

No Child left inside

A NatureScape Playground as A Community Engagement Project

In April, 2009, concerned about «nature-deficit disorder» in children in the US and the lack of opportunities for kids to experience nature, a group of volunteers gave their time and efforts to build what they dubbed a «NatureScape». This natural playground was built at Jefferson Elementary School in New Britain, a major industrial city of approximately 70,000 people, about two hours north of New York City, in Connecticut, on the east coast of the United States. In the following article, Chez Liley, project manager, describes why the NatureScape was important, and what it took to make this «out-of-the-box» idea a reality. The NatureScape was part of an initiative «Where Art Meets Nature», by the so-called University-Museum-Community (UMC) New Britain Collaborative formed between Central Connecticut State University, the New Britain Museum of American Art (NBMAA), and the local community, coordinated by CCSU faculty member Karen A. Ritzenhoff (for more information see Ritzenhoff's article in this issue).

In the US, in the space of a generation, the landscape of childhood has dramatically altered. Kids are spending more and more of their time indoors. New findings from The Nielsen Company, which measures media consumption, show kids aged two to five now spend more than thirty-two hours a week on average in front of a TV screen; ages six to eleven spend about twenty-eight hours per week, a little less time than the younger kids because they are more likely to be attending school for longer hours.¹

When kids do go outside, it tends to be for time spent in structured activities – for example, playing organized sports. In his 2008 book, *Last Child in the Woods: Saving Our Children From Nature Deficit Disorder*, Richard Louv coined the term «nature deficit disorder» to describe kids' disconnect from the natural world and its impact on childhood development, including increased childhood depression, attention and learning disorders, and increased obesity and related health issues. (On average, one in three children in America are overweight or obese.) Why kids are spending so little time outside can be attributed to a number of factors, including increasing urbanization and the layout of neighborhoods, parental fears about

1 Blog on October 26, 2009 by Patricia McDonough, SVP Insights, Analysis and Policy, The Nielsen Company. These statistics by the Nielsen Report are also listed on the website of the «No Child Left Inside» Coalition. <http://www.cbf.org/Page.aspx?pid=687> (Retrieved December 8, 2009).

safety, time pressures, and educational constraints, which are affecting the way children relate to and understand the world around them.

Why kids need nature has been articulated by writers such as Stephen Trimble and Gary Paul Nabhan in *The Geography of Childhood: Why Children Need Wild Places*,² and Mary S. Rivkin in *The Great Outdoors: Restoring Children's Right to Play Outdoors*.³ But Louv's book has recently caught the attention of the national media and introduced these concerns to a larger audience. Louv's work brought together a range of research that shows how nature is important for healthy human development: direct involvement with the natural world fosters brain development, increases attention span and concentration, and promotes healthy physical, intellectual and emotional growth. Problem-solving skills, motivation levels, and self-esteem are all improved. Frequent interactions with nature give children the sense they are connected to something larger than themselves. Moreover, some immersion in wild nature nourishes people on some deep level scientists still can't pinpoint – perhaps because only nature engages all our senses.

Louv's book also gave momentum to the burgeoning campaign in states across the US, called «Leave No Child Inside». The No Child Left Inside Coalition (NCLI) is an alliance of environmental, educational, and public health organizations, and businesses, civic groups and other public enterprises, formed to alert Congress and the public to the need for US schools to devote more resources and attention to environmental education. The campaign intends to remedy effects of the «No Child Left Behind» Law, signed into effect by former US President George W. Bush in January 2002, which pressured schools to focus on high stakes test subjects such as math and language arts at the expense of other curricula, including science, field-based experiences and outdoor learning activities which were cut in order to spend more time on tested subjects, and to the detriment of outdoor playtime. According to NCLI,

«The No Child Left Behind Act has fundamentally changed the way that education is delivered in this country. It has defined the core content that all students in the United States must learn to be considered proficient at each grade level. In many school districts, this has translated into teaching only those subjects and standards that are assessed.»⁴

A disconnect from nature is at the root of many of the grave challenges that younger generations will have to face, including global climate change and its repercussions. Children are becoming more aware of global threats to the environment at the same time that they have less direct contact and connection with nature. Learning about nature and understanding its processes and interconnections are educational tasks essential for creating an ecologically sustainable society. But current educational

2 Stephen Trimble, Gary Paul Nabhan, *The Geography of Childhood: Why Children Need Wild Places*. Boston, 1994.

3 Mary S. Rivkin in *The Great Outdoors: Restoring Children's Right to Play Outdoors*. New York, 1995.

4 <http://www.cbf.org/Page.aspx?pid=687> and <http://www.nwf.org/news/story.cfm?pageId=CA3BDF3E-5056-A868-A0A176C5FB74B49E> (both retrieved December 8, 2009).

constraints under the No Child Left Behind Act – with the inevitably narrowed science curricula in response to stringent assessment criteria, limiting the amount and variety of environmental education as well as the kind of multidisciplinary teaching that it fosters – will leave the upcoming generation ill-equipped to deal with the future. The kind of attitude and involvement we will have towards nature in our later years – including our pattern of physical activity and interest in understanding the world and the larger community of life – is established in early childhood. Kids have to fall in love with nature or some aspect of it in order to grow into adults who care about the planet they live on.

So, given the degree of nature deficit in the US, what can a parent/school/community do to contribute towards a solution? Our institutions, including schools and our current consumer-model educational system that divides knowledge into specialized parts, is designed around this fundamental disconnect between people and nature, so only radical measures can affect the underlying issues. In this light, our response of building a new playground seems a very small and palliative remedial step. But this was going to be a playground with a difference.

Our plan was inspired by the Nature Action Collaborative for Children (NACC) – currently, around 1,400 architects, community planners, early childhood educators, engineers, environmental educators, environmental activists, health specialists, and landscape architects from six continents are members of NACC – and the work by these members to create environments for children that better facilitate a connection with nature.⁵

We aimed to create a little play area – we called it a «NatureScape» – with elements to encourage imagination, natural materials to provide sensory stimulation, and adjacent gardens to give pleasure as well as opportunities to learn about natural cycles and processes. The NatureScape was to be a community engagement project, part of a larger initiative, «Where Art Meets Nature», exploring ideas around nature and environment and sustainability. This took place in April 2009, under the auspices of a collaborative that linked Central Connecticut State University, the New Britain Museum of American Art and the city itself, called University-Museum-Community, or UMC, New Britain Collaborative.

We had contacts at Jefferson Elementary in New Britain, a major industrial city. The school is in a low-income neighborhood of mostly working-class/working poor families. We brought our idea to Nancy Sarra, Jefferson's bold and enlightened principal, who remembered playing outdoors as a child and knows that «being outside is good for children». She welcomed the idea for the project, and so did her colleagues. (2008-2009 was Sarra's first year as principal of Jefferson, and we had approached her in her first weeks on the job. Her predecessor, Meg Walsh, an administrator in the New Britain school system, had helped to facilitate the initial contact and also lent her support for the Naturescape project.)

5 <http://www.worldforumfoundation.org/wf/nacc/index.php>

Sarra and her colleagues favored a site for the NatureScape that was among a small grove of oaks, where the children were naturally drawn to play. The area was on a patch of level ground roughly thirty feet in diameter between the asphalt play area and a chain link fence, which had been ripped and curled back to create a gap where people could enter, and a well-worn path led up from the housing development at the bottom of the hFig.

Sarra did not want a manufactured playscape – one already existed at another nearby school, but she was intrigued by the idea of natural structures that called forth inventiveness and imaginative games, pointing out that her neighborhood kids have little background knowledge in different ways of play. (Jefferson has an ethnically diverse student body, many of whom are new immigrants.⁶) «To move forward academically, we need to look at social and emotional and other pieces, at the whole child, which in our education system is often neglected», said Sarra.

Ideas for the NatureScape moved in the direction of trying to offer the kind of exploration and adventure of a walk in the woods: tree parts to climb on and over, a «secret» place to discover and crawl through, and all the rich opportunities for the imagination those present. Kimberly Jackson, coordinator of the Family Resource Center located at the school, welcomed the NatureScape because «it allows hands-on learning with materials the children have perhaps not had a chance to play with», at the same time as encouraging hand/eye coordination and physical development in the younger children. Of course, the NatureScape had to meet safety regulations, be low-maintenance, and sturdy, since it would have to withstand a lot of use. (Jefferson has about 420 students as well as children in the after-school programs, and visitors to the Family Resource Center.)

As for the Naturecape's design, we knew of several renowned landscape architects in the field, including Robin Moore, Rusty Keeler, and the design team at the Arbor Day Foundation. However, their costs were prohibitive for our budget of about \$10,000. (For comparison, in my town, twenty-five miles away, a new manufactured metal and plastic standard playground was installed for around \$250,000.) Ironically, all-natural can be expensive: in a catalog of «Nature Explore Resources» by the Arbor Day Foundation and Dimensions Educational Research Foundation, which sells «field-tested natural components for outdoor learning», a set of three log edging sections, 24" high x 12" wide x 4" diameter, to add a rustic look to a structure, costs \$ 129.99; a stool made of 12" red cedar stumps with the bark removed costs \$ 109.99.

Ritzenhoff knew Willis Bowman, an engineer from St. Paul, Minnesota, and she had visited the University of Minnesota Arboretum's all-natural playscape he had created. In the fall of 2008, photographs of these whimsical structures were shown to Sarra and her staff, who were delighted, and they approved a design Bowman came

6 The New Britain school population comprises 65.1% minority students; 16.0% special education; 58.9% non-English home language; 50.2% economically disadvantaged. <http://www.csdnb.org/about.html>. (Retrieved Dec.8, 2009)

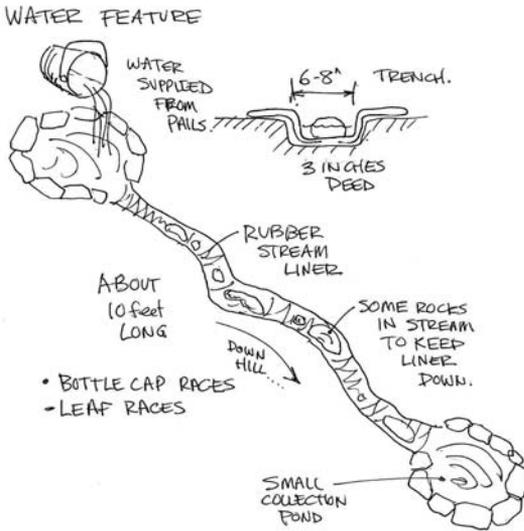


Fig. 1: Skizze Willis Bowman

ring Family Resource Center. Vice President and Provost of Central Connecticut State University, Carl Lovitt; New Britain's mayor, Timothy Stewart; Kate Miller, of The Hartford Courant Foundation, which had supported the project with a grant of \$8,000 Dollars; and Meg Walsh, former principal of Jefferson Elementary School, were among the dignitaries who lined up on the slope and ceremoniously touched their new spades to the earth. Alongside the adults were several student representatives. In contrast to the grown-ups' symbolic gesture of breaking ground, the kids went earnestly to work with post hole diggers, shovels, trowels and other tools, enthusiastically opening the soil and digging deep, long after the ceremony was over. They took the ceremony literally, believing they were making a real contribution to the project with their labor, never mind that the actual location for the NatureScape lay twenty feet behind them.

The following day was the start of the school spring vacation. All Jefferson families had received a flyer in both English and Arabic explaining the project and inviting their participation. Bowman arrived from Minnesota and worked on-site every day for the next ten days to implement his designs for the NatureScape. The wood came from my farm about thirty miles away in northwestern Connecticut. Saplings of beech and birch were cut to lengths and ferried to the site by Ritzenhoff's pick-up truck. A local forester donated lengths of cedar, known for its durability, and attractive, with its fragrant crimson inner wood.

Because there was no power outlet nearby, and the school was closed for vacation, all the construction work for the NatureScape and gardens was done by hand, with simple power tools, wheelbarrows and buckets. Holes were laboriously punched out of the rocky soil using muscle power and post hole diggers. The rocks probably added

up with for Jefferson, composed of elements that would be robust and fairly simple to make, but would look intriguing and pleasing: two climbing structures, a tunnel, a water feature for floating bark boats and experimenting with water flow, and a sorting table within an enclosure, all fitting within the space outlined by the standing trees.

The NatureScape's ground-breaking ceremony on April 16, 2009, involved the entire school, plus some mothers and their small children from the neighbo-

20% more time to the entire playground creation process. First the fence was laid out. Originally Bowman had imagined an enclosure made of large tree limbs turned upside-down and fastened together. However, available materials dictated a new plan: a low wattle fence made of long saplings or branches interwoven around posts. Wattle fencing is fairly easy to build, strong, can be repaired and looks unusual. Inevitably, the final design of the playground was shaped by the materials, which dictated to a certain degree the ways they could be used. «I couldn't take the time to straighten out a big log, so instead I had to move, flip, or bend it to fit», Bowman said. «Building with natural materials meant I had to use all the wood to its maximum efficiency. My design had to be as flexible as the wood!»⁷

Bowman's overall plan was based on the idea of movement along some sort of path to a small, intimate place where the kids could look out to a larger one. «Children love to play in these intimate spaces and be led there with fun paths (tunnel and steps). The result is very different from a typical steel, concrete and plastic playground where intimate spaces are eliminated.»⁸

In the first few days, a few children stopped by and were invited to help, under Bowman's supervision. They had never used a hand drill or carpentry tools, were proud to be entrusted with the responsibility, and enjoyed the work. In the following days, some parents came to help. One father was a construction worker and designed and built two teepee-like structures. Kids of all ages enjoyed making various sized balls of twisted bittersweet vines, which were to be hung like constellations from upper branches. To the kids' excitement, the local fire department arrived in a shiny engine and clambered up ladders to secure the balls at the desired heights. The balls swung gently and cast intricate shadows on the ground. Bowman wrote:

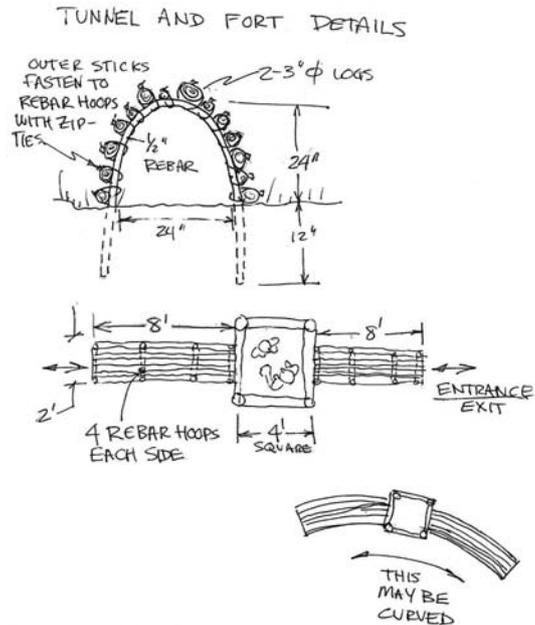


Fig. 2: Skizze Willis Bowman

7 Willis Bowman, Write Up, April 2009, unpublished manuscript.

8 Ibid.

I want the children who use the playground to appreciate the wood and how it can be used. There may be some kids who have never seen the inside of a branch or don't know that a row of simple limbs can make a deck or bridge. I hope that perhaps they can build something similar in their backyard. I tried to use as much natural material as possible, though I did have to make some concessions, as wood is not the ultimate material. I did employ some steel rebar for the arch supports in the tunnels, a rubber pond liner in the water feature, zip ties for the vine balls and wattle fence, and of course metal screws to hold the whole thing together. Still, the amount of non-natural material is minimal and the kids can appreciate the feel of wood and rocks. The use of a natural playground is different than a traditional steel and plastic one. I made this playground so that play would be fueled by imagination. Typical playgrounds dictate how the play will happen – for example, featuring pirate ships or space rockets. . . . My forms are somewhat non-descript, enabling the children to think of them in any way they choose. I'm a big fan of exercising the imagination muscle. I think this playground will help the kids do so.⁹

Alexis Brown, a landscape artist, designed the sensory garden, featuring mostly native perennials – low maintenance, hardy species that would provide shade and texture, color and fragrance, while creating the idea of an intimate space. Special education teachers at Jefferson were excited about the garden, which they believed would particularly benefit kids with special needs; Sarra and her colleagues also imagined students enjoying the space for picnics, and for quiet reading times. The garden was laid out beyond the NatureScape and the chain link fence, near a community softball field, with the plantings centered around the two mature oaks close on one side of the path into the school yard. Five yards of compost were a donation from a local supply company; Steven Kliger, Executive Director of the Center for Public Policy and Social Research (CPPSR) at the University, Andrew Clark from the Institute for Municipal and Regional Policy (IMRP), and Alexis Brown, helped purchase and donate plants. While we were working on the beds, a neighbor, an elderly man who had apparently complained to the school about the unkempt state of the grounds abutting his property fence, came over to watch us. After a while, he beckoned us towards him. He leaned as far as he could over his fence and wordlessly handed us smooth and flat rocks like a peace offering from his own yard to make paths in the new garden.

Every day, we picked up litter – a flotsam of candy and condom wrappers, plastic beverage containers, windblown drinking straws. A mountain of woodchips was delivered for mulch, and had to be dispersed by hand. While the adult volunteers groaned at the prospect of hauling wheelbarrow loads up and down the incline, the children set enthusiastically to the task, swarming over the mound with plastic buckets and little trowels. They delighted in seeing the pile diminish before their eyes. They were proud of their hard work, of getting the job done. Other children helped set in the plants. For most of them, it was the first time they had ever plant-

9 Willis Bowman, *op.cit.*



Fig. 3: Climbing Tower at NatureScape

ed anything. A boy took on the task of watering the plants, sloshing water from a bucket, since the large can was too awkward for him.

Adjacent to the asphalt, ground was dug for the butterfly garden. First a rototiller (donated by a hardware store) broke the sod; then by hand we raked and pulled out clumps of turf, which were hauled away in buckets. For the children who helped, sticking their hands in the soil, discovering worms and feeling the cool earth were new experiences. Sarra, her husband and a teacher, along with kids and other volunteers, spent a hot afternoon planting the prepared beds with perennial and annual species that would attract pollinators. Later, seeds were distributed to the teachers for classes to plant; the art teacher was going to have her students create their own unique stepping stones for paths between the plants. Sarra was keen to use the butterfly garden as a sort of outdoor science lab. She was hoping the upper grades would take on the opportunity and responsibility of caring for it.

The evening of the last day of construction, while we were clearing away tools, a couple of families wandered up from the development below, through the chain link fence gap, and asked if the kids could play. The children happily clambered on the structures. The parents examined the various elements, fingering the wood in its quirky shapes, and expressed approval. The surrounding fence gave the look of an African boma or a Stone Age settlement, filtering the hard spring light into an

intricate network of shadows. The stately entrance between two large straight oaks looked like a portal to a whimsical kingdom of knotted branches and twisted vines. The sorting table was stacked with supplies of building blocks of circular birch pieces with the soft peeling outer skin, and cool beech with its textured bark, and loaded with supplies of tiny hemlock cones and large spruce cones and a variety of acorns in their cups.

The next morning, at the official opening of the NatureScape, the entrance between two oaks was sealed with a red ribbon. The kindergarteners had been chosen to be the first class to officially play there. They sat on the grass while Sarra explained that accompanying the privilege of a new custom playscape came the responsibility of treating it respectfully. A voice cried «Help! There's a snake!» Sarra crouched down to look at the offending creature, and said, «No, that's a worm». A member of the class proudly cut the ribbon and the kids rushed in behind her with whoops of delight. At lunch break, the doors to the yard burst open and the entire school seemed to be charging out towards us, yelling «NatureScape! NatureScape!»

To tie in with the NatureScape, the project funded workshops¹⁰ at the school by another local institution, the Eli Whitney Museum in Hamden, CT, which teaches experiments to encourage design and invention.¹¹ «We jumped on this opportunity», said Sarra, delighted by the chance for hands-on learning for all 420 pupils, grades K-5, over three days. «It's a challenge in education today to have hands-on learning», said Kimberley Jackson of the Family Resource Center, who thought the workshops were «outstanding». The children built models representing different cultures – for example, Yemeni dwellings with figures in ethnic costume, and dwellings with walls brightly patterned in designs reminiscent of the Ndebele culture of South Africa. The children's finished models were displayed at the New Britain Museum of American Art during the «CCSU Night at the Museum» on April 15 and 16, 2009, which the children visited to view their artwork. One of the models was chosen as the basis for a structure by the butterfly garden, featuring panels of art to be designed by the graduating fifth grade class as their «legacy» to the school for the year. Designed by Clifford Andersen of Central Connecticut University's engineering faculty, the Ndebele wall was begun by Andersen and the mayor of New Britain himself, Timothy Stewart, with his friend, Leo Camosci, owner of a construction company, who provided the power shovel machine.

The work on this last part of the design was completed in winter 2009.

10 Additional funds for the building of the NatureScape, the «CCSU Night at the Museum» as well as the workshops at Jefferson Elementary School, facilitated by the Eli Whitney Museum in Hamden, CT, were provided by several grants, administered at CCSU: the UPBC Strategic Grant 2008-2009; a CCSU Community Engagement Grant 2008, administered by CCSU's Institute for Municipal and Regional Policy (IMRP); a grant by the Connecticut Commission on Culture and Tourism as well as funds provided by the CCSU Alumni Office, Student Activities, Institutional Advancement, the School of Engineering and Technology, the School of Arts and Sciences, and the Office of the Provost.

11 <http://www.eliwhitney.org/> (Retrieved Dec.8, 2009)

Outcomes

At the end of the project, aside from the experience of the workshops, the school had the completed NatureScape, the planted butterfly garden, the planted and mulched sensory garden complete with benches, three cherry trees along the chain link fence to cast some shade and provide flowers and color, and shrubs planted to beautify a small section of the pathway. The school was also given tools, including sets of all-purpose buckets, children's work gloves, and children's and adult's gardening equipment. Three local papers had picked up the story and published positive articles.

The NatureScape project was an attempt to represent a different aesthetic, to show new possibilities. It was made on a comparatively humble budget, with generous donations and contributions of time and expertise. We felt some sense of triumph in that it was completed, and was beautiful, and pleased the children, parents and teachers. «It's neat. It's different», said Joseph Lweko, the father who had made the teepees, admiring the uniqueness of the NatureScape. «It's not commercialized, not like any other playground». Certainly, the project strengthened relationships and developed many new ones, especially between the university and the school. Meeting and interacting with university students gave Jefferson pupils «a beautiful example of what they might become», remarked Kimberly Jackson. «The kids and other volunteers were part of helping to make the community better – for others as well as themselves», said Steven Klinger – «The NatureScape will help the kids see what could happen when people from different parts of the community come together», said University Provost Carl Lovitt. Sarra, who considers that the New Britain public schools are often underestimated in what they can accomplish, was supportive of our multi-layered approach to serve her community.

The project partners – institutions and individuals – learned a good deal from the experience. Jefferson has plenty of challenges: test scores are low; many children are recent immigrants and are still learning to speak English. We found out how hard it is for a school with its few resources already overstretched to take on a new project, even if it is predominantly a gift.

At Jefferson, the grounds are open to the public after-hours, where older kids inevitably play unsupervised on structures designed for younger ages.

Vandalism had been a concern, and there was some damage: A couple of the NatureScape's wooden supports had been chopped; parts of the fence were beaten down; two of the cherry trees planted along the fence had been mutilated. But the vandalism was relatively mild and only highlights the underlying issues that prompted the NatureScape in the first place.

Some elements of the NatureScape turned out to be impractical. The water feature, for example, even though on paper it had been approved by the school, in reality had too many moveable parts that disappeared. We realized we needed to make modifications to the basic design of the NatureScape structures.

As for the gardens, it takes time to develop a gardening club, and the success of that undertaking depends on staff with gardening experience, let alone extra hours



Fig. 4: Opening Day of the NatureScape

and surplus enthusiasm. Ironically, the educational constraints and demands that had led to the lack of hands-on environmental education and field research for science also meant that there was little energy or time to make use of the resources when they were provided. By October, the butterfly garden had vanished. Apparently the weeds had been allowed to take over. Sarra said the ground had been too hard for the children to weed and they had grown discouraged. The larger shrubs had disappeared without trace. Maintenance staff had mowed over the rest and let the grass grow back. The sensory garden, however, had grown in nicely, and the cedar benches, which could easily have been carted off, were still in place.

Another lesson is how relationships created by the project have ripple effects we could have never anticipated. A surprise offer of help came from the CCSU girls' softball team. One member had been in Ritzenhoff's visual communication class in the spring semester of 2009, and had heard about the NatureScape. When her coach asked for suggestions for a community engagement project for the team, she recommended the playground. One afternoon, her team of volunteers arrived at Jefferson and raked leaves, weeded the sensory garden, and planted bulbs donated by Alexis Brown, who also showed up to help. And while the garden lies dormant this winter, the softball team has committed to come to Jefferson every Friday to help with the reading program.

The girls' softball team symbolizes the human relationships that, as part of the larger context of the UMC initiative, will give the project momentum and enable it to grow and change. After the winter, we will implement the lessons we've learned regar-

ding what works and what doesn't. We will hire a carpenter to modify the structures to be more durable; and the children will be playing on NatureScape again in the spring.

A video documentary of the making of the project was created by Ryan Wark from the CCSU Technology group in the Academic Technology Division. This DVD, «Where Art Meets Nature: The NatureScape Project», is available from Ritzenhoffk@ccsu.edu. Willis Bowman has been commissioned to create another NatureScape in Connecticut in the spring 2010.

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