

Arch 464
ECS
Spring 2017

Name _____

Quiz #1

"Light and Art at Indian Springs School"



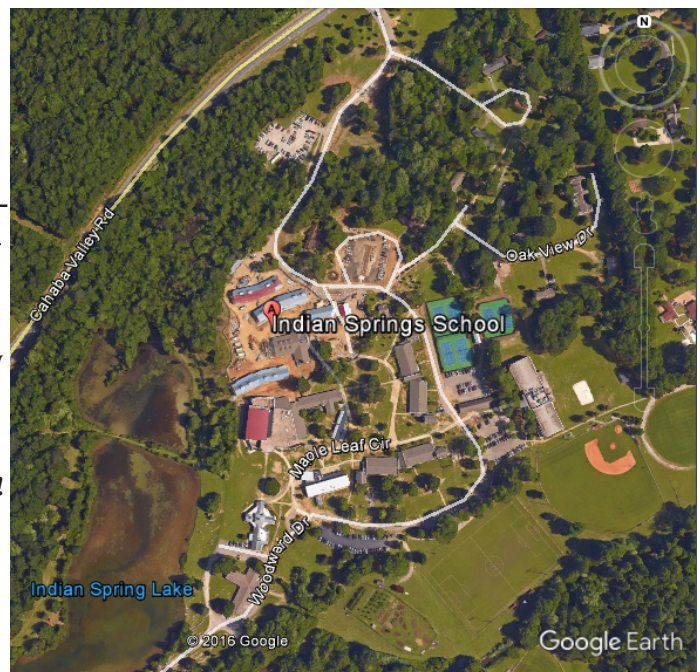
View of Classroom C, Classroom B, and the Library (from left to right).

All images: Architectural Record, January 2017

For this problem you are a new member of the Lake|Flato team focussed on daylighting and assigned to develop plans for the proposed new arts building. You'll be asked to analyze strengths and weaknesses of the existing daylighting strategies in the classrooms and to suggest appropriate strategies for the arts building.

Context. Indian Springs School is located on Indian Springs Lake in Pelham, AL, at 33° NL. It has a humid climate predominated by cloudy days throughout the year. Summers are hot/humid and winters are mild/humid.

READ THE ENTIRE QUIZ BEFORE YOU BEGIN!



Indian Springs School, Birmingham, Alabama by Lake|Flato Architects

When Harvey G. Woodward—an eccentric heir to a sizable iron fortune—envisioned a new boys school for Birmingham, Alabama, in the 1930s, he sought to create an educational institution that was on a par with its Yankee counterparts, with a progressive agenda that embraced nature and shunned two of the South’s most sacred pursuits: church and football.

As hoped, Woodward’s school, called Indian Springs, has provided its students with sturdy academic underpinnings: since opening in 1952, it has produced a long roster of accomplished alumni and gained a reputation for its rigorous programming. But in recent years, the campus’ aging cinderblock classrooms and deteriorating infrastructure were hindering it from staying on course. “Nothing about the physical campus suggested that something exceptional or worth the private school price was happening here,” says Claire Cassady, the school’s director of admissions.

Four years ago, the school turned to San Antonio firm Lake|Flato to design a master plan that would realign the school with its motto, “learning through living.” Phase One, completed in August 2015, has recaptured the school’s spirit with four new single-story, cypress-clad buildings and a refurbished library that respect the original structures’ simple forms and materials while opening the buildings to nature.

It became clear to the architects—whose research included a community charrette and an overnight stay in the dorms—that the adjacent lake would become the new focal point. On a recent visit, the rolling Alabama countryside was a blaze of autumn foliage. Along a curved drive, glimpses of the buildings’ low-pitched roofs come into view through gaps in the trees. The architects clustered the new buildings—three for classes and one for administration—around the existing library, facing the water.

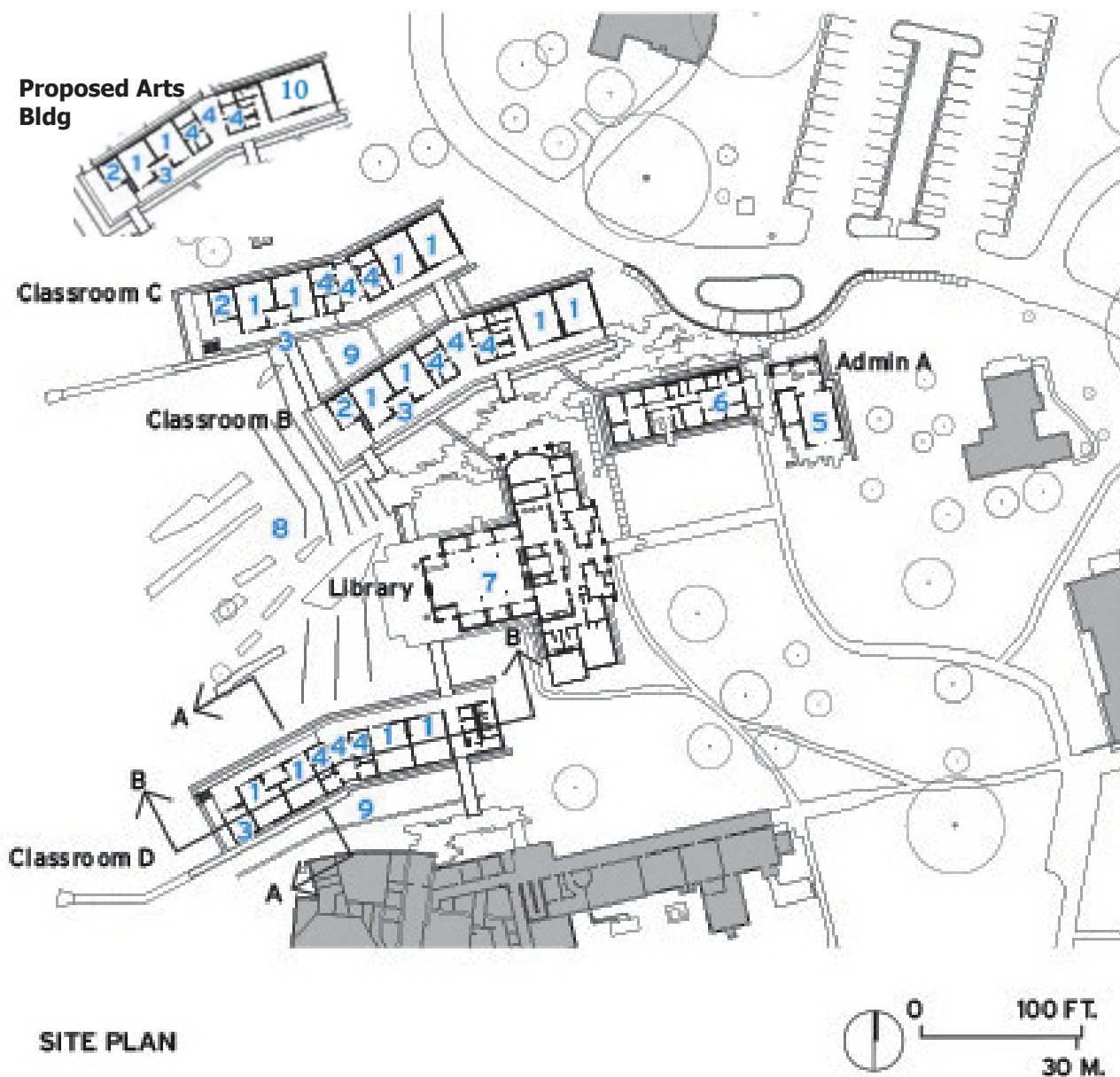
From the administration building, paths lead to the classroom facilities to the north and south. Overhangs protect exterior circulation, which runs the length of the buildings, from sun and rain. Because the campus was experiencing drainage issues, Baton Rouge-based firm CARBO Landscape Architecture devised a system of rain gardens to filter water and then channel it into the lake. A network of gangways bridge these recessed gardens and connect the classroom buildings—each include four large lecture rooms, six faculty offices, and a tiny (150 square feet) breakout space for pre-exam cramming or office hours. “My favorite part is the open layout, because you get to see everyone when walking between classes,” says senior Emma Turner. “You feel like a community.” The architects also situated a single midsize seminar room at the end of each of these bars, oriented toward the lake, like the prow of a ship.

Inside, daylight pours in from monitors, clerestories, and floor-to-ceiling windows, which also frame views of the lake and the surrounding forest. To make the classrooms as flexible as possible, there is no fixed furniture. Gone are chalkboards or whiteboards: instructors lecture using movable interactive panels. “Learning is a network now,” says Papay, recalling how his own high school children do their homework on apps. “So the buildings need to be set up to catalyze that.”

There is still work to be done at Indian Springs—once funds are raised, Lake|Flato will begin work on an arts building and a replacement dining hall—but the school is already reaping the benefits of its new facilities. The admissions office has seen a 25 percent increase in applications. And, say the architects, the new buildings—on track to achieve LEED Silver certification—are 60 percent more efficient per square foot than the old ones.

Perhaps the most meaningful feedback has come from Indian Springs’ former students, who have fond memories of trekking the school’s rugged trails or paddling the lake. “We were concerned about messing this place up, because it has a soul,” says Libby Pantazis, the school’s board chair. “But alums come back and say, ‘This is what the school has always meant to me. You got it.’”

—*Anna Fixsen, January 1, 2017*



- | | |
|-----------------|-----------------------|
| 1 CLASSROOM | 6 ADMINISTRATION |
| 2 SEMINAR ROOM | 7 LIBRARY |
| 3 BREAKOUT ROOM | 8 OUTDOOR LEARNING |
| 4 FACULTY | 9 RAIN GARDEN |
| 5 BOARD ROOM | 10 GALLERY/CRIT SPACE |

Indian Springs Schole site plan. The proposed Arts Building will echo the form of Classroom B and be sited north of Classroom C deep into the woods surrounding the open area of the site (see the Google site photo on page 1). It will contain two art classrooms for making art and one larger gallery/critique space (the size of two classrooms) as well as the faculty spaces and seminar room.

3 pts. 1. Note three age old adages or rules-of-thumb that apply to the successful daylighting of the classroom. Fully explain and illustrate why you believe that they are effective in providing a visually comfortable room.



Section perspective through classroom looking East.

Interior view of same room looking south.



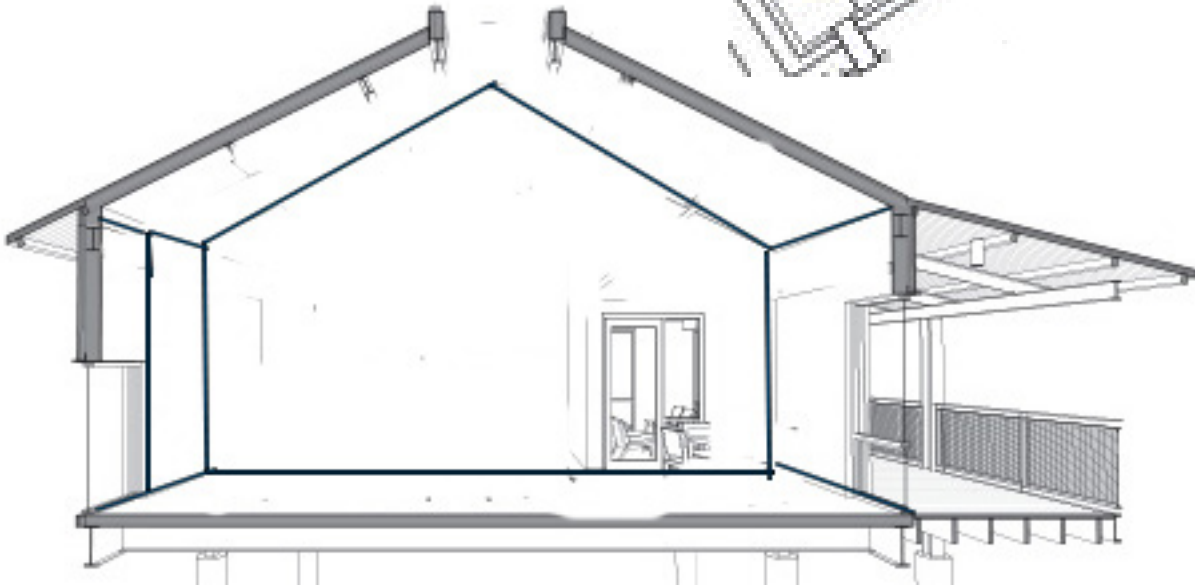
3 pts. 2. In examining the photograph below (Classrooms B & C looking East) [and the one on page 4] and comparing it with the section perspective, it's obvious that daylight monitors were modified during construction. **Draw** the modification on the section perspective below. **Explain** why it improves the daylighting in the classroom.



4 pts. 3. The design team has deemed the spaces in the building as suitable for seminars, art classrooms and faculty spaces. The easternmost room, however, requires some design work to provide the desired diffuse daylight for displaying and critiquing art. The team has decided to keep the structural design in tact by using the same apertures, but removing the dropped ceilings to create a loftier space. **Propose** an appropriate daylighting goal and **design** a new daylighting fixture for the space that attains your goal.

Proposed Arts Building floor plan and section perspective through the gallery/crit space (10) looking East.

Draw your design here:



Goal:

Design description/rationale: