# *CCB BROWN BAG*

December 10, 2015

## Designing Library Spaces That Work
# Standard Planning Issues

Georgeann Burch & Fred Schlipf
Graduate School of Library & Information Science
University of Illinois, Champaign

# STANDARD PLANNING ISSUES

## Seating

**Decide:**
- How many classes do you need to seat at one time:  One? Two?
- What is the size of your largest class?  How can you plan for larger classes?
- Do you need to be able to seat your faculty or other groups for meetings?

**Think about:** Tables
- To avoid overcrowding, students seated at study tables require 25 square feet each. Primary size tables require about 15-20 sf per child, depending on the shape of the table. Toddler tables for pre-K need about 10 sf per child.
- The best shape for workable study tables is rectangular.  Four-person tables are at least three by five feet, with two chairs on each of the five-foot sides.  Avoid square or round study tables.
- To test whether tables will work, draw a table top and use dotted lines for each student's work space.  Remember that people don't work well on pie-shaped spaces.  If you have round tables, any book or other item pushed to one side falls on the floor.

|               The Good               |               The Bad               |               The Ugly               |

- Tables should have thin tops, not aprons (the vertical boards below table tops).
- Avoid horizontal beams connecting legs, which will make it impossible for students to rearrange chairs to provide extra seats at a table for group work.
- Tables need to be far enough apart so that people can easily walk between them when all the chairs are occupied.  See the sample building program for square footage allowances.
- If tables are next to book shelving, the unoccupied sides of the tables should always face the shelving.  Otherwise, people seated at tables block access to the shelving.
- If you have major space problems or need to rearrange things regularly, you may be able to use tables and shelving on casters.  Neither are a good substitute for enough space.
    - The best movable tables now come with locking casters and with tops that flip up vertically so the tables can be nested for storage.
    - Be careful of stability of bookcases on casters, especially with tall shelving.

**Think about:** Chairs
- Never buy a chair until you've spent at least 15 minutes sitting on it. For a school library that may be buying from 25 to 50 identical chairs, manufacturers will send a sample.
- Chairs have to be designed for institutional use. Chairs from a discount furniture place can break in a week.
- Some chairs are designed for tilting, with bases that have two planes.
- You can find stacking chairs that come with platform dollies. (Some stacking chairs have metal frames with a joint at the top. Often these joints cut into the plastic backs of the chairs they're stacked next to.)
- All chairs and stools need a minimum of four legs. Three-legged stools tip over.

**Think about:** Floor covering
- Will you need both open flooring and tables?
- If you have children sit on the floor, you need carpeted floors or an area rug.
- There are a lot of options: broadloom carpet, carpet squares, vinyl tile, strip vinyl flooring, cork (the current green vogue), etc. Choice of flooring may depend on the school's maintenance preferences.
- Carpet squares allow one to replace individual squares. To do this well, the squares need to have patterning to help hide the joints. Pattern also hides lint. If you have a family of carpet squares in similar colors, a replaced square doesn't stand out like a sore thumb.

**Think about:** Multi-level structures
- If you have multi-level reading structures, make them out of wood, in case they turn out not to be satisfactory. To keep wooden platforms from echoing, glue Homasote to the *undersides* of the platforms. Avoid curved platforms because they are impossible to carpet. Multi-level risers can be carpeted with durable padding.
- Multi-level reading structures are not accessible to users with disabilities, so libraries need to plan adjacent floor space.
- Beware of designing story pits set below floor level. Falling into an unexpected story pit is not a happy experience. But predictable.

# Shelving

**Decide:**
- What is more important: aesthetics or usefulness?
- How often will your shelving be replaced? A basic rule is that there is no really good cheap shelving.

**Think about:** Type of shelving
- The most practical library shelving is made of steel and called "cantilever" shelving because the individual shelves hook onto a central steel column.
- When you are comparing shelving, remember that the thickness of steel is described by "gauges," and the thicker the steel the smaller the gauge number. If the manufacturer won't tell you the gauge of the steel, try another company.

- One advantage of cantilever shelving is that entire ranges of connected units loaded with books can be picked up and moved by companies with hydraulic stack lifters.
- Cantilever style steel shelving is available with steel end panels, but many libraries have wooden end panels custom-made.
- To be moved, wooden shelving, by contrast, usually has to be unloaded, completely dismantled, then reassembled and reloaded in another location. Since shelving is usually located on top of carpets, recarpeting a library with wooden shelving is a dismal experience.
- Avoid non-cantilever shelving where shelves are supported by their ends on movable clips. If the end panels flex outward slightly, individual shelves can fall. (Some high quality non-cantilever shelving has very heavy wooden end panels separating the sections. Individual metal shelves are supported by metal posts fitted into vertical rows of holes drilled into the end panels.)

**Think about:** Size
- You will need to specify the height of the columns and the depth of the individual shelves. Most libraries use 84" (seven foot) high columns for YA and adult books, 60" (five foot) columns for older children, and 48" (four foot) high columns for younger children's books.
- Some people recommend that libraries buy 42" shelving for children's books, but it will hold only two shelves of picture books, while 48" shelving will hold three.
- For oversized books (picture books and J non-fiction)
    - 48 inch units – 3 shelves
    - 60 inch units – 4 shelves
- For standard height books (J fiction, YA, adult)
    - 60 inch units – 5 shelves
    - 84 inch units – 7 shelves (6 shelves for 700s and some 600s)
- Most steel cantilever shelving is three feet wide and two feet deep. Base shelves are 11" deep ("nominal 12") and upper shelves are either 9" or 11" deep ("nominal 10" and "nominal 12"). Shallower shelves are available but usually a bad idea.
- Picture books, leveled beginning readers, CDs, etc. can be stored in flip bins, allowing children to view the covers easily. It also takes somewhat more floor space per book, and it makes keeping books in perfect order more difficult.

**Think about:** How to estimate shelving needed
- Divide the collection into groups of materials that require different types of shelving.
- For each type of material, determine the number of items a shelf will hold by counting the items of each type that will fit into about 29 inches. Stop counting when you're down to 6 inches of empty shelf.
- For example: If 29 inches will hold 32 J fiction/chapter books, one <u>double-faced</u> 60-inch shelving unit with five shelves vertically (ten shelves total) will hold 320 books.

**Think about:** Other features
- In general, light, neutral colors—such as light gray or cream—tend to work best. Light colors soak up far less light, and light gray doesn't show dust. Avoid trendy

colors, which will be out of fashion during most of the life of the shelving, because steel shelving cannot be easily repainted.
- Most cantilever shelving comes with sliding wire bookends that run in tracks on the bottom edge of the shelves. They're a lot easier to work with than individual bookends, and they never fall on the floor.
- Most shelving is available with "canopies" that provide closed tops. They are good for display, but they block light.

**Think about:** Aisles
- In Illinois, the minimum legal aisle width is 36 inches, but anything that narrows the aisle width (such as edges of end panels, oblong books or ranges of shelving that are not quite parallel) leads to an illegal aisle.
- Many libraries have 42-inch aisles, but you can get by with 39-inch aisles if space is really tight.
- Cross aisles should be at least 48 inches wide.
- Never set up dead-end aisles, because students can be cornered in them.

# Circulation Desks

**Decide:**
- How can I plan for future changes to the space?
- What work needs to be done at the circulation desk?

**Think about:** Movable, modular circulation desks
- Many libraries find that they need to relocate or reconfigure desks over time. Modular construction allows sections to be removed or added.
- Some library supply firms offer service desk modules. These can work very well, but beware:
  - Interior designers or architects may want order desk modules without consulting with library staff about technical needs of modern libraries. Always stop that idea in its tracks.
  - Service desks need provisions for wire management—grommets in the desk tops and wire management troughs inside.
  - Everyday high-pressure laminates are strong enough for table tops, but sliding books back and forth all day on circulation desks soon starts wearing the patterns off the laminates. "Solid core" laminates are fine. So are plastic products like Corian, but they're more expensive.

**Think about:** Service desk height
- If you have a standing height desk, accessibility laws require that at least one section be at seated height.
- Typical desk heights are 40" for staff standing use and 30" for staff seated use.

- Some desks have been designed with raised fronts to hide stuff stored on the desk. In general, these cause serious problems with staff oversight of libraries and staff movements. Do not order them.

**Think about:** Book return & toe kicks
- It's handy to have a book return slot located at the end of the desk that students pass as they enter the library.  Slots need to be located in standing-height desk segments (40") in order to leave room beneath for receiving bins on casters.
- Desks need toe kicks—indentations in the fronts that allow users to stand close to the desk.  You will notice if you DON'T have them.

**Think about:** Work counter
- If you need a work counter behind the desk, remember staff need to sit behind the counter facing the library—not facing the wall with their backs to the students.

# Staff Workrooms

**Decide:**
- What activities will take place in the workroom?
- What "stuff" will need to be on the floor in there?

**Think about**:
- All libraries need some place where staff can work away from the public area of the library, talk confidentially with people, store equipment, etc.
- Library staff workrooms need to be larger than outsiders might expect because libraries have so much stuff.  When you're planning an office, think about all the objects you need in that space.
- Sinks are wonderful, as much for cleaning oneself up after dealing with infected children as for doing more common tech services and maintenance tasks.
- Furniture is more flexible than built-in counters.

# Storage

**Decide**:
- Take an inventory of all things you store now.
- Will you continue to store the same items?
- Will you be storing more or fewer items?

**Think about:**
- Storage needs of school libraries vary widely, but if you don't plan a spot for *everything*, you will end up with rows of book carts or computer carts or something-carts lining the walls of your library.

- For example, where will you store your seasonal decorations? Boxes of puppets? Posters or flat wall decorations?
- Traditional map cases have drawers of various dimension, usually about five drawers per stacking unit.  The durable ones are enameled steel and can be stacked to perhaps 20 drawers.
- One option is standing-height work counters with storage underneath for flat items.  Flat drawers or shelves for posters and other flimsy items, and vertical slots for items that are stiff enough to stand vertically.
- If you plan to have flexible space for collaborative study or makerspace learning, you may need space to store odd pieces of furniture or equipment when not in use.
- Storage closets always work better when they are wide and shallow instead of narrow and deep, so you don't have to drag things out of the front of the closet to get at things in the back.
- Very few libraries have enough storage space.

# Wiring and Lighting

**Think about:** Electrical outlets
- Libraries need electrical outlets everywhere, both on the walls and columns and in the floor.  If your designer asks where you will want to place computers, say "Everywhere."
- Consider what floor space you need for computer charging carts.
- Libraries need powerful WiFi service.

**Think about:** Lighting
- Libraries need bright, low glare, multidirectional lighting.  You need light on flat surfaces (tabletops) and on vertical surfaces (book shelves and books held vertically).
- Even lighting is important because we move stuff around all the time.
- You need light in book stack aisles.
- The best library lighting is "uplighting." Uplighting involves bouncing light off a white ceiling to reduce glare and to provide better light distribution.  This is usually done with pendant fixtures with about 70 percent of the light directed upward.
- If your school insists on troffers—flat fixtures inset in the ceiling grid—be sure they direct light to the sides as well as down.  Deep, sharp prisms in the lenses of troffers are better than flattish ones.
- A lot of libraries use pendant uplight fixtures in connected rows.  If you run the rows of fixtures perpendicularly to the stack aisles, you can relocate stacks without having to move light fixtures.
- Some technical specifications:
    - Lighting levels of 50 to 60 footcandles on both flat and vertical surfaces.  On the bottom row of books in a stack unit, light falling on the faces of the books should be at least 18 footcandles.
    - CRI (color rendering index) of 85 or better.  Any CRI below 80 should be cast into outer darkness.

- o   Good library lighting requires ten feet of ceiling clearance.
- Light fixtures to avoid:
  - o   Lights with parabolic lenses with shiny surfaces that are designed to shine all the light straight downward.
  - o   Round lights inset in the ceiling (called "recessed down lights" or "can lights") because they provide terrible light.  Never let anyone install any in your library.

# Sight Lines

**Decide:**
- Good sight lines are essential.  What areas of the library need adult supervision?

**Think about:** What to avoid…
- Libraries with balconies or on more than two levels unless you have the money to staff both levels.  Unless the library has its own elevator (an extraordinarily unlikely situation) a second level means a second entrance, which can be a major security problem.
- Libraries in two rooms *without* a glass wall or large windows between them.
- Libraries where book stacks are arranged so staff seated at the circulation desk face a wall of books rather than the ends of the aisles.  Diagonal stacks may work better, although they take up a little more space.  Stacks that radiate like spokes of a wheel are an extraordinarily bad idea.
- Libraries with unnecessary partitions, like ornamental half-walls or decorative room dividers.
- "Private" study rooms.  Study rooms need to be terrariums, with glass starting no more than a foot from the floor and at least seven feet high.  Many designers fight this necessity, so be prepared to stand your ground. Tell them "passion pits" are unacceptable.
- Entrances hidden from staff view.  There should never be a second entrance (although alarmed fire exits are a good thing, especially if you have exits with delayed egress alarms).
- Workrooms without windows, making it impossible for staff to see what's going on in the library.  It's impressively easier to install a Venetian blind in an unneeded window than to install a needed window in a solid wall.

# Seriously Bad Ideas

A few common architectural ideas cause major problems in school libraries.  It's probably a good idea to list them in your program and to stop them the moment you see them on plans.

1. **Inflexible design.**  Libraries are always changing in ways that no one expected 10 or 15 years ago.  Few libraries 40 years ago envisioned the PC revolution.  Few libraries 20 years ago foresaw the interest in collaborative study spaces or that fact that computer labs might be replaced with tablets or laptops.  Twenty years from now,

libraries will be doing something we can't imagine today. There's nothing like lots of electrical outlets, multifunction lighting, and nothing nailed down to make the inevitable changes less painful. If a counter doesn't have running water, it doesn't need to be fastened down.

2. **Multiple entrances.** The right number of entrances to a library is exactly one. (Of course, many libraries have additional fire exits. Alarmed fire exits with delayed egress work especially well.)

3. **Skylights.** One of the Great Satans of library design. Skylights are too bright by day and too dark by night. They cause echoes. And they leak. We've seen libraries try to put window shades on skylights, and it's not a pretty sight.

4. **Windows without blinds.** Unless the windows face north. Watch out in particular for high windows.

5. **Libraries next door to seriously noisy functions**, particularly athletic and musical areas and restrooms.

6. **Combined school and public libraries.** This idea comes up every once in a while, although it's usually a spectacular disaster. In a post-Columbine world, no school administrator wants out-of-school adults wandering in and out of the building. (And that's just one of a couple of dozen good reasons not to consider the idea. If you need backup, Fred has a handout on the subject.)

7. **Weak floors.** Books are amazingly heavy. Tell the architect the minimum live load is 150 pounds per square foot. (That's why libraries end up on ground floors.) Installing a strong floor only where books will go on opening day is a dumb idea, but libraries have done it.

8. **Funny-shaped rooms.** Everything we put in libraries is rectangular. If your library is not a simple rectangle, you'll need more floor space for the same amount of furniture and you'll have more trouble keeping an eye on things. You don't want curved rooms, triangular rooms, trapezoidal rooms, L-shaped rooms, or any of that stuff.

9. **Soffits.** Soffits are lowered sections of ceilings, such as one sometimes sees above kitchen cabinets. In libraries, soffits are sometimes installed above service desks or around the edges of rooms. Soffits above service desks make it expensive to rearrange or move the desks. Soffits around the edges of rooms make the wall space beneath them dark. Some designers like to put recessed downlights into soffits, compounding the evil. If your designer thinks perimeter soffits would be really elegant, insist on a crown molding instead.