

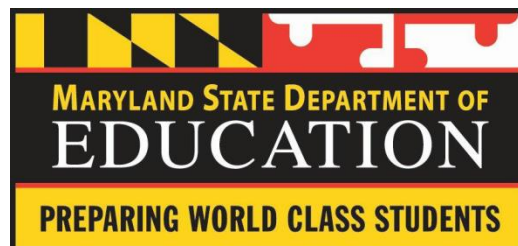
LIBRARY MEDIA CENTER

Facilities Guidelines

FOR NEW CONSTRUCTION AND MAJOR RENOVATIONS



*"What a school thinks of its library is a measure of how it feels about education."
- Harold Howe, former U.S. Commissioner of Education*



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COVER IMAGE: (For all other images, see Image Credits under the Appendix)
 Moravia Park Elementary Library Media Center (LMC), Baltimore, MD
 (Design by JRS Architects and Kirk Designs; Photograph by Alain Jaramillo)

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SECTION 1.0 - INTRODUCTION

1.1 Purpose of Update

Over the last decade, there has been a major shift in ideas about the function and character of library media centers in schools. The shift was driven by changes in technology, educational standards, students' expectations, and what it means to be college and career-ready in our information-rich society.

These guidelines supersede the 1998 Maryland State Department of Education (MSDE) publication: "*Facilities Guidelines for Library Media Programs*" and revise the facility design recommendations and space allocations to reflect these changes. The guidelines will assist local public school systems and design professionals in the development of educational specifications and facility designs for new or renovated library media centers that will inspire students to seek knowledge and become lifelong learners.

1.2 Background

In the 2014-15 school year, a Library Media Facilities Guidelines Workgroup was convened consisting of district library media administrators and MSDE representatives from the School Facilities Branch and the Office of School Libraries. Their task was to update the 1998 guidelines using current literature and best practices.

Charged with making recommendations to the Maryland School Library Media Advisory Committee, MSDE's Office of School Libraries and MSDE's School Facilities Branch, the workgroup discussed the key changes affecting library media centers and identified space and design elements needed for the future.

Some of the significant changes considered by the Workgroup included:

- **Changes in learner expectations** – Today's learners are Internet-driven, expect quick results and constant, reliable connections through mobile devices.
- **Changes in technology** – Technology developments have significantly increased access, wireless availability, and types of devices and formats.

- **Changes in teaching** – This is an era of student-centered, inquiry-based learning. Library media specialists play a critical role in helping students build skills on HOW to learn, so students can become ethical, discerning users of information.
- **Changes in College & Career-Ready Expectations** – From pre-kindergarten to postgraduate endeavors, students need skills to navigate an information-driven and global society. The design of the library media center must support students in acquiring life and career skills, in understanding media use and application, in making appropriate use of technology tools, and in learning to participate in a collaborative environment.
- **Changes in National and State Standards** - The American Association of School Librarians (AASL) published their “*Standards for the 21st Century Learner*” (2007), “*Empowering Learners: Guidelines for School Library Programs*” (2009), and “*Library Spaces for 21st-Century Learners: A Planning Guide for Creating New School Library Concepts*” (2013). The Maryland State Board of Education (SBOE) incorporated these national guidelines and published the “*Maryland State Curriculum for School Libraries*” (2010) and the Maryland College and Career-Ready Standards in multiple content areas.

1.3 Organization of Document

Section 2.0 acknowledges the important role that the library media center has in a school. It references recent research linking the strength of library media center programs with measurable differences in student academic achievement. It lists key passages from current state and national library standards and concludes with state library staffing recommendations.

Section 3.0 highlights major shifts in expectations regarding the use of library media centers by learners. Key characteristics that need to be incorporated into facility design to best support and enhance student learning and engagement are identified.

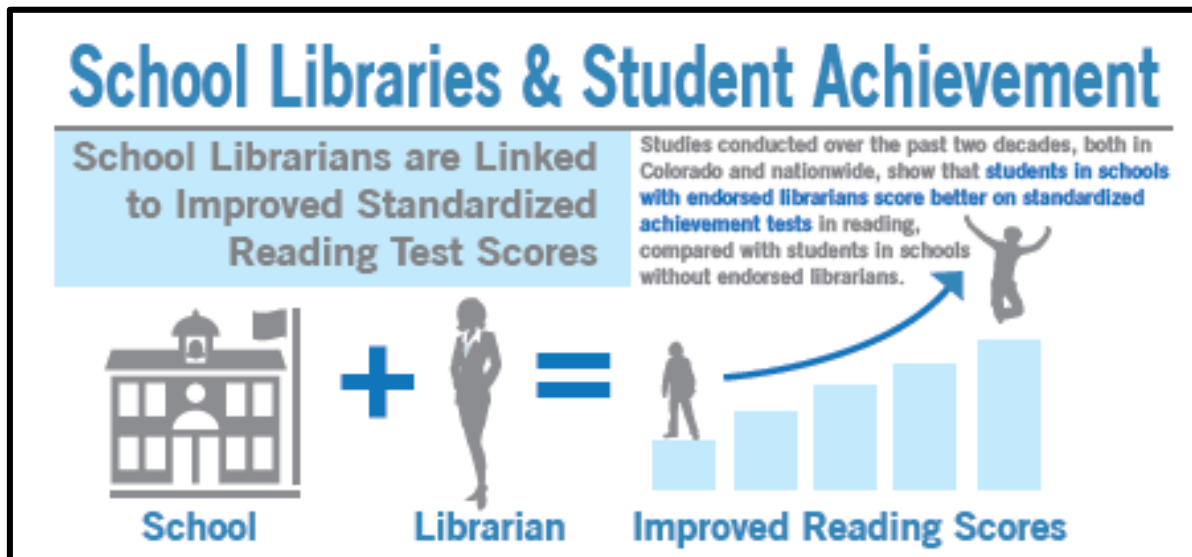
Section 4.0 outlines facility specifications, including recommended adjacencies, types and characteristics of program areas, and includes visual examples.

Section 5.0 includes a space planning worksheet and questionnaire, as well as examples of possible space summaries for typical library media centers at elementary, middle, and high school levels.

Section 6.0 lists key design considerations for planning a library media center, such as accessibility, acoustics, lighting, and security.

Section 7.0 includes images of recent projects for inspiration.

The Appendix contains resource material on: recent research on library media center programs; the school facility planning process, what to consider when renovating an existing facility, and concludes with a list of resources to aid in library media center design. This list also cites the sources of images and content by section headings found within this document.



SECTION 2.0 - THE IMPORTANCE OF LIBRARY MEDIA CENTERS IN SCHOOLS

2.1 Role of Library Media Centers

School library media programs are recognized as integral to student achievement because they provide all students and staff members with equal and timely access to ideas and information for personal and academic pursuits.

Library media centers play a vital role supporting the school community in these key areas:

- **In the use of new technology** - In a new or renovated media center, the library media specialist has the most current technology to support the curriculum and train students and classroom teachers. They serve as a link between classroom instruction and achievement of college and career readiness skills
- **In the use of new media** – Due to the explosion of information available, today's students and teachers need guidance now more than ever. The library media center staff is invaluable in teaching students by using the most current print and digital formats along with the devices that support them. The library media center serves as a supportive environment where students learn to be independent, self-directed, discriminating consumers of information.
- **As a social commons for learning and community engagement** - The library media center has the potential to be the center for collaboration and interaction at the heart of the school, as well as the community. It serves as a unifying element, a common denominator bringing students together across the disciplines. In many communities, the library media center serves as a location for after-school meetings, educational and cultural enrichment opportunities, and career development programs. In communities that need the additional support, they can contain resource areas for parents and guardians to help in their students' academic success and their own viability for employment.

2.2 Research Findings

Recent findings from studies carried out in diverse locations reinforce the critical need for a dedicated, quality school library program and library media center to foster academic achievement and successful delivery of content in both traditional and digital formats. In numerous studies it has been shown that there is a correlation between the strength of library media center programs with measurable differences in student academic achievement. These are cited in the Appendix. **JAY SUMMERIZE?**

2.3 National and State Standards

In 2009, the **American Association of School Librarians (AASL)** released “*Empowering Learners: Guidelines for School Library Programs*” which shares:

- *The school library media program includes flexible and **equitable access** to physical and virtual collections of resources that support the school curriculum and **meet the diverse needs** of all learners. (p.33)*
- *The physical space serves as an intellectual gymnasium with multiple, flexible spaces that accommodate a variety of learning tasks. Among such tasks are information seeking, collaborating, and communicating, as well as reading and browsing, and use of multimedia formats. **The physical space includes** areas for group and independent work, an area for presentations, a multimedia production area, access to an adequate number of workstations, wireless access for students and faculty who bring their own laptops, space for curricular planning and small meetings, ample research space, and comfortable spaces for reading. Materials are shelved and organized for accessible use by all patrons.” (p. 34)*

AASL listed actions to be considered in the design and function of the library space:

- *Create an environment that is conducive to **active and participatory learning**, resource-based learning, and collaboration with teaching staff;*
- *Create a friendly, comfortable, well-lit, aesthetically pleasing, and ergonomic space that is centrally located, easily accessible, and well integrated with the rest of the school;*
- *Include designed learning spaces that **accommodate a range of teaching methods**, learning tasks, and learning outcomes;*
- *Provide space and seating that enhances and encourages technology use, leisure reading and browsing, and use of materials in all formats;*
- *Provide sufficient and appropriate shelving and storage of resources;*
- *Ensure that technology, telecommunications, and power infrastructure is adequate to support teaching and learning.*
- *Gather feedback from students, teachers, and other stakeholders to ensure that the physical space meets the needs of the school community.*

AASL anticipates the release of updated Student Standards in late fall of 2017 followed by the release of new Empowering Learners guidelines by the fall of 2018.

State Standards

It is intended that these guidelines support the **Code of Maryland Regulation (COMAR) 13A.05.04.01 Public School Library Programs** and the *Standards for School Library Media Programs in Maryland*, which the Maryland State Board of Education last adopted in 2000 based on the 1998 guideline. The

standards include criteria for school library media centers that identify a number of spaces required for the implementation of a comprehensive, unified school library media program:

- A unified library media program provides access and instruction in the use of resources and resource services in a variety of formats and delivery modes, e.g., books, multimedia, and online.
- Such a program requires spaces for circulation, exhibits, reading, research, viewing, listening, browsing, creating, direct instruction, administration and management, storage, and electronic communications.
- Specialized equipment and furniture along with appropriate instructional materials are necessary for each of these areas to enable personnel to provide curricular support.

In support of the programmatic standards described above, the MSDE developed the *School Library Media State Curriculum*, which was accepted by the State Board of Education in October 2010. As a process model for information literacy, these standards paired with the Maryland College and Career-Ready Standards in multiple content areas support the need for school library media centers that can handle the information/technology/media literacy demands of students and teachers.

2.4 Staffing Recommendations

When planning for new construction or renovation of a library media center, it is essential to establish the appropriate number of professional, clerical, and technical staff that will operate the planned library media center for the proposed enrollment. MSDE provides guidance on this number, although it is the responsibility of each jurisdiction to determine the appropriate amount of staffing to successfully implement the program.

Professional Staff

A **certified library media specialist** is essential for the effective implementation of a quality school library media program. Without a professional who has the prescribed competencies, various components of the library media program may not be available to students and staff or, if they are available, they are ineffectively implemented.

Professional competencies required to deliver a unified library media program:

- As a **leader** the library media specialist develops a successful school library media program grounded in information literacy and technology skills central to learning and leads the way in building those skills throughout the school environment.
- As a **program administrator** the library media specialist develops budgets, plans for acquisitions, and supervises support staff and volunteers to ensure that appropriate resources and resource services, including multimedia and technology resources, are consistently available to students and staff.
- As an **information specialist** the library media specialist plans and implements collection development cooperatively with teachers and students in support of the curriculum.
- As an **instructional partner** the library media specialist works with teachers and other staff members to plan and implement lessons and activities that promote student and staff learning.
- As a **teacher** the library media specialist provides an information literacy skills program that is integrated with the curriculum.

Operational Support Staff – Clerical / Technical Personnel

Clerical and technical staff provide the support services essential to the management and processing of materials, and troubleshooting technology and associated applications. Without their operational assistance and efficient maintenance of the library media center materials and equipment, library media specialists will have difficulty delivering a media program that integrates information skills in support of the curriculum.

The estimate of staffing is proportional to the number of students and faculty. However, even the smallest schools require one full-time professional library media teacher and one library technician – see the following table.

TABLE 2.4: State Recommended LMC Staffing Levels by Student Capacity

	Elementary Schools			Secondary Schools				
Student Enrollment:	200-799 students	800-1,199	1,200+	200-799 students	800-1,199	1,200-1,599	1,600-1,999	2,000+
# of Certified Library Media Specialist:	1	1.5	2.0	1	1.5	2.0	2.5	3.0
# of Clerical/ Technical Personnel	1	1.5	2.0	1	1.5	2.0	2.5	2.5

Providing a certified library media specialist, necessary support staff, and the appropriate library media center spaces maximizes the return on the investments made by the state and local school system.



SECTION 3.0 EMERGING CONCEPTS AND DEVELOPING TRENDS

3.1 Nature of the Library Media Center

Today, with the digitization of content and the prevalence of digital resources, information is no longer confined to printed materials accessible in a single, physical location. As content becomes more accessible online, the role of the library media center becomes less about housing materials and more about connecting students to knowledge and space where all types of learning can take place. With this reinvention, school library media centers are changing the ways in which their physical space is utilized. Their space must be laid out in a way to meet flexible programming requirements.

20th Century School Library	The Modern School Library Media Center
Large static collection of printed resources	Select, accessible collection of physical and digital resources
Programming focused on reading skills	Multi-functional programming focused on information skills
Inflexible teaching space with fixed personal computers	Flexible learning spaces and mobile devices
Whole class instruction	Variety of learning configurations and sizes
Library viewed as librarian domain with centralized control	Library viewed as learners' domain with librarians serving as guides
Fixed schedule and set hours of student use	Flexible schedule

3.2 Changes in the Learner

In order to design facilities for today's students, educators, and designers need to carefully examine who the students of today and tomorrow are, how they learn and what they need to learn. Today's students:

- **are growing up in a media-saturated environment;** information and ideas are accessed and shared in visual, multimedia formats.
- **are always on, always connected,** carry a variety of portable devices allowing them to stay in constant contact with friends and family and to be **comfortably multitasking** - chatting on cell phones, surfing the Web, sending instant messages, watching online TV/videos, listening to music, playing online games, taking photos/movie clips - all while doing their homework.
- **embrace new technologies** and transfer their skills to each new technology.
- use multiple technologies to obtain and share information and expect to have **access to information quickly and easily.**
- **are comfortable learning informally with their peers** and expect to have conversations with anyone in the world, not just those in their immediate community.
- **use social media routinely** and through their use, define themselves as individuals.

Most of today's learners have never known a world where this information and technology saturation didn't exist, yet the structure of school learning was developed more than a century before this current reality. So the challenge becomes: How do we better connect the learning that takes place within the school environment with the realities of how students easily operate outside of school? How do we configure physical library media center spaces to reflect this new reality?

Even with these changes in technology and student behavior, students still need to be prepared for the challenges they will meet in life. They need to be able to locate, evaluate and use information from a wide variety of formats in an ethical manner to gain knowledge. A well-staffed, well-funded, and well-equipped library media center supports this vision.

3.3 Trends in Library Design

In order for library media centers to thrive in this changing environment, their physical spaces need to accommodate new learning methodologies and technologies. Dynamic, agile spaces with a wide variety of information sources, technological tools and resources are some of the defining characteristics of high impact library media centers. Design components to consider should include flexibility, comfort, collaboration, and community.

- **FLEXIBILITY** - As technology continues to develop rapidly and space utilization alters, today's library media centers must be flexible and adaptable environments that can easily change over time to remain relevant. Library media centers serve as program and spatial unifiers within school communities as well as places where the wider outside community can engage. Providing bookshelves, tables, and chairs that are easy to both move and store out of the way is key to multi-functional usage, both during and after school. The space and elements provided should allow for group or individual learning as well as formal and informal arrangements.



Oak Ridge Elementary School LMC, Palos Hills, Illinois (Design by LEGAT Architects) Shelves are confined to the walls, creating room for group research and project-based learning. Bright colors, natural light, and mobile furniture make the space both appealing and flexible for student and community use.

- **STUDENT-CENTERED** - Comfort and appearance are increasingly important in the library media center. A safe, inclusive, welcoming environment is imperative to meet the diverse abilities and learning styles of its users. Attention to aesthetics, natural light, and offering a range of seating types and furniture arrangements, all help to make the library media center more welcoming. The ideal library media center offers a range of spaces to enhance the learning process and appeal to different types of learners - spaces for class or group instruction, for individual or small group work, and a place where students can have quiet, focused studying or be actively engaged in hands-on learning. Having easily accessible electric outlets throughout allows for the uninterrupted use of digital devices.



Norma Rose Point School LMC, Vancouver, BC (Design by Fielding Nair International)
FIND NEW IMAGE?

- EXPERIENTIAL LEARNING** – Many school library media centers are trying a fresh approach to learning that provides students with unique opportunities to meld critical thinking skills with creativity and problem solving. Various names capture the phenomenon - “makerspace,” “fablab,” “colaboratories” – but the basic premise is to provide the tools, supplies, and space to support project-based learning. Within that space, students can work individually or together with supportive peers to tinker, experiment, invent, and make things. Often this process of creating taps into other resources in the library media center and includes the component of sharing the product and process online. Offering these types of spaces not only allows for more student-directed, active learning, but it connects students to larger knowledge communities with shared interests. This broadens the library media centers reach as a more inclusive learning environment that draws on different skill sets and interests of students who otherwise might be less engaged



Madison Central Library Makerspace, Madison, WI (Design by MSR Architects)
 Providing sufficient room for working on a range of projects as well as a means for digital interface beyond one’s setting are key components for project-based learning in today’s library media center.
FIND LOCAL IMAGE

- **COLLABORATION SPACES** - Library media centers are interactive, multimedia environments, providing space where students can also work together in collaboration. Students are able to gather around digital screens or interactive displays, discuss group projects, and refine presentations. These spaces may be either open to the library media center or enclosed for greater acoustical separation, with attention given to providing clear sightlines into the space for adequate supervision.

*Sir Michael Cobham Library,
Bournemouth, England (Design by
???) Study booths with interactive
computer screens to aid
collaboration.
FIND NEW IMAGE?*



- **WOW FACTOR** – Library media centers have the greatest impact when they are inviting and dynamic spaces! They should foster memorable experiences, stimulate the senses, transcend the humdrum, and make the ordinary extraordinary. By appealing to students as places where learning is “cool,” they raise the user’s own expectations of what they can explore and achieve.



*Flora Singer
Elementary School
LMC, Silver Spring,
MD (Design by
Grimm + Parker)
Simple ceiling
elements can create a
more dynamic space
without limiting the
furniture
arrangements below.
They create the
anticipation of
discovery as well as
help serve for
wayfinding.*

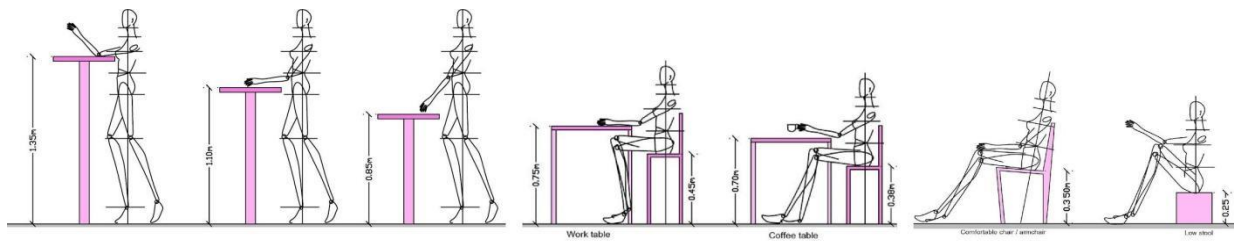
Philanthropic organizations have realized that upgrading library media centers make a huge impact in school communities. Throughout this publication are images from two such programs:

- *The L!brary Initiative* (with an exclamation point as part of their logo) is a partnership of the Robin Hood Foundation and the New York City Department of Education. The program has renovated 62 elementary school libraries since 2002 in order to reverse patterns of low literacy skills and underachievement in high poverty neighborhoods throughout New York City.
- *The Baltimore Elementary and Middle School Library Project* is a multi-year, collaborative effort supported by The Harry and Jeanette Weinberg Foundation and associated partners. Their plan is to transform up to 24 Baltimore City Public School libraries with a goal to strengthen academic achievement among students.

Both projects are known for key design concepts: clearly identifiable, welcoming entrances, colorful interiors and furnishings, large, themed graphics throughout. Other characteristics include open and cozy student-friendly areas decorated with a variety of nontraditional finishes, furniture, and lighting.

According to *The Library Project*'s research data, the transformed libraries have become a source of pride for the school community and have had positive impact on the school climate. Teachers are using the libraries more often than before and students are shown to be reading more books. By creating strong emotional bonds with their school library media centers, students will embrace learning both within school and throughout their life.





SECTION 4.0 - FACILITY DESIGN AND EDUCATIONAL SPECIFICATIONS

4.1 Introduction

The library media center is one of the most important and largest teaching spaces in any school, used by staff and the community at large. Its size and prominence often shapes one's impression of how learning is valued at the school. Higher ceilings improve a large room's proportions and spatial prominence. If the budget allows, high quality materials and attractive architectural features should be specified in this public room. The appearance and durability of furnishings are particularly important with the multi-use and extended use of the space.

The design should exemplify the school library media center's role in this modern period: as a hub for collaboration, creativity, interactivity, performance, and exploration, both online and offline. Most of the functions of a library media center are contained in one overall space to allow the greatest supervision with limited staff. There should be areas that foster communication and collaboration among students, in addition to areas for class instruction and quiet individual study and reading designed to appeal to variety of learners with different lighting levels and types of seating.

The design of the library media center addresses numerous functional uses by students – for study and research, production and group projects, informal reading, and instruction - all supported by staff administrative areas. General planning assumptions and the activities, spatial characteristics, furnishings, and adjacencies for these uses are described in this chapter.

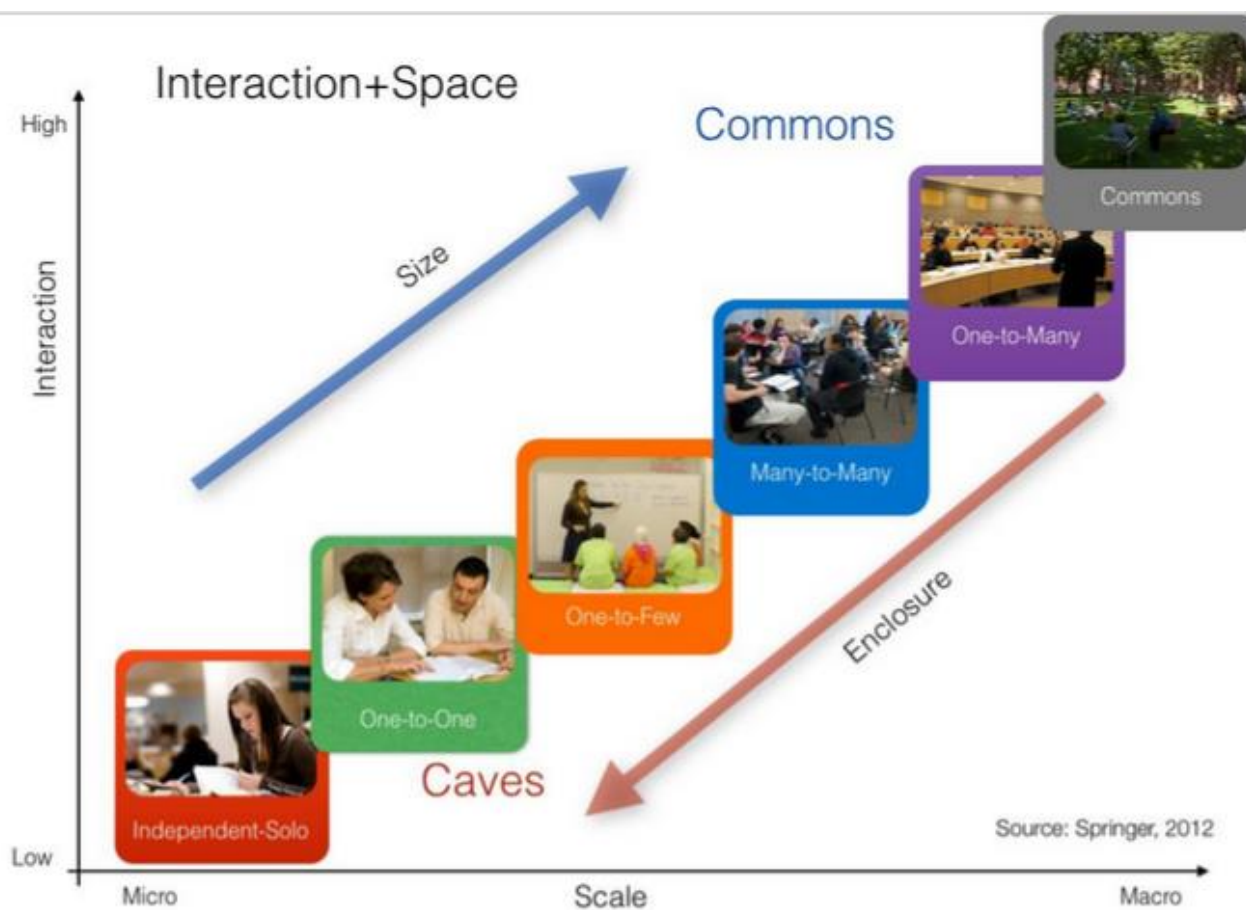
Functional Uses

- **Instruction and Presentation** - Provide both open and enclosed instructional areas where group and class instruction occurs. In those spaces, the library media specialist demonstrates the use of information technologies and teaches students how to access, analyze, organize, synthesize, and present information. Students then present their findings to demonstrate achievement of the learning outcomes in the content areas and to share their knowledge with their peers. Included are instructional materials and equipment one would expect to find in a multipurpose classroom, such as presentation equipment and interactive display technology. These spaces must be flexible in their layout and furnishings so that learning may happen in large or small group scenarios.
- **Production and Group Project** - Provide the space and equipment needed for students to organize, create, and present the information they have gathered, analyzed, and synthesized. Students frequently work in cooperative teams to produce and present their projects in a variety of ways – both online and in multimedia formats, including broadcasting programs on closed circuit television. Depending on the library media center program and resources, equipment may vary from simple tables and graphic arts supplies to quite sophisticated broadcasting studios. The

production areas and equipment can be used by teachers before and after school and during planning periods to prepare materials for classroom use and display.

- **Study and Research** - Provide access to information through printed books, reference materials, periodicals, non-print materials, and online. This information is used to achieve the learning outcomes of the library media program and other content areas. Included are areas for the collection, computers, tables, and chairs for individuals and small groups.
- **Informal Reading** - Provide areas to encourage and promote reading of good quality literature through various age-appropriate activities in a relaxed environment. Included are furnishings for activities such as storytelling and puppetry at the elementary level and browsing and independent reading at the secondary level.
- **Administrative Support** - Provide areas for the library media specialist to manage and coordinate the library media program; plan with teachers; and order, receive process, store, and distribute all media for the library media center.

Types of Interactions and Scale of Space - For the public functions within the library media center, there is a progression from individual use to more group interaction, affecting the character and scale of the spaces being designed.



4.2 Planning Assumptions

The following general planning assumptions and guidelines apply to student capacity, staffing, collections, and instructional technology. The spaces described in these guidelines are intended to support library media programs in Maryland public schools. These assumptions are based on the following criteria:

- The school is organized to provide a comprehensive library media program.
- The school system is working toward, or has met, the recommended staffing standards for school library media programs in Maryland developed by MSDE as outlined in Table 2.4 on page 11.
- Students have regular access to certified library media personnel.
- Additional clerical and technical support staff is provided to ensure that the library media specialist may be involved in the instructional process.

The library media center should accommodate, at any one time, at least 8% of the enrollment in schools up to 1,500 students. Additional library media center capacity in larger schools may be provided if staffing allows appropriate supervision and assistance.

LMC CAPACITY (Typical Ranges & Groupings)	Elementary	Elementary	Middle	High
Students enrolled in school	<200	200 - 800	500 - 1,200	800 - 2,000
Instructional areas (to hold a class of 30 students)	1	2	2-3	2- 4
Small group areas (to hold 5 students each)	1-2	1-2	2-3	2-4
Independents	5	5	5-10	10-15
Maximum total students in LMC for space planning purposes	40-45 (<16)	70-75 (16-64)	75 – 115 (40-96)	80 – 160 (64-160)

Use these recommended percentages to address a range of seating types and groupings:

Suggested Percentage of Seating Types in a Library Media Center (LMC)	
Total Seating: Provide 1.2 seats for each student in planned LMC capacity	
<u>Type of Seating:</u>	<u>% of Total</u>
<u>Seating:</u>	
• Group study & research (Seating at group tables maybe interlocking)	70%
• Collaborative online group work (Seating at tables with built-in display screens)	5%
• Individual study/research (Seating at counter, partitioned table, or workstation)	10%
• Informal group (Seating in grouped low, upholstered lounge chairs & sofas)	10%
• Individual informal reading (Seating in low lounge chairs or window seats)	5%

COLLECTION SIZE

Based on school population with consideration given to use of print or digital resources, the basic collection size maximums are:

- 12,000 library media items for elementary schools,
- 14,000 items for middle schools
- 15,000 items for high schools plus access to online services.

National averages:

- 27 books per pupil for elementary schools,
- 19 books per pupil for middle high schools
- 16 books per pupil for high schools

As schools move to wireless networks, the need for hardwired computer stations lessens. However, even with wireless in place, it is still recommended to have some hardwired computer stations available for use in the library media center. These are better able to handle streaming media and high-end graphic applications, and supplement when conductivity is compromised if bandwidth capacity is reached.

Recommended Dedicated Hardwired Computers	Elementary	Middle	High
Students enrolled in school	200 - 800	500 - 1,200	800 - 2,000
Student desktop computers if NO wireless available	30	60	60
Student desktop computers in addition to laptops and mobile devices, if wireless provided	1- 3	2- 4	3- 5
Student printers	1-2	2	2- 3

Note that adequate storage must be provided for laptop or mobile devices charging carts – see page 53.

4.3 Grade Level Guidance

Library design should reflect the level of students served, elements of the library media program, and the school's instructional patterns.

The Primary and Elementary School Library Media Center is a supervised, child-friendly environment. Particular attention should be paid to the scale of overall space and size of the furniture. Decoration should express the excitement of learning. Book shelving should be kept low (48" maximum). Children come to school with a broad range of library experience; some may be encountering them for the first time. The school library media collection should directly support the curriculum and needs of the children in that particular school community. The majority of elementary students use the library media center in whole class groups to focus on particular skills and tasks as taught and supervised by the library media specialist and assistants. It is important that one of the instructional areas be designed to enhance storytelling with nearby shelving for oversized picture books. Some elementary schools may allow individual students with passes to visit the library media center at set times, encouraging periods of self-discovery. Shelving should be designed to allow books to be within easy reach and to have some with their front covers visible for greatest appeal.

The Middle School Library Media Center is a place for rapidly developing adolescents, bridging the great change between elementary to high students. They are experiencing complex new feelings and growth spurts - physical, emotional, social, and intellectual. The best middle schools respond to these students with caring, supportive teachers and opportunities for each young person to develop fully. The library media center often become a safe haven and should feel warm and inviting. The middle school student still needs supervision and guidance, but demonstrates and wants more independence. Middle schools may allow individual students with passes to visit the library media center at set times, encouraging periods of self-discovery. Showcasing interest areas, such as graphic novels, in the collection helps connect students to others with their shared interest, which in turn stimulates further reading and discovery. Featuring audio digital material and a range of formats for accessing material helps students who struggle in reading. Key is flexibility in the design to be able to easily adopt and change the collection, scheduling, and room layout to best reflect the needs of the current population.

The High School Library Media Center is the link between the school and the college/academic libraries and institutes of higher learning. The high school student is required to work independently and as well as collaboratively. With supportive staff, time, and resources they thrive. Personal development and exploration intensify for the teen. Students select and test their first career paths and life directions. The library media center provides students and teachers with a reference collection to support the curriculum and personal inquiries, books and materials for reading pleasure and personal growth and access to a variety of electronic media, global networks, and high quality production equipment.

Library Media Centers in Schools with Combined Levels (PreK-8, middle/high school, or preK-12)

- To prepare for combined/multi-level programs address the following questions:
 - Which materials need to be separate and which can be shared?
 - Are there specific areas that need to serve the different age levels and do these need to be separate? How can this be accomplished?
 - Will there be shared staff for all grade levels?
- Providing flexible learning spaces is all the more critical so the design can address the needs of a diverse population. Provide a variety of seating suitable to students of different physical sizes. Provide age-appropriate furniture for each group in a library media center is particularly critical when combining elementary and middle school levels as there is a great difference in body sizes between a 1st grader and an 8th grader.
- Providing a storytelling area for the younger students where they can be on the floor or on low seating is still important in PreK-8 or PreK-12 schools.
- It is important to divide the fiction collections so there is appropriate content for each grade levels - for example, separating Young Adult literature from K- 5 fiction. Provide appropriate sized seating near these separate fiction collections. Reference and areas for electronic access to the collections could help divide the overall space if placed in a central location near the circulation and info desk.



Examples of furnishings at a variety of heights
Study counters at Sioux Center Middle & High School LMC, Sioux Center, Indiana (Design by DEMCO Interiors) and worktable by ??
GET ADJ IMAGE



Library Media Centers in Special Need Schools

Library media centers in schools for students with substantial physical and/or mental impairments require careful planning and design to address the accommodations and supportive environment needed for their users.

- Often additional space is required for equipment and/or aides for students with special needs, thus providing movable shelving with lockable wheels is recommended to allow flexibility in space usage. Different types of shelving may be required to accommodate oversized books and manipulatives. Include closets and storage units where needed for these additional materials. A secure location in a storage area will also be needed for supplemental equipment and devices will be needed.
- In addition to the electric outlets required for personal devices, multiple charging areas are also needed for their accessibility equipment.
- Depending on the severity of the disabilities of the population being served, it is recommended for ease in accessibility and maintenance to avoid fabric on chairs or carpet on floors. Additional acoustical treatment on the walls and ceilings for sound dampening will be needed to compensate for harder finishes. Students heightened sensitivity to sharp sounds and glare from lighting should be addressed.
- Provide study areas for students who need to bring personal equipment, who need the assistance of a reader, or who are distracted by noise and movement around them. Table and counter heights should be adjustable to allow for use with a range of sizes of mobility equipment.
- Two means of egress are recommended from the library media center in cases of emergencies, even when its size may not require by code. It takes more time and assistance to evacuate.
- The Americans with Disabilities Act (ADA) Standards for Accessible Design, published by the U. S. Department of Justice, contains criteria for accessible requirements, such as for accessible counter heights and built-in seating.
- For the circulation desk, consider making the desk less of a barrier wall and more of a design that allows for easy and direct access between the library media specialist and the student.



NEED CAPTION/PURCHASE IMAGE?

4.4 Space Adjacencies

- Ideally, the library media center should be at the "**heart**" of the school and serve as the "hub" of learning. Most academic programs want proximity and easy access for their students. Administrators and teachers want convenient access for themselves during planning periods.
 - Understanding the program goals and the unique role that this space serves in a particular school community is critical to determining its ideal location.
- Library media centers are often used for after-school community meetings and thus require convenient access to the school's **main entrance and parking**. It should be in a portion of the school that can be open at night, separate from the secured zone of the classroom wings.

- A location on the main floor is ideal, but may be difficult to achieve on some sites. This is especially true for elementary schools when site constraints force a limited floor plate. As the kindergarten classes have higher priority to be at ground level, often the library media center must go on the second floor. If placed on an upper floor, **close proximity to an elevator** and the main stairs is critical as well as being designed as a destination. This elevator should be of a design to accommodate pallets of materials when needed.
- As the functions of the library media center include providing instruction and quiet reading areas, **acoustics are important**. When designing the school layout, care should be taken to isolate unwanted noise from such spaces as the cafeteria, auditorium, music rooms, physical education, and shop areas so they do not impact learning in the library. Avoid having doors directly across from doors to these functions.
- Most library media centers do not have en suite **toilet facilities**, although some do allow for a staff toilet within the office area. It is important that there be easy access to restroom facilities from the main entrance of the library media center. As a rule of thumb, the travel distance should not exceed 200 feet and the toilet should be available for use afterhours and not behind locked security doors.



*Captain Walter Francis
Duke Elementary School,
Leonardtown, MD (Design
by TCA Architects)*

*Shown above, view from
main lobby to the library
media center on left and the
learning kiosk on the right,
which captures metrics on
energy use for the school*

*This library media center is
designed as the heart of the
school, with circulation to
all the public functions and
to the classroom wing
circulating around it.*

4.5 ACTIVITY AREAS

4.5.1 Main Entrance

- The main entrance to the library media center should be welcoming and inviting with an entrance that is easily identifiable. It should make a strong, positive impression, creating a sense of anticipation and intrigue about learning beyond the entry doors. What we first see when we enter a space has a profound impact on the perception of that space. Visibility into the library media center from various vantage points is important, including from adjacent floors if possible.
- The entry needs to be spacious enough to avoid congestion during busy parts of the day when classes may be exiting and entering simultaneously. There also must be adequate space for checking materials in and out. (See Section 4.5.9 on Circulation Desks and Section 6.10 on Security and Loss Prevention.) Consider if a wall slot/book truck may be desired near the entrance for quick book return by students and staff.
- Wall materials and finishes around the entrance should be particularly durable and easy to maintain.
- The entry should allow opportunities to market the library programs to the school and community with glass cabinets, bulletin boards, or display areas.
- Care should be taken to create a flush transition between changes in floor material between the lobby or corridor and the library media center to meet accessibility requirements and not present a tripping hazard.

*Red Pump Elementary School
LMC, Bel Air, MD (Design by
GWWO) A sitting bench and
display cabinet mark the entrance
to this elementary school library
media center of the entry lobby.*



*Madison College, Truax
Campus, WI (Design by
Demco Interiors)
The use of color for simple
wayfinding of the entrance
and to draw one into the
library.*

4.5.2 Open Instructional and Storytelling Areas

Large Group Instruction within Open Area –

One of the main functions of the library media center is to provide areas for class instruction. This section focuses on the specialized spaces within to the library media center as opposed to the separate instructional classrooms adjacent to the main library media center (covered in the **next section**). Each school system and school community has different needs for the type of supplementary spaces associated with the library media center, which can include a computer lab, a video production and editing lab for film or broadcasting, a graphics publications room for the school newspaper or yearbook, a distance learning lab, etc.

- There should be areas for class-type instruction identified within the layout of the main library area. Placement should allow instructional activities to occur without distracting other groups. Full-height solid partitions are not advisable between the instructional areas as unobstructed sightlines throughout the media center are important.
- Technology in instructional areas should support a projector and interactive capabilities, either with an outlet in ceiling or with a projector mounted to an interactive. The height of the whiteboard should depend on age of students in the school as it needs to be low enough for students to be able to write on but high enough so no obstructed when viewing while sitting in a group. Some companies make brackets that allow for the board to be moved up and down as appropriate, which impacts where/how the projector is installed.
- Tables should be sturdy and mobile to allow for easy reconfiguration of the space. Consider how seating can store or stack to move out of the way when not in use.



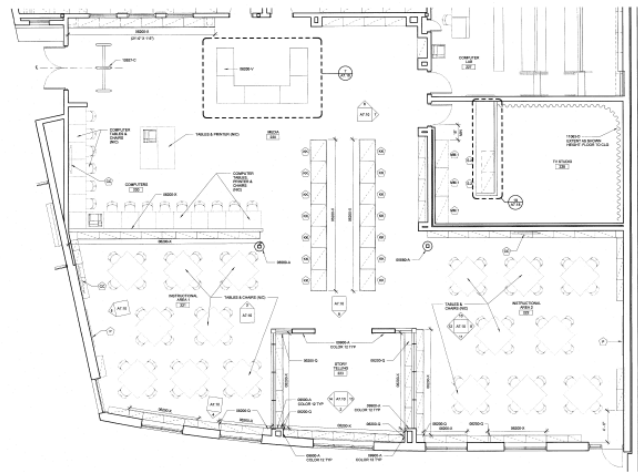
*Cabin John Middle School
LMC, Potomac, MD (Design by
Samaha Associates)*



*Vermillion Elementary School
LMC, Vermilion, Ohio (Blox
Stool Design by Media
Technologies)*

*Sitting stools for younger ages
are made of high-density foam
with an easy-wipe removable
cover.*

*They also can be stacked out of
the way when not in use.*



Red Pump Elementary School LMC, Bel Air, MD (Design by GWWO; Photos by Alain Jaramillo)
 Upper images: Children's Reading Room divides two classroom areas. It is semi-enclosed in glass walls to allow acoustical separation and visual supervision. Within the Children's Reading Room, bookshelves ring center sitting rug at a low, easy-to-reach height. Lower images show one of the instructional classroom areas and the overall floor plan of the library media center.

Storytelling Area

- Primary and elementary schools should have a dedicated group storytelling area scaled to the youngest students.
- The storytelling area should be large enough to accommodate a classroom of students comfortably (which may be as many as 30 students).
- It can be equipped with such features as an area rug specially patterned to distinguish sitting areas or low cushioned seating, a rocking chair, and low shelving for easy access by young students. It should promote interactivity through access to the appropriate technologies or furnishings.
- It may require a degree of acoustical separation if the library media center accommodates more than one instructional group at a time.
- Storytelling pits are discouraged due to inflexibility, safety, and accessibility concerns with the physically disabled.



West Towson Elementary School LMC, Towson, MD (Design by: Design Collective)
An example of a light-filled storytelling area with built-in window seats and integrated book shelving in handy reach of young children.

? Elementary School LMC Where
???? (Design by **????**)
Storytelling area created with furnishings for more flexibility. Careful thought should be given to determining the right amount of seating for the class size. The wood framework over the circulation desk helps lower the scale of the high ceilings in the room.



?? Elementary School LMC, Where
???? (Design by Demco)
Amphitheatre seating for a storytelling area can also be created by specially designed cushions that are moveable and can come apart in sections for different seating arrangements. The flexibility of this design is recommended over built-in pits or stepped risers that are less easily altered.

4.5.3 Spaces for Experiential, Project-based Learning

A school system should give thought to including inquiry-based spaces designated for experiential learning where students apply their knowledge through project-based, immersive, hands-on learning.

- Located adjacent to or within the library media center to support its role as a research and learning hub, this flexible-use space can be used for peer-to-peer group work, whole class instruction, and for active, experiential and participatory learning. Part of vision of a library serving as unrestricted hubs of information; with the information flowing both ways. Allow students the ability to go beyond just taking in of information; to being able to do something with that information - to bring ideas to life and encourage innovation.
- Consideration must be given if enclosure is needed to acoustically isolate noisy equipment or to secure expensive or delicate equipment from unintended, afterhours use. As supervision of the area is required, having it be able to be partially opened to the library media center is ideal.
- Depending on the type of activities to be promoted, storage will be needed for supplies, student projects, and specialized equipment. The range of materials, supplies, tools, and equipment can be both low to high tech.- from craft supplies to 3-D laser printing. Access to a sink and a non-carpeted floor area is recommended as activities can be MESSY.
- Access and use by outside community should be considered.



United Nations International School, New York City, NY (Designed by ???)

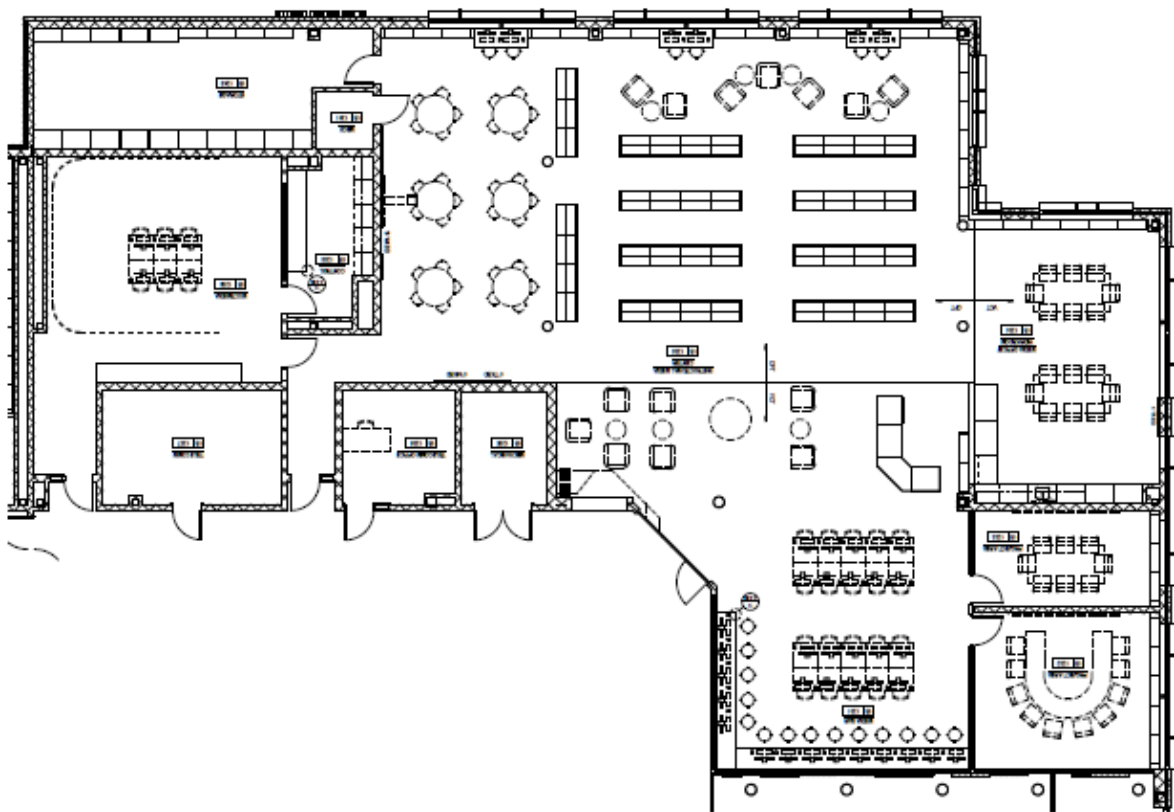
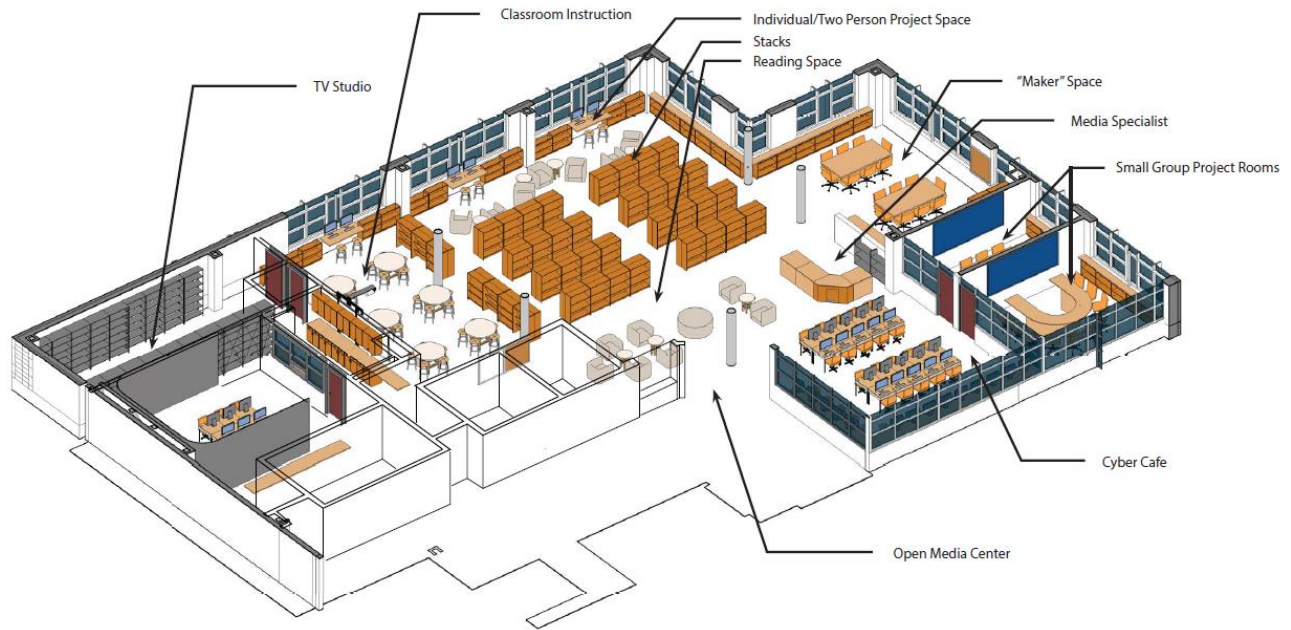
This “CoLaboratory” in one portion of the school’s library media center features a wall that celebrates students’ projects as well as one where supplies are easily accessible.



PHOTO CREDIT *Individual tables interlock to bring students together for experiential learning projects.*



“The MakerSpace” at Westport Library, Westport CT is located in the middle of the space as a center of innovation. Semi-enclosed to allow views inside and out.



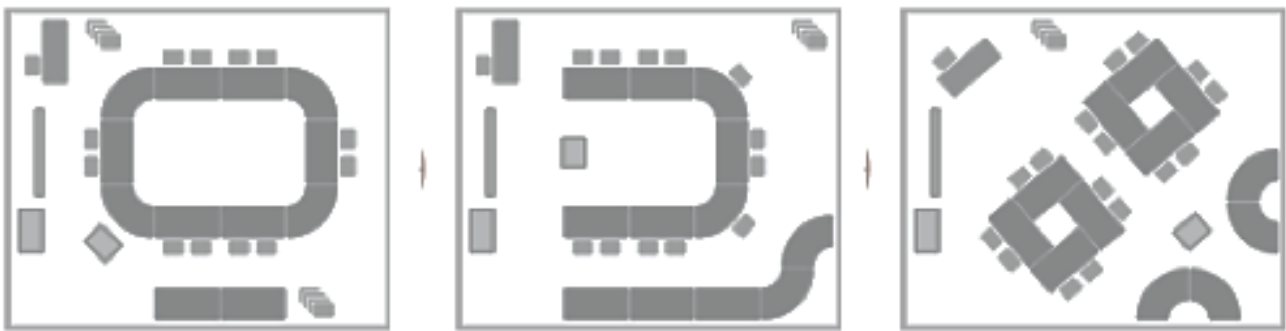
Bethesda-Chevy Chase Middle School #2 LMC, Kensington, MD (Design by Samaha Architects)
 This proposed library media center will have 3 instructional areas, one with round tables, another with computer stations (that can also serve as a “Cyber Café” when not in use for instruction), and a third as a “MakerSpace” that is semi-open to the room (space on right). It is intended that this space doubles as a work processing area for the staff. The plan layout also includes two smaller glass-enclosed project rooms for collaboration (on right).

Flexible Learning Laboratory

With the flexibility provided by new forms of technology and furniture for educational facilities, more agile learning spaces are being developed. One such type space that has been both developed and studied for educational outcomes is the Hillbrook School's Learning Spaces iLab. (See images on next page.) A two-year research project was performed, investigating the impact of the physical environment on learning. The result found a positive impact on student learning, engagement, confidence, and productivity. School systems could consider such a space adjacent to the library media center that could address multiple needs of the school and serve as the location for numerous pull out programs of the library media center, such as the student broadcast studio, multimedia production area, and tinker space for experiential, project-based learning.

- The flexibility of the room's furnishings and layout are adaptive to different styles of both teaching and learning, now and in the future. Easy to change to meet different needs at different times.
- The nature of the room as a blank canvas promotes engaged intentional learning and inspires creativity as the students take an active part in the room's layout and arrangement at the start of each use. This engaging exercise encourages and enables exploration in both content and context of knowledge and space.
- Supplement with many means to visually share - Hillbrook School's iLab has 110 square feet of mounted whiteboards, 90 square feet of mobile whiteboards.

Furniture Selection should allow a Variety of Room Layouts:



Moveable furniture - In order to create these flexible spaces, the furniture must be light weight and movable as well as stackable and compact to store out of the way when not in use. These are just a few of the products available today:



Individual student tables, designed to also work in small group clusters



Mobile interactive whiteboard



Rollaway tables that can flip up and nest together for easy storage



Movable furniture is stored along walls and organized at the beginning of each class by teacher and students to suit the learning objectives. The furniture is then reset along walls for the next class.



Example of room set up for group discussion. Desks allow individual plug-in for power and/or to connect to the interactive white board.



The room can be set up to allow students to work in groups with varying levels of privacy for acoustical separation and concentration.



Room should be sized to allow flexibility in arrangement and the ability to push much of the furniture aside to allow class group interaction.



The room can allow for more traditional furniture arrangements for class instruction.



The room can be set up for use for specialized functions, such as for media broadcasting.

4.5.4 Group Project and Open Collaboration Areas

Collaborative learning projects require group spaces where students can meet, exchange ideas and brainstorm.

- Create informal and relaxing environment for students designed to promote student interaction
Design areas to foster peer-to-peer learning and open conversation. Area should allow for small groups (3-6 team members) to work collaboratively without disturbing the rest of the library media center. May require glazed screening for sound control while ensuring visibility. Areas need to be able to be monitored and not secluded in order to ensure appropriate behavior.
- Furnishings should be easily reconfigurable to meet the needs of different sized groups and tasks.
- Often, the output of the students' collaborative projects is a multi-media presentation and can include a video, power point, or poster with enhanced graphics. The furniture and equipment should support producing these end products and include a means to access technology, such as a large video screen, computer hookup and power source. Power outlets should be distributed throughout.



Scotts Valley Library (Design by Group 4 Architecture, Research + Planning, Inc.; Photo by Technical Imagery Studio) This collaboration learning area has the feel of a diner with a range of seating options - including café "booths" - allowing for individual and group work.



Westlake High School Library Research Center & Learning Commons, Austin, Texas (Design by Pfluger Associates Architects) In the redesign of the school library, a conscience effort was made to create a space where students would naturally gather and connect. Combining the concepts of an Apple Genius Bar and an internet café, "The Juice Bar" features high stools, a standing table, natural colors, built-in shelving and a video screen. The term "juice" derived from the slang "to get juiced" or "charged."

- Collaboration Areas with Digital Interface Video Conference Capacity** - Consider providing of student collaboration tables with shared interface to a common video screen(s). For acoustical screening, a semi-enclosure focus area can be created either by booths, glass enclosure or the furniture itself, which can be designed to allow additional team seating. See examples below.



Arlington ES/MS School LMC, Baltimore, MD (Design by JRS Architects and Kirk Designs)



Image right: Collaboration Rooms at St. Charles High School, Waldorf, MD (Design by Stantec)



*University of Iowa Libraries, Main Library Renovation, Iowa City (Design by Smith Metzger; Photo by Main Street Studio)
The collaboration space can allow multiple forms of presentation.*

4.5.5 Individual Study & Research Areas

- **Self-Study Areas** – Design areas where students can work individually and be focused, although not necessarily isolated from the rest of the library as supervision is still important for these age groups. In this area, students will often access reference materials from printed sources as well as online. They’ll need places to work alone, gathering and evaluating information.
- **Seating styles** –Furnishings should be in a range of styles, from counters to benching tables to comfortable, lounge-style seating to appeal to different users and a range of activities, which include reading and introspection in addition to research. In the past, study carrels provided individual study areas by minimizing distractions and focusing the student’s attention. However, this type furniture can be a more inefficient use of space. One solution for keeping students focused at tables and counters is the use of the “Desk Fence” – low screening that helps defines one personal space.

Workstations at *high* seating or standing at counters:



Gum Spring Library, Loudoun Co., Virginia (Designed by: Grimm + Parker Architects) For stool seating, providing a leg rest is critical.



Dover High School LMC, Dover, Delaware (Design by Hord Coplan Macht) A “Research Bar” for accessing online the library collection as well as internet resources is located in close proximity to librarian help desk and the stack area.

Individual Study at Tables



Edgewood High School LMC, Edgewood, MD (Design by Grimm + Parker) Whether set up with personal computers or not, tables for individual study are critical to include.



(GET CREDIT) *An example of “Desk Fence” screening using light materials on movable furniture.*



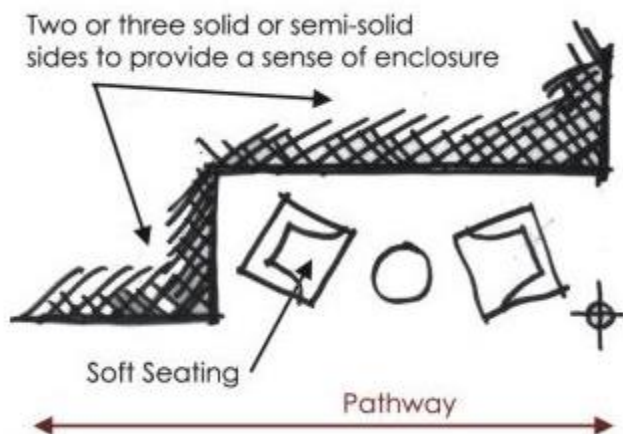
Edgewood High School LMC, Edgewood, MD
 (Design by Grimm + Parker) Traditional wood carrels have the disadvantage of less flexibility in being able to be reconfigured or moved easily around. Carrels that require access from all sides require more space per student to accommodate circulation.



(GET CREDIT) Modern carrels are available that are more lightweight and have interchangeable parts for varied seating arrangements. It is important to confirm the length of the warranties and that additional fasteners are included.



Example of niches created by bulkheads, walls, and screening, enhanced by color and lighting.



Prakash Nair and Randall Fielding in their book entitled *The Language of School Design: Design Patterns for 21st Century Schools* (2013) outline the need for “cave spaces” - places for individual study, reflection, quiet reading and creative flow, which can be rare in school. Places some children feel comfortable, safe, and open to learning. These can be created by niches with walls, shelving, or furnishings and acoustical softening.

4.5.6 Soft Seating Areas - Informal Reading and Studying

Social and interactive learning environments should still provide quiet spaces in which individual students may retreat and imagine an escape to the world of ideas and provide an area of refuge.

- A variety of informal seating areas should be designed to appeal to different users, both quiet reading areas as well as those where students are encouraged to talk openly and discuss content.
- Should be lightweight for movability, but if not, consider built-in casters for easy reconfiguration.
- Careful selection of materials - must be flame resistant, padding should be wear-resistant and covering durable and cleanable with spot cleaning. Bean bags should have removable covers that can be washed, if necessary.
- Seating should be cushioned and comfortable and allow a variety of postures, which may require more generous dimensions size for youth relaxation.



ADULT



TEEN

Students comfort positions are different than adults and the furnishings should reflect this.

Individual Seating

- Should support quiet reflective personalized learning.



NEED CREDIT

Some seating can provide an oasis.



*Concordia International High School, Shanghai (Design by: Perkins Eastman)
Movable elements to find one's right zone*



NEED CREDIT *This library includes a range of seating in the children area, from casual grouped to individual nooks. Low movable stools playfully form a caterpillar chain.*

Social Learning Areas - Group soft seating

- Informal seating should be designed to fit to different arrangements and size groupings.



Norma Rose Point School LMC, Vancouver, BC (Design by Fielding Nair International) Students enjoy bean bags that can be easily moved and clustered by the window light.

Phil Snowdon Elementary School LMC, Cheney, Washington (Design by NACI Architecture) Offering diverse types of comfortable seating for studying is as important as providing hard-back sitting chairs at tables.



- **Importance of having work surfaces with seating options** - Seating needs to be designed with thought toward how to support all uses of the space. Laptops often require a surface to use when keyboard typing. Provide power outlets in easy access to all seating areas for charging personal devices.



Waterford High School LMC, Waterford, CT
(Designed by JCJ Architecture)
SOFT SEATING & WRITING SURFACES:
Light movable tables for laptops allow comfortable seating areas to become places for individual focused work.

RESPLACE IMAGE BELOW



Arlington ES/MS School LMC Renovation, Baltimore, MD
(Designed by JRS Architects and Kirk Designs) Movable table tops along bench seating in a storytelling area allows for a hard surface if needed for instruction.



Baltimore County Public Library, Owings Mills Branch, MD
Cushioned chairs include a simple flat surface for laptops, tablets, or books, designed to swing out of the way when not in use. When selecting this type of seating option, ensure that all moving parts are built substantial and easily repaired if needed.

4.5.7 Electronic Access to the Collection

Locate computers in the research and study areas to be used predominantly for access to the OPAC or library catalog. As wireless access and mobile devices become more readily available, there will be less need for designated equipment for this purpose.



Glenville Elementary School LMC, Greenwich, Connecticut (Design by Perkins Eastman)
Workstations to reference online catalog placed at the end of shelving units for convenience/ Standing access will tend to limit use for just referencing Careful design consideration is needed so that protruding elements in circulation areas do not become hazards for sight-impaired students.

Howard County Public Library - Savage Branch; Savage, MD
(Design by: Grimm + Parker Architects)
Reference computer station should be right-sized for the students it is serving.



Andrew G. Truxal Library; Arnold, MD
(Design by RATIO Architects, Inc)
Small movable reference desk near the stacks.

- **Parental Areas** - Some schools provide areas where parents/guardians are welcome to utilize the resources and services available in the library media center. This is particularly true in communities where adult members of a family may not have had the opportunity to become familiar with all of the resources and services available through the library media center. Such areas might include computers, study spaces or areas for group discussions/presentations and feature opportunities for personal and professional growth.



Westport ES/MS School LMC Renovation, Baltimore, MD
(Design by JRS Architects) "Parents' Place" Workstation dedicated to visiting parents and guardians **GET CORRECT PHOTO**

4.5.8 The Collection Area and Book shelving

Provide shelving to house the collection, including print and non-print materials, and periodicals. Allowance should be made for an average of ten items per foot). Shelving may be utilized to define different areas within the library media center based on group sizes and functions.

- **Types of Book Shelving** – The variety of pre-made shelving available has expanded greatly. The purpose of shelving has moved away from the most efficient way to store the most number of materials to finding ways to exhibit books and media making them easy and attractive to pick up and begin reading. The exception to this are renovations on small footprints. There they still have to be thoughtful about efficient ways to store materials. Types of shelving vary between wall mount and floor shelving as well as attached and mobile. "Picture book shelving" provides dividers within the book shelf units to help the books "stand up" and not slide around on the shelf.
- **Display shelving** – Display shelving should be scattered throughout the media center with the largest concentration in the entrance. This will allow the library media specialist to feature new books or special collections for classroom use. The shelving should allow for displaying books, student work, information about upcoming programs and other resources/services. If glass-enclosed cabinets are used, they should be lockable and internally lit. Including an electrical outlet and data connectivity within the case allows for electronic or digital display for added interest. Appropriate lighting in these areas is extremely important.

Display shelving at entrance into library media center

GET IMAGE



Patterson Mill Middle/High School LMC, Bel Air, MD (Designed by CS&D/Fanning Howey Assoc.) Simple display cabinet for book allows views through to the library media center from the corridor.

Cele Middle School, Pflugerville, Texas (Design by: Stantec Architecture) Display shelving allows views into the library media center from lobby area.



Parr's Ridge Elementary School LMC; Mt. Airy, MD (Designed by BMK Architects) Entry display shelving



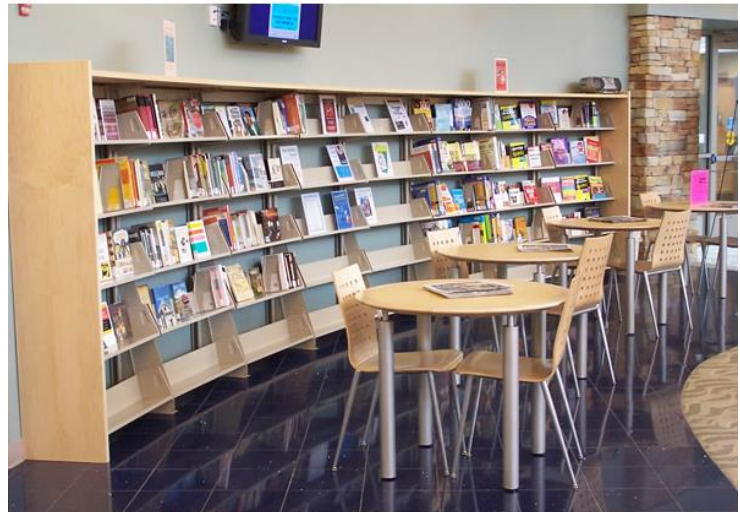
Falk Laboratory K-8 School; Pittsburgh, PA (Design by: Perkins Eastman) Bookshelves display.

- **Book shelving against walls** – Shelving can either be up against a wall or inserted to be framed by the wall. The latter provides a clearer look but allows for less flexibility. In the height of the shelving, be conscience of the reach ranges of the student population being served. Recommended maximum heights for elementary school: 48"; for middle school: 60"; and for high schools: 72". High shelving is better used for display of materials and thus should be designed with that in mind.

RETAKE



Red Pump Elementary School LMC, Bel Air, MD (Designed by GWWO) Inset shelving in the wall is an option to create a cleaner look and to ensure the shelving is out of the way of other functions and circulation.



NEED CREDIT *Book shelving can be thought of more than just for storage of the collection. It can serve as a means for display to make the collection more accessible and attractive to the user.*

- **Wall Glazing** - Windows shall be placed so that adequate wall and floor space remains to accommodate the shelving necessary for the library collection size established by the guidelines. Determine the type of books or media that are likely to go under the windows and size the shelving heights appropriately.



Shelving Under Windows
Picture books require more height – at least 12”to capture most books. If the shelving shown above was lowered to be one shelf height, the sturdy bookcase might have been able to double as a low window seat.

**International School,
Bangkok, Thailand**
(Design by: ???)
*Shelving is integrated in
with window seats*



- **Freestanding Bookshelves** – It is recommended that freestanding bookshelves not be greater than 42" in height to allow visual supervision of the library media center by staff. For flexibility, having rollaway shelving with locking wheels is the most beneficial.



*(Above) Stevensville Middle School LMC;
Stevensville, MD (Design by Crabtree, Rohrbaugh
& Associates Architects) Bookshelves should be
sized to allow good sightlines throughout the
library.*



*(To left) Cornerstone Academy for Social Action
LMC (PS 189); Bronx, NY (Design by Perkins
Eastman) One-sided facing bookshelves can serve
to provide more enclosure for social zones.*

- **Mobile Bookshelves**



FLEXIBLE FURNISHINGS (*Palette™ tables and shelving by Russwood*) **GET LOCATION** *These playful and creative tables and bookshelves can be arranged in a variety of ways to suit the type of learning desired. The interlocking shapes allow assembly into quiet reading coves with soft seating as well as single workstations that connect as group tables.*



The wheels can be hidden behind a skirt so their movability is not as apparent.





***Elbert Elementary School
LMC; Elbert, Colorado***
(Design by: Hord Coplan
Macht)

Mobile shelving allows spaces to be created and modified for different grade levels or needs - such as this intimate storytelling area for younger students.

- **Periodical shelving** – The need for display shelving for periodicals is diminishing as more material is accessed online. However, providing some print copies helps to engage those students who find holding and looking at printed material more engaging. To allow for adaptation with changes in the collection, the shelving should be able to be modified for either angled or horizontal display.



Central High School LMC, LOCATION?

*(Product Design by Media Technologies)
Special slanted bookcase shelving or pedestal units on wheels allow periodicals to be displayed and easily moved out of the way.*

- **Children's Books.** Book shelving should be right-sized for the user and the collection it serves.

*Glenville Elementary School LMC,
Greenwich, Connecticut (Design by
Perkins Eastman)*

*Book shelving for picture books or easy
books come with dividers to keep the books
upright and easier for younger children to
access and see.*



Browser Boxes

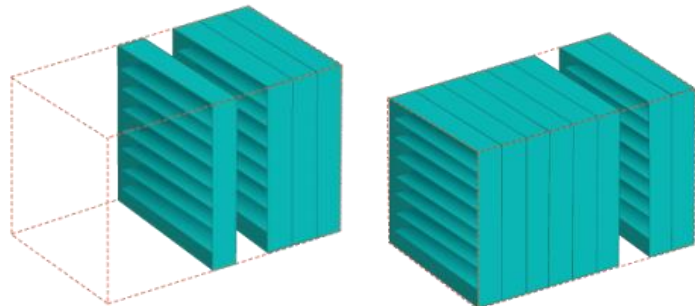


**Owings Mills Learning Center;
(Design by Hord Coplan Macht)**

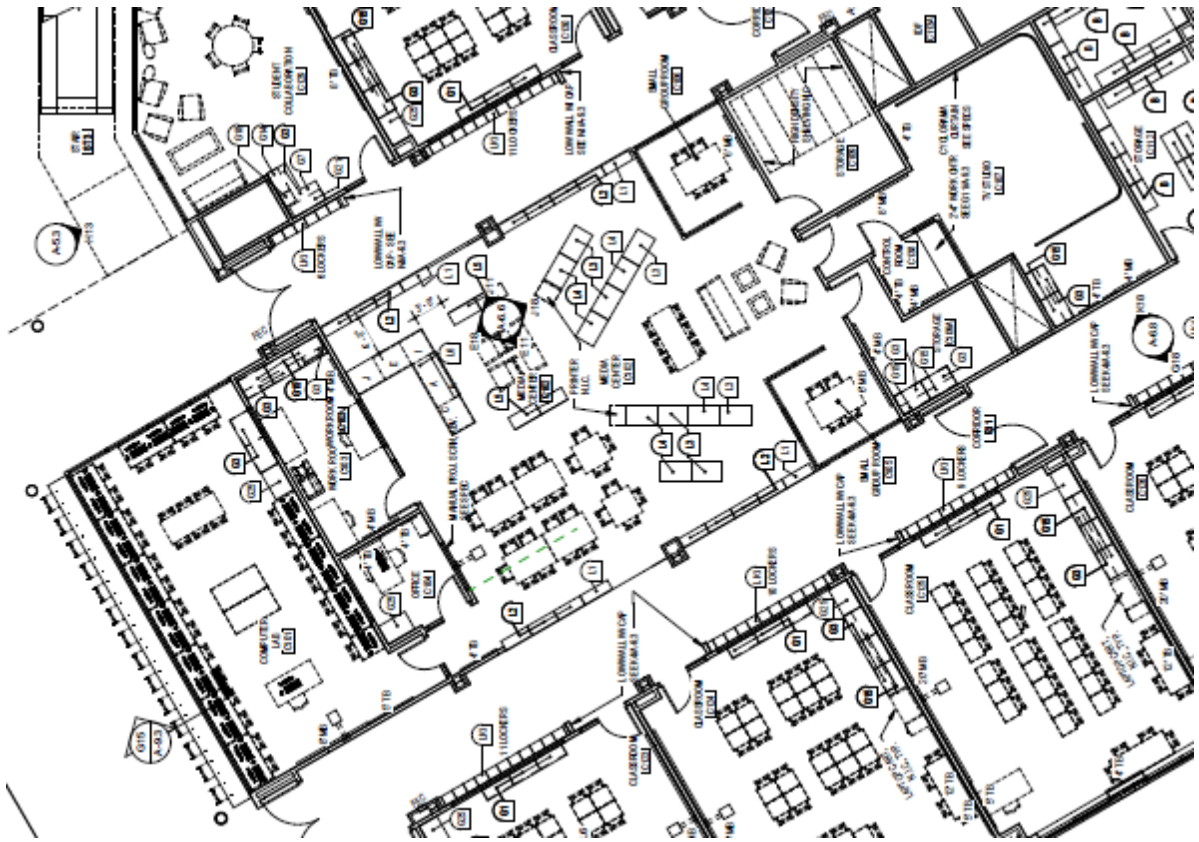


**Oversize books
NEED CREDITS?**

- **High-Density Mobile Shelving** – One solution to retaining portions of the collection, but allowing space within the library media center public areas for new uses, is to provide high-density mobile shelving in a storage room. This type shelving can almost double storage capacity by eliminating fixed aisles. The shelving would move open up to create the aisles by either manual, mechanical-assist, and powered controls modes of operation.



Spacesavers Compact Shelving



Alleghany HS LMC; Cumberland, MD (Design by: Grimm + Parker Architects)

To allow more user space in the library media center, an easily compact storage room was designed to house the portions of the collection less used. This staff accesses the materials at students' requests or rotates it periodically on the open shelving in the room.

4.5.9 Student Broadcast Studio /Multimedia Production Room

- TV studios are used for taping presentations, performances, or live cable broadcasts within the school, such as daily news shows and announcements. These spaces can also serve for video conferencing or long distance learning. Smaller, lighter cameras and recording equipment, which can work well in natural light, give students the option of recording anywhere. The school system administration needs to decide on the level of production to be offered and the facilities needed to meet that level. Many high schools will include a formal TV studio, but which is associated with the CTE programs and faculty, not the library media center and staff.
- Broadcasting studios require special sound isolation, power, lighting, and room ceiling heights and better serve their intended purpose if designed as studios, not as classrooms or workrooms. The studio should be an open space able to support multiple scenarios. The room works best as a square proportion with a 12' high ceiling and no exterior windows. Floors and ceilings may be unfinished, with theater curtain backdrops and a pipe grid hung from the ceiling for lights and microphones. Sets are designed and constructed by students. They are moved in and out of camera range as necessary. Floors are frequently repainted for productions. The amount of space required depends on the type of cameras and sets proposed. A typical space may be 30' by 30' feet.
- At the elementary and middle school levels, a formal TV studio may not be necessary as a less sophisticated space may be acceptable. The “studio” may consist of a curtain or other simple backdrop material, a few ceiling mounted track lights, a camera mounted on a tripod, and wires to the central equipment. This area can be combined with seminar, group project, production, or storage rooms. If the room is also designed and furnished for other uses, additional space will be required to store excess furniture while recording and any furnishings must be easily moved.



Types of Backgrounds: (Image on left) A curtain on a track at Red Pump Elementary in Bel Air, MD, and (image on right) a simple Green screen with wall-mounted housing allowing digital use.

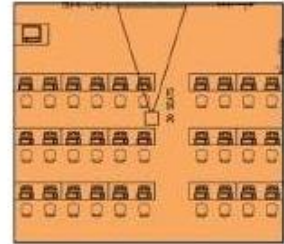
4.5.10 Computer Laboratory

- The need for standalone computer labs is diminishing as wireless technology becomes more prevalent. However, where a separate space is preferred for ease of class instruction, the computer lab should be sized to accommodate a full class of students at work stations, an area for networked laser printers, and the instructor’s workstation. The floor space should allow for ease of movement around workstation tables. One wall should be reserved for presentation with clear space before an interactive whiteboard or projection surface with multimedia projector.
- Diffused indirect lighting helps prevent light reflection on computer screens. Removable ceiling panels enable easy access to lines. Additional air conditioning and dust filtration may be necessary to maintain a comfortable temperature and dust free environment.
- Access to the room is usually from both the main corridor and the library media center to allow the most flexibility in programming. It is important to determine if glazing is needed to the library media center for ease of supervision by staff. (See next page for layout options.)

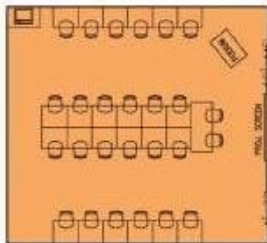
- **Computer Lab Layouts - From most fixed to most flexible:**



Red Pump Elementary School, Bel Air, MD (Design by GWWO) Tiered seating allows the students' computer screens to be easily seen from one location by the instructor. Half walls can be used as a secondary work surface when students face the teaching wall.



Ducketts Lane Elementary School, Elkridge, MD (Design by Grimm + Parker) Built-in counters, cabinetry and a center wall allows for storage and easy access to power.



Thomas Viaduct Middle School, Hanover, MD (Design by TCA) Fixed counters and tables with portable laptops that allow use of the devices throughout the school. Downside is the



Captain Walter Francis Duke Elementary, Leonardtown, MD (Design by TCA) Workstations on movable tables for flexibility, but requires floor power outlets in center of the

equipment needs to be set up before each use of the room.

room and equipment storage if room is to have another use.

4.5.11 Administrative Areas

The library media center administrative area must be welcoming, yet maintain a degree of separation and control. The library media specialist is the information and educational technology specialist, a teacher, an instructional partner, and a program administrator. Many of the management, clerical, and technical activities required to operate the program occur in the library media center administrative area. Activities include general office functions and the technical operation and support for instructional and administrative technology systems.

Administrative areas provide work space for the library media center staff to maintain and develop the library media center collection and also to support instruction throughout the school. Included in this area are the circulation desk, offices, work rooms, the communications distribution room, and secure storage for technology multimedia equipment related items.

Component Elements:

Points of Service – Circulation Desk / Information/Tech Center – The circulation desk is often part of the first impression of the library media center along with the appearance of the space as you enter and the main entry. It should be welcoming and have a higher quality of material finishes that last over time.

- **Placement** - The location of the circulation desk must relate to the overall interior design of the room. It should be easily seen by people entering the room. Its location and shape must permit good visual supervision by staff throughout the library, especially of the research and study areas. The desk's position should not require the librarian to face away from the main entry. Close proximity to the office/administrative area is necessary for staff to easily move between the two. Adequate waiting area should be provided in front for checking out materials and asking questions. The desk's orientation and placement should allow a line of students to form without blocking the route to the main entrance. When the circulation desk is central to the space, it can become the focal point of the room and can also serve as the information / technology hub.



Laveen Elementary School LMC; Laveen, AZ (Design by: DLR Group)

Circulation desk location provides good sight lines to all areas of the media center and addresses need to be by front entry and near office/administration areas.

- **Design** - If not near the main entry, provide overhead signage, a lowered bulkhead and/or featured lighting. Typically control and security of the staff area of the circulation desk is desired.
- **Dimensions** - At a minimum the desk should be composed of components totaling approximately 10 to 12 linear feet with areas for book return, general information, and check out. For smaller schools, no less than 5 lineal feet of work surface should be available, especially if a compact, mobile satellite station is provided. Many of schools are opting out of a book return, especially if the media specialist does not have a formal office. In those cases, the circulation desk becomes more of an office/work area and will needs more storage capacity.
- **Accessibility** - A section of the counter must meet accessibility requirements for persons with disabilities (34" maximum height). For elementary and primary schools, the desk should be address children's anthropometrics (**Give height range**). Since the counter is generally along a circulation route, the lip of the countertop must not protrude more than 4" into the circulation zone.



*Red Pump Elementary School LMC, Bel Air, MD (Designed by GWWO)
Example of an age-appropriate height for the student population being served. The display of books is integrated into the design to allow for easy selection.*

- **Components** - The circulation desk must be at a comfortable height for staff in both seated and standing positions. There should be a designated area for returning and checking out materials. The desk should accommodate such equipment as staff computer(s) and printer, security detection equipment, a telephone and/or means to make announcements. There should be adjacent shelving to allow for reserved materials or special collections assembled for particular class assignments.



Edgewood High School LMC, Edgewood, MD (Design by Grimm + Parker)

Example of a screen wall on circulation desk that helps hide the clutter of the work stations while having a wide enough wall caps to allow the display of materials.



DELETE?

Baltimore County Public Library, Owings Mills Branch (Designed by ???)

Another approach is to break apart the components of the circulation desk so that it is less a barrier between the librarian and the student, much like this example.

Components become easier to move as programming requires, but careful placement of floor outlets is required. Care also must be taken to provide adequate area for both equipment and transactions.



Schaumburg High School LMC, Schaumburg, Illinois (Photo by Mark Wels)

Taking clues from an Apple Store, improvements were made to the library media center to include a "genius bar" for help with personal devices as well as research.

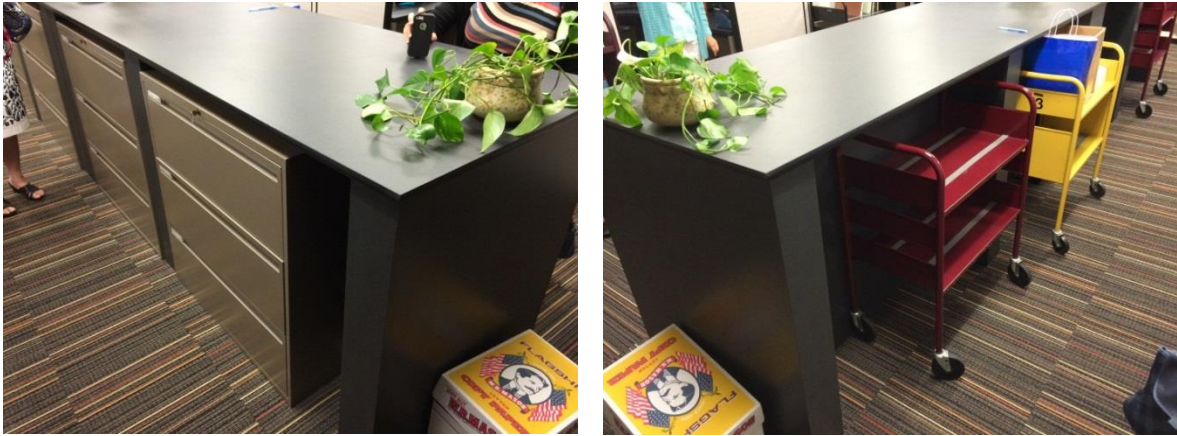
Self-Service Kiosks - For larger library media centers, or those with staffing limitations, a self-checkout system could help supplement the circulation of materials. Compact, modular self-service kiosks are available that allow students to borrow, return, or renew materials. There are also devices that can attach to a mobile device. Some self-checkout kiosks come with return bins and wheels to move out of the way when needed.



Workroom/Office Area

The library media specialist and the support staff are the primary users of this space. Other teachers, instructional aides, parent volunteers, and student assistants may also have access to this space. Often this is a non-carpeted floor area with access to a sink and specialty equipment. Some school systems see this area as an opportunity to create a “maker space” for use by students or the public after hours. If so, additional storage area should be provided so sensitive materials can be easily stored away.

- **Office Area** – An allowance of 120 nsf per staff member should be provided to cover work space, general file/storage needs, reception, and meeting areas. Included in this space should be:
 - one workstation per staff person
 - space to complete book orders, cataloging, reports, phone calls, etc with limited noise
 - meeting space for the staff and visitors
 - lockable storage for personal belongings
- **Library Media Processing Area/Production Room** - Should be designed for efficient processing of new library media materials, repair of print material, and good access to information technology. Provide glazing in the partitions of the administrative areas to allow visual supervision of the library media center. Natural light, views to the outdoors, colors, and surfaces are important.
- **Staff Meeting Space** - It is helpful to have an area for a table that sits 6 for collaboration with teachers. This should be near a white board. In some schools, this might want to be its own room in association with the library media center, in others, one of the functions to be accommodated in the workroom, which would require slightly additional space.
- **Types of Casework and Equipment** - Provide ample counter space and lockable cabinets should be provided for storage of supplies. In addition to standard office equipment, the space may include other furniture and equipment such as: high end printer and copy machines, a paper cutter, large trash containers, a roll laminator, a utility table (30” x 60” recommended), and tack board (4 linear feet recommended).
- **Utilities** - Provide a sink with hot and cold water for clean up before and after handling library media processing materials and maintenance and repair of items in collection. Receptacles and ventilation for equipment is essential.

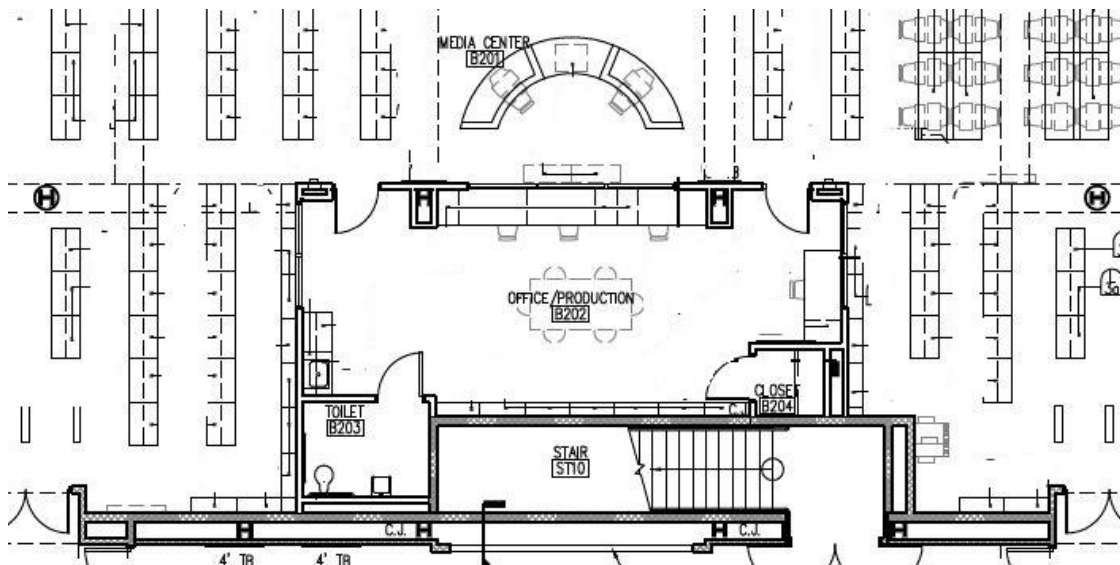


Anne Arundel Community College Library Work Room; Arnold, MD

(Design by RATIO Architects, Inc) The island table in the center of the work room is high enough to serve as a standing work surface that can store library carts and filing cabinets underneath



Edgewood High School LMC Work Room, Edgewood, MD (Design by Grimm + Parker)



GET PLAN WITHOUT SYMBOLS

- **Storage** – Lockable closet should be provided for storage of equipment and collection items for distribution. For adaptability over time, adjustable metal shelving is recommended versus less flexible built-in wood cabinets.

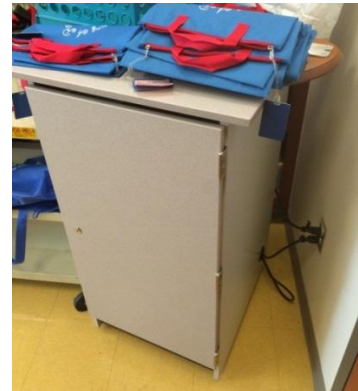


FIND BETTER IMAGES *Storage areas contain resource materials for classrooms and the library media program that might be in a variety of formats.*

- **Charging Stations** - Designated areas for charging stations of laptops may be required, with ample, conveniently placed outlets and appropriate amperage and space for the carts



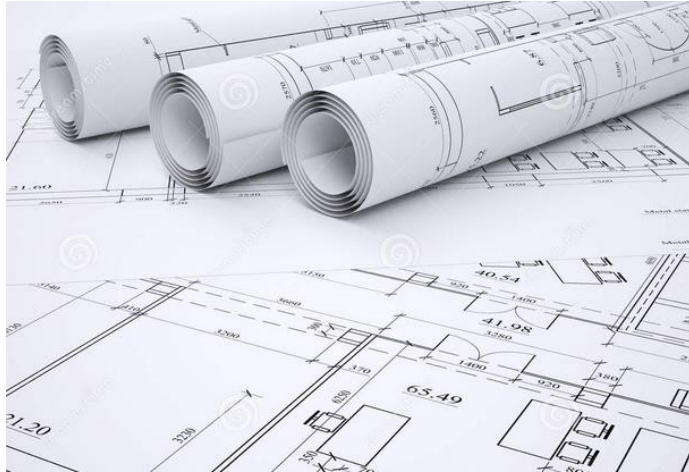
Laptop carts provides a secure environment to store and charge laptops and other peripherals while still remaining mobile – here depicted for storage of mini laptops and mobile devices.



Care must be taken for the placement of electric outlets for charging stations so there is sufficient space for the carts and access to the plug.

4.5.12 Telecommunications and Head End Room

- **Communications Distribution Room (CDR) and Telecommunications Storage** – The media center serves a dual role – its traditional role as a gathering place for research and learning and a new role as a technological information base and learning hub. In this new role, the media center may house a wireless voice/video/data network, connected to the entire school. This network enables the transmission of media services to the desktops of teachers and students without physically entering the media center. The new library media center can utilize digital technology to enhance voice, video, and data communications within the school and with distant learning resources. Technology specialists recommend a CDR be provided in every school:
 - The CDR houses the equipment necessary to receive external electronic communications systems and distribute them throughout the school.
 - The CDR includes audio/video/telephone distribution systems as well as network hubs/switches/routers and file servers.
 - When the library media specialist is responsible for the technology, the communications distribution room must be accessible directly from the library media center to enable the specialist to correct problems without leaving the center unsupervised. Convenient access from a corridor is also desirable for use by service personnel and other administrators.
 - The CDR should be a secure, uncluttered space with good lighting, protected power supply, and climate controls for temperature and humidity. Some equipment will be wall mounted. Many items will be on racks. Secure storage for software, service manuals, disks, tapes, and supplies is necessary.
 - The workstation for the technology specialist may be in this room. Plumbing lines and other potentially damaging items, such as coffee pots or water coolers, should not be in or above this room. Depending on the size of the school and the technology programs, the space required can vary between 150-300 nsf.
 - Involved the administrators of the instructional technology, administrative technology, and library media programs early in design process in the planning of this room.



SECTION 6.0 - SPACE PLANNING

5.2 Space Planning Worksheet -

School Name: _____ School Enrollment: _____

Proposed LMC Staffing: _____ Max LMC Occupancy: _____

Target Space Allocation _____

6-8 nsf per student below 600 enrollment

6 nsf per student 600-1200 enrollment

5-6 nsf per student above 1200 enrollment

<u>Planning Assumptions:</u>	<u>Guideline</u>	<u>Capacity /Quantity</u>
LMC Capacity	8% total enrollment (max. 125)	_____
Total LMC Seating	1. 2 x capacity	_____
70% at tables	_____	_____
10% at Individual workstations	_____	_____
20% informal	_____	_____
Student Computer Stations	1 for every 4 students	_____
Student Printer Stations	1 for every 5 computers	_____

<u>Spaces Needs – Typical Activity Areas</u>	<u>Guideline</u>	<u>Net Square Feet</u>
Collection & Stacks	800 nsf minimum	_____
Student Computers	30 nsf per station x	_____
Student Printers	12 nsf per station x	_____
Seating at Table	20 nsf per seat x	_____
Seating at individual workstations/carrels	30 nsf per carrel x	_____
Informal seating	25 nsf per seat x	_____
Seminar/Collaboration Room(s)	20 nsf per student x	_____
Story area (Only if PreK-3 rd Grades)	10 nsf per child x	_____
Instructional Area(s) or classroom(s)	30 nsf per student x	_____
Project/Makerspace Area or Rm	900 nsf	_____
Broadcast Studio	900 nsf	_____
Computer Room		_____
Circulation Desk	150 -200 nsf	_____
Additional Point of Service Stations	80 -100 nsf	_____
Administrative Office/Work Room	145 nsf per LMC staff x	_____
Storage Area	As Required	_____
Communications Distribution Room	150 -300 nsf	_____
Other _____	_____	_____
_____	_____	_____
TOTAL	NSF AREA	_____
	NSF Area Per Student	_____

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**“WHAT IS MORE IMPORTANT IN A LIBRARY
THAN ANYTHING ELSE - THAN EVERYTHING
ELSE - IS THE FACT THAT IT EXISTS.”**

ARCHIBALD MACLEISH

SECTION 6.0 - ADDITIONAL DESIGN CONSIDERATIONS

There are a number of factors that need special consideration in the design of school library media centers. They include:

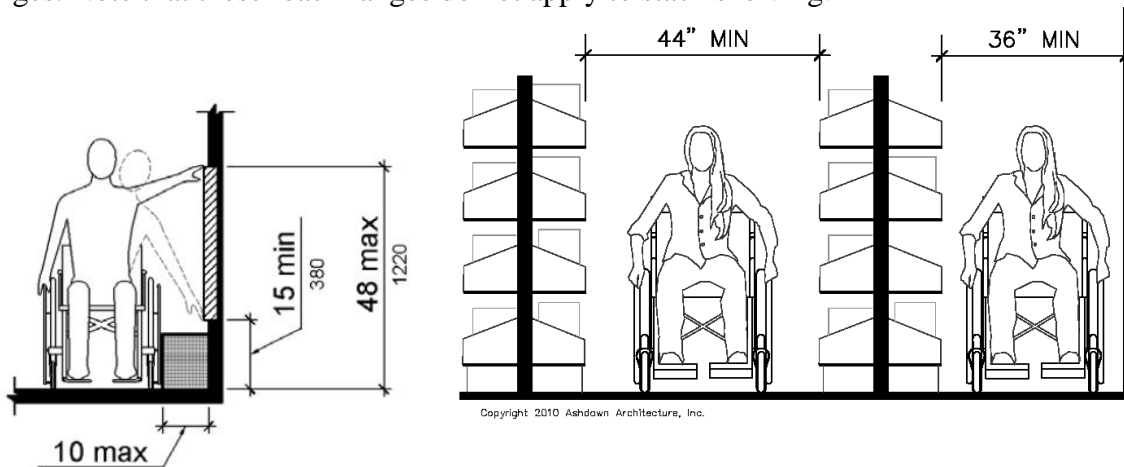
6.1 Accessibility

Access to information is the primary function of any library media center. To welcome and accommodate all users with no barriers or physical hindrances should be the goal of any design. The *American Library Association (ALA)* policy on services for students with special needs states that there should be equitable access to library facilities, collections, and services. If the school library media center serves other public functions, such as a polling location, compliance with accessibility regulations receives even greater scrutiny.

The following regulations apply to ensure equal access for those with disabilities:

- ***Individuals with Disabilities Education Act (IDEA)*** mandates access to the general curriculum; as well as, physical accessibility to classroom, to learning materials, to teaching methods, to programs, to technologies in the classroom, and to school libraries. *IDEA* requires public schools to make available to all eligible children with disabilities a free appropriate public education in the least restrictive environment appropriate to their individual needs.
- ***Americans with Disabilities Act (ADA)*** provides protection from discrimination for all individuals with a disability and requires reasonable accommodations be provided in all public services. The definition of disability broadly encompasses impairments that substantially limit a major life activity, including impairments that are episodic or in remission, such as epilepsy or post-traumatic stress disorder.
- ***ADA Standards for Accessible Design (ADA Standards)*** are the technical regulations issued by the U.S. Department of Justice to insure that built environments complies with ADA. The following criteria impacts library media center design:
 - **Multiple levels** – If a portion of the library media center is on another level, there must be access either by accessible ramp, lift, or elevator. This access should be within the library media center and not outside of it. Changes in floor finishes and to the exterior, if provided, must be no greater than ¼" unless beveled, in which case a maximum of ½" is allowed.
 - **Accessible route** – There should be an accessible path of travel to all functions within the library media center. The regulations include very specific maneuvering clearances at doors based on the approach and direction of the swing of the door. Circulation areas should be wide enough for wheelchair users to maneuver. The distance between fixed equipment, shelving, and walls should have a minimum clear aisle width of 36" (or 44" width, if possible). Dead end aisles, alcoves, and rooms require a 60" turning radius or T-Turn within them.

- **Protruding objects** - Objects that protrude more than 4" along a circulation path between 27"-80" above the finished floor could present a hazard for people with sight impairments as they are less easily detected by a cane. The regulations impact the design and placement of such elements as counter overhangs, drinking fountains, open sinks, bulkheads, and open stairs.
- **Furnishings & equipment** - For furnishings, adjustable seat, table, and display surface heights are recommended to allow for accommodations when needed. Five percent, but not less than one, of all fixed and built-in seats, tables, work surfaces, and storage units must be accessible to persons with disabilities. Operational parts should not require tight grasping, pinching, or twisting of the wrist. Reach ranges to controls and to operate equipment need to be within 20" to 48" above finish floor. This is for an unobstructed side reach. Other positions and barriers have more stringent reach ranges. Note that these reach ranges do not apply to stack shelving.



Children's Reach Ranges			
Forward or Side Reach	Ages 3 and 4	Ages 5 through 8	Ages 9 through 12
High (Maximum)	36"	40"	44"
Low (Minimum)	20"	18"	16"

- **Children's anthropometrics** - The *ADA Standards* includes technical requirements based on children's dimensions and anthropometrics for work surfaces, sinks, toilet rooms, drinking fountains, and operable controls. Modifications for accessible work surfaces used by children include tops of tables and counters at 26" minimum and 30" maximum above the finished floor with knee clearance 24" minimum above the finished floor. The advisory table above is from the 2010 *ADA Standards* provides additional guidance on building elements used primarily by children.
- **Signage** - The *ADA Standards* include regulations on signage for permanent rooms and spaces, both their placement, size, and tactile characteristics.
- **Emergency notifications** - Safety alarm systems must include sound and flashing light to meet accessibility regulations for persons with vision and/or hearing disabilities.
- **Audible communication systems** - If the library space serves as a public assembly space at times and includes an audible communication system that is integral to the use of the space, there is a need to provide an assistive listening system in accordance with the *ADA Standards* Section 219.
- **Maryland Accessibility Code (MAC)** - New construction, alterations, additions, and changes of use of state and local government buildings and facilities are required to comply with *MAC* (COMAR 05.02.02). It has more stringent requirements than the federal standards.

- **International Building Code (IBC) Accessibility Regulations** - Construction projects in Maryland for public schools also must comply with the *Maryland Building Performance Standards (MBPS)* and all applicable local codes. *MBPS* requires each jurisdiction in Maryland to use the same edition of the building codes, including the *IBC*. Many provisions in the *ADA Standards* are coordinated with the *IBC* regulations, particularly when addressing accessible means of egress, but there are some additional requirements, such as for a vertical grab bar adjacent to a toilet.

As the more restrictive law prevails, it is important that the design team and school system facilities planners familiarize themselves with all accessibility regulations that apply. However, these regulations often fall short of true accessibility as they are minimal, not optimal, requirements. For instance, many of the clearances are based on a wheelchair clear floor space of 30"x48", but many motorized wheelchairs dimensions may be greater. The **Universal Design** movement calls for the design of all products, buildings, and exterior spaces to be usable by all people to the greatest extent possible. Universal design does not focus specifically on people with disabilities; the goal is to have greater accessibility for all by eliminating environmental barriers.

6.2 Acoustics

The architectural and engineering design of the library media center must provide the acoustical qualities necessary for good communication between all users and staff. MSDE recommends new schools and major renovation projects comply with the *American National Standard Institute, Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools*, ANSI S12.60-2010/Part 1. This voluntary national standard provides specific standards on acoustical performance criteria, design requirements and guidelines for schools that address background noise levels, reverberation, and noise isolation.

Using decibel (dB) as a measure of sound level, the recommended greatest A- and C-weighted background noise level for most media centers is 40 / 60 dB and 35 / 55 dB for media centers smaller than 20,000 square feet in volume (an overall space less than roughly 20'x50'x20' high). The recommended noise isolation between a library media center and an adjacent space is a sound transmission coefficient rating (STC) of 50.



Young Women's Leadership Academy LMC, Fort Worth, Texas (Design by Perkins+Will) Open acoustical ceiling panels provide sound absorption while allowing the sense of higher ceiling above.

The ceiling, walls, floor, and furniture finishes become important factors as to how much additional acoustical treatment will be needed. Carpeting the main portions of the library media center with static-free, high-quality, commercial-grade carpeting will help eliminate the noise that originates at floor level. However, if that is not possible or not desired, using sound-absorbent materials on ceilings, walls, and furnishings will also help control sound. Acoustical treatments are particularly important in bigger volume spaces, where sound can reverberate or dissipate where you need it, like at class instructional spaces. Finding ways to bring down the volume in these areas is helpful.



*Ridgecrest Elementary School LMC; Houston, Texas (Design by: Pfluger Architects)
Colorful acoustical wall panels provide sound absorption while adding an element of play above.*

6.3 Energy Conservation

Energy conservation is an important design goal in every project for environmental and financial reasons. A new school in the State of Maryland that receives State construction funding shall be constructed to be a high performance building. “High performance” means a building that meets or exceeds the current U.S. Green Building Council Leadership, Energy and Environmental Design (LEED) green building rating system, Silver certification, complies with the International Green Construction Code as amended for Maryland and approved on **DATE**, or by a pre-approved comparable standard. The educational facilities design process for new schools and major renovations includes a required energy and life cycle cost analysis. Within the school library media center, items that will be analyzed include the following: sun orientation, arrangement of windows and shading devices; building envelope, spatial volumes, thermal characteristics of materials; operating expenses based on hours of operation and capacity; types and levels of illumination; types and amount of electrical equipment; types of heating, ventilating, and air conditioning systems including special exhaust and ventilation systems.

6.4 Finishes

If the budget allows, high quality materials and attractive architectural features should be specified in this public room. The appearance and durability of furnishings are particularly important with the multi-use and extended use of the space. Care should be taken not to select too glossy a finish surface, which may create glare. In selecting a flooring system, the designer must specify adhesives which emit low levels of volatile organic compounds and provide ventilation before, during, and after installation.

With appropriate maintenance and replacement safeguards, carpet can be an ideal flooring material for library media centers and offices because of its comfort, noise reduction, and appearance. However, wet, damaged or improperly cared for carpet can become a source of indoor air quality problems. Carpet requires an intensive maintenance program. It should be vacuumed daily with proper equipment and wet cleaned (shampooing and/or hot water extraction) several times a year. If this maintenance program cannot realistically be achieved, other flooring products should be selected. Another advantage to movable furniture and shelving is the greater ease in carpet cleaning. The trend is to utilize carpet "squares" which allow for easy removal and replacement of damaged carpet squares as well as offer non-traditional designs and space creation.



Edward M. Felegy Elementary School LMC, West Hyattsville, MD (Design by Hord Coplan Macht) For library media centers without carpet, carefully considering the color and the design of the floor pattern is critical in the creation of placemaking.

6.5 Graphics, Signage, and Artwork

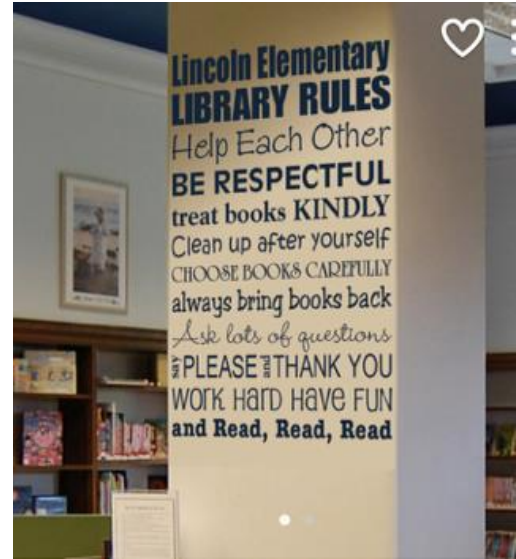
The library media center is the information center of the school. Students must be able independently to locate materials and operate computers and other equipment. Simple signs that can be read from a distance designating types of print or multimedia collections are helpful. Students and teachers are accustomed to sophisticated, colorful, well-coordinated, and effective graphics in commercial and public places. They expect the same quality in the school library media center. But whereas commercial establishments frequently hire a graphic designer as a part of the architect's team, most school systems will not. The architect will specify a basic sign package for the building. Enhancements for the library media center may require extra work and coordination by the library media specialist, facilities planner, and the architect.

The more public use of the library media center and its larger volumes, make it an ideal place for the display of artwork. Art reflecting the school community, its environs or its aspirations, and the work of local artists or talented students are meaningful to display. Providing direction to the design team early in the process will allow them to integrate these features into the end product. The architect can provide a

framework for display for the library media specialist to select a changing collection of work to be presented. Care must be taken not to create too much visual clutter and distraction with signage, artworks, book and magazines displays.



Wall signage clarifies the uses in the library spaces.



Library rules, shown here in playful graphics, can be printed in a vinyl word decal to adhere to the wall.



Zwink Elementary School LMC, Klein, Texas (Design by PBK? Architects)

Simple bold graphics can inspire and raise the expectations of the users.



***Captain Walter Francis
Duke Elementary School
LMC, Leonardtown, MD
(Design by TCA Architects)
Features quotes from famous
people on the bulkhead
around the room.***

***Atascocita Springs
Elementary School LMC,
Humble, Texas (Design by
PBK Architects)
To highlight the STEM
programs in the school and
provide greater visual
interest, a colorful depiction
of the solar system is featured
below the rather monolithic
ceiling.***





Ludlow-Taylor Elementary School LMC , Washington (Design by Meditch Murphey Architects)
Colorful, airborne panels were used to modulate the lighting and cheer up the space of this renovated library. The thought behind the design was to inspire students to “reach for the sky and take their knowledge to new heights.”

6.6 HVAC / Ventilation

It is recommended that the library media center be on a separate HVAC system. Not only may it operate during the summer for use by the community or summer school when other areas of the school building are closed, but the print material it contains should never be allowed to become moldy. A year-round temperature range between 72 and 76 F degrees is generally acceptable, assuming fairly uniform conditions throughout a room with air motion in occupied locations within the space not above 30 feet per minute. The relative humidity should be maintained between 30% and 60% as a comfort and health consideration. In prolonged relative humidity above that range, fungi and bacteria have been shown to produce rapidly. Conversely, respiratory irritation and aggravation of cold symptoms are a consequence of too low humidity during cold weather.

As with other high occupancy public spaces, two levels of ventilation should be provided in the library media center for periods of low occupancy and high occupancy. The thermal environment involves several variables that cause relative degrees of human comfort or discomfort. These include air temperature, radiant temperature of surrounding surfaces, uniformity of air temperature, humidity, and air movement. Adverse thermal conditions can stress students or staff and in turn affect the quality of the learning situation. The equipment in computer and production areas will also generate additional heat. Main head-end rooms for computer equipment often generate so much heat that these spaces must be cooled year round, and should also have a separate system.

6.7 Lighting - Artificial

Lighting for the school library media center must be designed to support numerous activities occurring simultaneously.

- **General overall lighting** is most commonly supplied by fluorescent fixtures or more recently by energy efficient LED lighting. If indirect luminaires are provided, we recommend the following requirements for ceiling brightness be met: ceiling luminance should not exceed 750 foot lamberts and the ceiling luminance uniformity ratio, maximum to minimum, should not exceed 15. Vertical or wall illumination in footcandles should be at 50% of the horizontal illuminance measured 30” above the floor. The uniformity lighting ratio is to be in the 1.0 to 2.5 range. Before designs for the library media center are finalized, confirm that there are not areas where supplementary light may be needed where shadows can be casted by high shelving or privacy walls.

- **Task lighting** can be by pedestal lamps or more often built into office systems furniture or placed under bulkheads or wall-mounted cabinets. Readers benefit from daylight and adjustable reading lights. Recommended task lighting at 55 - 60 footcandles.
- **Computer areas** require lower light levels. Parabolic louvers or indirect lighting sources are often used to reduce glare in computer areas.
- **Independent lighting controls** for separate lighting zones are very important. A lighting control point at the entrance /exit is needed for opening and closing the library media center. Equally important is to have lighting and shade controls near the teaching wall of the instructional areas. Instructors need to be able to vary the light level and focus for effective viewing of different media - markerboard, computer projections. Light switch locks can be used to prevent tampering.
- **Emergency lights** and very low level "night" lights will be necessary. Care in their placement is necessary around white boards, video display monitors, or media production rooms to not cast glare or unwanted light.



*Washington-Lee High School **LMC**, Arlington, VA (Design by Grimm + Parker Architects) Task lighting is used at the tables and at the perimeter where the workstations are placed.*

Gum Spring Library; Loudoun County, Virginia (Design by Grimm + Parker Architects; Photo by: Ken Wyner) The lighting fixtures deliberately do not define different functional areas to allow the maximum flexibility in how the space is arranged.





*Cabin John Middle School LMC,
Potomac, MD (Design by Samaha
Associates)*

*Pendant light fixtures allow the light
source to be closer for reading as
well as ease in maintenance of the
fixture.*

6.8 Lighting - Natural

Windows are highly desired in a library media center and can serve as important architectural features. Natural light provides one of the best sources of overall ambient lighting. Views of the outdoors increase one's orientation and satisfaction with a space. Natural light not only has emotional and physiological benefits, but it allows energy savings in not artificially lighting the space. Artificial light is less necessary when natural light comes from several directions, creating a more balanced, glare-free space.

A key concern with daylight is providing the ability to **control the light level** for multimedia presentations. Care must be taken to prevent glare or a wash out of the image on screen in the class instruction area of the library media center. Strong direct sunlight can also fade and degrade printed materials and cause excessive heat gain. Consider the sun orientation and the placement of stacks and display areas near windows. Eastern and particularly western exposures should be avoided, if possible, as direct sunlight and heat gain are more difficult to control at certain times of the day and year. Provide sunscreens, shades, blinds, or draperies to moderate the light. Controls of electronic shading devices should be placed near the class instructional area with the lighting level controls.

A lighting system should take advantage of **available technologies** - such as occupancy sensors, daylight harvesting, high-performance glazing, and energy monitoring - to make the most of the natural resource. Light shelves on the interior of windows can direct light onto the ceilings and deep into the room. Glazed partitions allow natural light to be shared by interior offices and support rooms. **Skylights** may be used in large central rooms if constant light and potential noise from rain are acceptable or can be modified.

Advanced Daylighting Systems have been developed to bring sunlight into the lower recesses of a building from the roof above. These tubular daylighting devices consist of a roof oculus to collect light, a 10- 21" diameter tube specially lined with an engineered reflective surface, and an interior diffuser in the room ceiling. A beam of light captured at the top of a tube will bounce off the interior surfaces until it's eventually redirected by a diffuser. It is a simple, unpowered system that can collect and concentrate diffuse, low-angle daylight with little heat gain and minimal light loss for straight tubes of 30 feet or less. They are useful for library media centers that may be internalized due to the building configuration. There is an increased light loss for each bend in the tube and they require a separate roof penetration for each vertical tube.



West Towson Elementary School LMC, Towson, MD
(Design by Design Collective)

Window seats serve as an informal reading lounge area. Books shelving is designed to protect the collection from direct sunlight and becoming washed out.



Windsor Park Elementary School LMC, Charlotte, North Carolina (Design by Perkins Eastman) In library media centers with limited exterior walls, clerestory windows and strategically-placed interior glazing can maximize natural light.



Mascoutah High School LMC, Mascoutah, IL (Design by FGM Architects) The lighting system acts to screen direct glare from the skylight above as well as provides a major light source after daylight hours.



Cherry Creek School, Greenwood Village, Colorado (Design by Hutton Architecture Studio) Diagram of the tubular daylight device system, allowing natural light to penetrate lower floors of a school. *Credit?* Drawing of tubular daylight device in



*ceiling plenum and
example of ceiling len*

6.9 Outdoor Learning Areas

Consider creating an outdoor reading patio off an interior courtyard for access by the school library media center. Creating a secure environment outdoors for students to gather, read, perform, or just relax can enhance library programming and create memorable learning experiences. It can help to stimulate students' other senses and relieve eyestrain since so much of their time can be immersed in technology. Even if an outdoor reading area is not possible, reserve the floor space directly in front of windows for students—not shelving. Being able to enjoy the sunlight, the views, the change of seasons all adds to an experience that enriches their learning.



*Aberdeen High School,
Aberdeen, MD and
Deerfeild Elementary
School, Edgewood, MD
(Both designs by Grimm +
Parker) Directly outside the
library media centers are
storytelling performance
spaces—following the
natural slope of the land
(above right) and in a
courtyard (above left).*





Shadow Oaks Elementary School LMC, Houston, Texas (Design by Pfluger Architects) The layout of the library media center (to the left) “embraces” a south facing courtyard (shown above) with a sitting area directly outside under the shade of a large tree.

6.10 Security / Loss Prevention

- **Loss Prevention Security Systems** – These are falling out of favor due to their expense and perceived ineffectiveness. If used, know that there are two basic types of theft detection systems which utilize audible and/or visual alarms. Both systems require security panels to either side of the exit that use low-frequency signals to detect security target strips adhered to the media. In the full circulation model, the security target is deactivated as part of the check-out process and reactivated when the material is returned. In the bypass model, the staff member passes the checkout material around the detection point before handing back to the patron, thus bypassing the sensors. Bypass systems are less commonly used, but are the less expensive option than full circulation systems.
- If security panels are used, any require cabling to run between the panels will need to be either buried or utilize a cover plate over the cabling that meets accessibility requirements for thresholds. If the security detection system utilizes swing bars/panels across the circulation path, sufficient clearance of 7' to the main entrance doors is required to meet accessibility.
- **Security layout of media center** – Due to the size of the space, most media centers require two means of exit by fire code. If direct access to an outside emergency route is not possible or desired, care should be taken that the second means of existing is of sufficient distance from the main entrance to serve for emergency passage. It also may need to exit into a corridor that is open after school hours or otherwise may need to be alarmed.

6.11 Technology (THIS 1998 SECTION STILL NEEDS TO BE EDITTED)

Telephone - A separate telephone line is essential to the effective operation of today's school library media center. The telephone should be accessible from the circulation and office areas.

Television Distribution - Many schools provide a well-equipped television production studio or cable or satellite distribution system in at least one school building for originating distance learning instruction. The design and installation of these systems should be completed in consultation with local cable company representatives and those who specialize in these areas in order to acquire a system that meets the needs of the individual school program. Essential items to be considered include location of the “head end” of a distribution system, the location of cable/satellite jacks and drops, and any special features, such as a media retrieval system.

Data Network - The use of networked and wireless computers has made the planning and design of data networks an integral part of library facility design. It is essential to consider the amount, type, size of data and the speed and amount of bandwidth required for transmission. The LMC should provide enough data drops and wireless access points for student access to network research, telecommunications, circulation desk, printers and online catalog stations. Additional drops and access points would include those necessary for such areas as multimedia production, office, and workrooms. Sufficient data jacks, along with both electrical outlets and phone jacks, must be installed for present, as well as future needs.

Technology Equipment - Developments in electronic communications affect many aspects of educational facilities design. Electronic communications systems via multimedia computers and video display terminals provide information from the world outside and from within the facility. The facility should be designed to maximize the potential of emerging voice, video, and data technology. SMART Boards, overhead LCD projectors, wall-mounted, short-throw LCD projectors, and sound systems all can be found in today's learning environments. A SMART Board, for example, is an interactive white board with a touch-sensitive display that connects a computer and digital projector to show the computer's image on the white board. The teacher can then control the computer's applications directly from the display on the white board, write digital notes and save work for later. An LCD projector is the modern version of the slide or overhead projector. It displays video, images or computer data.

Instructional and administrative technology specialists in the school system will work with the library media specialist and school principal to define an appropriate system for the building. Location of equipment and the size of spaces required will depend on the management requirements. Where systems are unified and the library media specialist is responsible for instructional technology, a communications distribution room will be required in the administrative area of the library media center. In some school systems general office staff may supervise parts of the system, such as administrative file servers, and separate spaces will be required.

Technology today requires enough incoming and outgoing lines and data connections to serve all staff members and offices with a minimum of disruption and delay. Telephone lines and high speed data lines, preferred over dial up connections, are particularly important in the school library media center to support administrative functions, e-mail, Internet access, fax machines, and modems. In addition to connections in the study and research area for data and online access for student use, each staff member's work station must have online, data, and voice access. With a backbone of fiber optic and/or category five wiring built into a school, most voice, video, and data needs can be met. This level of wiring allows additional hardware and software to be added as needs change.



Carroll County Public Schools LMC – (Image left) Wall-mounted short-throw projector; (Image Right) Mobile Speaker's Cart – Designed to hold all equipment necessary for presentations, include Docu-camera and laptop

Electrical Design - The electrical design of a library facility must be an integral and early part of the planning. The number of electrical outlets installed must be sufficient to meet present, as well as future needs. Ample outlets should be included in all workspace areas, the circulation area, instructional areas in which equipment will be used, and in storage, production and processing work areas. Even though outlets may not be used in certain areas at present, it is smart to install more outlets than you think you'll need. Consider special items that may require electricity, such as a security gate system or workspaces with built-in counters that need outlets above the counter. The number of outlets must be sufficient to allow equipment to be plugged directly into an outlet, rather than relying on the use of outlet strips or extension cords. Make sure that switches and electrical controls located on walls are conveniently located, but take care that they are not placed in an area where they may be hidden by shelving installed at a later date



Metal Floor Outlet Covers- If floor outlets are necessary to provide flexibility in the layout of spaces in the library media center, it is recommended that the cover be of heavy duty metal to not compromise durability and safety.

IT'S ALL ABOUT POWER!



Under Carpet Power Supplies

A threaded power track system developed by Steelcase can fit under carpeting and tie into the existing electrical service in the wall. Its one-circuit, 20-amp system is enough to power laptops and mobile devices from attachable hubs containing standard outlets (depicted here at a 30" lounge height). The 3/16" high strips ramped on either side are able to meet accessibility restrictions.



Power Integrated into Tables
Internal wiring allows them to be connected.



Hoover High School LMC, Hoover, AL
Charging station designed by the staff

Power Integrated into Seating
(Design by Bretford Furniture Co.)



SECTION 7.0 - INSPIRE IMAGES

PRIMARY SCHOOL LEVEL



Early Learning Center LMC, Des Plaines, IL (Design by Wight & Company)
EASY ACCESS: Lounge area opens up to large books on display for easy access.



Gateway Primary School LMC, Westminster, UK (Design by Demco Interiors)
RIGHT SIZE: Designed to encourage reading, the lounge area utilizes junior-sized study tables, browser boxes, brightly colored area rug, cushioned stools, and comfy chairs. In the words of the school librarian: “They love it, they can’t get enough of it... they get so excited coming in.”
ELEMENTARY SCHOOL LEVEL

The John J. Driscoll School P.S. 16 LMC Renovation, Staten Island, NY
(Design by 1100 Architects; Photo by Peter Mauss/Esto)



GRAPHICS: *Bold simple graphics helps a diverse student body connect with positive clear messages.*



FINISHES: *Seamless vinyl floor, a cork wall, colorful foam cushions and curvy laminate plywood shelving create a comfy space.*



DESIGN ELEMENT: *A serpentine bookcase - dubbed the “bookworm” - acts as the visual focal point and divides the library into separate and versatile areas. Formed of a flexible, modular system, it can be adapted to a range of layouts and conditions at different schools.*



P.S. 192 Elementary School LMC Renovation, Manhattan, NY
(Design by Gluckman Mayner Architects; Photo by Peter Mauss/Esto)



P.S. 189 Elementary School LMC Renovation, Manhattan, NY
(Design by Gluckman Mayner Architects; Photo by Peter Mauss/Esto)

UNIFYING ELEMENT: A flock of “books” fabricated from sheet metal soars beneath a digitally printed sky, turning fluorescent light fixtures into inspiring works of art in these two schools.



Samuel Coleridge-Taylor Elementary School LMC Renovation, Baltimore, MD
(Design by JRS Architects and Kirk Designs; Photos by Alain Jaramillo)

USE OF COLOR: Bright graphics, color in key places, and a special reading area are signature elements of the Harry & Jeannette Weinberg Foundation and Baltimore City Public Schools Baltimore Library Project.

MIDDLE SCHOOL LEVEL



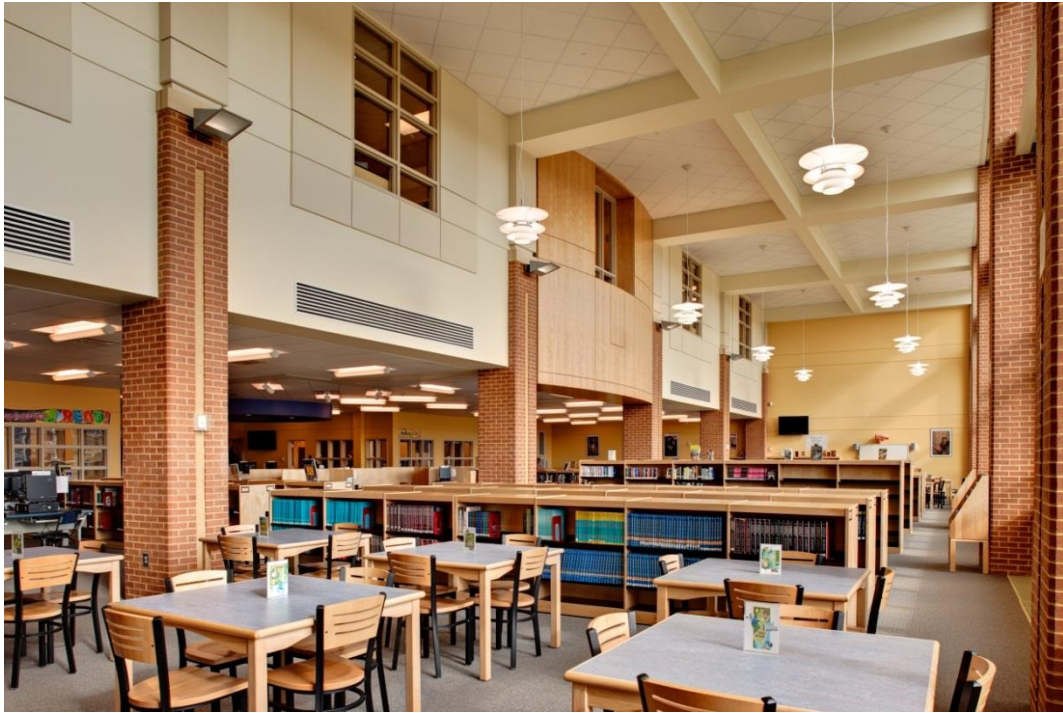
Hadley Junior High School LMC Renovation, Glen Ellyn, IL (Design by FGM Architects)
TRANSFORMATION: *BEFORE: A dark, uninviting library circa 1970s filled with tall, fixed bookshelves with limited sight lines. AFTER: An open and welcoming entry greets students into a fun, dynamic destination to gather and collaborate. All furniture (including circulation desks and bookshelves) is mobile, which allows maximum flexibility and reconfiguration to support multiple uses of the space, including conversion into a meeting seminar area to accommodate 100 people.*



Deer Path Middle School "The Cube"; Lake Forest, Illinois (Design by Perkins+Will)

Instead of providing a traditional library media center, students, staff and administrators set out to develop the ideal learning environment to serve the three Cs – Creating, Collaborating and Communicating – thus nicknamed "The Cube." It includes a "genius bar" where students can get technology help, a green room for recording and filming movie projects, large monitors for global video conferencing, and movable bookshelves and seating.

HIGH SCHOOL LEVEL



Belair High School LMC, Belair, MD (Design by Grimm + Parker)

To give the library media center presence, the main space was designed as a double height volume. A lower-ceiling zone is created by upper floor classroom, which receive “borrowed” natural light from the tall exterior library windows.

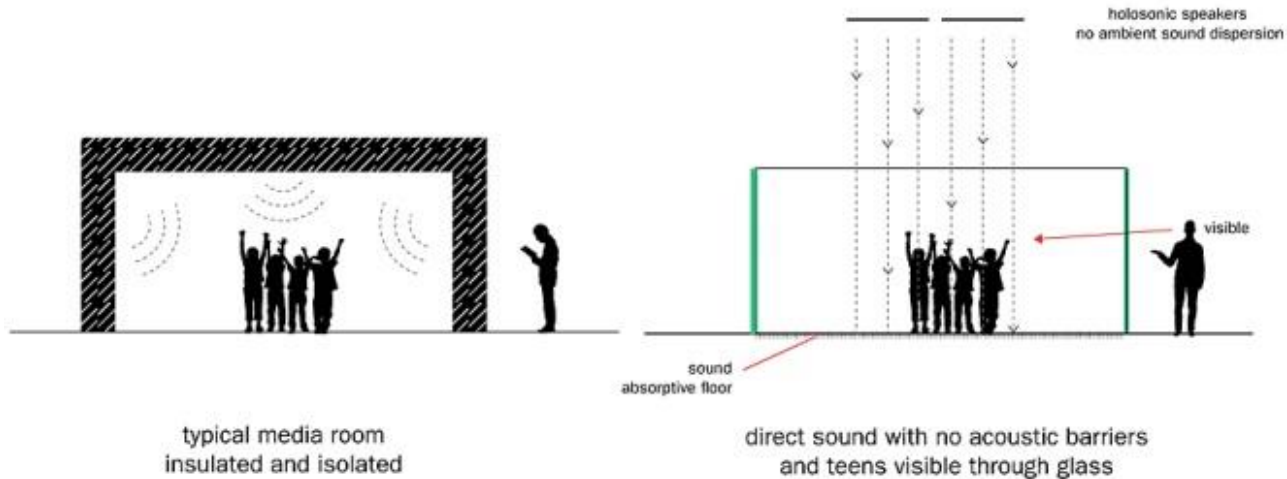


Dover High School LMC, Dover, DE (Design by Hord Coplan Macht)

Similar use of ceiling height to create different zones of library functions.

Hamilton Grange Teen Center, New York, NY (Design by: Rice+Lipka Architects)

Located in the third floor of Harlem’s branch library, this teen space challenged library norms and provides an open, technology-rich environment to attract and engage neighborhood youth. Conceived as a single, light-filled space with multiple zones that foster small group interaction – a 20’ diameter “Media Vitrine” at one end, an X-Bar computer zone, low shelving in the middle, an L-bracket lounge that rolls away for presentations, and tuck-away bleachers at the other end.



The “Media Vitrine” uses four Holosonic speakers to produce a vertical column of short wavelength sound that is contained within the open-top glass enclosure. Audio perceived as very loud inside are barely audible just outside the cylinder. Counter to the notion that multimedia spaces must be hyper-isolated, the glazed enclosure of the “Media Vitrine” becomes a performative piece that allows for the teens within to be monitored easily.



View of the 20’ diameter “Media Vitrine” from inside the performance space.

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South Carolina Study (2014) - The Washington State study supports findings from 24 earlier state studies conducted over a number of years, including a recent South Carolina study: *How Libraries Transform Schools by Contributing to Student Success: Evidence Linking South Carolina School Libraries and PASS & HSAP Results*, which finds that:

- **Student academic performance and school library characteristics are positively associated.** The findings “are consistent with previous available-data research in revealing associations between the academic performance of students and a variety of school library characteristics: library staffing, librarian teaching activities, library expenditures (both total and per student), circulation of library materials (both total and per student), collection size (both print and E-book), and library visits by groups. Generally, these relationships... were in a predictably positive direction and statistically significant, indicating that demonstrated differences are unlikely to have been produced by chance alone.” (p.78)

Pennsylvania Study (2012) - The study *How Pennsylvania School Libraries Pay Off: Investments in Student Achievement and Academic Standards* adds to the evidence that all K–12 students deserve quality school library programs with full-time certified staff. It finds that:

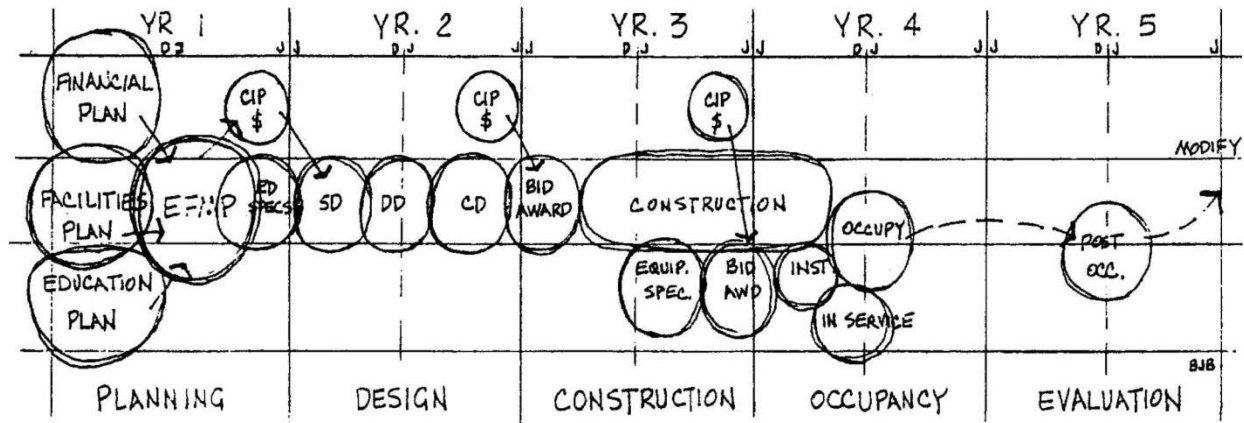
- **Students are more likely to succeed when they have access to library programs that are well-staffed, well-funded, technologically well-equipped, and appropriately stocked. The neediest learners may benefit the most from trained librarians and quality library programs.** “When students with and without access to various library resources are compared, the following statistically significant relationships are revealed: Consistently, for all 12 library measures, students with access to these resources—a better-staffed, funded, equipped, and stocked, and more accessible school library—are more likely to score ‘Advanced’ and less likely to score ‘Below Basic’ on the PSSA Reading and Writing tests.” (Executive Summary p. ii)

Baltimore Library Project Report (2013) - *School Library Impact Studies: A Review of Findings and Guide to Sources*, prepared for The Harry & Jeanette Weinberg Foundation, summarizes current research on the impact of school libraries to better assess and develop current and future library initiatives.

- The universal findings from more than 60 studies conducted in 22 states conclude that **schools with a well-equipped library, staffed by a full-time, certified librarian and appropriate support staff contribute significantly to gains in student learning.**
- **All aspects of literacy improve when children have access to books.** Access to books not only fosters an early love of learning and has a positive effect on reading achievement, but appears also to offset the impact of poverty. Children of poverty perform poorly on reading tests because they have very little access to books at home and in their communities.

Montgomery County Study (2010) - The local study, *Outcome Evaluation of the Library Media Program on Information Literacy Skills*, conducted by the Montgomery County Public Schools Office of Shared Accountability, reveals that **students with better information literacy skills scores have higher academic achievement and reading scores.** This relationship was statistically significant and large enough to be of practical significance to educators for each grade level tested.

ADD CONCLUSION???



APPENDIX A2.0 - Planning & Design Process

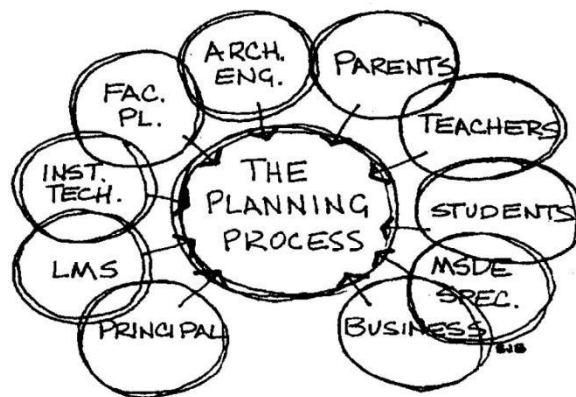
> EDIT: Condense to 4 pages max, check APG <

A1.1 Introduction

The process of planning, designing, constructing, occupying, and modifying schools is a continuous multi-year effort requiring the close coordination and cooperation of numerous individuals, agencies, and companies. The steps in the process for large and small projects are similar.

- **Large projects**, such as new buildings and additions, are undertaken as part of a capital improvement plan with local and state funding. They involve the school library media specialist and administrator with facilities planners, administrators, budget analysts, funding authorities, architects, engineers, construction contractors, purchasing agents, and suppliers.
- **Smaller projects**, such as rearranging equipment or installing additional technology, can be accomplished at the school or district level and are under the direction of the library media specialist, the principal, and the school board staff.

It is critical to engage your Library Media Program specialists during all phases of a project.



A1.2 Planning

- The planning phase includes determining the need, defining a scope of work, developing a preliminary budget, and identifying a funding source. Decisions on needs and scope are made within the framework of an educational facilities master plan. Once a project is approved to proceed, a Planning Committee is formed to define the parameters of the project within a given budget and timeframe for action.
- When the committee convenes, the first steps are to clarify communication channels and identify who is responsible for key decisions. The local school system facilities planner is usually responsible for coordinating the process working closely with the school principal. They ensure

that educational programs, budget constraints, and current facilities standards are incorporated into the project. The library media specialist, instructional technology specialist, teachers, students, and maintenance staff represent the future users.

- During the planning phase and the development of the educational specifications, the input of Library Media Program specialists is critical to develop the intent of the spaces and establishing benchmarks and standards to utilize for quality control during implementation. The library media specialist and library media administrator are responsible for identifying the needs of the library media center and coordinating the proposed facilities requirements with other educational programs and school needs. They write program and space equipment lists.
- The MSDE school facilities and library media specialist participate in an advisory role. They serve as resources on national trends, practices across Maryland, state-level standards, and as liaisons to other state agencies.
- Planning a media center, whether new or renovated, requires the cooperative efforts of Library Media Program specialists, central office administrators, school staff, faculty, and students, in addition to the careful involvement of outside partners and community stakeholders. In order to create the best possible learning environment for children, an effort has been made to incorporate the best ideas from existing plans and facilities as well as to anticipate future needs for educating students.

A1.3 Preliminary Programming and Pre-design (Typically 2-4 Months):

- Identify all stakeholders for project (new builds and renovations); include school library administrator in the beginning, during and after all other stakeholder input
- Establish clear design review procedures from the beginning of the project to ensure that the work of all consultants and design team members is thoroughly reviewed. These reviews take time and they should be shown in the overall project schedule.
- Recognize and define present and long-term needs. Careful review of early design team assumptions is critical because if they are questioned later in the design process, it may be too late or too expensive to change them. This is especially true of major design decisions such as structural and HVAC systems, plumbing stacks, vertical circulation, etc. ? **Feasibility Study?**
- **Analyze existing buildings, site requirements, transportation needs, finances and budget, grade structure, joint use of facilities, etc. Discuss objectives, funding, educational trends, and time schedule.** Refer to expert studies and pre-existing materials as a starting point. There are many existing experimental studies and publications that academic practitioners have pilot-studied.
- When planning learning spaces, it is important to think first in terms of the activities that need to be supported. Define the stimulation factors of the space. For example: Why would students be interested in being here other than the function of the space? Cool furniture? Availability of coffee and snacks? Being able to see outside and have access to natural light?

A1.4 Educational Specifications (Typically 2 – 4 Months):

- Educational specifications are a text document describing the physical requirements for the project as an outgrowth of the educational program. They must be consistent with the local educational facilities master plan and the overall project scope, capacity, and budget as approved by state and local sources. They will guide the architect through the design and construction of the project.
- They define the physical attributes of each space and include the necessary technology, equipment, furniture, and environmental qualities that support the identified activities within that space.
- Two common planning errors are misestimating the amount of space needed and proceeding with an incomplete program. The more detailed the project descriptions are and the more

comprehensive the existing conditions analysis (if a renovation), the better direction the designers can receive from the planning committee.

- In designing a facility, an architect starts with the general view of the program expressed in the educational specifications and gradually develops a very specific response to the program requirements in a set of construction documents detailing the intended facility for construction contractors.
- Each design phase builds on the previous work and reflects a dynamic process of interaction between the architect and the planning committee. The educational specifications are the foundation of design, but additional requirements are building codes, safety /environmental regulations, local/ state standards and procedures, constraints imposed by funding, and existing conditions.
- The design schedule includes reviews, coordination, and approvals by numerous parties. Delays in response or late changes can expand the design time and may sometimes delay the start of construction.

A1.5 Schematic Design (Typically 2 – 4 Months)

- During the schematic design phase, the architect develops two or more preliminary site and building design solutions, each meeting major program goals. The successful design is very often a combination of elements from several schemes. After evaluating alternatives, the planning committee selects one solution which the architect refines through a process of review and revision lasting several weeks. This is the time to make changes and explore options. The design concepts approved at schematics are difficult to change at later phases.
- The library media experts on the planning committee should monitor the schematic design closely for overall relationships between the library media program and other disciplines and for the relationships among library media center spaces. Within the spaces, there should be an indication that an appropriate layout can develop for the space and proportions provided.
- **Placement of major program spaces, adjacency and circulation**

A1.6 Design Development (Typically 2 – 4 Months)

- During the design development phase, the basic elements articulated in the schematic design phase are developed and fine-tuned. The building's shape and individual room dimensions are finalized; fixed furnishings and equipment are located. It is important to confirm the design being shown meet the program. Changes are expensive to make once construction details begin, utilities and systems are developed and the project take on greater depth and sharper focus. The specialists on the planning committee have an important role at this phase because it may be the last practical opportunity to make substantial changes in the project. It is the time to convey to the architect and engineering design team the specific furniture and equipment requirements, including type, manufacturer, electrical accessories, etc. It is also a good time to discuss finish requirements and detailed storage requirements.
- Movable equipment and furnishings, although not typically funded and installed during construction, should be shown on design development drawings to convey the architect's understanding of the layout, circulation, and other design considerations. The architect can provide large scale plans showing furniture and equipment for review by the local facilities planner, administrators, and school staff. They should be able to generate three-dimensional computerized tours of the building and library media center to help the library media specialist and other team members visualize activities that will occur in the spaces.
- At this phase the administrative and instructional technology networks in the school will be established. The school system or the architect may bring in technology consultants to write

specifications for electronic communications systems. Close and detailed design coordination between the overall instructional technology network and the library media center is critical. The school system and school-based library media specialists and instructional technology specialists will be heavily involved with the development of the technology network.

- Detailed cost estimates, energy analyses, and other data are presented and evaluated during this phase.

A1.7 Construction Documents (Typically 6 – 8 Months)

- During the construction document phase, the architect, engineers, and technical consultants produce detailed construction drawings and written specifications. All systems and elements are fully described, including demolition, site work, structural work, roofing, doors, windows, finishes, equipment, plumbing, heating and cooling, fire protection, lighting, power, and electronic communications. A detailed cost estimate is prepared.
- The architect is responsible for coordinating the work of the other consultants. On a large project there will be hundreds of pages of technical specifications and drawings.
- The school library media specialist, library media administrator, and other members of the planning committee continue to advise the facilities planner and architect on specific concerns as they arise.

A1.8 Bidding, Award, and Construction (Bidding & Award 2-3 months; Construction 18–24 months)

- When the construction documents are completed by the architect, they are reviewed and approved by professional staff in the local school system and government agencies. Locally approved documents are then reviewed at the state level. Once the bid documents are approved, the project is advertised, competitive bids are opened, and the contract is awarded according to local and state procurement policies and law. During the construction of a new facility, planning committee involvement is minimal.
- Access to the site is limited to the contractor, architect, owner's representative, and inspectors. Frequent observation by a knowledgeable owner's representative can be very important. Large school systems may have construction project managers on staff. Small systems may hire an inspector for the duration of a particularly large capital project or rely on the facilities planner and architect. The construction schedule developed by the contractor includes a reasonable time to complete the work.
- Significant changes are unusual during construction, but do sometimes occur and may require additional input from the planning committee and redesign. Construction delays due to bad weather, late shipments of critical materials, and many other unanticipated situations often develop. The local school system construction project manager is responsible for alerting the library media administrator to any proposed changes in the library media center and resolving issues which may arise.
- If the project is the renovation of an existing facility, construction- may be phased so that the school continues to operate while renovations take place. If this occurs, close coordination is necessary between the facilities planners and the school staff to vacate areas on schedule and to isolate areas under construction. If the library media center is to operate out of temporary space, parts of the collection may have to be stored at a remote location. Providing services will be an administrative and logistical challenge for the school library media specialist and administrators.
- Technology systems and networks will be provided as part of construction. The design, specification, purchase, installation, and building network testing of the technology systems are best performed during the general construction phase. The school system and school -based library

media specialists and instructional technology specialists will be heavily involved with the development of the technology network.

A1.9 Furnishings and Equipment

- Once the construction is substantially complete, furnishings and equipment are installed.
- Movable equipment and furnishings are typically excluded from the general construction contract. Some components may be installed under the general contract for construction, but frequently independently contracted vendors and school system personnel are involved as well.
- Allow a generous budget for finishes and furniture since these elements withstand the brunt of everyday use. If low-quality finishes and furniture are used, they will soon need to be replaced and the overall atmosphere of the space will suffer.
- The school principal and the library media specialist must know clearly what items are in or out of the construction contract and what the school or system must provide.
- Scheduling staff training for technology systems and other instructional hardware and software requires special attention.

A1.10 Occupancy

- Once construction is complete, the staff and students will be authorized to move into the facility. Training in operating new instructional equipment and systems must be provided to library media specialists, and teachers before the students arrive. Maintenance personnel must become familiar with any new materials or finishes and their requirements, as well as with mechanical systems.
- Moving an existing library media center collection is a major project in itself. The library media specialist must plan and carefully oversee packing, labeling, scheduling, delivery, unpacking, and placement of materials. This may require additional pay during summer moves. Before the opening day the library media specialist must anticipate the questions and needs of the students and teachers and ensure signs giving general direction, orientation, information are provided.
- Ensure that collaboration is enabled through necessary support services and technology in the space. The full range of collaboration should be supported so that users can develop, capture, present and share their ideas.

TOTAL TIME: 31–45 Months from design to finish school for new or major renovations.

NOTE: Post Occupancy Evaluation

- A post-occupancy evaluation can be an invaluable learning tool for the school system. Typically, a team visits the facility in the second year of occupancy. Using a checklist and comments from users, the team assesses the planning process and the final product. Facilities planners will use this information to revise local standards to benefit the planning of future construction projects.
- Monitor the use of the space and watch for clues from users to determine adjustments that can enhance the functionality. Examples are the way that users circulate through a space (that may be a different route than the design team anticipated), or users moving furniture from one space to another.



APPENDIX A3.0 – Special Considerations for Renovations

Essential Elements When Updating Existing Library Media Centers:

Updates to Infrastructure

- Internet access with high speed Wi-Fi for portable electronic tablets and other e-readers to access information sources, check out electronic or digitized library materials
- Power everywhere - duplex outlets on walls, furnishings, and floor
- Climate controlled environment year round

Change in Space Usage/Room Layout

- Amount and types of collections - stack and display areas
- Amount and types of reading areas
- Special spaces for collaboration
- Amount of Office/Workroom Area
- Amount of Storage Space



Marsh Middle School LMC Renovation; Dallas, Texas (Design by: WRA Architects)

With more than 70% of the student body at the poverty level and without home internet, the school took design elements from coffee shops and created a “tech cafe” outfitted with cocoa machine, high stools at a counter on existing book shelves. The library now has over 240 student visitors a day.

Types of furnishings

- Reference/checkout desk – Open, not used as barrier, more compact components, mobile
- Tables that roll away and store easily
- Work-study tables at different heights and different groups for individual and group learning
- Relaxation/comfortable seating – both singular and group arrangements



Spartanburg High School LMC Renovation; Spartanburg, South Carolina

(Design by McMillan Pazdan Smith, LLC; Photo by: Fred Martin Photography, Inc.)

FINISHES: The modernized library media center incorporates an easy-to-monitor area for collaboration and socialization that can also host events for up to 50 attendees. Adding visual interest: accent lighting, cork flooring, and wooden-veneer arched panels at raised ceilings.

Simple Steps to Take for Minor Renovations:

- **See With Fresh Eyes** - Take a step back and view the library media center with fresh eyes. Walk through the space as though for the first time. Can the areas of the library media center be easily identified from the entry point? Confirm the entry is welcoming and the circulation presents an intuitive flow.
- **Remove Barriers** - Remove visual and physical impediments to easily accessing the resources within the library media center. If tall shelves are blocking sightlines from the administrative area, find ways to consolidate materials in order to remove shelving or lower the height. Remove rooms that close off areas that would get more useful if **opened up**.
- **Unclutter** – Keep a relevant collection and purge what is in disuse unless it has historical value to the school community. Visually chaotic surroundings can intimidate users as it is not clear where should they focus their attention. Where to go and what to do should be intuitive so there is less need to visually sift through multi-written instructions about every service or rule.
- **Use Less For More Impact** - Pare down displays so the remaining have more impact. Unify displays through consistent use of materials or color.

- **Consider The Whole** - Find ways to unify furnishings and fixtures through material, color, and form. Jettison mismatched furniture and keep only the pieces in harmony with one another and the space itself.
- **Support How Humans Use Space** - People seek out natural light and views and want to be sheltered. Look for existing opportunities in the interior architecture to create reading nooks. Evaluate whether your seating takes advantage of natural light or views to the exterior, and think about whether shelves could be rotated or moved to let more daylight into the interior of the space. Organizing shelving to work with—and not against—sources of natural light and views to the exterior can create magical little spaces.
- **Zone Your Interior** - Examine the space with noise in mind: find the sources of noise and activity within each area and seek to avoid conflicts in privacy, sense of security, sociability, and acoustics. Use the building’s architecture or book shelving to create a sense of enclosure and help signal how to behave.
- **Create a Variety of Experiences** - One size does not fit all. Allow students to decide what type of social interaction they want, on a scale of none to lively collaboration. Provide variety and choice. Teens, in particular, appreciate choice in how to study or collaborate.
- **Light To Shape Space** - When lighting is done well, we tend not to notice it; when it is done poorly, it can ruin an interior. Evaluate if the space seems over lit or appears dim. Vary lighting levels for visual interest and to cue behavior. Lower light levels in the lounge area signal that this is a quiet area in the wide-open floor plan. More light over the collections encourages exploration. Pendant fixtures can help bring the scale down to wide open volumes.
- **Embrace Color** - Strategic use of color can direct attention toward an asset or draw it away from a liability. Color can help give boundaries to a space and signal how to behave. It can add warmth or liveliness or gravity. Simple use of color can direct attention to amenities, such as the enclosed study room. And, especially when applied through paint, it is easy and inexpensive to change, so you can alter your library media center interior over time. Colorful acoustic fabric panels can be installed for interest and acoustics.



APPENDIX A4.0 - Resources / References

(By Chapter/Subject Headings)

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1.2 Background

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SECTION 3.0 - EMERGING CONCEPTS AND DEVELOPING TRENDS

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APPENDIX

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APPENDIX A5.0 - Image Credits

SECTION 1.0 - INTRODUCTION

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- Page 5 (Top image): Front Entrance to P.S. 165, Brooklyn (Designed by Paul Bennett Architects, NY) <http://archleague.org/2010/05/the-library-initiative> (Image #55)
Page 7 (Top image): Portion of infographic presenting highlights from the School Library Impact Studies © 2013 Library Research Service www.lrs.org/documents/school/school_library_impact.pdf
- Page 12 (Top image): *Tree of Knowledge seating area - Dame Bradbury School, Saffron Walden, UK (Designed by Architect Chadwick Dryer Clarke; Photograph by Daniel Shearing)* www.theguardian.com/teacher-network/gallery/2015/jan/08/school-libraries-world-books-gallery
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- Page 14 (Bottom image): Phil Snowdon Elementary School LMC, Cheney, Washington (Design by NACI Architecture; Photo by Benjamin Benschneider)
- Page 15 (Top image): Madison Central Library Makerspace, Madison, WI (Design by MSR Architects; Photo by Lara Swimmer)
- Page 15 (Bottom image): Sir Michael Cobham Library, Bournemouth, England (Design by ???)
- Page 16 (Top image): Flora Singer Elementary School LMC, Silver Spring, MD (Design by Grimm + Parker)
- Page 16 (Bottom image): Logo from *The Library Initiative*
- Page 21 (Top image): Sioux Center Middle & High School LMC, Sioux Center, Indiana (Design by DEMCO Interiors) www.demcointeriors.com/project/sioux-center-middle-and-high-school-ia-2
- Page 22 (Top image): Glenallan Elementary First Floor Plan, Silver Spring, MD (Design by WMCPRP)
- Page 22 Holly Hall Elementary First Floor Plan, Elkton, MD (Design by SHW)
- Page 23 Blacksburg High School, Blacksburg, Virginia (Design by Stantec Architecture)
- Page 23 Madison College, Truax Campus, WI (Design by Demco Interiors)
- Page 23 Red Pump Elementary School LMC, Bel Air, MD (Design by GWWO)
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