CENTRAL STORAGE FOR TENANTS

Its Use and Operation.

U.S. PUBLIC HOUSING ADMINISTRATION

HOUSING AND HOME FINANCE AGENCY
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>NUMBER OF FAMILIES USING STORAGE</td>
<td>1</td>
</tr>
<tr>
<td>UNIT STORAGE VS. CENTRAL STORAGE</td>
<td>3</td>
</tr>
<tr>
<td>Tenant Requests for Additional Unit Storage</td>
<td>3</td>
</tr>
<tr>
<td>Unit Storage Space Required to Reduce Central Storage Needs</td>
<td>3</td>
</tr>
<tr>
<td>ARTICLES PERMITTED STORAGE AND ARTICLES TENANTS WANT STORED</td>
<td>4</td>
</tr>
<tr>
<td>EXISTING CENTRAL STORAGE AREA AND LAYOUT</td>
<td>5</td>
</tr>
<tr>
<td>Area and Layout</td>
<td>5</td>
</tr>
<tr>
<td>Storage Compartments or Lockers</td>
<td>5</td>
</tr>
<tr>
<td>Storage Area Recommendations</td>
<td>6</td>
</tr>
<tr>
<td>Solid and Wire Mesh Front &quot;Walls&quot;</td>
<td>7</td>
</tr>
<tr>
<td>Location and Distance to Storage Areas from Maintenance Buildings and Units</td>
<td>7</td>
</tr>
<tr>
<td>OPERATION AND MAINTENANCE</td>
<td>8</td>
</tr>
<tr>
<td>Limitations and Methods Used to Reduce the Number of Articles to be Stored</td>
<td>8</td>
</tr>
<tr>
<td>Access, Locking and Unlocking</td>
<td>10</td>
</tr>
<tr>
<td>Office Records and Labeling</td>
<td>12</td>
</tr>
<tr>
<td>Packing and Hauling</td>
<td>12</td>
</tr>
<tr>
<td>Operation and Maintenance Functions and Time Requirements</td>
<td>12</td>
</tr>
<tr>
<td>MANAGERS' RECOMMENDATIONS ON CENTRAL STORAGE PROVISION</td>
<td>13</td>
</tr>
<tr>
<td>PERAMBULATOR, BICYCLE, AND VEHICULAR TOY STORAGE</td>
<td>14</td>
</tr>
<tr>
<td>GENERAL RECOMMENDATIONS</td>
<td>14</td>
</tr>
</tbody>
</table>
CENTRAL STORAGE FOR TENANTS - ITS USE AND OPERATION

A. INTRODUCTION

A preliminary study of 9 projects in which central storage space for tenants is provided revealed the following major problems reported by tenants:

1. Restriction on the quantity of articles and the necessary restrictions on the types of articles that can be stored in central storage areas, resulting in unused articles in units for which there is no storage space;

2. Access to central storage too infrequent for tenant need and in some instances the removal of articles only at the time of leaving projects;

3. Storage areas continuously unlocked; and,

4. No central storage provided for group house families with no permanent storage space in units.

In addition to the above tenant problems, a number of families reported they had nothing to store.

It was considered necessary to study intensively additional projects with central storage facilities to determine the extent of tenant need, space required; problems of layout creating operating difficulties and the most satisfactory and economical techniques of operation. Consequently, twenty-three additional projects with central storage were intensively surveyed increasing the total projects to thirty-two. Managers, maintenance staffs and two hundred and thirty-eight tenants were interviewed.

B. NUMBER OF FAMILIES USING STORAGE.

1. Reports on Use

Of the thirty-two projects surveyed with central storage facilities, fourteen were of the apartment type only; five were houses and flats only; and thirteen were combined unit types. The number of families provided for in planning central storage was considerably greater than the number actually using this storage. For instance, the percentage of units provided for and the families actually using storage show:

- apartment type units provided for..................100 percent
- families living in apartments using storage......... 60 percent
- houses and flats provided for.......................100 percent
- families living in houses and flats using storage... 40 percent

\[1\] Excludes houses and flats in three projects of combined unit types not provided with central storage.
In two-apartment type unit projects only fifteen to twenty percent of the families use central storage.

It should be noted that this study included only projects with central storage. The great majority of group house projects not included in the study are not provided with these facilities since these units were supplied with more unit storage than were apartments. However, previous surveys show there is some need for central storage by group house families where none is provided, since present unit storage in most units is inadequate. However, rather than construct new central storage for existing group houses, it is advisable to add storage, even though limited, to existing units, whenever layout permits.

2. Reports on Use by Tenants

Forty percent of families living in apartments do not use central storage. Twenty-five percent state they have nothing to store and the remaining fifteen percent were dissatisfied, chiefly because of loss and breakage of articles and operating difficulties. Sixty percent of families in houses and flats do not use central storage. Forty percent report no surplus to store and the remaining twenty percent were dissatisfied, with the exception of a few who had moved to larger units and no longer required central storage.

Consequently, in planning for central storage space it can be assumed that twenty-five percent of the families in apartments and forty percent of the families living in houses and flats will have no surplus. Those dissatisfied families will use central storage if it is satisfactorily planned and operated.

The dissatisfactions reported by those tenants who need storage but were not using it were: infrequency of accessibility; preference for lockers with tenant-owned keys for safety of articles and use of storage as needed; lack of cleanliness; storage areas unlocked; difficulties in making arrangements with management offices; and breakage of articles stored. In addition to the dissatisfaction by those tenants who had discontinued use, tenants using storage reported similar dissatisfactions.

3. Number of Tenants Requiring Storage in Existing and Future Projects

Based on the above findings approximately seventy-five percent of tenants in apartments and sixty percent of tenants in houses will require space for infrequently used articles either in units or in central storage areas, providing the latter are satisfactory both in layout and in operation.
C. UNIT STORAGE VS. CENTRAL STORAGE

1. Tenant Requests for Additional Unit Storage

The majority of tenants interviewed who used central storage required more unit storage space for articles frequently used and space for articles that could not be stored in central storage due to necessary limitations on upholstered articles, mattresses, etc. Tenants also reported a strong preference for unit storage due principally to problems of accessibility, breakage and loss of articles. The survey showed the more unit storage available, the less the use of central storage, even for articles infrequently used. For instance, of forty-three tenants with a reasonably adequate amount of unit storage and a number of which had utility rooms, only one used central storage.

Additional unit storage would not only reduce the amount of central storage required but the required frequency of access by tenants, since the necessary central storage provided could be used only for articles infrequently used. The reduction of central storage reduces project operating cost, since the locking and unlocking of storage by maintenance staffs whenever tenants require access, require considerable time.

2. Unit Storage Space Required to Reduce Central Storage Needs

General storage space for future group houses should be not less than thirty square feet for two-person occupancy; with an additional five square feet for each additional occupant or forty square feet for four persons and fifty square feet for six persons. (See Minimum Physical Requirements and Criteria, November, 1945.) Families of more than six persons should be limited to the fifty square feet for six-person occupancy, since findings show families of more than six members have no more and frequently not as much to store as families of six. It should be noted that the above are minimum standards only. To further reduce central storage and to more adequately meet tenant requirements, four- and six-person families should be provided with fifty and sixty square feet respectively. Based on the findings, the thirty square feet for two-person families appears sufficient.

General storage space for future apartment units should approximate at least one-third of that for group houses, since adequate basement space is available for permanent storage. One-half the storage space for group houses would be more desirable. Such unit storage will relieve central storage of frequently used articles and will greatly add to tenant convenience. It should be noted that household operations and required articles for such operations are identical in apartments to those in houses, except for those houses with individual yards where gardening equipment may be required and where complete laundry facilities are provided and tenants own machines. However, with basement space available in apartment buildings, economies
can be realized by the use of this space. That the added amount of unit storage space in apartments will reduce the number of families in apartments requiring central storage is doubtful.

In some existing group housed, unit storage space can be somewhat increased. Since families report the necessity of storing frequently used articles in central storage, such as cases of canned foods and other articles, such additions are desirable to relieve central storage. Central storage areas, where they do not exist, are not recommended for group houses.

D. ARTICLES PERMITTED STORAGE AND ARTICLES TENANTS WANT STORED

Detailed information was obtained for twenty-three projects on articles permitted storage and tenant requirements.

1. What Can be Stored

In eleven projects storage space is permitted for all household furniture of wood or metal, including infant furniture, out-of-season toys, trunks, stoves, refrigerators, garden tools, out-of-use household utensils, fruit jars and canning equipment. In nine of the remaining projects, cartons and boxes containing frequently used articles by tenants are also permitted. In some of these, upholstered furniture is included and in three of the nine, tenants were allowed to store practically all household articles, which included many useless articles. Strict or complete limitations were imposed on the remaining three projects since two permitted trunks only and trunks and out-of-season toys; and in one project no storage was permitted due to project operating and upkeep cost.

2. Articles Tenants Store and Want Stored

In the eleven projects where necessary limitations are imposed to reduce infestation, fire hazards, and permit reasonable sanitation in the storage area, the most commonly stored articles were: furniture items including baby cribs, high chairs, tables, bedsteads, cabinets and kitchen tables. Less commonly stored were: stoves, refrigerators, trunks, temporarily unused baby carriages, out-of-season toys and canning equipment.

In those projects where more flexibility on types of articles was permitted the most commonly stored articles in addition to those listed in the above eleven projects with limited storage were: out-of-repair upholstered furniture, mattresses, out-of-season clothing, cartons of infrequently used articles and numerous apparently useless tenant possessions. It was estimated by some project managers that thirty percent of the total articles stored were useless. Based on the survey this did not appear to be too high an estimate. Also, tenants in one-third of the projects surveyed are reported to have left articles in storage when leaving projects, which is further evidence that tenants store articles which they do not value and which they do not intend to reuse.
Tenants reports show that in projects where storage is limited to two or three articles that many units are over-burdened with articles that should be stored in central storage. Reports show also where storage is unrestricted that out-of-order upholstered furniture is the most common article tenants want to store but are unable to store where articles must be restricted.

E. EXISTING CENTRAL STORAGE - AREA LAYOUT AND LOCATION

1. Area and Layout

Areas designed for tenant storage vary greatly - from eight to seventy-two square feet per tenant. The seventy-two square feet area was an individual storage compartment and was not considered too large by the manager of the project. Compartments in other projects approximated eighteen and forty square feet each. All of the projects studied, with the exception of three, were provided with undivided storage. But few managers limit storage area per tenant in undivided storage but permit tenants whatever storage is available. Consequently, storage areas used by tenants varied from eight to sixty square feet but articles were included which could be eliminated through instructions to tenants and specific tenant program (see pp. 11 and 13).

a. Storage compartments or lockers. The three projects with compartment areas included one with temporarily constructed compartments to determine their advantages over undivided storage, particularly economy in operation and satisfaction to tenants. In this project both the manager and tenants considered compartments much more desirable than undivided storage. In the three projects with compartments both managers and tenants expressed a strong preference for them. Also, a large number of dissatisfied tenants in other projects wanted lockers or compartments. Compartments varied in the three projects from eighteen to seventy-two square feet, and the managers of the projects considered each area satisfactory. However, based on the articles families reported stored, the seventy-two square foot area appeared unnecessarily large.

Compartments have these advantages over undivided storage: (1) tenants can assume complete responsibility for cleaning, care and order; (2) tenants can assume responsibility for locking and unlocking since compartments can be so arranged that tenants can have freedom of access without maintenance service for locking and unlocking; and, (3) increased frequency of access permits tenants the storage of temporarily unused articles which overcrowd units due to inadequate unit storage.
Unless storage partitions are of masonry, articles stored should be restricted as to fire hazard and infestation possibility. Tenants using compartments should assume full responsibility for the safety of articles, cleaning and care and the transfer of articles to and from units; and the lease should contain a clause absolving management of such responsibilities.

b. Storage area recommendations

A careful analysis of the number of families using storage, the number and type of articles stored and areas such articles occupy show the following requirements:

1. For future projects

(a) No central storage area to be provided for houses and flats due to increased unit storage (see p. 4).

(b) Storage area to be provided for seventy-five percent of apartment unit families, since twenty-five percent have no surplus to store.

(c) Compartments of not less than forty square feet each to be provided for fifty percent of the families using storage, and undivided storage based on an average not less than eight square feet for each tenant to be provided for the remaining twenty-five percent who have but one, two or three articles to store.

(d) Compartments to be so located that tenants can lock and unlock storage without the services of a project employee to permit access to the area.

(e) Central storage area for a 500-unit apartment project based on the above requires 22.0 square feet for each of the five hundred units.

It is recognized that with a portion of central storage divided into compartments and the remainder undivided, some tenant difficulties may arise. However, based on the savings that can be realized and the strong preferences by tenants for compartments they are considered highly desirable for those tenants who must store a number of articles. Where space and funds are available compartments may be substituted for undivided storage.
(2) **For existing projects**

Where existing storage areas are so located as to permit direct access by tenants without the necessity of management unlocking a portion of the building to permit tenant access, compartments are recommended for all families storing a number of articles, area for each to approximate forty square feet.

2. **Solid and Wire Mesh Front Walls**

Where wire mesh front walls are provided for storage areas, the accumulation of dust and dirt creates considerable tenant dissatisfaction. Such lack of protection also requires additional project upkeep. All of the managers operating storage areas with wire front walls, recommended solid walls. Problems of petty thievery and disorder also result in projects where wire mesh front walls are but six feet high, permitting children to enter.

The findings of the study show solid front walls to be essential, and all but one manager of the entire number reporting, recommended this construction for the protection of stored articles from dirt, dust and fire. Some recommended metal doors.

In both future and existing projects both compartments and undivided storage should be provided with solid front walls.

3. **Location and Distance to Storage Areas from Maintenance Buildings and Units**

In all apartment type projects, storage is obviously located in apartment basements. Storage located in buildings occupied by tenants is more convenient for tenants but not usually so satisfactory for management. However, the majority of managers reported that it was more desirable to provide storage areas near the maintenance building, to prevent tenants from carrying articles long distances. Furthermore, the cost of trucking tenant storage to and from units to storage areas is reported to be costly to tenants. In some projects storage areas are scattered for the convenience of tenants with as few as thirteen families using one area. In others, area is concentrated providing for as many as one hundred and fifty families.

In projects with both houses and apartment buildings, row house families use apartment basements. In projects with houses and flats only, space in basements used for other purposes, such as group laundries, is used for storage. In a few instances, separate buildings have been provided, servicing from twenty-five to sixty-five families each.
Of the projects surveyed, the distance from storage areas to the maintenance office varies from two hundred to approximately one thousand five-hundred feet, which is time-consuming for maintenance; however, it is not practicable to locate large storage areas near the maintenance building when basement space is already provided in apartment buildings, and only four of the thirty-two managers recommended it.

In future projects individual storage compartments should be located in the same buildings as the families using them. Undivided storage, which will be infrequently used, since families with few articles only, will use it, should preferably be located as near the maintenance building as is practicable.

F. OPERATION AND MAINTENANCE

1. Limitations and Methods used to Reduce the Number of Articles to be Stored

As previously stated the limitations by projects on articles that can be stored vary greatly. In two projects, storage is limited to one trunk per family; in a few others, to trunks and infant furniture; and in a few projects, practically no limitations are required. Limitations are necessary for the protection of tenant possessions as well as project property.

About half the managers recommend that articles be restricted to those in good condition which will be used later. Several believe that unless restrictions are rigid, tenants will be encouraged to keep useless items.

a. Undesirable techniques in use to discourage tenant use of storage. In a few projects, the following techniques are used to discourage the use of storage:

1. New tenants are not advised that central storage is available unless tenants request it;

2. Articles are not permitted storage permanently; and

3. New tenants are asked to dispose of all household furniture and equipment that cannot be used in units.

The policy of not informing new tenants of central storage is not recommended; neither are the policies of informing tenants that storage is temporary or of requiring tenants to permanently dispose of articles that cannot be accommodated in units, since a public housing project may not be a permanent home and the articles may be urgently needed later. This is particularly true of stoves, refrigerators and furniture.
b. Need for tenant guidance. Findings of this study show tenants' need for information and guidance before and after moving into the project in order to relieve central storage and simplify its operation.

Before entering the project:

Tenants should be informed of the central storage space permitted; the types of articles that can be stored; and, the regulations governing the use of central storage.

Suggestions should be given to tenants on evaluating articles expected to be stored to determine their worth and possible future use; and, the possibility of storing these articles elsewhere that cannot be accommodated in central storage and have no present use in units. The value of articles possessed by the tenant can only be determined by the tenant himself, but articles apparently worthless should not occupy central storage space and require project operating cost. The disposal of useless articles and the storage of articles eventually needed with friends, which is a common tenant practice before entering projects, would relieve both unit and central storage spaces.

After entering the project:

Tenants should be required to re-evaluate articles in storage every six months to reconsider the future use of those articles and the possibilities for temporary or permanent disposition.

Methods of procedure used in projects where tenants are now given assistance with some of these problems, are constructive, and are recommended for consideration by other projects.

In one project, a tenant organization assists project families who are in need of furnishings and household equipment. They request old discarded furniture from tenants who do not need it, repair it, and give or lend it to needy families. The manager's advice to new tenants includes a statement on the work of this organization which has resulted, in a number of cases, in furnishings being loaned and the elimination of the storage of temporarily out-of-use furniture.

A few projects have furniture repair shops for tenant use, either in or adjacent to the projects. In some of these shops, tenants are given instruction in repairing old furniture. This is invaluable in relieving both units and central storage space of out-of-use articles due to repair needs.

In another project a semi-annual "open house" of all storage rooms is held and tenants are requested to take stock of stored items to decide whether they should be disposed of or continued in storage.
Of twenty-two managers reporting on the need for tenant guidance, fourteen stated that instruction of tenants would improve central storage use by preventing the storage of unnecessary articles. Based on the findings of the entire study it is evident that guidance to tenants is highly desirable and that it should be sufficiently thorough to assist tenants in determining the value and possible future use of articles they expect to store.

c. Recommendations on limitations and tenant instructions

(1) Limitations. For undivided storage, limitations on stored articles should be based principally on fire hazards and sanitation, particularly infestation.

For individual compartments, limitations should depend upon the type of construction of the compartments.

(2) Tenant instructions. Complete tenant instructions should be provided tenants before entering the project on the amount of storage space, limitations on articles and storage regulations.

Six months after entering the projects tenants should be required to re-evaluate stored articles to reconsider the future use of articles stored.

2. Access, Locking and Unlocking

a. Frequency of access. In nearly half the projects access was permitted either five or six days weekly and any time during the eight-hour day. In a few hours are limited to specific hours during the day, and in a few, to one day or one-half day weekly. In one project, storage access may be obtained one-half hour weekly for each storage room and in one, access is permitted only at the time of entering and leaving the project. The purpose of limiting access to the time tenants enter and leave projects was to discourage storage and save maintenance time.

Except where tenant keys open individual compartments or where storage remains unlocked, management controls access to storage.

b. Methods used for permitting access.

The following methods are used to permit access:

(1) Tenants must request permission for access from the management office one-half or one day in advance of use and a specific hour is given the tenant. Management notifies the janitor, or other maintenance employee, who meets the tenant at the storage area at the hour determined. Where tenants are required to submit filled-in forms to the management office for storage entrance, advance notice is also required.
Tenants must obtain permission for access from management, but not in advance, and tenants then locate and notify the janitor, or the office notifies the janitor.

Tenants must request access from the management office, but not in advance of the half day or full day each week the storage areas are accessible and management notifies the janitor.

Tenants contact directly the maintenance office to obtain access or contact the janitor of the building which the tenants occupy. No management office clearance or advance notice is necessary.

Each storage area is provided one-half hour service each week and tenants requiring accessibility are at the area at the specified hour.

In a few projects, forms provided by management are required to be filled in and signed in duplicate by tenants, specifying the article, the date and hour of removal; one copy is sent to the management office, the other is retained by the tenant. The janitor notes on the form the condition of the article removed. This arrangement eliminates tenant uncertainty of articles left in storage.

c. Locking and unlocking. All projects with undivided storage with the exception of those never locked, are locked and unlocked by management. Janitors usually conduct this service, but in a few projects this function has been delegated to other maintenance employees. In most projects the maintenance employee remains at the storage area during the period of tenant use.

d. Recommendations. The provision of individual compartments eliminates all problems of access, locking and unlocking.

Access to central storage should be limited to a specific half hour of a specific day each week for each storage area.

Tenants should notify the management office the day proceeding the day of requested access in order that management may identify the tenant as one who has articles stored and also notify the janitor of the request.

Forms provided by management specifying articles withdrawn, date and hour of withdrawal should be filled in and signed by the tenant, in duplicate, one copy to be filed in the management office and one to be retained by the tenant.
3. **Office Records and Labeling**

Various methods are used for recording stored articles. Satisfactory ones can be very simple. One type of form only is required to identify the tenant, to record the articles originally stored and for occasional and final withdrawal of articles. Such a form includes the tenant's name and address, items to be stored or withdrawn, date of storage or withdrawals and a statement on condition of articles stored, filled in by management. One copy signed by the tenant is retained in the management office. The one form for original storage and later withdrawals provides a complete record of all items each tenant initially stored and a record of all withdrawals and additions to storage.

Tenants should be required to label stored articles even though there is a storage record in the management office, since labeling eliminates time waste in locating stored articles. Uniform labels also eliminate time in locating articles and labels or tags should be furnished by the management.

4. **Packing and Hauling**

A few requirements are in use on packing, such as the crating of furniture and the packing of small articles permitted storage. The latter should be packed to permit convenience in cleaning and in keeping storage orderly. The crating of furniture is not recommended.

In most projects, management requires tenants to assume full responsibility for transporting articles to and from units to storage areas. In a few, tenants are permitted to use the project's hand trucks and in one project, management provides the services of the project truck and a maintenance attendant.

The manager states that the arrangement prevents damage to such project property as walls and door frames.

Tenant responsibility for transporting tenants' possessions to and from storage areas is recommended. However, there may be instances when project assistance is necessary.

5. **Operation and Maintenance Functions and Time Requirements**

a. **Functions.** Cleaning, disinfection, locking and unlocking, are the three major management functions.

Projects vary in their frequency of cleaning storage areas. In some, cleaning is required only once annually; in others, two times annually and four times annually. The location of the storage areas and the type of construction of front walls affect
the need for cleaning. Disorder is reported to be a problem in a number of projects, since individual responsibility cannot be fixed.

The frequency of disinfestation varies from two months to six months periods. The policy tried in a few projects, requiring tenants to disinfest articles before moving them to storage was unsuccessful and abandoned.

Where compartments are provided or to be provided, order, cleaning and disinfestation are the responsibility of the individual tenant. Based on the findings, undivided storage cleaning is required at least two times annually, and more frequently if the location or construction of the area, or both, require it. Disinfestation also is required at least two times annually and more frequently, if needed.

b. Operating and maintenance time. Service time required for central storage depends upon the number of storage areas, their location and project limitations on articles stored. Time estimates only could be obtained. These varied from two to nine hours per month per one hundred tenants using storage, in the majority of the projects. In some projects, estimates were as high as thirty hours per month for one hundred tenants. Where access to storage was limited to specific days and hours weekly, considerable time savings were reported.

Project operating time can be reduced by: (1) providing individual compartments; (2) limiting storage access to specific hours and days per week; and (3) restricting articles to be stored to those requiring infrequent disinfestation.

G. MANAGERS' RECOMMENDATIONS ON CENTRAL STORAGE PROVISION

In twenty-eight of the thirty-two projects surveyed, managers made recommendations on central storage provision.

Of the thirteen managers of apartment type units reporting, ten recommended some central storage; of the four managers of projects with houses and flats reporting, all recommended some central storage; and of the eleven projects with combined types of units, nine recommended it - seven for all types of units and two for apartments only. Practically all managers recommended additional unit storage. It should be noted that these recommendations are on existing units, many of which need additional unit storage.

Recommendations were also obtained from twenty-four managers of projects with no central storage. Eleven recommended central storage, but the majority recommended storage for apartments only. Most of the managers recommending storage recommended it for a limited number of units only. Those managers recommending storage for houses and flats either recommended a small building at the end of each row of houses or other areas easily accessible to tenants.
H. PERAMBULATOR, BICYCLE AND VEHICULAR TOY STORAGE

Separate storage space for perambulator and vehicular storage is provided in apartment buildings, but not in the projects surveyed with houses and flats only. Average space per family for this type of storage varies from twelve to seventeen square feet per unit for all units in the project. This amount is reported as adequate. The use of a lock rail, which exists in most projects, to insure the safety of the articles stored, also appears satisfactory.

In some projects, perambulator rooms are located in the basement of each apartment building, for the use of the tenants in the building; in others, one room is provided for every two and even three buildings. Distance and lack of easy accessibility to perambulator rooms create a problem for tenants and are not conducive to current use.

The presence of bicycles and wheel toys in already crowded houses and flats indicates a need for this storage for houses as well as apartments. Damage to unit door casings from bicycles, vehicular toys and baby carriages can be reduced by the provision of this storage outside units.

The findings of this study show storage space should be provided for perambulators, bicycles and wheel toys for apartments, houses and flats. Fifteen square feet per unit is adequate. For apartment buildings, space should be provided in each building as near the entrance as is practicable and directly accessible to outside grade or by a ramp. For houses and flats, spaces should be provided as near each group of houses as is practicable.

I. GENERAL RECOMMENDATIONS

1. Unit Storage Provision

   a. From thirty to fifty square feet of general storage area to be provided in future houses and flats and one-third the amount in apartment units to facilitate household operation, reduce the need for the amount of central storage space, and types of articles to be stored.

2. Central Storage Provision

   For future projects, storage space to be provided for apartments only. For existing projects, storage space to be provided for apartments only, except where it now exists for houses and flats, but additional unit storage to be provided for the latter in all units where layout permits such additions.

3. Central Storage Area and Layout

   a. For future projects (apartments only)

      (1) Storage area to be provided for seventy-five percent of the families in the project
(2) Compartments or lockers of at least forty square feet each to be provided for fifty percent of the families and undivided storage, based on an average of not less than eight square feet per tenant to be provided for the remaining twenty-five percent, who have but one, two or three articles to store. Where space and funds are available, all compartments should be provided instead of undivided storage.

Based on the above, storage area may be computed on the basis of twenty-two square feet for each unit in the project.

(3) Compartments to be so located that tenants can unlock and lock storage without the services of a project employee.

b. For existing projects

Where existing undivided storage areas are so located as to permit direct access by tenants to lock and unlock storage, compartments to be provided for all families storing a number of articles; area to be as above, if existing space permits.

c. In both future and existing projects, both compartments and undivided storage to be provided with solid front wall.

4. Location

In future projects, compartments to be located in the same building as the families using them; undivided storage to be preferably located near the maintenance building.

5. Operation and Maintenance

a. For undivided storage limitations on articles to be stored to be based principally on fire hazard and sanitation, especially infestation; for compartments, limitations to be based on the type of construction of the compartment.

b. Complete tenant instructions to be provided tenants before entering the project on the amount of storage space, limitations on articles and storage regulations.

c. Management to control access to undivided storage and lock and unlock for each period of use; tenants to assume this responsibility for compartments.

Access to be limited to a specific half hour (or sufficient time to meet the need where large storage areas are provided) of a specific day each week for each storage area; tenants to notify management of intended use one day in advance.
d. Forms to be provided by management for undivided storage to be filled in by tenants, listing all articles stored and withdrawn, dates of storage and withdrawals, name and address of tenant, and filed in the management office; tenants to be required to label all articles with labels furnished by management.

e. Tenants to assume the responsibility for transporting articles to be stored to and from units.

f. In undivided storage management to assume responsibility for order, cleaning, and disinfection; storage areas to be cleaned and disinfected at least two times annually and more frequently, if required.

In compartments, tenants to assume responsibility for order, cleaning, and disinfection.

6. Perambulator, Bicycle and Vehicular Toy Storage

To be provided in future projects for houses and flats as well as apartments. Area to approximate fifteen square feet per unit.

Space for apartment buildings to be located in each building as near the entrance hall as is practicable and directly accessible to outside grade or by ramp.

For houses and flats, space to be provided as near each group of houses as is practicable with access as for apartments.