COMMISSION FOR ARKANSAS PUBLIC SCHOOL ACADEMIC FACILITIES AND TRANSPORTATION RULES GOVERNING THE TEN (10) YEAR FACILITIES MASTER PLAN

March 17, 2008

1.00 REGULATORY AUTHORITY

1.01 The Commission for Arkansas Public School Academic Facilities and Transportation's authority for promulgating these Rules is pursuant to pursuant to Ark. Code Ann. §§ 6-21-112 et seq. (Act 1327 of 2005), 6-21-801 et seq. (Act 1426 of 2005), 25-15-204 and Act 989 of 2007.

2.00 PURPOSE

2.01 The purpose of these Rules is to establish a program and process for establishing a format for districts to begin creating ten-year (10) facilities master plans in accordance with State legislation, in an ongoing effort to remediate deficiencies in academic facilities.

3.00 DEFINITIONS

3.01 For the purpose~~s~~ of these Rules, the following terms mean:

3.01.1 Academic facility – a building or space, including related areas such as the physical plant and grounds, where public school students receive instruction that is an integral part of an adequate education as described in Ark. Code Ann. § 6-20-2302.

3.01.1.1 A public school building or space, including related areas such as the physical plant and grounds, used for an extracurricular activity or an organized physical activity course as defined in Ark. Code Ann. § 6-16-137 shall not be considered an academic facility for the purposes of this rule to the extent that the building, space, or related area is used for extracurricular activities or organized physical activities courses, except for physical educational training and instruction under Ark. Code Ann. § 6-16-132;

3.01.1.2 The Division of Public School Academic Facilities and Transportation shall determine the extent to which a building, space, or related area is used for extracurricular activities or organized physical activities courses based on information supplied by the school district and, if necessary, on-site inspection.

3.01.1.3 Buildings or spaces, including related areas such as the physical plant and grounds, used for pre-kindergarten education shall not be considered academic facilities for purposes of these Rules; and

3.01.1.4 District administration buildings and spaces, including related areas such as the physical plant and grounds, shall not be considered academic facilities for the purpose of these Rules.

3.01.2 Amended Facilities Master Plan - A revised Facilities Master Plan, submitted at any time during the ten-year cycle if a district has encountered one of the following conditions:

3.01.2.1 A major enrollment change; or

3.01.2.2 A major disaster; or

3.01.2.3 A major curriculum change; or

3.01.2.4 An unforeseen occurrence.

3.01.2.5 The format for submission will be as outlined in the most current Master Plan Guidelines.

3.01.3 Annexation – the joining of an affected school district or part of the school district with a receiving district under Ark. Code Ann. §§ 6-13-1401 through 6-13-1411.

3.01.4 Appendix – A shortened amendment to an approved Master Plan submitted if a district has begun or completed a self-funded project over which the Division has only review authority, but which was omitted from the Master Plan submittal. The format for submission will be as outlined in the most current Master Plan Guidelines.

3.01.5 Arkansas Facility Condition Index – The ARFCI is the established Facility Condition Index modified to give weighted values to the public educational facility needs identified in the 2004 facility assessment. It assists in prioritizing the school district campuses, on a statewide basis, with the greatest need.

3.01.6 Consolidation - the joining of two (2) or more school districts or parts of the districts to create a new single school district under Ark. Code Ann. §§ 6-13-1401 through 6-13-1411.

3.01.7 Custodial activities – routine and renovation cleaning activities related to daily operations and upkeep of a public school facility, including related supervisory and management activities.

3.01.8 Facility Condition Index - means that particular index obtained by dividing the presently existing condition costs, not including projected life-cycle costs, to bring a public school academic facility up to current codes by the facility's replacement cost, using data for such costs available in 2004.

3.01.9 Facilities distress status – a public school district determined by the Commission for Public School Academic Facilities and Transportation as being in academic facilities distress status.

3.01.10 Facilities master plan – a ten (10) year plan developed by a school district's strategy for maintaining, repairing, renovating, and improving through new construction or otherwise the school district's academic facilities and equipment, and other information required by law.

3.01.11 Foundation funding – shall have the same meaning as in Ark. Code Ann. § 6-20-2303.

3.01.12 Guidelines – Master Plan Guidelines are non-regulatory forms and instructions which are necessary to complete the submission process. The Guidelines are attached to these Rules as "Appendix A" and which are hereby incorporated into and made a part of these Rules as if fully set forth herein. They are found on the Division Web Site (www.arkansasfacilities.com).

The failure of a district to comply with the Guidelines does not mean that the district's submission will not be considered by the Division.

3.01.13 Local resources – any moneys generated by a school district for the purpose of funding the school district's share of financial participation in any academic facilities project for which a school district is eligible to receive state financial participation under priorities established by the Division of Public School Academic Facilities and Transportation. Also referred to as "raised funds" for the purpose of self funded projects.

3.01.14 Maintenance, repair, and renovation – any activity or improvement to a public school facility and, if necessary, related areas, such as the physical plant and grounds, that:

3.01.14.1 Maintains, conserves, or protects the state, condition or efficiency of the public school facility; or

3.01.14.2 Brings the state, condition or efficiency of the public school facility up to the facility's original condition of completeness or efficiency.

3.01.15 New construction – any improvement to an academic facility and, if necessary, related areas, such as the physical plant and grounds, that brings the state of condition or efficiency of the academic facility to a state, condition or efficiency better than the academic facility's original condition of completeness or efficiency. New construction also includes a new addition to an existing academic facility and construction of a new academic facility.

3.01.16 Project – an undertaking in which a school district engages in:

- 3.01.16.1 Maintenance, repair, and renovation activities with regard to an academic facility;
- 3.01.16.2 New construction of an academic facility; or
- 3.01.16.3 Any combination of maintenance, repair, and renovation activities with regard to an academic facility and new construction activities with regard to an academic facility.

3.01.17 Public School Facility – any public school building or space, including related areas such as the physical plant and grounds, that is used for any purpose, including, without limitation:

- 3.01.17.1 An extracurricular activity;
- 3.01.17.2 An organized physical activity course defined in Ark. Code Ann. § 6-16-137;
- 3.01.17.3 Pre-kindergarten education;
- 3.01.17.4 District administration;
- 3.01.17.5 Delivery of instruction to pubic school students that is an integral part of an adequate education as described in Ark. Code Ann. § 6-20-2302.

3.01.18 Public School Facilities Custodial, Maintenance, Repair and Renovation Manual - a document which contains uniform standards to direct custodial, maintenance, repair and renovation activities in public school facilities.

3.01.19 Public School Academic Facilities Manual – a document which contains uniform standards to guide the planning, design and construction of new academic facilities and additions to existing academic facilities, and which is hereby incorporated into and made a part of these Rules, as "Appendix B" to these Rules, as if the Manual was fully set forth herein.

- 3.01.19.1 Variances to the Arkansas Public School Academic Facilities Manual standards may be granted by the Division upon the presentation of evidence of existing conditions that makes compliance with

applicable standards impractical or unreasonably burdensome; or

3.01.19.2 Other conditions determined by the Division as warranting a variance from applicable public school academic facility standards.

3.01.20 Reconstitution – the reorganization of the administrative unit or the governing school board of a school district, including, but not limited to, the replacement or removal of a current superintendent, the removal or replacement of a current school board, or both.

3.01.21 School district – a geographic area with an elected board of directors that qualifies as a taxing unit for purposes of ad valorem property taxes under Title 26 of the Arkansas Code and which board conducts the daily affairs of public schools under the supervisory authority vested in it by the General Assembly and Title 6 of the Arkansas Code.

3.01.22 Self-Funded Project - means a project that is one hundred percent (100%) raised and funded by the school District, that shall be submitted to and approved by the Division upon compliance with state codes and standards. It will be submitted as an Appendix to the most current school district Master Plan.

4.00 ACADEMIC FACILITIES MASTER PLAN PROGRAM – PURPOSE

4.01 The purpose of the Academic Facilities Master Plan Program is:

4.01.1 Establish a mechanism for state supervision of school district activities impacting academic facilities and equipment;

4.01.2 Develop and continually update information critical to identifying academic facilities needs at the local level across the state; and

4.01.3 Allow the state to manage state financial participation in eligible local academic facilities projects.

4.02 The Academic Facilities Master Plan Program shall require each school district to:

4.02.1 Develop a ten (10) year district wide facilities master plan that shall be approved by the school district's board of directors for submission to and approval by the Division of Public School Academic Facilities and Transportation.; and

4.02.2 Base its facilities plan on the provisions of the Arkansas Public School Academic Facility Manual as adopted by the Commission for Public School Academic Facilities and Transportation and on

priorities indicated by statewide assessment, on priorities established by the Division's statewide facility needs priority list and other pertinent data specific to the needs of the school district with regard to academic facilities and equipment.

4.03 The district wide facilities master plan shall include, at a minimum, the following:

4.03.1 A schedule of custodial activities for each public school facility used by a school district;

4.03.2 A schedule of maintenance, repair, and renovation for each academic public school facility used by a school district. The schedule shall distinguish between work associated with academic facilities and work associated with nonacademic public school facilities;

4.03.3 Documentation that describes preventive maintenance work for each public school facility and identifies the completion date of the work. The documentation shall distinguish between preventative maintenance work associated with academic facilities and preventative maintenance work associated with nonacademic public facilities;

4.03.4 Annual expenditures of the school district for all custodial, maintenance, repair, and renovation activities in the school district. The section of the facilities master plan pertaining to annual expenditures shall distinguish between expenditures associated with academic facilities and expenditures associated with non–academic public school facilities;

4.03.5 A projected replacement schedule for major building systems in each public school facility;

4.03.6 Identification of issues with regard to public school facility and program access to individuals with disabilities and, if necessary, proposed methods for improving access;

4.03.7 Identification of committed projects within the district that includes, as applicable, a breakdown of the portion of each project between maintenance, repair, and renovation activities and new construction activities and the portion of a committed project pertaining to maintenance, repair and renovation activities shall identify, as applicable, maintenance, repair and renovation activities associated with academic facilities and maintenance,

repair and renovation activities associated with nonacademic public school facilities;

4.03.8 Annual expenditures of the school district for capital outlay;

4.03.9 Description of planned new construction projects with cost estimates for each public school facility, and needs prioritized as set forth in § 4.05 below; and

4.03.10 Narrative analysis of facility needs and response plans to address the overall district strategy of providing suitable, adequate and maintained public school facilities.

4.04 Districts shall submit a master plan to identify prioritized needs of the district as follows:

4.04.1 The district's Master Plan shall be submitted to the Division of Public School Academic Facilities and Transportation Division by February 1, of each even numbered year with the following needs to be addressed:

4.04.1.1 Immediate needs that the school district intends to address within three (3) years following the submission of the facilities master plan;

4.04.1.2 Short term needs that the school district intends to address within the four (4) to six (6) years following the submission of the facilities master plan; and

4.04.1.3 Long term needs that the school district intends to address within the seven (7) to ten (10) years following the submission of the facilities master plan.

4.05 In addition, as part of and at the same time of the submission of the facilities master plan, the school district shall provide evidence of the following:

4.05.1 Public comments from public hearings regarding the district's facilities master plan; which are to be held in the same locality as the school district.

4.05.2 Evidence of the school district's insurance coverage, including coverage amounts, types of coverage, identification of buildings covered, policy renewal dates, and all riders must be submitted to the Division no later than July 1 of each even numbered year.

4.05.3 Evidence of current student enrollment projections for a period of ten (10) years beginning with the first year of the master plan submission.

5.00 SUBMISSION PROCESS

Each school district in the state shall, in accordance with applicable state law, these Rules, and the guidelines published by the Division:

5.01 Submit the district's facilities master plan with a summary of comments made at public hearing to the Division by February 1 of each even numbered year.

5.02 Submit a report to the Division by February 1 of each odd-numbered year that includes:

5.02.1 An automated update of all completed projects since the most recent submission;

5.02.2 Current enrollment projections;

5.02.3 New or continuing needs of the district with regard to academic facilities; and

5.02.4 An accounting of any changes to the district's insurance coverage from the most recent submission.

5.03 A school district which has encountered one of the conditions listed in Section 3.01.2 of these Rules may submit an Amended Master Plan to the Division out of the regular even-numbered year cycle.

6.00 DIVISION OF PUBLIC SCHOOL ACADEMIC FACILITIES AND TRANSPORTATION RESPONSIBILITIES

6.01 Establish procedures (guidelines) and timelines for submittals of preliminary master plans, master plan outlines and master plans;

6.02 Hold consultation meetings with districts regarding preliminary master plans master plan, outlines and master plans to assure:

6.02.1 Understanding of the general goals of the master plans and reports, and the criteria by which projects will be evaluated;

6.02.2 Discuss ways the master plan may be structured to meet said goals;

6.02.3 Assist districts in preparing accurate budgets and reasonable projects schedules; and

6.02.4 Provide efficiency and productivity in the approval process as to both local academic facilities projects and state financial participation in local projects.

7.00 APPROVAL PROCESS

The Division shall:

7.01 Review and approve master plans no later than September 1 of each even numbered year and shall notify a district no later than May 1 of each odd-numbered year that the district's application for state financial participation for the upcoming biennium has been approved.

8.00 APPEAL PROCESS

8.01 A school district may appeal any determination of the Division to the Commission as follows:

(i) A school district may request and the Division shall provide upon request a written determination of any appealable issue by the Division.

(ii) After receipt of a written determination from the Division, the school district shall file its written appeal within ten (10) calendar days via first class mail, return receipt requested, in the Office of the Director of the Division of Public School Academic Facilities and Transportation, 501 Woodlane St., Suite 600, Little Rock, Arkansas 72201, no later than 4:30 pm on the tenth calendar day from receipt of the Division's written determination. The Division shall within thirty (30) calendar days receipt of the appeal schedule the appeal for the Commission's consideration and determination.

(iii) The school district shall provide in clear express terms a detailed explanation and evidence showing that the Division's decision was clearly erroneous or outside the legal authority vested in the division.

(iv) The school district shall have the burden to establish a *prima facie* case, unless the Commission shall decide to hear the appeal *sua sponte*.

(v) The school district shall not be entitled to a hearing before the Commission unless the Commission should indicate in writing that it desires to hear the appeal and provides notice of the time and location of the hearing.

(vi) Any appeal hearing shall be conducted pursuant to the hearing policy established by the Commission.

(vii) Provided the Commission determines the school district has established a *prima facie* case or the Commission *sua sponte* decides to hear an appeal, the Commission shall render a decision to approve or deny the appeal within sixty (60) calendar days of receipt of the appeal by the Commission from the division.

8.02 All decisions of the Commission regarding a school district's appeal of a Division determination shall be final and shall not be subject to any right of further appeal or request for rehearing to the Commission or subject to right to petition for judicial review under the Arkansas Administrative Procedures Act, §25-15-201 *et seq*.

8.03 Section 8.00 of these Rules shall remain effective until new rules governing Commission appeals have been promulgated. At that time, Section 8.00 of these Rules shall be sunsetted and will be of no further force or effect. All subsequent appeals shall be considered under the new Commission Rules Governing Commission Appeals, when such Rules are promulgated and become effective.

STATE OF ARKANSAS

DIVISION OF PUBLIC SCHOOL ACADEMIC FACILITIES and TRANSPORTATION

ACADEMIC FACILITIES MASTER PLAN PROGRAM

MASTER PLAN GUIDELINES for 2009-2011 Biennium

Arkansas Division of Public School

Academic Facilities & Transportation

SUBMITTAL DEADLINE FEBRUARY 1, 2008

PLEASE NOTE THAT IN ORDER TO EFFECTIVELY CREATE YOUR MASTER PLAN YOU WILL NEED TO USE THE FOLLOWING WEBSITE:
www.arkansasfacilities.com

THAT WEBSITE CONTAINS THE FILES NEEDED TO REVIEW AND SUBMIT TO THE DIVISION OF PUBLIC SCHOOL ACADEMIC FACILITIES AND TRANSPORTATION

Revised to incorporate changes from ADE Commissioner's Memo Number: COM-08-055 dated 11/20/2007

Revised December 5, 2007

Arkansas Division of Public School

Academic Facilities & Transportation

Division of Public School Academic Facilities and Transportation

Facilities Master Plan - 2008

Submission Date _____

School District _____

School District LEA _____

School District Address _____

_____

Phone _____ **Fax** _____

Superintendent _____

Email Address _____

Facilities Master Plan Authors (if more names, please attach separate sheet)
Name _____ **Phone** _____ **Email** _____
Name _____ **Phone** _____ **Email** _____

(BELOW LINE FOR DIVISION USE)

Date of Most Recently Approved Master Plan_____

Received By: _____**Date:**_____

Approved By: _____**Date:**_____

I. Introduction

The facilities goal of the State of Arkansas is to have all schools in all school districts meet the standards for suitability and adequacy as stated in the Arkansas Public School Facility Manual. The school district Facility Master Plan is the backbone of the State of Arkansas goal to provide these facilities for all of its students. It embodies specifics of each school district, bringing them together into a cohesive plan to serve as a guide for the district toward having suitable and adequate facilities. The Master Plan is the district's plan to move from its present facility condition of their district to this goal of suitable and adequate facilities, as defined by the state, by tying together the district's present facility conditions and needs, student population growth and movements, academic needs and educational delivery systems into a district-wide, campus specific plan that provides a roadmap toward making the facilities compliant with the state standards. The Facility Master Plan should consider priority of need in conjunction with financial ability and provide for a coordinated program toward reaching the goal of suitable facilities that support the district's academic program. It should complement the facility requirements of the school district's technology master plan, educational delivery system plan, maintenance plan and other plans the district has which may be affected by facilities.

II. Purpose

The Academic Facilities Master Plan (A.C.A. 6-21-805) is one of the foundations of the Arkansas Public School Academic Facilities Program. The purposes of the Master Plan are to -

- Establish a mechanism for State supervision of school district activities impacting academic facilities and equipment;
- Develop and continually update information critical to identifying academic facilities needs at the local level and across the state; and
- Allow the State to manage state financial participation in eligible academic facilities projects

A.C.A §6-21-806 requires that school districts:

- Develop a ten (10) year district wide facilities master plan that shall be approved by the school district's board of directors for submission to and approval by the Division of Public School Academic Facilities and Transportation;
- Base its facilities master plan on the provisions of the Arkansas School Facility Manual as adopted by the Commission for Public School Academic Facilities and Transportation and on priorities indicated by statewide assessment, on priorities established by the Division of Public School Academic Facilities and Transportation statewide facility needs priority list, and other pertinent data specific to the needs of the school district with regard to academic facilities and equipment;
- Present a draft of the facilities master plan in a public hearing in the same locality as the school district and take public comments;

- Submit evidence of the district's insurance coverage by July 1 of each even numbered year, including coverage amounts, types of coverage, identification of buildings covered, policy renewal date, and all riders;

- Submit facilities master plan with a summary of comments made at public hearing to the Division by February 1 of each even numbered year; and

- Submit a report to the Division by February 1 of each odd-numbered year that includes description of all projects completed in the school district since the submission of the most recent facilities master plan, the school district's current enrollment projections, new or continuing needs of the school district with regard to academic facilities and equipment, and an accounting of any changes in the school district's insurance coverage from the most recent submission.

III. Master Plan Requirements

School districts may submit its Master Plan in either an electronic format using the Master Plan web tool or in two three-ring notebooks that will contain numbered tabs that address the statutory requirements of A.C.A. 6-21-806. The notebooks should contain a cover page on the front cover and a notebook spine label that contains the school district name, "Master Plan", the date "February 1, 2008", and Volume I or Volume II, as appropriate. The 15 tabs are listed below and described in the following paragraphs.
Volume I will contain Tab 1 through Tab 8 and Tab 12 through Tab 15. Volume II will contain Tabs 9, 10, and 11.

District Overview

Tab 1 – District Information Page (Page 2 of these instructions) (Only required with notebooks or hard copy submissions)
Tab 2 - School Board Resolution
Tab 3 – Public Hearing
Tab 4 – District Enrollment Projections (Not required. Optional if district provides revised enrollment projects)
Tab 5 - Community and District Profile (Not required). Planning Considerations
Tab 6 – Master Plan Narrative Summary (Not required). General Planning Considerations

Facilities

Tab 7 – Insurance Coverage
Tab 8 – Identification of Access Issues
Tab 9 – Custodial Activities Schedule
Tab 10 – Maintenance, Renovation, Repair Activities Schedule
Tab 11 – Preventative Maintenance Documentation
Tab 12 – Projected Replacement Schedule for Life Cycle Systems

Projects

Tab 13 – Committed Projects
Tab 14 – Planned New Construction Projects

Financial

Tab 15 – Annual Expenditures for Maintenance/Repair and Capital Outlay

District Overview

Tab 1. District Information Page. (Not required if submitting master plan electronically).

Provide the completed Page 2 of these instructions for district contact information if submitting notebooks or other hard copy information.

Tab 2. School Board Resolution.

Provide a copy of the signed School Board resolution that approved this Master Plan.

Tab 3. Public Hearing.

Provide a description of how your community was involved in the development of this ten-year master plan. Include a "summary of comments made at public hearing"; including dates, times, places of the meetings, and approximate number of attendees.

Tab 4. District Enrollment Projections. (Not required. Optional if district provides revised enrollment projections.)

The district's enrollment growth and suitability needs are predicated on the maximum projected enrollment during the next ten years. Enrollment projections for each district are available for viewing at *http://www.facilitymaps.state.ar.us/ (Under "Click A Button to Get A Report" select the "District" Button and then choose your District from the pop-up menu).* Current enrollment projections posted on the web site were developed using the October 2005 Average Daily Membership (ADM). Revised enrollment projections are available on the Division's web site.

The Cohort-Survival method was used to develop the projections provided on the web site. If the district agrees with these projections no further action is required. If the district believes that the provided enrollment projections are not the best representation of future enrollments, submit an enrollment projection displaying the district's current enrollment projections by grade level for the next ten years. The district projection should also include an analysis of the demographic or other factors that substantiate the differences in their projections with those provided by the Division.

Tab 5. Community and District Profile (Submittal not required). Planning Considerations:

School district existing and anticipated future conditions affect school facilities. The following areas should be considered in your planning for school district needs.

Facility Information

1. Facilities not owned by the district but used (or jointly used) by the district.

2. Land that is being purchased by the district.

3. Portable buildings used for academic purposes. (Plans for replacement of portable buildings should be incorporated with this Master Plan.)

4. District facilities that are being leased to other organizations.

Demographic Information

5. Population and geographic features of the district that affect school facilities needs and utilization (e.g. remoteness of communities, area of district, etc.)

6. Population trends of the school district and surrounding areas.

7. Economic environment of the district and surrounding areas (e.g. major new employers, closing of major businesses, etc.)

8. Other community factors that will affect school facility needs.

Educational Considerations

9. Current and future instructional delivery system(s) used in your district. (e.g. self-contained classrooms, team teaching, distance learning, block scheduling). Describe the anticipated effects on facility needs.

10. Educational programs that have unique school facility needs (e.g. reading recovery, vocational agriculture, technology). Identify the unique facility needs.

11. Anticipated school boundary changes or consolidation of schools within the district.

12. Current district grade configuration, any anticipated grade configuration changes, and the anticipated effects on facility needs.

13. Transportation or food service issues that affect facility needs.

14. Planned local enhancements beyond statewide adequacy standards or any other educational considerations that could affect facilities.

Tab 6. Master Planning Considerations. (Submittal not required).

The information in this tab provides the foundation for the Master Plan as it contains the district's strategy and vision to provide an adequate education for its students. The district should review their academic programs, delivery methods, and their existing public school facilities in terms of current and life cycle condition, suitability, adequacy, and ability to address growth requirements.

The following are planning considerations to assist in the development of the school district Master Plan:

1. Identify your most critical facility deficiencies from the facility assessment and your recorded work request logs. Identify and prioritize the needs that contribute most to the facility status of being maintained in a safe, dry and healthy environment. Analyze these deficiencies and separate them to see if they can be corrected through new construction that would qualify under the Partnership Program or under self-funded maintenance projects.
2. Analyze your "end of life" systems at each campus. Identify the year of most likely replacement of the system. (Tab 12)
3. Analyze each school campus in terms of the student enrollment and determine its suitability, required size based on number of students. Consider inter and intra school movements such as grade changes and consolidations both within the school and between schools. Use the Program of Requirements located in Section 2, Chapter 5 of the web based Arkansas School Facility Manual to determine the correct school facility size for the number of students considered in the plan. Expand the Program of Requirements to list the existing spaces to determine any overages or shortfalls. Facilities must be designed to accommodate the maximum number of students expected during the next ten year period.
4. Analyze student growth and student enrollment projections or district movement to determine facility needs. Consider any changes to current student assignment plans.
5. Analyze campuses to determine educational adequacy, the correct size and type educational spaces to deliver the district's academic program. This analysis is based on the extended Program of Requirements in step 3. Identify academic areas needs to be corrected. Consider the replacement of portable buildings as not being suitable or adequate for academic purposes over an extended period of time. Consider other district plans which have facility ramifications, such as technology plan, educational delivery plan and financial plans.
6. Compile these three areas (condition, suitability/growth, and adequacy) to assist in determining the campus with the greatest needs. Prioritize your campuses based on these criteria. Review the Arkansas Facility Condition Index (ARFCI) ranking of all state campuses that is contained on the Division's web site. This prioritization comprises the district's individual campus plan.
7. Analyze each campus plan as to how these needs are best addressed over the period of the Master Plan. Prioritize the campus needs amongst all campuses. Develop a time line to begin correcting the campus needs. (All needs are not required to be completed within the ten year span of the Master Plan, BUT steady, deliberate, well planned out progress must be established).
8. Examine your campus plans to insure all intercampus considerations are made. This comprises the facility portion of the Master Plan.
9. Analyze your financial ability to support your facility plan. Integrate these to finalize the timeline of projects needed to address your district needs. Enter the projects as detailed in Tab 14.

A. Facilities

Tab 7. Insurance Coverage.

The district must provide a copy of their Statement of Values from their insurance provider, such as the Arkansas School Board Association (ASBA), Arkansas Insurance Department, or any other provider of insurance for its school buildings**.** The information must include coverage amounts, types of coverage, identification of buildings covered, policy renewal dates, and all riders. (Districts are reminded to be sure the minimum insurance values established by law in Act 625 of 2007 are met).

Tab 8. Identification of Access Issues.

Provide the Division with identification of issues with regard to public school facility and program access to individuals with disabilities and, if applicable, proposed methods for improving access.

Tab 9. Custodial Activities Schedule.

The district must provide schedule of custodial activities for each public school facility in the district.

Appendix B of the Custodial and Maintenance Manual (Section 3 of the Arkansas School Facility Manual) located on the Division's web site provides suggested custodial schedule formats.

Tab 10. Maintenance, Renovation, Repair Activities Schedule.

The district must provide a schedule of maintenance, repair, and renovation activities for each public school facility used by the school district. The schedule must distinguish between work associated with academic facilities and work associated with non academic public school facilities.

Maintenance, renovation, and repair activities are scheduled as part of a work request system to allow others to inform the maintenance department of needs and allow the responsible person(s) to prioritize responses.

Districts must provide a narrative description of the type of work request system used by your district including:

1. How work requests are originated and reviewed, if applicable, in the facility and forwarded to the maintenance department.
2. How work requests are scheduled.
3. How your system distinguishes between work requests for academic and non-academic public school facilities in order to schedule maintenance, renovation, and repair activities.

Tab 11. Preventative Maintenance Documentation.

The district must provide documentation that describes preventative maintenance work for each public school facility and identifies the completion date of the work. The documentation must distinguish between preventative maintenance work associated with academic facilities and preventative maintenance work associated with nonacademic public school facilities.

Documentation must include;

1. List of Preventative Maintenance inspection items or areas by facility.
2. A schedule of inspection times for each of the items identified in 1 above.
3. Documentation on inspections completed as of January 1, 2008.

Documentation from a computerized work order scheduling and tracking system would satisfy these documentation requirements.

Tab 12. Projected Replacement Schedule.

The district will provide a projected replacement schedule for major building systems in each public school facility. Using the form provided in the Master Plan web based tool on the Division web site, enter the year of projected replacement. One row must be completed for each public school facility, including non-academic facilities. The projected replacement date for the end of life system does not automatically mean the system will be replaced that year by the district, but represents the district's current forecast of the projected replacement date.

To determine the Division's APPLE data base information for end of life for facility systems, district life cycle reports are available in the Reports tab of the master planning tool under Master Planning Reports.

B. Projects.

Use the Master Planning Web Based Application (located on the Division's web site).

Districts will use the web based tool to revise district information, to indicate 2004 assessment deficiencies and other facility projects that have been completed, and to enter district facility Master Plan projects. Appendix A of these Guidelines contains instructions on how to use this tool, and instructions and helpful information are also included within the application. You can access the tool by logging onto the Division's web site at www.arkansasfacilities.com and going to the link for the Master Planning application. The following instructions and Appendix A references should be followed when using this application. Districts should be able to review and revise much of the required information from their February 1, 2007 Master Plan update.

a. Revise District Information: The district will be required to enter a point of contact for Master Plan coordination with the Division [Appendix A, page A-4]. Revise other data as appropriate. [Appendix A, pages A-4 through A-8]

b. Review and update deficiency lists: Follow the instructions within the application to review the deficiency lists for all schools and buildings. Mark deficiencies that have

been corrected as "completed". Mark deficiencies that the district believes are in error "suspended." [Appendix A, pages A-9 through A-11]

Districts should review each deficiency individually on its own merits and should not make sweeping changes of deficiencies to "suspended". Districts are reminded that deficiencies are used in the computation of a facility's Facility Condition Index (FCI) and the Arkansas Facility Condition Index (ARFCI) that are used in the Division's review and prioritization of facility needs.

c. Enter Master Plan projects: [Appendix A, pages A-12 through A-16]

A Master Plan Project is defined as a new construction or major renovation project, regardless of funding source.

1. The district must enter **all** new construction projects, regardless of source of funding, for all public school facilities, including both academic and non-academic facilities, with a breakdown of the portion of each project between maintenance, repair, and renovation and new construction. (Cost estimating tools are available on the Division web site.)

2. It is very important that project numbers are formatted correctly. Refer to page A-13 of these guidelines for the correct format.

3. The ten year master plan must reflect projects planned to begin from July 1, 2008 through June 30, 2018.
   i. Immediate needs projects must be entered for 2008 – 2011.
   ii. Short-term needs projects must be entered for 2011 – 2014.
   iii. Long-term needs projects must be entered for 2014 – 2018.

4. Districts should review and revise project information submitted for the February 1, 2007 Master Plan Update.
   i. Revise project numbers, if necessary, to meet the required format.
   ii. Update project information, if necessary, such as project scope, dates, status, projected budget, and estimated annual costs.
   iii. Since Tab 12 contains projected replacement schedules for major life cycle systems, districts may delete life cycle projects submitted with the 2007 master plan update that are not planned. (To receive Partnership Program funding, projects must be included on the district's master plan.)

5. Partnership Program Considerations.
   i. DISTRICTS SHOULD NOTE THAT PROJECTS TO BE SUBMITTED FOR PARTNERSHIP PROGRAM FUNDING FOR THE NEXT BIENNIUM, FISCAL YEARS 2009-2010 AND 2010-2011, MUST BE INCLUDED WITH THIS FEBRUARY 1, 2008 MASTER PLAN SUBMISSION. APPLICATIONS FOR PARTNERSHIP

PROJECTS WILL BE SUBMITTED BY MARCH 3, 2008. (PARTNERSHIP APPLICATION GUIDELINES TO BE AVAILABLE WITHIN 60 DAYS).

ii. Section 9 of Act 989 of 2007 establishes a minimum project cost for Partnership Program new construction projects of the lesser of $150,000 or $300 per student. Same system projects may not be combined across multiple facilities (campuses) nor multiple system projects combined to meet the minimum dollar threshold for Partnership Program funding.

iii. To receive consideration for state financial participation, districts must submit project applications for Partnership Program funding. Inclusion of projects on the district's Master Plan does not submit the project for consideration for Partnership Program funding, nor does it serve as justification for the Partnership Program consideration. The Partnership project application submittal must clearly support the Master Plan and not simply be listed on the district's project list submitted through the web tool.

iv. Partnership projects will only be considered if they address requirements identified in the Master Plan and are to correct, through new construction, safe, dry and healthy deficiencies along with projects to address the district goals to achieve suitable and adequate facilities and to compensate for student growth or other enrollment change.

d. Provide additional information for other capital projects and end of life deficiency projects completed since February 1, 2007. [Appendix A, pages A-12 through A-16]

Step b. required the district to review and indicate which deficiencies have been completed. For any of those completed deficiencies that were "end-of-life" system projects for any of five major systems (HVAC, roof, structural, plumbing, and electrical service) and for other completed capital facility projects, submit information including the project description, school, and total project cost using the web based tool. Districts must enter the completed projects using the same general process as outlined in step c. for new Master Plan projects with the following additional instructions.

1. Scope – Include detailed scope of project and indicate the facilities funding program, if any, that the project received state financial participation from. For end of life projects, include Assess ID from deficiency list and provide detailed system information including quantity, unit of measure, and year replaced so new life cycle for system can be established
2. Status - Complete
3. Budget –Final total project cost

Tab 13. Committed Projects.

After all projects have been entered, <u>for notebook submission,</u> print out a hard copy of the Committed Projects Report from the Reports tab in the web based master plan application.

Tab 14. Planned New Construction Projects.

For notebooks print out a copy of the Planned Projects from the Reports tab in the application.

D. Financial Information.

Tab 15. Annual Expenditures for Custodial, Maintenance, Repair, and Renovation Activities and Capital Outlay

The most current APSCN Annual Statistical Report contains much of this information. Item 58 on that report displays Maint/Operation of Plant Services, and Item 77 displays Capital Expenditures. For annual expenditures of the school district for custodial, maintenance, and repair activities, the district must distinguish between expenditures associated with academic facilities and expenditures associated with nonacademic school facilities.

The Annual Statistical Report may be found by going to the Arkansas Department of Education (ADE) web site located at http://arkansased.org/ and following the quick link to APSCN. From the APSCN menu select Reports, then select the Annual Statistical Report page.

IV. Master Plan Submissions:

Even Numbered Year Submissions:
School districts are required to submit Master Plans, covering a ten year period, by February 1 of each even numbered year. The plans will be submitted in the format contained herein and with the tabulated project data required.

Odd Numbered Year Submissions:
Master Plans are required to be updated by February 1 of each odd numbered year. The Master Plan updates are to include:

1. Description of all projects completed in the school district since the submission of the most recent facilities Master Plan;
2. The schools district's current enrollment projections;
3. New or continuing needs of the school district with regard to academic facilities; and
4. An accounting of any changes in the school districts insurance coverage from the most recent submission.

Amended Master Plan Submissions:

Amended Master Plans may be submitted at any time during the Master Plan cycle when one of the following criteria has occurred:

1. A major enrollment change;
2. A major disaster;
3. A major curriculum change; or
4. An unforeseen occurrence.

The Amended Master Plan will take the same format as a Master Plan and remain effective until the next regular plan submission in the even numbered year. The amended Master Plan must fully explain the basis for the amendment. If applicable and needed to support the plan, the

Amended Master Plan will be accompanied by any Locally Funded Projects (LFP) deemed necessary to implement the amended plan.

Applications for Partnership Program projects to support the amended plan will not be accepted, but will be submitted in the even numbered year with the regular cycle Master Plan and Partnership Program submissions.

Master Plan Appendix:

An appendix to the Master Plan is an adjustment to the most current approved plan. It is to be used when the school district starts or completes a LFP (Locally Funded Project) which is "100% raised and funded by the school district". The appendix to the Master Plan will include as a minimum:

1. An addition explaining the project and the circumstances as to why it is being added at this time.
2. The explanation will include the basis of funding. If the local funds are derived from mills, the explanation will include the number of mills available above the Uniform Rate of Tax.
3. A statement that the funding of this project is not detrimental to the funding requirements to insure the school district facilities are maintained in a safe, dry and healthy condition.
4. The project will be added to the district project list in accordance with these guidelines.
5. The project will be subject to all applicable state reviews. The Division will approve the project upon compliance with state codes and standards.

V. Submission Requirements for February 1, 2008 Even Year Master Plan

Electronic submissions under this program must be entered into the web based master plan tool by midnight February 1, 2008. On February 2, 2008 the web based tool will become inaccessible for school district input.

Hard copy submissions as required under this program shall be postmarked or received via first class mail return receipt requested or via stamped receipt of hand delivery, in the **Office of the Director of The Division of Public School Academic Facilities and Transportation, 501 Woodlane Street, Suite 600, Little Rock, Arkansas 72201**, no later than 4:30 pm on February 1, 2008.

Checklist:

- □ Did you provide complete information for all required tabs?
- □ Do the master plan planned new construction projects for 2009-2019 support and accomplish district's facility needs and objectives?
- □ DID YOU INCLUDE NEW CONSTRUCTION PROJECTS TO BE SUBMITTED FOR PARTNERSHIP PROGRAM FUNDING FOR 2009-1011 WITH THIS MASTER PLAN?

Appendix A

Arkansas Master Planning Application

Table of Contents

Overview

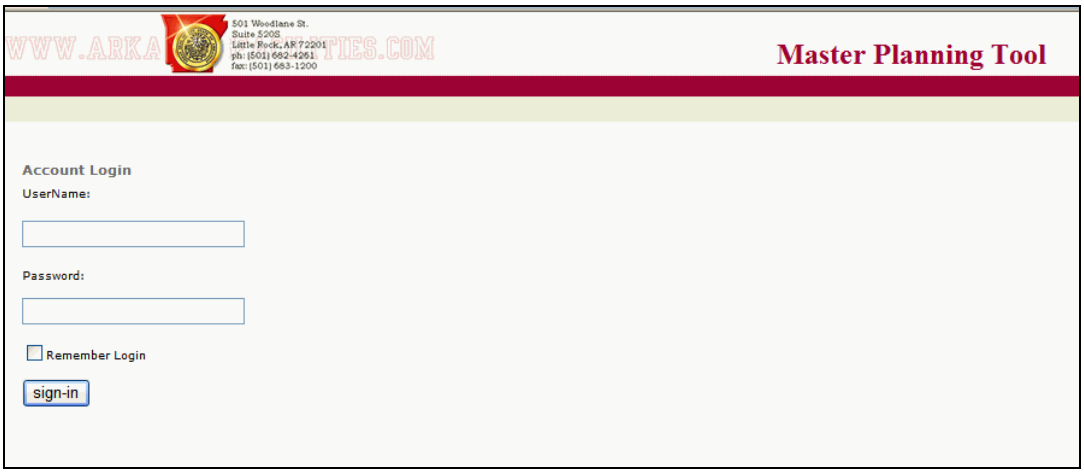
The Master Planning Web Tool (tool) was developed to allow districts to electronically submit documents and data pertaining to the annual Master Planning activities.

The items in the tool labeled with "Tabs" (1-15) corresponding to the aforementioned Master Planning Guidelines document (document), and for additional details on the nature of the information and documents required for each Tab, you should refer back the document.

Log in

To Log in to the Arkansas Master Planning Tool, go to the Division web site at http://www.arkansasfacilities.com and navigate to the 2007 Master Plan Update icon. Enter the appropriate credentials in the 'UserName' and 'Password' fields and click the sign-in button.

Area Project Managers will provide school districts with their User Name and Password information. If districts would like their "UserName" and "Password" credentials changed, they should contact their Area Project Manager.

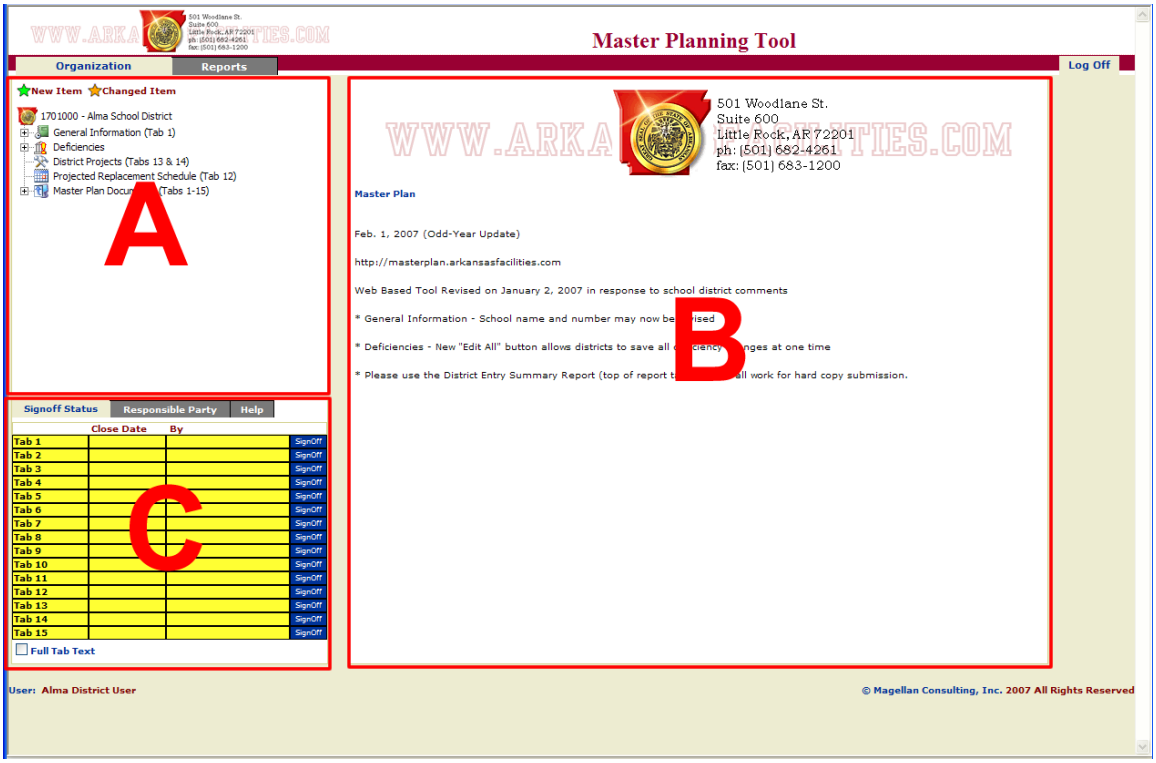


Main Screen

The initial screen is comprised of three separate components (or frames): The Planning Tree, The Information Pane, and The Signoff Status / Responsible Party / Help Pane and Instruction Pane. These three frames are indicated in the following graphic as:

A – The Planning Tree
B – The Information Pane
C – The Signoff Status / Responsible Party / Help Pane

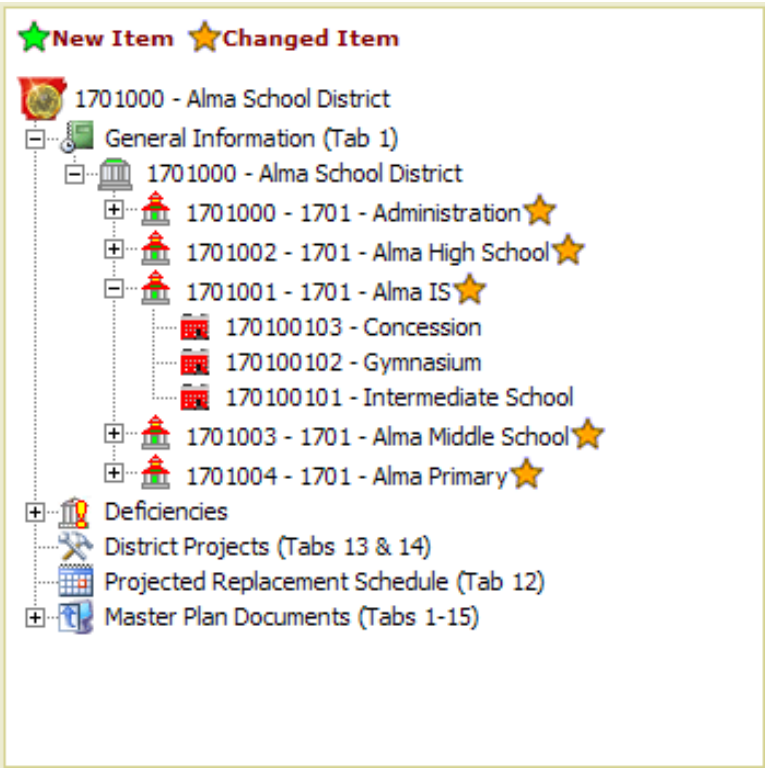
The Main Screen



The Planning Tree

Use the Planning Tree to navigate through the different tasks associated with the planning process. These tasks include General Information Updates (District, School, and Building), Assessment Deficiency Updates, District Project Creation for the district's Master Plan, Project Replacement Schedules to indicate replacement years for major systems, and Master Planning Documents to electronically submit documents associated with the Master Plan.

Click on the '+' or '-' to either expand or collapse the General Information or Deficiencies levels of the tree.



As seen in the preceding image, the tree has been expanded down to the building level in the General Information level of the tree. With the tree expanded, the user can then click on the lower level '+' symbols to expand that level. This can be done until the tree has been expanded to the building level.

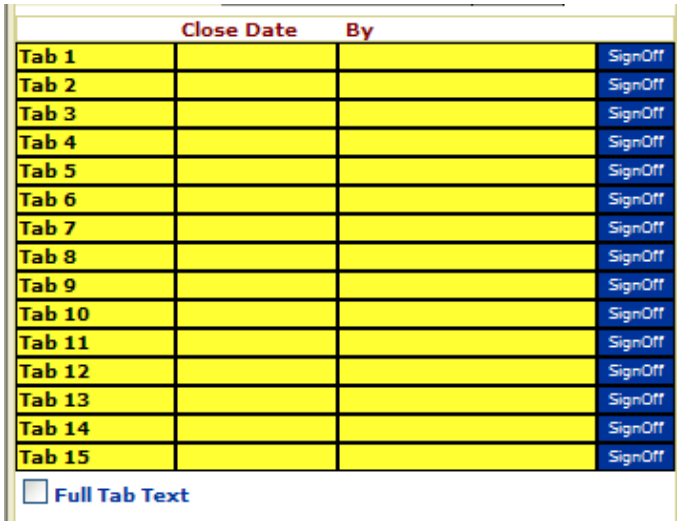
By clicking the '-' symbol that occurs after the tree is expanded, the user can collapse that particular level of the tree.

Green stars next to a level in the Planning Tree indicate that that level is a New Item. Orange stars indicate levels for which updates have been recorded.

Signoff Status / Responsible Party / Help Pane

This pane contains three different types of information pertaining to the Master Planning tool and the process of entering data. This pane is arranged by tabs located at the top of the pane

Signoff Status

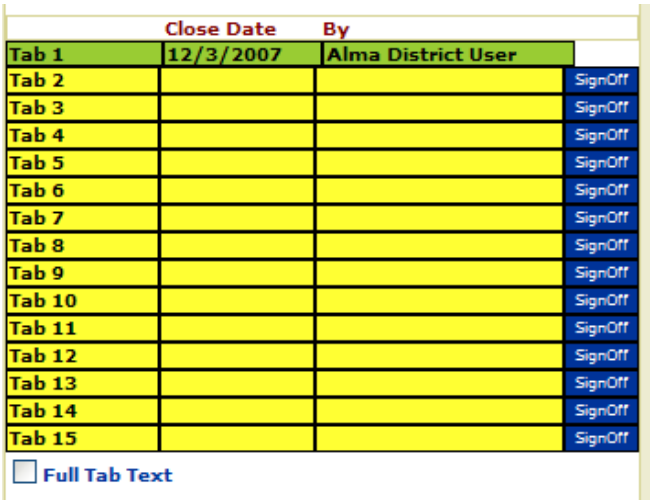


Once all the information has been either modified to the district's satisfaction using the specific entry forms of the web tool or documents have been electronically uploaded to the web tool pertaining to a specific Tab, the user should sign-off the Tab to indicate its completion.

Signoff data can be displayed in one of two ways: The default view above shows just the Tab number and associated Close Date and By whom information when a Tab is signed off. By clicking the ☐ Full Tab Text checkbox on the bottom of this pane the Tabs will be displayed with a full description to ensure you are signing off the correct Tab.

To signoff a Tab, manually review any revision to the data pertaining to the particular Tab to ensure its authenticity and completeness (This will only apply to Tabs 1,12,13,14 and any revisions to Deficiencies), or ensure all documents pertaining to a Tab have been uploaded and listed. Then press the SignOff button on the corresponding Tab line to indicate your completion of the Tab.

The rows corresponding to Tabs that have not been signed off will appear in Yellow with a Signoff button in the right-hand column, while complete items will appear in Green, with the Signoff button removed, as indicated by Tab 1 below:



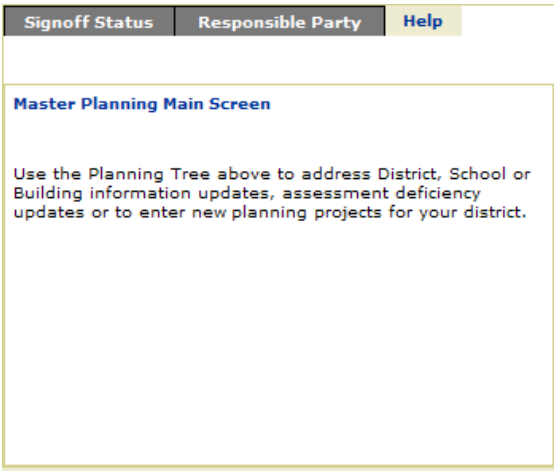
Note: Document submittal for Tabs 4, 5, and 6 is optional and not required. A signoff of these Tabs, as well as any other tab where no documents are submitted, is required to indicated that the information pertaining to this Tab was reviewed by the district, and the signoff will indicate that the decision to not upload any documents was the intended action of the district

Responsible Party

The responsible party information is the person who is uploading Master Planning documents or updating the district information on the web tool who should be contacted in case of questions with the data or documents.

Data entry will not be permitted until all the required information (Indicated by a *) is provided. Once the Responsible Party contact information has been entered, press the Save button to accept this information and enable data to be edited.

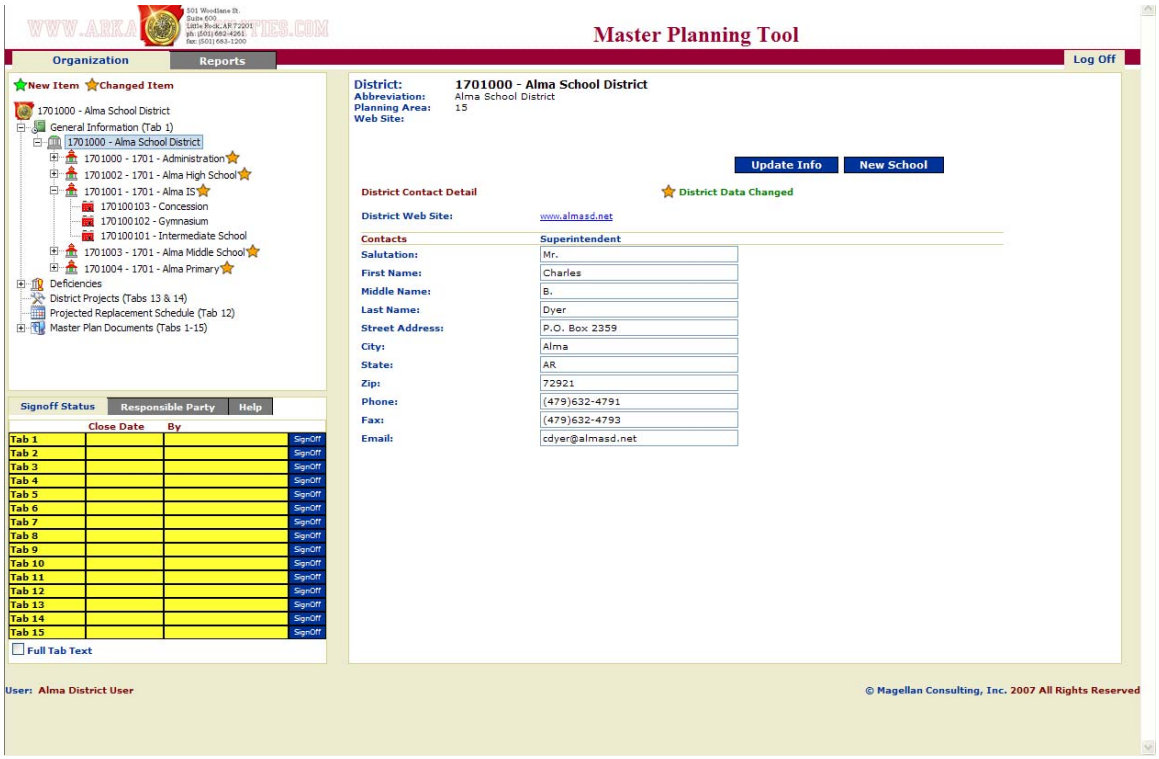
Help



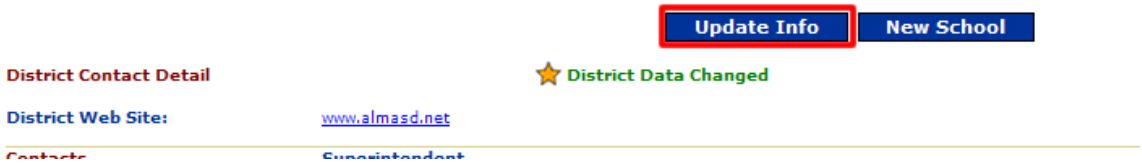
The Help pane displays information pertaining to the information being displayed in the Information Pane.

General Information Updates (See Guidelines, III, C. Projects, a.)

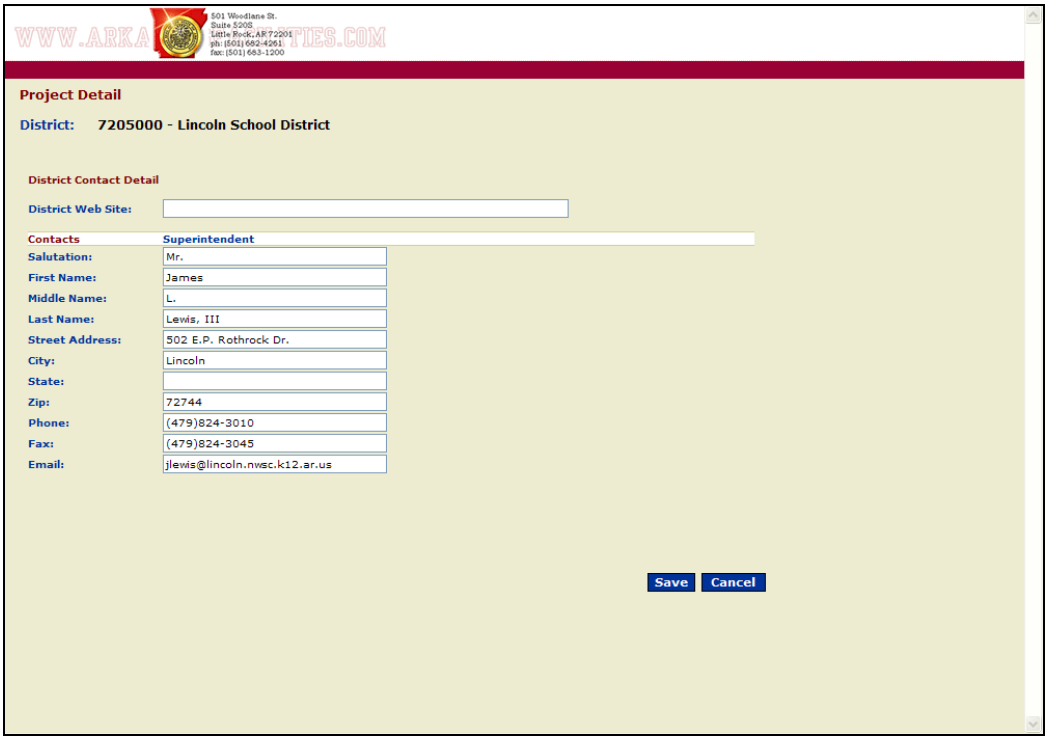
Upon expanding the General Information level of the tree to display the District Name, the user can then select the District name to generate the following update screen.



To edit the District Contact information, the user clicks on the **Update Info** button, located immediately above the Contact Detail to the right, as shown below:



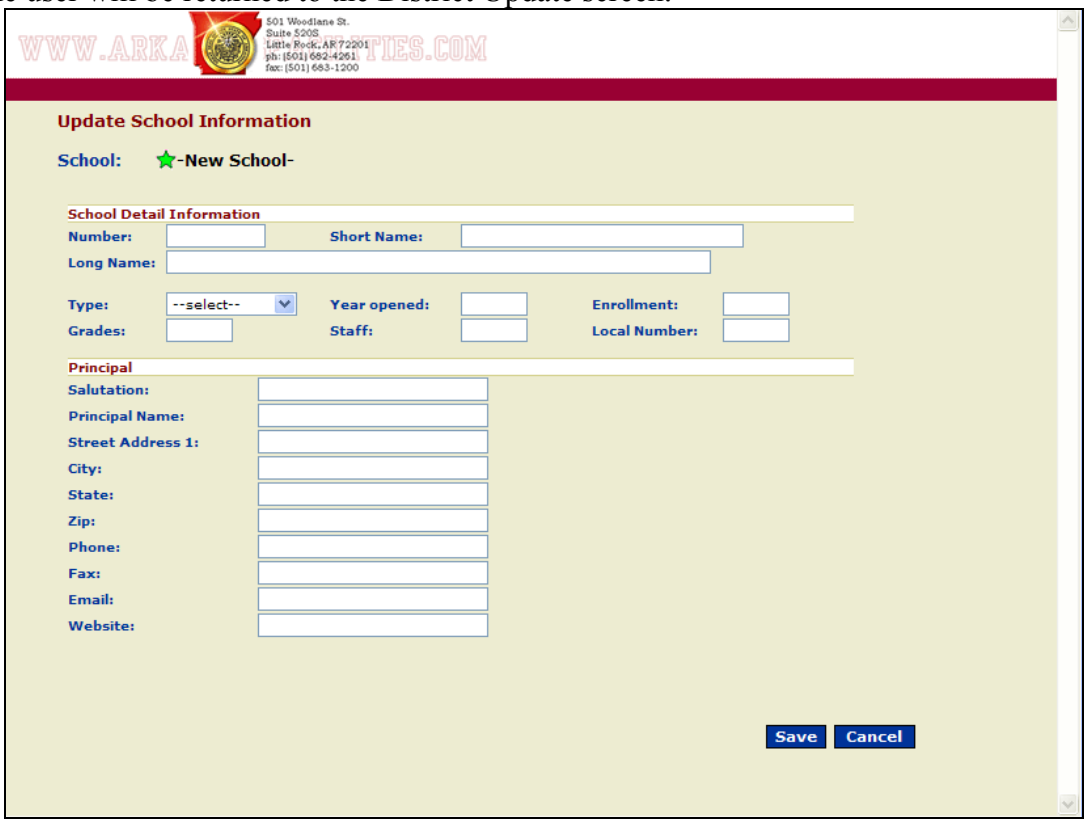
By clicking on the Update Info button the user generates the following update screen:



The user can then update the District Contact information directly into the text boxes provided and save it to the database by clicking the **Save** button. If changes are made that are not accurate or if the user does not need to update the information, the window can be closed without saving these changes by hitting the **Cancel** button. The user is returned to the District Information screen.

If the District has recently built or acquired a new school that is not listed with the other schools in the Planning Tree, the user can add the school to the system by clicking on the **New School** button, as seen located below:

This will generate the following screen where the user can then enter the appropriate information into the text boxes and save it to the database by hitting the Save button. If information that is entered is inaccurate or not necessary, hitting the Cancel button will close the Update School Information screen without saving the changes to the database. The user will be returned to the District Update screen.



In order to edit the General Information related to both Schools and Buildings, the user would follow the same instructions outlined above for the District Update. At the School level, the user can update the School information or enter a new building. At the building level, the information associated with buildings can only be updated.

Note: Where the forms provide input for address information, please avoid using P.O. Boxes and provide the physical address of the District Administrator or School whenever possible.

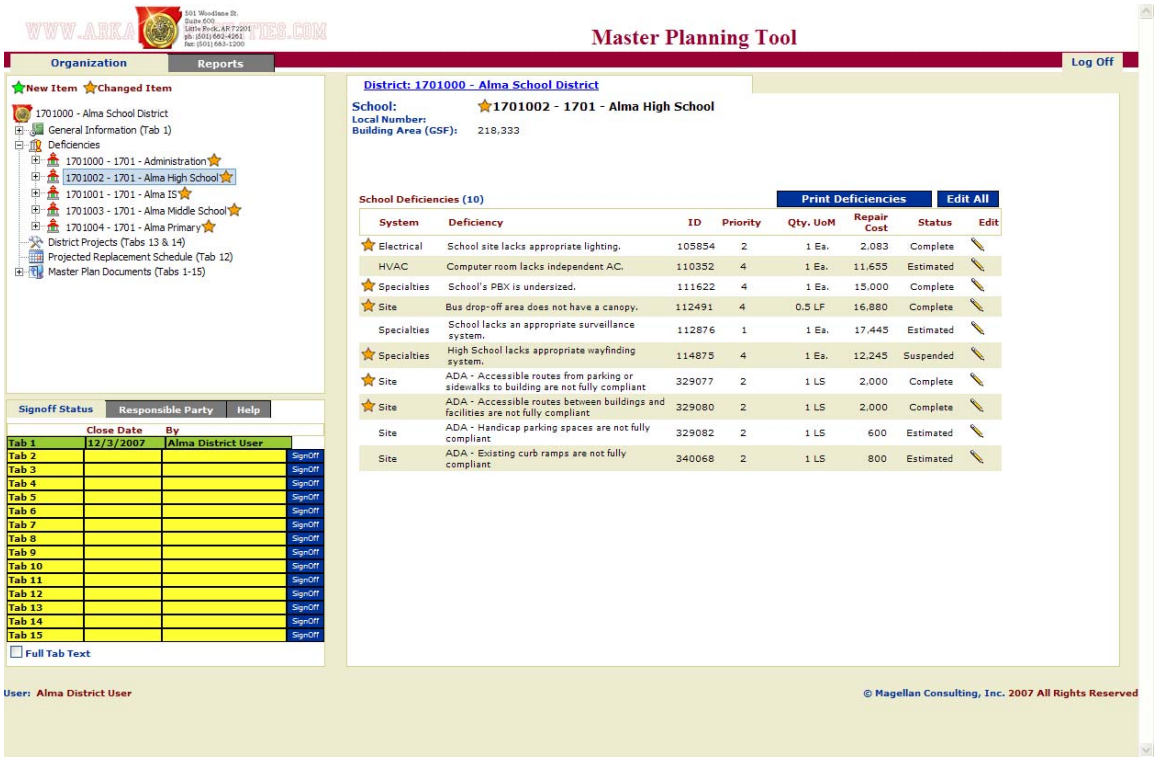
Deficiencies (See Guidelines, III, C. Projects, b.)

This Planning tool allows the user to update the status of deficiencies identified during the 2004 Facility Condition Assessment. The user can edit deficiencies to be either "Complete" or "Suspended" based on the current status of the deficiency with regards to the district's planning process.

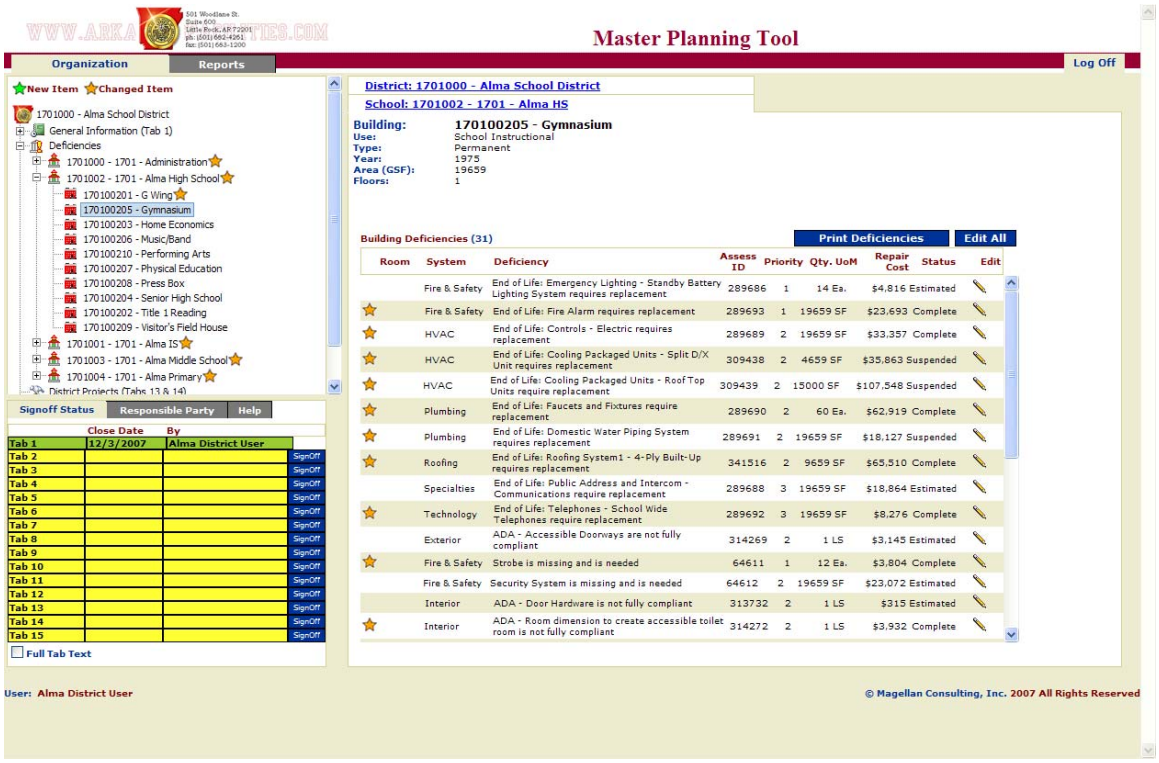
Use the following definitions. For "Complete", districts should mark those deficiencies that the district has addressed completely. Do not mark as "Complete" if only partially completed and further work is necessary. For "Suspended", districts should mark those deficiencies that the district believes are incorrect or do not exist.

In order to edit deficiency status, the user needs to expand the Planning Tree below the Deficiencies level to reveal the School level. At the school level of the tree, the user can edit the status of those deficiencies that are specific to the site or campus for that school. The user can also expand the school level of the tree to find the buildings associated with that campus. Clicking on a building will generate a list in the information pane of all the deficiencies associated with that building.

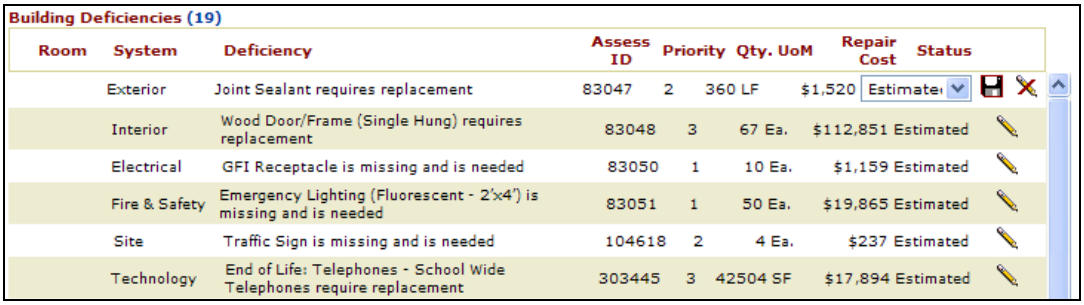
Below is a view of the school level deficiencies:



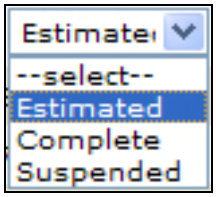
Below is a view of the building level deficiencies:



In order to edit the status of a deficiency, click on the button. The Status field will change to appear like the example below:



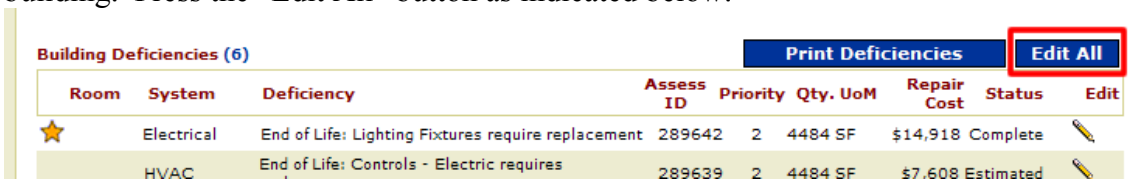
The user can now select the drop-down arrow next to the repair cost and generate the following list:



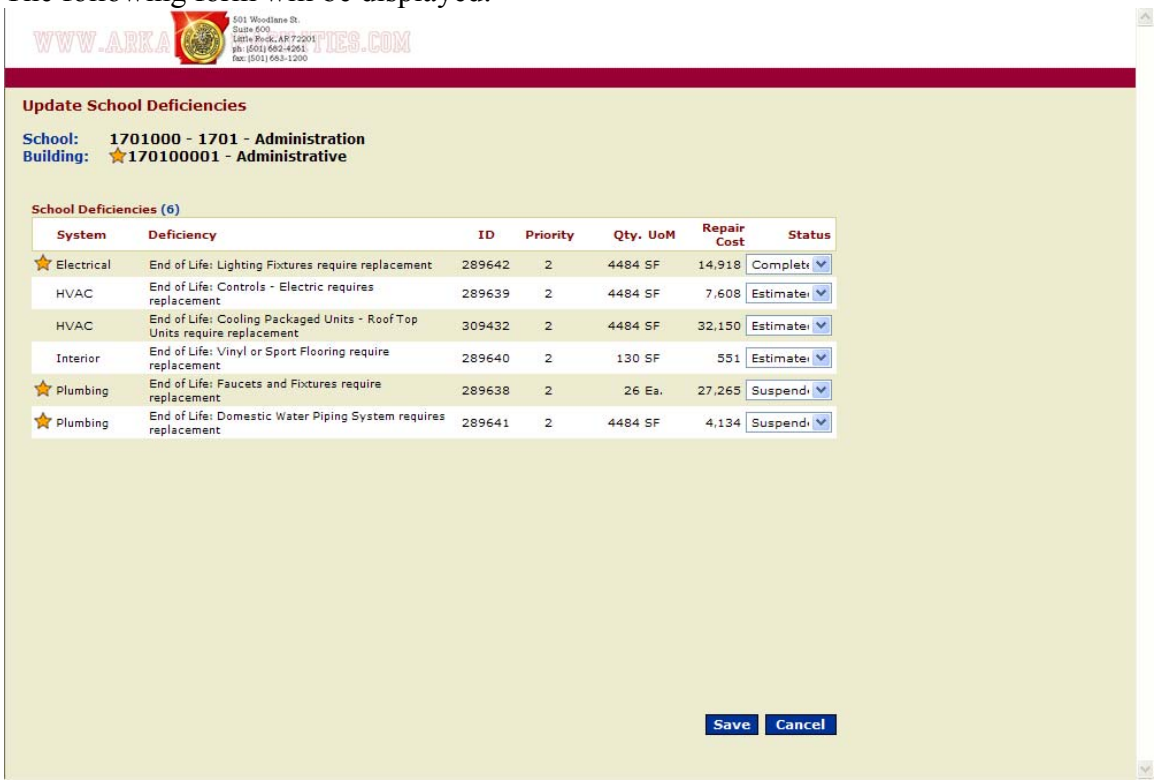
At this point the user may change the deficiency status to either Complete or Suspended. Once the status has been changed, the user may click the button to save the change. Changing the status of the deficiency to Complete or Suspended will remove the deficiency's cost from the database of needs for that particular site or building. The user can edit as many of the existing deficiencies as necessary.

To cancel and edit, the user can click the button.

Alternatively, you can bring up an edit form to edit all the deficiencies for a school or building. Press the "Edit All" button as indicated below:

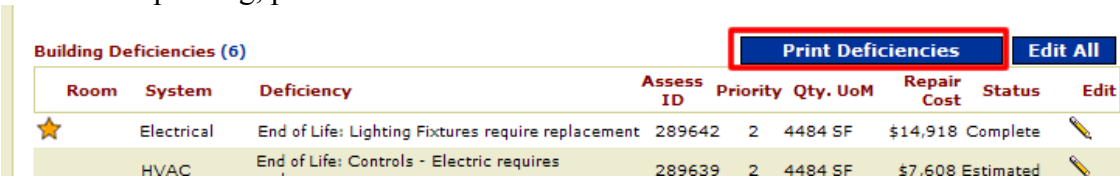


The following form will be displayed:



On this form, follow the directions from above in setting the Status for each deficiency. When you have completed adjusting the status, press the **Save** button to save all the changes made. To ignore the changes, press the **Cancel** button, and you will be returned to the main form without the changes taking effect.

If you wish to receive a view of all the deficiencies for a school or building that is suitable for printing, press the "Print Deficiencies" button as indicated below:

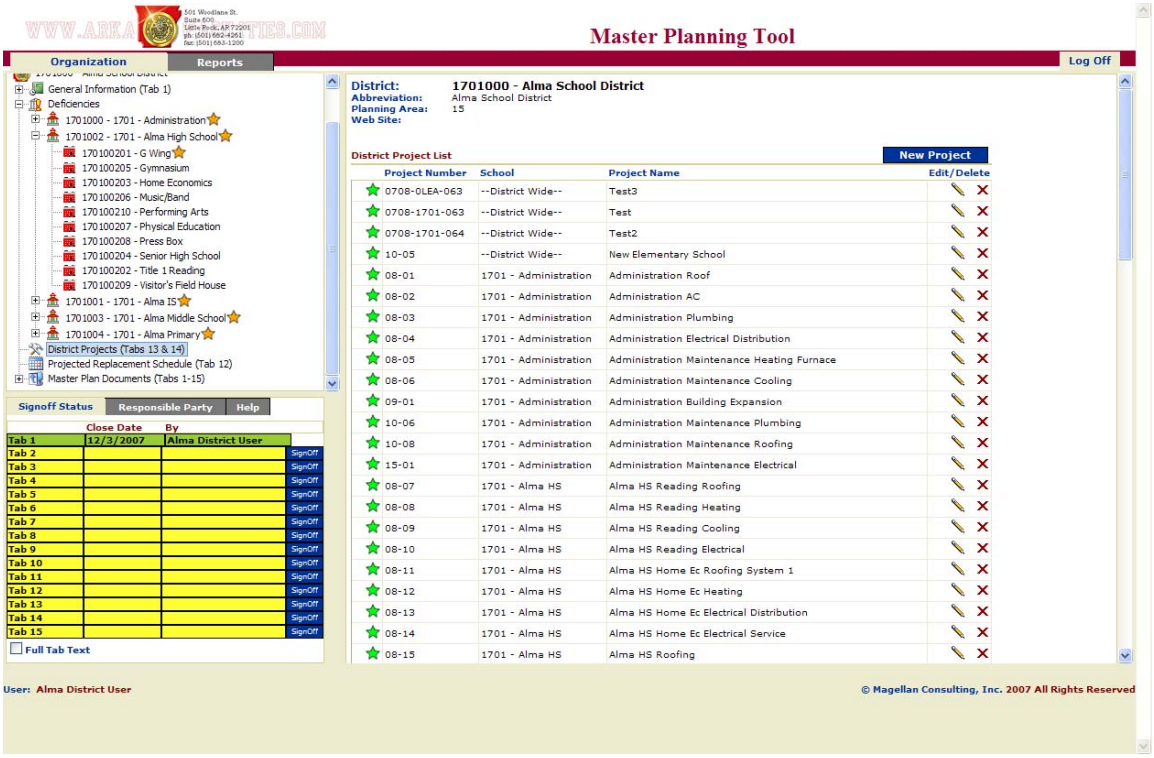


The Deficiency information is not directly associated with any of the Tabs (1-15), but is assumed complete when the district has completed signoff for all Tabs.

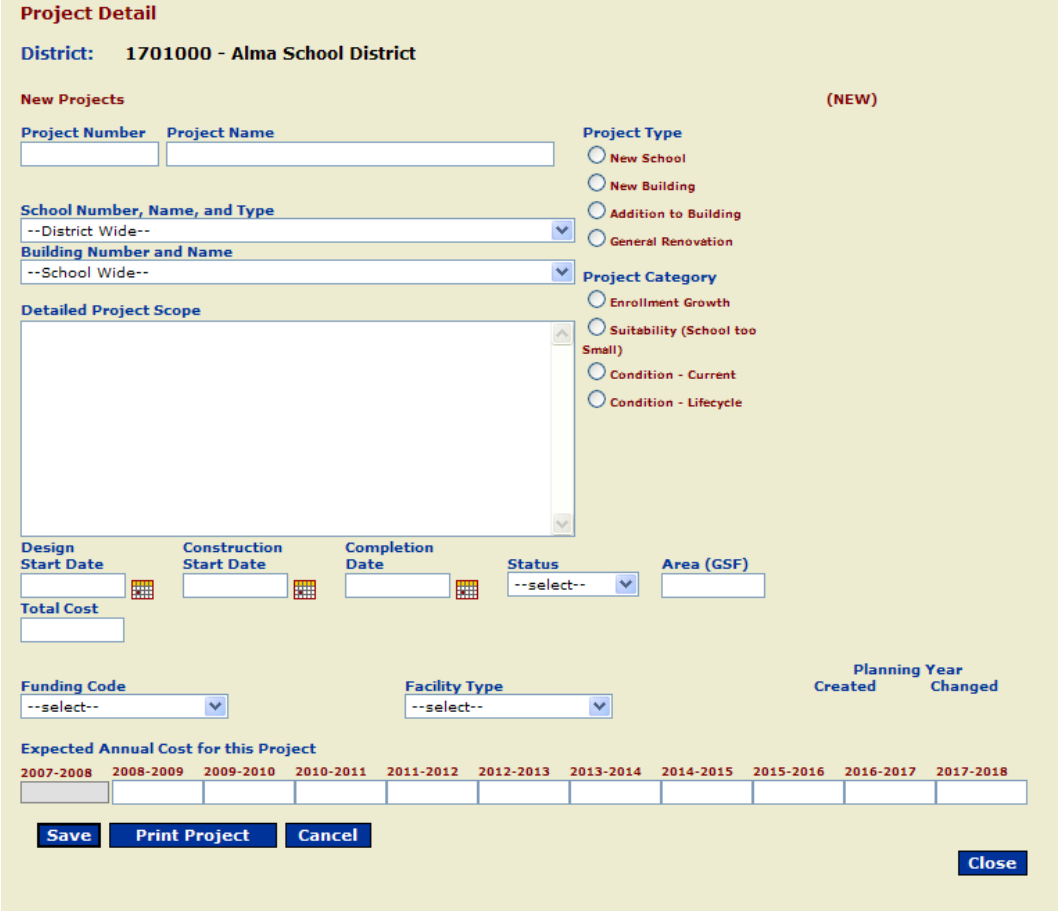
Note: It is in the best interest for the districts to indicate any status change to a deficiency, as they should have the best knowledge of the any maintenance activities that might have been performed relating to a specific deficiency.

District Projects (Tabs 13 & 14) (See Guidelines, III, C. Projects)

The District Projects level on the Planning Tree is used for creating District projects, including Projected and Committed project, as required in the Planning acitivities. When the District Projects level has been selected in the tree, the user is presented with a list of projects in the Information Pane.



To create a new project, the user clicks the **New Project** button. The user will be presented with the project creation screen as shown below:



The user can now enter the required information related to a Master Plan Project.

When developing a Master Plan project, districts should consolidate new construction projects for similar work that will be done with one construction contract. The first year of a project is the year when the design of the project is initiated, and for Partnership Program projects should be the year that the application is submitted for initiation and the Partnership Program Project Agreement is signed. For example, a Partnership Program project with a beginning year of 2011-2012 is a project that is anticipated to be approved, the project agreement signed, and design begun during the period July 1, 2011 – June 30, 2012.

Project numbers must be in the following format that contains year-LEA- and number: y1y2-0LEA-xxx, where y1y2 are the last two digits of the fiscal year that the district will begin the project, and if applicable, request Partnership Program funding. For example, 0708 refers to a project that will begin in fiscal year 2007-2008 (July 1, 2007 – June 30,

2008). The middle four digits of the project number are the district's LEA number, including the leading zero, if applicable. The last three digits are a sequential numbering of district projects for year y1y2, beginning with 001. (2006-2009 projects that are included on the current master plan should use the xxx number corresponding to that master plan project number.) Non-academic facilities should begin numbering at y1y2-LEAx-701. Sample project numbers are 0708-0901-004 and 1112-7401-702.

Project Name should be a short description of project.

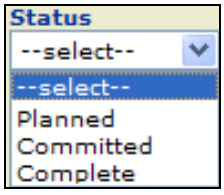
School Number, Name and Type is a drop-down list that allows the user to pick a location that already exists in their district for which the project will apply. Project Type requires one type to be selected that best suits the project being created. If the user selects General Renovation as a Project Type, a list of affected buildings systems appears. The user should identify all major systems that will be affected by the project being entered.

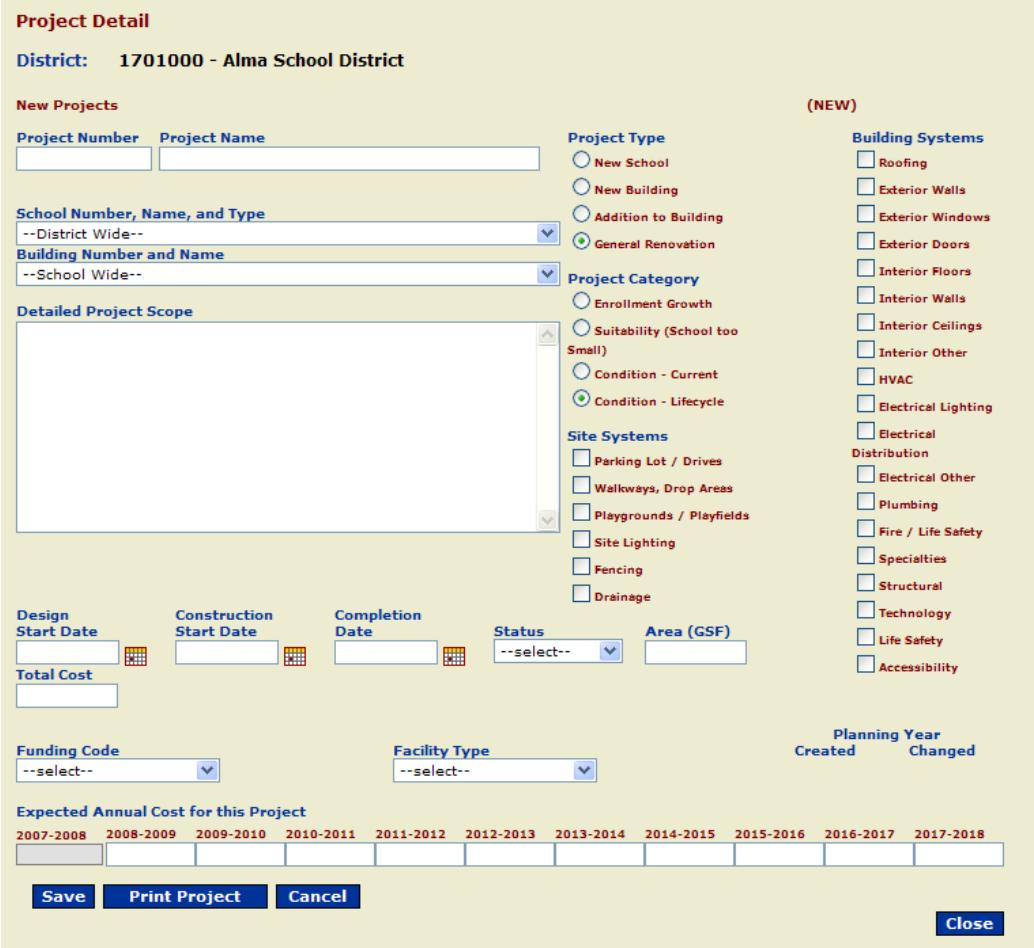
Building Number and Name is a drop-down list that allows the user to specify a building that is directly involved in the project scope.

Project Scope must be as complete as possible and must provide sufficient information so that state financial participation can be determined. The project scope should also detail if the project costs include any "maintenance, repair, and renovation" costs that are not eligible for state financial participation. If currently approved Master Plan projects for 2006-2009 are consolidated, the project scope should identify all currently approved Master Plan project numbers. Project scopes for consolidated projects must clearly identify all facilities and building systems included in the consolidated project.

Design Start Date, Construction Start Date, and Completion Date are to be entered to identify expected time frames for the project. The Completion Date should be the estimated time of the final acceptance of the project. The  button generates a calendar to ease the date entry for the user.

Status is a drop-down menu where the user can select a status for projects. A Partnership Program or self-funded project becomes a committed project when a School Construction Approval Form is submitted to the Division for the project. A complete project has construction completed, occupancy of the facility, and all state financial participation funds, if applicable, provided. All projects that are not committed or complete are planned.





Area (GSF) allows the user to input the square footage of the project. Project area for new facilities or facility additions must meet spacing requirements contained in the Program of Requirements contained in the Arkansas School Facility Manual. For roof projects, enter the area of roof system being replaced.

Total Cost is for the **total** estimated budget for the project.

The user should select the appropriate Funding Code (Partnership or Local) from the provided drop-down. Likewise, the Project Category (Academic or Non-Academic) drop-down will also require a selection.

Facility Type allows the user to designate the type of facility affected by the project.

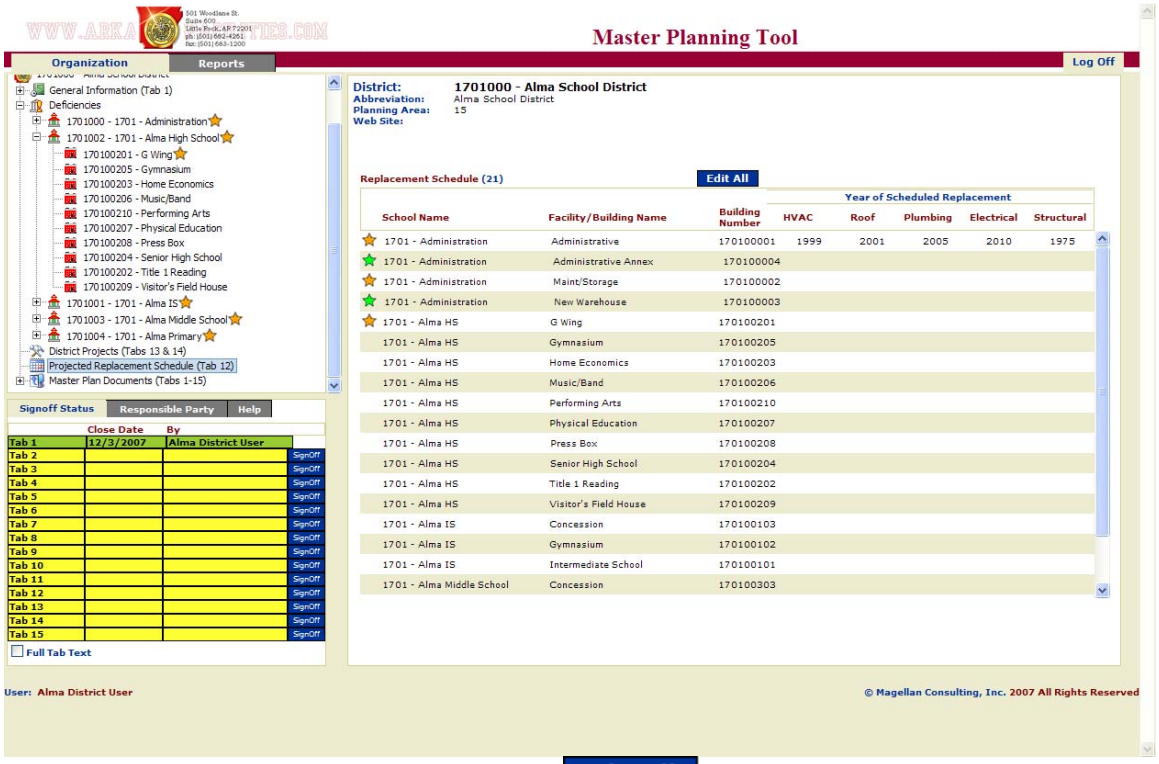
The Expected Annual Funding allows the user to input expected yearly total expenditures associated with the project that includes both district funding and state financial participation, if applicable. Prior actual expenditures for 2006-2007 and 2007-2008 must also be entered. The sum of the Expected Annual Funding entries must equal to the Total Cost entry.

All other text boxes and drop-downs are required to be completed accurately. Once the information is satisfactory, the user can hit the Save button. If the user decides not to save changes, they can click the Cancel button or simply use the Close button.

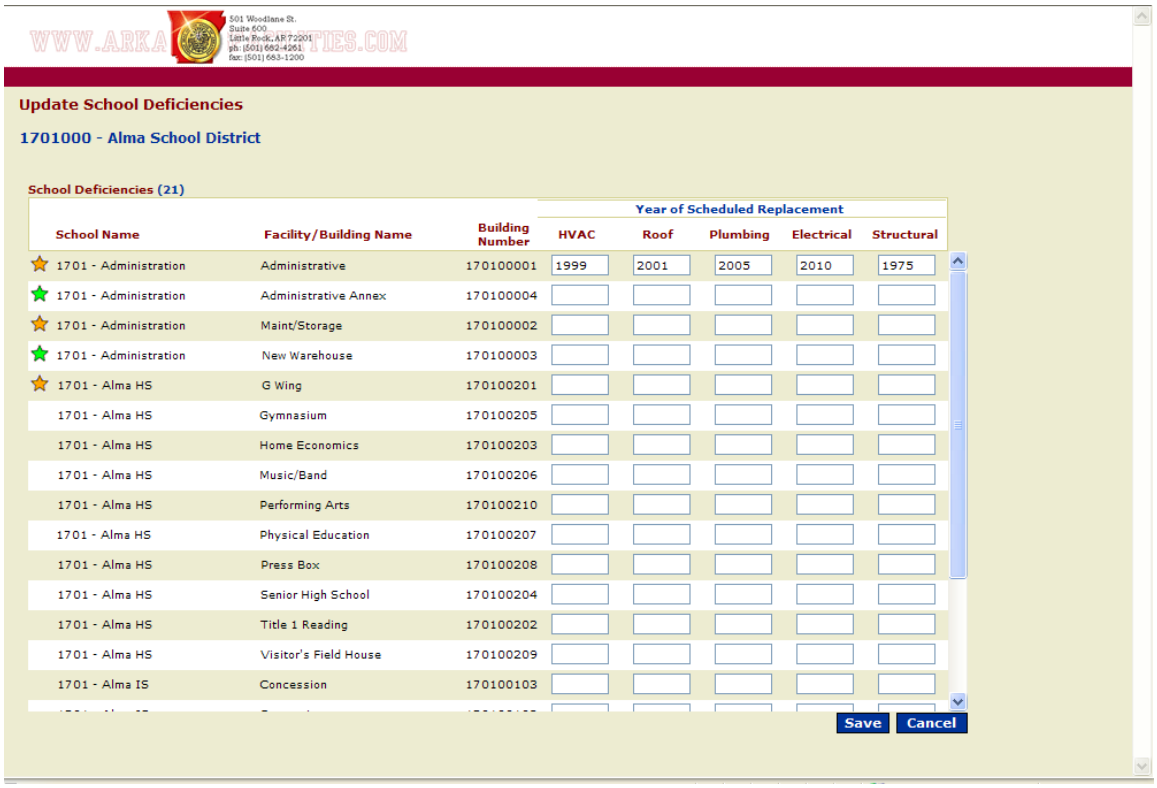
The user can edit any projects that have been created by clicking on the  button associated with that particular project entry. If an entered project is no longer needed, the user can click the  button associated with the project. This will remove the project from the planning application.

Projected Replacement Schedule (Tab 12) (See Guidelines, III, C. Projects)

The Projected Replacement Schedule level on the Planning Tree is used for indicating the approximate calendar year a major system for a building is scheduled to be replaced. When the Projected Replacement Schedule level has been selected in the tree, the user is presented with a list of projects in the Information Pane.



To edit this information, the user clicks the **Edit All** button. The user will be presented with the entry screen as shown below:



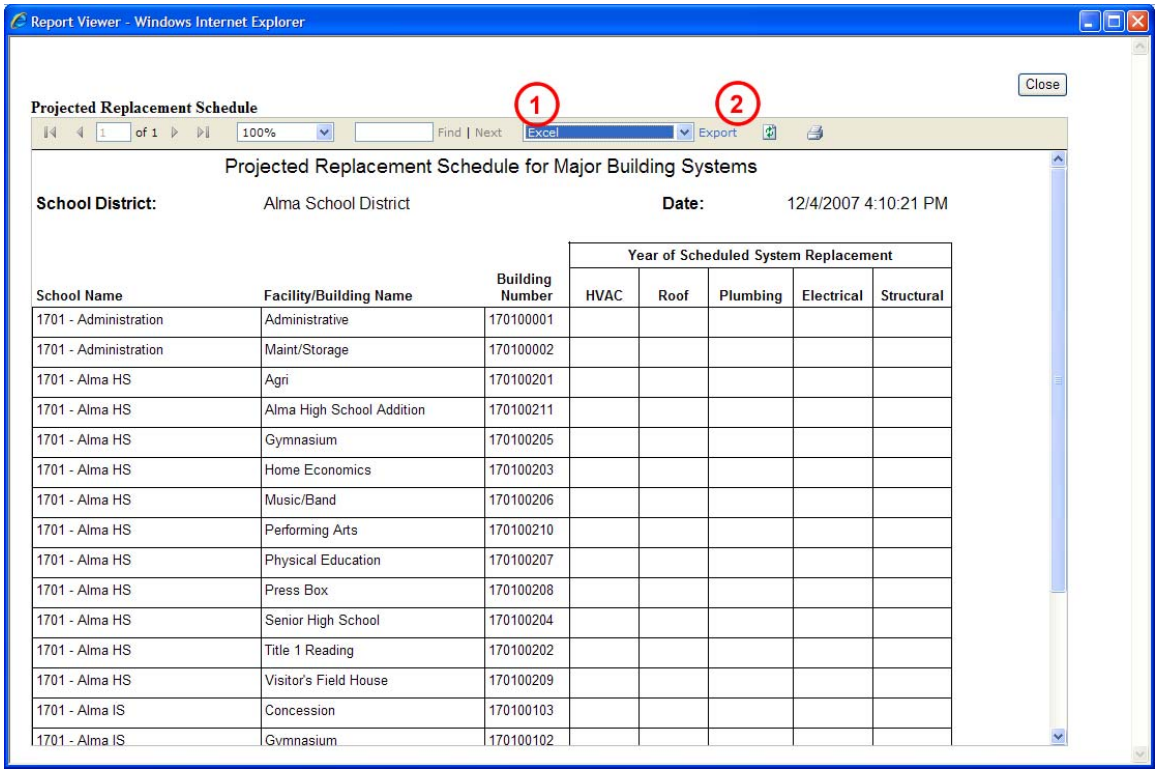
Each building within the district, along with the school to which it belongs, will be displayed with gird-like entry cells available to indicate the year associated with the major system. The five (5) major systems are listed as columns, below which, and in the appropriate row for the building, the scheduled replacement year should be entered in the intersecting cell.

Once all the data has been entered, press **Save** and return to the main entry form. If you press **Cancel**, all items changed will be discarded and the previously entered values will be retained.

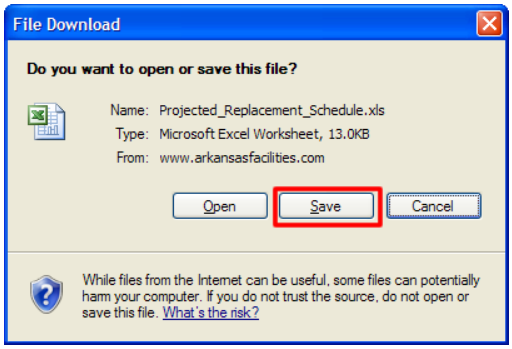
Note: You can download this as an Excel file, available on the Reports tab:

Press the **Tab 12 - Projected Replacement Schedule** report button to get a printable version of the report.

When the report is displayed, ① Select "Excel" from the export type drop-down list and then ② press the "Export" link, as shown below:



When prompted to do so, save the file to your local disk, as shown below:

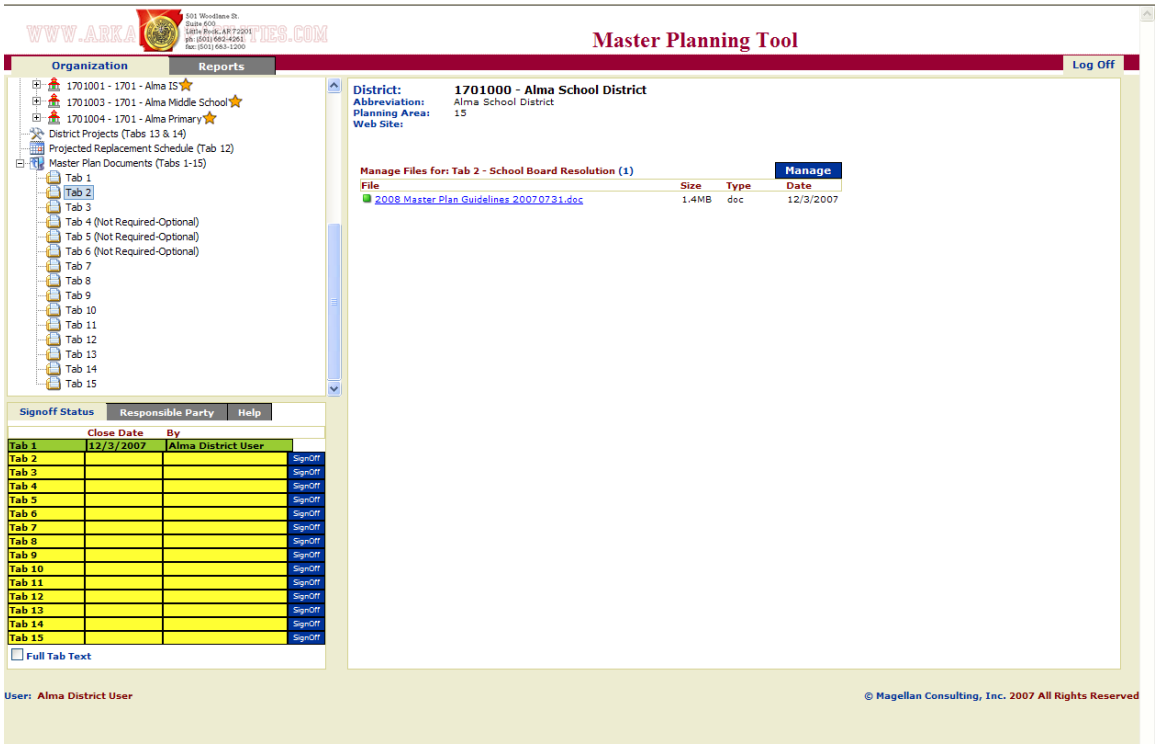


You can then open the Excel document locally on your system, make the necessary adjustments to the dates, and save the adjustments back to this local version. When you are ready to submit the document, proceed to the next section and upload the document to the appropriate Tab (Tab 12).

Note: Adding or changing any information to the submitted Excel document will not be reflected on the corresponding items depicted on the on-line tool. If you intend to make additions and changes to the School or Building names, it is recommended you do so through the steps outlined in the **General Information** section, and then make your Replacement Schedule adjustments using the on-line forms, rather than an attached Excel worksheet.

Master Planning Documents (Tabs 1-15) (See Guidelines, III)

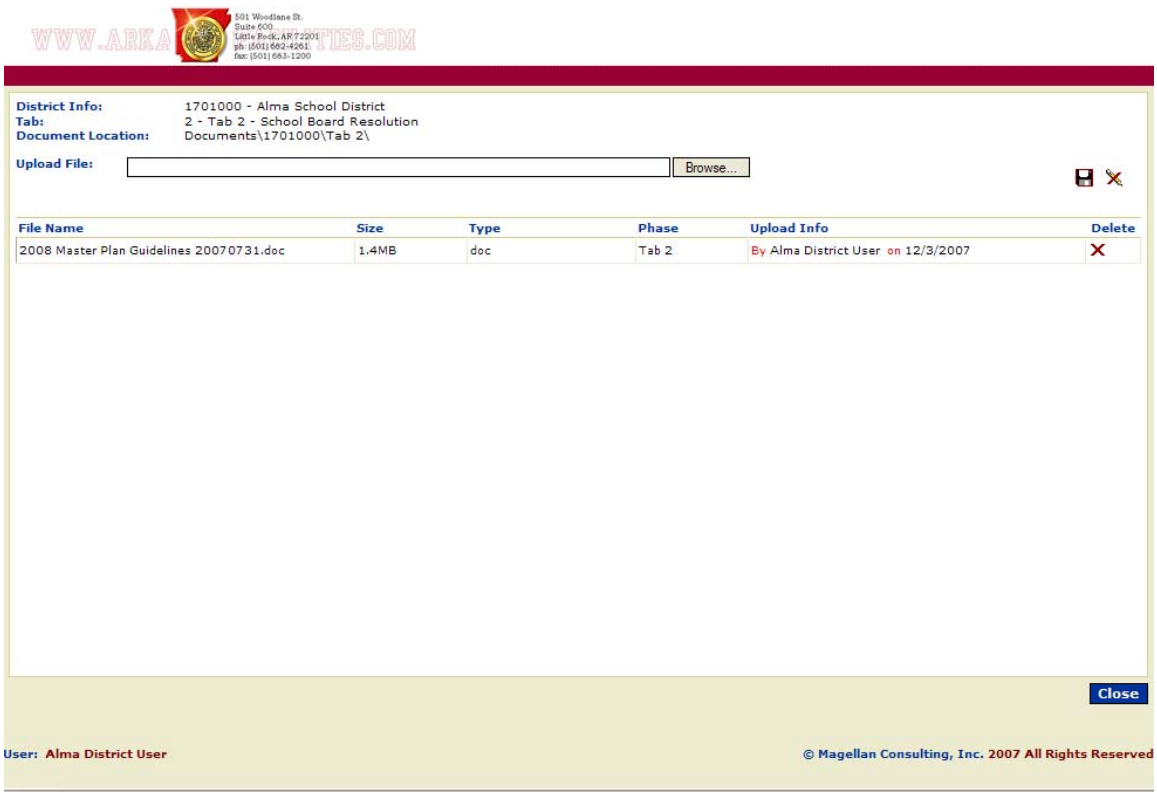
The Master Planning Documents level on the Planning Tree is used for electronically uploading documents to the Master Planning tool. Documents can be in any electronic format that are supported. When the Master Planning Documents level has been selected in the tree, the user is presented with a list of projects in the Information Pane.



Click on the Tab that is associated with the document you would like to upload and Information Pane will display a list of document already uploaded for this Tab, as well as the ability to add and maintain documents. Each document is hyperlinked (i.e. you my click on the document name in the list) so that you can preview the document that has been uploaded to the tool.

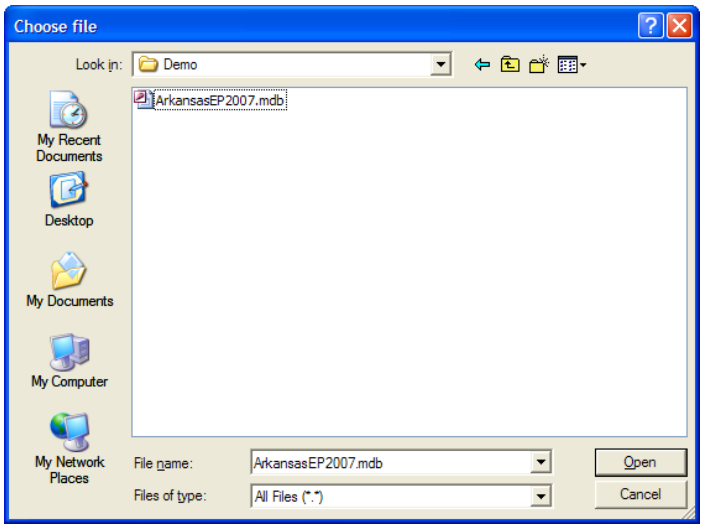
A document preceded by a indicates the document uploaded successfully and is available from the site. A document preceded by a indicates a document that was uploaded, but was not successfully saved to the site. If continued attempts to upload a document produce a preceding the document, please contact Arkansas Facilities to ensure there is not a problem with either the size or type of file you are attempting to upload.

To upload and edit documents, the user clicks the Manage button. The user will be presented with the entry screen as shown below:



This form will allow users to browse to files located on their local systems and upload the document to the Master Planning tool.

Press the Browse... button to bring up the Windows Explorer, in which the user will be able to navigate to the document. Click on the document and press the Open button, as shown below to bring the document location into the tool:



Once all the document name appears in the Upload File textbox, press the  button to complete the upload. You can cancel this upload by pressing the  prior to upload.

To remove a previously uploaded document, press the  in the row corresponding to the document no longer needed, and the document will be removed from the Master Plan tool.

When you are finished, press 

button and return to the main form.

Note: Below is a list of suggested file types supported by Arkansas Facilities. If your document type does not appear in the list below, please contact Arkansas Facilities to ensure the document is of a supported type.

.doc – Word Document
.pdf – PDF Document
.xls – Excel Worksheet
.ppt – Power Point presentation
.gif, .jpg, .bmp – Image file
.mdb – Access Database
.tiff – Scanned document

7500-15 Interactive Classroom Design

The Arkansas Department of Education (ADE) is charged with overseeing the design and construction of school facilities in the state of Arkansas. The Arkansas School Facility Manual has been developed to provide consistent, clear information for school districts and design professionals as a new generation of schools is being created for Arkansas. The Standards & Guidelines contained within this section are the culmination of standards, accepted procedures, statutory requirements, and the experience of experts and authorities throughout the United States and establish a uniform level of quality for all public school buildings. The Standards & Guidelines will apply to new school facilities and new additions to existing buildings. Renovation to existing facilities should adhere to the Standards & Guidelines as outlined in Section 1200.

Since the Standards & Guidelines must communicate information about so many issues, the length and quantity of the document can be intimidating. However, understanding how the Standards & Guidelines is organized and which information will be needed during the various phases of the process will enable each participant to be better prepared for the exciting opportunity of creating school facilities.

An important consideration in developing a state-wide program that must provide equity among districts is the balance between broadly applicable standards and program delivery. A fundamental tenet of educational facility planning is that school facilities must be responsive to a school district's educational program. The Standards & Guidelines allows districts to develop building programs that respond to their current, unique needs as well as prepare for their educational future. There are also many different ways in which districts are delivering educational programs and helping students accomplish learning objectives at every school and school level. By designing classrooms and other instructional spaces to be flexible and adaptable, individual districts are better prepared to accommodate future educational program developments.

Throughout the planning, design, and construction phases of a project there are three factors that must be considered and held in balance: quality, cost, and time (schedule). The Standards & Guidelines was created to provide parameters for balancing these three essential elements fairly for all projects throughout the state.

The Standards & Guidelines are intended as a starting point for architects, engineers, other design professionals, and school districts to develop solutions to meet the needs of the individual school community. The information is provided to allow the planning, design, and construction process to proceed most efficiently, without undo restriction on the design of the facilities, focusing efforts on the creation of best possible school facilities for each project rather than "reinventing the wheel".

The Arkansas School Facility Manual is the exclusive property of the Arkansas Department of Education of the State of Arkansas, and the Arkansas Department of Education reserves the right to add, delete, modify, or otherwise change the content of this manual at any time. Specific information contained within the manual will be periodically modified to reflect current and future trends in teaching methodologies, construction and

educational technologies, and lessons learned as Arkansas proceeds with the ongoing task of improving and maintaining its schools.

The Standards & Guidelines are organized into eight chapters that explain the planning, design, and construction process; suggest current educational best practices and facility planning concepts, recommend components of an education framework, identify the square footage provisions for each school level; detail the features and amenities of each space; and provide systems, materials, guidelines information; and technology infrastructure recommendations. This chapter contains an outline of the information found within this section of the Arkansas School Facility Manual and a summary of the standards and guidelines contained within each chapter.

The chapters included in this section of the Arkansas School Facility Manual are:

Chapter 1: How to Use This Section
Chapter 2: Educational Facility Planning Concepts
Chapter 3: Educational Framework
Chapter 4: Site Guidelines
Chapter 5: Program of Requirements [Bracketing]
Chapter 6: Program Space Guidelines
Chapter 7: Building Systems
Chapter 8: Cost Guidelines

Chapter 1: How to Use This Section

Chapter 1 contains introductory information that indicates the organization of Section Two; an executive summary highlighting the standards and guidelines; a glossary of general Arkansas School Facility Manual definitions and abbreviations; and a general overview of the planning, design, and construction process intended to respond to the educational facility needs of Arkansas schools.

Chapter 2: Educational Facility Planning Concepts

Chapter 2 contains planning concepts related to current educational best practices, special education, workforce development, and program and design capacity. The facility planning concepts contained within this chapter are intended to be informative only and are not standards.

Chapter 3: Educational Framework

Chapter 3 contains a series of broad principles associated with organizational, facility, program, and service issues, including: grade configuration, school size, and class size. In conjunction with the Chapter 2: Educational Facility Planning Concepts, Chapter 3 provides assistance when developing an educational facility.

Chapter 4: Site Guidelines

Chapter 4 contains information about site size and site amenities. Guidelines are also outlined for a multitude of factors that must be considered, including: various types of circulation and site access, drainage, play fields and playgrounds, fencing, lighting, mechanical/ electrical yard, landscaping, site furnishings, and exterior security provisions.

Chapter 5: Program of Requirements [Bracketing]
Chapter 5 assists the school district in establishing the size and quantity of instructional and support spaces for construction of a new facility or an addition to an existing facility. The size of a school facility is based on total student population and grade configuration. The Program of Requirements identifies an overall square feet for a facility and then identifies spaces that must be included and provides an allowance for additional support spaces that the district may choose based on their programs and method of delivery.

Chapter 6: Program Space Guidelines
Chapter 6 contains space plates for each type of space in the Programs of Requirements. Most space plates contain a graphic representation and information related to features, loose furnishings, finishes, and notes.

Chapter 7: Building Systems
Chapter 7 provides an overview and examples of the various materials and systems that have been used to establish a design standard and level of quality for the systems and materials to be incorporated into new school buildings and additions to existing school buildings.

Chapter 8: Cost Guidelines
Chapter 8 will be added at a later date.

The Standards and Guidelines contain a vast number of educational planning, facility design, and construction concepts. The next few pages

serve as a summary of the standards and guidelines contained within Section Two of the Arkansas School Facility Manual. For additional information, refer to the various chapters for clarification.

Standards are identified by **bolded** text. Guidelines are identified as regular text.

Chapter	Standards & *Guidelines*	Notes
3	*GRADE CONFIGURATION* The Program of Requirements has been developed to address any K-12 grade configuration.	
3	**CLASS SIZE:** **A. Pre-Kindergarten/Kindergarten 20 students** **B. 1st Grade through 3rd Grade 25 students** **C. 4th Grade through 6th Grade 28 students** **D. 7th Grade through 12th Grade 30 students** **E. Workforce Development 30 students**	**Districts may decrease class size by adding teaching stations at their own expense or by utilizing innovative program delivery methods that allow multiple uses of spaces.**
5	**SQUARE FOOT PER STUDENT** **A. A gross square foot per student for the overall building may be calculated using the total student population and the total gross square feet indicated by the Program of Requirements.** **B. The Program of Requirements indicates the following approximate square foot per student ranges:** **1. ES = –119 - 151** **2. MS = –124 - 182** **3. HS = –161 - 243** **4. PK-8 = Blended** **5. PK-12 = Blended**	**Total student population is established by the highest projected enrollment beginning three years out from the date of the 10-year projection.**

Chapter	Standards & *Guidelines*	Notes
5	**NET AND GROSS SQUARE FOOTAGE** **The net square footage will be composed of the following two components:** **A. Required Spaces. The Program of Requirements identifies the quantity and size of all required spaces to provide an adequate education.** **B. Support Space Allowance. The Program of Requirements provides a net square foot allowance for districts to provide flexibility for their instructional programs. Districts must include the indicated support space allowance in a new school. Support space allowance shall not be used to increase the size of gymnasiums or auditoriums.** **C. The gross square footage will be equal to the net square footage plus a construction factor that accounts for wall thickness and equal to 10 of the total net square footage.**	**Size of the building is driven by the total number of students.** **The percentage of support space allowance is 10% for elementary school spaces and 15% for middle and high school spaces.**
5	**SIZE MODIFICATION OF INDIVIDUAL SPACES** **A. The size standard for all individual required spaces is established by the Programs of Requirements located in Chapter 5.** B. Sizes indicated by the Programs of Requirements located in Chapter 5 for support spaces are not intended to be standards but to serve as guidelines for planning and design purposes. **C. Size of individual required space may be altered ± 5% for design and structural purposes only provided the following:** **1. The standard for total gross square footage is met.** **D. Individual required spaces may NOT be removed or reduced in size.**	**The selection of support spaces is limited only by the following basic rules:** **a. The standard for total gross square footage must be met. Any overages will be at district expense.** **b. If an instructional space is selected, its size may only be altered by the design professional for design and structural purposes.**
4	SITE SIZE A. The recommended site sizes are: 1. Elementary School: 10 acres plus 1 acre per 100 students 2. Middle School: 20 acres plus 1 acre per 100	The site sizes shown should be considered as the minimum size to provide adequate pedestrian & vehicular circulation, parking for staff, students, & visitors

Chapter	Standards & *Guidelines*	Notes
	students 3. High School: 35 acres plus 1 acre per 100 students 4. Combination Schools: a. PK-12 School: 40 acres plus 1 acre per 100 students b. PK-8 School: 20 acres plus 1 acre per 100 students B. Deviations from the site size may be required because of extenuating circumstances. Deviations from the site size recommendations must be approved by the Arkansas Department of Education. The site sizes shown should be considered.	and playgrounds and playfields. When selecting a site, the District should consider current and future student needs, changing demographics, and possible development around the site. It is recognized that not all sites, especially urban sites, will be able to meet those recommendations. The Design Professional, working with the District, should make every attempt to meet as many of the recommendations as possible. Variances will be considered by the Department of Education.

Chapter	Standards & *Guidelines*	Notes
5	PROGRAMS The following programs are guidelines. It is the responsibility of each district to determine the appropriate programs for their students. The programs listed below were used to develop the spaces contained in the Programs of Requirements. A. Elementary Schools 1. Academic Core 2. Special Education 3. Visual Arts 4. Music 5. Physical Education B. Middle Schools 1. Academic Core 2. Special Education 3. Visual Arts 4. Music 5. Technology Education 6. Family and Consumer Sciences 7. Physical Education 8. Workforce Development C. High Schools 1. Academic Core 2. Special Education 3. Visual Arts 4. Music 5. Physical Education 6. Workforce Development 7. Alternative Education	Combination Schools contain the programs from which those schools are comprised. Example: A Pre-K – 8 school would contain all the elementary school programs and the middle school programs. Workforce development is an exception. Accreditation Requirements make it necessary for all comprehensive high schools to make available at least three programs of study from three different occupational areas. Refer to Workforce Development in Chapter 2.
5	**SIZE OF SPECIFIC SPACES** **The following sizes are standards from the Programs of Requirements in Chapter 5. The spaces listed below are intended to be samples and representative of typical spaces.** **Regular Classrooms** **850 SQFT** **Pre-Kindergarten/Kindergarten Classrooms** **1,000 SQFT** **Special Education Classrooms** **850 SQFT** **Resource Room** **450 SQFT** **Art Classroom** **1,200 SQFT** **Music Classroom** **1,200 SQFT** **Student Dining** **50% TSP x 15 SQFT/Student**	TSP = Total Student Population **The Program of Requirements contained in Chapter 5 details the size and quantity of all instructional and support space allowances that must be included in new school construction.**

Chapter	Standards & *Guidelines*	Notes
7	**EXTERIOR WALLS** **A. Options available for numerous, insulated wall systems.** **B. All systems to be well insulated and have moisture barrier.**	**Minimum insulation R values.** **40-year minimum lifespan.**
7	**ROOFS** **A. New construction to be sloped or low slope roof system.** **B. Options available for numerous, UL class "A" systems with warranties.** **C. Vapor barrier are critical for weather protection.**	**Meet "energy star" values** **Minimum, thermal resistant U-values.**
7	**OPENINGS** **A. All academic spaces to have natural daylight.** **B. Minimize east and west facing glass.** **C. Interior wood doors to be solid core and factory finished.**	**Encourage top lighting. Provide uniform light distribution. Select formaldehyde-free doors constructed with recycled or recovered content.**
7	**INTERIOR FLOOR FINISHES** A. Use water-based coatings and adhesives. B. Options available for soft and hard surface flooring. C. Choose low-VOC emitting materials. D. Meet carpet "green label plus" rating and use carpet reclamation programs.	Use products containing recycled content.
7	**PLUMBING** A. Water piping should not be installed under floor slabs. **B. Domestic water systems within the building shall be type "K" or "L" copper tubing.**	**No additional notes.**
7	**HVAC** **A. All new construction will include air conditioning.** **B. Several systems are available and selection shall be based on a life cycle cost analysis.** **A. All temperature control systems shall be electronic, direct digital controls.**	**All systems shall be designed in compliance with ASHRAE standard 90.1 Energy Code.** **Control indoor and outdoor HVAC noise.**

Chapter	Standards & *Guidelines*	Notes
	B. Commissioning of HVAC is recommended.	
7	**ELECTRICAL** **A. Conductors shall only be copper.** B. All branch circuits and feeder circuits should be run above ceilings and within walls. **C. Interior lighting shall be controlled by occupancy sensors, automatic timed lighting controlled system or a combination of both.**	**Within building electric system, provide technology infrastructure such as cable trays, conduit, boxes, etc.**
8	**TECHNOLOGY** **A. All instructional spaces will be wired for voice, video, data, and power.** **B. All offices and meeting spaces will be wired for voice, data, and power.**	**Selected offices may also be wired for video.**

An Educational Framework is a series of broad principles associated with organizational, facility, program, and service issues. In conjunction with the Educational Facility Planning Concepts, the Education Framework establishes the foundation on which educational facilities are designed.

The Standards & Guidelines are not intended to address every possible condition. Flexibility is required to develop appropriate solutions given the diversity of programs, community requirements, existing building conditions, site constraints, etc. found in the school district.

The following educational assumptions/concepts were derived from a wide range of sources that included representation from parents and students, teachers and school administrators, business and government [state and local] officials.

GRADE CONFIGURATION

Following are the suggested grade configurations for each level of school facility.

Pre-Kindergarten programs should be included as part of the school facility as required by state law.

Workforce Development courses are included in middle and high school facilities.

A. ***Elementary School: Pre-K-5***
B. ***Middle School: 6-8***
C. ***High School: 9-12***
D. ***Combination Schools***
- ***1. Pre-K-8***
- ***2. Pre-K-12***

SCHOOL SIZE

School size is based on the number of students projected to attend a particular school facility. For the number of students by grade level the Program of Requirements provides the total required school size that contains both the required spaces and a support space allowance needed to adequately meet the needs of the students.

The Program of Requirements found in Chapter 5 provides required spaces and a support space allowance for the selection of spaces needed for the various program areas found in each grade level of school.

CLASS SIZE

Class size [or Average class size] is defined as the number of students occupying a space at one time. Class size is not necessarily synonymous with student teacher ratio.

A.	Pre-Kindergarten-Kindergarten	20 students
B.	1st Grade through 3rd Grade	25 students
C.	4th Grade through 6th Grade	28 students
D.	7th Grade through 12th Grade	30 students

WORKFORCE DEVELOPMENT

Workforce Development [WFD] refers to programs traditionally offered under the label Career Technical Education or Vocational Education.

A. Middle schools and PK-8 combination schools must provide access to pre-technical courses for students in grades 7-8.
B. High schools and PK-12 combination schools must provide access to at least three different WFD occupational areas for students in grades 9-12.
C. High schools and PK-12 combinations schools must provide access to at least one Program of Study within each occupational area in grades 9-12.

Note: Access to a WFD occupational area can occur in the following ways:
1. On-site
2. Through a partnership with an off-site organization.

KINDERGARTEN

Kindergarten courses will be delivered all day.

PROGRAMS

As programs and services change it is important that each school district identify the current and future educational needs of its students. Once those needs have been identified, the District should then determine the types of instructional programs that will result in a successful student. The Standards & Guidelines are based on current and future trends in education and include the following programs. As stated above, ultimately each district should determine the appropriate programs for their students.

A. Elementary Schools
   1. Core Academic
   2. Special Education
   3. Visual Arts
   4. Music
   5. Physical Education

B. Middle Schools
   1. Core Academic
   2. Special Education
   3. Visual Arts
   4. Music
   5. Technology Education
   6. Family and Consumer Science
   7. Physical Education
   8. Workforce Development

C. High School
   1. Core Academic
   2. Special Education
   3. Visual Arts
   4. Music
   5. Performing Arts
   6. Physical Education
   7. Workforce Development

Purpose

The intent of Chapter 7 is to provide standards and guidelines necessary to plan, ~~and~~ design and construct school facilities throughout the state of Arkansas. The focus is on building systems and materials that will provide buildings that are economical and reflect quality construction~~.~~, Aalong with mandatory performance standards, additional options and available choices~~. are available.~~

All items and systems, such as loose furnishings, casework, technology, etc., should be integrated early in the planning phase of the project.

Definitions

The planning and design of school facilities shall be based upon criteria described in Chapter 7 in accordance with the following definitions:

"Standards" – Performance or construction required ~~or mandatory~~ items for which there is mandatory adherence.~~that must be adhered to~~

"Guidelines" – Performance or construction items which are recommended, but NOT required.

"Examples" – tTypical component(s) off standards or guidelines.

Codes and Standards

Applicable local, state, and international building codes and standards are not repeated in this chapter. It is the responsibility of the Design Professionals to conform to the current codes in their design process. Should the ~~Where these~~ standards contained in this manual be~~are~~ in conflict with international, state, or local codes, the established codes shall prevail. The requirements of (ADAAG) (Americans with Disabilities Act) should be consulted.

No attempt has been made to provide detailed specifications in Chapter 7. ~~Again, options~~ Standards and guidelines are available that allow architects and engineers the flexibility to design to fit the school district needs.

~~Renovation~~Applicability

~~The main purpose of these~~ The construction and performance standards and guidelines contained herein are applicable to both new construction of public school facilities and renovation of existing public school facilities. ~~is to apply them to new school facilities. However, we recognize that the majority of existing buildings may be renovated and upgraded rather than replaced. In the assessment process there may be buildings that will require exceptions or variances to the standards and guidelines.~~ Every attempt should be made to apply these standards and guidelines to existing buildings, in gradual steps as funding and other influences allow. (refer to Chapter 1 It may be recognized that some standards may not be compatible with existing facilities in renovation projects nor may it be possible to completely conform a performance or construction standard to new a new facility. It those instances variances to those standards, upon request, may be granted by the Division~~)~~

Green Building Design (optional)

A strong motive of these building systems standards and guidelines is to promote high performance schools. High performance schools are healthy, comfortable, energy efficient, resource efficient, water efficient, safe, secure, adaptable, and easy to operate and maintain. Designing for high performance goals is a guideline. It is to be considered, but not mandatory.

Commissioning (optional)

The commissioning process is a single-point responsibility to make sure that certain systems in a building are functioning and performing according to the design intent. The independent Commissioning Agent goes far beyond the occasional Design Professional job visits during the construction period. Actual tests are performed and components are verified under the guidance of the Commissioning Agent. Several systems can be commissioned, but emphasis in the chapter is to commission the HVAC components.

Definition

Commissioning is the process of ensuring that systems are designed, installed, functionally tested, and capable of being operated and maintained according to the Owner's operational needs.

Application

Commissioning may be applicable to both new facilities and renovation. It is a guideline to be considered, but not mandatory.

~~New, addition/renovation, and renovation projects. Commissioning is optional.~~

Commissioning Authority (CA)

The CA is in charge of the commissioning process and is an objective, independent advocate of the Owner.

Commissioning Authority Options

CA can be selected from an independent third party; a mechanical or installing contractor; or a design professional.
Contractor: Desirable when building is small and contractor performs all mechanical work, but a conflict of interest can arise.
Design Professional: Good idea provided that the project specifications detail the requirements. Already familiar with the design intent but may not have day-to-day experience in the process.

How To Select

Use competitive Request for Qualifications (RFQ) and follow a qualification based selection process (QBS).

CA Qualifications

Experience required:

- Designing, specifying, or installing educational building mechanical-control systems or general HVAC systems
- Working with project teams and conducting "scoping meetings"
- Building systems start-up, balancing, testing, and troubleshooting
- Commissioning at least two projects involving HVAC and lighting controls
- Writing functional performance-test plans for at least two projects.

Extent of Commissioning

The degree or extent of commissioning for new buildings is recommended for the planning, design, and construction phases. However, involvement can occur only in design, construction, or post-construction phases.

What to Commission

All projects that include controls, EMCS, pneumatic equipment, integrated systems, HVAC-related equipment, and air distribution systems should be commissioned.

Benefits

- Improved performance of building equipment and building systems interactions
- Improved IAQ occupant comfort and productivity
- Decreased potential for building Owner liability related to IAQ
- Reduced operation and maintenance costs
- Maximize energy efficiency
- Provide training for school personnel

Green Building Design (optional)

The term "green building" is synonymous with "high-performance building", "sustainable design and construction", as well as other terms that refer to a holistic approach to design and construction. Green building design strives to balance environmental responsibility, resource efficiency, occupant comfort and well-being, and community sensitivity. Green building design includes all players in an integrated development process, from the design team (building owners, architects, engineers, and consultants), to the construction team (materials manufacturers, contractors, and waste haulers), to the maintenance staff and building occupants. The green building process results in a high-quality product that maximizes the owner's return on investment.

Why Design Green?

The building sector has a tremendous impact on the environment. According to the U.S. Department of Energy (DOE), buildings in the United States consume more than 30% of our total energy and 60% of our electricity annually. Buildings are a major source of pollutants that cause urban air quality problems and contribute to climate change. Buildings produce 35% of the country's carbon dioxide emissions. Green building practices can substantially reduce the negative environmental impacts associated with these buildings and reverse the trend of unsustainable construction activities. Green design also reduces operating costs, enhances building marketability, potentially increases occupant productivity, and helps create a sustainable community. Green design has environmental, economic, and social elements that benefit all stakeholders, including owners, occupants, and the general public.

Creating High Performance Schools (optional)

School districts around the country are finding that smart energy choices can help them save money and provide healthier, more effective learning environments. By incorporating energy improvements into their construction or renovation plans, school can significantly reduce energy consumption and costs. These savings can then be redirected to educational needs such as additional teachers, instructional materials, or new computers.

Establishing High Performance Goals

Cost-effective energy- and resource-efficient schools start with good planning. Working closely with the school's design and planning staff, the architects and engineers should develop objectives that reflect local conditions and priorities, balance short-term needs and long-term savings, and address environmental issues. Goals can include reducing operating costs; designing building that

teach; improving academic performance; protecting the environment; increasing health, safety, and comfort; supporting community values; and considering emerging solutions.

A. Reducing Operating Costs - To ensure that your school is water- and energy-efficient, you must first work with the school system to establish clear consumption goals. Given your climatic region and building type, this "energy budget" must be realistic, and it must be based on the potential of current, proven energy-saving technologies. Many energy- and resource-saving options have very good financial value. Some of these solutions do not add anything to installation costs.

Establishing High Performance Goals (continued)

B. Designing Buildings That Teach - When designing the school, consider the importance of incorporating high performance features that can be used for educational purposes. Some high performance features may be harder to rationalize financially, but from an educational standpoint are still important to consider. Solar electric systems (~~photovoltaics~~photovoltaics), for example, may have a longer return on investment, but if installed properly, can be a very powerful educational tool.

C. Improving Academic Performance - During the past decade, remarkable studies have indicated a correlation between the way schools are designed and student performances. You can maximize student performance by setting air quality objectives that:

1. Define a level of indoor air quality desired during occupied times
2. Place limitations on the use of materials, products, or systems that create indoor air quality problems.
3. Require monitoring equipment.

Establishing day_lighting objectives will also improve classroom conditions and can help improve performance if you:

1. Include controlled day_lighting in all classrooms, administrative areas, the gymnasium, and other significantly occupied spaces.
2. Develop intentional visual connections between the indoor and outdoor environment.

D. Protecting Our Environment - High performance school design takes into consideration not only the economic and academic impacts of design, but also environmental impacts. Environmentally sound design elements are those that:

~~———~~1. Use renewable energy systems and energy-efficient technologies

~~1. Use renewable energy systems and energy-efficient technologies~~

2. Incorporate resource-efficient building products and systems
3. Promote water-conserving strategies
4. Use less polluting transportation alternatives
5. Establish recycling systems
6. Incorporate environmentally sound site design

E. Designing for Health, Safety, and Comfort - You cannot design a high performance school without including design strategies that address health, safety, and comfort issues. Goals should include objectives that:

1. Implement day_lighting and indoor air quality solutions to make the school a healthier place to teach and learn
2. Address acoustical and thermal comfort

F. Supporting Community Values

1. Incorporating high performance strategies in your school's design results in a win-win situation for the community and the school. Through the implementation of energy-savings strategies, the school saves money and taxpayers benefit. Additionally, the energy dollars saved don't leave the immediate region but stay within the community and help to build a stronger local economy. Building to high performance standards implies the purchase of locally manufactured products and the use of local services. This approach is effective because much of the environmental impact associated with materials, products, and equipment purchased for construction involves transportation. The more transportation, the more pollution. Specifying local products benefits the community in the same way that retaining energy dollars helps: it strengthens the local economy.

Green Building Rating System (optional)

The Green Building Initiative design program called Green Globes and the program offered by the U.S. Green Building council, LEED (Leadership in Energy and Environmental Design), are green measurement systems designed for rating commercial and institutional buildings. Both address new construction and major renovations. The programs address various environmental categories, typically sustainable sites, water efficiency, energy, indoor environmental quality, and materiaolsmaterials and resources. Both are performance oriented systems where points are earned for satisfying performance criteria. Different levels of green building certification are awarded based on the total points earned.

~~LEED (Leadership in Energy and Environmental Design) for new construction and major renovations is a measurement system designed for rating commercial and institutional buildings. The rating system is organized into five environmental categories: sustainable sites, water efficiency, energy & atmosphere, materials & resources, and indoor environmental quality. LEED is a performance oriented system where points are earned for satisfying performance criteria. Different levels of green building certification are awarded based on the total points earned. The system is designed to be comprehensive in scope, yet simple in operation.~~

A. Sustainable Sites - Properly chosen and developed site help minimize negative project impacts of the surrounding areas, the project site, and occupants of the project site.

B. Water Efficiency – Reduce quality of water needed for the building and the burden of water from the site on municipal treatment facilities.

C. Energy & Atmosphere – Establish energy efficiency to reduce operational expenses, conserve natural resources, and reduce local and global pollution.

1. Commissioning and Training – All schools should be commissioned to ensure that the design meets the expectations of the district, and that the school is built as it was designed. Modern schools are complex buildings. Commissioning ensures that all building systems are working properly, and that the school staff knows how to operate and maintain them.

D. Materials & Resources – Reduce the amount of materials needed. Those used should have less environmental impact. More sustainable

alternatives exist and should be used as much as possible. Waste from the project should be reduced and managed. It is now possible to recycle, compost, or salvage a majority of construction and demolition waste instead of disposing it in landfills.

E. Indoor Air Quality – Schools must protect student health, and good indoor air quality is essential for healthy schools. Good indoor environmental quality can be managed by controlling the sources of pollutants, ensuring thermal comfort and student connections to the outdoor environment.

1. Acoustics – If not controlled to appropriate levels, noise from loud ventilation systems, outdoor sources, and neighboring rooms can significantly impeded communication between teachers and students. Young learners, students with hearing difficulties, and those learning English as a second language are particularly vulnerable. Classrooms should be designed to be accessible for all students.

Application

Green building design may be applicable to both new facilities and renovation. It is a guideline to be considered, but not mandatory.

Components

1. Spread footings and wall footings.
2. Trenched footings/turned down footings
3. Drilled piers
4. Reinforced concrete foundation walls
5. Reinforced concrete masonry walls utilizing normal weight masonry units with all cores grouted and reinforced
6. Concrete grade beams
7. Driven piles and pile caps
8. Auger cast piles and pile caps
9. Other systems if recommended and acceptable to the geotechnical engineer and the structural engineer.
10. Where expansive clays are present on the site, the geotechnical investigation is to address such and special foundation and floor slab systems and/or undercutting and backfilling shall be utilized as recommended by the geotechnical engineering investigation.

~~Performance~~ **Standards**

1. **Foundations shall be designed by a structural engineer to meet the recommendations given by a geotechnical engineer based upon his geotechnical investigation and report and in accordance with the current state building code.** ~~*Geotechnical engineer is to inspect the foundation excavations during construction.*~~
2. **Structurally sound**
3. **Deflections and differential movement to be limited to magnitudes compatible with other building components.**
4. **Compatible with soil type**
5. **Water Barrier**
6. **Long life expectancy**
7. ~~For c~~Concrete materials, ~~may use 10-20% flyash as replacement, but not addition. Mix design to be done by qualified independent testing agency.~~
8. ~~Use low and non-toxic form releases.~~

97. **Sub-slab ventilation in areas with radon or potential soil gas submissions. Requirement for such is to be determined by qualified testing agency.**

~~Construction Standards~~

18. **Concrete minimum compressive strength at 28 days to be as required by structural engineer's design, but shall be no less than the following:**
   a. **Foundations – 3,000 psi**
   b. **Floor slabs – 3,000 psi**
   c. **Precast systems – 5,000 psi**

   Strength of concrete provided is to be tested by independent testing lab, during construction.

29. **Concrete reinforcing steel shall meet the requirements of the current state building code and structural engineer's design.**

310. **Project site concrete mixing shall not be used, unless otherwise approved by an independent testing agency.**

411. **For classrooms and corridor areas, use no less .than a 4" thick concrete slab with 6x6 - W1.4 x W1.4 welded wire fabric.**

512. **Under concrete building slabs, place a minimum 10 mil vapor barrier and compact a minimum of 64" of drainage fill material unless geotechnical engineering investigation recommends otherwise.**

Guidelines

1. Concrete materials, may use 10-20% flyash as replacement, but not addition. Mix design to be done by qualified independent testing agency.

2. Use low and non-toxic form releases.

~~Examples~~

~~1. Spread footings and wall footings.~~

~~2. Trenched footings/turned down footings~~

~~3. Drilled piers~~

~~4. Reinforced concrete foundation walls~~

~~5. Reinforced concrete masonry walls utilizing normal weight masonry units~~

with all cores grouted and reinforced

6. Concrete grade beams

7. Driven piles and pile caps

8. Auger cast piles and pile caps

9. Other systems if recommended and acceptable to the geotechnical engineer and the structural engineer.

10. Where expansive clays are present on the site, the geotechnical investigation is to address such and special foundation and floor slab systems and/or undercutting and backfilling shall be utilized as recommended by the geotechnical engineering investigation.

Examples

1. Steel roof deck on open web steel joists or steel beams
2. Cementitious deck on open web joists
3. Composite action concrete slabs and steel beams
4. Pre-engineered building systems
5. Concrete on steel form deck floor
6. Cast-in-place floor slabs (1 way or 2 way)
7. Steel and/or reinforced concrete columns and beams
8. Load bearing masonry walls
9. Wood Frame systems or Heavy Timber Frame Systems
10. ~~Heavy Timber Frame Systems~~
10. Engineered wWood products including engineered wood joists and beams, pre-engineered wood trusses, OSB and plywood.~~Products~~
12. Other systems if recommended and acceptable to the structural engineer and Owner and in accordance with the applicable Fire Prevention and/or Building Codes.

~~Performance Standards~~

1. ~~*Structurally sound*~~
2. ~~Non-deteriorating~~
3. ~~*Structural systems and members shall be designed by by a licensed structural engineer to meet current state fire prevention and building codes and to have adequate stiffness to limit deflections and lateral drift to the requirements of theseis codes.*~~
   a. ~~Where the current state building code is deficient in guidance on deflection limitations, the deflection limit recommendations found in the American Institute of Steel Construction (AISC) Design Guide #3 "Serviceability Design Considerations for Low-Rise Buildings" shall be utilized.~~
   b. ~~Beams and/or lintels supporting masonry shall limit the vertical deflection at mid-span to 1/800 of the span or 3/8", whichever is smaller.~~

~~**Examples**~~

~~1. Steel roof deck on open web steel joists or steel beams~~

~~2. Cementitious deck on open web joists~~

~~3. Composite action concrete slabs and steel beams~~

~~4. Pre-engineered building systems~~

~~5. Concrete on steel form deck floor~~

~~6. Cast-in-place floor slabs (1-way or 2-way)~~

~~7. Steel and/or reinforced concrete columns and beams~~

~~8. Load bearing masonry walls~~

~~9. Wood Frame systems~~

~~10. Heavy Timber Frame Systems~~

~~11. Engineered Wood Products~~

~~12~~9. ~~Other systems if recommended and acceptable to the structural engineer and Owner~~ and in accordance with the applicable Fire Prevention and/or Building Codes~~.~~

~~Considerations~~~~Construction~~ **Standards**

1. Structurally sound

2. Structural systems and members shall be designed by a licensed structural engineer to meet current state fire prevention and building codes and to have adequate stiffness to limit deflections and lateral drift to the requirements of these codes.

~~1~~2. **Steel roof deck:** ~~minimum 20 gauge~~as designed by structural engineer

~~2~~3. **For cementitious decks, use galvanized sub-purlins**

~~3~~4. **For roof slopes greater than 1:12, metal joists shall span parallel to the slope**

~~4~~5. Do not use calcium chloride in concrete.

~~4. Prefabricated wood trusses and glue-laminated beams shall not be used.~~6. For structural steel, comply with AISC specifications and current state building codes.

~~Considerations (continued)~~

~~5. Plywood and oriented strand board (OSB) shall not be used as~~

~~structural roof deck.~~

~~6. Do not use calcium chloride in concrete~~

~~7. For structural steel, comply with AISC specifications and current state building codes~~

6~~7~~8. Steel joist manufacturer shall be certified by steel joist institute (SJI)

7~~8~~9. Non-paintedGalvanizing ~~for~~ steel roof deck, if galvanized, to be~~be~~ ASTM A924, G90 (90 oz. per sq.ft.) zinc coating~~,~~. S~~F~~or ~~steel~~ floor deck shall be galvanized and to be ASTM A924~~, use~~ G60.

8~~9~~10. Concrete deck fill: minimum compressive strength of 43,000 psi or greater at 28 days

9~~10~~11. Structural steel fabrication must be ~~certified~~ in accordance with standards.~~by the AISC.~~

10~~11~~12. Rolled s~~S~~teel columns and beams: ASTM A572, grade 50~~; or ASTM A36~~ or others if recommended and approved by the structural engineer; Square or rectangular hollow structural steel sections shall be ASTM Grade B, Fy = 46 ksi; Round hollow structural steel sections shall be ASTM A 500, Grade B, Fy = 42 ksi.

11~~12~~13. Concrete columns: minimum compressive strength of 3,000 psi or greater at 28 days

12~~13~~14. Steel form deck shall comply with SDI design manual (publication no. 27)

14~~5~~. Structural m~~M~~asonry columns shall be filled and reinforced.

15~~6~~. Load bearing masonry walls shall comply with current state building codes.

15~~6~~~~7~~. Steel lintels in exterior walls: if 8" or less in depth and 12" or less in length, use hot-dipped galvanized, grade 65. For lintels greater in size, use ~~ASTM A641~~ASTM A123M-02.

16~~7~~8. Steel lintels, other than angles, supporting masonry shall have rigid masonry anchors at 32" maximum spacing to secure masonry to steel.

17~~8~~9. Reinforced masonry lintels shall be used in exterior walls wherever possible.

18~~9~~20. Concrete mix design to be designed and strength tested by qualified independent testing agency to meet these

requirements and any others from the Design Professional.

~~19~~20~~21~~. ~~**Provide compressive strength testing of all concrete.**~~**All lumber used for wood trusses shall be #2 grade, kiln dried, Southern Pine; #2 grade, kiln dried, Spruce-Pine-Fir; or #2 grade Hem-Fir or better. #3 grade lumber shall not be allowed for chords or web members.**

~~**Guidelines**~~

~~Examples~~

~~1. Steel roof deck on open web steel joists or steel beams~~

~~2. Cementitious deck on open web joists~~

~~3. Composite action concrete slabs and steel beams~~

~~4. Pre-engineered building systems~~

~~5. Concrete on steel form deck floor~~

~~6. Cast-in-place floor slabs (1 way or 2 way)~~

~~7. Steel and/or reinforced concrete columns and beams~~

~~8. Load bearing masonry walls~~

~~9. Wood Frame systems~~

~~10. Heavy Timber Frame Systems~~

~~11. Engineered Wood Products~~

~~12. Other systems if recommended and acceptable to the structural engineer and Owner and in accordance with the applicable Fire Prevention and/or Building Codes.~~

Components

1. Masonry cavity walls
2. Veneer and metal framing walls
3. Pre-cast concrete insulated panels
4. Metal panel on metal framing walls
5. Veneer and wood framing walls

NOTE: Other types of exterior wall construction may be acceptable if type meets or exceeds the above performance standards criteria. Construction standards following, indicated in bold type, are to be considered mandatory minimum requirements. More stringent requirements shall be used when required by the current state building codes.

~~Performance Standards~~Guidelines**Standards**

1. **Impact resistant – must resist breakdown from projectiles**
2. **Moisture resistant – provide vapor retarder to inside of insulation**
3. **Thermal resistant – minimum U-factor of 0.074. Consider long-term performance**
4. ~~Economical – consider life cycle evaluation~~
5. ~~**Long life span – 40 year minimum**~~
6. **Minimum maintenance – no routine applied maintenance**
7. ~~Light-colored exteriors walls~~

Guidelines

1. Economical – consider life cycle evaluation
2. Light-colored exteriors walls

~~Examples~~

1. ~~Masonry cavity walls~~
2. ~~Veneer and metal framing walls~~
3. ~~Pre-cast concrete insulated panels~~
4. ~~Metal panel on metal framing walls~~
5. ~~Veneer and wood framing walls~~

~~NOTE: Other types of exterior wall construction may be acceptable if type meets or exceeds the above performance standards criteria. Construction standards following, indicated in bold italicized type, are to be considered mandatory minimum requirements. More stringent requirements shall be used when required by the current state building codes.~~

Components

1. Exterior stone, clay, or concrete masonry units
2. One inch cavity (two inch recommended)
3. Rigid insulation – seal inside face – seal seams with tape or mastic
4. Interior concrete masonry units

~~Performance Standards~~

~~1. *Impact resistant*~~

~~2. *Moisture resistant*~~

~~3. *Thermal resistant*~~

~~4. *Fire resistant*~~

~~Construction Standards~~**Guidelines Standards**

1. Impact, moisture, and thermal resistant.

2. Fire resistant

13. **In-wall flashing – copper fabric laminate; Elastomeric thermoplastic; sheet metal**

24. **Drain cavity with weep holes, 4'0" o.c.**

35. **Steel reinforcement to meet the requirements of the current ~~state~~ building code, including the seismic provisions where ~~re~~ applicable.**

46. **Face brick: grade SW**

57. **Concrete masonry: unit compressive strength 1900 psi (13.1 MPa) Use CMU's containing ~~flyash~~fly ash.**

68. **Insulation: extruded polystyrene board or spray polyurethane foam. Minimum R-value of 10.00.**

~~7. Use mortar dropping control product to prevent blocking of weep holes~~

89. **For CMU's, maximize recycled content (minimum 10%)**

~~9. For exterior CMU, provide with~~order integral color. ~~Do not paint.~~

Guidelines

1. Use mortar dropping control product to prevent blocking of weep holes

2. For exterior CMU, provide with integral color. Do not paint.

Components

1. Exterior stone, clay, or concrete masonry units

2. One inch cavity (two inch recommended)

3. Exterior sheathing: glass-mat gypsum
   Sheathing board: extruded polystyrene sheathing

~~4. Cold-formed metal framing having 30% recycled content~~

54. Bat/blanket insulation with faced membrane

65. Interior gypsum wallboard, type X, foil-backed

~~Performance Standards~~

~~1. *Impact resistant*~~

~~2. *Moisture resistant*~~

~~3. *Thermal resistant*~~

~~Construction Standards~~Guidelines Standards

1. Impact, moisture, and thermal resistant

~~1~~2. **In-wall flashing**

~~2~~3. **Drain cavity with weep holes, 4'0" o.c.**

~~3~~4. **Mill galvanized wall ties**

~~4~~5. **Face brick: grade SW**

~~5~~6. **Concrete masonry: unit compressive strength 1900 psi (13.1Mpa~~) Optional) ~~u~~Optional uUse of CMU's containing ~~flyash~~fly ash. Maximize recycled content.**

~~6~~7. **Use minimum R-19 fiberglass insulation. The paper or foil vapor barrier should be anchored to the face of the studs.**

~~7~~8. **Insulation could be soybean oil-based polyurethane, open-cell, semi-rigid foam.**

Guidelines

1. Maximize recycled content.

Components

1. Exterior architectural concrete with smooth or exposed aggregate texture finish or ~~or~~ thin brick facing.
2. Rigid cavity insulation.
3. Structural concrete backup.
4. Interior finish, if exposed, to be smooth ~~concrete or~~concrete or exposed aggregate concrete or a surface applied smooth or textured finish.

~~Performance Standards~~

~~1. *Impact resistant*~~
~~2. *Moisture resistant*~~
~~3. *Thermal resistant*~~
~~4. *Long lasting system*~~
~~5. *Low maintenance*~~
~~6. *Meet ASHRAE 90.1-2001 (or later) and current state energy code requirements*~~

~~Construction Standards~~**Guidelines Standards**

1. Impact, moisture, and thermal resistant
2. Low maintenance
3. Meet ASHRAE 90.1-2001 (or later) and current state energy code requirements
~~1~~4. **Use extruded polystyrene or polyisocyanurate insulation**
~~2~~5. **Use fiber composite or plastic connectors – no metal connectors**
~~3~~6. **Concrete materials: Portland cement ASTM C 180, Type I or III; Fly ash, ASTM C 618, Class C or F may be substituted for up to 20 percent of total cementitious materials**
~~4~~7. **Concrete mix: 28 day compressive strength, 5,000 psi** minimum
~~5~~8. **Interior surface: paint or skim-coat plaster**

~~Guidelines~~

Components

1. Exterior metal wall panel
2. Weather barrier
3. Exterior sheathing
4. Batt insulation with vapor barrier
5. Cold-formed metal framing
6. ~~Interior gypsum wallboard~~

~~Performance Standards~~

1. ~~*Low maintenance*~~
2. ~~*Moisture resistant*~~
3. ~~*Thermal resistant*~~
4. ~~*Provide 20 year warranty for exterior panel finish*~~

~~Construction Standards~~Guidelines Standards

1. **Metal wall panel: 0.0269 inches minimum thickness zinc-coated (galvanized) or aluminum-zinc alloy-coated sheet steel; fluoropolymer exterior finish with minimum 20 year finish warranty**

2. Low maintenance

3. Moisture and thermal resistant

~~2~~4. **Weather barrier: composite, self-adhesive, rubberized-asphalt compound flashing product**

~~3. Use ¾ inch extruded polystyrene-foam wall sheathing~~

~~4~~5. Provide ~~18 gauge, standard C-shaped steel studs~~steel studs as designed by structural engineer

~~5~~6. **Provide ASTM C665, Type 1, faced mineral fiber insulation blankets**

~~6~~7. **Interior surface: painted, ½ inch, Type X gypsum wallboard**

~~7~~8. **Insulation could be soybean oil-based polyurethane, open-cell, semi-rigid foam**

Guidelines

1. Consider u~~U~~se of ¾ inch extruded polystyrene-foam wall sheathing

Performance Standards

1. **Moisture resistant – integral finishes**
2. **Thermal resistant – minimum U-factor for low-slope roof is 26.0 and steep roof 19.6.**
3. **Positive slope – minimum slope ~~3/8"~~ 1/4" in 12", unless specified otherwise.**
4. **Minimal maintenance – upkeep but not continual maintenance**
5. **Wind / weather resistant – meet FM uplift criteria**
6. **Positive drainage to interior drains or exterior sources**
7. **Fire resistive – meet UL class "A"**
8. **"ENERGY STAR" recommended ratings for surface treatments**
9. **Consider "radiant barriers", such as aluminum foil at the ceiling of ~~———————~~attics**

Examples

1. Shingle roof system
2. Metal roof with batt insulation
3. Built-up roof system
4. Single-ply roof system
5. Metal roof with rigid insulation
6. ~~———————6.~~ Cold tar roof system
7. Modified Bitumen Roofing System

NOTE: #1: Other types of roof systems may be acceptable if system meets or exceeds the above performance standards.
#2: All roof system and products shall be designed in accordance with state fire prevention code and state building code.

Components

1. Asphalt shingles, UL class "A"
2. Felt or membrane underlayment
3. Vented nailboard insulation: oriented strand board (OSB) or plywood
4. Rigid insulation with vapor barrier on under side: extruded polystyrene or polyisocyanurate board
5. Vapor barrier
6. Structural roof deck

Performance Standards

1. **Moisture resistant**
2. **Thermal resistant**
3. **"ENERGY STAR":** [illegible]
4. **~~40 year~~Maximum industry available material and wind warranty**

Construction Standards

1. **Minimum 3:12 slope**
2. **Fasten shingles to roof sheathing with nails – not staple fasteners.**
3. **Metal drip edge: brake formed sheet metal with at least a 2 inch roof deck flange**
4. **Glass-fiber reinforced, mineral-granule surfaced, self-healing shingles.**
5. **Felt underlayment [illegible] pound asphalt-saturated organic felts, nonperforated. Use two layers where slope equals or is less than 4/12.**
6. **Sheet metal flashings conform to SMACNA's "Architectural**

Sheet Metal" manual.

Components

1. Metal panels: aluminum zinc alloy coated steel sheet with fluoropolymer two-coat finish system or Kynar 500 finish system
2. Insulation: glass fiber blanket with vapor tight edge tabs and facer on under side
3. Galvanized steel purlins
4. Steel joist or other structural members

Performance Standards

1. **Moisture resistant**
2. **Thermal resistant**
3. **"ENERGY STAR":** [illegible]
4. **20 year finish and weathertightness warranty**
5. **System shall have ASTM E 1592-94 wind uplift classification.**
6. **Contractor furnish 2 year guarantee on materials and workmanship.**

Construction Standards

1. **Minimum 31:12 slope**
2. **Thermal spaces where panels attach directly to purlins**
3. **Standing seam assembly: factory formed, cap seam assembly designed for concealed mechanical attachment of panels to roof purlins or deck**
4. **Air leakage through assembly of not more than 0.06 CFM/sq.ft. of roof area when tested to ASTM E 1680.**

5. **No water penetration when tested according to ASTM E 1646.**

Z
Construction Guideline

1. "ENERGY STAR" compliant roof surface recommended

Components

1. Top membrane: cap sheet, interply sheet, and base sheet
2. Recovery board
3. Rigid roof insulation – one or two layers
4. Structural support: steel deck or cementitious deck orf wood deck (lumber, plywood or oriented strand board, OSB)

Performance Standards

1. **Moisture resistant**
2. **Thermal resistant**
3. **Relatively low maintenance**
4. **Economical**
5. **"ENERGY STAR"** compliant surface recommended
6. **Must have class A rating complying with ASTM E 108**
7. **Manufacturer to provide a 15 year warranty**
8. **Contractor to provide 2 year guarantee warranting the roofing, insulation, and flashing**

Construction Standards

1. **Minimum slope 0.375:12 ":12"**

2. **Base sheet: asphalt-impregnated no. 28 glass-fiber HT-felt or styrene butadiene styrene (SBS) modified bitumen**

3. **Interply sheet: (SBS) sheet with glass-fiber or nonwoven polyester reinforcing with minimum 15 year warranty.**

4. **Cap sheet: (SBS) modified asphalt sheet with granule surface**

5. **Install modified bituminous flashing at cant strips, roof edges, and at penetrations through roof**

6. Pre-roofing Conference prior to the installation of roofing

Components

1. Uniform elastomeric EPDM membrane or TPO
2. ½ inch, rigid cover board
3. Rigid insulation – one or two layers
4. Vapor barrier
5. ¼ inch substrate board
6. Structural support: steel deck or cementitious deck or wood deck (lumber, plywood or oriented strand board,OSB).

Performance Standards

1. **Moisture resistant**
2. **Thermal resistant**
3. **Weather / temperature resistant**
4. **"ENERGY STAR":** 0.65 total solar reflectance and 0.65 minimum emittance for a roof with a slope less than or equal to 2:12

CHAPTER 7: Building Systems
SINGLE-PLY ROOF SYSTEM

5. Class "A" U.L. roof system

6. Manufacturer to provide 15 year warranty

7. Contractor to provide 2 year guarantee warranting the roofing, insulation, and flashing work

Construction Standards

1. Minimum slope 1/4":12"

2. Loose laid/ballasted, fully adhered or mechanically fastened ethylene propylene diene monomers (EPDM) membrane, .045 inch thick minimum

3. Cover board: ASTM C 1177, glass mat, water resistant gypsum substrate Type X, or ASTM C 272 gypsum wood fiber composite board

4. Insulation: extruded polystyrene board or polyisocyanurate board

5. Vapor barrier: polyethylene retarder, ASTM D 4397, 6 mils (0.15 mm) thick minimum

6. Substrate board: glass mat, water resistant gypsum board

7. Pre-roofing Conference prior to field installation of roofing

Components

1. Metal panels: aluminum zinc alloy coated steel sheet with fluoropolymer two-coat finish system or Kynar 500 finish system
2. Underlayment (ice and water shield)
3. Nail base Rigid roof insulation – one or two layers
4. Structural support: .steel deck

Performance Standards

1. **Moderate impact resistant**
2. **Moisture resistant**
3. **Thermal resistant**
4. **Low maintenance**
5. **Long-lasting system**
6. ~~**"ENERGY STAR"**~~
7. **20 year finish and weathertightness warranty**
8. **System shall have ASTM E 1592-94 wind uplift classification**
9. **No water penetration when tested according to ASTM E 1646**
10. **Contractor finish 2 year guarantee on materials and workmanship**
11. "ENERGY STAR" compliant roof (required)

Construction Standards

1. **Minimum 31:12 slope**
2. **Underlayment: self-adhering high temperature sheet: 30 to 40 mils thick**
3. **Standing seam assembly: factory formed, cap seam assembly designed for concealed mechanical attachment of panels to roof purlins or deck**
4. ~~4.~~ **Air leakage through assembly of not more than 0.06**

CFM/sq.ft. of roof area when tested to ASTM E 1680

5. ~~"Energy Star" compliant surface treatment. Pre-roofing Conference prior to field installation of roofing~~

Components

1. Top membrane: ~~coa~~coal ~~t~~-tar bitumen and glass-fiber ply felts
2. Backer sheet
3. Rigid roof insulation
4. Structural support: steel deck

Performance Standards

1. **Moisture resistant**
2. **Thermal resistant**
3. **Long lasting**
4. **Fume emission**
5. **"ENERGY STAR"**
6. **Contractor to provide 3 year guarantee warranting the roofing, insulation, and flashing**
7. **Manufacturer to provide a year warranty**

Construction Standards

1. **Minimum slope: ~~0.375:12~~" to 12**
2. **Coal-tar pitch: ASTM D 450, Type I, specially formulated for low fume emission**
3. **Coal-tar primer: ASTM D43; high pen primer 452**
4. **Backer sheet: standard spun-bonded, non-woven, polyester reinforced fabric**
5. **¼ inch to 5/8 inch, clean gravel surface**
6. **Four plies of coal tar-impregnated glass-fiber mats, complying with ASTM D 4990, Type I**

Components

1. Top membrane: APP or SBS bitumen with glass fiber or polyester reinforcing.
2. Intermediate sheet: APP fiberglass felt
3. Base sheet: UL-G2, ASTM D4601 Type II
4. Rigid roof insulation Perlite cover board is required
5. Structural support: Steel deck, cementitious deck or wood deck (lumber, plywood or oriented strand board, OSB) ~~concrete, wood or wood fiber~~

Performance Standards

1. **Moisture resistant**
2. **Thermal resistant**
3. **Long lasting**
4. **"ENERGY STAR" compliant surface treatment**
5. **Contractor to provide a minimum 2 year warranty covering the roofing, insulation and flashing**
6. **Manufacturer to provide a minimum 20 year warranty**

Construction Standards

1. **Minimum slope 3/8 1/4" to 12**
2. **Torch applied or hot mopped asphalt**
3. **Fibrated alumimum coating or granular surface coating**
4. **Pre-roofing Conference prior to field installation of roofing**

Performance Guidelines

1. Provide uniform light distribution
2. Provide low glare
3. Reduce energy costs
4. Mitigate safety / security concerns
5. Low maintenance
6. Provide ~~daylighting~~day lighting that uses diffused or reflected sunlight
7. Provide windows views to help eye health and help reduce stress
8. Encourage "~~toplighting~~top lighting" to provide best uniform illumination
9. Consider all academic spaces should have natural daylight
10. Minimize east and west facing glass

Examples

1. View windows
2. "~~Toplighting~~Top lighting" (roof monitors, unit skylights, and tubular skylights)
3. Entrance assemblies
4. Interior and exterior doors

Components

1. View windows
2. Clerestory windows
3. Roof monitors and skylights
4. Entrance assemblies
5. Interior doors
6. Exterior doors

Construction Standards~~Guidelines~~

1. **Air infiltration rate of less than 0.4 CFM/ft performance class AW and grade 65 by AAMA.**
2. **Testing for thermal performance according to AAMA 1503.**
3. **Not less than 26 STC when tested for sound transmission loss according to ASTM A90.**
4. **Operating window sash to be factory glazed.**
5. **Windows to be double glazed and have low ~~emissivity~~emissive coating.**
6. **Glass for exterior doors and sidelights shall ~~be 1 inch thick total, fully tempered insulation glass.~~ comply with state fire prevention codes. Provide vestibule at main entrance.**
7. **In un-rated assemblies, glass for interior doors shall be a minimum of ¼ inch clear tempered.**
8. **Interior wood doors to be solid-core and factory finished.**
9. **Consider sSelection of interior doors constructed with recycled or recovered content and low VOC (volatile organic compounds) if available.**
10. **Consider sSelection of interior doors with wood veneers harvested from sustainable forests if available.**
11. **For a high degree of sound isolation on both interior and exterior doors, provide full perimeter gaskets and automatic**

door bottoms with a neoprene element for acoustical doors and an STC rating appropriate for the intended use.

12. **On exterior doors, provide full perimeter weather-stripping and thresholds.**

13. **Exterior hollow metal doors shall be insulated.**

Performance ~~Standards~~Standards

1. **Easy to clean materials**
2. **Resistant to moisture or that inhibit the growth of biological contaminants**
3. **Impact resistant materials in high traffic areas**
4. **Durable, long life materials**
5. **Dimensional planning to reduce waste (i.e. 4 ft. by 8 ft. wallboard~~, 12 ft. wide carpet~~)**
6. **Use materials that meet industry consensus standards for VOC emissions.**

Guidelines

~~1~~6. Consider Design for disassembly for a product and its parts to be reused, remanufactured, or recycled

~~2~~7. Good acoustical qualities

~~3~~8. Consider Recycled/recyclable

~~9. Low VOC materials~~

~~4~~10. Local (within 500 miles) materials and products where possible

~~1~~11. Consider Renewable materials

Examples

1. Concrete masonry walls (CMU)
2. Glazed tile and ceramic tile
3. Gypsum wallboard
4. Veneer plaster over gypsum wallboard
5. Operable partitions
6. Folding partitions
7. ~~7.~~ Demountable partitions
8. Wood ~~partitions~~framing

Examples

1. Concrete masonry walls (CMU)
2. Structural glazed tile walls (CGFU)
3. Ceramic tile (CT)

Performance Standards

1. **Impact resistant**
2. **Easily cleanable & maintainable**
3. **Good acoustic qualities**
4. **Daylight enhancement qualities**

Construction Standards

1. **CMU walls: ASTM C190, 1900 psi compressive strength, normal weight aggregate**
2. **Tooled or struck mortar joints for cleanability. Use Type "[illegible]" ~~mortar~~ *mortar* for loadbearing walls and Type "[illegible]" for non-*loadbearing walls.* ~~loadbearing walls.~~**
3. **Glazed structural clay tile: ASTM C 126, Type I (single-faced ~~units~~) and Type II (double-faced units)**
4. **Ceramic tile: for materials ANSI A 137.1 "Specifications for Ceramic Tile"; for installation ANSI 108 series and TCA handbook**
5. **Glazed wall tile: 5/16 inch thick, flat tile with cushion edges**
6. **Grout tile using latex Portland cement grout. Exception: use chemical resistant epoxy grout in kitchens**

Examples

1. Metal studs with gypsum wallboard both sides
2. Veneer plaster over gypsum wallboard

Performance ~~Standards~~Guidelines

1. "Abrasive-resistant" and "high impact" in high traffic areas
2. Economical
3. Relatively easy to move or remove
4. Accommodates periodic finish color changes
5. Good sound barrier with acoustical insulation

~~1. "Abrasive-resistant" and "high impact" in high traffic areas~~Do not use in exterior walls where threat of moisture and mold might be present

~~2. Economical~~Sound transmission characteristic: Minimum STC: 41 in academic areas

~~3. Relatively easy to move or remove~~Steel framing: comply with ASTM C754 and G40 hot-dip galvanized zinc coating

~~4. Accommodates periodic finish color changes~~Gypsum wallboard: ASTM C36, Type X, 5/8 inch thick

~~5. Good sound barrier with acoustical insulation~~Metal studs: ASTM C645, 20 guage sheet base metal

~~6. Provide control joints in partitions 30 feet maximum~~

Construction ~~Standards~~Guidelines~~Standards~~

1. **Do not use in exterior walls where threat of moisture and mold might be present**
2. **Sound transmission characteristic: Minimum STC: 41 in academic areas**
3. **Steel framing: comply with ASTM C754 and G40 hot-dip galvanized zinc coating**
4. **Gypsum wallboard: ASTM C36, Type X, 5/8 inch thick**

5. **Metal studs: ASTM C645, 20 gauge sheet base metal**

6. **Provide control joints in partitions 30 feet maximum** ~~1. "Abrasive-resistant" and "high impact" in high traffic areas~~

~~Do not use in exterior walls where threat of moisture and mold might be present~~

~~2. Economical~~ Sound transmission characteristic: ~~minimum STC: 44~~

~~3. Relatively easy to move or remove~~ Steel framing: ~~comply with ASTM C754 and G40 hot-dip galvanized zinc coating~~

~~4. Accommodates periodic finish color changes~~

~~Gypsum wallboard: ASTM C36, Type X, 5/8 inch thick~~

~~5. Good sound barrier with acoustical insulation~~ Metal studs: ~~ASTM C 645, 20 gauge sheet base metal~~

~~7~~6. ~~**Provide control joints in partitions 30 feet maximum**~~

~~6~~7. **Veneer plaster: ASTM C58T consisting of separate base coat and finish coat**

~~8~~7~~8~~. ~~Gypsum hollow metal door frames~~

~~8~~ **Wood stud grade marked as required by the applicable building code**

Examples

1. Operable partitions
2. Folding partitions
3. Demountable partitions

Performance Standards

1. ~~**Easily moved by manual or electrical means**~~**Easily moved**

from opened to closed (stored) position by manual or electrical operating mechanism

2. ~~Sound control equal to fixed partitions~~Sound control (STC rating) as required to meet the sound isolation requirements for the functional use of the rooms or spaces to be divided

3. Options for tack and marker-board~~chalk~~ surfaces

4. ~~Flexibility for space usage~~Overhead structural support with minimal deflection as required for functional operation.

5. ~~Convenient to relocate~~Demountable partitions convenient to disassemble and ~~reocate~~relocate

Construction ~~Standards~~Guidelines~~Standards~~

1. Manually or electrically operated partitions

2. Operable partitions: panels ½ inch gypsum board laminated ~~———~~with 3/16 inch natural cork (STC 47) or steel face sheet (STC 50); Panel finish-vinyl fabric, carpet, ~~tackboards~~stack boards or marker boards; pedestrian pass doors ~~available~~as required

~~3.~~

~~3.~~ Accordion folding partitions: steel or aluminum suspension tracks; manually operated; interior 22 gauge steel panels for sound isolation; vinyl coated fabric finish

~~4.~~

~~4.~~ Demountable partitions; face panels of gypsum board painted or covered with vinyl; face panels of steel painted or covered with vinyl or plastic laminate; ~~standard~~ doors and windows available as required

5. Non-~~combustable~~combustible products that meet rated fire or smoke separation building code requirements

Performance Standards

1. **Water-based coatings and adhesives**
2. **Nontoxic and non-polluting materials (low VOC)**
3. **Resistant to moisture or inhibits the growth of biological contaminants**
4. **Easy to clean with non-polluting maintenance products**
5. **Durable to withstand heavy use without requiring frequent replacement**
6. **Easy to maintain**
7. **Provide moisture testing of concrete floors to meet flooring manufacturer's requirements**

Examples

1. Soft surface flooring
   - ~~resilient~~~~Resilient~~Resilient
   - ~~carpeting~~~~Carpeting~~Carpeting
   - ~~resinous~~Resinous

Rubber

2. Hard surface flooring
   - ~~tile~~Tile~~Tile~~
   - ~~terrazzo~~Terrazzo~~Terrazzo~~
   - ~~concrete~~~~Concrete~~Concrete
   - ~~wood~~~~Wood~~Wood
   - ~~rubber~~~~Rubber~~Resilient
   - Rubber
   - ~~resinous~~~~Resinous~~Resinous
   - Hardwood

~~Considerations~~Construction Guidelines

1. Recycled/recyclable
2. Minimize PVC content

Examples

1. Vinyl composition tile (VCT) and Vinyl enhanced tile (VET)
2. Linoleum and Sheet vinyl
3. Carpet (CAR) and carpet tiles
4. Rubber flooring

Performance ~~Standards~~~~Criteria~~~~Standards~~Guidelines

1. Easy to clean and maintain
2. Acoustical benefits
3. Physical comfort (cushion)
4. Recycled content/Recyclable
5. ~~5.~~ Safety for small children
6. Consider meeting Carpet and Rug Institute Green Label Plus criteria
7. Research and use carpet reclamation programs where available for disposal of existing carpet.
8. Minimize PVC content where possible.
9. Review life cycle costs including materials, cleaning and maintenance

Construction Standards

1. **Carpet: minimum recycled content guideline of 25~~50~~%, minimum 17 ounce ~~faceweight~~face weight.**

~~**Meet Carpet and Rug Institute Green Label Plus.**~~

2. **Low-VOC emitting materials. Resilient VOC content limited to 340 GM/liter or less**

~~3. VCT: 12 inch by 12 inch by 1/8 inch thick~~

3. **Maximum acceptable moisture emission rate for concrete ~~subfloors~~sub floors:**
   - **~~carpet~~Carpet and sheet vinyl – 3 lbs/1,000 sq. ft. per hours or less**
   - **VCT – 5 lbs/1,000 sq.ft.**

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5. **Use water-based low VOC adhesives, sealants, and cleaning**

products

6. **Sheet vinyl with backing: 0.080 inch thick**

7. **Linoleum: 0.10 inch (2.5mm) minimum thickness. ~~with heat-welded seams~~**

8. ~~**Research and use carpet reclamation programs where available for existing carpet.**~~

~~**9.Minimize PVC content where possible**~~

~~**Review life cycle costs including materials, cleaning, and maintenance.**~~

Examples

1. Porcelain ceramic tile (CT) with recycled content
2. Quarry tile (QT)
3. Terrazzo tile with recycled content
4. Concrete finish
5. Wood (athletic)
6. Resinous Epoxy

Performance ~~Standards~~Guidelines

1. Easy to clean and stain resistant
2. Highly durable
3. ~~High reflectivity can augment daylighting~~day-lighting
4. Reasonably economical based on life-cycle cost analysis
4. Consider finishes and/or materials suitable for use in ~~h~~High traffic area~~s~~
5. Wood flooring: Use certified hardwook, slavaged wood and/or laminated or veneered wood products where possible.

Construction Standards

1. **Low-VOC emitting materials: flooring, adhesives, grouts, caulk, or sealants**
2. **Comply with ANSI ceramic tile standard**
3. **~~Use~~M~~-latex Portland cement mortar setting material for tile~~ortars and grouts should be based upon the installation**

conditions and as recommended by the Tile Council of America.

4. Use epoxy-modified grout mixture for high moisture areas

5. For concrete floors use two-component, water-based, low odor, dust proofing, color pigmented epoxy sealer, or stain

6. Wood gym floors: ~~(consider local wood)~~
   - maximum 4.5 pounds per 1,000 sq.ft. moisture ~~———~~emission in slab
   - two year guarantee
   - second and better grade, maple strip flooring

~~7.Wood flooring: Use certified hardwood, salvaged wood and laminated or veneered wood products where possible.~~