

APPENDIX 5

PROJECT ENGINEERING SURVEY: ELEMENTS TO BE INSPECTED

1. General Appearance. Check the condition of buildings and grounds as observed by the public by touring the entire project to gain a general impression of the quality of maintenance and care in upkeep. The outward appearance of a project is an important factor in evaluating condition and is the yardstick by which the performance of management is measured by the general public and, particularly, by the surrounding community
2. Grounds. At a minimum, inspect the entire perimeter of the site and as much of the interior grounds as necessary to ascertain conditions of the major elements: plantings and lawns; play areas and equipment; roads, walks and other paved areas; wheelchair curb cuts and ramps; yard appurtenances such as benches, fences, tree guards, etc.; and drainage facilities and structures. Observe safety hazards, physical accessibility and effectiveness of tenant maintenance where applicable.
3. Structures. Inspect the following major elements, including evidence of settlement, leaks condensation, corrosion or other signs indicating that damage may result if the deficiency is not corrected promptly.
 - a. Roofs, flashing, parapets, chimneys, and canopies and their ventilation and insulation.
 - b. Attic spaces, including ventilation and insulation, and the condition of utility lines, if water is a downfeed system.
 - c. Exterior walls and foundations, including expansion joints and caulking.
 - d. Exterior painted surfaces for general condition including defective paint and treatment activities as defined by 24 CFR Parts 35 and 965, Subpart H.
 - e. Gutters and downspouts, including adequacy of roof drainage.
 - f. Crawl spaces and basements, including adequacy of ventilation and vapor barriers.
 - g. Doors, windows, screens, hardware and railings.
 - h. Porches, balconies and fire escapes.
 - i. Evidence of rodent, termite or other pest infestation.
 - j. Care and condition of public spaces such as hallways and stairs.

APPENDIX 5

4. Interior of Dwelling Units. Inspect the following major elements:

- a. Walls, ceilings, plaster and painting, including insulation of pipe chases.
- b. Painted surfaces for general condition, including defective paint and treatment activities as defined by 24 CFR Parts 35 and 965, Subpart H.
- c. Floors and coverings.
- d. Refrigerators, ranges, water heaters, including T&P valves, and garbage disposals. Note whether pilot light operation is satisfactory, accumulation of ice on evaporator is not excessive and T&P valve is properly installed. Verify that electric circuits are not over-fused and that major appliance cords and plugs are safe to use. Examine kitchen cabinets, counter tops and faucets Determine whether replacement equipment is energy efficient as required by 24 CFR Part 965.308.
- e. Space heating equipment, radiators, convectors and air registers, including controls and valves and air conditioning.
- f. Plumbing fixtures, faucets and fittings.
- g. Electrical wiring, fixtures, fuses or circuit breakers and cords.
- h. Carpentry, hardware, cabinets, doors, windows and window shades.
- i. Stairways and stair rails (in row houses).
- j. Tenant care.
- k. Evidence of rodent, termite and other pest infestation.
- l. Fire and smoke detectors.

5. Tenants. Ask tenants whether they have any complaints regarding physical upkeep, public facilities and services, as well as what efforts they undertake to keep the project well-maintained.

6. Underground Utility Lines. Check for condition of all project-owned gas, water, heat distribution and sewage lines, noting evidence of corrosion, failures in pipe covering or other protective materials and functioning of drainage in conduits, tunnels and manholes. Expose

and inspect toe gas and water lines in at least one location at each site where there is expectation of problems due to general age and condition of project and where weather conditions permit (e.g., snow, storms, etc.). Additional inspections are to be made if the parts of the installation are of different age, materials or construction or where differences in soil conditions are apparent. Underground lines under cathodic protection should be checked by taking and recording a sufficient number of pipe-to-soil potential readings to be sure that they are being adequately protected. Where local utilities carry out these inspections, the General Engineer (GE) should use their reports for data. (See paragraph 11 of this Appendix.)

7. Electrical Distribution System. Note the condition of poles, insulators, cross arms, guy wires, service drops, excessive wire sag, interference of tree branches and other hazardous conditions. If convenient, visit the project after dark to check on adequacy of lighting, especially near steps, embankments and other potentially hazardous locations. Review preventive maintenance procedures for both overhead and underground systems including vaults, switchboards and transformers. If work is done by contract, review reports of inspection and work done.

K. Project-Operated Heating and Domestic Hot Water Plants. Inspect the central heating plants and a least one-third of the group plants, having the plant operator check the controls. Review the following items:

- a. Boilers, settings, stacks, burners, stokers and related equipment.
- b. Firing methods, combustion control and safety devices.
- c. Heating control systems, including building and zone controls, valves and equipment. Complaints from tenants that units are too cold would indicate units are not over-heated. Conversely, your own observations should indicate whether complaints are valid and units appear adequately heated.
- d. Hot water generators, controls and pumps.
- e. Auxiliary equipment such as feed water heaters, condensate tanks, vacuum, condensate and boiler feed pumps and boiler water level controls.
- f. Chemical treatment procedures and testing of boiler and condensate return water.

APPENDIX 5

- g. Safety devices (test for proper operation).
 - h. Fuel consumption (comparison with previous three years' consumption and with similar projects).
 - i. Make-up water consumption.
 - j. Domestic hot water temperature. This should not be higher than 120 degrees at taps.
 - k. Boiler logs and inspection reports.
9. Special Purpose Facilities. Inspect the following and note the condition of the plant and equipment, methods of operation, cleaning schedules, hazardous or unsanitary conditions and evidence showing that there is lack of preventive maintenance.
- a. Sewage treatment plants, lift stations and appurtenances.
 - b. Water supply and treatment plants and pumping storage stations.
 - c. Gas storage and distribution.
 - d. Community and management space.
 - e. Commercial space, including laundries, stores, day care and medical.
 - f. Garages and carports.
 - g. Television antennae.
10. Service Facilities. Inspect the following:
- a. Maintenance shop and equipment. Note the adequacy of work and storage space, the sufficiency and arrangement of work benches and tool racks, the adequacy and condition of the tools, the location and inspection date of fire extinguishers and the quality of housekeeping. Are there adequate supplies on hand to take care of emergencies? Check the condition of all maintenance vehicles, tractors and other power equipment. Also inspect the maintenance and use records of such equipment.
 - b. Elevators.
 - c. Project-owned space-cooling equipment.

APPENDIX 5

- d. Compactors, incinerators and trash collection areas.
 - e. Security systems, including intercoms and surveillance.
 - f. Janitorial care.
 - g. Fire, accident and health hazards.
11. Forms Update. Make any necessary revisions to Form HUD-51885, Project Physical Characteristics, and Form HUD-51885A, Report on Cathodic Protection System. If no changes are made, date the form indicating that it is still correct.