

Meetinghouse Replacement and Improvement Standards

Physical Facilities Department

Replacement and Improvement Standards

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Guiding Principles:

"Older buildings are architectural examples of their time and need not be remodeled to look like modern meetinghouses."

(Facilities Management Guidelines for Meetinghouses and Other Church Property, 6)

Standards communicate the desired appearance of facilities as established by the presiding councils of the Church and ensure consistency throughout the world. When properly used, standards empower facilities managers to make more decisions at the local level.

The "life cycle" of a component is sometimes used as the reason for replacement. This is inaccurate and wasteful. The only criteria used for replacing a component should be when it meets the written standards for replacement and is validated by onsite inspection. The life cycle of a component is used for evaluation purposes only.

Replacement Standards Guidelines

The purpose of the *Replacement and Improvement Standards* is to ensure that the desired level of quality approved by presiding councils of the Church is achieved but not exceeded in our facilities. When items are replaced before they meet the replacement criteria, costs increase and the replacement is no longer defensible. For this reason, facilities managers are not authorized to replace items that do not meet the replacement criteria.

A certain amount of wear and tear is to be expected in our facilities and is acceptable. When this amount becomes excessive and generally distracting, the item should be considered for replacement. Replacement standards have been created for inventory items which are more costly to replace. If a replacement standard does not exist for an item, the facilities manager should determine whether another replacement standard could be applied. For example, a replacement standard does not exist for kitchen cabinetry. However, the replacement standard for Millwork could be used to evaluate whether to replace kitchen cabinetry. Some standards may not apply or descriptions may need to be adapted for the Area. As facilities managers apply the *Replacement and Improvement Standards*, they should use good judgment and common sense to ensure work is needed.

As facilities managers apply the *Replacement and Improvement Standards* to determine whether to replace an item, the following guidelines should be considered.

Evaluating the Condition of an Item:

1. Consider the following questions to assess the reliability of an item:
 - How well does the item serve its originally designed purpose?
 - How often does the item require repairs?
 - How often is this item in use?
2. Consider the following questions to assess the appearance, noise level, or comfort level of an item:
 - Has the noise or comfort level of the item become a distraction?
 - If the style or color of the item is outdated, does the item meet the standard for replacement? If not, it should not be replaced.

Determining What Action to Take:

1. Consider a repair in the following situation:
 - If individual components of a system are failing but can be repaired. However, if major repairs persist, do a cost breakdown analysis in order to compare repair costs with replacement costs. In some cases, parts may be obsolete and replacement will be necessary.
2. Consider a partial replacement in the following situations:
 - If sections of the inventory item can be replaced with a similar color, pattern or texture, this type of replacement is justified if the item meets the standard for replacement.
3. Consider a full replacement in the following situations:
 - If individual components of a system cannot be replaced due to obsolescence.
 - If after conducting a cost breakdown analysis it is found that the inventory item is no longer cost effective to continually repair.

Improvement Standards Guidelines

Definition:

Improvements are defined as work that:

- Extends the life of components or systems
- Increases functionality of the facility, system, or component
- Increases the quantity of an inventoried component

Application:

When determining whether to make an improvement, facilities managers should apply the *Replacement and Improvement Standards*. Some standards may not apply or descriptions may need to be adapted for the DTA Area. As facilities managers apply the *Replacement and Improvement Standards*, they should use good judgment and common sense to ensure work is needed. If additional quantity is being added or new space is being reconfigured, the facilities manager should verify that work complies with the standard plan boundaries and guidelines. For information regarding standard plans, contact the area A&E representative.

The following guiding principles and improvement guidelines should be reviewed before identifying, verifying, and performing improvement work.

Guiding Principles:

1. “Older meetinghouses are architectural examples of their time and need not be remodeled to look like modern meetinghouses.”
2. “If exceptional circumstances dictate modification, the results should be in harmony with the character of the original building.”
3. “When properly maintained, most older meetinghouses continue to be attractive and comfortable and portray the desired image of dignity and reverence without extensive remodeling.”
4. “Reasonable wear is acceptable when buildings show evidence of appropriate maintenance, cleanliness and care.”

(Facilities Management Guidelines for Meetinghouses and Other Church Property)

Improvement Guidelines:

1. Consultants
Consultants may be used to assist the FM or PM in developing project scope, cycle time, and estimated costs. Once the scope has been approved, consultants should use Church standard specifications in all design work. Designs should be consistent with the cost per square foot established by the DTA Area for R&I and new space work. Consultants should also be familiar with the *Replacement and Improvement Standards* and apply them in their work.
2. Additions
Additions and reconfiguration of existing space may be made when an existing facility no longer provides for the functional needs of the local units. This is determined by applying the *Meetinghouse Adequacy Standards O&M-PS-0006*. For instructions on applying these standards, see *Determining Meetinghouse Adequacy O&M-PS-0007*.

When there is a defensible need to add new space to an existing building, standard plan additions should be applied where appropriate. Non-standard additions should be designed in consultation with the Architecture Engineering and Construction Division at Church headquarters or the DTA Area architecture and engineering staff. The long term cost implications should be reviewed when considering an addition. Example: a stake suite should not be added when a stake center is eminent.

Additions and other improvements should be consistent with the existing architecture of the building. Existing finishes, fixtures, and components should not be replaced to match the addition unless they meet the established criteria for replacement in the *Replacement and Improvement Standards*.

3. Interior Finishes

Existing interior finishes such as face brick or painted concrete block walls should not be upgraded with plaster and paint or sisal wall covering.

4. Seismic

Before performing any seismic work, the Seismic Strategy found in the *Operations & Maintenance Strategies O&M-PS-0002* should be reviewed. Seismic upgrades should only be performed when other R&I work creates an opportunity to optimize economic timing and to minimize the impact on occupying units. Full building seismic upgrades require PFAC approval.

5. HVAC

Air conditioning may be added to existing meetinghouses per the HVAC System Upgrade Improvement Standard found in the *Replacement and Improvement Standards*. It is important to ensure that all HVAC equipment is functioning as intended so that the original design for outdoor ventilation air is achieved.

6. Site Work

Retaining walls, benches, decorative planters and landscape islands in parking areas should not be added unless required by local code. For most sites, future expansion areas should be left undeveloped with no unnecessary grading or landscape improvements.

7. Parking

To determine the appropriate number of parking spaces for a facility, see *Standard Plans Change Boundaries A&E-NSP-0003*.

8. Landscaping

Before replacing or upgrading landscaping, the following *Replacement and Improvement Standards* should be reviewed and applied:

- General Site: Landscaping Replacement or Upgrade Improvement Standard
- General Site: Trees Replacement Standard
- General Site: Shrubs and Groundcovers Replacement Standard
- General Site: Lawns Replacement Standard
- General Site: Irrigation Systems Replacement Standard

Drought tolerant landscape should only be installed on existing buildings when the landscape meets the standard for replacement or when required by local code. Landscape irrigation systems should not be added if similar facilities in the area are not commonly irrigated.

9. Parking Lighting

Parking lighting should illuminate stalls close to the building or as needed for safety and to meet local jurisdiction requirements. Do not provide accent, ornamental, seasonal, or other special lighting and related exterior power outlets on existing buildings.

10. Flagpole

If requested by local leaders, a flagpole may be installed at a meetinghouse. The cost of the flagpole and installation is a local unit expense. The flagpole can usually be placed in a front lawn area and should not require additional concrete walks.

11. Fencing

If fencing is required, chain link fencing should be installed. Plastic slats may be added when needed for screening. Other fence types are permitted only when required by local jurisdictions.

This standard is used to evaluate cassette tape recorders/players, compact disk players(CD), DVD players, televisions (TV), video cassette recorders/players (VCRs), any combination of these units, video projectors, and video cameras. **Each electronic audio and video unit should be evaluated independent of all other units.**

Condition	Definition	Action
<p>1. Working Necessary adjustments keep the unit functioning as designed.</p>	<p>The unit delivers high quality sound and/or picture without distortion with slight adjustments to the manual controls.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Not working</p>	<p>If unit is under warrantee (usually 1 year)</p> <p>If unit replacement cost is greater than \$500 USD (these would include projectors and video cameras) and between 1 and 5 years old</p> <p>If unit replacement cost is less than \$500 USD and is 1 to 5 years old</p> <p>If unit is older than 5 years</p>	<p>Get replaced by manufacturer*</p> <p>Call local service provider to discuss problems and merits to repair or replace.**</p> <p>Replace this unit</p> <p>Replace this unit</p>

Replacement Directives

1. Replace only with items found in Purchasing Reference Guide (PRG).
 - US/Canada- **through TV Specialists/Church dealer.**
 - **** US/Canada - Meetinghouse Technical Support (MTS)**

Complete replacement of a sound system is seldom required. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years. This does not take acts of nature or vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good The system functions at the original design levels.</p>	<p>Occupants can hear clearly. There is no distracting noise. The system is reliable. Necessary balancing and other adjustments keep the system functioning at design levels.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The system continues to function with intermittent component repairs, replacements, and minor system improvements.</p>	<p>Occupants can hear clearly. There is no distracting noise that cannot be corrected. Some components have failed and have been replaced. Other components are approaching the end of their useful lives.</p>	<p>Replacement is not yet justified. Make necessary repairs and component replacements.</p>
<p>3. Poor The overall sound system is subject to constant breakdowns and delivers inadequate sound quality.</p>	<p>Occupants are distracted by the failures of the sound system and noise. The components are old and undependable. The technology is out of date. Repair costs have become intolerable.</p>	<p>Replace the sound system.</p>

Replacement Directives:

1. Church approved consultants, drawings, specifications and details should be used when replacing sound system parts and components.
2. Existing sound system components such as speakers, speaker cans, speaker cable, microphones, pulpit controls, etc. that are in good condition should be maintained wherever possible.
3. Ensure that an asbestos survey and report is on file for meetinghouses built prior to 1988. Follow asbestos abatement and management practices outlined in the Church Asbestos Program Handbook when replacing the sound system.

Replacement Standards

Ceiling Acoustical Tile (glued on)

Complete replacement of ceiling tile is seldom required. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years. This does not take vandalism into consideration.

Ceiling tile may be replaced in homogeneous wear zones, identified as:

1. Foyers and hallways
2. Classrooms and offices
3. Chapel and overflow
4. Cultural hall

Condition	Definition	Action
<p>1. Very Good Tile is beginning to show defects.</p>	<p>Slight discoloration may be present in aging tile or around return air ducts. Spot cleaning and minor repairs to prevent sagging and remove marks have been made to maintain the condition of the tile. 75% to 95% of the tile is still in excellent condition.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory Tile is showing defects, but is within acceptable limits.</p>	<p>The tile is showing slight yellowing and discoloration. Regular spot cleaning has kept the tile attractive. Repairs and replacements have been made to correct sagging, fading, dented, chipped and broken tiles. 75% to 95% of the tile is still in very good condition.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor Tile is showing considerable cracks marks and defects.</p>	<p>More than 70% of the area covered is showing discoloration, sagging, cracks and marks. Cleaning and other restoration processes are having minimal effect on the tile. Repairs are needed often to correct sagging, cracking, and denting. Less than 75% of the tile is in good condition.</p>	<p>Replace the tile.</p>

Replacement Directives

1. It may be necessary to replace an area, subject to considerable vandalism, with a product that is more resistant.
2. The addition of new space does not necessarily justify the replacement of ceiling tile in existing space.

All MLS (Local Unit) computers (CPU) will be replaced on a five-year cycle. The stake physical facilities representative works with the FM group during the fourth year of the computer's life so headquarters budget funds can be set aside to replace the computer during the fifth year. See the *Policy and Guidelines for Computers Used by Clerks for Church Record Keeping* for specific questions. Printers and monitors will be replaced when they are no longer functional. The FM group is responsible for purchasing MLS machines that are required for newly created units. The FM group will replace the computer using operational funds when not covered by warranty. Computer repair will be handled by the operational fund of the FM group.

Complete replacement of a countertop is seldom required. This does not take vandalism or misuse into consideration.

It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years.

Condition	Definition	Action
<p>1. Very Good The countertop is beginning to show wear. Regular cleaning keeps the countertop in good condition.</p>	<p>The countertop may have some scratches or small chips at this point. The surface is not seriously dented or scratched. There is no fading or discoloration present. All corners and side pieces are tight.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The countertop is showing defects, but is within acceptable limits. The countertop continues to serve its purpose with regular cleaning and minor repairs.</p>	<p>The countertop may have some minor dents, chips and scratches. The finished surface is beginning to fade and wear. Some discoloration may be present, but the countertop is still usable. Some of the corners or side pieces may need to be re-adhered or replaced.</p>	<p>Replacement is not yet justified; make necessary repairs and section replacements.</p>
<p>3. Poor The countertop is showing serious and extensive discoloration and defects.. It no longer serves its purpose as originally designed. Damage or decomposition to the countertop substrate exists.</p>	<p>The countertop has many scratches, dents and chips. The finish surface is faded and wearing thin. De-lamination is occurring and re-adherence is not viable due to the damaged substrate. Discoloration is present and side and corner pieces are loose or broken.</p>	<p>Replace the countertop. If only one section of the countertop is in bad shape, try and get a match in materials and replace only that one part.</p>

Replacement Directives:

1. Use only Church approved consultants, specifications and/or details when replacing a countertop.
2. Wherever possible, continue to use existing sections or components that are in good condition, such as corner pieces, side pieces or entire sections of countertop. This may not be possible if a color or design match cannot be made.

Complete replacement of doors is seldom if ever required. This does not take vandalism into consideration. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years.

Condition	Definition	Action
<p>1. Very Good</p> <p>Necessary adjustments and minor parts replacement may be necessary. Only minor scratches and wear on the hardware and veneer are evident. The door functions as originally installed.</p>	<p>The operation of the door is totally reliable. Adjustments and minor parts replacement will maintain the integrity of door. 85%-95% of the surface area of the door, door-frame and hardware are in original condition. The hardware is showing only slight wear.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The door continues to function with intermittent component repairs, replacements.</p>	<p>The door functions adequately. Some components have failed and have been replaced, others are approaching the end of their useful lives. 85%-95% of the surface finish of the door, door-frame and hardware are still in very good condition. The door may have a slight amount of warp.</p>	<p>Replacement of the entire door assembly is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor</p> <p>The door no longer functions as designed and will not without major repairs.</p>	<p>Door sags from hinge failure. Locking system is inoperable. More than 40% of the surface finish of the door and hardware shows evidence of peeling, scratches, splintering, chips The door is warped to the point that it cannot be adjusted to latch properly. Panic hardware is inoperable and new panic hardware is incompatible with the old door.</p>	<p>First replace the components such as the hinge, the door lock. Replace the door as the last resort.</p>

Replacement Directives:

1. Replace with equal veneer selection, stain colors and specifications as closely as possible.
2. When partial replacement occurs, maintain consistency in styles and ratings of doors and components.
3. When replacing door in entire building or building section, replace with church standard specified products.

Complete replacement of storefront doors is seldom if ever required. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good Necessary adjustments and minor parts replacement may be necessary. Some fading of anodized aluminum is prevalent.</p>	<p>The system is totally reliable. Adjustments and minor parts replacement will maintain the integrity of door system. 75% or more of the anodized area, and hardware surfaces, on a particular storefront door assembly are still in excellent condition.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The system continues to function with intermittent component repairs, replacements.</p>	<p>The door functions adequately. Some components have failed and have been replaced. Others are approaching the end of their useful lives. 75% of the anodized area, and hardware surfaces, on a particular storefront door assembly are still in very good condition. The door is still secure.</p>	<p>Replacement of the entire door assembly is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor The Storefront Door no longer functions as designed and will not without major repairs.</p>	<p>Door sags from hinge failure. Locking system is inoperable. More than 40% of the anodized areas and weather stripping is gone. Panic hardware is inoperable and new panic hardware is incompatible with the old door.</p>	<p>First replace the components such as the hinge or the panic hardware. Replace the door as the last resort.</p>

Replacement Directives:

1. Use only recommended professional glazing contractors when replacing an entire system.

It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The drapes are beginning to show wear. Cleaning and repairs help keep the drapes in good working condition.</p>	<p>Drapes have a slight number of loose threads. Hems are secure and seams tight. If liners are present, stitching is tight. There are no tears. Hardware functions smoothly and has no broken or missing parts.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The drapes are showing defects, but are within acceptable limits. The drapes continue to serve their purpose with regular cleaning and repairs.</p>	<p>Drapes have some loose threads. The sunlight is starting to weaken the fibers in the material. Hems are secure and seams tight. If liners are present, stitching is tight. There are no tears. Hardware functions smoothly and has few broken or missing parts.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor</p> <p>The drapes are showing considerable wear and defects. The drapes no longer function as designed and will not without several repairs, to the point where the repairs are noticeable and distracting.</p>	<p>Drapes have several loose threads. Damage in the form of holes and tears are present, due to the fragility of the material. Hems or seams are coming un-sewn. Liners may be hanging loose. There may be tears. Hardware does not function and may have several broken or missing parts.</p>	<p>Replace the drapes.</p> <p>If the liners are stained and the hardware is bad, but the rest of the drapes are in good condition, consider replacing only the liners and hardware.</p>

Replacement Directives:

1. Use only Church approved contractors, specifications and/or details when replacing drapes.
2. Blackout drapes may need to be put in places where broadcasts are shown, such as in a stake center.

Complete replacement of fascia is seldom required. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The fascia is beginning to show slight signs of wear. Cleaning might be necessary to keep the fascia in this condition.</p>	<p>Fascia is slightly dented, but has no loose sections. There is slight discoloration.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The fascia is showing wear, but is within acceptable limits.</p>	<p>Fascia has some dents and has a few loose sections. There is some discoloration.</p>	<p>Replacement is not yet justified; make necessary repairs and section replacements.</p>
<p>3. Poor</p> <p>The fascia is showing a considerable amount of wear.</p>	<p>Fascia has several dents and has some loose sections. Discoloration detracts from the building's exterior appearance.</p>	<p>Replace the fascia.</p>

Replacement Directives:

1. Use only Church approved specifications and details when replacing a building's fascia.

Complete replacement of fencing is seldom required. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The fence is beginning to show wear. Necessary adjustments allow the fence to continue its designed purpose.</p>	<p>Chain link fence is straight and tight, with slight bending and / or sagging mesh. Supporting posts are straight. Privacy slats are all intact, but may be starting to crack.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The fence is showing defects, but is within acceptable limits. The fence continues to function with regular maintenance and intermittent repairs.</p>	<p>Chain link fence could be bent in some areas due to cars, snow removal, or people (climbing on it). Sections of mesh may need to be replaced. Some privacy slats are broken or missing and need to be replaced. Supporting posts are still straight.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor</p> <p>The fence is showing serious and extensive discoloration, rust and other defects. The fence is continually breaking or damaged. It is no longer useful and does not function as designed.</p>	<p>Chain link fence is no longer straight and has several areas of bent mesh. Many supporting posts are bent and several wire ties are missing. Most of the privacy slats are missing. Trees and bushes may have grown into the fence, bending and distorting the mesh. Most of the fence no longer serves its original purpose.</p>	<p>Replace the damaged areas of the fence.</p> <p>Full replacement should only be considered if the cost of repairs exceeds the cost of replacement.</p>

Replacement Directives:

1. Use only Church approved consultants, specifications and/or details when replacing chain link fencing.
2. Wherever possible, use existing components that are in good condition, such as supporting posts. If the old fence does not have privacy slats, and the new fence will have privacy slats, use a thicker gage steel support post, buried at least two feet deep.

Carpet will last beyond the warranty period if installed and maintained properly. Carpet replacement may include all the carpet in a meetinghouse or the carpet may be replaced in homogeneous wear zones. Wear zones may be identified as:

1. Chapel and overflow
2. Cultural hall
3. Foyers, hallways and stairs
4. Classrooms and offices

Condition	Definition	Action
<p>1. Very Good Carpet is beginning to show wear.</p>	<p>Slight matting or fading may be present in areas of heaviest traffic. Regular spotting and cleaning have maintained the carpet's attractive appearance. Small repairs may have been made to correct some snagging, or fraying. There is no visible seam separation, bubbling, backing separation, or tearing. 75% to 95% of the carpet in the area being inspected is still in excellent condition.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory Carpet is showing wear, but is within acceptable limits</p>	<p>Heaviest traffic areas are showing matting or fading. Regular spotting and cleaning have kept the carpet looking attractive. Repairs have been made to correct frizzing, fraying, seam separation, backing separation, bubbling, or tearing. 75% to 95% of the carpet is still in very good condition.</p>	<p>Replacement is not yet justified; make necessary repairs or component replacements.</p>
<p>3. Poor Carpet is showing considerable wear.</p>	<p>50% or greater of the carpet is showing matting or fading. Frizzing is irreversible. Regular spotting and cleaning has little or no effect on appearance. Repairs must be made constantly to correct snagging, fraying, seam separation, bubbling, backing separation, or tearing.</p>	<p>Replace this carpet.</p>

Replacement Directives:

1. New carpet colors have been designed such that the carpet does not prematurely trigger the replacement of other items. The color of the replacement carpet should be chosen to **complement** other existing meetinghouse components and **not be a reason to replace them**. Such components include (but are not limited to) existing carpet, pew fabric, opera chair fabric, foyer furniture, chair color, counter tops, window sills, toilet partitions, or portable partitions.
2. The addition of new space does not necessarily justify the replacement of carpet in existing space.
3. Relief Society Room carpet replacement should not be different from standard carpet in the meetinghouse.
4. If the wall base must be replaced, carpet wall base is the standard.
5. Inspection and application of the standard justify the replacement of the carpet, not once the carpet reaches its expected life

Complete replacement of tile flooring is seldom if ever required. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The tile floor is beginning to show wear. Regular cleaning and preventative maintenance keep appearance clean and new.</p>	<p>The floor has no discoloration or worn surface. There may be slight cracks, with no chipped or broken tiles. There are no loose or missing portions. Grout is uniform in color and appearance.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The tile floor is showing defects, but is within acceptable limits. The tile surface continues to serve its purpose with regular cleaning and intermittent repairs.</p>	<p>The floor has no discoloration or worn surface. There may be some hairline cracks or chips, but no tiles are broken. There are no loose or missing portions. Grout may show variation in color or appearance.</p>	<p>Replacement is not yet justified; make necessary repairs and individual tile replacements.</p>
<p>3. Poor</p> <p>The floor tile is showing considerable wear and defects. The floor tile no longer serves its purpose. The appearance of the tile is distracting.</p>	<p>50% or more of the floor is discolored and a worn surface. There are cracks and/or chips present with some tiles broken. There are some loose, broken or missing portions. Grout shows obvious variation in color and appearance. Some grout is loose or missing.</p>	<p>Replace the floor tile.</p> <p>If only one section of tile has been damaged or worn due to heavy traffic, consider only replacing that tile area. This may not be possible if a tile match cannot be made.</p>

Replacement Directives:

1. Use only Church approved contractors, specifications and/or details when replacing floor tile.
2. If only one section of tile has been damaged, find matching tile and only replace the damaged section. .
3. When replacing floor tile, make sure to buy extra tiles and store them for future repairs and replacements.
4. Dissatisfaction with color is not justification to replace the tile.

Complete replacement of hardwood flooring is seldom if ever required. It should be possible, with proper and timely refinishing, repairs and preventive maintenance, to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The flooring is beginning to show wear. Cleaning and routine maintenance keep the floor in good condition.</p>	<p>Floor has slight scratches, but no gouges, discoloration or finish build-up. There is no chipping or peeling of the finish. Finish is slightly worn in high traffic areas only. There are no loose, broken or missing portions.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The flooring is showing defects, but is within acceptable limits. It continues to function as originally designed with regular maintenance.</p>	<p>Floor has some scratches and/or gouges. There is discoloration and finish build-up. There may be some chipping and peeling of the finish. Finish shows some wear throughout. There are no loose, broken or missing portions.</p>	<p>Replacement is not yet justified; refinish the floor and make repairs as needed.</p>
<p>3. Poor</p> <p>The flooring is showing considerable marks and defects. Floor is extensively worn. The surface no longer functions as designed and will not without major repairs.</p>	<p>Floor has considerable scratches gouging is present. There is discoloration and finish build-up. There is chipping and peeling of the finish. Planks have been sanded several times and are wearing thin. Water damage may be present, causing the planks to cup and buckle, which causes uneven sections. Separation of planks has caused many areas to squeak when stepped on.</p>	<p>Replace the floor.</p>

Replacement Directives:

1. Use only Church approved consultants, specifications and details when replacing an entire wood floor.
2. Hardwood floors can be sanded three to four times before they need to be replaced.
3. Before replacing a floor, consider whether making repairs and replacing some planks can extend the life of the floor.
4. When replacing a cultural hall floor, take off the basketball rims in order to prevent people from playing on the floor too early.

Selective removal of trees as they reach maturity is justified if they are no longer meeting the design criteria or maintenance and replacement standards established by the original or modified planting plan. Consult with the authorized landscape architect or certified arborist designated by the RFM or area O&M manager to assist in this evaluation.

Each tree should be inspected and recommendations reported on an annual basis to the verification team by the experienced certified arborist or assigned specialist selected to oversee maintenance of the tree.

Condition	Definition	Action
<p>1. Very Good</p> <p>The tree has sustained some damage, but generally is in a healthy condition.</p>	<p>Tree is new and/or healthy. Poor maintenance practices, natural forces or insects/pests may have slightly damaged the tree.</p>	<p>Do not consider replacement under these conditions.</p> <p>Perform preventative measures and maintenance as directed by the certified arborist’s annual report.</p>
<p>2. Satisfactory</p> <p>The tree is showing improvement from previous damage sustained earlier in its life but still has good form and a healthy structure.</p>	<p>Growth and development of the tree is continuing though hindered by poor maintenance practices, natural forces or insects/pests that affected its earlier growth. Most damage has been stopped or altered enough to extend the life of the tree.</p>	<p>Replacement is not yet justified; perform necessary maintenance as recommended by the certified arborist.</p>
<p>3. Poor</p> <p>The tree is showing serious or extensive wear and/or damage. It has poor form, is causing damage to other site elements or is a safety hazard.</p>	<p>50%-75% of the tree has died. Deterioration and/or poor growth has caused concern for safety and protection of surrounding plants, surfaces, buildings, etc. Messiness and cleanliness are significant concerns.</p>	<p>Remove this tree.</p>

Replacement Directives:

1. Determine whether continued upkeep can extend the life of the tree. If not, perform corrective maintenance to those areas that may result in a life safety situation.
2. Trees should only be replaced if required in the overall design scheme for the site.
3. Church approved guidelines, specifications and details should be followed when replacing trees.
4. “Legacy” or “Historic” trees should be evaluated under the same criteria as those listed above. If they are a serious threat to life and safety, they can be removed in a timely fashion to provide the necessary safety needed for proper management of the site.

Selective removal of shrubs and ground covers as they reach maturity is justified if they are no longer meeting the design criteria or maintenance and replacement standards established by the original or modified planting plan. Consult with the authorized landscape architect designated by the RFM or area O&M manager to assist in this evaluation.

Each shrub and area of ground cover should be inspected and recommendations reported annually to the verification team.

Condition	Definition	Action
<p>1. Very Good</p> <p>The shrub or groundcover has sustained some damage, but generally is in a healthy condition.</p>	<p>Shrub or ground cover is new and/or healthy. Poor maintenance practices, natural forces or insects/pests may have slightly damaged the shrub or groundcover. Long-term effects are negligible.</p>	<p>Do not consider replacement under these conditions.</p> <p>Provide preventative measures of maintenance as directed by the Management Plan.</p>
<p>2. Satisfactory</p> <p>The shrub or groundcover is showing some signs of deterioration but still has good form and a healthy structure.</p>	<p>30%-50% of the limbs have died or show considerable signs of altered growth. Extensive damage to the growth areas of the shrub or groundcover has occurred due to insects/pests infestation or other natural forces.</p>	<p>Replacement is not yet justified; perform necessary maintenance as recommended.</p>
<p>3. Poor</p> <p>The shrub or groundcover is showing serious or extensive wear and/or damage. They have poor form, are causing damage to other site elements or are a safety hazard.</p>	<p>50% or more of the shrub or groundcover has died. Deterioration has caused concern for safety and protection of surrounding plants, surfaces, buildings, etc. Neatness & cleanliness are significant concerns.</p>	<p>Replace the shrub or groundcover.</p>

Replacement Directives:

1. Proper maintenance can extend the life of the plants. If the shrub or groundcover cannot be saved and the analysis justifies replacement, do not repair any damaged areas. Replace the plant.
2. Church approved guidelines, specifications and details should be followed when replacing shrub/groundcovers. Plants should meet the same quality, size and variety characteristics as those called for on the style option eco-region plans for your area.
3. Use recommendations from the landscape architect or horticulturalist for type and size of replacement plants.

Complete replacement is seldom required when the lawn is installed in compliance with Church specifications. Before considering replacing sections of the lawn, check the irrigation system for proper coverage. Make repairs or adjustments and allow lawn to recover before determining replacement needs.

Selective removal of lawn areas as they reach maturity is justified if they are no longer meeting the design criteria or maintenance and replacement standards established by the original or modified planting plan. Consult with the authorized Landscape Architect designated by the RFM or Area O&M Manager to assist in this evaluation. .

Each lawn area should be inspected and recommendations reported annually to the verification team by the authorized Landscape Architect or assigned specialist selected to evaluate the lawn areas. Replacement should be evaluated against the following criteria:

Condition	Definition	Action
<p>1. Very Good The lawn area has sustained some damage, but generally is in a healthy condition.</p>	<p>Lawn is new and/or healthy. Poor maintenance practices, natural forces or insects/pests have damaged the lawn area.</p>	<p>Do not consider replacement under these conditions. Perform preventative maintenance as directed in the Management Plan.</p>
<p>2. Satisfactory The lawn area is showing improvement from previous damage sustained earlier in its life.</p>	<p>Growth and development of the lawn area is continuing though hindered by poor maintenance practices, poor soil conditions, natural forces or insects/pests. Most damage has been stopped or altered enough to extend its life.</p>	<p>Replacement is not yet justified; perform necessary maintenance</p>
<p>3. Poor The lawn area is showing serious or extensive wear and/or damage.</p>	<p>50% or more of the lawn has died. Deterioration has caused concern for safety and protection of surrounding plants, surfaces, buildings, etc.</p>	<p>Replace affected areas as required through re-seeding or sod.</p>

Replacement Directives:

1. Church approved guidelines, specifications and details should be used and followed when replacing lawn.
2. Schedule replacement during the cool season so that there is no significant stress on the lawn during installation.

Complete replacement is seldom required when the system is installed in compliance with Church specifications and drained properly at the end of the season. Portions of older systems that were not installed according to Church guidelines, specifications and details may need to be replaced.

Condition	Definition	Action
<p>1. Very Good</p> <p>The system functions at adequate levels. Adjustments and minimal head replacements may be required.</p>	<p>The system is totally reliable. Adjustments may need to be made to maintain the system.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The system continues to function with intermittent component repairs, replacements and minor system improvements</p>	<p>Turf and planting areas are adequately covered. Some components have failed and have been replaced. Others are approaching the end of their useful lives. Adjustments need to be made. A small number of components need replacement.</p>	<p>Replacement of the entire system is not justified; make necessary repairs or adjustments.</p>
<p>3. Poor</p> <p>Various irrigation zones are subject to constant breakdowns and delivers inadequate quality.</p>	<p>Complete lack of coverage to turf and plantings due to low pressure caused by leaks, worn and broken sprinkler heads, and extensive expansions of the system.</p>	<p>Receive a recommendation from a licensed landscape architect and/or certified irrigation auditor. If necessary, replace the non-functioning zones of the system.</p>

Replacement Directives:

1. Water Conservation Guidelines are located in the Physical Facilities Document Library.
2. Church guidelines, specifications and details should be used when repairing or replacing the irrigation system.

Complete replacement is seldom required when gutters and downspouts are installed in compliance with Church guidelines, specifications and details. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good The gutters and downspouts are beginning to show wear.</p>	<p>There are a few areas that leak and have loose joints, but are not split or cracked. Gutters are not bent or loose.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The gutters and downspouts function with regular maintenance and intermittent repairs.</p>	<p>There are some areas that leak and have loose joints. Some areas are split and/or cracked. Sections of gutters are bent or loose.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor The gutters and downspouts no longer functions as designed and will not without major repairs.</p>	<p>There are many areas that leak and have loose joints. Many areas are split and/or cracked. Many sections of gutters are bent or loose.</p>	<p>Replace the damaged gutters and downspouts as needed</p>

Replacement Directives:

1. Replacement may be considered when a complete roof replacement is scheduled.
2. Replacement or repair may be required when damage compromises the integrity of the structure.

The air cooled condensing unit should last well beyond the warranty period when it is installed in compliance with Church specifications.

Condition	Definition	Action
<p>1. Very Good The unit functions properly and the building zone is cooled effectively.</p>	<p>The condensing unit is new or operates with near new reliability.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The unit functions properly most of the time.</p>	<p>Some components may need to be repaired or replaced. The unit is generally reliable. Annual inspections reveal potential failure of individual components.</p>	<p>Replacement is not yet justified; make necessary repairs or component replacements.</p>
<p>3. Poor The unit breaks down frequently during critical operating periods.</p>	<p>The condensing unit is unreliable. Parts and technology are obsolete.</p>	<p>Replace the condensing unit.</p>

Replacement Directives:

1. Before replacing a compressor a professional mechanical engineering consultant should inspect the refrigerant piping to determine if the refrigerant piping installation is the cause of the compressor failure. Correct or replace the refrigerant piping as necessary per the condensing unit manufacturer’s recommendations before replacing a compressor or condensing unit.
2. If the warranty period has expired on units with a capacity of less than ten tons it is generally less expensive to replace the entire unit rather than just the compressor. For units with a capacity of ten tons or more it is generally less expensive to replace a compressor rather than the entire unit. However in either case a life cycle cost analysis should be done to determine the proper solution. Note: Link to an example of how to do a life cycle analysis
3. Church approved guidelines, drawings, specification and details should be used when replacing air cooled condensing unit components.

Replacement of air handling units is seldom if ever required when it is installed in compliance with Church guidelines, specifications and details and it is maintained properly.

Condition	Definition	Action
<p>1. Very Good</p> <p>The blower section delivers heating and cooling air effectively to the building zone.</p>	<p>The air handling unit is new or operates at near new reliability.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The blower section delivers heating and cooling air adequately to the building zone with regular maintenance and intermittent repair to the blower and coil sections.</p>	<p>Some components may need to be repaired or replaced. The air handling unit is reliable provided annual inspections reveal potential failure of individual components to allow timely repair.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor</p> <p>Components of the air handling unit have failed and parts are no longer available.</p>	<p>The structural frame and/or the steel sheet metal cabinet frame are failing because of corrosion or operational stress.</p>	<p>Replace the air handling unit.</p>

Replacement Directives:

1. Church approved guidelines, drawings, specification and details should be used when replacing air cooled condensing unit components.
2. A professional mechanical engineering consultant should be used when replacing air handling units to ensure compatibility with existing equipment and ductwork and to review the complete system design.

An air cooled chiller should last well beyond the warranty period when it is installed in compliance with Church specifications and maintained according to the manufacturer’s recommendations.

Condition	Definition	Action
<p>1. Very Good The unit functions properly and the building zone is cooled effectively.</p>	<p>The chiller is new or operates with near new reliability.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The unit functions properly most of the time.</p>	<p>Some components may need to be repaired or replaced. The unit is generally reliable. Annual inspections reveal potential failure of individual components.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor The chiller breaks down frequently during critical operating periods.</p>	<p>The chiller is unreliable. Parts and technology are obsolete.</p>	<p>Replace the chiller.</p>

Replacement Directives:

1. Church approved guidelines, drawings, specification and details should be used when replacing air cooled chillers.
2. A professional mechanical engineering consultant should be used when replacing an air cooled chiller. Perform an engineering evaluation to determine the feasibility of replacing the chiller with individual air cooled condensing units with a DX cooling coil for each of the zone air handling units.
3. The condenser coil fins are not corroded away.

Replacement of water cooled chillers is seldom required. With proper maintenance and care only individual components will need to be replaced. Such components include (but are not limited to) compressor or condenser tube bundle.

Condition	Definition	Action
<p>1. Very Good The unit functions properly and the building zone is cooled effectively.</p>	<p>The chiller is new or operates with near new reliability.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The unit functions properly most of the time.</p>	<p>Some components may need to be repaired or replaced. The unit is generally reliable. Annual inspections reveal potential failure of individual components.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor The chiller breaks down frequently during critical operating periods.</p>	<p>Condenser coil section is failing and needs to be repaired regularly. A compressor has failed and parts and technology are obsolete.</p>	<p>Before replacing, perform a life cycle cost analysis to ensure replacement is justified.</p>

Replacement Directives:

1. Church approved guidelines, drawings, specification and details should be used when replacing water cooled chillers.
2. A professional mechanical engineering consultant should be used when replacing a water cooled chiller. Perform an engineering evaluation to determine the feasibility of replacing the chiller with individual air cooled condensing units with a DX cooling coil for each of the zone air handling units.
3. Perform required preventive maintenance as per manufacturer’s recommendation and schedule.
4. Initiate and maintain proper water treatment schedule.
5. Perform eddy current test.

Condition	Definition	Action
<p>1. Very Good Chilled water, hot water or steam is delivered effectively to all air coils for each building zone.</p>	<p>The piping and control valves do not leak. The pumps function with routine maintenance. Water treatment is current.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory Chilled water, hot water or steam flow to all air coils is adequate to cool/heat each building zone.</p>	<p>Minor leaks need repair and some parts need replacement over time. Water treatment is current.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements. Replace terminal control valves if obsolete or not functioning. Replace pump seals and gaskets if leaking.</p>
<p>3. Poor Chilled water, hot water or steam is delivered inadequately to air coils and the building zone is not cooled or heated adequately.</p>	<p>Several major leaks have occurred. Water treatment is not current. Pipe wall thickness is near failure i.e. 50% or less of the original pipe wall thickness. (measured by cutting open the pipe section at an elbow).</p>	<p>Full replacement should only be considered if the cost of repairs exceeds the cost of replacement. Replace piping, pumps, traps and all other piping accessories as required</p>

Replacement Directives

1. Church approved guidelines, drawings, specifications and details should be used when replacing distribution piping.
2. Professional mechanical engineering consultants should be used when replacing distribution piping.

A cooling tower should last well beyond the warranty period when it is installed in compliance with Church specifications and maintained according to the manufacturer’s recommendations.

Condition	Definition	Action
<p>1. Very Good</p> <p>The cooling tower functions effectively to ensure reliable chiller operation.</p>	<p>The cooling tower is new or operates with near new reliability.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The cooling tower functions adequately to ensure reliable chiller operation with regular maintenance and intermittent repair.</p>	<p>Some components may need to be repaired or replaced. The cooling tower is reliable provided that annual inspections reveal potential failure of individual components to allow timely repair.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor</p> <p>The unit breaks down frequently during critical operating periods</p>	<p>The cooling tower is unreliable. Parts and technology are obsolete.</p>	<p>Replace the cooling tower.</p> <p>This assumes that the existing chiller remains in service.</p>

Replacement Directives:

1. If the chiller is being replaced with a new chiller, an engineering evaluation should be performed to determine capacity match. If the existing cooling tower capacity matches the new chiller, then the cooling tower should remain. If the complete chilled water plant is abandoned, then the cooling tower should be abandoned and removed.
2. A professional mechanical engineering consultant should be used when replacing a cooling tower.

Currently specified thermostats should last 15-20 years when installed in compliance with Church guidelines, specifications and details.

Condition	Definition	Action
<p>1. Very Good The controls function properly.</p>	<p>The controls are new or operate with near new reliability.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The controls function properly most of the time.</p>	<p>Some components may need to be repaired or replaced. The controls are generally reliable and the components are not obsolete.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor The controls fail frequently and the warranty period has expired.</p>	<p>The thermostat and/or sensor do not reliably activate the heating and cooling equipment or maintain temperature settings.</p>	<p>Replace the thermostat and/or room sensor.</p>

Replacement Directives:

1. Church approved guidelines, drawings, specification and details should be used when replacing a digital thermostat.
2. Earlier model thermostats will need to be replaced when they are no longer dependable.
3. The thermostat should be replaced with the most current specified thermostat model.
4. Other auxiliary temperature control components should be reviewed and replaced if they are not compatible with the replacement thermostat.

A duct furnace should last well beyond the warranty period when it is installed in compliance with Church specifications and maintained according to the manufacturer’s recommendations.

Condition	Definition	Action
<p>1. Very Good</p> <p>The furnace functions properly and the building zone is heated effectively.</p>	<p>The furnace is new or operates at near new reliability.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The furnace functions properly most of the time.</p>	<p>Some minor components such as controls, wiring and gas valve may need to be repaired or replaced. The furnace is reliable provided annual inspections reveal potential failure of individual components to allow timely repair.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor</p> <p>The furnace breaks down frequently during critical operating periods</p>	<p>The furnace is unreliable, parts and technology are obsolete. Measured carbon dioxide levels may indicate a potentially dangerous cracked heat exchanger.</p>	<p>Replace the furnace.</p>

Replacement Directives:

1. Church approved guidelines, drawings, specifications and details should be used when replacing a duct furnace.
2. Existing duct work and other parts that are still in usable condition should be re-used whenever possible.
3. A professional mechanical engineering consultant should be used when replacing a duct furnace to ensure compatibility with existing HVAC system equipment and to review system for correct design.

A forced air furnace should last well beyond the warranty period when it is installed in compliance with Church specifications and maintained according to the manufacturer’s recommendations.

Condition	Definition	Action
<p>1. Very Good The furnace functions properly and the building zone is heated effectively.</p>	<p>The furnace is new or operates with near new reliability.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The furnace functions properly most of the time.</p>	<p>Some components may need to be refurbished or replaced. The furnace is reliable provided annual inspections reveal potential failure of individual components to allow timely repair.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor The furnace breaks down frequently during critical operating periods</p>	<p>The furnace is unreliable. Parts and technology are obsolete. Measured carbon dioxide levels may indicate a potentially dangerous cracked heat exchanger.</p>	<p>Replace the furnace.</p>

Replacement Directives:

1. Church approved guidelines, drawings, specifications and details should be used when replacing a duct furnace.
2. Existing duct work and other parts that are still in usable condition should be re-used whenever possible.
3. A professional mechanical engineering consultant should be used when replacing a packaged forced air furnace to ensure compatibility with existing HVAC system equipment and to review system for correct design.
4. If the heat exchanger has failed but the other components are functioning, perform a life cycle cost analysis to determine whether to replace the heat exchanger or the entire furnace.

A hot water or steam boiler will last well beyond the warranty period when it is installed in compliance with Church specifications and maintained according to the manufacturer’s recommendations.

Condition	Definition	Action
<p>1. Very Good Necessary adjustments keep the boiler functioning at the original design levels.</p>	<p>The boiler operates economically. Operating noise is not noticeable.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The boiler continues to function with regular maintenance and intermittent repairs.</p>	<p>The boiler’s efficiency may be slightly diminished, affecting the economy of operation. The boiler’s structure and components are still in good and safe condition. Some boiler parts have been replaced. Other original parts may not be functioning at peak levels.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor The boiler no longer functions as designed and will not without major repairs. The technology may be outdated.</p>	<p>Operating efficiency and effectiveness have declined. Water level and pressure cannot be maintained consistently due to leaks or poor component support. Heating tubes may have deteriorated.</p>	<p>Full replacement should only be considered if the cost of repairs exceeds the cost of replacement.</p>

Replacement Directives:

1. A boiler will operate at optimum design levels if an effective maintenance program (water treatment, thorough cleaning, small leak repair, and scale removal) is implemented. Adjustments to boiler controls, valves, burners, and safety devices may be necessary to operate as efficiently as possible.
2. Church approved guidelines, drawings, specifications and details should be used when replacing a hot water boiler.
3. A professional mechanical engineering consultant should be used when replacing a hot water or steam boiler to ensure compatibility with existing HVAC system equipment and to review system for correct design.
4. If the heat exchanger has failed but the other components are functioning, perform a life cycle cost analysis to determine whether to replace the heat exchanger or the entire boiler.
5. Have professionals review the piping distribution system to determine its useful life.

It should be possible, with proper and timely repairs and preventive maintenance, to extend the life of the lighting fixtures for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good Fixture is like new (typically less than 15 years old)</p>	<p>Lenses or covers have no cracks or discoloration. Operating noise is not noticeable.</p>	<p>Do not consider replacement.</p>
<p>2. Satisfactory Fixture is showing some wear or damage (typically 15-25 years old)</p>	<p>Cracked or discolored lenses or covers can be economically replaced. Operating noise is acceptable.</p>	<p>Replacement is not yet justified; unless repairs approach the cost of replacing the fixture.</p>
<p>3. Poor Fixture is showing considerable wear or damage or is dangerous.</p>	<p>Repairs either cannot be made or would be more costly than replacement. Operating noise is distracting.</p>	<p>Replace the fixture.</p>

Replacement Directives:

1. Recommended lighting levels should be met and maintained. Levels are documented in the Lighting Design Table in the Meetinghouse Electrical Design Guidelines. A good quality lighting meter and its proper application are necessary for measuring and evaluating existing lighting levels.
2. Professional electrical engineering consultants should be utilized when replacing lighting in the chapel, cultural hall, or parking area.
3. Lighting fixture types and lamp colors should be consistent within a room or corridor.
4. Standards for lighting fixtures and lamps are identified in current meetinghouse standard plan documents.
5. Changes made solely for energy savings must meet required payback criteria.

Replacement Standards

Millwork: Under 12” in width (R&I #33)

Complete replacement of millwork is seldom if ever required. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life of the millwork for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The millwork is beginning to show wear. Regular cleaning keeps the millwork in good condition.</p>	<p>The millwork may have some scratches or small chips. The surface is not seriously dented or scratched. There is no fading or discoloration present.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The millwork is showing defects, but is within acceptable limits. The millwork continues to serve its purpose with regular cleaning and minor repairs.</p>	<p>The millwork may have some minor dents, chips and scratches. The finished surface is beginning to fade and wear. Some discoloration may be present, but the millwork is still usable.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p> <p>Millwork can be sanded down and re-stained if necessary.</p>
<p>3. Poor</p> <p>The millwork is showing considerable wear and defects.</p>	<p>50% or more of the millwork has deep scratches, dents and chips. The finish surface is faded and/or discoloration is present. The veneers are delaminating, blistering, or cracking.</p>	<p>Replace the damaged portions of millwork and finish to match existing. Refinish the portions of millwork not being replaced as needed.</p>

Replacement Directives:

1. Church approved specifications should be used when replacing and refinishing millwork.
2. Use only Church approved consultants.
3. Consider carpet base when replacing wood baseboard.

It should be possible, with regular preventive maintenance and proper and timely repairs, to extend the life of an electronic organ many years. This does not take vandalism into consideration. **Each organ should be evaluated independent of all other organs.**

Condition	Definition	Action
<p>1. Very good The organ is in new or like-new condition.</p>	<p>The organ delivers high quality sound and performs well. There are no problems and no visual damage.</p>	<p>Do not consider replacement</p>
<p>2. Satisfactory The organ shows signs of several years of usage, but continues to sound good and perform adequately with regular maintenance.</p>	<p>The organ may have an occasional key contact problem. An electronic component may occasionally fail. Keys may be slightly chipped or discolored. Sound quality may be diminishing slightly. Light bulbs may be burning out. Case is starting to show some wear.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor The organ no longer produces a quality sound as designed and shows substantial mechanical and outer-case damage. The organ will not work properly without major repairs.</p>	<p>The organ no longer sounds good. Such problems might be distortion, hum, or bad organ tone. Expression pedals may be broken or not function properly. Replacement parts are unavailable or are not cost effective. Emergency service calls are becoming a regular occurrence. Wear on the case is extensive creating a notable visual distraction in the chapel. Keys or stops may be chipped, worn or discolored; actions may be stiff, loose, broken or unusually noisy.</p>	<p>Consider replacement if the cost of repairs exceeds the cost of replacement.</p> <p>Age based electronic organ replacement should be on a case by case basis; consider the following guidelines:</p> <p>2010 – replace organs that were new in 1960 or earlier</p> <p>2011 – replace organs that were new in 1967 or earlier</p> <p>2012 – replace organs that were new in 1973 or earlier</p> <p>2013 – replace organs that were new in 1976 or earlier</p> <p>2014 – replace organs that were new in 1979 or earlier</p> <p>2015 and on – replace organs 33 years old and older</p>

Replacement Directives

1. Replace only with full-size electronic organs found in the Purchasing Reference Guide (PRG).
2. Encourage priesthood leaders to involve unit organists in selecting the new organ from the PRG.

Complete replacement of folding accordion doors is seldom required. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good Necessary adjustments and minor parts replacement may be necessary</p>	<p>The system is totally reliable. Minor repairs, parts replacement and adjustments may need to be made to maintain the system.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The system continues to function with intermittent component repairs, replacements.</p>	<p>The door functions adequately. Some components have failed and have been replaced and others are approaching the end of their useful lives.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor The overall folding partition is subject to constant breakdowns and functions inadequately.</p>	<p>Door does not glide properly on track. Locking system is inoperable. More than 40% of the panels are damaged. Rubber seals, top and bottom, are missing.</p>	<p>Make a study and life cycle cost analysis to determine whether to replace faulty components of the folding partition or replace it entirely.</p>

Replacement Directives:

1. Use only manufacturers recommended specifications and details or recommended supplier/installer, when replacing an entire system.
2. Whenever possible, continue to use as many existing components that are in good condition, such as headers and wood trim.
3. It should be possible, with proper and timely repairs, maintenance and necessary replacements, to extend the life of the entire folding partition for many years without replacement of the entire door system.

Complete replacement is seldom required when paving is installed in compliance with Church specifications. A conscientious and consistent program of scheduled preventive maintenance work to each part of the pavement will maximize the useful life. This includes regular sweeping of the parking area, inspecting for damage, and sealing cracks.

Condition	Definition	Action
<p>1. Very Good</p> <p>The pavement is beginning to show some wear and/or weathering.</p>	<p>There are a few cracks, oxidation has started (the asphalt color is changing from black to gray) but there is no raveling (loss of surface material due to weathering or traffic).</p>	<p>Do not consider replacement under these conditions.</p> <p>Seal cracks.</p>
<p>2. Satisfactory</p> <p>The pavement shows signs of wear and/or weathering.</p>	<p>There are some linear cracks, some alligator cracking, no potholes, minor raveling and some oxidation.</p>	<p>Replacement is not yet justified; make necessary repairs and replace small sections where possible.</p> <p>Seal cracks, remove and replace alligator crack areas with shallow or deep patch depending on the condition of the base and sub-base.</p> <p>If the pavement has been in this condition for more than three years, apply asphalt emulsion sealer and re-stripe.</p>
<p>3. Poor</p> <p>The pavement shows considerable wear and/or weathering.</p>	<p>There are numerous linear cracks, areas of alligator cracking occupying about 50% (or more) of the pavement, some potholes, and considerable oxidation and raveling</p>	<p>Before replacing the entire lot, perform a life cycle cost analysis to ensure replacement is justified.</p> <p>If complete replacement is not justified seal cracks, remove and replace alligator crack areas with shallow or deep patch depending on the condition of the base and sub-base, fill potholes, apply asphalt emulsion sealer and re-stripe.</p>

Replacement Directives:

1. It should be possible with proper and timely repairs and preventive maintenance to extend the life of the pavement in good condition for many years. Applying a sealer approximately every 3 to 5 years will greatly extend the life of pavement.
2. A professional consultant should assist with the pavement evaluation and related core testing when a pavement requires replacement.
3. Pavement deficiencies such as poor drainage, ruts, corrugations, and settlement should be evaluated and corrective action incorporated into pavement replacement.
4. Church approved specifications and details should be used for pavement maintenance, repairs, and replacement. The asphalt mix specification should be modified for locally available materials. A mix appropriate for low volume roads or freeway shoulders is most appropriate.

Asphalt Paving Examples:

Alligator Cracking



Linear Cracks



Raveling



Complete replacement of concrete is seldom required. It should be possible, with proper and timely repairs and preventive maintenance, to extend the life for many years. This does not take natural disasters or vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good The concrete is beginning to show defects.</p>	<p>The concrete is beginning to show defects with a few hairline cracks and some chipping and spalling.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The concrete is showing defects but is within acceptable limits.</p>	<p>Cracks in concrete have spread and widened. The amount of chipping and spalling has increased. More than 75% of the surface is without defects.</p>	<p>Replacement is not yet justified; make necessary repairs and replace small sections where possible. Repair and/or replace any joint sealant that has failed. Seal all cracks wider than 1/8". Grind trip hazards smooth in areas of foot travel.</p>
<p>3. Poor The concrete is showing serious and extensive defects.</p>	<p>Cracks in concrete are numerous, large and extensive. Extensive spalling, chipping and cracking have deformed the face of the concrete making it rough. More than 50% of the surface has defects.</p>	<p>Replace the concrete.</p>

Replacement Directives:

1. Church design guidelines, drawings, specifications and details should be used for concrete replacement.
2. When possible, it is prudent to wait until several adjacent slabs can be replaced at the same time.
3. Professional consultants should be used for concrete replacement.

Replacement Standards

Piano: Upright & Grand (R&I #76)

Complete replacement of a piano is seldom required. It should be possible to extend its life for many years with preventive maintenance and proper and timely repairs. This does not take vandalism into consideration. This standard is used to evaluate both upright pianos and grand pianos. Each piano should be evaluated independent of all other pianos.

Condition	Definition	Action
<p>1. Very Good</p> <p>The piano is in new or like new condition.</p>	<p>The piano delivers high quality sound and performs well with regular tuning and maintenance. There are no problems and no visual damage.</p>	<p>Do not consider replacement</p>
<p>2. Satisfactory</p> <p>The piano shows signs of age but continues to sound good and perform adequately with regular tuning and maintenance.</p>	<p>The piano delivers good quality sound and action performs adequately with regular tuning and maintenance. Key bushings may need to be replaced and hammers reshaped. The case is starting to show some scratches, chips, and marks.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor</p> <p>The piano no longer produces a quality sound as designed. The action will not work properly without major repairs.</p>	<p>The piano is hard to keep tuned. Tuning pins may be loose. The soundboard or pin board could be cracked or the ribs or bridge may be separating causing unacceptable noises or potentially compromising structural integrity. The sound quality may not be improved without major repairs such as hammer or string replacement. The outer case shows considerable scratching, chips, and marks. Keys may be chipped, worn or discolored. Action and pedals may be loose, worn, unresponsive, or broken.</p>	<p>Consider replacement if the cost of repairs exceeds the cost of replacement.</p>

Replacement Directives:

1. Replace only with pianos found in the Purchasing Reference Guide (PRG).
2. Encourage priesthood leaders to involve unit pianists in selecting the new piano from the PRG.

Replacement Standards

Roofing: Built-up Asphalt or Bitumen (R&I #156)

Asphalt or bitumen roofs will last beyond the warranty period if installed and maintained properly. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take natural disasters or vandalism into consideration. This includes regular inspections of the roofing. Standard roofing industry recommendations are to make thorough inspections of the roofing at least in the spring and the fall, and after serious weather trauma.

Condition	Definition	Action
<p>1. Very Good</p> <p>The roofing is beginning to show slight wear and/or damage.</p>	<p>The surface aggregate may be thinning due to traffic or erosion in some locations. Ridges may have lifted due to expansion. The roof is still water-tight.</p>	<p>Do not consider replacement under these conditions.</p> <p>Redistribute aggregate as needed. Keep debris off roof.</p>
<p>2. Satisfactory</p> <p>The roofing is showing wear and/or damage.</p>	<p>The roofing asphalt is exposed in some areas because of the loss of aggregate. The material is begin to show buckling, fish-mouthing, slight cracking at ridges, open seams, punctures, splitting, tight bubbles, surface slippage, and/or wrinkling. Flashings, drip edges and flashed penetrations and minor leaks may have necessitated repair.</p>	<p>Replacement is not yet justified; make necessary repairs and replace small sections where possible.</p>
<p>3. Poor</p> <p>The entire roofing system is showing serious and extensive wear and/or damage.</p>	<p>50% or more of the membrane is exposed, oxidized and cracked. The surface shows extensive blistering, buckling, cracking, fish-mouthing, open seams, punctures, splitting, surface slippage, ridging, and/or wrinkling. Moisture has penetrated through the roof insulating material damaging the roof deck and/or the interior of the meetinghouse.</p>	<p>Replace this roofing system.</p>

Replacement Directives:

1. Only roofing replacement systems and details that are found in the standard Church specifications should be used. A professional consultant must be hired to design and supervise application. Perform necessary maintenance to keep moisture from the roof deck and the interior of the meetinghouse until the re-roofing work commences.
2. If roofing on a different wing or a different surface is in good condition, it may be retained only if doing so does not create an unsightly appearance.
3. Schedule replacement of the roofing well in advance so that the project can be developed and bid during the winter months. Time the replacement of the roofing to avoid as much bad weather as possible.

Composition shingle roofs will last beyond the warranty period if installed and maintained properly. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take natural disasters or vandalism into consideration. This includes regular inspections of the roofing. Standard roofing industry recommendations are to make thorough inspections of the roofing at least in the spring and the fall, and after serious weather trauma.

Condition	Definition	Action
<p>1. Very Good The shingles are beginning to show slight wear and/or damage.</p>	<p>Evidence of minor granule erosion may be seen in the rain gutters. Minor lifting of tabs may have occurred due to wind. The roof is still water-tight.</p>	<p>Do not consider replacement under these conditions. Continue to inspect. Re-tab as needed. Keep debris off roof.</p>
<p>2. Satisfactory The shingles are showing wear and/or damage.</p>	<p>The shingles are beginning to crack and/or curl. Some granules may have been eroded from the shingle’s surface. Some tabs may have broken off. Flashings, drip edges and flashed penetrations may require repair. Minor leaks may have necessitated repair.</p>	<p>Replacement is not yet justified; make necessary repairs and replace small sections where possible.</p>
<p>3. Poor The shingles are showing extensive wear and/or damage.</p>	<p>50% or more of the shingles are showing horizontal cracking or are badly curled. Many shingles are broken or are missing. Granule erosion may have exposed the felt backing on most of the shingles. Leaking has likely damaged the roof deck and/or interior of the meetinghouse.</p>	<p>Replace this roofing system.</p>

Replacement Directives:

1. If roofing on a different wing or a different surface is in good condition, it may be retained only if doing so does not create an unsightly appearance.
2. Only roofing replacement systems and details that are found in the standard Church specifications should be used.
3. A professional consultant may be hired if necessary. Perform necessary maintenance to keep moisture from the roof deck and the interior of the meetinghouse until the re-roofing work commences.
4. Schedule replacement of the roofing well in advance so that the project can be developed and bid during the winter months. Time the replacement of the roofing to avoid as much bad weather as possible.
5. Replacing the roofing system may need to be completed in conjunction with structural improvements to the meetinghouse, in compliance with Church seismic criteria.
6. Always refer back to the warranty, and file a claim with the shingle manufacturer if premature aging or failure has occurred.

Complete replacement of concrete tile roofs is seldom if ever required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take natural disasters or vandalism into consideration. This includes regular inspections of the roofing. Standard roofing industry recommendations are to make thorough inspections of the roofing at least in the spring and the fall, and after serious weather trauma.

Note: *Faulty installation can lead to leaks in the underlayment or base sheet long before the failure of the tile. A common mistake has been to leave out the necessary vertical cleats, and install only the horizontal cleats, which then trap water and cause leaks. This condition may justify replacement or reinstallation of the roof.*

Condition	Definition	Action
<p>1. Very Good The roofing is beginning to show scattered damage.</p>	<p>Fewer than 25 tile may have come loose or are broken. The roof is still water-tight.</p>	<p>Do not consider replacement under these conditions. Re-anchor any loose tile and replace any broken tile as needed.</p>
<p>2. Satisfactory The roofing is showing damage.</p>	<p>Damage to tile due to traffic, fastener failure, or the elements has become more widespread. A small percentage of tile may have come loose or are broken. Minor leaks may have necessitated repair to roof deck and interior of building.</p>	<p>Replacement is not yet justified; make necessary repairs and replace small sections where possible. Re-anchor any loose tile and replace any broken tile as needed. Remove tile, repair underlayment, and restore tile as needed.</p>
<p>3. Poor The roofing is showing extensive damage.</p>	<p>50% or more of the concrete tiles are loose, missing, cracked or broken, and/or the underlayment has buckling, cracking, open seams, oxidation, punctures, ridging, splitting, and/or wrinkling. Moisture has penetrated through the roof damaging extensive areas of the roof deck and/or the interior of the building.</p>	<p>Replace this roofing system. A life-cycle cost analysis should be made to determine which roofing system should be specified as the replacement.</p>

Replacement Directives

1. If tile can be matched, replace only those sections of a roofing system that need to be replaced. Roofing of different installation years on different sections may not need to be replaced at the same time.
2. Only roofing replacement systems and details that are found in the standard Church specifications should be used.
3. A roofing consultant may be hired to design and possibly supervise application of a new roofing system.
4. Perform necessary maintenance to keep moisture from the roof deck and the interior of the building until the re-roofing work commences.
5. Schedule replacement of the roofing well in advance so that the project can be developed and bid during the winter months. Time the replacement of the roofing to avoid bad weather as much as possible.
6. Replacing the roofing system may need to be completed in conjunction with structural improvements to the meetinghouse, in compliance with Church seismic criteria.

Complete replacement of metal shingle roofs is seldom if ever required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take natural disasters or vandalism into consideration. This includes regular inspections of the roofing. Standard roofing industry recommendations are to make thorough inspections of the roofing at least in the spring and the fall, and after serious weather trauma.

Condition	Definition	Action
<p>1. Very Good</p> <p>The shingles are beginning to show slight wear and/or damage.</p>	<p>The shingles may show slight fading, denting or discoloration. The roof is still water-tight.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The shingles are showing wear and/or damage.</p>	<p>The shingles are beginning to show some dents or distortion. Shingle coating may be thinning and/or eroding. Some fasteners may have come loose. Minor leaks in the shingles and base sheet may have necessitated repair.</p>	<p>Replacement of the entire roofing system is not yet justified; make necessary repairs and replace small sections where possible.</p>
<p>3. Poor</p> <p>The shingles are showing extensive damage.</p>	<p>50% of the shingles are dented, distorted, loose and/or missing. Surface corrosion may have followed the loss of shingle coating. Leaking has likely damaged the roof deck and/or interior of the meetinghouse.</p>	<p>Replace this roofing system.</p>

Replacement Directives:

1. If roofing on a different wing or a different surface is in good condition, it may be retained only if doing so does not create an unsightly appearance.
2. A professional consultant may be hired to design and possibly supervise application of a new roofing system.
3. Perform necessary maintenance to keep moisture from the roof deck and the interior of the meetinghouse until the re-roofing work commences.
4. Only roofing replacement systems and details that are found in the standard Church specifications should be used.
5. Schedule replacement of the roofing well in advance so that the project can be developed and bid during the winter months. Time the replacement of the roofing to avoid as much bad weather as possible.
6. Replacing the roofing system may need to be completed in conjunction with structural improvements to the meetinghouse, in compliance with Church seismic criteria.

Replacement Standards

Roofing: Single-ply Rubber Membrane (EPDM) – Ballasted (R&I #157)

Complete replacement of single-ply rubber membrane roofs is seldom required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take natural disasters or vandalism into consideration. This includes regular inspections of the roofing. Standard roofing industry recommendations are to make thorough inspections of the roofing at least in the spring and the fall, and after serious weather trauma.

Condition	Definition	Action
<p>1. Very Good</p> <p>The roof is beginning to show the effects of traffic or erosion.</p>	<p>The ballast may be displaced due to traffic or erosion in some locations. The roof is still water tight.</p>	<p>Do not consider replacement under these conditions.</p> <p>Redistribute ballast as needed.</p>
<p>2. Satisfactory</p> <p>The roof is showing effects of traffic, erosion, expansion, oxidation and/or wear.</p>	<p>The membrane is exposed in some areas because of the ballast displacement. The membrane is beginning to show slight cracking at ridges, open seams, punctures, and/or splitting. Minor leaks may have necessitated repair.</p>	<p>Replacement of the entire roofing system is not yet justified; make necessary repairs and replace small sections where possible.</p>
<p>3. Poor</p> <p>The roofing is showing extensive damage.</p>	<p>50% or more of the membrane is exposed, and oxidized. The membrane is no longer watertight due to buckling, extensive cracking, open seams, punctures and/or splitting. Moisture has penetrated through the roof insulating material, damaging the roof deck and/or the interior of the meetinghouse.</p>	<p>Replace this roofing system.</p> <p>Perform necessary maintenance to keep moisture from the roof deck and the interior of the meetinghouse until the re-roofing work commences.</p>

Replacement Directives:

1. If roofing on a different wing or a different surface is in good condition, it may be retained only if doing so does not create an unsightly appearance.
2. Only roofing replacement materials and details that are found in the standard Church specifications should be used.
3. A professional consultant must be hired to design and supervise application.
4. Perform necessary maintenance to keep moisture from the roof deck and the interior of the meetinghouse until the re-roofing work commences.
5. Schedule replacement of the roofing well in advance so that the project can be developed and bid during the winter months. Time the replacement of the roofing to avoid as much bad weather as possible.
6. Replacing the roofing system may need to be completed in conjunction with structural improvements to the meetinghouse, in compliance with Church seismic criteria.
7. Replace ballasted systems with a fully adhered roof system when total replacement is required.

Replacement Standards

Roofing: Single-ply Rubber Membrane (EPDM) - Fully Adhered (R&I #157)

Complete replacement of single-ply rubber membrane roofs is seldom required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take natural disasters or vandalism into consideration. This includes regular inspections of the roofing. Standard roofing industry recommendations are to make thorough inspections of the roofing at least in the spring and the fall, and after serious weather trauma.

Condition	Definition	Action
<p>1. Very Good The roofing is beginning to show slight wear and/or damage.</p>	<p>The membrane may show fading or discoloration due to sun and weather. Slight ridges may have lifted due to expansion. The roof is still water-tight.</p>	<p>Do not consider replacement under these conditions. Keep debris off roof.</p>
<p>2. Satisfactory The roofing is showing effects of traffic and/or wear.</p>	<p>The membrane is beginning to show buckling, slight cracking at ridges, open seams, oxidation, punctures, and/or wrinkling. Minor leaks may have necessitated repair.</p>	<p>Replacement of the entire roofing system is not yet justified; make necessary repairs and replace small sections where possible. Keep debris off roof.</p>
<p>3. Poor The roofing is showing extensive damage.</p>	<p>50% or more of the membrane is oxidized and cracked. The surface shows cracking, open seams, punctures. Moisture has penetrated through the roof insulating material, damaging the roof deck and/or the interior of the meetinghouse.</p>	<p>Replace this roofing system.</p>

Replacement Directives:

1. If roofing on a different wing or a different surface is in good condition, it may be retained only if doing so does not create an unsightly appearance.
2. Only roofing replacement materials and details that are found in the standard Church specifications should be used.
3. A professional consultant must be hired to design and supervise application.
4. Perform necessary maintenance to keep moisture from the roof deck and the interior of the meetinghouse until the re-roofing work commences.
5. Schedule replacement of the roofing well in advance so that the project can be developed and bid during the winter months. Time the replacement of the roofing to avoid as much bad weather as possible.
6. Replacing the roofing system may need to be completed in conjunction with structural improvements to the meetinghouse, in compliance with Church seismic criteria.

Complete replacement of standing rib or metal panel roofs is seldom required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take natural disasters or vandalism into consideration. This includes regular inspections of the roofing. Standard roofing industry recommendations are to make thorough inspections of the roofing at least in the spring and the fall, and after serious weather trauma.

Condition	Definition	Action
<p>1. Very Good The panels are beginning to show slight wear and/or damage.</p>	<p>The panels may show slight fading, denting or discoloration. The roof is still water-tight.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The panels are showing wear and/or damage.</p>	<p>The panels are showing some fading denting, and/or discoloration. Some seams and/or fasteners may have come loose. Minor leaks may have necessitated repair.</p>	<p>Replacement of the entire roofing system is not yet justified; make necessary repairs and replace small sections where possible.</p>
<p>3. Poor The panels are showing extensive damage.</p>	<p>50% or more of the panels and seams (ribs) are dented, bent, discolored, corroded and/or loose. Leaking has likely damaged the roof deck and/or interior of the meetinghouse.</p>	<p>Replace this roofing system.</p>

Replacement Directives:

1. Only roofing replacement systems and details that are found in the standard Church specifications should be used.
2. A professional consultant may be hired to design and possibly supervise application of a new roofing system.
3. Perform necessary maintenance to keep moisture from the roof deck and the interior of the meetinghouse until the re-roofing work commences.
4. Schedule replacement of the roofing well in advance so that the project can be developed and bid during the winter months. Time the replacement of the roofing to avoid as much bad weather as possible.
5. Replacing the roofing system may need to be completed in conjunction with structural improvements to the meetinghouse, in compliance with Church seismic criteria.

It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take natural disasters into consideration. This includes regular inspections of the roofing. Standard roofing industry recommendations are to make thorough inspections of the roofing at least in the spring and the fall, and after serious weather trauma.

Condition	Definition	Action
<p>1. Very Good</p> <p>The shingles are beginning to show slight wear and/or damage.</p>	<p>The shingles may show fading or discoloration due to sun and weather. A few shingles may have broken, splintered, come loose, and/or are missing. The roof is still water-tight.</p>	<p>Do not consider replacement under these conditions.</p> <p>Keep debris, moss, mold and fungus off roof. Apply linseed oil and graphite mix when necessary.</p>
<p>2. Satisfactory</p> <p>The shingles are showing wear and/or damage.</p>	<p>Wear due to the elements has caused slight warping and/or thinning of the exposed portion of the shingles. Damage to shingles has become more widespread due to elements, fastener failure, or traffic. Many shingles may have cracked, loosened or broken. Minor leaks may have necessitated repair to the shingles and/or base sheet.</p>	<p>Replacement of the entire roofing system is not yet justified; make necessary repairs and replace small sections where possible.</p> <p>Apply linseed oil and graphite mix when necessary.</p>
<p>3. Poor</p> <p>The shingles are showing extensive wear and/or damage.</p>	<p>50% or more of the shingles are cracked, warped, eroded, broken and/or missing. Leaking has likely damaged the roof deck and/or interior of the meetinghouse.</p>	<p>Replace this roofing system.</p>

Replacement Directives:

1. If roofing on a different wing or a different surface is in good condition, it may be retained only if doing so does not create an unsightly appearance.
2. Only roofing replacement systems and details that are found in the standard Church specifications should be used.
3. A professional consultant may be hired to design and possibly supervise application of a new roofing system.
4. Perform necessary maintenance to keep moisture from the roof deck and the interior of the meetinghouse until the re-roofing work commences.
5. Schedule replacement of the roofing well in advance so that the project can be developed and bid during the winter months. Time the replacement of the roofing to avoid as much bad weather as possible.
6. Replacing the roofing system may need to be completed in conjunction with structural improvements to the meetinghouse, in compliance with Church seismic criteria.

Replacement Standards

Seating: Non-upholstered
(R&I #046, #042, #049, #052, #333, #337)

It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take vandalism into consideration. This standard is used to evaluate non-upholstered pews, side chairs, folding chairs and stacking chairs.

Condition	Definition	Action
1. Very Good The pew or chair is beginning to show slight signs of wear.	Small repairs may have been made to correct the loosening of structural connections. There may be slight mars in the wood or finish.	Do not consider replacement under these conditions.
2. Satisfactory The pew or chair is showing some defects, but is within acceptable limits.	Repairs have been made to correct loose structural connections. There are noticeable mars in the wood or finish.	Replacement is not yet justified; make necessary repairs and/or refinishing.
3. Poor The pew or chair is showing serious and extensive wear and/or damage.	Repairs can no longer restore the pew or chair's frame to useable condition.	Replace this pew or chair only if cost of repairs/refinishing exceeds the cost of replacement.

Replacement Directives:

1. Replace chairs in reasonable groups to maintain continuity of appearance.

Replacement Standards

Seating: Upholstered

(R&I #041, #042, #043, #044, #045, #048, #050, #051, #053, #054, #254, #338)

It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The item is beginning to show slight signs of wear.</p>	<p>There may be slight thinning of the fabric on arms, corners or edges. Regular spotting and cleaning have maintained the upholstery's attractive appearance. Small repairs may have been made to correct some snagging of the fabric or loosening of structural connections. There may be slight mars in the wood or finish.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Fair</p> <p>The item is showing some defects, but is within acceptable limits.</p>	<p>Thinning of fabric on arms, corners and edges may be obvious. Regular spotting and cleaning have kept the upholstery looking attractive. Repairs have been made to correct snags, tears in the fabric and/or loose structural connections. There are small noticeable mars in the wood or finish.</p>	<p>Replacement is not yet justified; make necessary repairs.</p>
<p>3. Poor</p> <p>The item is showing considerable wear and use.</p>	<p>There is thinning or tearing of the fabric on the seat, arms, corners or edges. Regular spotting and cleaning are having no effect on appearance. There is permanent soiling, staining, or fading. Repairs are needed often to correct snagging and fraying. Structural connections may be failing. Many deep mars are obvious in the wood or finish.</p>	<p>Re-upholster or replace this item.</p> <p>Re-upholster or replace this pew or chair only if cost of repairs/refinishing exceeds the cost of replacement.</p>

Replacement Directives:

1. Re-upholster all of the items only in homogeneous seating areas that qualify by this standard.
2. Use only church approved upholstery fabrics.
3. Always consider replacing padding, especially when re-upholstered an item.

Complete replacement of soffits is seldom if ever required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good The soffit area is beginning to show slight signs of wear. Cleaning might be necessary to keep the soffit in this condition.</p>	<p>All panels are in near perfect condition. There are slight areas of dents, holes or bent panels.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory The soffit area is showing wear, but is within acceptable limits.</p>	<p>Some panels may be dented, bent or may have holes. A panel or two may be out of place, due to a windstorm. The majority of the soffit is still in very good condition</p>	<p>Replacement is not yet justified; make necessary repairs and replace small sections where possible.</p>
<p>3. Poor The soffit area is showing a considerable amount of wear. The soffit is detracting from the exterior appearance</p>	<p>50% or more of the panels are bent, have holes, and/or have dents.</p>	<p>Replace the soffit.</p>

Replacement Directives:

1. Use only Church approved specifications and details when replacing a soffit area.

Complete replacement of partitions is seldom required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The partition is beginning to show slight signs of wear. Necessary adjustments to the hardware help the partition serve its purpose.</p>	<p>The partition has no dents, rust or broken hardware. The partition walls are securely anchored to the wall(s) and floor. Some bolts or screws may be loose and there may be a few scratches on the walls.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The partition is showing some wear but is within acceptable limits. The partition functions properly with regular maintenance and intermittent repairs.</p>	<p>Some of the hardware may need to be tightened or replaced. Rust may be present, but not enough to cause structural damage to the walls or door. Partition walls may be coming loose from floors and wall(s). There may be some dents or marks visible at this point.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>3. Poor</p> <p>The partition is showing a considerable amount of wear. The partition no longer functions as originally designed and will not without major repairs.</p>	<p>The partition hardware does not function properly and needs to be replaced. Some replacement parts are no longer available. Rust is beginning to crumble the bottom and sides of the partition walls. The walls are becoming less stable due to a rusted bottom and screws that are coming out of the wall.</p>	<p>Replace the partition.</p>

Replacement Directives:

1. Use only Church approved specifications and details when replacing a bathroom partition.
2. It may be necessary to replace an area, subject to considerable vandalism, with a product that is more resistant, such as a hard plastic.
3. Stall partition replacements should be coordinated with restroom renovations, especially when floor or wall tile is being replaced.

Complete replacement of sisal wall covering is seldom if ever required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take vandalism into consideration. Sisal replacement may include all of the sisal in a meetinghouse, or the sisal may be replaced in homogeneous wear zones identified as:

1. Chapel and overflow
2. Cultural hall
3. Foyers, hallways and stairs
4. Classrooms and offices

Condition	Definition	Action
<p>1. Very Good</p> <p>Sisal is beginning to show slight signs of wear.</p>	<p>Slight fading may be present in areas of direct sunlight. Spot cleaning and minor repairs to prevent sagging, separating, bubbling and fraying have been made to maintain the condition of the sisal. 75% to 95% of the sisal in the area being inspected is still in excellent condition.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>Sisal is showing some defects, but is within acceptable limits.</p>	<p>The areas of heaviest sunlight are showing fading. Regular spot cleaning has kept the sisal attractive. Repairs have been made to correct frizzing, fraying, seam separation, bubbling, sagging and tearing. 75% to 95% of the sisal in the area being considered is still in very good condition.</p>	<p>Replacement is not yet justified; make necessary repairs and replace small sections where possible.</p>
<p>3. Poor</p> <p>The sisal is showing considerable wear marks and spots.</p>	<p>75% or more of the sisal is fraying, bubbling, separating, tearing and sagging. Extensive marking detracts from the appearance of the sisal. Damage is irreversible.</p>	<p>Replace the sisal.</p> <p>Defects that detract from the overall appearance may be replaced in a specific area.</p>

Replacement Directives:

1. New wall covering colors have been designed such that the sisal does not prematurely trigger the replacement of other items. The color of the replacement sisal should be chosen to **complement** other existing meetinghouse components and **not be a reason to replace them**. Such components include, but are not limited to, existing sisal, carpet, pew fabric, opera chair fabric, foyer furniture, chair color, counter tops, window sills, toilet partitions, or portable partitions.
2. The addition of new space does not necessarily justify the replacement of sisal in existing space.
3. Dissatisfaction with color is not justification to replace the sisal. Consider sisal rehabilitation as outlined in the R&I specifications.

Complete replacement of vinyl or fabric wall covering is seldom required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take vandalism into consideration. Wall covering replacement may include all of the wall coverings in a meetinghouse, or the wall coverings may be replaced in homogeneous wear zones identified as

1. Foyers and hallways
2. Classrooms and offices
3. Chapel and overflow
4. Cultural hall

Condition	Definition	Action
<p>1. Very Good The wall covering is beginning to show slight signs of wear.</p>	<p>Wall covering has no tears. Material may be slightly frayed. Seams are tight. There is no discoloration or stains.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory Wall covering is showing some defects, but is within acceptable limits.</p>	<p>Wall coverings may have slight tears. There may be some fraying. There may be scuff marks or gouges present. Seams may have slight sections coming undone. No stains are present. There is no discoloration.</p>	<p>Replacement is not yet justified; make necessary repairs and replace small sections where possible.</p>
<p>3. Poor The wall covering is showing a considerable amount of wear.</p>	<p>Wall coverings have a considerable amount of tears and gouges. There is extensive fraying. Seams are coming undone. Considerable stains are present with some discoloration.</p>	<p>Replace the wall covering.</p>

Replacement Directives:

1. Use only Church specifications and details when replacing wall coverings.
2. Wall covering is only approved in the chapel and Relief Society room. When replacing wall covering in other areas change to a painted surface.
3. Careful consideration should be given when selecting wall coverings in areas of high humidity.

Complete replacement of ceramic wall tile is seldom if ever required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The tile wall is beginning to show slight signs of wear. Regular cleaning and preventative maintenance keep appearance clean and new.</p>	<p>The wall has no discoloration or worn surface. There may be slight cracks, with no chipped or broken tiles. There are no loose or missing portions. Grout is uniform in color and appearance.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The tile wall is showing some defects, but is within acceptable limits. The tile surface continues to serve its purpose with regular cleaning and intermittent repairs.</p>	<p>The wall has no discoloration or worn surface. There may be some hairline cracks or chips, but no tiles are broken. There are no loose or missing portions. Grout may show variation in color or appearance.</p>	<p>Replacement is not yet justified; make necessary repairs and replace small sections where possible.</p>
<p>3. Poor</p> <p>The wall tile is showing considerable wear and defects. The condition of the tile is distracting.</p>	<p>50% or more of the wall tile is discolored. There are cracks and/or chips present with some tiles broken. There are some loose, broken or missing portions. Grout shows obvious variation in color and appearance. Some grout is loose or missing.</p>	<p>Replace the wall tile.</p> <p>If only one section of tile has been damaged consider only replacing that tile area. This may not be possible if a tile match cannot be made.</p>

Replacement Directives:

1. Use only Church approved contractors, specifications and/or details when replacing wall tile.
2. If only one section of tile has been damaged, find matching tile and only replace the damaged section.
3. When replacing wall tile, make sure to buy extra tiles and store them for future repairs and replacements.
4. Dissatisfaction with color is not justification to replace the tile.

Complete replacement of windows or skylights is seldom required. It should be possible, with proper and timely repairs and preventive maintenance to extend the life for many years. This does not take vandalism into consideration.

Condition	Definition	Action
<p>1. Very Good</p> <p>The window is beginning to show slight signs of wear.</p>	<p>Glass, window frames and mechanisms have slightly loose parts with no chips, cracks or missing parts. Mechanisms operate and may slightly grind, rub or squeak.</p>	<p>Do not consider replacement under these conditions.</p>
<p>2. Satisfactory</p> <p>The window is showing some defects, but is within acceptable limits.</p>	<p>Glass, window frames and mechanisms have some loose parts and may have slight chips with no cracks, broken or missing parts. Mechanisms operate and may have some grinding, rubbing or squeaking. Rubber seals are weathered and are cracking. The glass is starting to haze over.</p>	<p>Replacement is not yet justified; make necessary repairs and component replacements.</p>
<p>Poor</p> <p>The window is showing considerable wear and defects.</p>	<p>Glass, window frames and mechanisms have some cracks, chips, and missing, loose or broken parts. Mechanisms may or may not operate and may have extensive grinding, rubbing, or squeaking. Most of the rubber seals are gone. Hazing in glass has severely affected the transparency of the glass.</p>	<p>Replace the damaged window.</p>

Replacement Directives:

1. Use only Church approved specifications and details when replacing windows.

Reasons for reconfiguring or changing the use of a room:

1. Upgrading a space for compliance to ADA codes and regulations.
2. Over-occupancy of a space according to the meetinghouse's core feature requirements.
3. Creating a new office or classroom out of an existing space.
4. The addition or removal of countertops, shelves or closets in a room.
5. Seismic upgrades on a building.

Improvement Directives:

When considering the reconfiguration of a space or the changing of a room's use, please consider the following:

- Use an architect, engineer, or project manager in the design processes in order to make sure that all changes will not affect the building's structural integrity. This is also a good way to make sure that all changes are in compliance with local and national building codes. Choose a professional that will stay consistent with the original building type and design.
- Make sure that the proposed changes follow the guidelines found in the Meetinghouse Building Adequacy Standards.
- When changing the function of a space or adding additional space to a building, take into consideration the other areas that are affected by the change. During the planning phase, consider how future additions and remodels will be affected by the design choice of the current project at hand.
- There should be a consistency in appearance and quality with the original building style when a room is remodeled or if an addition is being constructed.

When reconfiguring areas of a meetinghouse, a life cycle cost analysis should be made (with the help of a qualified consultant) to determine what the most cost effective design and construction may be.

Air conditioning (cooling) may be added in areas of existing meetinghouses that do not currently have air conditioning. The spaces below are listed in a suggested order of priority to receive air conditioning.

1. Chapel
2. Cultural Hall
3. Large multipurpose rooms which include Relief Society and Children's meeting rooms
4. Stake suite
5. Bishops and clerks offices
6. Family History and Name Extraction rooms
7. Nursery
8. Classrooms

Improvement Directives:

When considering an upgrade of the HVAC of a meetinghouse, consider the following:

- All HVAC improvements should be done with the help of a professional mechanical engineering consultant.
- When adding cooling to any area with an existing heating/ventilating system, consider the following two options:
 1. Addition of an indoor evaporator coil (with outdoor condensing unit) installed inside the existing heating/ventilating system. Evaluate the existing heating/ventilating fan capacity and air duct distribution system to ensure that it is capable of handling the additional air flow required for cooling. Existing ductwork may need to be replaced with larger ductwork and the fan may need to be replaced with a larger fan. If this option is not possible, consider option 2 below.
- One or more auxiliary heat pumps independent of the existing heating/ventilating system. When adding cooling to areas of a meetinghouse without an existing heating/ventilating system, a life cycle cost analysis should be made (with the help of a qualified consultant) to determine what the most cost effective installation may be.
- If the existing thermostat does not handle cooling, then replace it with the current Church-approved thermostat.
- The addition of air conditioning typically should not cause or be the reason for major architectural or structural changes.