



T'S THURSDAY EVENING, and Houston's Discovery Green is all abuzz. A band performs on a stage near the center of the park, and a crowd has gathered to listen. For some, the music is the main event; for others, it is merely a soundtrack for other activities.

Groups of teens play Frisbee and football on the lawn. Office workers spend happy hour on a terrace by the pond. For kids, there are a playground and two interactive fountains, and for dogs, a fenced area where they can run around. Discovery Green includes a model boat basin that becomes an ice rink, a reading room, bocce courts, shuffleboard, and much more.

"They've managed to incorporate so many different activities in such a small area!" exclaims Lynn, a resident of Houston's Upper West End, as she watches her grandchildren play. Though Discovery Green is less than 12 acres, it has more than 25 different programmed spaces.



It also has another type of "programming." Almost every day, some sort of free event is offered here. Many days, there are two or three. Some are big events like movies, farmers' markets, and car shows, and some are smaller such as writing workshops for kids, tai chi classes, and Zumba. Last fall, the park even curated an inflatable art exhibit.

In this and other ways, Discovery Green breaks from the traditional urban park. Built and operated with predominantly private funding but open and free to the public, it's a hybrid between park, sculpture garden, and fairground with a little bit of community center thrown in. Its closest analogue is Millennium Park in downtown Chicago, but while Millennium feels more like a sculpture garden meant to draw tourists, Discovery Green is very activity based and draws mainly local families.

Discovery Green's emphasis on activation and programming (both design programming and event programming) can be traced back to community workshops run by the Project for Public Spaces (PPS). This New York-based organization has been critical of landscape architects who allow design ideas rather than social function to define their work. Hargreaves Associates is among the high-profile firms that PPS has criticized, but at Discovery Green, the two entities worked together (even if through intermediaries). Hargreaves's San Francisco office took a series of program elements developed by PPS, refined it, and created a design that connects these elements together in an unusually artful way. But how does the space work, and how does everyone feel about the final product?

Creating the Program

For years, Houston's George R. Brown Convention Center had a bad reputation. "Coming to a convention here, it felt like you were on the moon," says Guy Hagstette, president of the Discovery Green Conservancy. The facility was cut off from downtown by a wasteland of parking lots. A small linear green space had been created on private land to make the convention center feel more connected, but the green space was more like a mowed field than a park and got very little use.

When the owners of the green space, who had always planned to develop it one day, put the land up for sale in mid-2004, Houston Mayor Bill White's office moved quickly to preserve it. But local leaders' vision went beyond preserving the existing field. They imagined a park more than twice as large—incorporating two cityowned parking lots and part of an existing street.

To encourage greater public support, White pushed for an unusually fast timetable—first demanding the park be completed in two years and then settling on a more practical three-year schedule for planning, design, and construction. To speed the process along, the city worked with local business leaders and foundations to create a nonprofit called

the Discovery Green Conservancy. The conservancy would be responsible for raising funds, overseeing the park's design and construction, and then managing the park for 50 years. However, to make sure the land would remain in the public trust, the city deeded the land to a new public corporation called the Houston Downtown Park Corporation. Hagstette, an architect and urban designer with experience developing parks, was chosen to lead the conservancy. While the city contributed land and paid for the



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parking garage beneath the park, all the money necessary to construct the park itself was privately donated.

From the beginning, the city was concerned about how to activate the space. Aside from a few convention goers looking to escape after a long day of presentations, there was no built-in constituency for a park here.

Early on, the conservancy looked to New York's Bryant Park as a model. Through a major redesign, the addition of food vendors, and programming of the space (with events like afternoon piano concerts), that once-derelict space was transformed into a vibrant gathering place. But Discovery Green doesn't have the

same concentration of office workers nearby, and the conservancy knew it would take much more to make this space work. So it brought in PPS, which was involved with Bryant Park in the early 1980s.

Fred Kent, the founder of PPS, has sought to develop a new sort of professional, separate from the designer, who works with the public to program open spaces and makes sure the designer sticks with the program (see "Separating Program from Design," page 89). Working in this capacity at Discovery Green, PPS ran a series of workshops on site and in the adjacent convention center. "We do this thing called the place game," says Kent. "You go out there and have people evaluate how [a landscape] works as a 'place.' Not as a design, but from

a social point of view." Participants say what they like about a space, what sorts of things they imagine doing there, and then everybody reports back to the larger group to discuss what they came up with.

Using that public feedback, PPS creates a sketch that lays out ideas for the site's program. The group promotes an idea called "The Power of Ten," meaning that every place needs at least 10 things to do. Though PPS's definition of a "place" typically extends beyond a project's boundaries—it may involve a series of spaces and even the ice cream parlor across the street—Discovery Green's context would do little to energize the park. So PPS's diagram here was particularly program heavy.

PPS also gives its clients advice about managing a space to facilitate use. "I think people believe that design alone is going to solve the problem, but it's never that easy," says Kathy Madden, vice president of PPS. "We say at least 70 to 80 percent of its success will be the way it's managed—whether there's a kiosk, who's running the kiosk, and what they charge at events."



During the planning stages, there was concern that Discovery Green's isolated location, *left*, would deter use. However, through fixed attractions, special events, and the sheer beauty of the place, this unusual park, *opposite*, has done something once thought impossible—it is attracting families to Houston's downtown, *above*.



"There are so many [people who] don't want any commercial activity [in public spaces], and that really discourages the use of a space," says Kent. At Discovery Green, a restaurant and banquet facility, an informal café, and a weekly farmers' market not only help to energize the park, but also provide a source of rental income that helps to fund maintenance and free events beyond what the city itself could provide.

"Everyone knew raising operational funds would be a challenge," says Hagstette. It's much less sexy to donate toward the maintenance of a garden than to plant one. Early on, the city agreed to spend \$750,000 per year on maintenance, an amount it determined to be typical for a "trees and grass" park of that size. But that accounts for less than a third of the conservancy's annual budget. The other funds are raised through donations, the rental fees paid by the company that runs the two restaurants, and fees for private events that are held there.

Those private events range in size from kids' birthday parties to a Lyle Lovett concert, which drew more than 7,000 people. Any group larger than 20 planning to use the park is required to purchase a permit in advance. "We spent an unusually large amount on electrical [hookups] here, which allows them to stage events in different places," says landscape architect Jacob Petersen, a principal at Hargreaves. One space in particular—an 11,000-square-foot event lawn—was designed to accommodate a large tent adjacent to the Grove, the restaurant and banquet facility, which often caters to convention goers.

Holding private events in a park often raises controversy. Consider Discovery Green's inspiration, Bryant Park. While it's extremely successful as a social space, PPS has named Bryant Park to its Hall of Shame because for nearly a month out of the year, most of the park is covered in tents and closed to the public for New York's Fashion Week.





The number of program elements was a real challenge for the landscape architects.

But not all private uses are equal. There are many factors that contribute to the way people perceive such uses—the event's exclusivity, its duration, and how much of the park it takes up all contribute to how an event is perceived. Even though it's a little obtrusive in Kent's opinion, he says that "if the fashion show [in Bryant Park] was open to the public, it would be okay."

With these distinctions in mind, the conservancy is particularly sensitive to how it rents out spaces. "We never allow a single event to take over the entire space," says Hagstette. At least part of the park is always open to the public. They rarely rent out Jones Lawn, the largest lawn area, for private events that last longer than a day, and the fountain and playground are never available for rental.

Contextual Design

Once PPS finished its work, the conservancy began interviewing landscape architecture firms. Each of the firms was given a copy of PPS's use diagram before the interview and a list of activities the community was interested in incorporating into the site. Hagstette made it clear he wanted to maintain the essence of PPS's planning, but he was open to argument on the specifics. The diagram, after all, was not a design.

"The challenge from [the conservancy] was to make it a beautiful, green respite—a place that reflects Houston's garden heritage," says Mary Margaret Jones, FASLA, of Hargreaves Associates. Jones won over the board with her local roots. "I think it really helped that I grew up there," she says. "They knew I would know what it's like—what the climate is like and what the culture is like."

Hargreaves Associates' experience designing parks on parking garages also drew the conservancy's attention. At Discovery Green, Hargreaves Associates has beautifully integrated the underground parking structure with the park (see "Integrating Park with Parking," page 93). The space where cars enter the garage is covered with a slanted roof, which actually functions as the main seating area for a stage.

The rest of the design is organized around two major cross axes—both former streets. "There was this allée of live oaks that was already existing and that really drove a lot of the design," says George Hargreaves, FASLA. The Brown Promenade, which runs under the oak allée, is very gardenesque, with lush plantings and benches where visitors can sit in the shade and look out over the lawn. To complete the allée, which had some gaps, a few large oaks were transplanted from other sites downtown where they were slated for removal.

The Andrea and Bill White Promenade, located over an existing utility easement, is wider, more brightly lit, and more heavily activated. This is where the farmers' markets are held. Since there were no trees existing there, the landscape architects chose to plant fast-growing Mexican sycamores, which would be able to provide a significant amount of shade within 10 years.

There was some concern that allowing people to put up their own tents for markets and events would divide up the park. "Those white tents people use can really create a barrier," says Petersen. So the landscape architects designed a canopy of removable, custom shade structures with spaces between them that allow people to flow between the picnic lawn and the main lawn. Within these spaces, there are also benches where people can sit along the promenade—even when the space is in use by the market or other events.

The landscape architects paid close attention to the wind patterns on the site. Given Houston's hot, muggy summers, they realized it would be important to plant trees in a way that channels the summer breezes as much as possible rather than setting up wind blocks. The three buildings on site, which house the café, the park office, the reading room, and the banquet facility, are also sited to channel breezes. Designed by Larry Speck of PageSoutherland-Page to fit within the park's framework, the buildings are contemporary glass, wood, and steel structures, yet they incorporate verandas that recall the traditional southern porch, complete with movable seating where visitors can sit in the shade and look out over the lawn.

Local culture also informed other parts of the design. Jones chose to plant azaleas, which are found in many historic Texas gardens, along the oak allée. Wood piers in Kinder Lake reference the piers in nearby Galveston, and Texas granite is used prominently throughout the design.

The landscape architects used local and sustainably sourced materials whenever possible at Discovery Green, which was given the name "green" partially for the word's sustainable connotations. While not locally grown, most of the wood used on the terraces adjacent to the buildings is sustainably harvested ipe, and solar panels, donated by BP, provide the energy necessary to power the park office. The entire project recently achieved LEED Gold certification.

Working with the Program

The number of program elements was a real challenge for the landscape architects. "We had to sift through what worked and what didn't work," says Hargreaves. "You have to figure out how you can have two, three, or four elements overlay in the landscape."

Some ideas were dropped out. The conservancy decided it couldn't afford to construct a coffeehouse. Others were modified to fit within the greater design scheme. A suggestion to create a zip line through the space was replaced with a bar that allows kids to glide





Discovery Green mixes fixed activities such as an interactive playground, a café, and fountains, *opposite*, with special events like farmers' markets, *top*, and inflatable art displays, *below*. A model boat basin, *above*, doubles as an ice rink during the winter.





along the bottom of the children's playground. A suggestion to create a stream became the Gateway Fountain, a spray pad that children can play in. And the idea for a tree house in the oak allée was exchanged for the beautiful, but not publicly accessible, dining space on top of the banquet facility, overlooking the oaks.

So that the park would always feel that it was bursting with energy, many of the most popular activities are located in the same

area. Kids can run between the model boat basin, the Gateway Fountain, the playground, and the *Mist Tree* sculpture while their parents sit on the terrace with food from the café or picnic on the picnic lawn.

Most of these spaces are also within view of the main stage, so if there's a concert going on, everyone is a part of the action. Hargreaves Associates used the pond to create a dramatic backdrop for the stage. However, the stage is open on all four sides, so viewing is not limited to the slanted

The design is organized around two major cross axes, both former streets. The Brown Promenade took advantage of an existing oak allée to create a quiet place to sit or stroll, above. The Andrea and Bill White Promenade, right, has more active areas plugged into it.

lawn. It actually feels like a picnic shelter when there are no concerts going on.

On the other side of the park, the Wortham Foundation Gardens provide a quieter place of escape. The fountain here is designed to be soothing rather than interactive. A number of venues that generally attract fewer than 10 people, like shuffleboard courts and a putting green, are integrated into these gardens.



Separating Program from Design

SHOULD PROGRAMMING AND DESIGN BE TWO SEPARATE DISCIPLINES carved out by separate professionals? Are there certain benefits or disadvantages to this approach?

FRED KENT, PROJECT FOR PUBLIC SPACES: "You need a lot of skills to make a project work. In the beginning, you need a vision and you need a program. You don't want a design. You don't know the answer, but the community does....

"The program needs to be independent of any designer because you know as well as I do, if you have the designer do the vision, it's really only about the design. [When a separate programmer works with the community], the community then owns the program because they did it. There's this healthy tension between [the programmer and the designer] that can produce really fantastic results. It's like a check and balance."

MARY MARGARET JONES, HARGREAVES ASSOCIATES: "It depends on the designer. We always do public process up front before we have a design vision. Maybe some don't, but we do. The best designs are usually the

ones that grow out of what you hear about the program, what you hear about desired uses, and the site itself—its soils, its climate, its geomorphology—and out of those things you begin to work on the design. You also have to bring good design to the table.

"Programming is not rocket science. It should never be seen as something that's separate from design. In the best instances, it's part of the design process. There have been cases where designers have had set styles that they apply wherever they go, and those have led to failed plazas and parks, but that's not the way we work."

GEORGE HARGREAVES, HARGREAVES ASSOCIATES: "In architecture, they will do programming that's not building specific, then they set about designing a building around it. The flaw in that is you often end up with a building you can't afford. I find it very difficult to work that way.

"We actually put design as part of that process. If you put a parking lot beneath a park, that's \$30 million; it creates these problems and these opportunities. At the

same time we're trying to understand the regional landscape, trying to understand circulation flows, the microclimate. We're not only talking about program opportunities and how much they would cost, but how they would impact what we're trying to build."

BOB EURY, CENTRAL HOUSTON INC./BOARD OF DISCOVERY GREEN CONSERVANCY:
"I feel pretty strongly about having an independent program advocate.

The tension created by the two parties, the separate programmer from the designer—I think that tension is extraordinarily helpful. There are a lot of significant pieces of Discovery Green that are a direct product of the public engagement. But I sure don't want Fred [Kent] designing it either."

GUY HAGSTETTE, DISCOVERY GREEN CONSERVANCY: "I feel fortunate that we had the talents of both PPS and Hargreaves. They both brought a lot of ideas to the table. I would not go so far as to say the programmer should always be separate. The public input process prepares the client to be a better client. You can do this with the design team or a separate programmer, but you need to do this."

JACOB PETERSEN, HARGREAVES ASSOCIATES: "It appears that [programming] will be something landscape architects have to fight for to retain it in the profession."

Maconda's Grove, within the Wortham Gardens, provides a particularly interesting example of how multiple uses can be overlaid. Instead of adding a driveway for trucks to access the event lawn, the landscape architects created a small, geometric grove of loblolly pines planted in a special structural soil blend created by a local company with a top dressing of decomposed granite mulch. Within this area, alongside the truck route, there are granite-outlined bocce courts with concrete seat walls meant to catch stray balls.

How's It Working?

There is not a lot of love lost between Hargreaves Associates and PPS. Both parties emphasized they had never spoken with each other during their involvement with the park. PPS reviewed the plans through Hargreaves Associates' conceptual design, but Hagstette acted as the middleman.

So what does Kent, who has visited the site since its completion, have to say about the finished product? His opinion



The *Mist Tree* is one of two "functional" sculptures created by artist Doug Hollis for the space. Sometimes it drips water in a band along the outside. Other times, it sprays a cloud of mist.

is mixed but fairly positive. "That whole central area is spectacular," he says.

Discovery Green is definitely well used. Hundreds of people filled its spaces on a Thursday afternoon at lunchtime, and as the day wore on, even more people came. Despite the fact that it was a weekday, most of the people were not office workers, but families. "To see families like this in downtown Houston...you just didn't see it before this park opened," says Hagstette. Many came for the whole day and brought their ice chests. "You can pull up right underneath the park," noted Karl Andersen, who drove 30 miles to come to a movie night put on by the local public radio station. "So if you have picnic supplies or lawn chairs, you don't need to worry about finding a space and dragging the stuff out."

Of course Kent has some criticism as well. "Hargreaves has this branding that keeps getting perpetuated—these mounds,"



Custom Playground Celebrates Flyway

HE PLAYGROUND AT DISCOVERY GREEN is a custom design. Hargreaves Associates came up with the concept—celebrating a bird migration route that passes over Houston—and then worked with Play Site Architecture from Massachusetts to realize the design in a safe and code-compliant way.

The playground is hugged by a grass berm, which was existing on the site. "It provides amphitheater seating for parents to sit and watch their kids," says Jacob Petersen. Worked into the hill is an ipeclad concrete seat wall, providing another seating option.

Kids can climb on play feathers and play on gliders and a giant egg that has a little slide on it. A "nest" of nylon webbing provides an interesting lookout and has a bit of a bounce.

The playground also has some educational elements. It is decorated with cutouts of bird species that fly over Houston, and squiggly rails run along the bottom of the playground. "If you run your arms along them, it is the exact motion a bird's wing makes when it flies,"

says Petersen. Not many kids had caught on to this yet, but this adult got a bit of a kick out of it, as the motion is sort of funny and awkward.

Generally the playground has been a big success with smaller children—with one exception.

Someone must have hit his or her head while crawling under one of the play feathers, since a pad has been attached with duct tape.

Like Discovery Green as a whole, the playground could also be a little bigger. As Hagstette notes, however, no one really expected so many families to show up here in this isolated part of downtown.



he says. "That angled lawn area where cars go underneath it—that should really be more active. That kind of takes up all that space."

Which raises an interesting question about park design: Should a performance space that does get heavily activated for events be active all the time? Landscape Architecture visited the site over the course of three days, and two major evening events happened during that time, a concert and a showing of the silent film Metropolis. Both times the angled lawn was packed—too full, really, to hold any more people. But there weren't many people on the lawn during the day or at night when there was no event going on. Should there be? Looking at Discovery Green's schedule, there

tends to be some sort of major event at least one night per week. Hargreaves says the grass is engineered for two major events per month. Would the grass survive if it was used much more?

The mound does make it difficult to circulate around the park without ending up on the sidewalk that runs along the park's edge. For better or worse, it's not really much of a strolling park. There aren't many good loops. But the experiences it does offer seem to make up for that.

Kent also thinks there needs to be a better connection to the hotel, and he is not particularly impressed with some of the plantings. "[PPS] gets criticized all the time because people say [we're] just interested in activities," says Kent, "but what we're saying is make it rich. That doesn't mean you can't have a quiet place with flowers, small hummingbirds, a fountain where you can be reflective, but a quiet place with just a bench and a lawn doesn't do much. Olmsted would make a path fascinating and interesting, but so much of design today is just a straight line and bosques of trees—it's just nothing. That's not a rich place for people."

In Discovery Green's first year, there have been a few adjustments, says Hagstette. "None of us anticipated the number of kids that are in the park." A puppet theater that had been incorporated into one of the buildings had to be transformed into a changing room for all the little kids playing in the fountain.

Also, although certain features officially met code, parents viewed them as a safety risk. After a number of worried mothers complained to the con-

The custom playground has a "crow's nest" created using nylon webbing, top.

Smaller children can use a giant egg with a little slide on it to play king of the hill, left.



servancy, it added handrails to the piers. And in the model boat basin, it added a net around the outside that makes it more of a challenge for kids trying to swim out to the lake or crash their boats into the wall (which had become a popular sport).

The amount of logistical and storage space has also been a challenge. "When you're activating the park, you are constantly needing stuff to coordinate that activity," says Hagstette. A dance floor, which is put on top of the stage for ballet performances, must be

dragged up from a vault in the parking garage because there is no room on the surface. The conservancy also has a larger full-time staff than originally expected, creating crowding issues in its building.

The biggest surprise for Hagstette is that the park attracts so many people, even when there aren't classes or events going on. "We thought [classes and events] would be necessary all the time," says Hagstette. "In the evening and during the week when school's in session, we need [classes and events]. But the experience of the place, and I think the beauty of the place, is a draw itself."

Regular events do help people to find out about the park, but so many of Discovery Green's

The Wortham Gardens, above, are a more passive garden space adjacent to the Grove, a restaurant and banquet facility within the park. A bosque of loblolly pines known as Maconda's Grove allows trucks to access the event lawn and provides a place to play bocce, left.



Would Discovery Green be better if it were bigger? Almost everybody has an opinion on that. "If a park has this much programming, I would like the park to be bigger," says Petersen. "It would be nice if it were 20 percent bigger." He thinks the great lawn, the play area, and the pond would all benefit from having more space. "The park is already crowded with no one living nearby," he says. "You can just imagine what it's going to be like [with more residents in the area]." The park has been spawning new construction along its edges. Since it was completed,

two large towers have been built adjacent to the space.





Integrating Park with Parking

NE OF THE MOST INTERESTING ASPECTS of the park's design is how it is integrated with the parking garage that lies beneath part of the site. "When you have an architect or engineer as prime [design consultant, he or she] might have the garage generate the park's form," says Jacob Petersen, a landscape architect with Hargreaves Associates. "Here we let the park's form generate the garage."

For example, the slanted roof over the automobile entrance is drawn out to become the viewing area for the main stage. Rather than covering the entire roof in three feet of soil, increasing the loading on the structure, the structural beams are located on top of the roof, creating deep linear pockets of soil where tree roots can grow. (The surface itself is flat.)

Hargreaves Associates worked with artist Margo Sawyer to make the garage stairways into functional sculptures (titled *Synchronicity of Color)*. Their colorful panels make them resemble Rubik's Cubes. The same sculptures also disguise utility vaults and ventilation shafts using ipe screens.

Even the location of the garage itself was influenced by the park above. The landscape architects were careful to make sure that its boundaries did not enter the drip line of the mature oak allée that makes up the Brown Promenade. Because the wall would have to run close to the drip line, a typical excavation with sloping sides would not be possible, so vertical shoring was used to hold the soil in place while the garage was built. Several hundred 18-inch-diameter holes were bored into the ground adjacent to the planned wall, filled with steel cages and concrete, and allowed to set before the hole was dug.

Finally, systems within the garage supply water for Kinder Lake. "To construct a below-grade garage in Houston requires a permanent dewatering system pumping something like 50 gallons per minute in perpetuity," says Petersen. "We're taking that water and putting it into the pond." This cuts down on the amount of water the park sends to Houston's overtaxed storm sewer system.

Outdoor movie attendee Andersen is also worried. "This park is becoming more populated," he says. "When you have an event like this [movie], I'm hoping it will still be big enough for people like us to have a space."

But grandmother Lynn leans the other way. "I'm not sure it needs to be bigger," she says. "I think if it were too big, you'd lose some of that energy."

"There's this energy to this park that is just brilliant," agrees Keith J. R. Hollingsworth, an artist who comes here often. "The fact that anyone can come out here and hang out...in the center of all this wealth—the skyscrapers, the Hilton.... This little park gives you the idea that Houston is becoming a real metropolitan city."

PROJECT CREDITS

Prime/landscape architect: Hargreaves Associates, San Francisco (George Hargreaves, FASLA, senior principal; Mary Margaret

Jones, FASLA, senior principal; Jacob Petersen, principal in charge; Lara Rose; Bernward Engelke). Architecture and mechanical engineering: PageSoutherlandPage, Houston and Austin, Texas. Early public input and site activity plan: Project for Public Spaces, New York. Local landscape architect: Lauren Griffith Associates, Houston. Water feature consultant: Dan Euser Waterarchitecture Inc., Toronto. Play consultant: Play Site Architecture, Acton, Massachusetts. Parking garage structural engineer: Walter P. Moore, Houston. Park structural engineer: Henderson + Rogers Inc., Houston. Sculptures Listening Vessels and Mist Tree: Douglas Hollis, San Francisco. Sculpture Synchronicity of Color: Margo Sawyer, Elgin, Texas. Operations and management consultant: ETM Associates, Highland Park, New Jersey. Restaurant consulting: A La Carte Food Service Consulting Group, Houston. Geotechnical engineers: Ulrich Engineers, Houston. Construction phase owner's representative: Gilbane Inc., Houston.