only references you need to share a part in this program is a good character reference. The membership is open to and made up of local people of a variety of interests and backgrounds. There is a large turnover and there has been a steady increase in membership from the original 25 to approximately 300. As long as there is space for additional activities there is every indication that this number will continue to increase.

The association itself holds no classes at present, however, there are a number of classes going on as long as there is space for it. This space is rented by groups and individual teachers who hold these classes, many of which are in the evening.

Exhibits are planned in advance, published and an attendant is on hand at all times. The limitation in space, however, has forced the Spring Show and other large programs into other buildings.

There is an abundance of social activities and parties which help keep the spirit of the group high. The space for this is quite inadequate, also.

CAMBRIDGE ART ASSOCIATION

37 Palmer Street, off Church Street

WINTER AND SPRING CALENDAR, 1952

FRENCH ART OF THE TWENTIETH CENTURY

January 7 - 19
Opening January 6, 7 - 9 p.m.

SCULPTURE

by members of the New England Association for Contemporary Sculpture and the Cambridge Art Association
January 21 - February 2
Opening January 20, 3 - 6 p.m.

KATHERINE COMPTON and ELIZABETH FERRY Watercolors

BARBARA LADD — Pottery
February 4 - 16

PAINTINGS by Ten Members

February 18 - 23

ARTHUR GALLART — Paintings and Drawings

February 25 - March 1

CONSTANCE WILLISTON — Watercolors

PRINTS by Members
March 3 - 15

GARABED DER HOHANNESIAN and HOWARD GIBBS — Paintings

March 17 - 29
Opening March 16, 4 - 6 p.m.

8TH ANNUAL SPRING EXHIBITION

March 24 - April 12
Opening March 23, 2 - 5 p.m.
at the Busch-Reisinger Museum — Harvard University

BARBARA PIERCE — Paintings

March 31 - April 12

STUDENT EXHIBITION

The School of the Museum of Fine Arts, The Cambridge School of Design and The Massachusetts School of Art
April 14 - 26
Lecture April 13 free for members, 50c for guests

5TH ANNUAL HARVARD SQUARE SHOW

Exhibition in banks and store windows
April 20 - May 3

MANLEY BUTLER — Landscapes

April 28 - May 10

BESSY CREIGHTON and DAPHNE DUNBAR Paintings and Prints

May 12 - 24

GROUP SHOW by Members

May 26 - June 7
Box Supper and Art Discussion May 25

DUES

Active \$3; Associate \$5; Sustaining \$25
Treasurer — Mr. John F. Davis, 33 Arlington St., Cambridge

SKETCH GROUP

Monday evenings, 7:30 - 9:30 p.m. Professional models.
50c charge per evening

MORNING STUDIO GROUP

Monday mornings, 10 a.m. - 12 noon
Portrait Model — 50c charge per morning

GALLERY RENTAL

For exhibitions — Hours 12 to 5 p.m. The charge is \$30 a week, including an attendant. For classes and studio purposes, available mornings and evenings. For further information apply to Gallery Chairman, Mrs. Greely Curtis, 77 Sparks Street, Cambridge. UN 4-2251

PRINT ROOM

A small gallery, excellently suited for the display of drawings, prints, pottery and jewelry, renting for \$7.50 for a two week period. For further information apply to Gallery Chairman, Mrs. Richard Edsall, 15 Walker Street, Cambridge. TR 6-1293

CLASSES

The Art Association holds no classes, but is glad to list here and on the bulletin board, private classes held in the Gallery. Mr. Charles Wadsworth — Private class in drawing and painting Wednesday evenings, 8 - 10 p.m.

A NEW PROGRAM

THE FUTURE

After introducing the Cambridge Art Association as a very fast growing healthy organization and pointing out the importance of such a group to the people of the community in which it is located, the next step is to consider the future.

A continued healthy increase in membership is self-evident as a desired goal of the association. The increase in membership is responsible for an increase in activities, and an increase of activities results in a need for more space.

The amount of space needed for these social and educational events may be determined from the estimated total number of members. The division of space for studios and exhibitions may be arrived at from the number of members interested in certain fields of art. From the files of this association the interests of the present 300 members are as follows:

147	-	Oils
137	-	Water Colors
66	-	Etchings and Prints
61	-	Crafts
54	-	Portraits
37	-	Pastels
22	-	Sculpture

It is estimated, however, that if studio and work space were possible, sculpture would increase to almost equal water color or oils. The New England Association for Contemporary Sculpture has already tied itself quite closely to the group by renting the gallery space for exhibits.

Other important activities that would require space are photography and ceramics.

Combining these would immediately result in more administrative and maintenance work.

In serving all the members, there is a need in this organization for something quite new in art centers. Since the membership consists of some professionals in the field, there is need for private studio space. This would be a small space where the professional artist could work while classes were going on and where he and his work would be undisturbed.

THE ESSENCE

IN GENERAL

The problem divides itself into two major areas:

1. The area where art is created.
2. The area where the art is seen.

The first is the work, studio, conference and social space. This involves mostly members of the association and requires a very functional and flexible area.

The second is primarily the exhibition space where the creative work is displayed, viewed, studied, discussed, criticized and sold. Here, not only the members are involved, but, the public and art work itself play an important part. The visual and esthetic factors involved here are many and complicated. In order to determine the important criteria which may be involved in solving this problem, a study of these visual problems involved in exhibition design was made.

EXHIBITION DESIGN STUDY

INTRODUCTION

The purpose of this study was to make it possible to become familiar with the visual problems involved in exhibition design.

It starts with the relationship between the spectator and the object of art; continues with the visual relation between the art and its surroundings and concludes with a summary on illumination.

THE OBJECTSPECTATOR RELATIONSHIP

The factor in the relation between the object and spectator is primarily the scale. This could determine the distance the work of art should be seen. When this question of distance is mentioned there is an immediate concern with the space in which this work of art is being placed. There is almost always a limit as to how great that distance can be, however, too often that limit falls way short of the desired distance, and it becomes necessary to combat this in other ways.

The next consideration, closely linked with the scale, is the angle of vision between the object of art and the spectator. It may be very disturbing to find a large heavy piece of sculpture towering over you in space where you could not get back far enough to see it as it ought to be seen. However, a light mobile piece of sculpture may work here very well.

There must be consideration for pieces which blend themselves to the touch of the hand. In putting a piece this low, the piece must be so placed that it does not get damaged.

Small pieces placed just below eye level make it very easy and pleasant to see. This eliminates any effort to bend over or strain to study the object.

Sculpture is most often made to be seen from all sides and should be displayed in this manner. Since you can never really isolate a piece or work, one consideration may be to always keep some type of background in close enough relation that it may be controlled.

The desired angle of vision for viewing painting, particularly oils, glass covered paintings, or any painting with a reflective surface is quite limited.

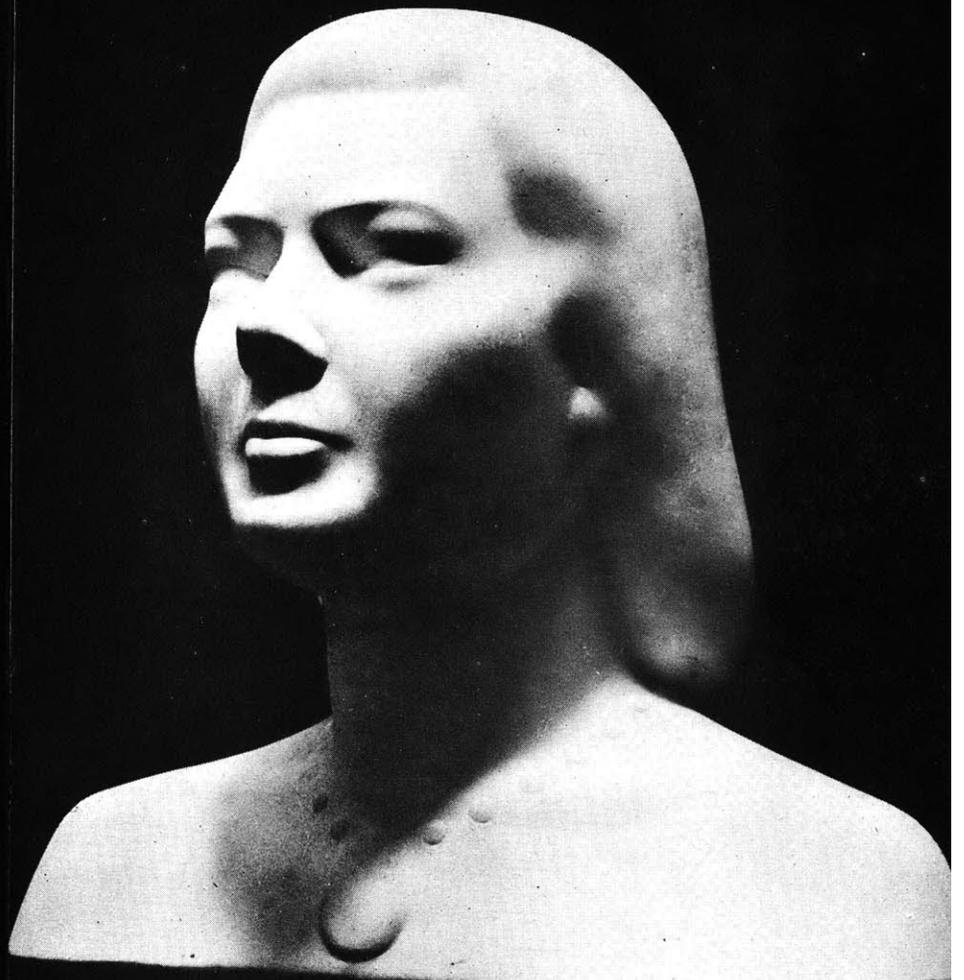
The circulation of the spectator depends directly on the character of the object seen, its scale, detail, whether it ought to be touched and how long it is to be viewed. The one circulation factor which could stand a lot of consideration in exhibition design is the factor of fatigue. Very few exhibitions are so designed that a person can relax either physically or mentally and still enjoy the work presented.

THE OBJECTBACKGROUND RELATIONSHIP

In almost every case when viewing a piece or sculpture or painting there is a visual background to which the work relates. To get the correct proportion or scale relation between the art and the background may be very important. If the background is definite but very large in comparison to the piece of art work, much of the detail in the work may be lost. The whole work may become a dot or spot on the background. It would depend on the strength of the sculpture itself as to when this occurs. On the other hand, a backdrop which is too small for the work would add nothing to it. Decreasing the size of the backdrop on a piece of finely detailed work may bring out this detail more clearly.

The same problems occur when considering the relation between the space volume and object. If the space is decreased the detail of the work of art may be brought out and etc. A flexibility of height could be just as important as a flexibility in the horizontal direction. This space between the pieces or groups play an important part. There is a great hazard in space which does not work with an arrangement, but dictates to it.

Value and color are what make it possible for us to distinguish form. The value relation between the object and its background are very important. A dark object placed on a light or white background will appear smaller as the white will invade the black.



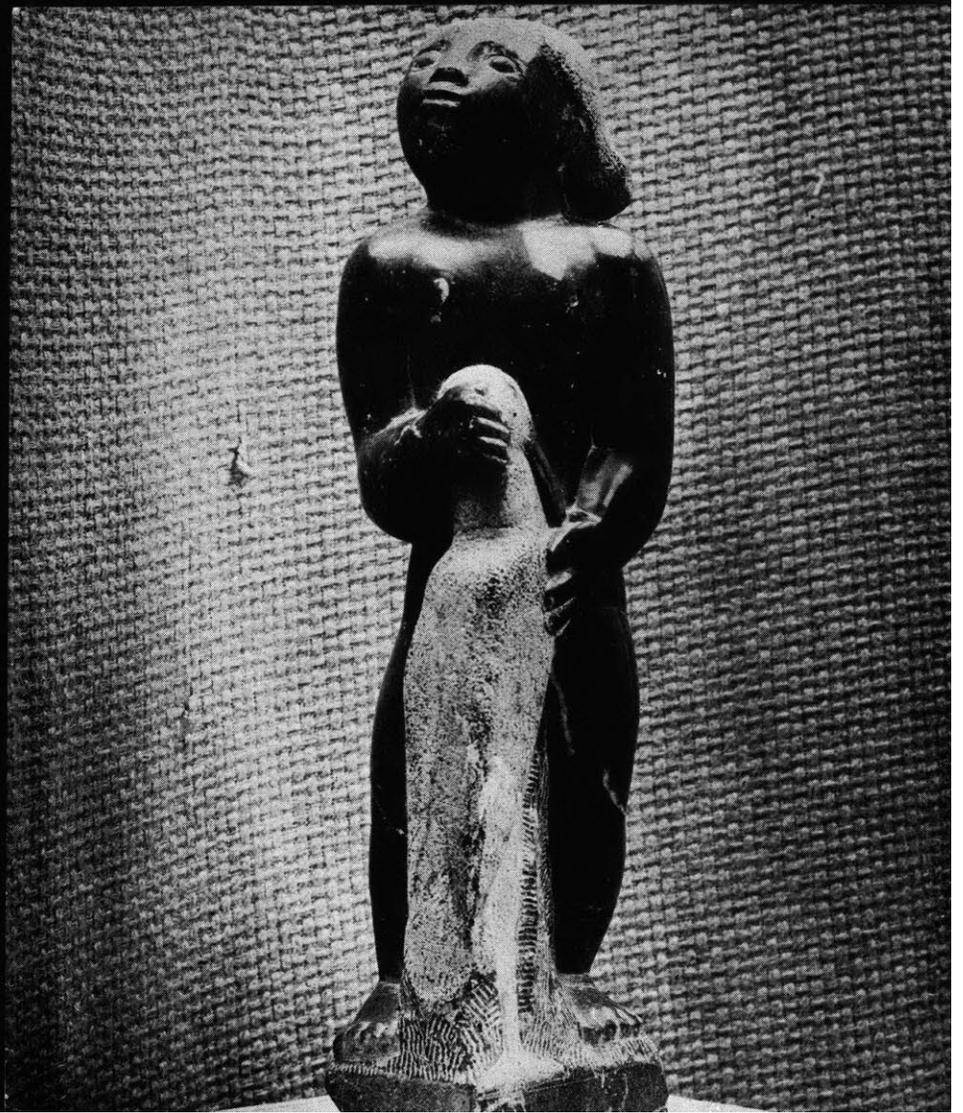
It may also be desirable to keep the contrast down on a finely detailed piece so that the detail is not lost. Strong contrast is an eye catcher, but it can also be fatiguing to the eye. A time factor is involved here. It might also be remembered that the lighter the background the darker the object will appear and etc.

Relative to the detail mentioned before if the background is too bright a piece could be lost entirely. This happens often when an object of art is placed in between two windows. The rules set up to determine exactly how much contrast you can have between the object and the background are of little value to changing exhibits and lighting conditions. There is information available regarding this, however.

The color of the background for a painting or sculpture is very important and should never be set when the exhibits are changing. The background color can completely change the apparent color of the object, particularly if it is close to neutral.

The advancing and receding of color is important. It could be unfortunate if the background color would fight to advance itself in front of the object to be seen. On the other hand, all cool colors may not be too pleasant in an exhibition space either.

A strong color may be neutralized if it is used on a good texture for a background.



Textures displayed against each other can work very well, however, a contrast of the surfaces is easier to handle and a little more bold in effect. It must be watched that the reflections of a textured background into a reflective surface do not distort the shape of the object to be seen.

Almost every piece of art work has some sort of a visual axis. A definite background can play a very important part to this axis. A strong horizontal backdrop could completely destroy an object placed in front of it that may have a visual vertical axis. On the other hand, if the contrast were great enough it could compliment it. Regardless of how it is handled, the relation is important.

The remaining important factor in the relationship between the object and its background is the relation of materials. Each material has its own qualities and these qualities can compliment each other. An example may be a very light wine or a wrought iron sculptured figure placed in front of a large square of stone with all of its heaviness and solidity. These different materials have different surface textures, colors, values and density which all play an important part in the visual relation between an object of art and its surroundings.

There is one remaining aspect in the object background relation that has presented itself for many years and probably will for many more years. That is the inevitable frame in which the painting or art work is placed.

The prupose of this object seems to be either to form an outline or boundary for the art, to isolate it from the surroundings or to become a transition between the art and its surroundings.

In either case it is a means of combating a background surface which cannot be changed to meet the requirements of the work of art. As the background becomes more flexible in its design the size of the frame has decreased. As the frame decreases in size the color relation between the object and its background must be watched more closely.

The grain in the wood of the frame must be taken into consideration. If the grain is not straight it could cause a visual illusion and distort the shape of the painting.

THE SEQUENCE
RELATIONSHIP

An important factor in exhibitions may be the sequence or the geometry that is used in placing one piece of work next to another. This is particularly important when arranging the exhibit on a long surface or wall.

Many approaches have been used. One may be to establish the eye level and place the horizontal visual axis of each painting on this axis, another would be to line up the base of the paintings or the tops, depending on the strip lighting involved.

A more recent practice may be to organize the work in groups which may set up a rhythm or some more interesting organization which may contribute to the circulation pattern.

This may be done by relating the group according to scale. The scale between the objects is probably more important than the scale relationship between the object and its background.

Another way of choosing the work in its sequence could be by the predominant color or colors that the art expresses. In relation to either color, scale, or character one rule that should be remembered is that the objects must either compliment, support or be isolated from each other.

This method of displaying not only calls for a very flexible system of space and background, but a very flexible system of illuminating this art work.



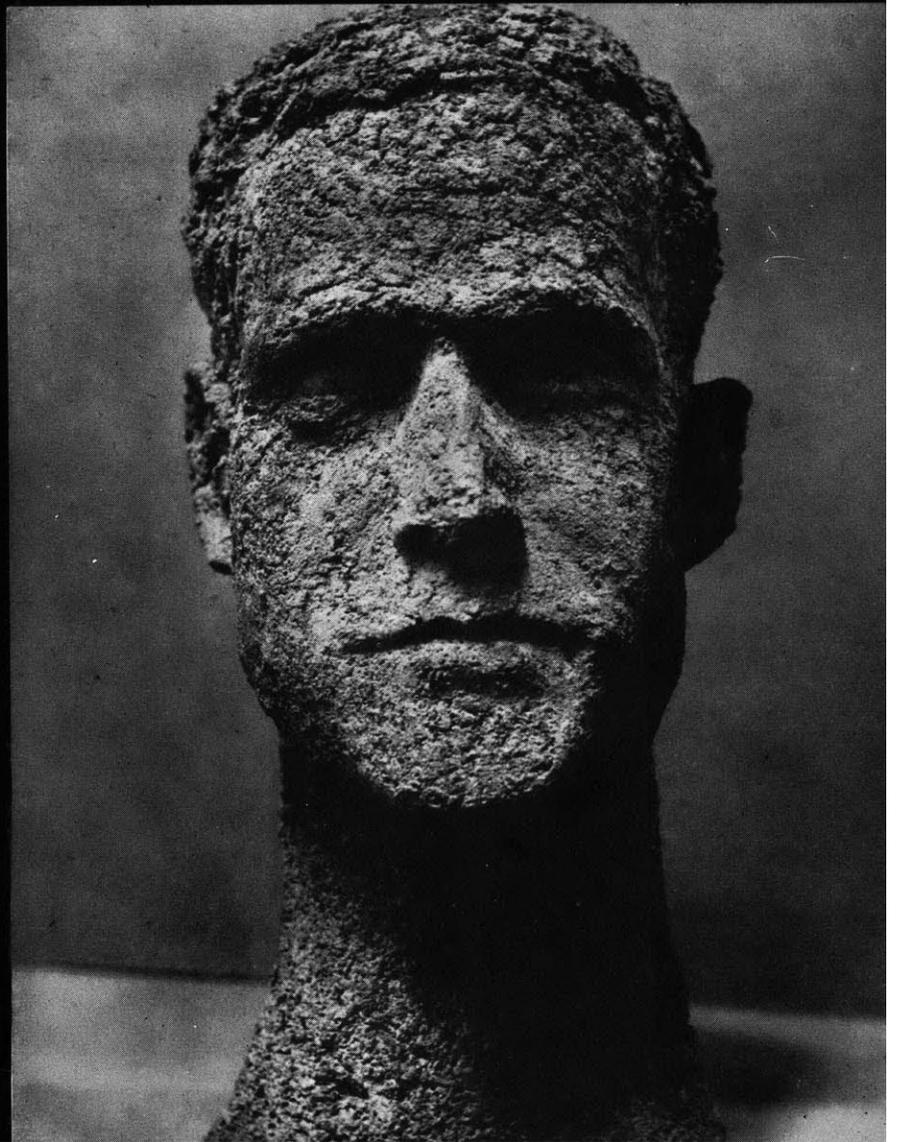
THE ISOLATED
PIECE

Although it is nearly impossible to really isolate a piece, the possibility is approached when circulation is allowed to circle the object. The interrelated piece in space then becomes the important factor to study. The material and how it is handled is what gives the surface quality and that is what we see.

This has undergone a change in recent years from aged and low reflectance materials, such as bronze, copper, and etc. to the possibilities of chromium, stainless steel, aluminum and others all of which may have a highly reflective surface. Bringing out the most in a material plays an important part in the success of an exhibition of that type.

The form or shape is probably considered even more important in most cases. The form of a material of a light value is more distinguishable than one of dark value. The possibility of a greater change in tone and value is the major reason for this. Another consideration in form is in defining it as curvilinear, circular, convex, concave, angular and etc. then bringing these out the best possible way.

Bringing out these qualities of an isolated piece depends almost directly on how the work is illuminated. That is the next and all important part of this study.



ILLUMINATION

The main controversy in the lighting of galleries and exhibitions is natural light versus artificial light. It is possible to find many reasons for the use of either, however, it seems to be generally considered true that the combination of the two are very difficult to handle and not always satisfactory.

There are times when natural light has a great advantage. The intensity level of direct sunlight cannot be reached by any other means. This could be desirable in any case where a clean sharp shadow is an asset, or where an extremely high intensity is needed, such as bringing out the translucence of a piece of marble.

It is really a mobile light, which not only changes direction but also intensity and color. This could be considered an advantage in the case of much of the present art work. It adds the element of time to a piece of art.

Another advantage of direct sunlight is that it contains all the spectrum colors. Color is directly dependent on light and daylight gives a less limited field in which to work and see.

The disadvantage of this type of light is that it is extremely hard to control. The same problems occur when natural light is defused or used indirectly.

The peak of gallery attendance is from October through May and this is also the period when there is the least

amount of natural light due to over-cast skies and the angle of the sun. Here artificial light would be needed to supplement the natural light.

Very often two sources and types of light are desirable. Here again, natural light is unsatisfactory. It cannot be controlled properly. Objectionable glare is a difficult thing to handle in the case of daylight or direct sunlight.

Artificial light also has both advantages and disadvantages. It is the only source of light there is at night sufficient to light an exhibition although it is possible to be used during the day. Its color stays the same, the intensity and number of lights can easily be controlled, and it has a constant and multi-directional possibility.

Another advantage is that it may be used as either a point source or a whole illuminous panel or ceiling.

Some of these advantages may some times be considered disadvantages. The element of surprise and time are not as evident when using artificial light. The spectrum range is somewhat limited, however this is slowly being overcome. The relation of a piece of art work to nature is also more limited.

With the advantages and disadvantages of natural and artificial light in mind the next step is determining the problems involved in illuminating the art work.

Consider artificial light. The determination of proper intensity level, as well as color tonalities and angles



of presentation is complicated by the factors of esthetics and others, which are not, as yet, quantitative weight in applied lighting calculations. Common denominators of opinions as to what kind of lighting makes objects look "best" are discernible neither by laymen nor even among the experts. How far one goes to dramatize an art object without distorting its appearance is very important and there are no hard fast rules which determine this.

Vision is accomplished through the distinction of difference of brightness and color. It is possible to then divide lighting into two parts: first, the consideration of quality (color); and second, the distribution of the intensity of the light. The two go hand in hand. The brighter the light the less saturation the color. When the intensity is lowered the color approaches black and when the intensity is raised the color approaches white. It is possible in this way to almost wash a color out completely. This happens quite often in direct sunlight.

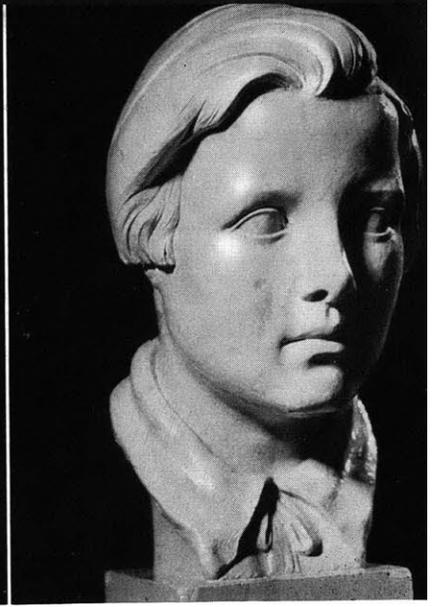
Color is an important factor when selecting types of lighting. A correct spectrum range should be considered which would bring out the most of an object of art.

The shade and shadow is the next important factor which depend directly on the light source. If the edges of the shadow are clean and sharp, the work may appear very hard and strong. A shadow which fades out at the edge may give a softness to the art object. This is usually accomplished by the use of more than one source of light or a diffused light.

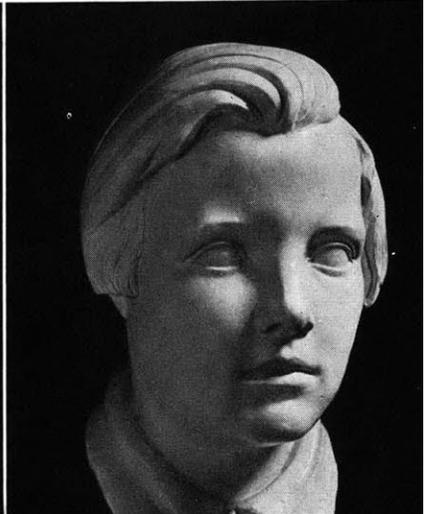
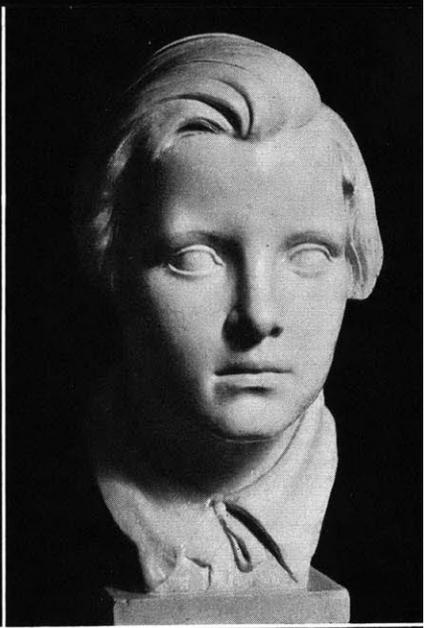
There are some rules which may apply in some of the past exhibitions. The old one of applying a light to an object at a 45 degree angle to give interesting shadow is one. There is another formula by Flaxman which states that if an object is one-third light and two-thirds shadow it will have a bold effect, and if it is one-fifth light and four-fifths shadow, then the effect will be even bolder. Leonardo da Vinci stated that the shadow should equal the height of a figure. This is the same as the old 45 degree law and may not be the best for a contemporary sculpture. It may also be said that generally two light sources are better than one on three dimensional objects, and a difference in the intensity, type and direction of these two lights are important.

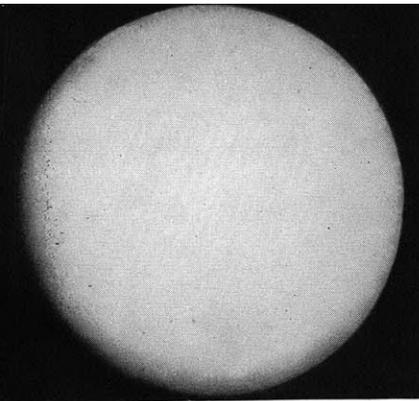
Different textures call for careful lighting. A surface can appear heavy, light, large, small, harsh, or can be almost obliterated due to the type and direction of the light source on it. This texture problem is very important in many contemporary paintings as well as sculpture.

The light reflections on objects and paintings, particularly oils and glass-covered work is also not to be forgotten. The angle of incidence should be so that the reflection does not spoil the effect.



Top left: Back lighting applied on the light side of the subject. It must be strong and sharp. *Right:* An edge of light on the dark side makes this stand out against a dark background. It may now be quite soft and subdued. *Bottom:* Two lights of exactly similar intensity, both striking the subject at the same angle from the front, produce a very unsatisfactory, flat effect, with awkward cross shadows and double catch-lights, making the face look exceedingly broad and square. Note how the light seems to change the character of the model.

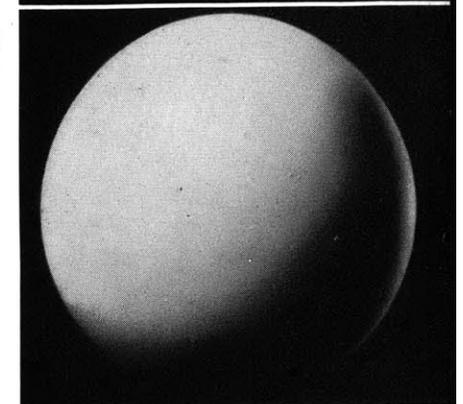
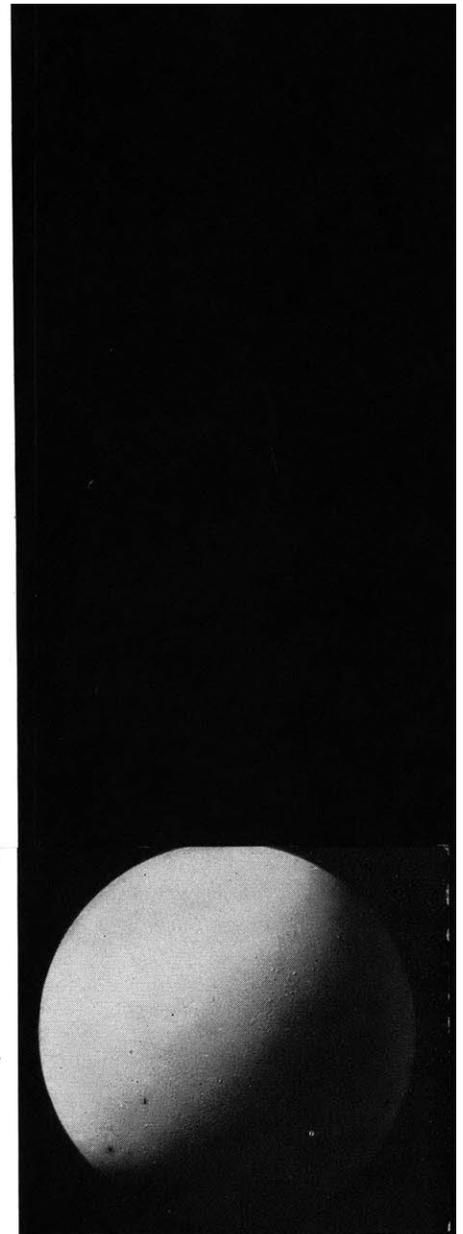
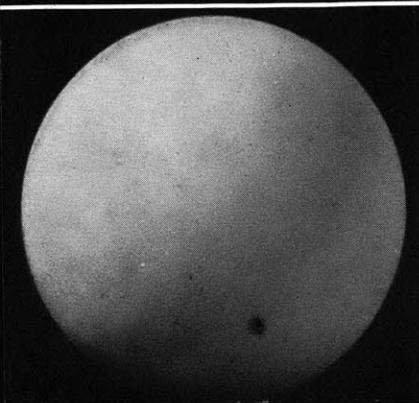
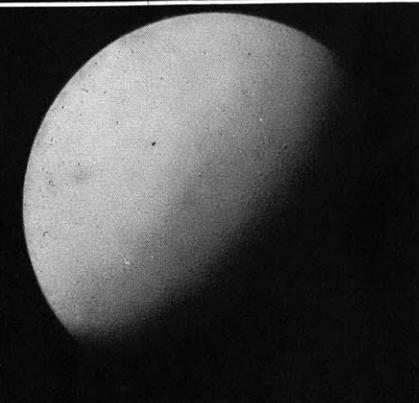




Top: This is a picture of a ball, though it doesn't look like it. The light was dead front and the effect is almost completely flat.

Middle: With the light striking at an angle of 45° from the side and above, the ball begins to look round, but as its shadow side is completely lost there is a suggestion of the moon about it.

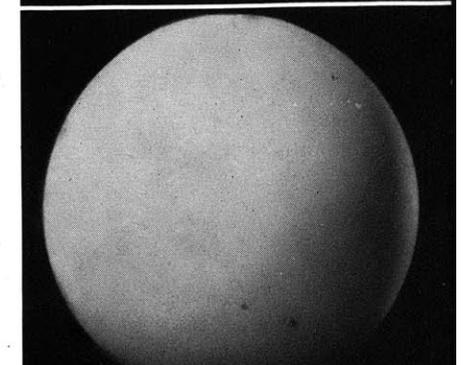
Bottom: With a reflector placed at the side and adjusted so that we get this effect, we achieve a very good illusion of roundness. The thing really looks solid (see pages 16,25).

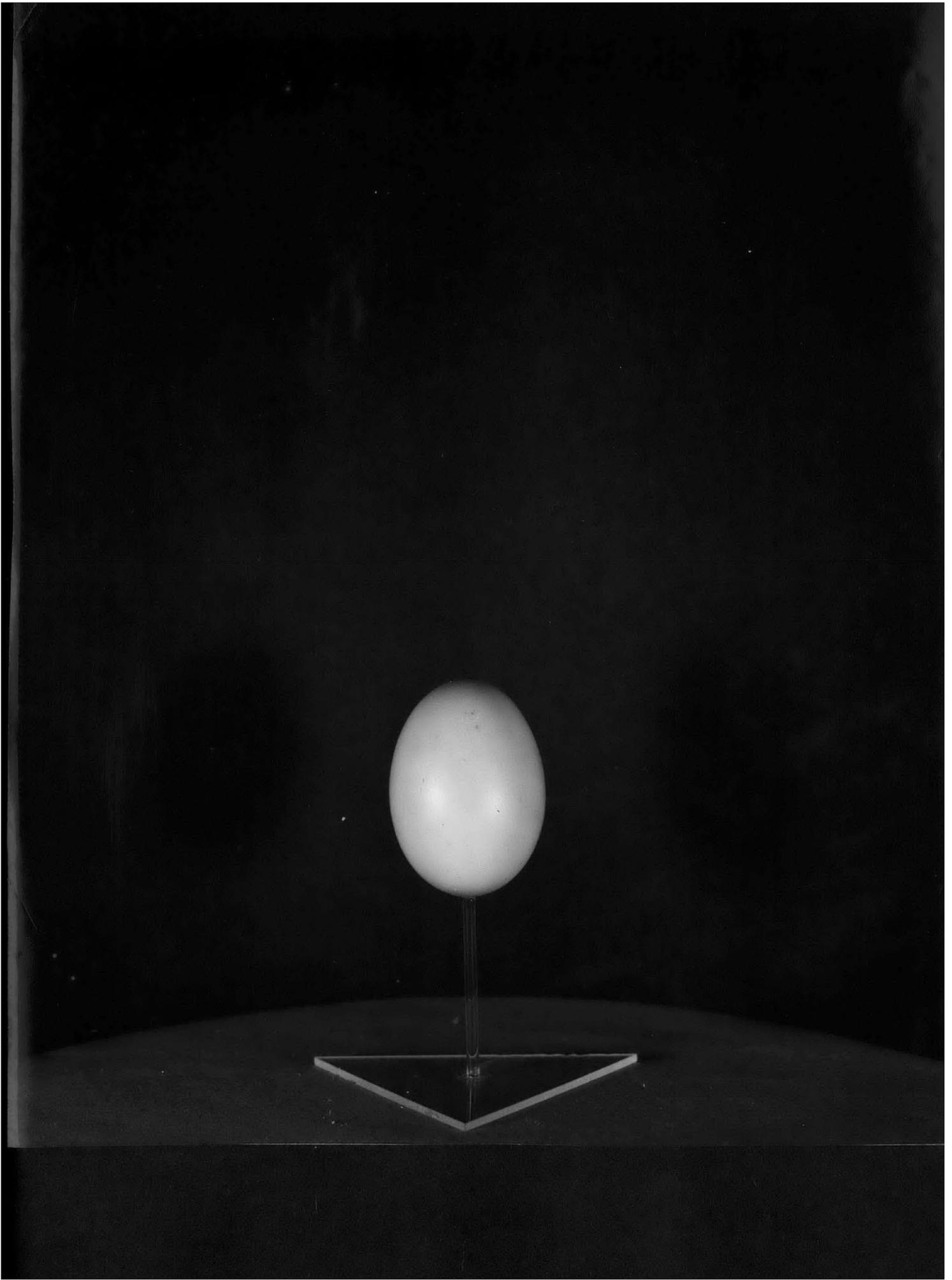


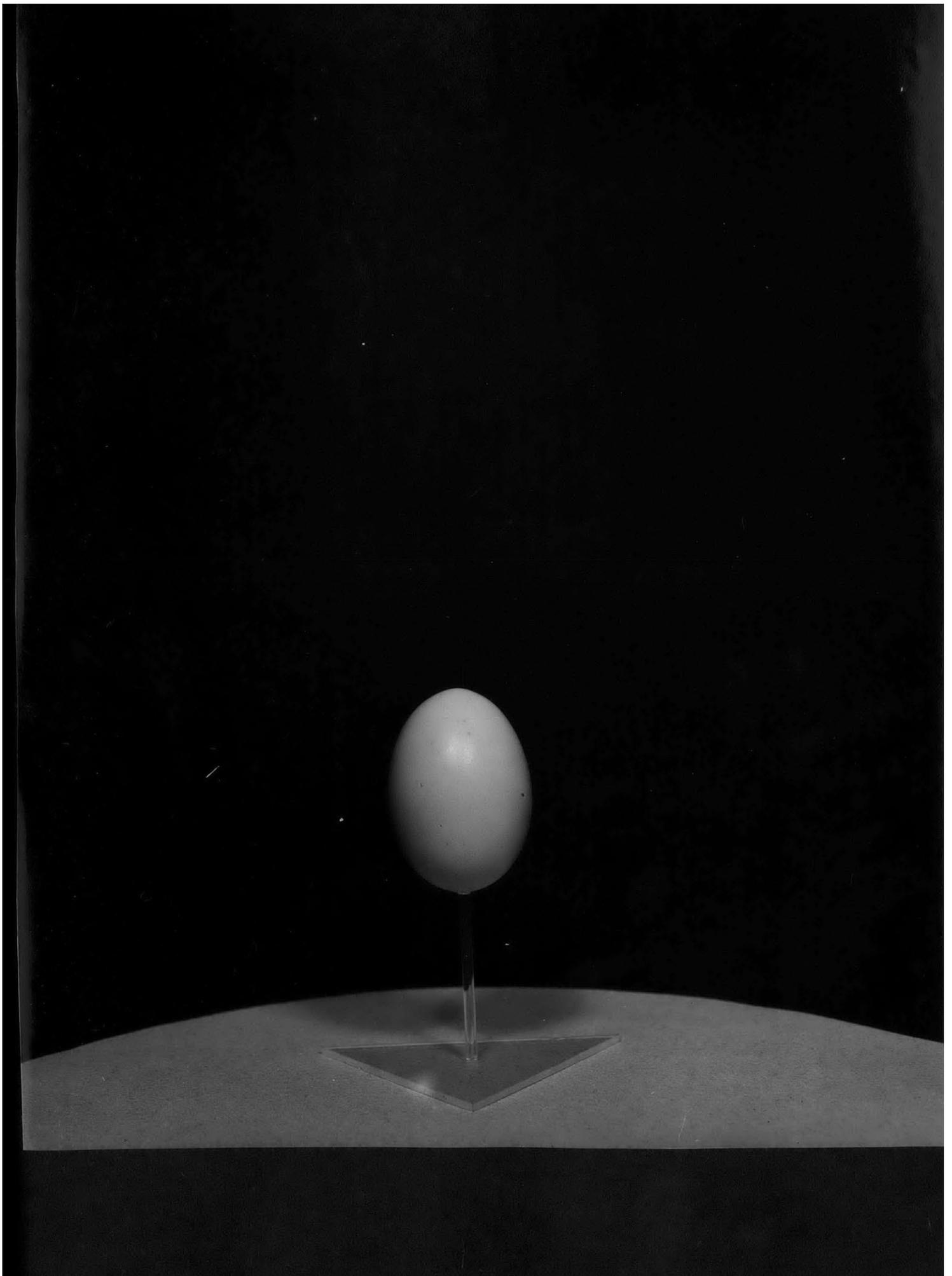
Top: When we put the reflector further back, there is a back-lighting effect that clearly indicates the outline and gives an excellent impression of roundness, but the front of the shadow is now perhaps rather too dark.

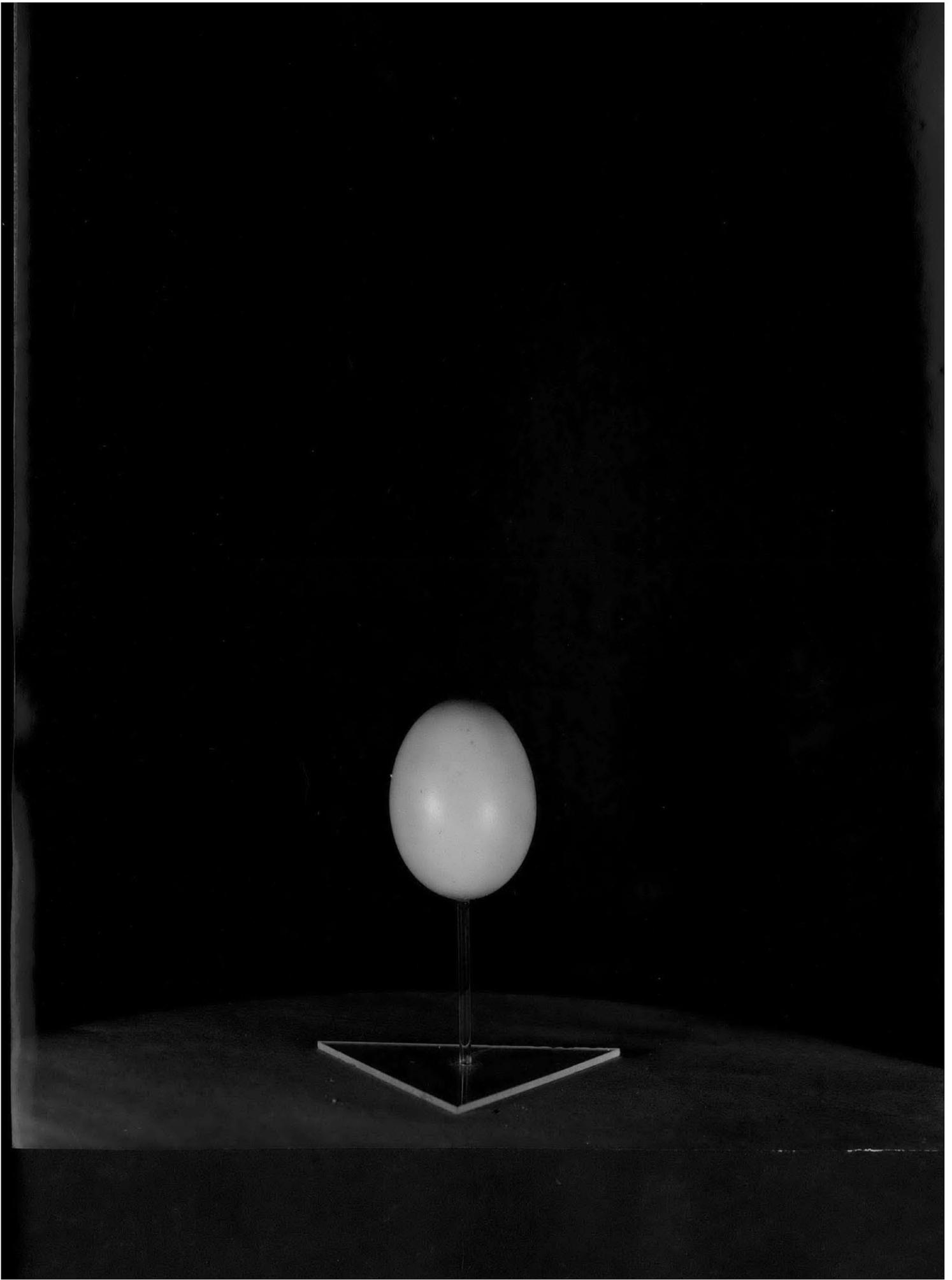
Middle: Let us try a mirror instead of the white reflector. This produces a much more intense and more sharply defined outline of light.

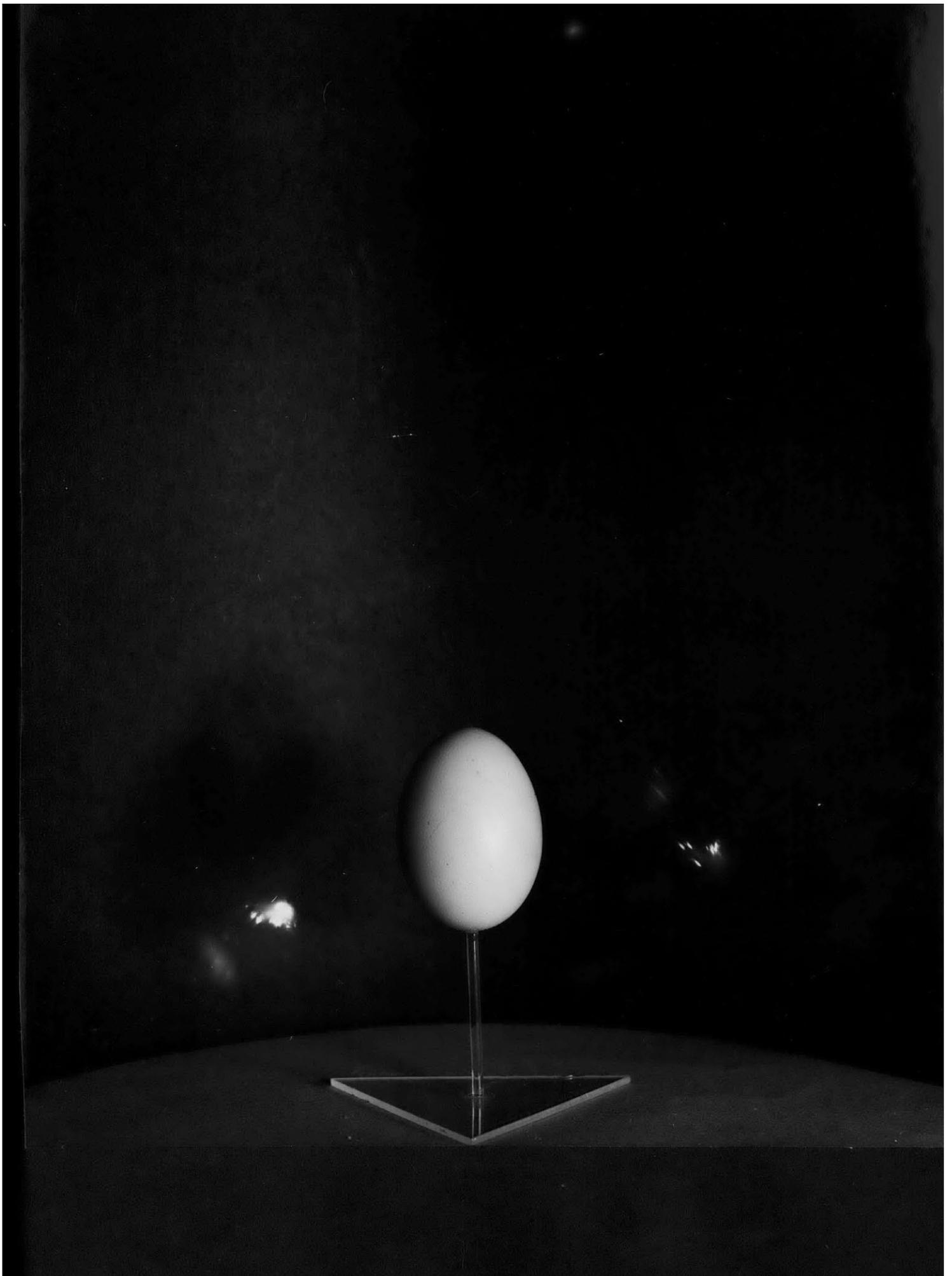
Bottom: Now let's put back the white reflector in its original place. We can't get a much better effect of roundness than this, on a flat piece of paper (see pages 27-30).

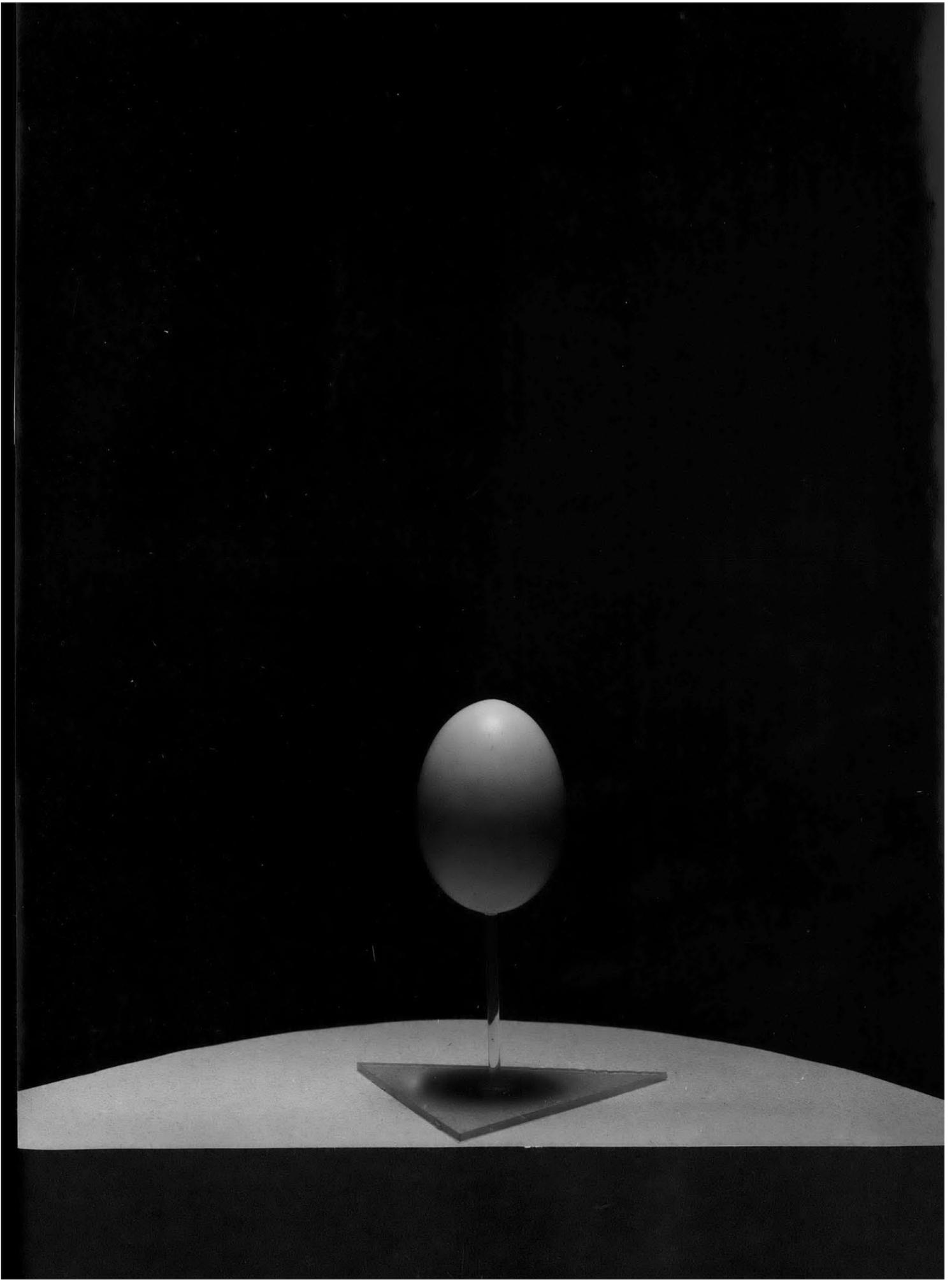


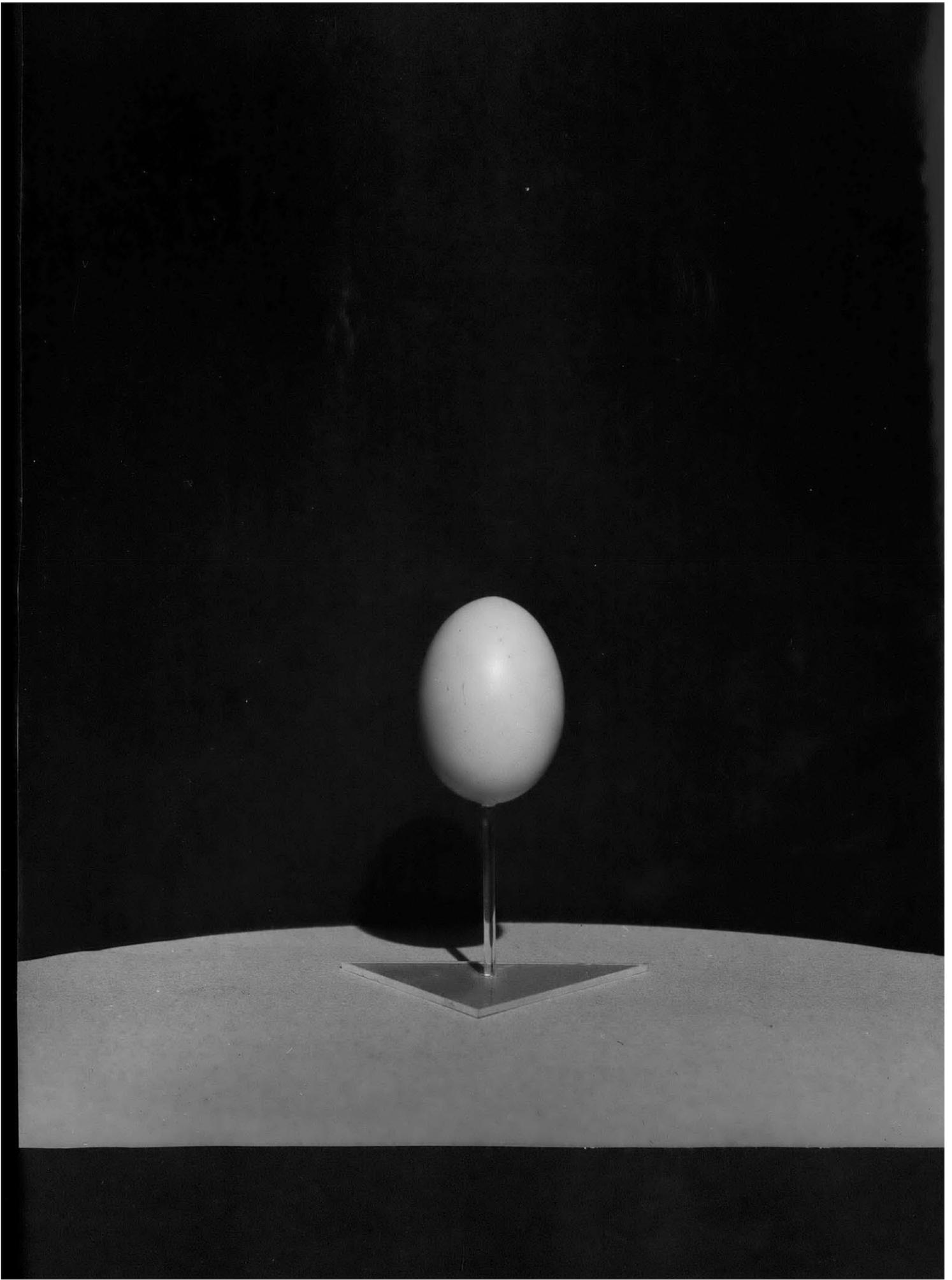


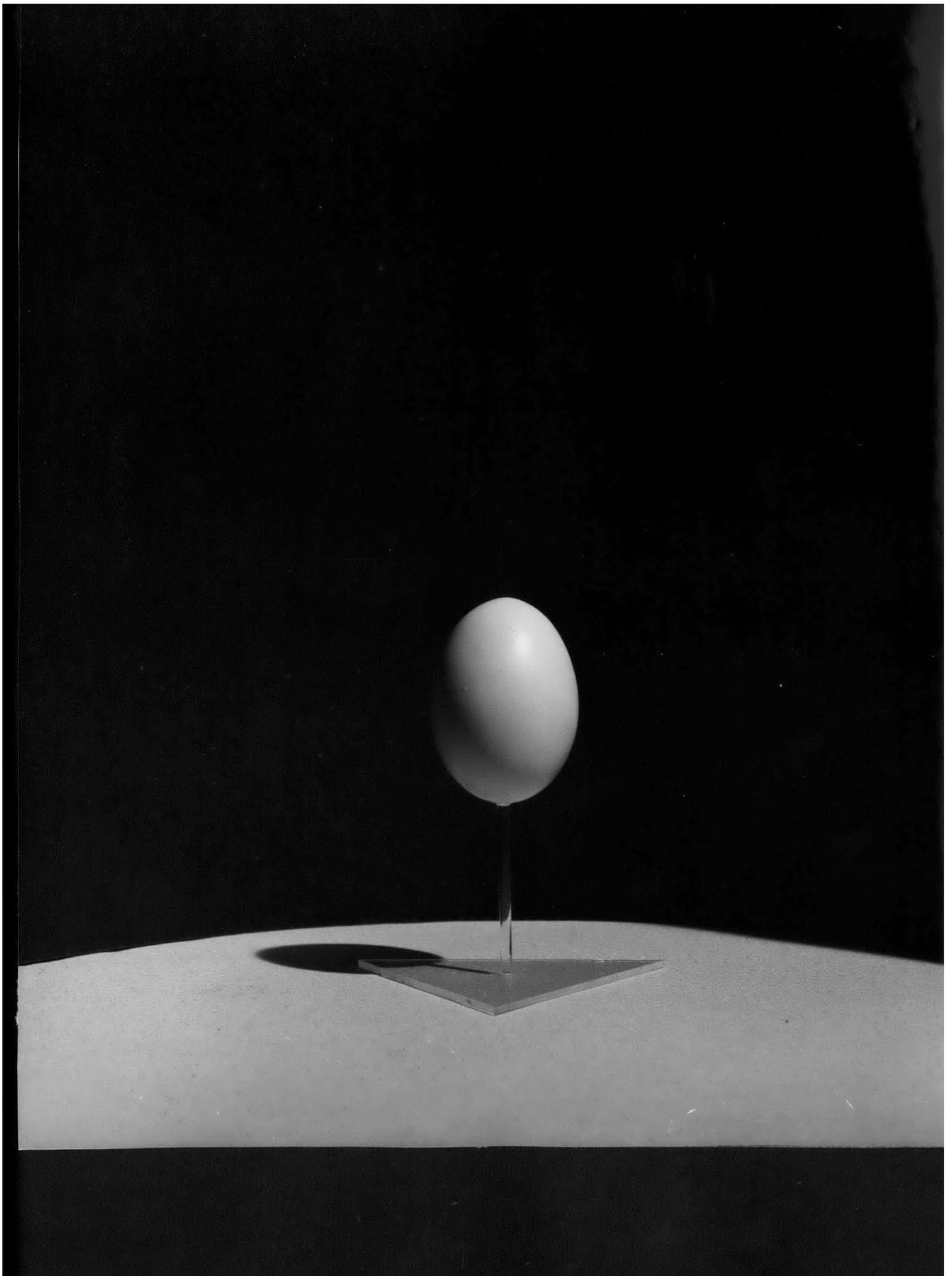


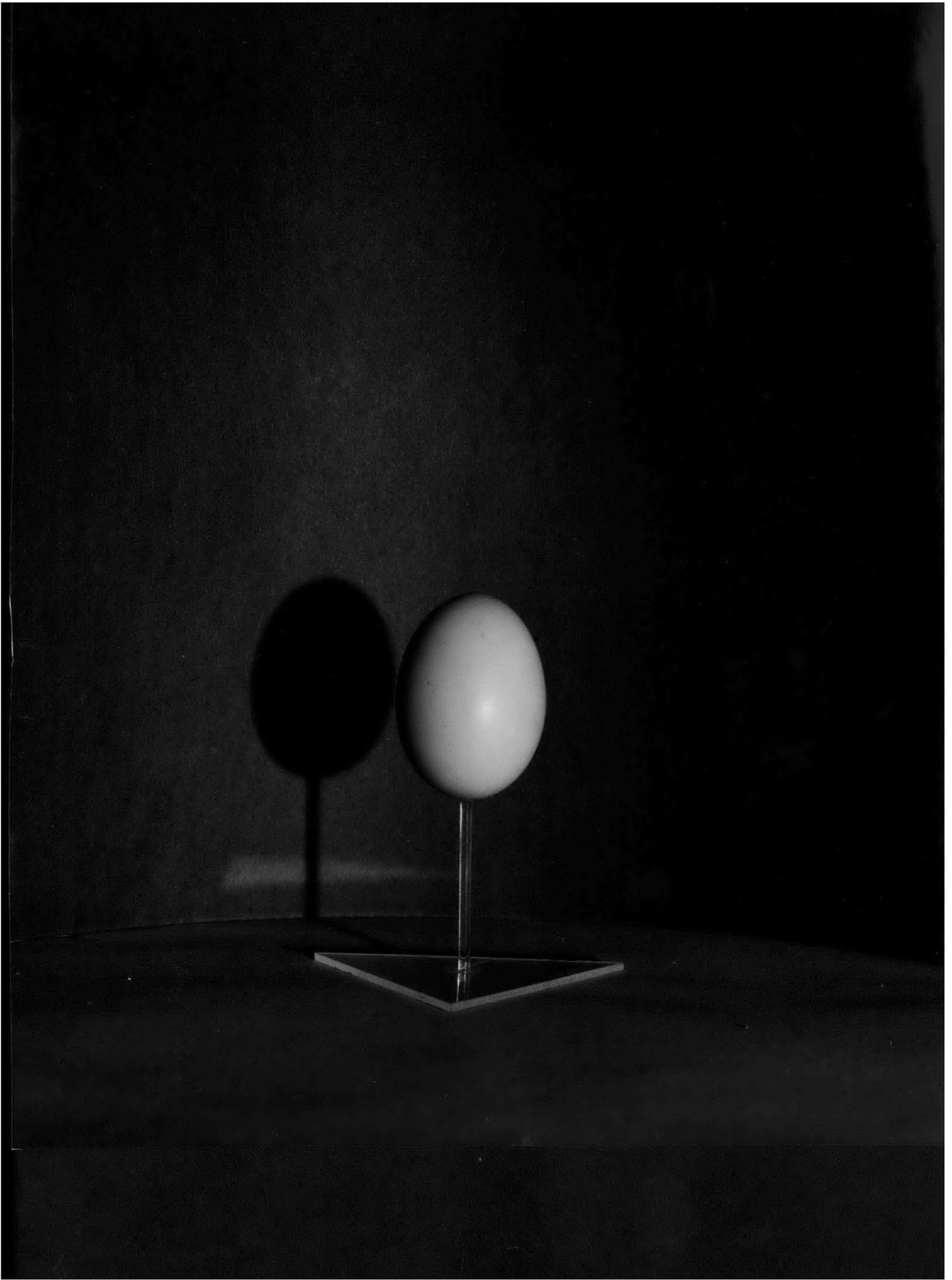


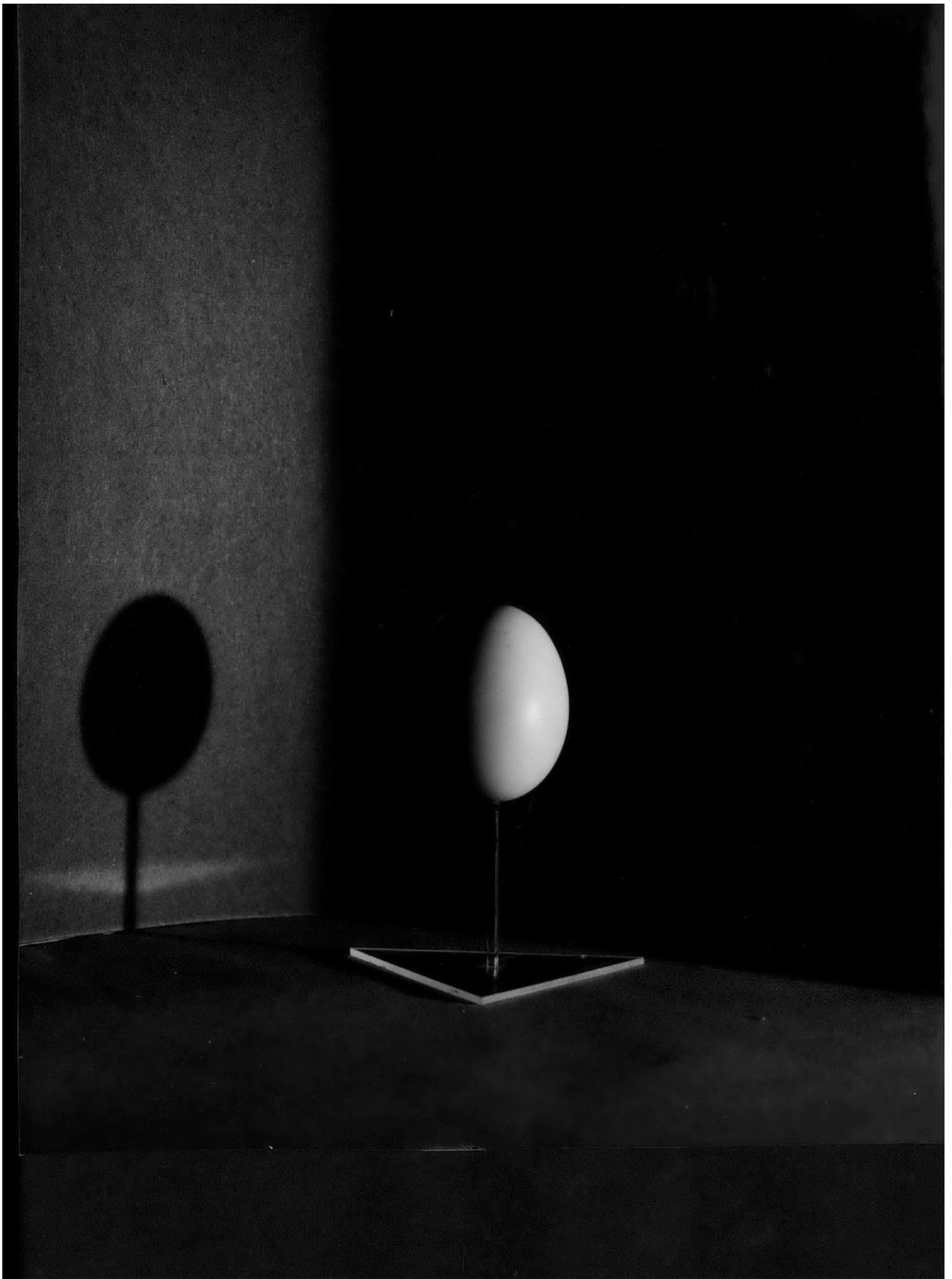












SITE FACTORS

THE PRESENT SITE

The general location in relation to the community is very good. It is located so that people may reach it very easily during a lunch hour or while shopping in the square. It is also a very short walk from the subway and bus station.

The immediate environment is quite undesirable. The street resembles a back street or an alley. The Association is located in the basement of a very poor structure. It is hard to find and the fire hazards are tremendous. There is only one entrance or exit and that is a stairway. There is no natural light and the existing lighting inside is makeshift.

THE PROPOSED SITE

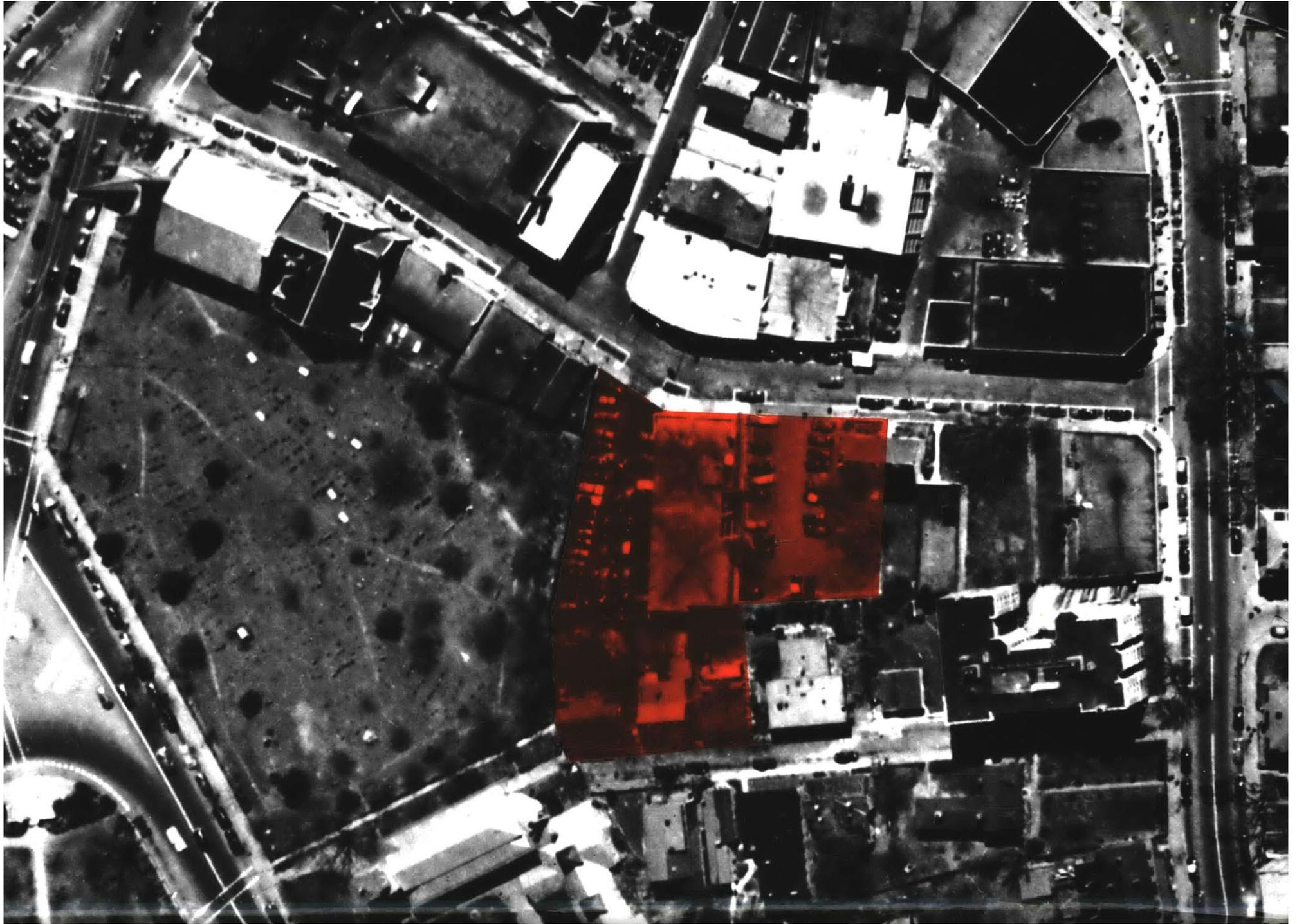
The proposed site for An Art Center for the Cambridge Art Association has the same advantage of location as does the present one. It is no further from the community square, but the immediate environment is more desirable.

The location is adjoining the historic and spacious old burial grounds between Church Street and the dead-end, Farwell Place. On either side of the burial grounds and framing the view from one of the main streets in the city, is the Christ Church and The Unitarian Church both important historic monuments to Cambridge. The burial ground itself is informally landscaped. It is open for public circulation and will always be kept in good shape visually. This gives a permanent extensive view both toward and from the proposed art center which does not have to be owned or maintained by the Art Association and yet it is only two blocks from the main square.

The cultural significance of the location of Harvard University on one side and Radcliffe College on the other must not be overlooked, along with the fact that the City of Cambridge itself is one of the cultural centers of the World.

Another advantage of this location is that it lies on the zoning line between the residential area and the business district. But, as a value to the city, it is a project of public value, redeveloping a deteriorating section.





PROPOSED SPACE DEVELOPEMENT

ENTRANCE

Lobby and Administration	2000 sq. ft.
LIBRARY and LOUNGE	500 sq. ft.
KITCHEN	150 sq. ft.
AUDITORIUM	2000 sq. ft.
GALLERY	6000 sq. ft.
STUDIOS	
Painting and Photo	2000 sq. ft.
Sculpture, Prints, Ceramics	2000 sq. ft.
STORAGE and SHOP	5000 sq. ft.
SERVICES	1000 sq. ft.

THE MUSEUM OF MODERN ART

NEW YORK 19

11 WEST 53rd STREET
TELEPHONE: CIRCLE 5-8900
CABLES: MODERNART, NEW-YORK

DEPARTMENT OF ARCHITECTURE AND DESIGN

June 24, 1952

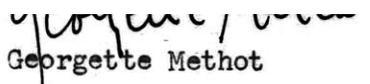
Mr. Robert A. Eckert
100 West Gate
M.I.T.
Cambridge, Mass.

Dear Mr. Eckert:

We are sorry, but we do not have very much information available that would be of help to you.

The only thing we can send is the enclosed listing of general information and specifications about our Museum.

Sincerely,


Georgette Methot

February 10, 1949

GENERAL DESCRIPTION

The Museum of Modern Art, 11 West 53rd Street, is located on the north side of the street, about 200 feet from Fifth Avenue, on a plot with 129 foot frontage that extends 190 feet through to the south side of 54th Street. The six story building covers 90 feet of the depth of the area. The rest of the land, which measures 387'6" by 100'5" is used as a sculpture garden. The rock excavation is 45 feet deep. Below the level of the street are included the auditorium, lounge, receiving, packing and shipping, checking, photograph and storage spaces, engineers' office, locker rooms, lavatories, and about two thirds of the mechanical equipment. At the ground floor entrance is the information and coat room space. The rest of the ground floor is gallery space used for exhibitions. The second and third floors are devoted to galleries for permanent and temporary exhibits, and the northern side of the third floor has the sculpture gallery. The fourth floor has the print room, library and stacks, dance archives, private film projection room, and offices, and connects with the building next door, 21 West 53rd Street, which is used for additional offices and storage. The fifth floor consists of offices. There are lavatories on each floor. The sixth floor includes a kitchen and pantry which serves the Trustees' and Committee Rooms and the Members' Penthouse. The Trustees' Room is separated from the Members' Room by a sliding wall. The rest of the floor is given over to terraces with partial overhead protection, rest rooms, and the cooling tower for air-conditioning. The seventh floor, or penthouse proper, is used for storage, with a tower above it for the elevator machinery.

GENERAL CONSTRUCTION

The building is of reinforced concrete construction designed to eliminate beams and girders (except where setbacks occur above) and give flat ceilings. It is divided into a series of 24 foot-square bays except for the western bays, which include the elevators and are 32 feet wide. A setback on the third floor provides a skylight over half of the sculpture gallery. Permanent walls are of cinder block, covered with special nailing plaster, designed to allow nails to be removed without cracking the plaster. All the inside walls are non-supporting and are changed to meet new exhibition and office requirements.

EXTERIOR MATERIALS

White Georgia marble and blue terra cotta tiles are used for the facade. Stainless steel and plate glass form the ground floor front, Thermolux glass (spun glass between two layers of plate glass which diffuses light and has insulating qualities) set in alumilited aluminum sashes faces the second and third floors, and the fourth and fifth floors have standard steel window sash. The rear facade uses aluminum at the entrance and glass brick on the second and fourth floors, with clear glass windows between. Sixth floor terraces use tan tile. Circular openings in the cantilevered roof slab are edged with alumilited aluminum.

INTERIOR MATERIALS

Floors: All floors are poured concrete slab with different finishes or coverings applied directly to the concrete. The entrance area, corridor to the garden, and stairway are of terrazzo with carborundum added to prevent slipping. Galleries use special granitized linoleum. The lounge, auditorium and sixth floor have Klearflax carpeting, offices use linoleum and the library and auditorium employ cork tile. The fire tower stairs are of cement and lavatory floors are tile.

Walls: Acoustic plaster has been used on office ceilings and auditorium walls and ceilings. Wall surfaces are covered with a special nailing plaster, designed to allow the removal of nails without cracking the plaster. Temporary gallery walls are made in 2, 4, and 8 foot sections of tempered prestwood on wood frames. Each section when assembled consists of two sections of wall held back to back by special clamps which make a wall approximately 6" thick. These sections of wall are then put in place resting on a board to protect the floor, and another board is placed on top, between the top of the wall section and the ceiling, to protect the ceiling when the thumb screw arrangement is brought to bear against it. In this way the wall is wedged securely in place.

LIGHTING AND VENTILATING

Many kinds of lighting are used, but skylights (except for the sculpture gallery) are limited by the fact that the offices are over the galleries. Gallery lights could not be permanently fixed because of the flexibility allowed by temporary gallery walls. Strip or spot-lighting devices are toggle bolted or "buttoned" onto the ceiling in various locations to fit any arrangement of walls. Standard trough lights and troughs with "Birdseye" bulbs which allow control of direction, and special spotlights are all used in the galleries. Fourth and fifth floor corridors have glass and metal stock fixtures, and offices use for the most part standard florescent strip fixtures. The sixth floor has flush ceiling lights, and the Library and Trustees' Room have specially designed lighting fixtures. The stairway to the auditorium and the second and third floor landing have Zeon tube lighting.

Anemostats are used throughout the building. Fresh air brought from the outside is fed to ducts which bring the air to the anemostats, which uniformly distribute the air. The ducts feeding the anemostats can also be connected to cooling units in the basement so that the anemostats can distribute the cooled air. At present the galleries and the auditorium are the only air-conditioned parts of the building. The basement and mezzanine are ventilated with filtered air, but have no temperature control.

HARDWARE AND DETAILS

Main stairway is made of glass panels with stain handrail of aluminum, alumilited to prevent oxidation. Door pulls and plates are standard throughout the office part of the building, stock patterns, white bronze, chrome plated. Stainless steel horizontal push bars are used on the ground floor front doors, aluminum on the rear. Office doors are flush birch panels. Window frames and door frames are stainless steel on the ground floor and elsewhere aluminum or steel.

EXPANSION

21 West 53rd Street

In June, 1946, the Museum acquired the building next to it on the west, 21 West 53rd Street, which it now uses for additional space. It was connected to the Museum building on the fourth floor and basement, and at the loading platform on the main floor. It is a five story house formerly used as a residence. At present the basement is used for storage, the first floor for mailing and shipping, the second floor for storage, the third and fourth for offices, and the fifth for storage.

Proposed New Wing

Because of the great necessity for increased space, which the addition of the residence at 21 West 53rd Street only partially satisfies, plans have been prepared for an annex, which the Museum hopes to build within the next few years. This wing would be used chiefly for exhibition space, since only a fraction of the permanent collection can now be displayed. It would also include a restaurant and storage space.

MUSEUM OF MODERN ART, 11 West 53rd Street, New York, N. Y.

AREAS IN SQUARE FEET

The approximate area of the Museum in square feet is as follows:

sub-basement:	6300
basement:	14,000
mezzanine:	8500
ground floor (incl. east passage):	104,000
second floor gallery:	11,125
third floor: gallery:	11,125
fourth floor	10,000
fifth floor	10,000
sixth floor	<u>.6025</u>
Total	87,525

This breaks down into the following areas:

Exhibition Space

Basement and lobby	2,390
first floor large gallery	2,300
first floor small northwest gallery	440
first floor hall	1,056
second floor galleries	11,125
third floor galleries	11,125
sixth floor lobby	900
Total	<u>29,386</u>

Lecture and Study Space

auditorium	3,600 (496 seats)
preview room	700 (54 seats)
dance archives study room	192
library	1,400
print room	504
architecture and industrial design study rooms	400
Total	<u>6,796</u>

Offices

fourth floor	3,000
fifth floor	6,325
sixth floor - Trustees' Room	750
sixth floor - Committee Room	300
Total	<u>10,375</u>

Storage Space

sub-basement	300
basement	375
mezzanine	3,454
second floor	105
fourth floor	200
fifth floor	500
sixth floor	300
seventh floor	3,200
Total	<u>8,434</u>

Shops and Other Services

carpenter shop and spray room	1,620
framing and mounting	1,050
engineering and electrical	6,300
receiving and shipping	720

SUPPLEMENTARY SPACE

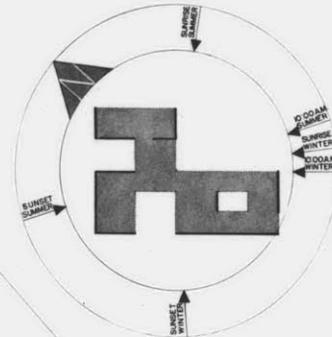
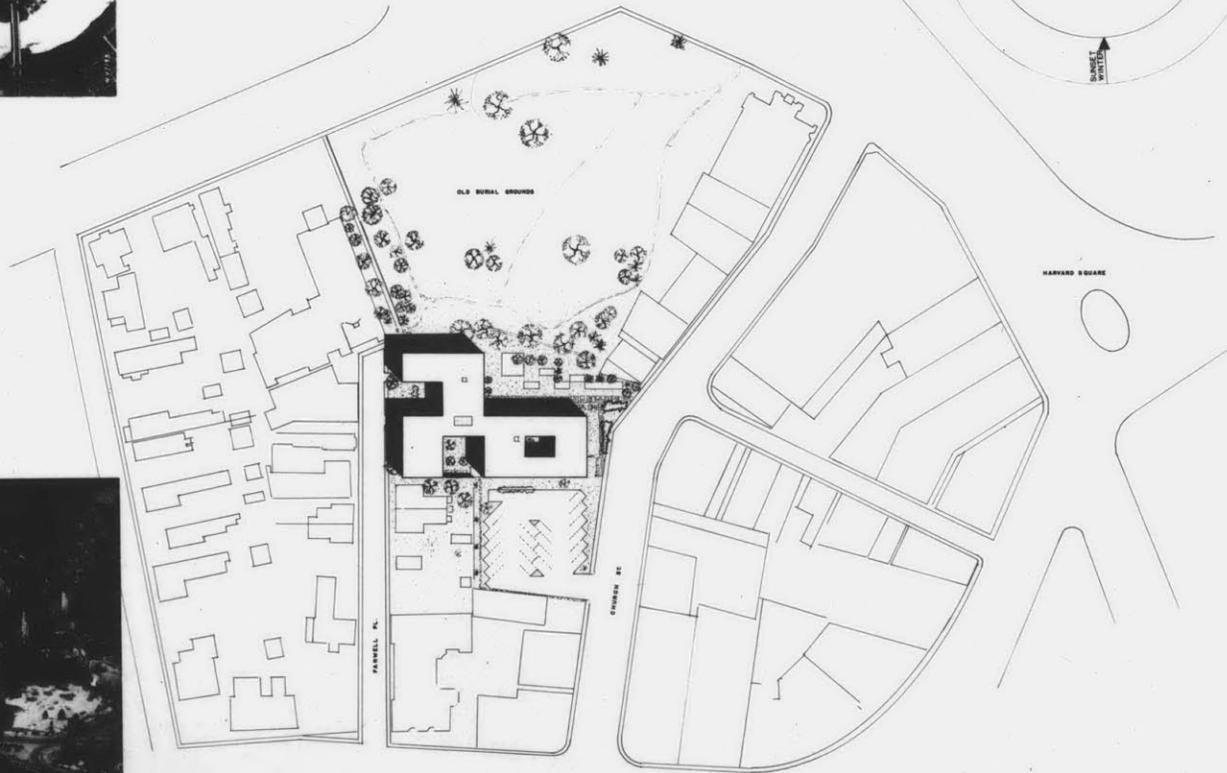
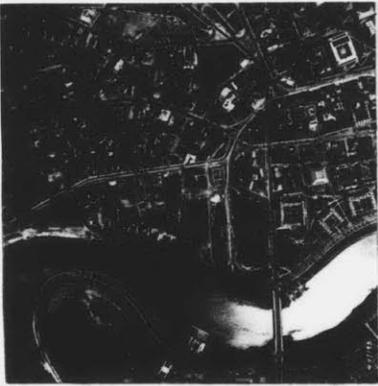
21 West 53rd Street

mailroom	640
receiving and shipping	525
offices	2,188
storage	2,720

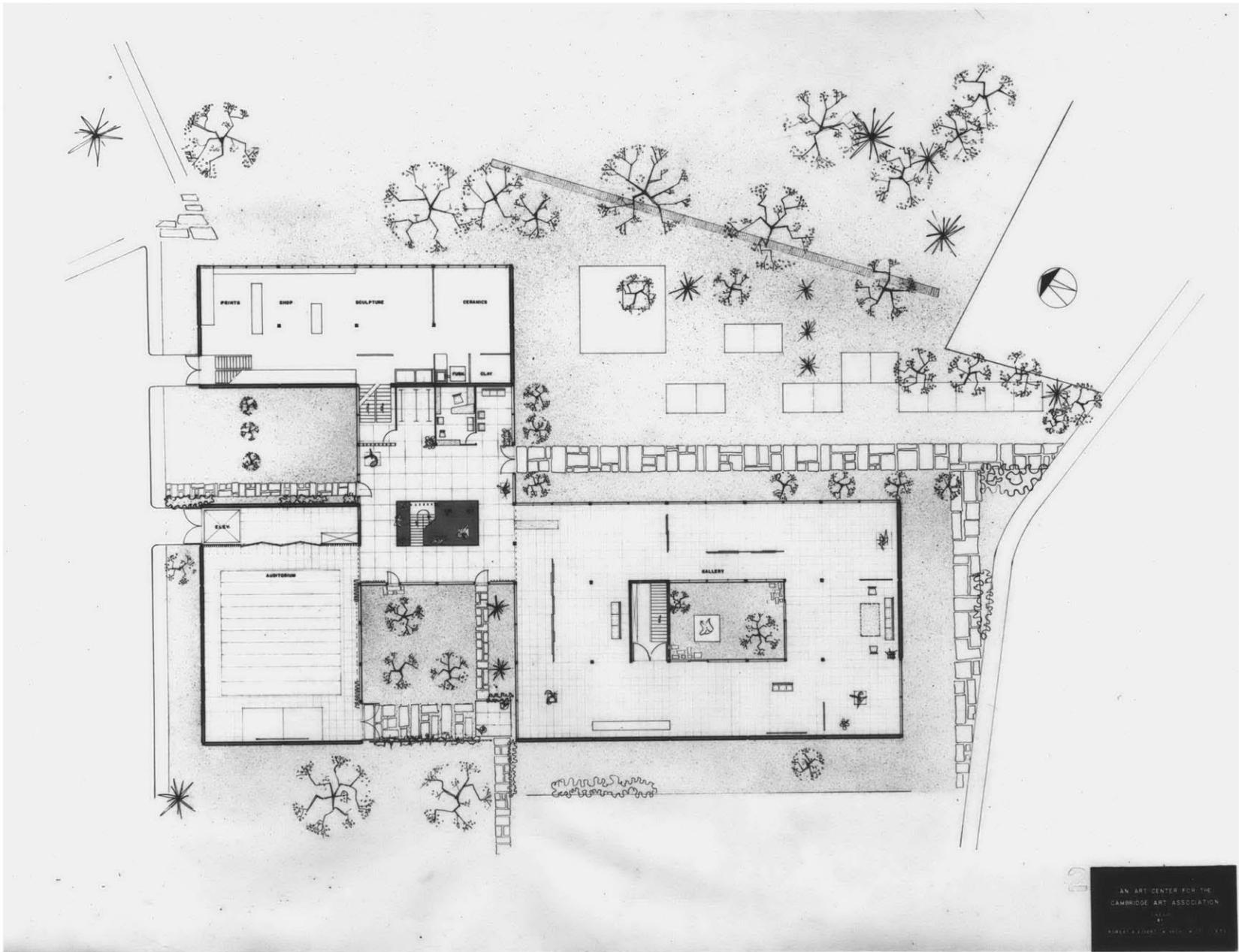
681 Fifth Avenue

Storage	3,000
classrooms	8,000

Lincoln Storage Warehouse	4,540 cubic feet
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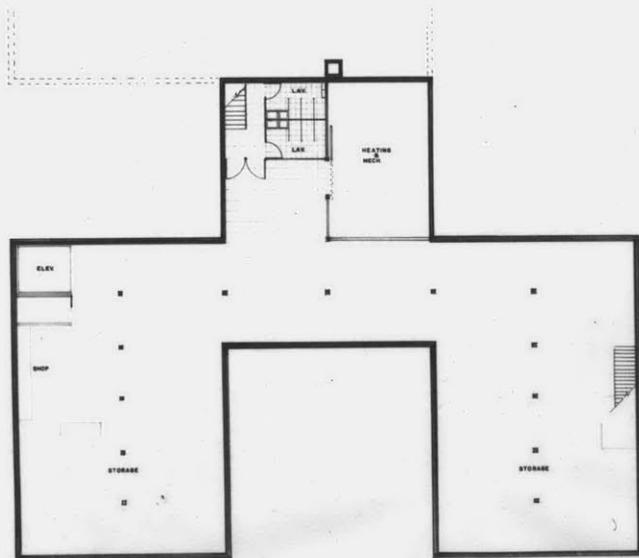
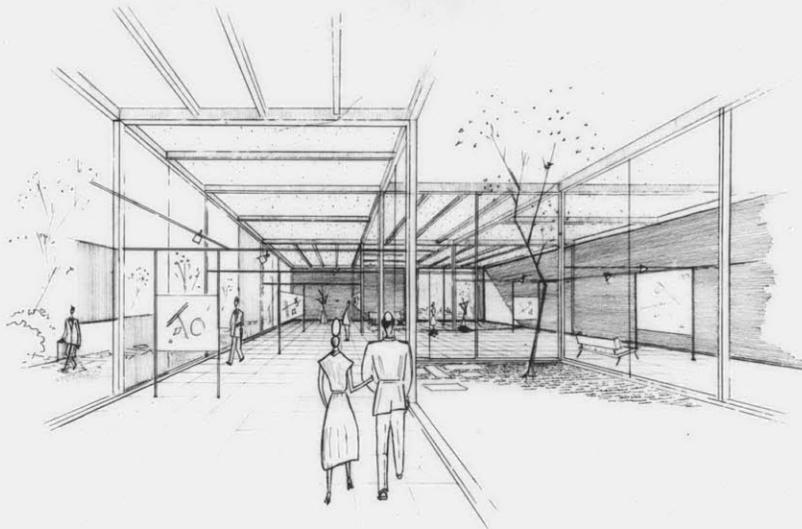
AN ART CENTER FOR THE
CAMBRIDGE ART ASSOCIATION
HARRIS ESTATE, 1920-1921



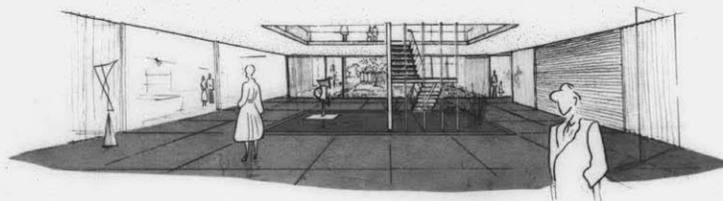
AN ART CENTER FOR THE
CAMBRIDGE ART ASSOCIATION
1968
BY
HAROLD W. FISHER & ASSOCIATES, INC.



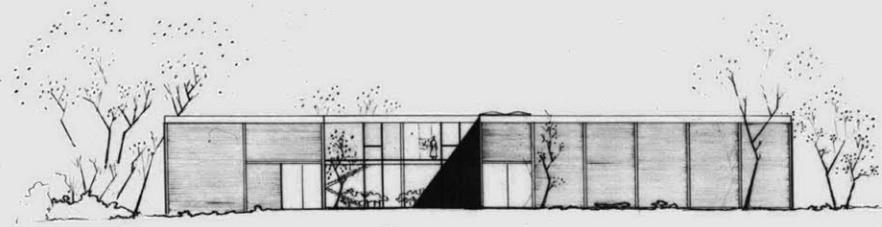
2ND FLOOR PLAN
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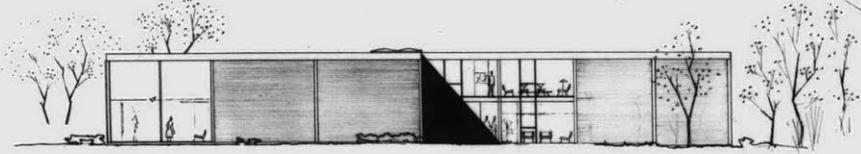
BASEMENT PLAN
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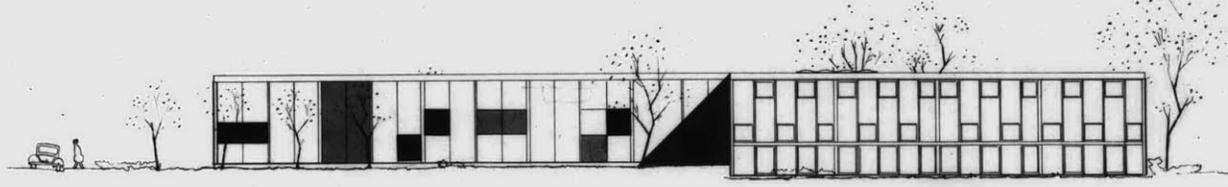
AN ART CENTER FOR THE
CAMBRIDGE ART ASSOCIATION
1931
HUBBARD, LUDWIG & HOWLAND ARCHT. INC.



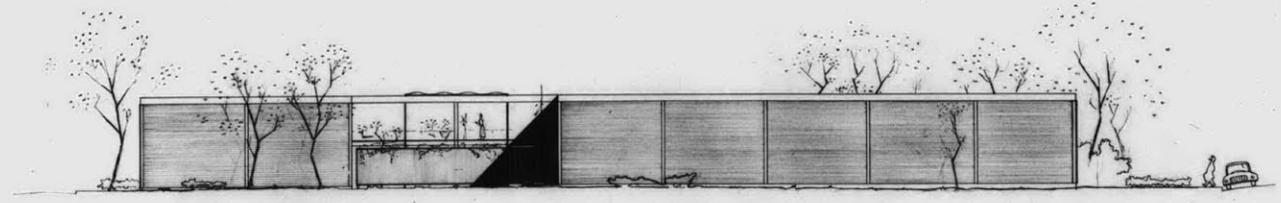
N.W. ELEV.



S.E. ELEV.



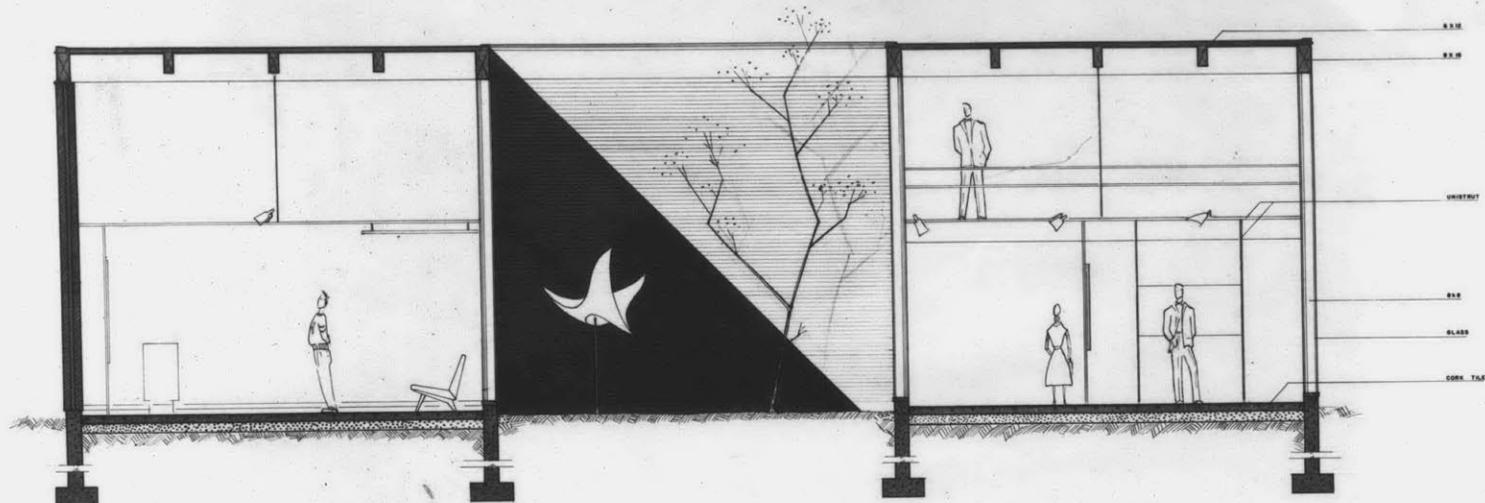
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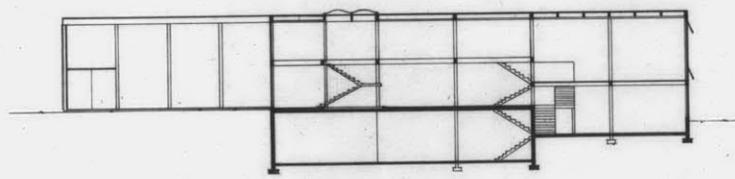
S.W. ELEV.



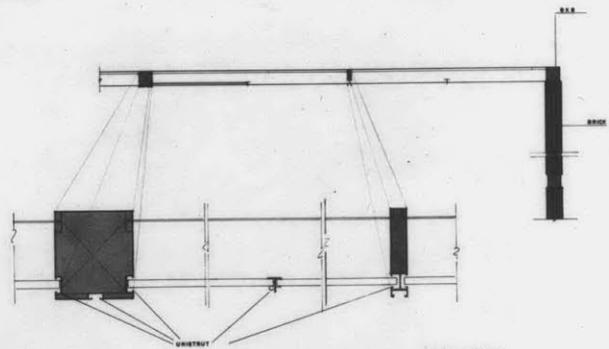
AN ART CENTER FOR THE
CAMBRIDGE ART ASSOCIATION
BY
FRANK LLOYD WRIGHT



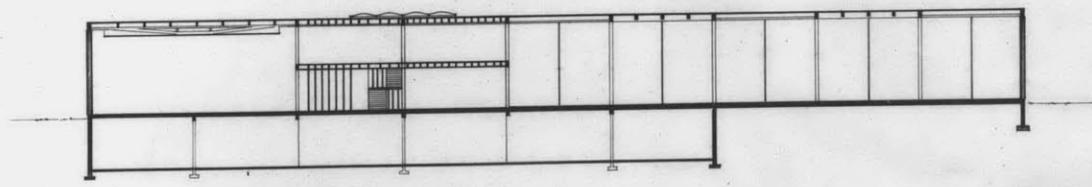
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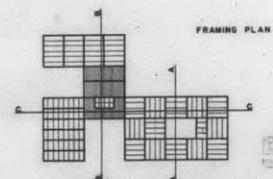
SECTION B.B.
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PLAN SECTION
WINDOW DETAILS
SCALE 1/8" = 1'-0"
3/4" = 1'-0"



SECTION C.C.
SCALE 1/8" = 1'-0"



FRAMING PLAN

5
AN ART CENTER FOR THE
CAMBRIDGE ART ASSOCIATION
BY
FRANK O. GEHRY, ARCHITECT

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