Appendix E:
Maintenance Condition Matrix

As facilities inventories age, institutional planners are devoting increasing attention, priority, and budget to maintenance. To help planners organize their maintenance efforts, chapter 5 of this manual includes a suggested classification system for both overall building and individual room conditions. Section 6.3 outlines a general approach to developing a set of equipment maintenance and space refurbishment identifiers and classifications. The following maintenance condition matrix provides a more detailed description of the actual conditions and levels of effort required for each of five levels of maintenance ranging from maintaining showpiece facilities to maintaining facilities in a crisis response mode.

The campus average Facilities Condition Index (FCI) of the five levels of maintenance described here correspond approximately to the first five categories of building condition described in section 5.5.4, Building Condition.

Level	1	2	3	4	5
Description	**Showpiece Facility**	**Comprehensive Stewardship**	**Managed Care**	**Reactive Management**	**Crisis Response**
Customer Service and Response Time	Able to respond to virtually any type of service, immediate response.	Response to most service needs, including limited nonmaintenance activities, is typically in a week or less.	Services available only by reducing maintenance, with response times of 1 month or less.	Services available only by reducing maintenance, with response times of 1 year or less.	Services not available unless directed from top administration; none provided except emergencies.
Customer Satisfaction	Proud of facilities, have a high level of trust for the facilities organization.	Satisfied with facilities related services, usually complimentary of facilities staff.	Accustomed to basic level of facilities care. Generally able to perform mission duties. Lack of pride in physical environment.	Generally critical of cost, responsiveness, and quality of facilities services.	Consistent customer ridicule, mistrust of facilities services.
Preventive vs. Corrective Maintenance	100%	75-99%	50-74%	25-49%	<25%
Maintenance Mix	All recommended PMs are scheduled and performed on time. Reactive maintenance (e.g., spot relamping and adjusting door closers) is minimized to the unavoidable or economical. Emergencies (e.g., storms or power outages) are very infrequent and handled efficiently.	A well-developed PM program: most required PMs are done at a frequency slightly less than per defined schedule. Appreciable reactive maintenance required due to systems wearing out prematurely and high number of lamps burning out. Occasional emergencies caused by pump failures, cooling system failures, etc.	Reactive maintenance predominates due to systems failing to perform, especially during harsh seasonal peaks. An effort still made at PM: priority to schedule as time and manpower permit. The high number of emergencies (e.g., pump failures, heating and cooling system failures) causes reports to upper administration.	Worn out systems require manpower to be scheduled to react to systems that are performing poorly or not at all. Significant time spent procuring parts and services due to the high number of emergency situations with weekly reporting. PM work possible consists of simple tasks and is done inconsistently, e.g., filter changing, greasing and fan belt replacement, etc.	No PM performed due to more pressing problems. Reactive maintenance is a necessity due to worn out systems (e.g. doors won't lock, fans lock up, HVAC systems fail). Good emergency response because of skills gained in reacting to frequent system failures (no status reporting, upper administration is tired of reading the reports).
Aesthetics, Interior	Like new finishes.	Clean/crisp finishes.	Average finishes.	Dingy finishes.	Neglected finishes.
Aesthetics, Exterior	Windows, doors, trim, exterior walls are like new.	Watertight, good appearance of exterior cleaners.	Minor leaks and blemishes, average exterior appearance.	Somewhat drafty and leaky, rough looking exterior, extra painting necessary.	Inoperable windows, leaky windows, unpainted, cracked panes, significant air and water penetration, poor appearance overall.

Level	1	2	3	4	5
Description	**Showpiece Facility**	**Comprehensive Stewardship**	**Managed Care**	**Reactive Management**	**Crisis Response**
Aesthetics, Lighting	Bright and clean, attractive lighting.	Bright and clean, attractive lighting.	Small percentage of lights out, generally well lit and clean.	Numerous lights out, some missing diffusers, secondary areas dark.	Dark, lots of shadows, bulbs and diffusers missing, cave-like, damaged, hardware missing.
Service Efficiency	Maintenance activities appear highly organized and focused. Typically, equipment and building components are fully functional and in excellent operating condition. Service and maintenance calls are responded to immediately. Buildings and equipment are routinely and regularly upgraded keeping them current with modern standards and usage.	Maintenance activities appear organized with direction. Equipment and building components are usually functional and in operating condition. Service and maintenance calls are responded to in a timely manner. Buildings and equipment are regularly upgraded keeping them current with modern standards and usage.	Maintenance activities appear to be somewhat organized, but remain people dependent. Equipment and building components are mostly functional, but suffer occasional breakdowns. Service and maintenance call response times are variable and sporadic, without apparent cause. Buildings and equipment are periodically upgraded to current standards and use, but not enough to control the effects of normal usage and deterioration.	Maintenance activities appear somewhat chaotic and are people dependent. Equipment and building components are frequently broken and inoperative. Service and maintenance calls are typically not responded to in a timely manner. Normal usage and deterioration continues unabated, making buildings and equipment inadequate to meet present use needs.	Maintenance activities appear chaotic and without direction. Equipment and building components are routinely broken and inoperative. Service and maintenance calls are never responded to in a timely manner. Normal usage and deterioration continues unabated, making buildings and equipment inadequate to meet present use needs.
Building Systems' Reliability	Breakdown maintenance is rare and limited to vandalism and abuse repairs.	Breakdown maintenance is limited to system components short of mean time between failures (MTBF).	Building and systems components periodically or often fail.	Many systems unreliable. Constant need for repair. Backlog of repair needs exceeds resources.	Many systems nonfunctional. Repair only instituted for life safety issues.
Facility Maintenance Operating Budget as % of CRV	> 4.0	3.5 - 4.0	3.0 - 3.4	2.5 – 2.9	<2.5
Campus Average FCI	<0.05	0.05 - 0.15	0.16 - 0.29	0.30 - 0.49	≥0.50

PM = preventive maintenance.
CRV = current replacement value.
FCI is a standard measure of renovation cost as a percent of building replacement cost. It is used throughout the country and is recommended by both the National Association of College Business Officers (NACUBO) and the Association of Higher Education Facility Officers (APPA).