Heifer International, Little Rock, Arkansas: A Brownfield Revitalization Best Practice

By Christopher De Sousa and Michael Testaguzza (Dec. 2013)

SITE HISTORY

An emerging cluster of non-profit organizations is leading post-industrial urban recovery in Little Rock, Arkansas. Among the NGOs is Heifer International, a humanitarian agency with a mandate to alleviate poverty and hunger through sustainable development. As Arkansas’ first LEED Platinum certified facility, Heifer International’s head office offers a case study in sustainable building design that is catalyzing brownfield revitalization in downtown Little Rock. The emphasis on sustainability adopted by Heifer International also demonstrates the transformative benefits of pursuing a triple bottom line approach to development.

The site that now houses Heifer International's headquarters was made up of nine different properties used primarily for industrial uses, most notably as a railroad-switching yard. At the time of purchase, none of the parcels had contained active uses for some time. There were several one-story warehouse buildings on the properties, and 60% of the land was paved. Two of the parcels, the former Union Pacific Railroad (UPRR) rail yard and the former Superior Trucking Company properties, were known brownfields at the time that Heifer International purchased them. The 5.6 acre UPRR property was vacant in the mid 1990s, but had previously been used as a rail yard since before 1900. The 3.97 acre Superior Trucking Company property was used as a freight terminal from the 1940s until 2003; it was also vacant when purchased by Heifer. The remaining properties also housed industrial uses in the past, and were zoned industrial; they include the former Harbor, Best Metal, Gray, Central Transport, and Pfeifer Plumbing and Heating properties.

1 Methodological note: Information for this case study was obtained from available project reports, site visits, and structured interviews with key stakeholders (at least 4-6), including developers, planners, consultants and community representatives. For any questions, please contact Christopher De Sousa, Associate Professor, Director, School of Urban and Regional Planning, chris.desousa@ryerson.ca. Research assistance provided by Daniel Adams, Jason Tiledetzke, Laura Lynn Roedl, Elizabeth Durkin, and Kevin Duffy from the University of Wisconsin-Milwaukee, and Michael Testaguzza, Michael Hayek and Lily-Ann D’Souza from Ryerson University.

2Interview: Erik Swindle - Heifer, director of facilities management.


4Ready for Reuse Determination, 1.
Contamination at the site was limited to creosote and diesel fuel in the top few inches of soil. Additionally, there were some buried fuel tanks (which had only contained diesel fuel); there was no record of any additional contaminants. This was confirmed by soil testing, which was carried out throughout the site at different stages of development. Reese et al. noted that at 21 acres, this was the largest brownfield recovery in Arkansas at the time.

The site is located to the east of the historic downtown core of Little Rock (left), from which it is separated by Interstate 30. It was surrounded by a number of industrial uses historically, which gave way to low-rise residential neighborhoods to the east and northwest.

The location choice of Heifer was the result of a confluence of several factors, including: a great deal of reinvestment, both in the historic downtown core as well on the property south of Heifer (the Clinton Presidential Center); a strong period of growth for the non-profit company; and underuse and vacancy in the industrial core east of Interstate 30. When the site was selected, there were several positive developments occurring nearby. First, the River Market District in downtown Little Rock had recently been redeveloped and was sparking development interest in the downtown core, which had previously been struggling. Development pressure in the downtown was enhanced by several amenities already available in the area, such as numerous hotels, the Little Rock Convention and Visitor Bureau, the Historic Arkansas Museum, the Arkansas Art Center and several other interesting spaces and places. Revitalization in the downtown area likely drove up office rental rates, which was a factor in Heifer's decision to move out of several rented downtown office spaces and consolidate its operations in one building. It also helped convince Heifer to remain in the vicinity of the downtown core. In addition to the revitalization of the downtown core, positive developments were happening on the east side of interstate 30. Prior to Heifer's choice to relocate, it had just been confirmed that the Clinton Presidential Library would be located immediately south of the eventual location of the Heifer property, which significantly influenced Heifer's decision to locate on the specific site. In fact, the Clinton Foundation petitioned Heifer to purchase the adjoining property, with the goal of creating the 60-acre greenbelt that now exists along the

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8 Bryan Day - City of Little Rock - Assistant City Manager
10 Interviewee q. 19
11 Interviewee q. 19
Arkansas River. The location of the library was not coincidence either. In 1997, former President William J. Clinton consciously chose a brownfield (immediately south of the Heifer property) as the site of the proposed Clinton Presidential Center, “to spark reinvestment in the languishing downtown.” It is no coincidence that the decision of Heifer to locate in the area was made after the site of the Clinton Presidential Center was confirmed.

Another particularly significant factor that contributed to Heifer’s decision to relocate was “a strong period of growth” coupled with rapid employment expansion, which necessitated a new arrangement beyond the four office spaces Heifer was renting downtown. Instead of renting out more office space in another location, the non-profit decided it was the right time to develop its own campus. This would allow Heifer to centralize its operations and consolidate 200-plus staff scattered throughout Little Rock into one location. It would also allow for the construction of a learning pavilion for public education and outreach programs.

Such lofty goals for relocation meant that a significant parcel of land would be needed, which was readily available in the former industrial district east of interstate 30. Thus the final factor influencing Heifer’ decision to relocate on a brownfield was the availability of developable land near the Arkansas River. This developable land was in reality a corridor of underutilized properties characterized by the legacy of industrial development and decline. By the late 1990s, the industrial corridor lay vacant, presumably due to liability concerns associated with remediating and redeveloping brownfield properties. It is into this situation which Heifer entered.

**PROJECT VISION**

Heifer is an organization that strives to promote sustainability and environmental stewardship the world over, so the company chose to incorporate these same principles into the location, construction and use of its new world headquarters. The non-profit’s goal since its inception in 1944 has been to combat world hunger and poverty by providing training in environmentally sound agriculture and donating livestock in order to help poor families worldwide become self-reliant. Heifer takes this approach because it is sustainable, since the community that receives these gifts will be able to produce its own food going forward. This stands in contrast with more conventional short-term aid that comes in the form of one-off donations of food or the like.

By reusing a vacant brownfield, Heifer incorporated sustainability into the location of its new building. It chose to revitalize an existing portion of the built environment, and at the same time avoid putting further stress on Little Rock’s development services, transportation systems, and natural environment. Additionally, the building’s location with drainage into the Arkansas River meant that by transforming the site into a giant wetland sponge and containing all drainage on site, Heifer reduced a significant amount of contaminated stormwater runoff from entering the river.
Another of Heifer’s goals was to demonstrate the principles of sustainability in the design of its building. In order to develop a sustainable building, Heifer created a 15-member Smart Building Committee, whose goal was to ensure that the new headquarters would achieve a high LEED rating. This commitment to build a green building in turn helped Heifer secure aid from the U.S. Environmental Protection Agency (USEPA), as the project was dubbed a ‘Green building on Brownfields’ pilot project. This aid came in the form of technical, financial, planning, outreach, and design expertise in implementing green building techniques on brownfield sites.

The building originally planned to achieve a silver or gold LEED rating, but as the project developed, Heifer International began to realize that a LEED platinum rating was possible. Using several different building techniques, the original hope of using 35 percent less energy than a standard ASHRAE 90.1 building was increased to a goal of 55 percent, according to project architect Reese Rowland; this was achieved through various building features such as optimized day lighting, dimming controls, occupancy sensors, and innovative air circulation methods. Heifer was able to push for further energy efficiencies using the rationale that in the future it would allow more funding to be freed up from operating costs and used for promoting poverty and hunger related initiatives around the globe.

In order to realize these savings, the design team coordinated significantly with the construction team to ensure that the projected efficiencies would become reality. According to the U.S. Department of Energy, the design team held numerous meetings with the construction team, at which contractors would submit ideas regarding alternative materials that would be most efficient and locally available in order to meet LEED targets. Many of the products that came to the fore in these meetings were new to the market. In addition, the U.S. Department of Energy notes that numerous changes were made to the building after the fact to ensure that efficiencies were realized.

The last reason why Heifer wanted to produce a sustainable building was to educate the people of North America about the principles of sustainability that they teach around the world; what Anne Laidlaw of the Arkansas Building Authority calls “practicing what they preach.” As such, Heifer planned to use its new world headquarters to promote the concepts of sustainability and environmental stewardship. This was noted by Rowland, who stated that “the goal was to design a sustainable headquarters in Little Rock, Ark., that would exemplify Heifer’s mission and express their sustainable attributes for educational purposes.”

In order to meet the educational goals of the building, Heifer decided to build more than a headquarters to house its employees; a welcome pavilion featuring galleries and a shop, an educational center, and a replica ‘global village’ were also planned. As noted by the U.S. Department of Energy, there was a tremendous increase in donations,

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22 “Big Ripples,” 1.
23 “Heifer International Center; Circle of Life.”
25 Database; Heifer International Headquarters.
26 Database; Heifer International Headquarters.
27 Database; Heifer International Headquarters.
28 “Heifer International Center; Circle of Life.”
29 Anne Laidlaw - Arkansas building authority
31 “Heifer International Center; Circle of Life.”
and as a result Heifer decided to purchase two times more land than originally planned in order to expand the potential for educational exhibits. The educational center was phase two of the development project, which Heifer originally expected to begin designing five years after the completion of the headquarters. Despite this, the green elements of the building, as well as Heifer’s legacy of successful non-profit work, began attracting 50 to 60 visitors to the headquarters per day. Consequently, phase two, now called the Murphy Keller Education Center, was built much sooner than expected, with planning beginning within a year of the headquarters’ opening. This center hosts a green building tour to educate patrons about the various green building strategies and the related efficiencies and benefits in the headquarters, educational center, and natural wetlands surrounding those buildings. The education center was expected to host an average of 75,000 visitors per year.

Supplemental plans for the construction of a ‘Global Village’ (phase three of the project) remain in the works. This section of the development is meant to complement the education center by providing a real life replica of several impoverished communities to serve as an aid to be used to teach patrons about solutions to world hunger and poverty.

The cumulative effect of the educational and sustainable features of the project has been the creation of a sustainable post-industrial development that is being used as a demonstration project to promote the uptake of green building techniques on brownfield land.

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**PROJECT CHARACTERISTICS AND DEVELOPMENT**

**Project Development**

In 1997, former President William J. Clinton “consciously chose this brownfield” corridor as the site of the proposed Clinton Presidential Center, “to spark reinvestment in the languishing downtown (Little Rock).” Heifer CEO at the time, Jo Lucher, was approached by Clinton and encouraged to situate Heifer’s building in the area to create a non-profit corridor. Heifer International hired Ret Tucker, a local real estate agent, to acquire the roughly 21 acres of contiguous parcels from 9 different property owners to create the site on which Heifer’s world headquarters now sits. Two of the parcels, the former UPRR rail yard and the former Superior Trucking Company properties, were known brownfields at the time that Heifer International purchased them, and the remainder of the land was previously used for various industrial purposes.
Before design and construction could begin, the site needed to be cleaned up, and before that could be done the full extent of the contamination needed to be known. As noted by the USEPA, this process began with the site enrolling in Arkansas' Brownfields Program. This gave Heifer potential access to USEPA/ADEQ (Arkansas Department of Environmental Quality) assistance in the form of a Targeted Brownfield Assessment as well as federal liability protection under the Comprehensive Environmental Resource Conservation Liability Act (CERCLA), which provides "federal liability relief to prospective brownfields property owners who were never involved in any practices that might have contaminated the property." The ADEQ funded and provided technical assistance for the completion of the comprehensive site assessment (CSA). This funding from the ADEQ is only available to non-profits and municipalities, as noted by Clyde Rhodes of the ADEQ. The CSA was performed in order to fully determine the extent and location of the contamination, as well as the necessary actions required to protect human health and the environment. In March of 2004, the ADEQ issued a final Property Development Decision Document (PDDD) that outlined the final remedy for the UPRR and Superior Brownfields properties. A PDDD outlines all action necessary in order for a property to be declared ready for re-use.

In addition, as noted by the USEPA, "in conjunction with the CSA", (A) a "petroleum storage tank investigation" was carried out on the Gray and Pfeifer parcels and in April of 2004 and the ADEQ "approved the final cleanup and closure of the fuel tank areas." (B) "Voluntary soil investigation and cleanup activities were conducted on the Central Transport, Gray and Pfeifer portions of the site", and (C) site-wide groundwater investigation occurred with no "constituents of concern found to be above ADEQ cleanup standards".

Upon completion of all required work to the satisfaction of the ADEQ and the USEPA, on January 27, 2005 a letter was sent to Heifer acknowledging that the site was 'Ready for Reuse'. When this letter was released, the Heifer site officially became the largest reclaimed brownfield in all of Arkansas.

To meet the requirements of the PDDD, the top few inches of soil that were lightly contaminated with creosote and diesel fuel were removed. The question of what to do with the contaminated soil was solved by one of Heifer
International's main partners on the project, the City of Little Rock. The City's landfills require a layer of soil fill to cover each day's deposit of landfill. As such, the landfill took all 4,200 truckloads of Heifer's contaminated gravel, waiving the tipping fee, and used it instead of clean fill to bury garbage. This approach was "a benefit for both projects," according to an interviewee who worked on the project. The "affected areas were on high ground, so there was no need for new soil." On the Gray and Pfeifer lands, as noted above, there were "several abandoned gasoline and diesel fuel tanks, associated piping, and contaminated soils." The few buried fuel tanks were removed and disposed of in a proper manner.

Gerald Cound of Crossroads Green notes that right off the bat, the ADEQ, USEPA and Heifer worked together as partners on the project rather than having an antagonistic relationship. He notes that they met frequently, and consequently carried out work as a team. There is little doubt that this relationship was partially responsible for the quick cleanup process and the innovative methods used to carry this out. It also sets a positive precedent for future brownfield reclamation projects; developers can expect to work with rather than against regulatory bodies in Arkansas to solve problems on brownfield sites.

Project Characteristics

| Site Planning | Concentric circles  |
|              | Zoning              |
|              | City services in kind |
|              | Links with the Clinton Presidential Library |

| Building Materials | Re-use of pavement, steel, and bricks |
|                   | Local products |

| Energy Efficiency | Daylighting complemented by occupancy sensors and supplemented by T5 lamps for artificial light |
|                  | Raised Floor Air-Distribution System |
|                  | Glass wrapped stairs |

| Water Efficiency and Quality | 32,000-gallon rain water cistern |
|                             | Permeable paving system in the parking lot |
|                             | Native landscaping and wetland |

| Community and Social Aspects | Transportation |
|                             | Jobs |
|                             | Community gardens |
|                             | Education |
|                             | Public space |

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53 Interviewee
54 Interviewee
55 Ready for Reuse Determination, 2.
56 Gerald Cound - Crossroads Green - living environment design and consulting.
57 Gerald Cound - Crossroads Green - living environment design and consulting.
Site Planning

Concentric Circles - The full build-out of the site, from a plan perspective, was designed based on the metaphor of ripples in the pond, which is reflected in the "set (of) concentric circles... rippling outward from their center at a public entrance commons."58 The various rings are as follows: a pedestrian ring, the welcome center ring (phase 2), the wetland ring, the office building ring, and the vehicular traffic ring.59 This is representative of Heifer's 'passing on the gift' policy, where at least one offspring of any livestock it donates must be donated to another individual in that same village. It also represents the fact that Heifer expects that those whom they educate will go on to educate others in their respective communities.60 Coincidentally, this strategy is part of what makes Heifer's economic development model so sustainable.

Zoning - In the past, the sites which now make up the Heifer site were zoned business industrial.61 However, as noted by Bryan Day, the Assistant City Manager with the City of Little Rock, a new zone, UU-Urban use, was put in place in the mid 1990s along the riverfront. This zoning was form-based and more concerned with whether the project fit into the area.62

City services in kind - In order to develop the site as intended, several internal streets had to be closed.63 Those roads were conveyed to Heifer at no cost, and a new road servicing the site (World Avenue) was built (again at no cost to Heifer). Additionally, the City consented to running a new street car system near the site and changed local bus routes to provide better access for employees and visitors.64 These services in kind provided by the City helped entice Heifer to locate in the area.

Links with Clinton Presidential Library - As noted by Anne Laidlaw, Heifer did an excellent job linking its site with the Presidential Library via parks, trails, and common elements. She notes that this "has created the synergy between buildings"; people park at one and walk between the two, visiting both green buildings.65

Building Material

Re-use of Pavement, Steel, and Bricks - When the Heifer lands were originally acquired, there were several existing low-rise warehouse buildings, and 60% of the site was paved. Heifer had no use for these industrial buildings, and the pavement ran in contrast to its plan to create a natural wetland sponge. Rather than simply disposing of this material, Heifer made use of it. In fact, 97 percent of all existing building materials were recycled and reused at the site.66 The bricks, mortar, pavement and other rubble were crushed and reused mostly as fill for various portions of the development.67 The gravel pave system used in the parking lot was largely (90 percent) made from this product. Not all bricks were crushed. Heifer employees helped recycle some of the bricks, which were used for sidewalks and

58 "Heifer International Center; Circle of Life."
59 "Big Ripples," 1.
60 "Big Ripples," 1.
61 Reese Rowland
62 Bryan Day - City of Little Rock - Assistant City Manager
63 Reese Rowland
64 Bryan Day
65 Anne Laidlaw - Arkansas building authority
66 "Case Study, Heifer International; Passing on the Gift," 5.
a circular portion of the driveway. The steel frames of the buildings were taken to local foundries and recycled; this steel was eventually used in the new building. In the end, the savings garnered from recycling material paid for the cost of demolishing the buildings.

Local Products - The materials used for construction were chosen based on their regional availability. The aluminum and steel used in the project were made or recycled at facilities located within a few blocks of the project. As noted by Heifer International, "using local material cut down on transportation costs." Examples of local products include Arkansas limestone (used on the exterior of the building), Mississippi delta pine (used to surface the fourth floor ceiling), and locally grown soybeans and cotton (used in the production of the building's insulation, among many others).

Energy Efficiency

Depending on the source, the building has been said to use anywhere from between 52 to 55 percent less energy than a standard comparable structure. This is due to the various green infrastructure features listed below.

Daylighting, complemented by occupancy sensors and supplemented by T5 lamps for artificial light - The semi-circular east-west positioning of the building, combined with its narrow and open floor plan, allows for maximum sunlight to penetrate the building while offering views of the Arkansas River to the employees within. Creative shading techniques were implemented to keep the work spaces inside from overheating, while still allowing natural light in. The U.S. Department of Energy notes that this was done by using "vertical fins and horizontal sunshades (to) limit unwanted solar heat gain while redirecting daylight into the building's interior." Even the glass itself is specially crafted to improve the facade’s thermal properties, with "a high 68 percent visible light transmission to allow daylighting, along with a U-value of .29 and a solar heat gain coefficient of .38." In addition to all of these features,
light sensors in the building react to the amount of natural sunlight entering at any given moment and as such, artificial light is only used when needed. The new Murphy Keller Education Center also makes extensive use of daylighting and other natural features. Ninety percent of the building center is daylit, and 50 percent can be ventilated using operable windows.

**Raised Floor Air-Distribution System** - The building has a raised floor system that is comprised of steel and concrete and leaves 18 in. of separation beneath the floor. The raised floor improves ventilation because air is not recycled in the building and makes heating and cooling more efficient because of water's superior thermal capabilities and its location in the floor rather than overhead.

Glass wrapped stairs - Two of the building’s three staircases float over the wetland features rather than resting inside the building. These stairs have openings at their base as well as five stories up, which allows natural convection to pull cool air off the water; this in turn cools the space and negates the need for air conditioning.

**Water Efficiency and Quality**

32,000-gallon rainwater cistern - Heifer’s water bill is significantly less than a comparable building of its size built using standard construction methods. This is in large part because of a four–story, 32,000–gallon cistern which collects rainwater from the roof of the building. The cistern is located in the middle of the main stairwell of the building, with the stairs wrapping around the water tank. Water from the cistern is used for toilets and other gray water systems in the building, to water landscaping and to naturally cool the building. In relation to a conventional building, the Heifer headquarters uses 65 percent less potable water because of the cistern.

Native landscaping, wetland and the permeable paving system in the parking lot - Heifer wanted to build a natural wetland on the property, however, they also needed a relatively large parking lot (337 spaces). In order to overcome this obstacle they created a permeable paving system. Gravel parking spaces take up approximately 30,000 square feet of land that in a traditional parking lot would have been covered by asphalt. The gravel is permeable, unlike asphalt, and thus reduces storm water runoff. Concrete is used rather than asphalt in areas where there are higher volumes of use such as the

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79 “Building It Forward.”
80 "Case Study, Heifer International; Passing on the Gift," 5.
81 Building Green on the Arkansas River.
82 "Case Study, Heifer International; Passing on the Gift," 2. and “Heifer International Center; Circle of Life.”
83 Green Parking Lot Case Study: Heifer International Inc, 16.
84 Building Green on the Arkansas River. and "Big Ripples." and “AIA's COTE 2007 Top Ten Green Projects.”
85 “Case Study, Heifer International; Passing on the Gift,” 3.
86 Heifer International; Little Rock Ark, 1.
driveways; it is preferable to asphalt because it has less harmful chemicals. All storm water that hits the parking lot or concrete driveways is either absorbed through the gravel or directed into bioswales (three-foot deep sand filtration basins with native flora). These bioswales slow down storm water runoff and filter out harmful chemicals. Overflow is directed to a large retention basin rather than to the Arkansas River. In total, the wetland and native landscaping itself is 32,670 square feet, and can hold over 700,000 gallons of water.

The benefits of this system are numerous. First, it greatly improves water quality in the area. As noted by Luoni, "runoff from hard parking lot and roof surfaces is the single largest contributor of nonpoint source pollution in watersheds." Stormwater from the site, if built in a conventional manner, would end up in the Arkansas River. Instead, the stormwater is contained wholly on site and is purified to a degree in the bioswales by natural plants that have been selected for that purpose. This stands in contrast to traditional parking lots, where "contamination from oils, metals, and other vehicle pollutants ... are swept from parking lots during storms, creating pulses of contaminated waters into the surrounding environment." In total, this innovative wetland system will help "avoid 180 lbs of nitrogen and 260 lbs of suspended solids from entering the river over a ten year period."

Second, this system has water conservation benefits, as very little additional irrigation is required because native species were used to populate the bioswales – thus, natural rainfall events should sustain them. This practice results in the parking lot using two-thirds less water for irrigation than a conventional parking lot. The value of this is about $65,343 annually. Third, because of this innovative stormwater management system, Heifer International has not had to hook up to the City's storm water management system. The potential benefits of this system, if used as a standard for new development, are vast. If this became a standard, a great deal more development could be accommodated, with significantly reduced municipal infrastructure costs. Lastly, the system saves Heifer some capital costs as traditional civil engineering systems used to control stormwater such as pipes, curbs, gutters, and catch basins do not need to be constructed, which can help alleviate the added construction costs.

90 Heifer International; Little Rock Ark, 1.
91 Green Parking Lot Case Study: Heifer International Inc, 23.
Community and Social Aspects

Transportation - Sustainable transportation modes are supported at the Heifer site by the site's location as well as various actions Heifer has taken. The site is located near a major interstate and between the Little Rock Airport and downtown. The strategic location of the site minimizes travel time for the large number of visitors the site receives for conferences, workshops and tourism, as well as for its own employees. There are also several residential areas located nearby, within walking distance. The site is also bisected by a new bike trail connecting North Little Rock to Little Rock and is located near Little Rock's new light rail line. To supplement this, Heifer has influenced a route change to the local bus service to get better service to the site, subsidizes public transportation costs for its employees, and provides on-site bike parking. Heifer also provides six premium parking spots specifically for carpooling or hybrid vehicles and encourages participation in the company's commuting program.

Jobs - The development of the World Headquarters building allowed Heifer to consolidate all its employees in a single building, as well as add new employees (between 2006-2008, 70-80 employees came on board). Thus, a significant number of jobs were brought within walking distance of several low-income residential neighborhoods, where previously vacant, contaminated industrial land existed. As noted by Eric Swindle in 2010, the site housed 256 employees but has the capacity to hold 405. In addition, these jobs are located in a green building that produces a better environment for employees through natural lighting and innovative ventilation systems. As noted by Rowland, Heifer sees “value in the health of their employees and associates” as one of the benefits of this building.

Community Gardens - Eric Swindle notes that Heifer plans to take community gardens off site and into the local community to support local agriculture. This move is to accompany phase three of the development, the Global Village. This is to be prefaced by an "educational garden" exhibition in the new educational center.

Education - The new Murphy Keller education center is meant to teach members of the public about two topics important to Heifer: sustainable building techniques and local and global poverty and hunger reduction strategies. The goal of the education center is to “inspire people to help

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95 Erik Swindle - director of facilities management - heifer
96 Swindle, Laidlaw
99 Erik Swindle - director of facilities management - heifer
100 Erik Swindle - director of facilities management - heifer
101 “Building It Forward.”
102 Erik Swindle - director of facilities management - heifer
build a better world”. Heifer believes that educating the public about issues surrounding sustainability, hunger, and poverty is extremely important because education eventually leads to inspiration and action. Thus by educating the public on sustainable building techniques, the hope is that people will begin to demand and expect this type of construction because of its many benefits. Sustainable building is promoted via guided tours of the wetland (through raised pedestrian bridges) and the green buildings on site.

Public space - The Heifer International World Headquarters is part of a larger remaking of east Little Rock. Together with the neighboring Clinton Presidential Library, Heifer International is part of a green belt along the Arkansas River that aims to provide open green space and a natural wetlands habitat for the citizens of east Little Rock. The two complexes together total roughly 60 acres of combined green space, most of which had previously been abandoned industrial lands.

Project Financing

Costs - The total cost of phase one of the project has been estimated to range from $17.9 to $19 million. Assuming $19 million is the correct figure, the building costs approximately $189 -per-square-foot, which is the average cost of office space in Little Rock, according to an interviewee. As such, the project, even with all its green initiatives, is not seen as extravagant, which is important for an organization supported by individual donors who demand fiscal responsibility. This also shows developers that green technology does not have to be overly expensive. The building makes economic sense for Heifer. By changing the rent they would be paying to house their employees in four dispersed locations into mortgage payments, Heifer will begin realizing cost savings as early as 2010.

Financing - Funding for this specific project was in the form of traditional loans obtained by Heifer International and a capital campaign organized by Heifer International. The capital campaign was so successful that the building that was built was much larger than originally planned.

Grants and Loans - With regards to remediation of the brownfield, financial assistance was received for the soil testing that preceded construction in the form of grants from US EPA and ADEQ. This was done, according to an interviewee, because the EPA and ADEQ wanted a flagship, ready-to-reuse project to help raise awareness of brownfield potential in Polaski County. Heifer also took advantage of the revolving loan fund provided by the ADEQ, which helped pay for site remediation.

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103 Heifer Village.
104 Heifer Education and Lifelong Learning Programs, 1.
105 Heifer Village.
107 “Heifer International Center; Circle of Life.” and Buildings Database; Heifer International Headquarters.
108 “Heifer International Center; Circle of Life.”
109 Interviewee.
110 Erik Swindle - director of facilities management - heifer.
111 “Green Building News”.
112 Buildings Database; Heifer International Headquarters.
113 Buildings Database; Heifer International Headquarters.
114 Interviewee.
115 Interviewee.
Additionally, the City, which was eager to retain Heifer as an employer as well as to kick start regeneration in the east end of town, offered several services in kind, such as waiving the tipping fee at the landfill, not charging Heifer to truck the material, and conveying streets at no cost to Heifer in order to create one continuous site.

The creation of the wetlands and permeable parking lot added cost to the project beyond what it would have been for a comparably sized traditional parking lot and non-wetland landscaping. As noted by Industrial Economic Incorporated, the total initial cost of the parking lot was $2,478,322 and the annual maintenance cost is approximately $47,850. This additional cost was offset to a degree by the fact that Heifer International received some grant funding from the US EPA Office of Solid Waste and Emergency Response to develop the impervious parking lot. In addition, the creation of the permeable parking lot contributed to the functioning of the wetland, which in turn has realized several cost efficiencies which are noted below.

**Cost Savings** - The building has realized many cost savings from efficient energy and water use. This was intentionally considered by the design team. As noted by the US Department of Energy, for “any cost that would not be part of a conventional office building, the team used a payback period of seven to ten years as a baseline to determine its viability.” As noted by Altes, the building uses 43 percent less energy than a standard building of its size due to the various energy efficiency features. As noted by Eric Swindle, this results in a $1.10-$1.25 per square foot electric bill, where standard buildings in the area spend about $2.12. He also notes that Heifer’s water bill is significantly reduced; a normal building of its size typically has a water bill of about $5,000 per month whereas Heifer’s is $1,000. Heifer also uses two-thirds less water for irrigation of its parking lot landscaping than a conventional parking lot because of its natural irrigation system and use of local plants, and uses 65 percent less potable water than a conventional building.

In addition, the savings from using materials recycled from the site paid for the cost of demolishing the buildings that previously existed there. Additional cost savings were realized by using locally available materials. For example, purchasing locally made steel and aluminum reduced transportation costs.

**BENEFITS, BARRIERS, AND LESSONS LEARNED**

Heifer International’s new headquarters has set an excellent example for future brownfield projects in the Southern United States as an example of an integrative approach to brownfield redevelopment, green design and urban recovery based on the principles of sustainability.

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116 Interviewee  
117 Interviewee  
118 Heifer International New World Headquarters Case Study.  
120 Green Parking Lot Case Study: Heifer International Inc, 4.  
121 Heifer International New World Headquarters Case Study.  
122 “Heifer International Center; Circle of Life.”  
123 Erik Swindle - director of facilities management - heifer  
125 “Case Study, Heifer International; Passing on the Gift.”  
126 Heifer International New World Headquarters Case Study.
Benefits - Provides an example of a successful brownfield site

Several interviewees noted that a key benefit of the Heifer project is that it will be viewed by the development industry as an "example of how to deal with brownfield challenges... and encourage people to look at brownfields as an opportunity." The many awards the project has won have enhanced its ability to act as a role model for future developments as well as thrust to the forefront the many opportunities available through funding and technical assistance provided by U.S. EPA. The Heifer project has also been good for marketing for ADEQ process to cities within the state. That said, one interviewee noted that even though people are more aware of the opportunities, it has not translated into much action as of yet. This may point to one of the major lessons learned through this project; it would not have occurred if not for the confluence of several factors, such as the cooperation, financial and technical assistance of various state and municipal level agencies; and the presence of other catalytic projects and urban regeneration. Going forward, creating the presence of these factors, and bolstering them in certain ways that will be mentioned below, can help create the conditions necessary to foster green brownfield projects.

Lessons Learned - Ways to bolster the factors that create green design on brownfields

The cooperation, financial and technical assistance of various state and municipal level agencies was essential in the Heifer project. The positive role of the ADEQ, EPA, and the City of Little Rock was crucial in the development of a sustainable building and site. However, these agencies were dealing with a client who already wanted to build a sustainable building and as such had very little to do with the green nature of the project. In order to foster more sustainable design on brownfield sites, these agencies need to be more vocal in advocating for these types of designs.

A brownfield redevelopment can be daunting enough without considering the complications that can be added by a green building, as noted by an interviewee; this can make the idea of doing both intimidating to most developers. In order to counteract this, agencies such as the ADEQ need to put greater focus on educating potential developers by providing technical and financial assistance to brownfield projects. In addition, these agencies should begin to make their funding and assistance contingent on a certain green standard in new brownfield projects, which is currently not done. Another potential course of action for these agencies could be to provide tax credits to help finance projects at the front end that will eventually have long-term payoffs; this would allow more brownfield projects to implement green technologies into their plan, according to an interviewee.

However, it should be remembered that the collaborative and non-confrontational nature of the EPA and ADEQ was noted as one of the integral aspects of the Heifer process. Therefore, while pushing for green buildings on brownfield site, agencies must ensure that they remain non-confrontational, but rather cooperative so that the process of brownfield redevelopment is viewed in a positive light, which will eventually translate into more redevelopments.

It is also important to remember that liability remains a key issue with brownfields. The importance of liability and risk management is highlighted by the fact that several interviewees, when discussing barriers to this project from a brownfields perspective, mentioned it. In every case, the main takeaway point is that state agencies must continue to help developers manage the potential risk of liability.

The presence of other catalytic projects was also significant in Heifer's decision to locate its building on a brownfield site. It is no coincidence that the Heifer project took place during a time when much of downtown Little Rock was experiencing regeneration. As noted by the Little Rock Downtown Partnership, "Since 1996, approximately $2 billion
in investments have come into the Downtown Little Rock area." The lesson learned here is that the better the land market in an area, the more attractive brownfield redevelopment will be. This is presumably because it is worth significantly less than uncontaminated land. Unfortunately, many brownfields are not blessed with a prime location immediately adjacent to a downtown core.

Thankfully, regeneration in industrial areas can be kick started from large investments, as seen with the Presidential Center. As noted by one interviewee, "[O]nce the Presidential Library was decided, it influenced Heifer to build its headquarters and education center." Both of these catalytic projects have further influenced redevelopment of the downtown, and have turned a derelict part of the downtown into an attraction for residents and tourists alike. It may be important to consider that the early pioneers (such as the Presidential Center) are in many cases needed in order to kick start regeneration. These projects may need to be further incentivised and not held up to the same green standards as later entrants. State agencies will have more leverage with later entrants than early pioneers.

Benefits - An example of the benefits of green design

Heifer is also an excellent example of the benefits of green design that can influence the public’s mindset as well as the actions of both private businesses and public agencies. A few interviewees noted that the Heifer headquarters has brought public attention to green design. This is supported by the fact that 50 to 60 people per day would come to visit the build. Heifer has embraced and expanded its role as an exemplary green project by building the Murphy Keller Education Center, and running a green building tour. The education center was expected to see an average of 75,000 visitors per year. As education about the benefits of these types of buildings increases, so should knowledge about their benefits, and hopefully eventually the public will begin to expect and demand this type of development. One of the interviewees noted that this is a key step in promoting green design going forward and important for convincing Americans that these are real issues with solutions.

One barrier in communicating the benefits of green building occurred during the attempt to certify the Murphy Keller Education Center. As noted by an interviewee, the education center could not claim a variety of points in the LEED rating system. This was mostly because the building was to share a variety of services with the first building, such as electricity, water, heating and cooling. In essence, Heifer was “penalized for building another building on the site, they were not going to make it to LEED platinum again because of this." The result would have been a LEED Silver building instead. From a public perception point of view, this would not send a good message about the benefits of green design because it would give the impression that it was not successful and that Heifer as such was moving away from it. This barrier turned into a positive because it allowed Heifer to showcase an alternative green building ratings system – the Green Globes system. He also noted that the education center was ultimately rated 3 of a possible 4 Green Globes. The Green Globe process also proved to be more streamlined and cost effective than the LEED certification system. One reason for the high costs of LEED is that the subcontractors charge Heifer to keep data. By showcasing alternative green building rating systems, Heifer is providing developers with alternative ways to showcase the sustainable initiatives in their buildings in a manner that is most beneficial to their project. This way,
instead of chasing LEED points, developers can focus on the green initiatives that make sense for them and then find
the system that accurately reflects the degree of green infrastructure in their building.

This barrier also demonstrates that the LEED rating system is not perfect. LEED needs to continue to add flexibility to
its standards over time; something it appears as if it has been willing to do given that it is now on its third variation.133
The hope is that over time LEED will continue to refine itself in a way that makes LEED certification less cumbersome
and more accepting of innovative green projects, while at the same time maintaining its credibility.

In addition to bringing public notice to green design, the Heifer headquarters has also demonstrated the various
financial efficiencies that the business sector stands to gain by developing a green building. As noted, Heifer has
spared thousands of energy dollars that go back into their poverty programs. In addition, the improved indoor air
quality and natural lighting has increased productivity and teamwork, which can further impact a company's bottom
line. Several interviewees noted that developers now sell green design to companies on the basis of energy savings
and natural light, while using Heifer as an example of how this works.

It should be noted that one of the reasons why Heifer has experienced savings in operation costs is because it
focused on "strategies that have a 5- to 19-year payback period."134 This can be conceived of as a barrier as it
resulted in certain green initiative not occurring, such as installation of photovoltaic cells on the roof or a car charging
station in the parking lot. However, this could also be construed as a benefit. By focusing on strategies that have a 5-
to 19-year payback period, Heifer has demonstrated to the business community the multiple quick wins that can be
realized through environmental design. This appears to be the trend in the business community. One interviewee
noted that many new buildings are staying away from the ‘flashy’ green projects that look too expensive while still
achieving similar efficiency results. Numerous companies implementing quick win projects could cumulatively have a
large effect and could be the thin edge of the wedge which ultimately results in more long term green projects being
incorporated into building designs.

The Heifer project has not only influenced the business sector, it has also significantly influenced public agencies.
Many of the interviewees pointed out that Heifer has been a catalyst in green building in Little Rock. The City has
created a sustainability group and now waives permit fees if residents build energy efficient homes. The state started
a Sustainable Building Design Program in 2009 that provides cheap loans to state agencies to support energy
efficient retrofits of existing state buildings, and intends to ensure that all new state owned facilities are designed for
maximum efficiency.

Heifer was able to successfully promote green design from a financial perspective to the business community and
public agencies because the company has monitored the innovative systems it has put in place in order to better
communicate its successes. One of the interviewees highlighted the fact that many companies “want to be green but
don’t want to spend more money, and need to be educated about the potential benefits of green design to legitimize
increased expenditure”. Monitoring has helped Heifer communicate the benefits successfully.

134 “Big Ripples.”
Benigns - Changing mindsets towards green design

In addition to demonstrating the various efficiencies that the business sector stands to gain by developing a green building, the Heifer building has also begun to change the mindsets of the various parties involved in development. It can sometimes be difficult to be innovative, which can result in pushback from several sources. For example, Heifer itself was tentative about having an open concept office with glass walls rather than more traditional separated work spaces. During project development, it was also difficult to change the mindset of contractors and the development company as well as educate the City about water collection. As one interviewee noted, “The main obstacle experienced during the project was not that people were opposed, but breaking new ground; they just didn't know how certain ideas would work out in reality.”

Breaking down common misperceptions and demonstrating how these projects can work from a functional perspective has to be considered an important accomplishment of this project. As these different parties – developers, contractors, and state agencies – become more educated and used to this type of development, and companies begin to understand the different ways spaces can function to produce the same or better results, promoting development of this type will become easier. Heifer was a trailblazer in Arkansas as the first LEED platinum building; hopefully its example can reduce the amount of pushback from all directions for future sustainable projects.

Benefits - Urban revitalization

The twin non-profit developments of the Heifer lands and the Clinton Presidential Center constitute a large part of urban revitalization in downtown Little Rock. These two projects have transformed a previously blighted portion of the City Center into two landmark tourist attractions. They have also improved safety in the area by bringing a number of people to the area’s newly created public spaces and improved employment opportunities for nearby low income neighborhoods. These developments have also increased the municipal tax base. The Heifer sites were purchased for a combined total of $7.1 million, whereas the current assessment of the property value is $20 million (with the building included). In addition, property values surrounding the new developments have increased markedly. The new developments have also “opened up the door for future redevelopment in the area immediately east of Downtown.” In fact, since the development of Heifer and the Clinton Presidential Center, development in the area east of the interstate has increased markedly. As noted by one interviewee, the quality of these two projects has also increased expectations of future development in that part of the City; as such it has started a positive feedback loop that will hopefully force new development in the area to be of a very high quality. The cumulative effect is that the two developments are beginning to put an end to the rich/poor divide that Interstate 30 had created.

The decision of these two large non-profits to co-locate has attracted further non-profits to build new offices in Little Rock, bringing with them more jobs and well as increased property values. These two non-profits are the Lions World Services for the Blind, and CareLink.135 This makes a strong case for attempting to attract agglomeration economies as a way to re-invigorate the economy, and by extension the urban built form, of a region.

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135“Speaking of Places -- Little Rock’s Emerging Nonprofit Corridor,” 70.
## TIMELINE

<table>
<thead>
<tr>
<th>YEAR</th>
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<tr>
<td>Late 1800s to</td>
<td>Development of a rail yard, east of downtown Little Rock on the Arkansas River. Industrial and manufacturing operations cluster around the rail yard.</td>
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<tr>
<td>early 1900s</td>
<td></td>
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<tr>
<td>2000</td>
<td>Heifer International decides to establish a campus and consolidate several satellite offices into one facility, with ‘public space for educational and outreach programs’.</td>
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<tr>
<td>2002</td>
<td>The Heifer International project is named a Green Building on Brownfields pilot project by the US EPA, which entails ‘technical, financial, planning, outreach and design expertise’.</td>
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<tr>
<td>June of 2003</td>
<td>Heifer International is awarded a US EPA OSWER Innovations grant to design an environmentally-friendly parking plaza.</td>
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<td>October 2003</td>
<td>Groundbreaking for construction at the site begins as scheduled. The collaborative technical assistance provided by the ADEQ and US EPA is instrumental in this.</td>
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<tr>
<td>March 12, 2004</td>
<td>The ADEQ issues the final Property Development Decision Document (PDDD).</td>
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<tr>
<td>January 27, 2005</td>
<td>The ADEQ and US EPA Region 6 together determine that the Heifer International site is Ready for Reuse.</td>
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<tr>
<td>2006</td>
<td>Phase I of the project is complete; the 94,000 square foot Heifer International headquarters.</td>
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<tr>
<td>2006</td>
<td>Within one year of completion, the Heifer International headquarters was receiving 50 o 60 visitors a day and as a result planning design and eventually development of phase two, what is today the Murphy Keller Education Center, begun, four years ahead of schedule.</td>
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<tr>
<td>2005-2006</td>
<td>Heifer International headquarters receives the following awards: (2005) Sierra Club of Arkansas Conservation Award; (2006) ASID South Central Region Interior Design Award, AIA Arkansas Honor Award, AIA Arkansas Member Honors Award, ASLA Arkansas Honor Award.</td>
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<tr>
<td>August 30, 2007</td>
<td>The U.S. Green Building Council announces that Phase one of the Heifer International Village was awarded a Platinum LEED rating (the first in Arkansas).</td>
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136 “Heifer International Center; Circle of Life."
137 Ready for Reuse Determination.
139 Heifer International; Little Rock Ark, 1.
140 Ready for Reuse Determination, 2.
141 Ready for Reuse Determination, 1.
142 “Building It Forward.”
144 “Green Building News".
<table>
<thead>
<tr>
<th>YEAR</th>
<th>DESCRIPTION</th>
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<tr>
<td>2009</td>
<td>Construction of the Murphy Keller Education Center is complete (phase 2 of the Heifer International Village plan).(^{146})</td>
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</table>

\(^{145}\) Design and Construction Excellence in Design Awards - Finalist, AIA Gulf States Region Honor Award.

\(^{146}\) "Building It Forward."

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\(^{145}\) Celebrating 30 Years; 1977-2007, 12.

\(^{146}\) "Building It Forward."


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ACKNOWLEDGEMENTS

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The Sustainable Brownfields Consortium is an interdisciplinary group of researchers and technical advisors who are analyzing best practices for sustainable redevelopment of brownfields and the environmental, economic and public health benefits that can result. Funded by a grant from U.S. EPA, the project is a collaboration of the University of Illinois at Chicago (where it is based), University of Illinois at Urbana-Champaign, University of Wisconsin-Milwaukee, Ryerson University, Resources for the Future, Kandiyo, and Hellmuth + Bicknese Architects. The project website is at www.brownfields.uic.edu.

Statue at the Heifer International Headquarters