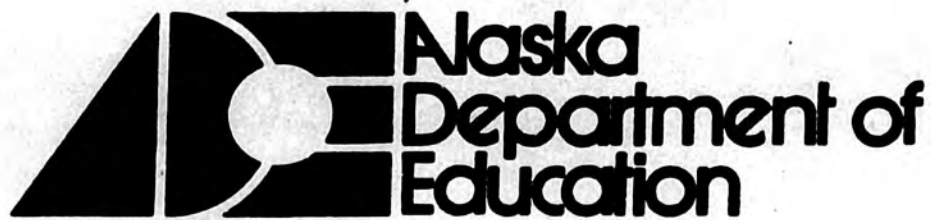


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**Alaska School Facilities
Preventive Maintenance Handbook**



Developed
by the
Department of Education
Education Support Services / Facilities

Appendix B

Definitions

Component

A part of a system in the school facility.

Component Repair or Replacement

The unscheduled repair or replacement of faulty components, materials, or products caused by factors beyond the control of maintenance personnel.

Custodial Care

The day to day and periodic cleaning, painting, and replacement of disposable supplies to maintain the facility in safe, clean and orderly condition.

Deferred Maintenance

Custodial care, routine maintenance, or preventive maintenance that is postponed for lack of funds, resources, or other reasons.

Major Maintenance

Facility renewal that requires major repair or rehabilitation to protect the structure and correct building code deficiencies, and shall exceed \$25,000 per project, per site. It must be demonstrated, using evidence acceptable to the department that (1) the district has adhered to its regular preventive, routine and/or custodial maintenance schedule for the identified project request, and (2) preventive maintenance is no longer cost effective.

Preventive Maintenance

The regularly scheduled activities that carry out the diagnostic and corrective actions necessary to prevent premature failure or maximize or extend the useful life of a facility and/or its components. It involves a planned and implemented program of inspection, servicing, testing and replacement of systems and components that is cost effective on a life-cycle basis.

Renewal or Replacement

A scheduled and anticipated systematic upgrading of a facility system or component to rehabilitate it to a renewed functioning standard.

System(s)

An assembly of components created to perform specific functions in a school facility, such as a roof system, mechanical system or electrical system.

Note: The above definitions are those adopted by the Bond Reimbursement and Grant Review Committee 4-18-97.

Preventive Maintenance Handbook

Overview

Preventive maintenance (PM) is the component of a facilities maintenance system which has as its goal the maximizing of the useful life of all building systems. Just as maintenance is an aspect of facility management which impacts virtually all other areas of the total facility equation, so PM, as a philosophy or mind-set, has a broad influence on the total maintenance effort. At its heart, preventive maintenance asks, "What can I do to make this item--be it an automobile, building, or piece of equipment--remain as good as new for as long as possible?"

Many discussions of maintenance relegate preventive maintenance to a small role, for example: "Preventive maintenance (PM) is defined in the maintenance management audit as periodically scheduled work on selected equipment, usually dynamic, to provide for required inspection, lubrication and adjustment."¹

However, a broader application of the term is desirable to avoid fragmentation of the maintenance system into multiple subcomponents where routine, preventive, regular, recurring and other variations of maintenance each have their own definition (and accounting classification). For the purposes of meeting the requirement and intent of Alaska Statutes, the Department of Education sees preventive maintenance as:

All activities which can be regularly scheduled to prevent premature failure or maximize or extend the useful life of a facility and its components. This will include items such as roof inspections, repainting, and door hardware adjustments as well as more traditional items such as bearing lubrication and belt replacements on HVAC equipment.

It is essential that school boards, school district administration and staff make a commitment to this philosophy when considering their responsibilities in managing district facility assets. Preventive maintenance should be a key element of a school board's mission statement.

Legislation

State of Alaska legislation is very clear about preventive maintenance. By statute, a duty of each district's school board is to "provide for the development and implementation of a preventive maintenance program for school facilities." Some school districts share the duties of maintenance with another agency within the city or borough. This legislation in no way prohibits districts from acting in conjunction with these associated agencies to effect all or a part of their maintenance program, however, neither does doing so relieve the school board of its obligations in the area of preventive maintenance. The legislation goes on to say, ". . . in this paragraph, 'preventive maintenance' means scheduled maintenance action that prevents the failure or extends the useful life of a facility, or facilities systems or components and that are cost effective on a life cycle basis." (AS14.14.090(10))

Legislation also does not allow capital funding for the accomplishment of preventive maintenance nor for projects caused by lack of it. A district requesting capital funding from either the school

Preventive Maintenance Handbook (cont.)

construction fund or major maintenance fund must provide "evidence that the project should be a capital improvement project and not part of a preventive maintenance program, or regular custodial care." An obvious conclusion to reviewing the pertinent legislation is that PM in Alaska is solely the responsibility of school districts and that funding must come from operating budgets which are in turn funded by community and state funds as well as federal funds allocated under the public school funding program.

Developing a Preventive Maintenance Program

Introduction

Alaska statutes give school districts two main responsibilities with regard to preventive maintenance. The first of these responsibilities is to *develop* a preventive maintenance program. This section will offer *guidance* in developing an effective program.

According to the Encyclopedia of Architecture, "Preventive maintenance programs should not be thought of as spontaneous natural events that will occur in the passage of time to meet the needs of the systems in place. Preventive maintenance programs begin with the acceptance of a need and the development of a considered, planned program for addressing the individual and different needs of each specific unit or system in a project."²

Many districts will have developed a traditional preventive maintenance program for various types of mechanical and some electrical equipment and components. Industry leaders in the design and manufacture of this type of equipment have long advocated and effectively promoted maintenance of their equipment. The early steps in this effort consisted of operations and maintenance manuals and, while these are still in use, have been supplemented by advanced, micro-processor based diagnostic and control systems.

In extending the scope of preventive maintenance to "maintenance work on any building system or component which can be scheduled", each district will be required to reassess their program's breadth and enhance it as necessary. The obvious first step in this process is identifying the facilities which need preventive maintenance (**by statute, all schools**) and the particular building systems and their components at those facilities which will respond effectively to preventive maintenance. This is followed by determining the present condition, establishing a level of maintenance and writing preventive maintenance tasks for each system or component

Identification of Facilities, Systems and Components

From the list in Appendix A, select those systems and components which apply to each of the district's facilities. Districts may add additional items if desired and/or necessary. The list is intended to be a baseline for a comprehensive integrated maintenance program; it is not an exhaustive list of every component. Many buildings will have multiple system types within a particular category (e.g. roofing, package unit heaters, etc.) as well as multiple components of the same type (e.g. circulating pumps, water closets, toilet partitions, etc.). A specific preventive