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1957

## SCHOOL BUILDING PLANNING SERIES

# A GUIDE FOR PLANNING SPECIALIZED DEPARTMENTS FOR HIGH SCHOOLS IN IOWA



## *BUSINESS EDUCATION*

Bulletin 127-4

Engineering Extension  
Iowa State College  
Ames, Iowa

## PREFACE

One of the major tasks of local boards of education is that of providing adequate housing for rapidly increasing school enrollments. Those responsible for school planning must be informed on trends in education and their implications for the future, and must use all help available in securing the most efficient plant in the light of community needs.

The American Association of School Administrators in their 27th year-book suggests the following:

Curriculum Adequacy — Does the building provide the space and facilities for the educational program needed by the children, youth, and adults of the community?

Safety and Well-being — Does the building provide a positive influence for improving the health and physical welfare of the pupils?

Interfunctional Coordination — Is the building so planned that the activity in each part may be coordinated harmoniously with related activities, without disturbing other activities of the school program?

Efficiency and Utility — Is the building so planned that the handling of materials and the passing of pupils, school staff, and the public are accomplished with a minimum of interference and a maximum of ease and satisfaction to all concerned?

Beauty — Is the building pleasing in appearance with simplicity and usefulness as the major objective?

Adaptability — Is the building so planned that it can be enlarged or rearranged internally to meet new educational demands at a minimum cost?

Economy — Is the building so planned that in original outlay and future operation the utmost in educational utility can be secured for every dollar spent?

The local board of education is the basic policy-making body for planning and promoting educational programs and buildings. The superintendent, as a trained educator, is the chief executive officer for the board, and assists by preparing recommendations based on careful research. The teachers, as the personnel closest to the pupils, can provide valuable recommendations based on training and experience. The architect, using the ideas of the board, superintendent, and teachers, provides the professional planning which results in a satisfactory and economical building.

This series of guides is the result of numerous inquiries regarding both educational and technical planning which have come to Iowa State College. Educational and architectural specialists have helped in the preparation of each publication of the series. It is hoped that these guides will provide a sound basis for local planning of specialized departments.

### SUGGESTED REFERENCES:

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Before You Build, Boicourt, Gerald W., State Department of Public Instruction, Des Moines, Iowa. 1953.

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SCHOOL BUILDING PLANNING SERIES

PART IV

A GUIDE FOR PLANNING

BUSINESS EDUCATION DEPARTMENTS

IN IOWA

by

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BULLETIN 127.4

1957

Engineering Extension  
Iowa State College  
Ames, Iowa

FOREWORD

This bulletin brings in condensed form current philosophy and information that are basic to planning business education departments for Iowa schools. It is designed to help in interpreting needs and specifications for an effective business education program that provides varied experiences. No two communities will have exactly the same problems in planning.

The current high cost of building and equipping necessitates very careful planning for economical and yet satisfactory facilities. The increasing High School enrollment must also be kept in mind.

The developing business education program presents somewhat different needs but not necessarily more spacious or costly ones. This points up the great importance of calling upon the business education teacher and the State supervisors in the State Department of Public Instruction for constructive help in the planning of business education departments in Iowa.

With this assistance, the architect can solve the physical needs of the school within budget limitations.

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## INTRODUCTION

Business education rooms should be attractive and equipped with suitable, well designed furniture and adequate fixtures. The department should be functional and the learning "going on" should be such that the pupil can adjust to an office or distributive occupation and to his role as a consumer in our economy.

### OBJECTIVES OF EDUCATION FOR BUSINESS

With the broadening of the concept of education for business, the term business or business education is the preferred modern term. The term commercial education or commercial is obsolete. Modern business education has a threefold purpose which includes:

A personal-use objective of providing certain business skills basic to all personal activities. These skills include the ability to typewrite, to keep personal records, to make intelligent choices as consumers of goods and services, and to learn about various business occupations.

A general education objective of providing basic business and economic information and understandings. A well-rounded business education program provides the opportunity for all pupils to develop an understanding of the activities of business and of the economic system of the nation.

A vocational objective of training for competence in business occupations. In this phase of education for business, provision is made for the qualified and interested pupil to acquire the skills, knowledge, and attitudes necessary for occupations in the office or the distributive areas.

### WHEN OFFERED

In the eighth and ninth grades, education for business is devoted largely to the objective for personal-use activities.

In the tenth, eleventh, and twelfth grades and in the junior college, education for business becomes more complex. It is further devoted to the objectives for general education and for vocational use.

### ADULT EDUCATION

In a complete program of adult education the basic and advanced skills which lead toward im-

provement of performance in given occupations and toward promotion are learned.

The need for more adult education became evident during World War II. This phase of business education will likely become more prominent in the future. There is also a noticeable demand for classes which offer business and economic information for general education purposes. Adult education generally provides for training in distributive occupations and office occupations.

### WHERE TO LOCATE THE DEPARTMENT

It is recommended that the business department be located on the first floor near the school's administrative offices. The advantage of this location is for the easier handling and maintenance of the equipment and for closer coordination of business education with some of the activities of the school administration.

### GENERAL CONSIDERATIONS

The planning of a business department should be determined largely by local community and pupil needs. However, consideration should be given to vocational preparation for positions in nearby cities if graduates seek employment in them.

The business teachers, school administrators, members of the board of education, key community members who are directly responsible for the planning of the department should be consulted. In addition the State Supervisor of Distributive Education and members of business education faculties in Iowa's teacher-training institutions may be consulted for information about present trends in business education. Planning an adequate department should be a combined responsibility.

A long-range (15 to 20 years) point of view in planning should be taken. In the long run, equipment for the business education department is less expensive if added and replaced in a systematic manner. A systematic replacement plan should be adopted to avoid large expenditures in any one year due to obsolescence or costly repairs. A definite amount should be budgeted each year for equipment. Experience has proved it economical to replace office machines every 8 to 10 years, manual typewriters every 3 to 5 years, and electric typewriters every 5 to 7 years. The amount of daily use equipment receives will help determine how often it should be replaced.

## ARCHITECTURAL SUGGESTIONS

Careful consideration should be given to planning a new building or remodeling present facilities.

Each room should be planned in terms of the major instructional program it will house, whether

this be typewriting, shorthand, secretarial and office practice, bookkeeping, distributive education, or courses in basic business. Specifications should be developed for each room, taking into consideration the number of pupil stations, aisle clearances, and desk or table dimensions.

It is important that the business department have more than one room and that these rooms be adjoining. It is advisable to have connecting doors between the typewriting and the shorthand rooms to make equipment readily available for teaching of transcription.

Schools having three or more business classrooms will find it desirable to have a separate classroom for an office practice or a secretarial practice room. If there is an office and conference room adjacent to a two room business department, it may be utilized for an office practice or secretarial practice room.

In deciding whether there should be one or more typewriting rooms in the larger high school, one should consider the number of rooms in the business education unit. If it is a six room department, two typewriting rooms are recommended. If there are five business classrooms, one typewriting room may be sufficient. If most of the non-business pupils elect typewriting, two typewriting rooms may be necessary.

Many new buildings are planned so that future additions can be made with relative ease. These planned additions should keep the business department as a unit, for the most efficient use of the teachers' time.

Adequate room facilities with adequate equipment are less expensive than the additional costs for instruction because of improperly planned facilities. The purchase of additional typewriting equipment which more fully utilizes the teachers' time is generally less expensive than the several sections of a class needed because of lack of equipment.

#### DIMENSIONS OF ROOMS

For the greatest economy and most effective teaching, a classroom should be large enough for at least 20 to 25 pupils in typewriting. Rooms used for typewriting, bookkeeping, and distributive education frequently are from 5 to 10 feet longer than those used as general classrooms.

A practical size of classroom is one providing around 900 square feet of floor area. This room is typically 24 feet by 38 feet. Such a room provides ample working stations for 25 pupils and teaching space. Should more than 25 working stations become necessary aisle clearance may be narrowed.

Business classrooms requiring special working stations for typewriting, bookkeeping, secretarial and office practice, and distributive education should have aisles of 30 to 36 inches. As previously mentioned, the initial provision for a wider aisle can later provide space for additional equipment.



Figure 1. Typewriting room showing adequate aisle clearance.

#### LIGHTING

Because of the necessity for close attention to details, rapid reading, and evening classes, the minimum lighting recommended is 40 foot-candles of high quality, evenly distributed throughout the room. Equally important to the amount and distribution of foot-candles is the elimination of glare.

In the typewriting room the pupils' desks should be arranged to have the light coming in over the right shoulder or toward the back of the pupil so the light will fall directly on the copy. Pupil desks or tables should be arranged in other classrooms so the windows will be at the left or back of the pupil.

#### ELECTRICAL OUTLETS

With the use of more electrical equipment provision should be made for adequate outlets not only for the present but also for the future. Outlets must be provided for typewriters and other office machines as well as for audio-visual equipment. Typewriting and machines rooms should be wired for the time when electric machines will be used almost exclusively.

Raised floor plugs, pedestal outlets mounted on the floor and connected to an under floor system of wiring, are preferable to the flush outlets which collect dirt and may become shorted within a year. Careful planning is also required to avoid placing a plug in the aisle.

It is advisable to have more electrical outlets brought through the floor than present needs indicate. These may be capped so there is only a slight rise in the floor. To uncap a needed outlet takes only a short time.

A master switch should be included in rooms with many electric machines. It is the surest way for the teacher to be certain all the machines are disconnected when the classroom is closed for the day.

If there is more than one entrance to a room, light switches should be near each door. Lights should be wired so those far from the windows can be turned on independently.

A number of outlets around the room should be provided for use with audio-visual instruction.

#### UTILITIES

Highly advisable in the typewriting, office, and secretarial practice rooms are a wash sink providing hot and cold running water, soap container, and paper towel holder. Duplication equipment necessitates washing facilities, which are provided for by a sink.

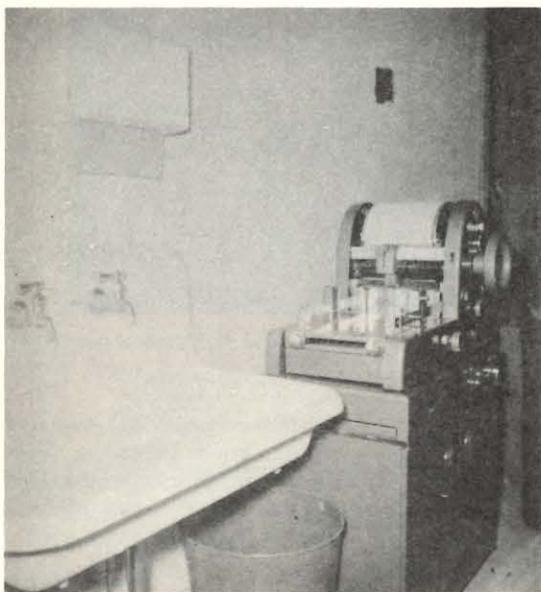


Figure 2. Clean-up facilities near a duplicating machine.

A clock with a second sweep hand placed above the chalkboard in the front of the room is recommended for the typewriting room so pupils may time themselves in practice work when they are not in a scheduled class.

#### Telephone

In a school with a substantial work-experience program, telephone facilities should be provided in the business education office so necessary contacts can be made with the stores and offices of the community.

#### STORAGE SPACE

##### In Rooms

Each room should be provided with adequate storage space. In addition to filing cabinets for the personal use of teachers, cupboards for teaching projects and materials should be available.

##### In Desks and Tables

Business educators are in disagreement about closed storage space in desks and tables. Many prefer open storage sections attached to the sides of individual desks or open storage under chair seats. Local preference should determine the installation.

#### ACOUSTICS

In those classrooms where noise is a problem acoustical treatment of the ceiling and walls should be provided.

#### GLASS PARTITIONS

Clear glass sections separating typewriting and general business education classrooms are condemned by many business teachers, yet there appears to be merit in this kind of an arrangement between the typewriting and the office or secretarial practice room. If there is a departmental office, it could well have a clear glass partition 4 feet from the floor between it and the typewriting room to enable the instructor to supervise the typewriting room when pupils are practicing outside an organized class.

#### FLOORS

Varicolored floors — black, gray, red, and blue — are advisable in the duplicating area. Ink and ditto spots will disappear.

#### COLOR

Cheerful and attractive colors tend to inspire a feeling of confidence in up-to-date class rooms. Effective color combinations can lessen eye strain which so often contributes to physical and emotional fatigue. The proper selection of color and paint is important.

The desks and other furniture should be a light color to prevent glare. Dark desk tops provide too much contrast with working papers. Natural wood mat finishes are especially good.

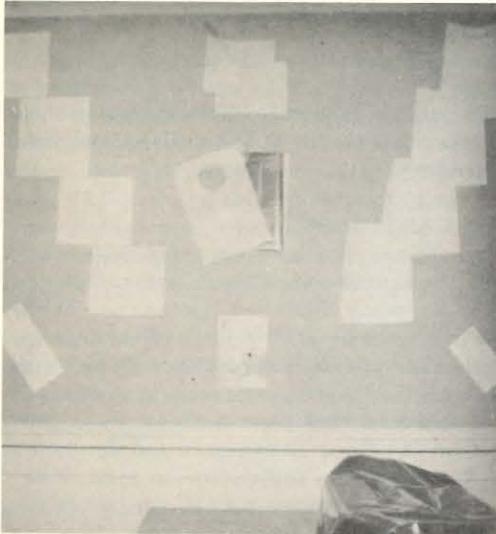
#### AUXILIARY NEEDS

##### Chalkboards

Adequate chalkboard space should be provided as determined by the major type of instruction to be offered in a classroom. For bookkeeping,

business arithmetic, and shorthand more space is required than for other business education rooms. Nested chalkboards may be used. Two of these could be used for bookkeeping purposes — one ruled as a journal and the other as a ledger. One could be ruled with lines for shorthand demonstration purposes and the last one could be a cork board for bulletin display.

Movable graph clips which may be used for charts, and other display material should be placed over the chalkboards.



#### Bulletin Boards and Peg Boards

Much bulletin boards space is needed in rooms devoted to basic business, business law, distributive education, typewriting, and office and secretarial practice. The bulletin boards in plain sight of all pupils should be placed at the same height as the chalkboard, near the doorway, or may be at the back of the room.

Bulletin boards are recommended for every business classroom, but the amount provided should vary with major type of instruction in the room.

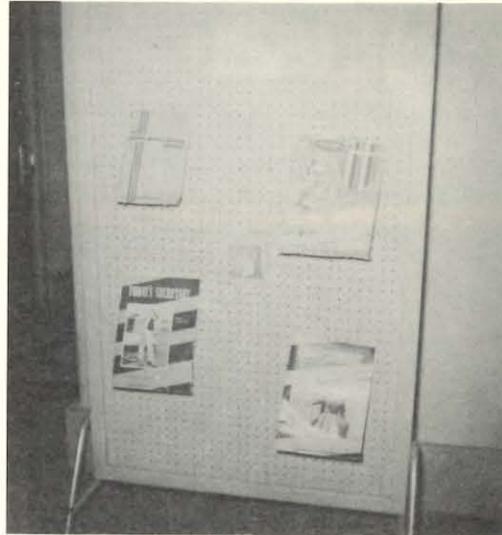


Figure 3. Above are two types of bulletin boards. At the left is a cork board and at right a peg board. Both have many uses in a classroom.

Peg boards are especially recommended for use by teachers of distributive education. If there is adequate space, peg boards provide excellent display area in the corridor.

A bulletin board panel outside the classroom door may be used for display of departmental work and for announcements.

#### Visual Projection Equipment

In classes of a general business education nature and in distributive education where many

films, filmstrips, and other visual aids are used, provision for light control should be made. Adequate electrical outlets for projection equipment should be provided for each classroom. Suitable projection screens, wall or portable, are also needed.

#### General Equipment

If no office conference room is provided for the teachers, each business education classroom must have a teacher's desk and chair. If an office is provided, a table and chair in the classroom is adequate.

### TEACHING ROOMS NEEDED

#### TYPEWRITING

Single work stations are recommended in the typewriting room. Many kinds of desks and chairs are available, and the choice the school makes will largely be determined by the school officials in consultation with the business teacher and by the finances available.

A solid, flat top, typewriting desk to be used with adjustable chairs is preferred. The chair can be adjusted for varying pupil needs.

For senior high schools, the typewriting desks should be 29" to 30" high. In the ninth grade, the desks should be 27" to 29" high. Probably 10 to 15 percent of the desks should be adjustable for height. The stationary desks should be provided in varying heights.

Typewriting teachers need a teaching demonstration stand. Several kinds are available on the market.



Figure 4. Two types of teaching demonstration stands. The stand at left is adjustable in height.

Typewriters with open keyboards should be used. Elite size type should be provided.

The typewriting department should have some electric machines to familiarize the pupils with

their use. The number needed will depend on the occupational demands of the community.

The following are drawings of the square footage requirements for typewriting working stations 3, pp 7 & 8.

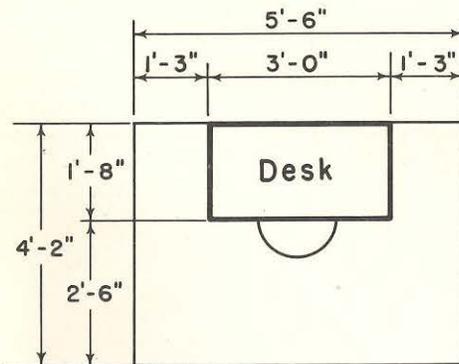


Figure 5. Floor space requirements for a single station desk.

total width — 66" total length — 50"  
area total — 22.93 sq. ft.

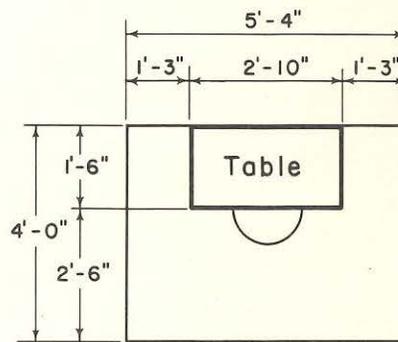


Figure 6. Floor space requirements for a single station table.

total width — 64" total length — 48"  
area total — 21.33 sq. ft.

The clearance and floor space requirements for calculating machines is the same as for the typewriting table stations.

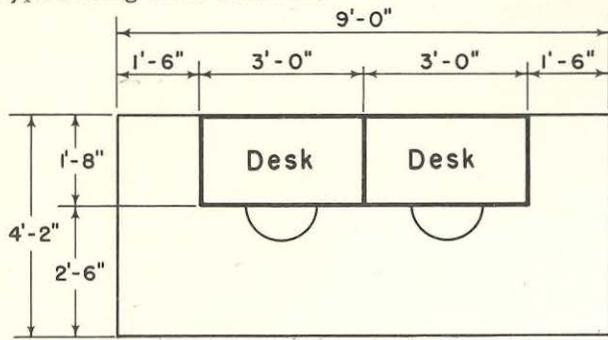


Figure 7. Floor space requirements for a double station with two desks.

total width — 108" total length — 50"  
area total — 37½ sq. ft.

#### OFFICE AND SECRETARIAL PRACTICE

Training in the operation of the most widely used office machines and equipment is essential for vocational preparation. It is advisable to have a variety of makes, rather than have all machines from one manufacturer.

Duplicating machines are essential. The most frequently used machines are the liquid duplicator and the mimeograph. Full-visible adding-listing



Figure 9. A variety of equipment is shown above.

#### DISTRIBUTIVE EDUCATION

Training for distributive occupations is rapidly becoming an essential part of business education. Greater emphasis will be placed on this area of instruction in towns where adequate work-experience stations are available.

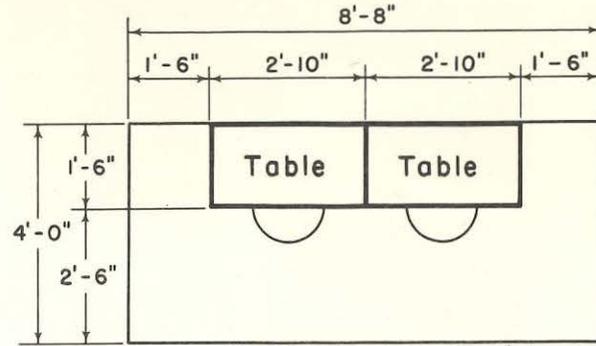


Figure 8. Floor space requirements for a double station with two tables.

total width — 104" total length — 48"  
area total — 34.66 sq. ft.

machines, key driven, crank driven, and ten key calculators, typewriters, and transcription machines are necessary for adequate training. Voice-recording machines are also necessary for office training. If this room is a separate classroom, typewriters are necessary.

Filing equipment should be available, particularly in those departments teaching for a vocational objective.



Tables at which two or three pupils can be seated are recommended. These tables can be arranged for group conference teaching and learning in distributive education. A magazine rack should be provided for the needed publications.



Figure 10. One of the many possible arrangements of trapezoidal tables. At right above and below the tables may be arranged for group conference teaching.



Figure 11. A magazine rack for publications used in the classroom.

This room should be provided with ample storage space, since much display equipment and supplies are required. A separate room adjacent to the classroom is recommended.

A mock store front window which opens from the classroom and can be seen by all pupils and visitors to the school is considered a necessity by distributive education teachers.



Figure 12. A mock store front which is used by classes in distributive education.

This classroom is more flexible. Business classes other than distributive education or typewriting, shorthand transcription, secretarial and office practice can be taught in it. Classes from other departments can also be taught in this room.

#### BOOKKEEPING, BASIC BUSINESS, AND SHORTHAND

Desks and chairs for bookkeeping, shorthand, and basic business classes should allow for adequate working space, have a flat desk top with smooth writing surface. Desks should be larger than for typewriting, preferably 24" x 36". Adjustability is generally not considered a necessary item for this furniture.

Typewriters must be available to shorthand pupils for transcription. The typewriting room or the office practice room can be used for transcription by careful scheduling.

Pupils' supplies and materials can be stored in drawers or in lockers. If storage space in the classroom is necessary, a permanent and secure cabinet or cupboard is better.

#### OFFICE-CONFERENCE

The business education program, particularly the vocational, involves activities which require the semi-privacy of an office conference room in which the teacher can counsel and still give some

degree of supervision to the activities in the adjoining classroom. Clear glass partitions as previously recommended can be used.

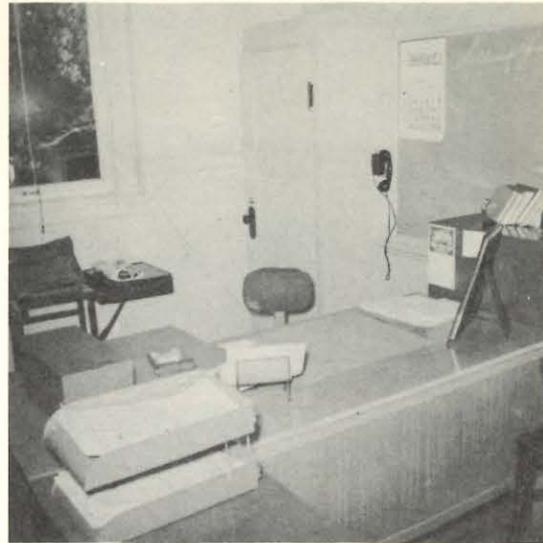


Figure 13. An office-conference room.

The equipment required for this room is a teacher's desk and chair, a filing cabinet, book and reference cases, and chairs for the conferees.

#### MISCELLANEOUS SUPPLIES AND EQUIPMENT

Many essential miscellaneous items frequently neglected include:

- 1) copyholders
- 2) typewriter brushes and cleaning fluid
- 3) paper cutters and scissors
- 4) staplers and staples
- 5) abridged and unabridged dictionaries
- 6) file folders and labels
- 7) card files
- 8) blank cards
- 9) rulers
- 10) work baskets or trays
- 11) pens, pencils, colored pencils
- 12) ink
- 13) carbon paper
- 14) paper clips and rubber bands (various sizes)
- 15) thumb tacks
- 16) mucilage
- 17) blotters
- 18) calendars
- 19) paper weights
- 20) letter openers
- 21) stationery, letterheads, envelopes, second sheets, shorthand pads, and scratch pads
- 22) invoices, statements, contracts, and other business forms
- 23) envelope sealers
- 24) stamp pads
- 25) rubber stamps
- 26) dating stamps
- 27) time stamps
- 28) stamp affixers
- 29) postal scales
- 30) numbering machine
- 31) hand cleanser fluids — especially in the machines room

This plan below for a typewriting with office practice room, if used only for typewriting, can accommodate 24 to 30 machines with relative ease.

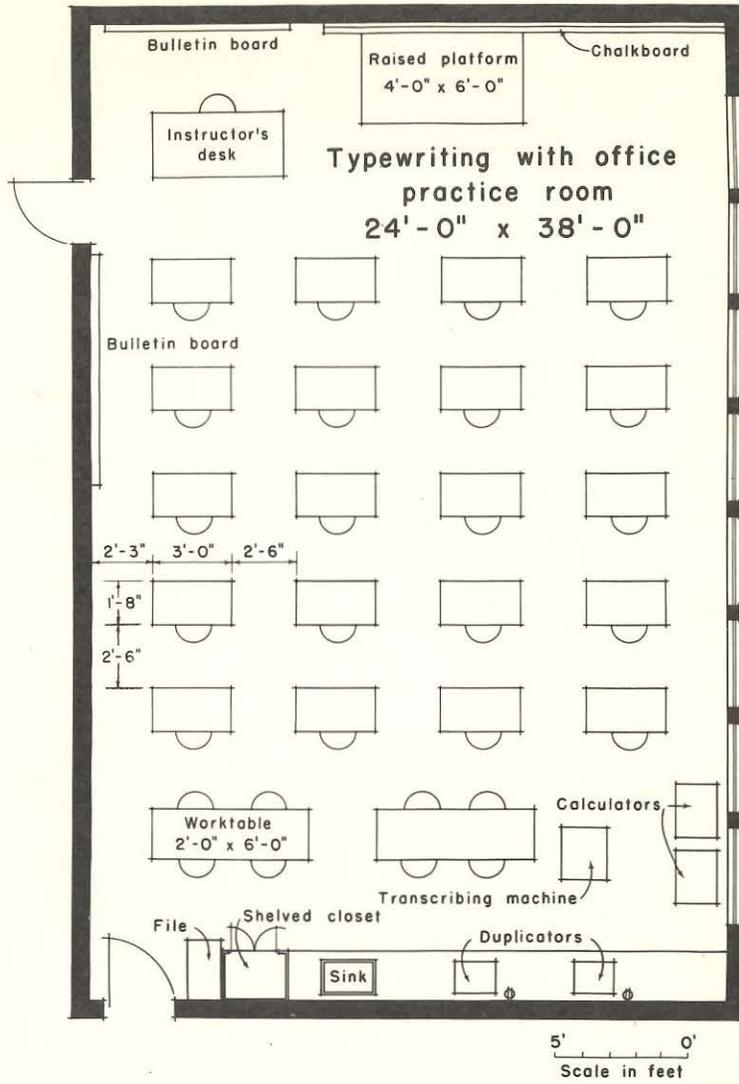


Figure 14. Suggested floor plan for a combination typewriting and office and/or secretarial practice room.

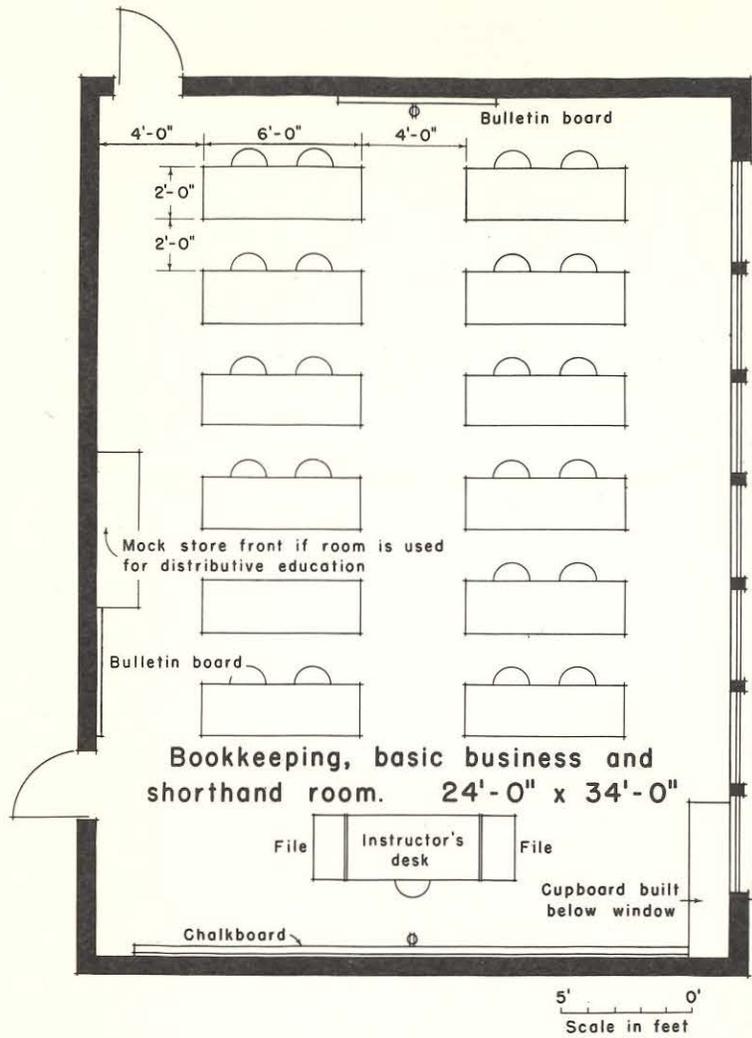


Figure 15. Suggested floor plan for a combination bookkeeping, basic business and shorthand room.

BUSINESS EDUCATION UNIT  
(Suggested Plan)

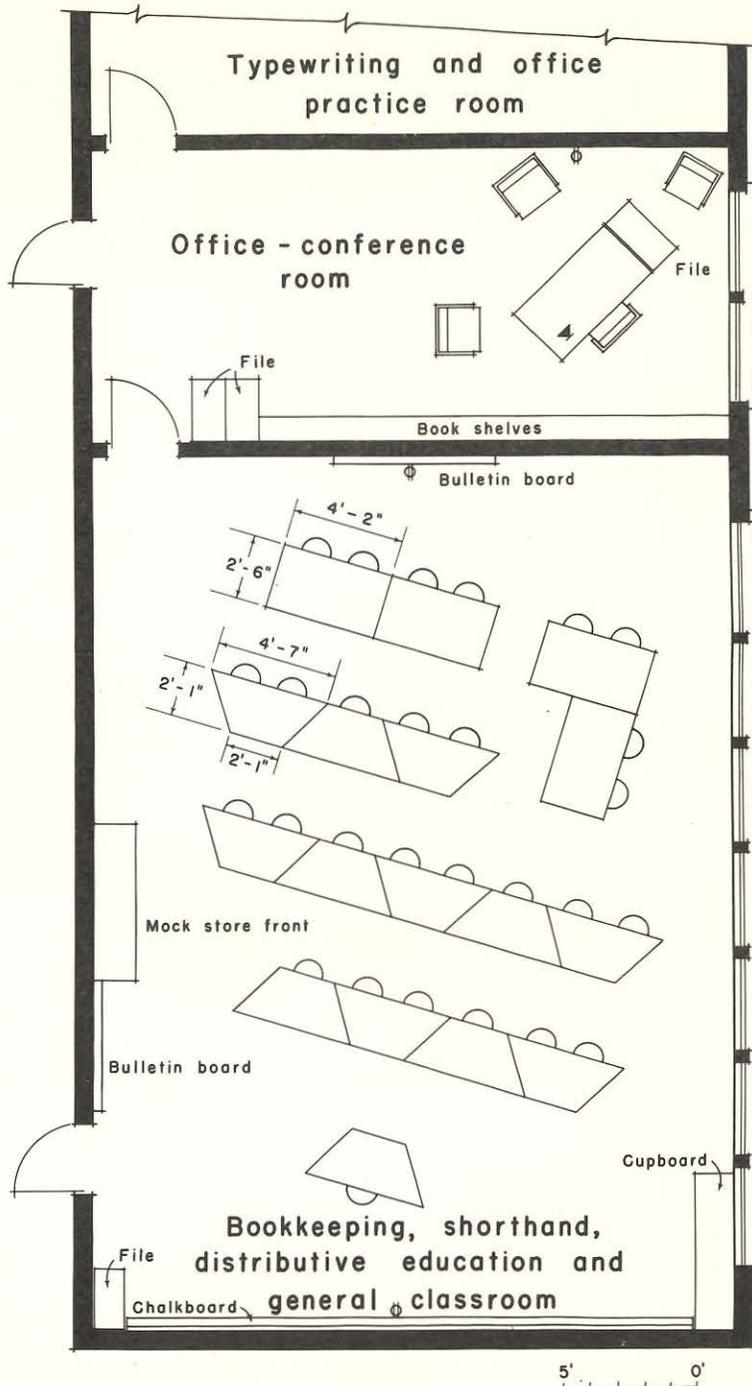


Figure 16. Suggested floor plan of a business education unit.



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