

Ridgetop to Reef
PLAYSCAPE

A child's gateway to the Park

Friends  *of* Virgin Islands National Park

Proposal

The playground outside of the Virgin Islands National Park headquarters is the ideal location for integrating natural landscapes, cultural history, trail guides, community meeting areas, and play structures with multiple affordances (opportunities for learning) because of its location and established value/use as a community meeting spot. By reimagining the playground and the use of its adjacent lands as a 'Ridgetop to Reef' playscape will increase environmental education opportunities by providing space for park interpreters to meet groups and interpretive signs that teach children about their Virgin Islands National Park.

Steps away from the base of the Lind Pointe Trail and the National Park pier, the playground is uniquely positioned to be a launching area to the Park's beaches, peaks, and reefs. In this way the playground and its adjacent lands are the true 'gateway' into Virgin Islands National Park, in particular for youth. As such, the opportunity to teach children about the ecological and cultural significance of the park starts in the playground!

Designing the playscape with these goals in mind means using play elements that integrate the Taino, Danish settlements, local flora and fauna, and play structures that mimic the ecosystems of St. John. For example, the 'Ridgetop to Reef' playscape includes a shaded gathering area, grass bermed amphitheater-like seating area, picnic tables, a native plant garden with interpretative signage, an enclosed play area for 0-4 years old, and multiple sensory play areas for ages 5-9 years and 10-12 years old with additional interpretative signage.

The Ridgetop to Reef Playscape seeks to:

- Connect children to the natural and cultural resources of Virgin Islands Park
- Increase play affordances for a variety of ages
- Offer VINP a staging locale for interpretative talks and activities
- Create a community gathering place for downtown Cruz Bay
- Provide a gateway to the National Park for children and their families

The Need

After being hit by two category five hurricanes, the playground and ballfield next to the Virgin Islands National Park headquarters suffered substantial damage. Several play structures and the fencing surrounding the playground are in disrepair. In order to restore the area and provide a connection for children to the Park, a revitalized vision for the playground and adjacent grounds is warranted.

The playground has been traditionally used heavily by local families, afterschool programs, summer camp programs, as well as school groups, and park visitors. Currently, it is the only public playground on the island. Additionally, the playground and its surrounding grounds (Visitors Center, pavilion, ballfield and adjacent land) provide numerous community groups with a meeting area. Most significantly, VINP's Interpretative Rangers currently use the locale as a staging/briefing area for the Reef Bay and L'Esperance guided hikes. With improved design, this area would be ideal for additional VINP interpretative activities.

Why a playscape?

For centuries, children played outside in creeks, rivers, trails, peaks, beaches, and valleys. These special places became beloved locales and children learned through play in their branches, water, sand, and mud (Louv, 2007; Sobel, 2012). Later in life, these experiences became the foundation for a land ethic (Chawla, 2006; Leopold, 1962) and a multitude of personal and societal benefits were bolstered (Appendix A). Outdoor play increased physical fitness, brain attention, interpersonal relationships, academic outcomes, psychological resilience, and creativity/innovation (Children and Nature Network, 2018). In the new millenia, many families use playgrounds as a medium for play instead of wilderness areas (Cohen et al., 2016). When playgrounds integrate natural landscapes, cultural history, and a sense of community they have the opportunity to connect children and families to the location and to continue to provide physical, emotional, and societal benefits (National League of Cities, 2017).

Current research states that when children spend time outside they experience better academic outcomes, restored attention, are more physically fit, and better mental health (Appendix A). Natural playgrounds or playscapes that incorporate natural materials, a variety of vegetation and soils, water and sand elements, and integrate multi-sensory play filled with affordances are a great asset to communities (Louv, 2006; Sobel, 2008). As well, playscapes teach children about the natural world as they play in native plant gardens with interpretative signs, climb wooden structures that promote risk and reward, and run among cultural elements that teach history and perspective. When comparing playscapes to traditional playgrounds researchers have shown

that playscapes have increased affordances and therefore increase play and learning (Chawla, 2006).

Playscapes have also been integrated into hundreds of city parks, nature centers, and zoos to help decrease nature deficit disorder and increase environmental awareness (Louv, 2006). In general, playscapes use natural elements such as stones, creeks, and vegetation for natural barriers rather than fencing. These elements encourage children to stay in the playscape because the play structures inside the natural barrier is more exciting than the human-built world around them.

Building in Phases

Phase 1

Take down fence

Fix the swing sets

Add in progress sign and community outreach materials

Phase 2

Deconstruction and breaking ground

Shape the landscapes and berms

Stone wall and backfill the wall for young child area

Set telephone poles

Moving swing sets and play structures

Construction of new play structures

Add boulders for play

Phase 3

Plant trees and vegetation

Finished materials (i.e. pebbles, grass, etc.)

Paint swings

Add lighting (solar powered)

Add interpretative signs

Funding and Ways to Get Involved

The VINP support request submitted in the fall of 2018 requested \$1800 to repair the existing damaged chain-link fence surrounding the playground. When news of the request to repair the playground reached the community in an article published in the local Daily News, overwhelming support was received from the community to expand and improve the playground.

To-date, \$6,600 has been by individual donors towards the project. Currently, Barefoot Architects has volunteered their services in drafting plans, Alfredo's Landscaping has offered to help with landscaping, and St. John Hardware has offered to assist with construction support (materials and use of trucks.) Additional donations, in-kind services, and materials are expected to be designated for the project and will cut down on costs, while engaging the local community in a meaningful, hands-on way. Lastly, dozens of individuals have offered volunteer labor to assist with the project both in the immediate, and long-term (maintenance of grounds, etc).

The playground project committee includes Tonia Lovejoy as a representative of the Friends, Chelsea Baranowski as a representative of the St. John Community Foundation's Long-term Recovery Youth Group (and a native St. Johnian), and Melissa Wilson as a representative of the education community (both an educator at the Giffit Hill School and an expert in outdoor education design with an MA from Harvard in the field). Sprauve School's Vice Principal Jeune Provost, as well as Mr. Elroy Hill at Sports, Park and Recreation have also been invited to participate in planning.

With approval from VINP, the committee would propose to share the plans with the greater community in a public forum.

Playscapes in Other Major Cities



The use of natural elements, grass, pea gravel, and a variety of materials encourages play that is not unilateral, but rather multi-dimensional. Play with a variety of stimulus and creativity increases health and wellbeing (Children and Nature Network, 2018).

Proposed Ridgetop to Reef Playscape Elements



- 1/ Step wall with ropes that allows for a variety of ages and challenges
- 2/ Slide built into a mountain with rocks and vegetation
- 3/ Backside of mountain made out of telephone poles or wood climbing pieces



5/ Use of curved stone wall with built in benches as boundary to parking lot and enclosure for 0-4 year old play area

6/ Boat for dramatic play in younger child area

7/ Use of texture: grass, small pebbles, boulders and poured coral casts

8/ Possible water feature with salt water for play



- 9/ Casts of local Park animals for children to find and play among
 10 & 11/ The use of stepping stones or timber to create leveled playing areas
 12/ Interactive elements that teach natural and cultural history (i.e. termites, iguanas, Taino, etc.)



13/ Elements that represent the Taino

14/ Interactive ruins that can be climbed on and peaked through

15/ Use of nautical cleats, ropes, shackles and portholes for older children

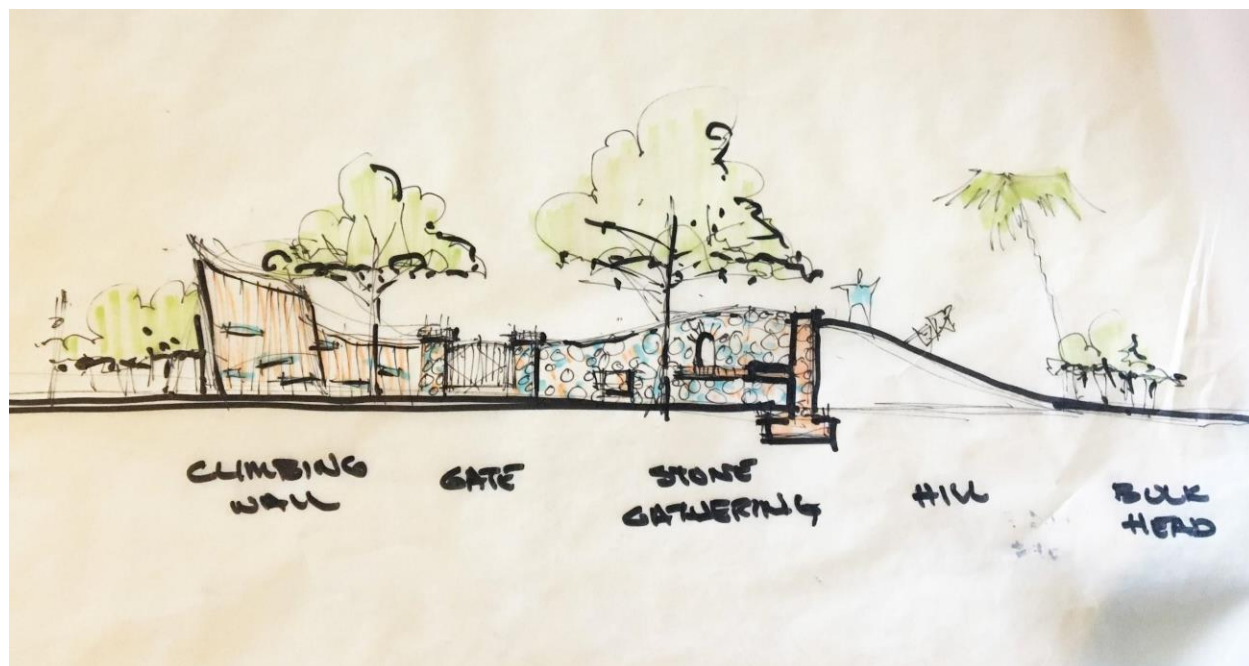
16/ Casts of diverse coral for playing on and hopping through



- 17/ Wayfinding for children that points to the trails
- 18 & 19/ Interactive signs that link children to Friends of VINP "Ranger Hawksbill" app
- 20/ Native plants throughout with kid-friendly interpretive sign

Proposed Ridgetop to Reef Playscape Layout





Cross section of Young Child Play Area



Cross section of Play Structure Area

Appendix A

NATURE CAN IMPROVE HEALTH AND WELLBEING

Spending time in nature provides children with a wide range of health benefits.



SUPPORTING RESEARCH

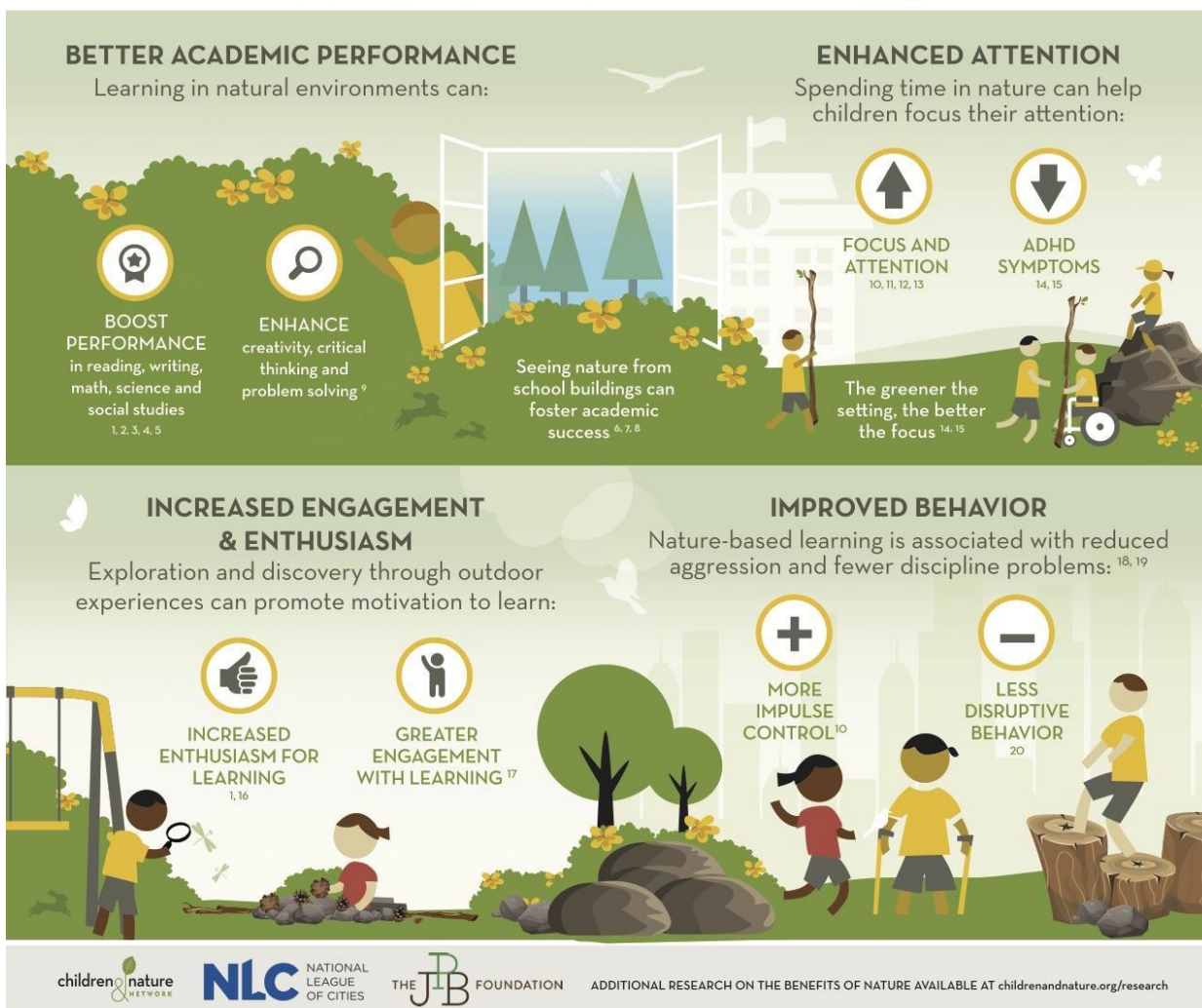
Dzhambor et al. (2014). Association between residential greenness and birth weight: Systematic review and meta-analysis. *Urban For Urban Gree*, 13(4), 621-629. ² Markevych et al. (2014). Surrounding greenness and birth weight: Results from the GINIplus and LISAplus birth cohorts in Munich. *Health Place*, 26, 39-46. ³ Dadvand et al. (2014). Inequality, green spaces, and pregnant women: Roles of ethnicity and individual and neighbourhood socioeconomic status. *Environ Inter*, 71, 101-108. ⁴ Agay-Shay et al. (2014). Green spaces and adverse pregnancy outcomes. *Occup Environ Med*, 71(8), 562-9. ⁵ French et al. (2013). Time outdoors and the prevention of myopia. *Exp Eye Res*, 114, 58-68. ⁶ He et al. (2015). Effect of time spent outdoors at school on the development of myopia among children in China. *JAMA*, 314(11), 1142-1148. ⁷ Dolgin (2015). The myopia boom: Short-sightedness is reaching epidemic proportions. Some scientists think they have found a reason why. *Nature*, 519, 276 - 278. ⁸ McCurdy et al. (2010). Using nature and outdoor activity to improve children's health. *Curr Prob Pediatr Adolesc Health Care*, 40(5), 102-117. ⁹ Pagels et al. (2014). A repeated measurement study investigating the impact of school outdoor environment upon physical activity across ages and seasons in Swedish second, fifth and eighth graders. *BMC Public Health*, 14(1), 803. ¹⁰ Almanza et al. (2012). A study of community design, greenness, and physical activity in children using satellite, GPS and accelerometer data. *Health Place*, 18(1), 46-54. ¹¹ Hartig et al. (2014). Nature and health. *Annual Rev Publ Health*, 35, 207-28. ¹² Christian et al. (2015). The influence of the neighborhood physical environment on early child health and development: A review and call for research. *Health Place*, 33, 25-36. ¹³ Wolch et al. (2011). Childhood obesity and proximity to urban parks and recreational resources: A longitudinal cohort study. *Health Place*, 17(1), 207-214. ¹⁴ Duncan et al. (2014). The effect of green exercise on blood pressure, heart rate and mood state in primary school children. *Int J Environ Res Public Health*, 11(4), 3678-3688. ¹⁵ Wells & Evans (2003). Nearby nature: A buffer of life stress among rural children. *Environ Behav*, 35(3), 311-330. ¹⁶ Corraliza et al. (2012). Nature as a moderator of stress in urban children. *Procedia - Soc Behav Sci*, 58, 253-263. ¹⁷ Chawla et al. (2014). Green schoolyards as havens from stress and resources for resilience in childhood and adolescence. *Health Place*, 28, 1-13. ¹⁸ Roe & Aspinall (2011). The restorative outcomes of forest school and conventional school in young people with good and poor behavior. *Urban For Urban Gree*, 10, 205-212. ¹⁹ Younan et al. (2016). Environmental determinants of aggression in adolescents: Role of neighborhood green space. *J Am Acad Child Adolesc Psychiatry*, 55(7), 591-601. ²⁰ Chawla (2015). Benefits of nature contact for children. *J Plan Lit*, 30(4), 433-452.

C&NN recognizes that not all studies support causal statements.

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NATURE CAN IMPROVE ACADEMIC OUTCOMES

Spending time in nature enhances educational outcomes by improving children's academic performance, focus, behavior and love of learning.



SUPPORTING RESEARCH

Lieberman & Hoody (1998). Closing the achievement gap: Using the environment as an integrating context for learning. Results of a Nationwide Study, San Diego: SEER. * Chawla (2015). Benefits of nature contact for children. *J Plan Lit*, 30(4), 433-452. * Berezowitz et al. (2015). School gardens enhance academic performance and dietary outcomes in children. *J School Health*, 85(8), 508-518. * Williams & Dixon (2012). Impact of garden-based learning on academic outcomes in schools: Synthesis of research between 1990 and 2010. *Rev Educ Res*, 83(2), 211-235. * Wells et al. (2015). The effects of school gardens on children's science knowledge: A randomized controlled trial of low-income elementary schools. *Int J Sci Edu*, 37(17), 2858-2878. * Li & Sullivan (2016). Impact of views to school landscapes on recovery from stress and mental fatigue. *Landscape Urban Plan*, 148, 149-158. * Wu et al. (2014). Linking student performance in Massachusetts elementary schools with the "greenness" of school surroundings using remote sensing. *PLoS ONE* 9(10): e108548. * Matsuoka, R. H. 2010. Student performance and high school landscapes. *Landscape and Urban Planning* 97 (4), 273-282. * Moore & Wong (1997). Natural Learning: Rediscovering Nature's Way of Teaching. Berkeley, CA: MIG Communications. * Faber Taylor et al. (2002). Views of nature and self-discipline: Evidence from inner-city children. *J Environ Psych*, 22, 49-63. * Mårtensson et al. (2009). Outdoor environmental assessment of attention promoting settings for preschool children. *Health Place*, 15(4), 1149-1157. * Wells (2000). At home with nature effects of "greenness" on children's cognitive functioning. *Environ Behav*, 32(6), 775-795. * Berto et al. (2015). How does psychological restoration work in children? An exploratory study. *J Child Adolesc Behav* 3(3). * Faber Taylor et al. (2001). Coping with ADD: The surprising connection to green play settings. *Environ Behav*, 33(1), 54-77. * Amoly et al. (2014). Green and blue spaces and behavioral development in Barcelona schoolchildren: The BREATHE Project. *Environ Health Perspect*, 122:1351-1358. * Blair (2009) The child in the garden: An evaluative review of the benefits of school gardening. *J Environ Educ*, 40(2), 15-38. * Rios & Brewer (2014). Outdoor education and science achievement. *Appl Environ Educ Commun*, 13(4), 234-240. * Bell & Dymont (2008). Grounds for health: The intersection of green school grounds and health-promoting schools. *Environ Educ Res*, 14(1), 77-90. * Nedovic & Morrissey (2013). Calm, active and focused: Children's responses to an organic outdoor learning environment. *Learn Environ Res*, 16(2), 281-295. * Ruiz-Gallardo & Valdés (2013). Garden-based learning: An experience with "at risk" secondary education students. *J Environ Educ*, 44(4), 252-270.

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