

# A SCHOOL DESIGN PRIMER

## // WHAT ARE THE LESSONS LEARNED FROM NEW SCHOOLS FUNDED BY THE 2007 HISD BOND? BY MARYSCOTT HAGLE

HISD DESERVES CREDIT FOR ITS GRANULAR APPROACH TO NEW SCHOOL DESIGN. While a suburban district with ample real estate might replicate one new school template at several wide-open sites, each of Houston's distinct urban neighborhoods dictates its own particular set of design decisions. And the challenges for the district's architects extend beyond site issues. Each school community has a unique story which might be as straightforward as a cross-town move or as delicate as the blending of two historic schools with two distinct populations. Meanwhile, HISD overall is committed to building "21st Century Schools," that is, schools that embody instructional flexibility, community engagement, technological integration, and sustainability. All building projects in HISD pursue LEED certification at the highest level possible within budget and programming constraints. Architects navigating these challenges depend heavily on input from the schools and their community constituents in order to do their best work.

NOTE: Schools profiled in this article were selected by the writer and the *Cite* editor after consultation with HISD, teachers, and parents from the projects completed with 2007 bond funds. The schools represent a diversity of communities and grade levels that the school district serves. Written as an analysis of process and basic design considerations not as an independent review, this article deliberately privileges access to information and perspective over critical distance. The writer of this article is married to a principal of HarrisonKornberg Architects. Nicola Springer, a member of the *Cite* editorial committee and guest editor of this issue, is a vice president at Kirksey. Danny Marc Samuels, a past chair of the *Cite* editorial committee, and John Casbarian, former dean of the Rice School of Architecture, are principals at Taft Architects.



SINCE THE PASSAGE OF THE 2007 BOND PACKAGE THAT FUNDED CONSTRUCTION AND RENOVATION PROJECTS AT 180 SCHOOLS, HISD HAS CALLED FOR PROJECT ADVISORY TEAMS (**PATS**) TO MEET MONTHLY THROUGHOUT THE PLANNING, DESIGN, AND CONSTRUCTION OF A SCHOOL PROJECT. TEAM MEMBERS INCLUDE THE PRINCIPAL, STUDENTS (IN MIDDLE AND HIGH SCHOOL

PROJECTS), TEACHERS, PARENTS, AND COMMUNITY MEMBERS ALONG WITH ARCHITECTS AND HISD FACILITIES STAFF, AND COMMITTEE MEETINGS ARE OPEN TO ALL PARTIES. ACCORDING TO THE DISTRICT'S 12-PAGE PAT HANDBOOK, NEWLY REVISED FOR 2012: PATS "HAVE PROVEN EFFECTIVE IN ENSURING THAT SITE-SPECIFIC NEEDS ARE ADDRESSED AND INCORPORATED INTO EACH PROJECT."

## I LOCKHART ELEMENTARY

Lockhart is a STEM (Science, Technology, Engineering and Mathematics) magnet school, and the U-shaped building wraps around the science garden, “a dynamic and interactive wetlands geared toward the exploration of elementary-level life science,” according to HarrisonKornberg. The resulting protected courtyard is used regularly by classroom teachers, and ensures that all classrooms have ample natural light. High-efficiency HVAC systems, occupancy sensors, super-insulated walls, and light-colored roofs help reduce Lockhart’s carbon footprint. (Not yet certified, Lockhart expects to receive its LEED Silver designation soon.) Eye-popping colors serve to differentiate between grade-level corridors, and the building’s bright two-story lobby features a map of the solar system in the floor.

Dennis Jackson, Magnet Coordinator at Lockhart since 2008, saw the benefits of a new school building even before construction was complete: “At the district-wide Magnet Open House, parents had researched which campuses were due for renovation or reconstruction” and were directing their applications accordingly. The new Lockhart campus consolidates two smaller schools, having absorbed the old Turner Elementary, and is surrounded by a tidy neighborhood whose residents have embraced the new school, so far this year borrowing spaces in the building to host retirement parties and wakes, among other community events.

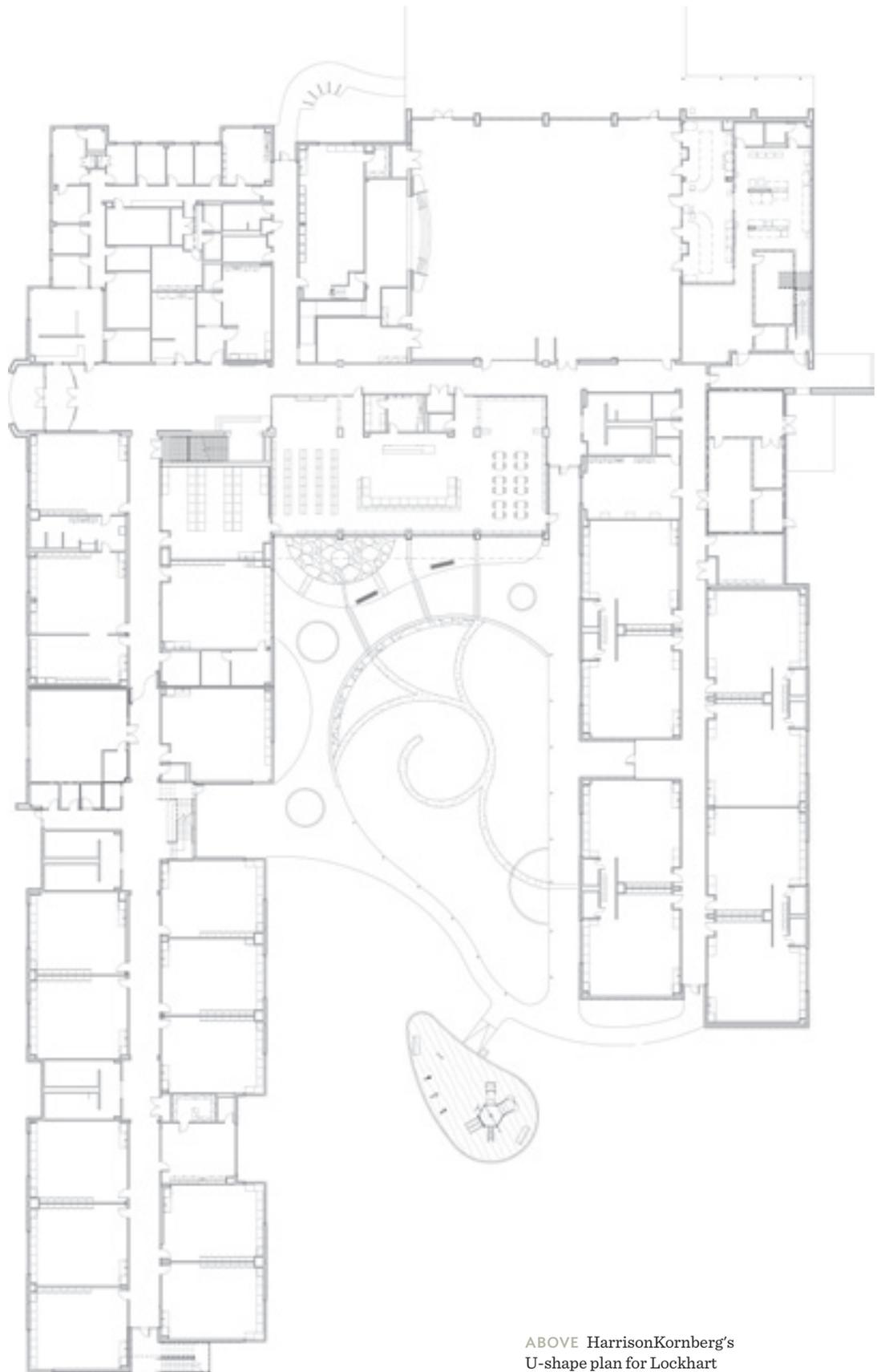


### LESSONS LEARNED »

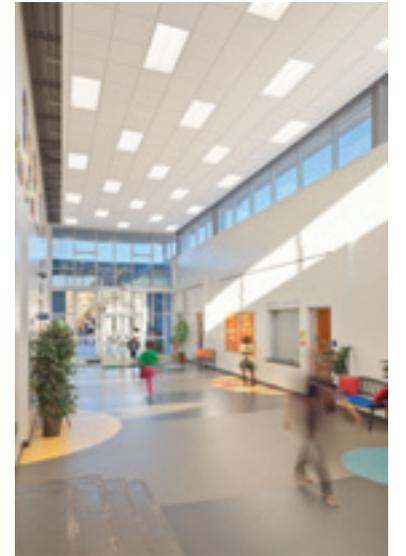
Lockhart Elementary Principal Felicia Adams took her **PAT** on tours of recently constructed schools to create a wish list for their new building, designed by HarrisonKornberg Architects and opened in Fall 2012. Some wishes were not granted – Lockhart teachers were disappointed to learn that HISD would no longer build large storage closets in classrooms like the ones they saw at Mark Twain Elementary, but the visits provided useful fodder for the committee’s early meetings with the architectural team.

Regarding the construction itself, Principal Adams notes, “None of the Smart Boards worked. I didn’t have a checklist telling me to go through the building and make sure every door latched, every light turned on.” She urges principals going through the process not to be in a hurry, and definitely not to move into a new building until everything is complete.

Value engineering forced the elimination of the school’s distinctive front canopy and exterior shades. Mixed signals from the HISD facilities department resulted in a vestibule expressed as an afterthought rather than part of the plan.



ABOVE HarrisonKornberg’s U-shape plan for Lockhart Elementary protects play areas and maximizes views to the outside.

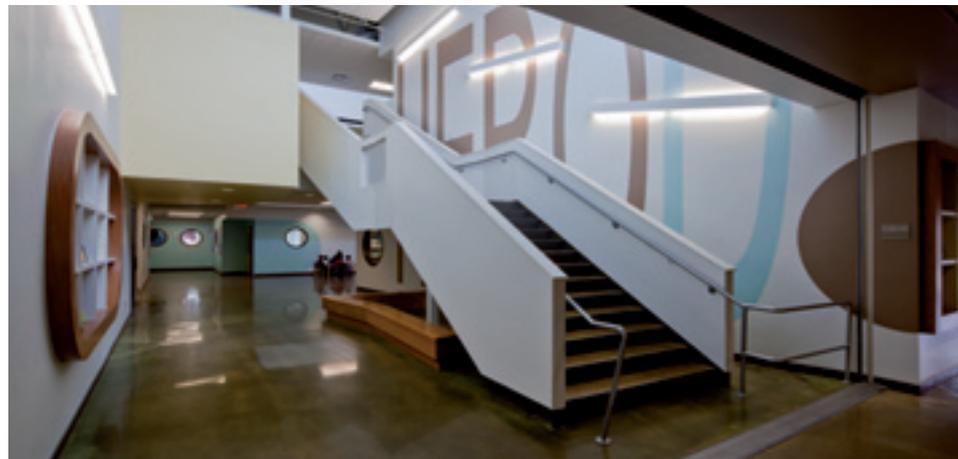


TOP Natural light from the north fills a durable, multi-use cafeteria. Exposed ducts and the bright green ceiling structure draw the eye through the indoor-outdoor transition.

ABOVE Movement and flow are possible in this colorful classroom. The desks are sprinkled through the room, not rigidly fixed in place. A generous corner window offers a focal point on the outdoors.

RIGHT The two-story lobby features clerestory windows and a map of the solar system on the floor.

PHOTOS COURTESY HARRISONKORBERG.



TOP The simple and iconic moves of the lobby's aeronautical aesthetic were inspired by the namesake of the school, Airforce Captain Gary L. Herod.

LEFT Students in the art room create under high ceilings. Bright colors, natural light, and consistent use of shapes and material create a lively space.

ABOVE Staircases provide an opportunity to create visual drama and identity. Here the aeronautical aesthetic seems to take off.

OPPOSITE Site Plan, Herod Elementary. Rain from the roof is channeled by bioswales to storage tanks. Clerestory windows allow light to penetrate the volumes, connecting the first and second floors and creating shared community spaces.

## II HEROD ELEMENTARY

“Every child deserves a new school,” says Herod Elementary principal Andrew Johnson, gravely. His 800 Pre-K through fifth grade students and their teachers seem to love their new building, designed by Kirksey Architecture and completed for the 2011-12 school year. The new Herod is an L-shaped building with school program elements expressed at different heights: a two-story bar houses the main classroom wing running east-west, while the library, multi-purpose gymnasium and cafeteria/lunch room line up as 1-1/2 story elements running north-south. Outdoor space defined by the L becomes a program element itself, and the school is flooded with natural light throughout. Principal Johnson loves this, “There’s no problem if the power goes off. We just keep on going!” Herod’s exterior expresses individual program elements with modular masonry and metal panels, and the interior features diamond-polished concrete floors, floor-to-ceiling classroom windows and the most elegant display systems ever conceived for showing off student work. This school is light years better than the old one – a 1965 flat-roofed building that had degenerated into what Johnson calls a “horrible, carcinogenic mess.” The new building is LEED Silver certified, employing low-maintenance, sustainable materials, and rainwater management that minimizes irrigation needs.



### LESSONS LEARNED »

Herod’s **Project Advisory Team** met rarely, but the school had a passionate advocate in the form of then Principal Jerri Nixon. She is largely credited for the distinctive touches in the building’s design, and she had so much fun with the process that she’s now pursuing a Master’s degree in construction management at Texas A&M. Herod’s parents also provided key support for the new school, raising more than \$30,000 to purchase shading devices for the playground equipment and hard top.

Not all teachers were happy with their built-in desks that faced the wall, and none liked the shelving hung below their white boards which required them to lean slightly to write on them, which came about as late changes after the design process.

Pre-K sinks were mounted at the wrong height, and no book drop was included in the library plan, though one has since been added to the librarian’s station. Principal Johnson urges school leaders to “become contractors, become involved, and communicate the needs of learners. We understand the learning environment.”





**ABOVE** A mural painted by students from the art department at TSU represents the Hispanic and African American communities brought together by the new school. Photos courtesy Taft Architects.

**OPPOSITE TOP** Two cylindrical forms define the campus, one of which is an exterior entrance court with a maze-like paving pattern to represent the surrounding neighborhoods.

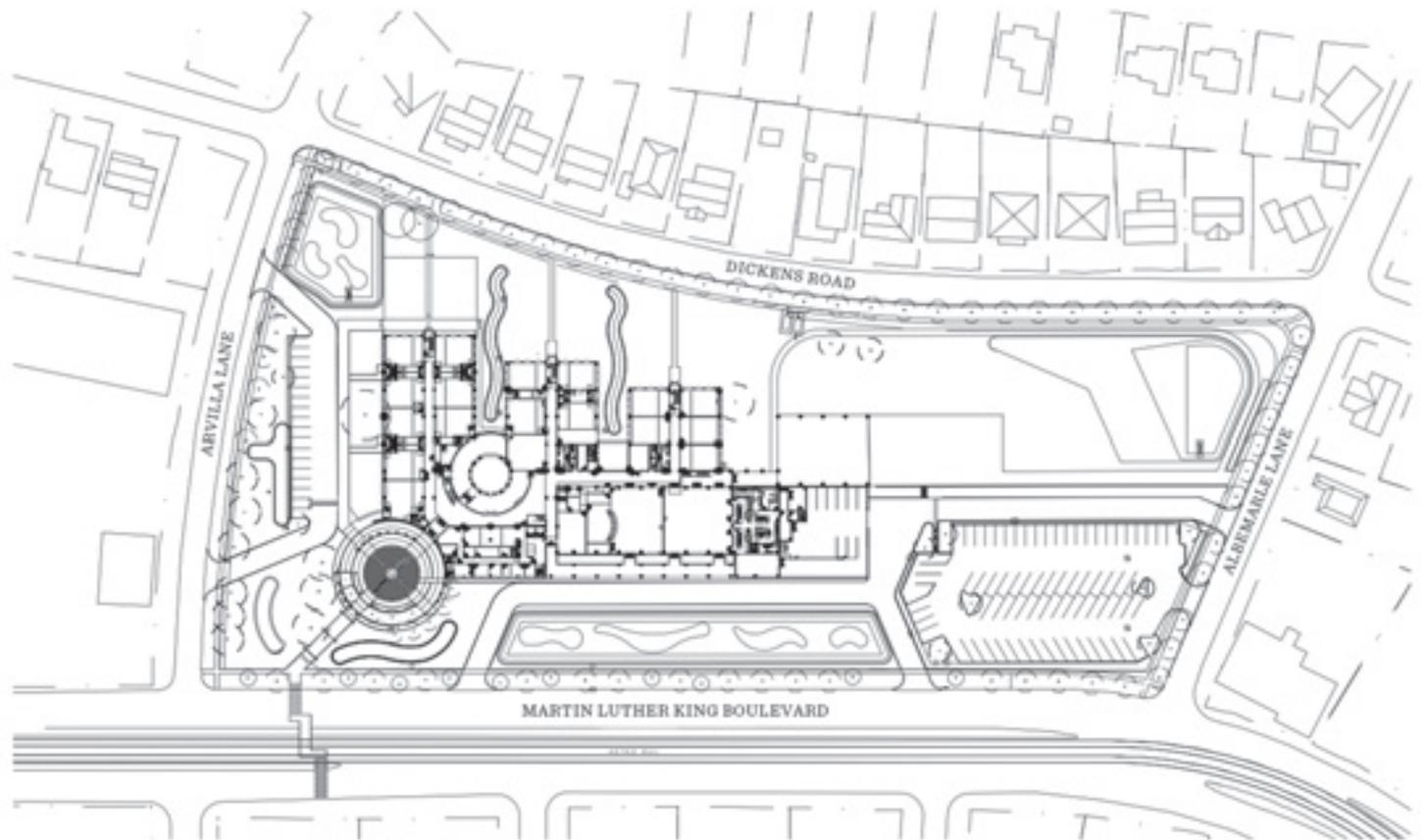
**OPPOSITE BOTTOM** The site plan shows a school carefully tuned to its site and transportation options. Admin and public functions form a protective buffer for classrooms. A coming light rail stop is integrated into the entrance sequence.

Peck Elementary occupies a high-traffic and highly visible site along METRO Rail's coming Southeast line on MLK Blvd., "on the banks of Third Ward" as described by Principal Carlotta Brown. Taft Architects' 2008 design uses the school's public functions to create a protective buffer for the main classroom pods. The new campus consolidates two historic campuses, the mostly Hispanic MacArthur Elementary and the almost entirely African-American Peck. Successfully blending the schools' two distinct communities became part of the design challenge, and Taft's Danny Samuels and John Casbarian conceived two cylindrical forms – an exterior entrance court with a maze-like paving pattern to represent the surrounding neighborhoods, and a round central library, the "heart of the school," encircled by a colorful mural depicting the roles of minorities in shaping Houston's history. Principal Brown commissioned the mural from students in the art department at Texas Southern University (TSU), and it is a point of pride for the neighborhood as well as the school. Determined to maximize community support for her campus, Mrs. Brown also named several rooms within the school for community leaders such as Texas State Senator Rodney Ellis, State Representative Alma Allen (a former Peck Principal), and long-time HISD trustee Arthur Gaines. These honorees have provided meaningful support to the school, in some cases donating personal memorabilia to be displayed on campus.



**LESSONS LEARNED »**

Principal Brown at Peck Elementary says, "The principal needs to be in all the meetings and on top of everything happening during construction." She described "fighting for all the money" that was promised to Peck in the 2007 bond package, and communicating her high expectations to every contractor and sub-contractor she met working on the building. Then after moving into their brand new school over Thanksgiving vacation in 2011, Peck students and faculty were forced to evacuate by a flash flood on January 9, 2012. Drainage work continues in the area along with METRO construction, and Mrs. Brown reports that the community treats the school with care and pride.





TOP: The first-floor plan is notable for its central courtyard and inclusion of the existing historic building on West Gray that the community must raise funds to rehabilitate.

BELOW LEFT The arcs of the entry sequence and the driveway forecourt interact to create an energetic and inviting facade. Photos courtesy RdlR Architects.

BELOW RIGHT Unlike a zoned school that draws from its immediate neighborhood, Carnegie's students commute from all corners of the city. The new central location, well served by public transit, has cut students' transit times.





The new campus at Carnegie Vanguard High School is still under construction, but it has been occupied since fall 2012, and the students' affection for their new home is palpable in the hallways. RdIR Architects (formerly Rey de La Reza Architects) began involving members of the Carnegie community in weekend charrettes to inspire the design even before a site for the school was final. Students were loud and clear on one point: "We need a courtyard." The new design actively integrates indoor and outdoor spaces, and the second story "green roof" plaza with its spectacular view of downtown has quickly become part of Carnegie's identity, judging by its frequent appearances on Facebook and Instagram. Exposed building systems and durable, low-maintenance materials add an industrial feel, and the school announces itself to the surrounding transitional neighborhood via a muscular glass and steel façade and giant initials: CVHS.

Once the Taft Street site was named, the building

committee and architects met with nearby businesses, churches, civic associations, and community centers to build support for the school, and the Carnegie parents kicked into gear, ultimately raising \$300,000 to fund the rehabilitation of the site's existing Settegast building into a fine arts complex which was not part of HISD's budget for the project. Carnegie's new building reflects such creative innovations as a parking structure originally planned for one story that grew to two when the City of Houston offered to pitch in in exchange for community access to the school's ball fields on the weekends. Principal Ramon Moss reports that the grounds are now heavily used by players of all ages and ethnicities; might this partnership be a model for future community enhancements as HISD revs up its next round of school projects? Furthermore, the garage itself is dual-purpose: when the academic day is over and the students who park on the garage roof go home, the Carnegie tennis team takes over for practice.



### LESSONS LEARNED »

After moving into Carnegie Vanguard High School's new campus in the Fall of 2012, Instructional Coordinator Melissa Matsu devoted about 90 percent of her time those first two months to managing the ongoing construction on campus. She quickly learned how to read architectural drawings and developed relationships with all of the contractors and subs who were in and out daily, only occasionally pausing to ask herself, "Is this normal?" Now all at CVHS eagerly await the completion of the Settegast building fine arts complex so they can fully occupy the site. And as Principal Ramon Moss says, articulating the big dream for the next wave of bond-funded school projects in Houston, "We're hoping that many more students will have the opportunity to learn in a state of the art facility like we do."

**ABOVE** The roof garden at Carnegie Vanguard offers a stunning view of downtown and a reminder of the urban context of some HISD schools.