A Report On
A CENTER OF ARCHITECTURAL CRAFTS FOR METROPOLITAN BOSTON

by

Gordon Bunshaft

Submitted in Partial Fulfillment of the Requirements
For the Degree of
MASTER IN ARCHITECTURE

from the
Massachusetts Institute of Technology

School of Architecture               June 1935
# TABLE OF CONTENTS

ACKNOWLEDGEMENTS ........................................ Page A.

LETTER OF SUBMITTAL ....................................... Page B.

PROGRAM .................................................. Page 1.

PURPOSE .................................................. Page 4.


SITE ...................................................... Page 8.

MAP OF SITE ................................................ Page 9.

PARTI ..................................................... Page 10.

DISPOSITION OF THE ELEMENTS.

I. Lobby .................................................. Page 10.

II. Exhibition Hall ................................. Page 10.

III. Studios ........................................ Page 11.

IV. Shipping Division .............................. Page 13.

V. Administration Offices ........................ Page 13.


VII. Auditorium ...................................... Page 14.

VIII. School ........................................ Page 14.

IX. The Recreational Group ...................... Page 14.

DETAILED DESCRIPTION.

I. Lobby .................................................. Page 14.

II. Exhibition Hall ................................. Page 15.

III. Studios ........................................ Page 17.
DETAILED DESCRIPTION (cont.)

IV. Shipping Unit............................Page 19.
V. Administration Offices.......................Page 20.
VI. Outdoor Garden..............................Page 21.
VII. Auditorium................................Page 22.
VIII. School......................................Page 22.
IX. Recreational Group.
   a) Promenade..................................Page 24.
   b) Cafeteria....................................Page 24.
   d) Library......................................Page 25.
   g) Lounge.......................................Page 26.
   h) Gymnasium...................................Page 27.
   i) Outdoor Playfields.........................Page 27.

CONSTRUCTION....................................Page 28.

CONCLUSION........................................Page 28.
ACKNOWLEDGMENTS

The author desires to take this means of thanking those professors who have been more than liberal with their time and aid during the course of this Thesis. Of special assistance has been the advice of

Dean William Emerson
School of Architecture

Professor H. W. Gardner
School of Architecture

Professor L. B. Anderson
School of Architecture

Mr. S. B. Zisman
School of Architecture

Mr. E. N. Gelotte
School of Architecture

The author owes a special debt of gratitude to those craftsmen in Greater Boston who gave so generously of their knowledge in order to make this thesis possible and practical.
Dean William Emerson
Chairman of Thesis Committee
School of Architecture
Mass. Institute of Technology

Dear Sir:

As a partial fulfillment of the requirements for the Degree of Master in Architecture at the Massachusetts Institute of Technology I herewith submit this thesis entitled, "A Center of Architectural Crafts for Metropolitan Boston".

Respectfully,

Gordon Bunshaft
PROGRAM

A CENTER OF ARCHITECTURAL CRAFTS FOR METROPOLITAN BOSTON

It is proposed to erect a group of buildings which will serve as a center for the more important architectural crafts in Metropolitan Boston. The purposes of this center are briefly (1) to make the public conscious of these crafts, (2) to unite these crafts so that they will benefit by having combined facilities, (3) to make this a center for the teaching of these arts.

The center should be so located that it can be easily reached by the public, employees, and students. The shipping to the receiving department is an important part of the center so that it is desirable that the site be in close proximity to railroads and trucking facilities.

The center shall consist of the following elements:

I. Nine studios for the crafts which are as follows:
   1. Wrought Iron.
   2. Ceramics.
   3. Glass.
   4. Woodwork.
   5. Architectural Sculpture.
   7. Textiles.
   8. Printing.

   These studios shall contain all necessary services for efficient workability.
II. Ample exhibition space for historical objects, contemporary works of art executed in the studios and work created by students.

III. Shipping, receiving and storage space for the entire center.

IV. Power plant to provide heat and electricity for the group.

V. Office space serving the administration for each of the nine crafts and space for the general administration of the center.

VI. A school for 250 students. It is here that the student will receive theoretical training and as advancement is made the student will receive practical training through apprenticeship in the various studios. Theoretical courses will consist of Physics, Chemistry, History, Mechanical Drawing, Freehand Drawing, Color, Modelling, and the study of materials. There will be lecture halls, laboratories, drafting rooms, offices for professors and offices for the administration of the school, and a lecture hall for 250 students.

VII. A main lobby from which the public can circulate to various units.
VIII. An auditorium to seat 1000 people. It will be used by the public, the students, and the craftsmen.

IX. A recreational unit which shall contain;

1. A cafeteria to seat 400.
2. Two dining rooms for the faculty and executives.
3. Lounges.
4. Gymnasium with lockers, squash courts, etc.
5. A main library.

The recreational units should be easily accessible to the students as well as the craftsmen.

The group should be so planned that there is simple and direct circulation between the various elements.

There should be separate entrances for the public, students, and craftsmen; parking facilities.

In addition there should be toilets, lockers, first aid equipment in case of emergency, etc., all of which are needed to make a workable solution.
PURPOSE

The guild system of the Renaissance Period was an important factor in the development and maintenance of high standards of craftsmanship in Architecture. The guilds, being high competitive organizations and composed of men of unusual ability only, provided architects and builders with highly trained craftsmen. And the attendant honor and respect attached to being a guild member insured an exalted position for the arts and crafts with its obvious effect upon architecture.

Today, the picture has changed. The ordinary layman is not conscious of many of the existing crafts. Ambitious young individuals no longer pursue an unknown, underpaid career which offers no wide recognition. The time element, which was of no consideration in the days of highly developed guilds, has, in our present day life, forced the art of craftsmanship into a position of mediocrity. There is however a certain individual group of men who have courage to pursue the high standard of individualism in art. We are fortunate indeed that a great many men of this group live in this city. I feel that a cyclic movement is on its way toward the appreciation of fine objects and is now slowly appearing. Even today,
with our simplicity in design, we are aware of fine craftsmanship and realize the value of various textures. The ever increasing number of artisan shops in Boston, displaying works of the minor crafts again give evidence of popular interest. All this evidence points to the necessity for some solution which will not only satisfy the aesthetically aware, but also stimulate and awaken those, who as yet, are unappreciative of fine handiwork.

How are we to answer this problem? We are aware of the fact that although some interest may be stimulated by means of radio and the newspaper, people are more convinced when they can see. My solution is to unite the important crafts into one large group which will be easily accessible to the public and will be so arranged that there will be efficient cooperation among the crafts. Attractive displays of the rough and finished objects, inviting and informative lectures by prominent craftsmen will be means of stimulating public interest.

There are other reasons for such a center of architectural crafts besides those of making the public conscious of the fine art of building. These are briefly:

(1) The combination of one of each of the best studios in Metropolitan Boston and of the principal building crafts into a single unit with facilities common to all
of them will greatly minimize the expenses of operation. (2) The fact that these various crafts are in one group would enable the artisans to get various points of view on the use of different materials and fresh attitudes of design. This will undoubtedly lead to the creation of new forms, new objects, and new tools. (3) Since all the crafts are together the architect and the client have their problems simplified in studying the details as they are worked out in the process of manufacture. (4) Lastly, having a school connected with the studios solves the problem of the ever desirable intricate connection between the practical and theoretical form of study.

The above mentioned reasons justify without question the existing need for a center of architectural crafts in Boston.

**ELEMENTS OF THE CENTER**

The principal elements of the center consist of:-

1. Studios of the various crafts.
2. Services for the above.
3. Exhibition space and lobbies.
5. An Auditorium.
7. Offices and Administration.
The question of selecting crafts most important to architecture was answered by consultation with architects and with the cooperation of the many studios in Metropolitan Boston. The studios chosen to be represented are:

1. Wrought Iron.
2. Ceramics.
3. Glass.
5. Woodwork.
7. Textiles.
   a. Prints.
   b. Weaving.
8. Printing.

Service units for the studios will be:

a. Shipping, receiving, and storage.
b. Power plant for heat, light and power.
c. Lockers, toilets, etc., for employees.

Since the nine studios and the school will exhibit their work conjunctively, together with historical objects, a large exhibition hall will be necessary for this purpose. So many different types of exhibits necessitate a freedom to expand or contract the area needed to make interesting settings.

The school, I decided, should contain the various elements which, accommodating 250 students, would function simply and easily in teaching the theoretical and practical courses.
An auditorium, seating 1000 people, has been so chosen in order to seat public, students, and some craftsmen at one time. Lectures presenting the latest ideas in the particular fields and given by the outstanding figures of the particular crafts will be open to the public, students and craft members in this auditorium.

For the diversion of the executives, students and craftsmen I have placed a large and comfortable recreational unit in the group. It will contain a library, a large cafeteria, dining halls, lounges, gymnasium, squash courts and possibly an outdoor play field.

SITE

Since the center has certain fixed requirements a particular site with certain features is necessary. It must have:-

1. A close connection with a railroad and a trucking route so that raw materials can be received and finished products shipped.

2. Large flat area to simplify planning of the many elements.

3. A central location in Metropolitan Boston so that it may be easily reached by the public in general.
4. On one side an important avenue for a natural setting and simple public approach.

The site chosen in Cambridge in my opinion fulfills these requirements. The following map, a portion of Cambridge and Boston, is self explanatory.
PARTI

Certain conditions and requirements aided me in arriving at a "parti". Briefly these were:

(1) Conditions of the site; such as, the form, type of property and the roads by which it is enclosed.
(2) Orientation of the various elements composing the center.
(3) Relationship of studios, exhibition hall, school, and other units, one to the other.

DISPOSITION OF THE ELEMENTS

I. LOBBY

The main public entrance is placed in relation to the turn-around on Memorial Drive facing Charles River. Cars, from either direction, may approach the main entrance. One enters the public lobby from which one finds on the left the Exhibition Hall, directly ahead the Outdoor Exhibits and on the right the Auditorium. Also, leading from the lobby one may easily reach the school and general administration offices.

II. EXHIBITION HALL

The Exhibition Hall which is reached directly from the public lobby, faces on and is parallel to the Charles River. At the opposite end, a covered patio serves as
an exit and through which, one may reach the studios. The mezzanines, which are part of the studio group, may be reached from the hall. From these mezzanines the public may view craftsmen at work thus making this a part of the exhibition.

**III. STUDIOS**

Disposition of the studio groups was influenced by the laws of orientation which meant placing the main axis of each studio east and west in order to obtain north light. Corridors placed north and south join the studios together with the exhibition hall on the south end and the shipping section on the north. Each studio is thus related both to the shipping or receiving section for its source of raw material and to the exhibition hall where the finished product may be temporarily placed.

Limited somewhat by area but still desiring to follow the laws of orientation I found it necessary to arrange the studios in groups of three. Since certain studios have facilities more common to them than others, this scheme worked out very well. The following arrangement of the groups were made.

**1st Group**

1. Wrought Iron.
2. Glass.
3. Ceramics.
They are placed in close connection with the power plant because of the large amount of heat and power necessary to all.

2d Group

2. Woodwork and Carving.
3. Stained Glass.

Close cooperation among these is very vital to operation, as for example in the case of church work, where each craft is an important finishing feature and dependent on one to the other for a harmonious whole.

3rd Group

1. Textiles (Prints, Weaving.
2. Printing, typography.

Although printing in the sense of typography does not relate to the manufacture of textiles, both use heavy machinery and are grouped to simplify floor construction.

Photography

Common to all studios and becoming more important in the field of art and crafts is the photographic studio. Placed at further end of the building but still accessible to the other studios this studio was planned to be away from heavy machinery and heat needed by the other crafts. Again, since very little in supplies is needed in comparison to the others there is no disadvantage to its location. Placed at the far end of the Exhibition
Hall the photographer can photograph all work before placed on exhibition.

IV. SHIPPING DIVISION

Facing directly on Vassar Street, the truck route, the shipping and receiving department also connect the studios. The employees entrance is also part of the shipping department. In this way the service corridor of the department serves a dual purpose. On the one hand as service for raw and finished products from the studios to the department and on the other as means of communication for the employees to the various elements in the building. An important railroad spur on Vassar Street is connected by a siding running parallel to the building bringing in materials and shipping the finished product from Boston to all parts of the country.

V. ADMINISTRATION OFFICES

These are placed in close connection with the lobby and easily accessible to the public and professional men. For purposes of control the offices are connected with the exhibition hall and employees entrance.

VI. OUTDOOR EXHIBITION GARDEN

Easily reached by the public directly from the lobby the exhibition garden is available to the students from the school, which is on the right. The administra-
tion offices together with a portion of the recreational unit overlook the garden from the other two sides.

VII. AUDITORIUM

With a seating capacity of 1000 people the auditorium placed in connection with the main lobby and the school is available to the public and students.

VIII. SCHOOL

The school unit has been placed at one end of the group so that it will be a quiet and undisturbed place for study. It is directly connected with the recreational unit through which students may circulate on their way to the studios.

The school is also directly connected to the auditorium and lobby. Students may easily circulate to all parts of the building and at the same time the school itself is secluded.

IX. THE RECREATIONAL GROUP

Convenient to the faculty, students and craftsmen, the recreational center has been placed away from any possible public circulation. Outdoor playgrounds have been added adjacent to the recreational group.

DETAILED DESCRIPTION

I. LOBBY.

The principal entrance to the center is reached
from Memorial Drive by automobile or on foot. Vehicles may enter the property and leave passengers at the terrace in front of the entrance. Cars can then be parked on the sunken parking area in front of the Exhibition Hall. This area has been sunken in order to avoid obstructing the view of the loggias which are part of the Exhibition Hall. The entrance, which is made through revolving doors eliminating vestibules, is treated above by a rich stained glass. From the terrace one enters the lobby, designed to be monumental in its proportions, the walls simply treated with rich textures. Directly ahead one sees the colorful garden with its outdoor exhibits and semi-formal planting. Within the lobby and closely related to it are found restrooms for men and women, a coatroom, information desk and a small sales shop.

II. EXHIBITION HALL.

The exhibition hall, which is reached to the left from the lobby, is treated with an interior colonnade. Between the columns are placed low display booths where exhibition cases and features are placed on display. Any possible monotony of the colonnade has been relieved by introducing, at intervals, exhibit areas for large features as part of the exhibition hall. Included in
this area are lounging seats which have been provided in alcoves where the public may rest and overlook the planting beyond. Opposite the alcoves are special exhibit rooms which in turn lead to the adjacent outdoor loggias containing exhibits.

Stairs are placed at regular intervals along the hall leading to a mezzanine level from which visitors may watch craftsmen at work. For one who wishes to inspect the work in detail, stairs have been provided connecting each floor of the individual studios to the mezzanine. Below the mezzanine corridor is the service corridor for raw and finished products and this corridor may also be used as a public circulating corridor in connection with the mezzanines, permitting public rotary circulation between the exhibition hall and the studios. This arrangement allows visitors to follow through to completion the design and manufacture of the objects exhibited.

Most of the two long walls of the museum are composed of glass brick permitting the entrance of a great deal of light into the hall. The amount of light is controlled by means of a secondary shutter wall which can be entirely opened, closed or even removed as it would be in case of exhibiting a large stained glass window.
when it would be placed directly against the glass brick. The hall has been made wide enough to permit many varieties of exhibition arrangements. The movable partition allows innumerable arrangements for exhibits. At the further end of the hall is a glass covered patio serving as an exit and in which is placed objects surrounded by planting for exhibition. The public may reach the photographic studio from the patio. Rest rooms for men and women may also be found leading off the patio. One entrance and one exit make simple control of the entire museum.

III. STUDIOS.

Research and study of studios in Boston pertaining to the architectural crafts that I have selected for my center conclusively showed that ample floor area was the primary requisition. Facilities that are common to all of them include drafting rooms, supervisor's office, a small library, lockers and toilets. There are however certain special requirements for each studio. For example, ceramics and glass studios require kilns for which heat is supplied by electricity from the power plant.

The stained glass studio requires a special room, glassed in on all four sides to permit the study of a stained glass window under any possible light condition.
These special requirements and those of the other studios have been taken care of in their own individual case. Since some of the studios require more area than others this problem was solved by adding another floor where it was necessary. Information of the required maximum floor space was obtained from experienced men in their particular craft, the maximum area being used in case of possible expansion.

In order to understand more fully the requirements as called for by each craft, that of the stained glass studio seems to be the best example to describe. The studio is two floors high, each floor having a working area of 6000 square feet with an additional third floor specially designed to be 40 ft. x 40 ft. and with a 25 ft. ceiling height enclosed entirely with the exception of its entrance, by glass brick. This permits, as mentioned before, the study of the stained glass window under all possible lighting conditions.

Raw materials are brought into the studio on the first floor by a service corridor in connection with the receiving department. On the opposite side of the studio another service corridor takes the finished product to the shipping department. Elevators and stairs have been provided at both ends of the studio to supply the crafts-
men with raw materials and means of vertical circulation to all floors thereby eliminating any possible cross-traffic and doubling back in the line of production. In close proximity to the studio is the drafting room with its library, files and vault. In order to insure the necessary quietness, the drafting rooms have been placed on the opposite side of the circulating corridor. Placed here also, are the supervisor's office for control, and lockers and toilets for men and women. This was so planned to provide ample light in the corridors, and to place the studio in a free position, unobstructed by rooms that are not continually being used.

The gravity system of production has been used in studios where possible, the product being finished on the first floor and taken to be shipped or exhibited.

IV. SHIPPING UNIT.

Composed of a single long building two floors high, the shipping unit facing on Vassar Street has its facade regularly interrupted by sections three floors high. All circulation from the shipping unit leads to the studios providing a direct, simple and efficient connection for raw material and the finished product. Trucks carrying raw materials arrive at specified sections along the building where the material is unloaded and is either
sent to the studios or to the storage loft above by means of stairs or elevators. The storage units project beyond the trucking platforms in order to permit the unloading of freight cars. An effort has been made to have the shipping unit work simply with a minimum of circulation on the part of employees.

Storage of raw products has been considered for each craft; for example, lumber in the woodworking studio is placed in kilns in the basement after which, when sufficiently dried, it is placed in adjacent storage bins. In the case of textiles, it is necessary to provide special storage bins in the basement of another storage unit for raw cotton and flax since they are highly inflammable. At one end of the shipping unit is found the employees entrance around which are offices for the superintendent as well as his workshop where all equipment for repairs of the building is kept.

V. ADMINISTRATION OFFICES.

Arranged in a unit two floors high the administration offices are placed on both sides of a central corridor. The offices are composed of ten groups, one group administering the affairs of each of the nine crafts; the tenth group is concerned with the affairs of the entire organization. A cooperative system is maintained
both in the matter of finances and teaching. Profits received from the sale of products and other sources are distributed according to the interests involved: The school and studio cooperating in teaching students the theory and practice of their chosen subjects. This system permits the staff of each group to work conjunctively in maintaining and developing the interests of the entire center. In connection with the administration offices a large director's office has been provided for meetings of the entire staff. Private directors' offices have been arranged in each group of the administration together with a large office for work space.

Stairs and toilet facilities for men and women complete the administration unit.

VI. OUTDOOR GARDEN.

A large outdoor garden on axis with the main lobby has been terraced to provide suitable means for exhibition purposes. Pools and fountains have been introduced for variety and design. Entrances to the garden may be made from the public lobby, administration offices, the cafeteria and dining rooms, and from the class rooms in the school. Simplicity and formality in design lend the desired effect.
VII. AUDITORIUM.

The auditorium, having its own lobby which connects with the main public lobby, is used by students, craftsmen, the staff and the public. Used primarily for illustrated lectures and movies, the auditorium is rectangular in form. A small circulating stair connects the backstage with the directors' offices permitting speakers and guests a private and convenient access to the auditorium.

VIII. SCHOOL.

The school is planned so that students may receive their theoretical training and with advancement move on to the studios for practical experience. I have not attempted to arrange a curriculum for the school but I have considered the courses that would be taught and classroom provisions for 250 students.

There are eight classrooms and six offices for instructors in the main wing of the school which is two floors high. Each classroom, seating 25 students, is placed on one side of a corridor permitting light on the other side as well as cross ventilation for the rooms. Class and lecture rooms have been orientated east and west for best light. The corridor, which is the main circulation of the school, connects the main public lobby
on one end and the recreational unit on the other. Leading off at right angles from the main corridor are two wings, two floors high, composed of specially lighted rooms oriented to receive north light. This unit consists on the first floor of two drafting rooms, two laboratories, for physics and chemistry, and two for the study of materials; on the second floor are found three modelling rooms and three freehand rooms. Each of these rooms is equipped with a studio system of exterior lighting, and accommodate 25 to 30 students. Four staircases for vertical circulation have been placed at strategic points to eliminate unnecessary steps.

The director's office has been placed on the second floor close to the entrance of the school below. In this location the director is away from the disturbance of student circulation and still accessible to the public, students and craftsmen. Toilets for men and women are found on both floors of the school together with lockers which have been recessed in the walls of the main corridor. A pleasant environment has been created on the exterior by gardens.
IX. RECREATIONAL GROUP.

As the center of relaxation and around which extra-curriculum activities will be maintained a recreational
group has been introduced between the school and studio group. Lounging rooms where students and craftsmen may discuss their problems have been located close to the gardens and dining rooms. Comfort and cheerfulness have been the chief characteristics which dictated the design in order to make this area an attractive feature.

This group is composed of the following units:

a. Promenade.
b. Cafeteria.
c. Two Dining Halls with Kitchen.
d. Library.
e. Two Seminar Rooms.
f. First Aid Room.
g. Lounge.
h. Gymnasium with lockers, squash courts.
i. Outdoor play field.

(a) Promenade.

This is a large open circulation from which one can get to all parts of the recreational group. It is connected with the lobby of the employees entrance so that the employees may reach it easily. The administration wing as well as the principal wing of the school is also in direct connection with the promenade. Seats have been provided for lounging and conversational purposes. Stairs from the promenade lead to the lockers in the basement or to the library and seminars on the second floor.

(b) Cafeteria.

It is very difficult to state accurately the number
of people connected with the center since the number of craftsmen in each studio vary from time to time. I have estimated that 1000 people would be about the number for which to provide necessary conveniences. The cafeteria, seating 400, would be open to two groups eating at different times. Some of the remaining number would probably bring their own lunches or eat in the dining halls. A lunch counter has been provided for quick lunches and a service counter for those who wish to eat their lunch at the tables at leisure. Below the cafeteria is the kitchen which also serves the two dining rooms through intermediate pantries. Opening off the cafeteria is the promenade on one side and the outdoor exhibition garden on the other. A dining terrace leading from the cafeteria is placed directly on the terrace.

(c) Dining Halls and Kitchen.

In addition to the cafeteria, two dining rooms have been arranged for the use of faculty members and for executives. These open on to the dining terrace and are serviced by the same pantries that service the cafeteria.

(d) Library.

Placed over the cafeteria on the second floor is the central library of the center used by the students and craftsmen. This library is in charge of all material
supplied to the smaller libraries of each studio. Clerestory light facing north has been provided and a pleasant outlook obtained of the outdoor garden by windows on the opposite wall. A ramp located near the school unit may be used by students to reach the library, while craftsmen may reach it by a separate set of stairs placed near the studio group.

(e) Seminar Rooms.

Two seminar rooms, each with a seating capacity of 200, are placed on the second floor adjoining the library. One is in close connection with the school and the other easily accessible to craftsmen. The rooms will be used for discussion and conference.

(f) First Aid Room.

With the great amount of machinery and the many systems of circulation there is always the danger of casualties when workers are present. I have provided a first aid room in a central position of the entire building and yet close to the entrance to take care of any possible accident.

(g) Lounge.

In connection with the recreation group and yet in a quiet location in the plan, the lounge overlooks a small, charming patio. I have purposely made this room
as large as the area permitted since many men undoubtedly like to relax and will feel more comfortable when there is no sensation of closeness.

(h) Gymnasium.

Lockers, showers, exercise rooms and squash courts, which comprise the gymnasium, have been placed in a far corner of the recreational group so that the athletic activities will not disturb those who may be conversing or playing games of concentration. The gymnasium is in close connection with the playfield and easily reached from the interior promenade. Lockers in the basement may be reached by stairs from the promenade and one may enter the gymnasium proper by means of another set of stairs, thereby controlling circulation. Access to the outdoor field may also be made from the gymnasium level. A small balcony for student spectators runs along one side of the gymnasium. For best light the gymnasium is given orientation to the north.

(i) Outdoor Playfields.

In that the selected site is large enough to permit the introduction of a play field I have taken advantage of this fact by arranging in this area a football field including a running track, several tennis courts and space for track events. I also thought that a bank
of seats on each of the two long sides would provide for spectators in case there were any important athletic events. Direct access for the athletes has been provided between the lockers and the field. There is accommodation for public parking along the long sides of the field close to the seating arrangement.

CONSTRUCTION

The entire plan has been considered from the point of view of simple construction of a steel column and lintel layout with reinforced concrete floors and walls. Cantilever construction has been introduced where special design was demanded, as in the case of the Exhibition Hall. Here by using this form of construction the steel girders were cut down considerably in size. Where large areas of light were required structural glass served this purpose as well as acting as a self supporting wall.

CONCLUSION

Bringing together, for the first time, the various crafts of the architectural profession proved to be a difficult problem. The numerous requirements of each craft, the precise system of production and the necessity of retaining simplicity in planning to provide efficient production proved to be an interesting study.
I have attempted to have the elevations a direct expression of the plan, each unit expressing in elevation as much as possible its function in the ensemble. I have kept the elevations as simple as possible allowing the relationship between solids and voids and the proportion of the masses to give me an interesting design. The only place that I have lavished any decorative effects is in the entrance treatment and I firmly believe that this is the only point that any richness should be found in this ensemble.