

LOCAL HOUSING AUTHORITY

MANAGEMENT HANDBOOK

PART V
MAINTENANCE

SECTION 1-

THE
MAINTENANCE
PROGRAM

HOUSING AND HOME FINANCE AGENCY

PUBLIC HOUSING ADMINISTRATION

THE MAINTENANCE PROGRAM

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1. INTRODUCTION

- a. The importance of proper and timely maintenance of all components of any physical plant cannot be overemphasized. With today's high cost of both labor and material no one can afford to operate on a "break-down" basis. The old adage that "a stitch in time saves nine" was never more true than today, especially as applied to plant maintenance. Private industry, where competition is keen and profits must be made, knows this and plans for its various maintenance activities accordingly. It employs competent personnel, conducts training, uses proper materials, tools, and equipment, keeps its procedures and methods up to date, requires adequate supervision and inspection, insists on preventive maintenance, and keeps simple but adequate records.
- b. Obtaining the maximum useful life of all components of a public housing project at the least cost is most important. Not only are costs up as in private industry but, in addition, public housing operating income, derived solely from the rents of low-income families, has not kept pace. This "squeeze" may become even more acute with the emphasis on housing the elderly who often are able to pay only the minimum rent.
- c. Maintenance in public housing, or in private operations, is the process of keeping the physical plant from declining in usefulness and appearance. By "plant" is meant the grounds, buildings, and equipment, both movable and stationary. Each of these in turn is subdivided into its component elements, thus grounds include lawns, roads, walks, and other paved areas, trees and plants, fences, play areas, drainage facilities, etc.; buildings include roofs, attic spaces, gutters and downspouts, walls, porches, foundations, crawl spaces, windows, floors, doors, etc.; and equipment covers all items such as utility lines and piping, heating and plumbing equipment, pumps and tanks, ranges and refrigerators, incinerators, tools, etc.

2. PURPOSE

Maintenance is performed to accomplish several purposes. One is to keep all the plant elements in condition so that they fulfill their intended functions during their life expectancies. Another is to remove upon detection any condition that may lead to an injury or accident to project occupants or employees. A third and equally important purpose is to forestall breakdowns by regular inspections and to repair or replace a plant element before it involves other adjacent elements in a breakdown. The last is usually known as preventive maintenance.

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A well maintained project which presents a satisfactory appearance will be more acceptable to adjacent property owners and to the community in general.

3. STANDARDS

The standards of maintenance should be consistent with the objective of providing satisfactory, decent, safe, and sanitary housing at economical cost and of having the buildings and grounds present an attractive and well-groomed appearance. All maintenance services and preventive maintenance programs should be rendered on a regular and scheduled basis. Systematic and prudent maintenance keeps the housing in a good state of repair, appreciably extends the useful life, and results in lower overall costs. It also makes for tenant satisfaction and, by example, elicits their cooperation.

4. CLASSIFICATION

a. Maintenance of federally aided public housing may be divided into the following categories:

- (1) Ordinary or recurring maintenance, including minor repairs and replacements
- (2) Preventive maintenance
- (3) Extraordinary maintenance, replacements, betterments, and additions
- (4) Tenant maintenance

The first three are maintenance conducted by regular project personnel, by personnel hired by the project on a temporary basis (force account), by Local Authority central maintenance crews, or by contractors. The fourth relates to participation in maintenance by the tenants and is dependent in extent on local conditions and the Local Authority's policy.

b. A further discussion of each of the categories follows:

- (1) Ordinary Maintenance, Minor Repairs, and Replacements

Ordinary maintenance is the routine work of keeping the buildings, grounds, and equipment in such condition that they may be utilized continually at their original or designed capacities and efficiencies for their intended purposes. Minor repair is the restoration of the facility

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to a condition substantially equivalent to its original capacity by overhaul. Minor replacement is the substitution of component parts of equipment to extend its useful life. A portion of this type of maintenance may result from breakdown, inasmuch as the work of restoration or replacement is performed when called for by actual breakage or wear carried to a degree that makes the equipment nonoperational.

(2) Preventive Maintenance

Preventive maintenance based on regular methodical inspections is the action taken to avoid or minimize the need for more costly measures at some future time. It is performed prior to actual breakdown thereby preventing costly replacements and, in the case of operating equipment, lengthy shutdown. Effective preventive maintenance reduces long-range operating costs and lessens the necessity for major restorations and improvements. Preventive maintenance may include, among other things:

- (a) Scheduled checking, adjusting, cleaning, and lubricating of heating and other equipment
- (b) Periodic checking of ranges, hot water heaters, space heaters, and refrigerators for mechanical performance and for needed replacement of worn or broken parts
- (c) Inspecting, servicing, and replacing worn parts in all other electro-mechanical equipment
- (d) Checking and repairing plumbing fixtures
- (e) Termite and vermin inspection and elimination
- (f) Periodic painting
- (g) Inspecting and patching of roofs, gutters, downspouts, and flashing
- (h) Inspecting of underground facilities for corrosion and control thereof
- (i) Inspecting for condensation, dampness, and fungus in wood and for rust in iron components and taking appropriate corrective measures
- (j) Patching of paved surfaces
- (k) Correcting erosion and drainage deficiencies

(Cont'd)

(l) Fertilizing and cultivating planted areas

(m) Installing protective barriers, where needed, for planted areas and trees

(3) Nonroutine Maintenance

This includes extraordinary maintenance, replacement of equipment, betterments, and additions. This type of maintenance consists of major repairs and rehabilitation involving substantial expenditures which usually are needed only at relatively long intervals of time, or are caused by such occurrences as hurricane, fire, obsolescence and, in some instances, neglect. Such items as replacement of roofs, replacement of corroded gas and heating lines, and rehabilitation of grounds cover would be considered in this category. Usually, this work will be done either by contract or by force account since having it done by regular maintenance personnel might adversely affect routine maintenance.

(4) Tenant Maintenance

Experience has shown that a well-administered tenant maintenance program in low-rent housing projects can be successful. It usually includes but is not limited to the maintenance of lawns adjacent to units, interior painting, and care of common halls and stairways. Having tenants assume responsibility for any such items of maintenance within their capabilities produces a good psychological effect; utilization of tenant maintenance can also result in substantial savings in operating costs to the Local Authority. It is important that tenant maintenance be performed under the guidance and supervision of the maintenance staff.

5. PLANNED MAINTENANCE

Maintenance is best performed according to a plan, the essential components of which are:

- a. A system for receiving and recording tenant requests and transmitting them promptly to the maintenance section.
- b. In the case of a project having more than one maintenance man, assignment of the work to the best qualified man.

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- c. A storeroom where sufficient materials, supplies, and tools are kept on hand so that maintenance personnel can promptly draw the items required to accomplish their assignments, and where a record of items issued may be kept.
- d. Supervisory spot checks to ascertain the quality and quantity of work performed.
- e. A plan for the rehabilitation of vacated units so they may be readied for occupancy without undue loss of time.
- f. A schedule, established by experience, for preventive maintenance inspections and work on equipment such as pumps, motors, tanks, electrical transformers, and the like.
- g. A simple record to indicate when servicing of large pieces of equipment was performed, and what parts were changed. This record serves as a basis for determining when the complete item will require replacement.
- h. An annual physical inspection of each dwelling unit, every building, and all facilities with the recording of any item therein requiring repair or replacement. This will include such items as plaster repairs, painting, termite inspection, roof deterioration, overloading of electric circuits, corrosion control, floors, windows and screens, ranges, refrigerators, fixtures and equipment, just to mention a few. A followup procedure should be established to see that all required repairs and replacements have been carried out within a reasonable period of time.
- i. Keeping of an adequate record of repairs performed in each unit such as painting, installation of new window shades, refrigerator and gas range parts replacement, etc.
- j. Periodic inspection of the extent of compliance by tenants with their maintenance and housekeeping responsibilities.
- k. Periodic conferences between Executive Director or project manager and maintenance personnel to discuss maintenance standards and future plans, and to ascertain whether current work is progressing as planned.
- l. Training programs for maintenance personnel in new methods and work simplification, including attendance at "Shirt Sleeve" Clinics, trade schools, etc.

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6. RECORDS

The number and extent of the records kept will, in large measure, be influenced by the size of the Local Authority--the larger the Local Authority the greater the need for detail in and number of records. Given below are the basic records that are recommended for any but the smallest Local Authorities. The specimen record forms exhibited in this Section are merely suggestions and will need to be modified to suit particular needs of a Local Authority.

a. Work Order

This form, a sample of which is shown as Exhibit 1, is used most effectively if prepared in duplicate, printed on a white and a colored paper to distinguish the two copies, and padded so that both copies are filled out simultaneously by use of carbon paper. A work order is filled out in the office following a tenant complaint or the discovery of the need for any repair work. It gives the location, the nature of the work to be done, the date, the serial number of the order, and, in cases of work in a dwelling unit, the tenant's name. Although the exhibited specimen form does not so indicate, some Local Authorities may want to include the time the work was started and completed.

The original of the work order generally is given to the workman assigned to do the job, while the copy is retained in the office. If the materials are issued by anyone other than the workman, they are recorded on the office copy; otherwise the workman fills them in after completion. He also adds to or corrects the description of the job if necessary, and obtains the tenant's signature when applicable.

On return of the completed work order the project manager decides whether any charges should be placed against the tenant. When routine work is chargeable to the tenant, it is best to have standard charges for the more common items; e.g. replacement of a window pane would be so much, cleaning out a drain so much, and replacing the screen wire in a door so much. It is recommended that such charges be based on the average actual costs involved and be periodically reviewed.

The office copy is used to check on the backlog of work, and upon completion of the work it is filed in numerical order. The original copy may be filed in the tenant's folder or a separate classification folder.

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b. Inspection Records

These could be forms printed on stiff paper listing the elements to be inspected periodically in the project. Forms are usually provided for each unit inspection, for each building inspection, and for the grounds inspection. These records serve as basic tools in the overall preventive maintenance program. Any items found needing correction would be noted thereon in the course of the inspection and, if not fixed on the spot, would provide the information for issuing work orders. The duplicate of the work order then serves as a followup check to see that the work has been accomplished within a reasonable time. (See Exhibits 2, 3, and 4.)

c. Equipment Inspection Record

This is best printed on a card. Each piece of major equipment, such as pumps, motors, fans, power mowers, automotive equipment, etc., would have its own card. When the number of cards is large, stenciling a number on the equipment corresponding to the card number simplifies identification. All inspection, maintenance, and repair data are entered on the card. It may be advisable to enter costs of overhauls, including that done by outside repairmen. Periodic checking of cards allows scheduling of inspection at the frequency determined to be necessary for each piece of equipment. Thus electrical transformers will generally not need inspection more than once a year, whereas a condensate return pump or a motorized valve will need at least a monthly check during the heating season. (See Exhibit 5.)

d. Paint Record

This form also can be printed on cards and filed either by unit number or in the tenant folder. It provides a permanent record of interior painting in units, whether performed by the tenant with project furnished paint or by the maintenance force. (See Exhibit 6.)

7. NEW PROJECTS

In addition to keeping current records on all projects, it is advisable to employ the head maintenance man for a new project before construction is completed so that he may observe operating tests, learn pipe and valve locations and other details, and become familiar with the physical aspects of the project while all the elements are still open to view and under the care of the contractor. Among other things it is recommended that he:

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- a. Obtain copies of "as-built" drawings whereon are marked any changes or additions. These are valuable if kept up to date at all times. For instance, if gas is installed to replace oil heat, the new gas lines, valves, and other details would be shown on the plans, including the utilities plan.
- b. Obtain and permanently file manufacturers' instruction and service booklets on equipment. These can save a lot of trouble and also furnish catalog numbers for replacement parts.

Date: _____ No. _____

WORK ORDER

Project No. _____

Tenant: _____

Location: _____

Work To Be Done: _____

Mechanic	Charges	
Hours Work		
Materials		
(Use reverse side for additional space)	Tenant	
	Project	
Tenant's Signature	Date	

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1961

LOCAL HOUSING AUTHORITY
MANAGEMENT HANDBOOK

Part V
Section 1, Exhibit 2

PREVENTIVE MAINTENANCE
UNIT INSPECTION RECORD

Project No. _____ Inspected By: _____ Date: _____

Tenant: _____ Location: _____

Item	Condition & Work Required	Work Order No.
Yard		
Doors		
Windows		
Screens		
Walls & Ceilings		
Floors		
Stairway & Hall		
Bathroom Fixtures		
Kitchen Fixtures		
Cabinets		
Range		
Refrigerator		
Unit Heater		
Radiators/Convectors		
Hardware		
Water Heater		
Electrical		
Window Shades		
Fire & Safety		
(Etc.)	(Continue on reverse)	

PREVENTIVE MAINTENANCE
BUILDING INSPECTION RECORD

Project No. _____ Building: _____

Inspected By: _____ Date: _____

Item	Condition & Work Required	Work Order No.
Roofs		
Gutters & Downspouts		
Flashing		
Attic Space		
Canopies		
Walls		
Foundations		
Outside Paint		
Chimneys		
Window Sills		
Porches		
Crawl Space		
Basement		
Termite		
Stairways		
Halls		
(Etc.)		
	(Continue on reverse)	

PREVENTIVE MAINTENANCE
GROUNDS INSPECTION RECORD

Project No. _____ Inspected By: _____ Date: _____

Item	Location, Condition & Work Required	Work Order No.
Roads		
Walks		
Drainage		
Project Lawns		
Plantings		
Play Areas		
Fences		
Benches		
Yard Lights		
Electric		
Water & Gas		
Laundry Poles		
(Etc.)		

(Continue on reverse)

No. 326

PREVENTIVE MAINTENANCE
EQUIPMENT INSPECTION RECORD

Project No. MICH-34-2 Location: Maint. Shop Frequency: 3 mos.

Description: Window Fan Make, Serial, etc: Westinghouse, SX21

Size: 20", 1/6 HP 110v. single ph. motor Year: 1957

Date	Work Done	Mechanic
7/12/59	Cleaned blades, screen & housing; oiled bearings	J. S.
10/6/59	Replaced switch; cleaned fan; shut down for winter	J. S.
4/22/60	Checked and oiled bearings; checked operation	A. D. W.
	(Continue on reverse)	

RECEIVED
SEP 11 1951
Executive Director