



## A Man of Many Firsts

On record now thy name's enrolled.  
And future ages will be told,  
There lived a man called Banneker,  
An African astronomer.  
Thou need'st to have a special care.  
Thy conduct with thy talents square.  
That no contaminating vice  
obscure thy lustre in our eyes.  
Or cast a shade upon thy merit.  
Or blast the praise thou might'st inherit.  
For folly in an orb so bright,  
Will strike on each beholder's sight.  
Nay, stand exposed from age to age,  
Extant on some historian's page.  
Now as thy welfare I intend,  
Observe my counsel as a friend.  
Let fair example mark thy round  
Unto thine orbit's utmost bound.  
"The good man's path," the scriptures say,  
"Shines more and more to perfect day."

*Susanna Hopkins Mason, 1796*

Benjamin Banneker Memorial I Predesign Program

A Memorial to America's First Black Man of Science

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# Benjamin Banneker Memorial I Predesign Program

A Memorial to America's First Black Man of Science

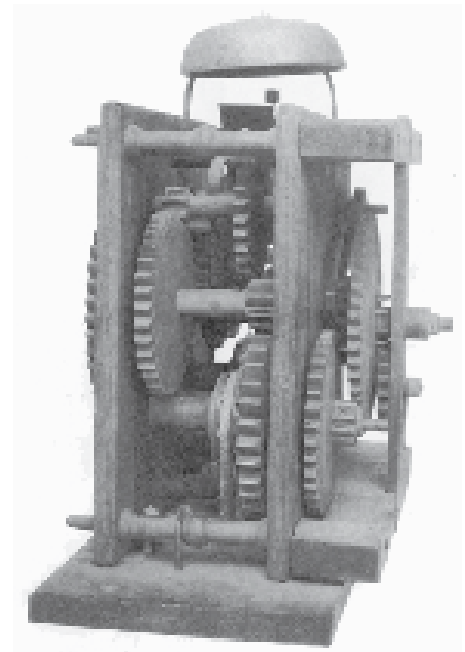
## HONORING BENJAMIN BANNEKER 1731-1806

Benjamin Banneker was born November 9, 1731 in Baltimore County, Maryland as a free man. He was the descendant of an English woman named Molly Welsh and a freed slave from Senegal named Banneka or Banneky. Molly and Banneka owned a farm where they raised four daughters, the oldest being Mary Banneka. Mary married a freed slave from Guinea named Robert and together purchased a farm on their own. Mary and Robert had five children, the oldest being Benjamin Banneker.

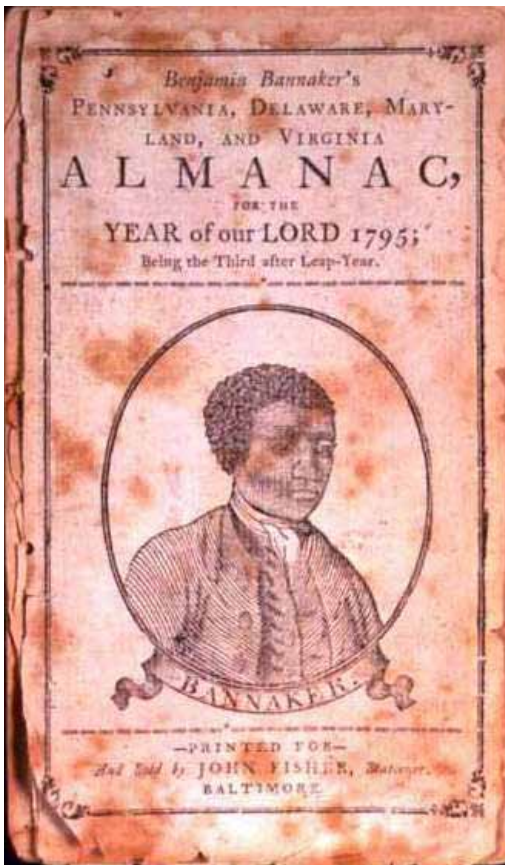
Benjamin Banneker was raised on the family farm and learned to read and write from his grandmother Molly Welsh. His formal education was limited; he attended school in the winter until he was old enough to help out on the family farm full time. With the aid of a Quaker schoolteacher, Banneker continued his education through avid reading. He showed an early interest in mathematics that continued throughout his life. Banneker was self taught and stated that he had “advanced in arithmetic as far as Double Position,” the equivalent of today’s high school algebra. Through the encouragement of his neighbor and friend George Ellicott, Banneker began his study of astronomy and became adept at astronomical calculations and charting the course of celestial bodies. These abilities would later lead to many of his greatest accomplishments.

In his early twenties, Banneker built a continuous striking clock entirely of wood. He based his design on observations of a borrowed pocket watch. Using his mathematical skills, he designed and hand carved the components. To power the clock Banneker developed a system of falling weights. The clock continued to keep time until he died more than fifty years later.

In 1791, Banneker was hired as scientific assistant for the Federal Territory Survey team under the leadership of Major Andrew Ellicott. He was responsible for establishing the base points for the original ten mile square that was to become the District of Columbia. He also maintained the survey team’s Ephemeral clock.



## BENJAMIN BANNEKER, A MAN OF MANY FIRSTS



Banneker may be best known for being among one of the first American's to author an *Almanac*. His *Almanacs*, published from 1792 through 1797, contained Banneker's astronomical ephemeris and solar and lunar eclipse tables along with essays and literary content from others. Banneker's *Almanacs* were embraced by Abolitionists as proof that African-Americans were the equal of other races in intelligence and capabilities.

Banneker took the opportunity of his *Almanac* to promote the cause of equality with then Secretary of State Thomas Jefferson. Writing to Jefferson, Banneker encouraged him to fulfill the promise of the Declaration of Independence by pursuing equal rights for all. Banneker's letter along with Jefferson's response were published in several publications, including Banneker's *Almanac*, which was one of America's first publicly documented protest letter.

Banneker's achievements in the sciences and mathematics, the *Almanacs*, and his correspondence with Thomas Jefferson made him a model for others. His work promoted equality, and his life was an example that people of different race, creed, and colors can come to together.

## A MEMORIAL FOR ALL PEOPLE

Benjamin Banneker was a free-born descendant of slaves in Baltimore, Maryland. Considered to be one of America's first African-American scientists, Banneker was an astronomer, mathematician, and surveyor. His involvement in the early survey of the ten mile square Federal Territory of Columbia, later to become known as Washington DC, places him in the category of one of Washington DC's founding fathers with George Washington, Thomas Jefferson, Major Charles Pierre L'Enfant, Daniel Carroll, David Stuart, Thomas Johnson, Major Andrew Ellicott, and Joseph Ellicott.

Unlike any other memorial in Washington DC, the Benjamin Banneker Memorial will serve as a connection between generations, peoples, and areas of the City. The memorial honors Benjamin Banneker's contribution to a city, a nation, and a culture. It recognizes his achievements in the fields of math and science, and his quest of equality for all. The Banneker Memorial will serve as an inspiration to youth to believe that they can master the STEM [Science, Technology, Engineering, and Math] disciplines and provides them with a state of the art learning facility. The Memorial will educate the public on the founding of their nation's capitol and serves as an invaluable cultural offering and healing tool for America. The Banneker Memorial represents just one of two planned memorials that celebrate African-American achievement in our nation's history within the monumental core of the Nation's capitol.



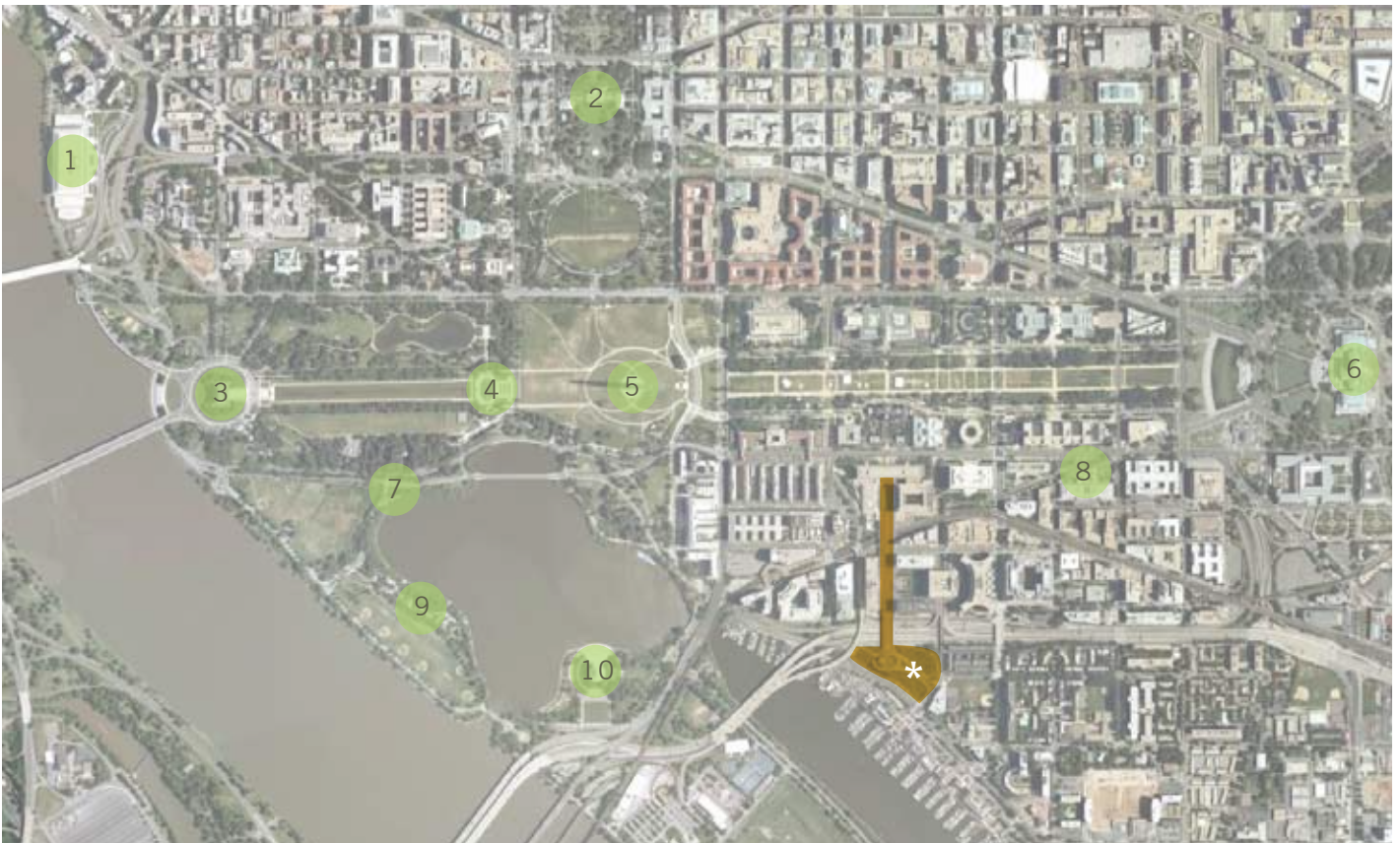
The Memorial will include The Founding Fathers Walk with a statue of Benjamin Banneker, a clock tower, a visitor's center, and informational nodes. The walk will end with the Banneker Institute, an academy geared towards the STEM [Science, Technology, Engineering, and Math] disciplines for our nation's students.

## PROPOSED SITE

The proposed site for the Benjamin Banneker Memorial is the L'Enfant Promenade in Washington DC (10th Street, SW from Independence Avenue to Benjamin Banneker Park at the south terminus) along with the Benjamin Banneker Park. The site functions as an important link between the National Mall, museums, and commercial business district and the emerging Southwest Waterfront neighborhood. The site had an Urban Study Plan and Environmental Assessment produced between 2001 and 2007, and received FONSI approval in November, 2007 for improvements to the L'Enfant Promenade and Benjamin Banneker Park.



## THEMATIC CONTEXT



- \* Benjamin Banneker Memorial Site
- 1. John F. Kennedy Memorial
- 2. White House
- 3. Lincoln Memorial
- 4. World War II Memorial
- 5. Washington Monument
- 6. The Capitol
- 7. Martin Luther King Jr. National Memorial
- 8. Eisenhower Memorial
- 9. Franklin Delano Roosevelt Memorial
- 10. Thomas Jefferson Memorial

## L'ENFANT PROMENADE AERIAL PHOTO



1. Founding Fathers Visitor Center
  2. Banneker Clock Tower
  3. Benjamin Banneker Statue
  4. Benjamin Banneker Institute for Math, Science and Technology
  5. Intermodal Transportation and Parking Facility
- Founding Fathers Walk

## BENJAMIN BANNEKER PARK AERIAL PHOTOS



1. Benjamin Banneker Statue
2. Benjamin Banneker Institute for Math, Science and Technology
3. Intermodal Transportation and Parking Facility

EXISTING SITE IMAGES



PROPOSED MEMORIAL DESIGN CONCEPT



“The colour of the skin is in no way connected with strength  
of the mind or intellectual powers.”

*Benjamin Banneker*

## PROPOSED MEMORIAL DESIGN CONCEPT



“This sun, with all its attendant planets, is but a very little part of the grand machine of the universe; every star, though in appearance no bigger than the diamond that glitters upon a lady’s ring, is really a vast globe, like the sun in size and glory; no less spacious, no less luminous, than the radiant source of the day; so that every star is not barely a world, but the centre of a magnificent system; and a retinue of worlds, irradiated by its beams, and revolving round its attractive influence, all of which are lost to our sight in unmeasurable wilds of ether.”

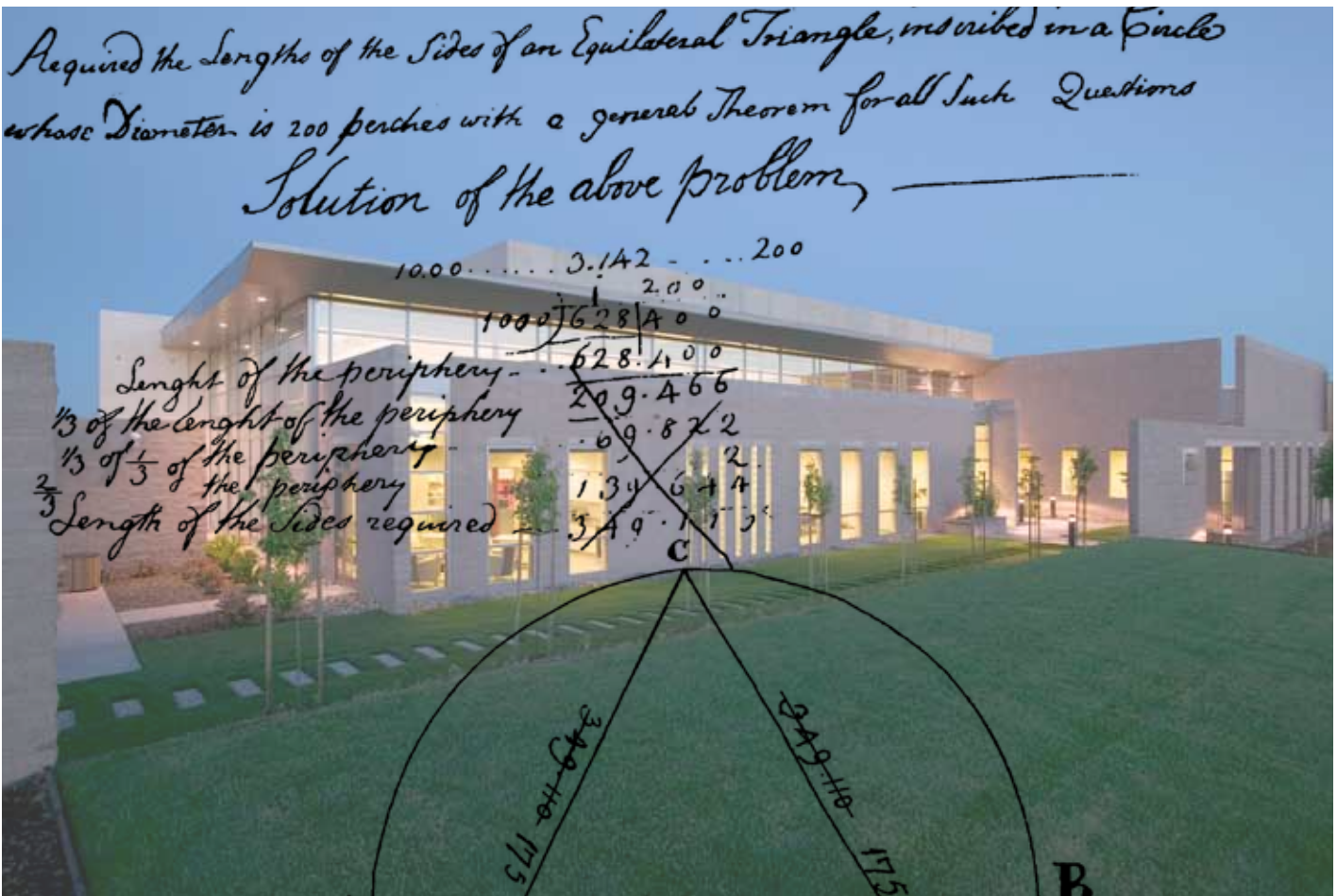
*Benjamin Banneker*

## FOUNDING FATHERS WALK

The Founding Fathers Walk will be an educational experience that focuses on the establishment of Washington DC and will serve as a link between the Mall and the Southwest Waterfront. The walk will commemorate George Washington, Thomas Jefferson, Major Charles Pierre L'Enfant, Daniel Carroll, David Stuart, Thomas Johnson, Major Andrew Ellicott, Joseph Ellicott, and Banneker's contributions to making Washington DC a world capital. With informational placards and kiosks that discuss the creation of DC, it will create an extension to the Mall experience that will link emerging neighborhoods to the central core.



BENJAMIN BANNEKER INSTITUTE FOR MATH, SCIENCE AND TECHNOLOGY



The Banneker Institute for Math and Science will be a prestigious academy that focuses on the STEM [Science, Technology, Engineering, and Math] disciplines. With the United States falling behind in math & science competency, the academy will be a catalyst for the next generation. With state of the art labs and equipment, it will draw students from around the nation to prepare them as leaders in the STEM disciplines. (See Exhibit A for program.)

## BENJAMIN BANNEKER INSTITUTE FOR MATH, SCIENCE AND TECHNOLOGY

Division	Program	Number of Rooms	Standard NSF/Area	Total NSF	Number of Students/Area	Number of Students	Teaching Stations
Academic	Regular Academic Classrooms	14	900	12,600	20	280	14
	Science Classrooms	6	1,300	7,800	20	120	6
	Science Prep	2	300	600			
	Technology Lab	2	1,300	2,600	20	40	2
	Large Classroom	1	2,000	2,000	30	30	1
	Greenhouse	1	400	400			1
	Storage	1	200	200			1
Common	Media Center	1	2,000	2,000			1
	Greenhouse	1	500	500			
	Lobby / Reception Area	1	500	500			
	Dining	1	4,000	4,000			
	Kitchen	1	2,000	2,000			5
	Storage	1	500	500			
Admin	Academy Director Office	1	150	150			1
	Student Support Staff Office	4	150	600			4
	Storage	1	100	100			
	Teacher Workroom	1	500	500			
	Conference Room	1	200	200			
	Health Suite	1	250	250			1
	Faculty Bathrooms	2	150	300			
	Break Room	1	200	200			
PE / Health	Gym	1	6,500	6,500			2
	Locker rooms	2	1,250	2,500			
	Staff Area	1	300	300			
	Storage	1	200	200			
Support	Building Engineering	1	580	580			1
	Storage	1	400	400			
	Loading	1	300	300			
Total Net Area School				48,780		470	40
Visitors Center	Office	1	150	150			2
	Workroom	1	150	150			
	Display Area / Lobby	1	400	400			
	Storage Area / Back of House	1	50	50			
Total Net Area Visitors Center				750			
Total Net Area				49,530			
Total Gross Area				74,295			

Assumptions:

∞ \$20 Million, approximately 75,000 GSF school @ 150SF/Student = 460 Students, 40 staff

∞ Grossing factor of 1.5 to cover circulation, bathrooms, etc.

∞ Two staff required for Visitors Center

## AMERICA'S MOST UNSUNG HERO



A bronze statue of Benjamin Banneker will be the focal point of the Memorial. At 15 to 20 feet tall, the statue will represent Banneker's life and accomplishments. Along with the statue, elements such as landscaping, water features, benches, bike paths and educational exhibits will be incorporated in the Memorial.



## BANNEKER CLOCK TOWER



The clock tower celebrates Banneker's success at building a clock that kept accurate time for nearly fifty years. Without any drawings or knowledge of clocks, he did all the necessary calculations, carved the pieces, and designed a method to power the clock simply from studying a borrowed pocket watch. The Clock Tower not only represents Banneker's mathematical and scientific ingenuity, it also embodies a young country's personality, the entrepreneurial nature, and the explorer's spirit, and will add ambiance to the corridor. It represents the founding of a Capital City for a young nation along the banks of the Potomac River.

## FOUNDING FATHERS VISITOR CENTER

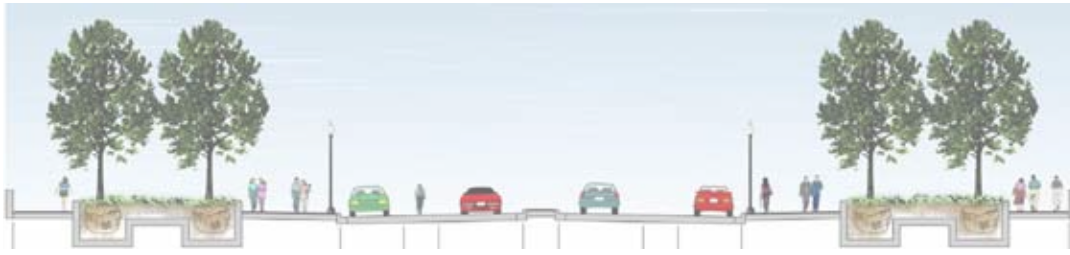


The visitor's center will sell souvenirs, education tools, and historical material focused on Benjamin Banneker, the Founding Fathers, and the establishment of Washington DC. It will be incorporated into the memorial to take greatest advantage of pedestrian flow.

## INTERMODAL TRANSPORTATION AND PARKING FACILITY



Located under Banneker Park, the Intermodal Transportation and Parking Facility will provide visitor parking for 1,158 vehicles and 75 tour buses. Incorporated into the design is a pedestrian link, via a grand stair, from the L'Enfant Promenade down to the Southwest Waterfront. The Facility will help ease the parking demand in the monumental core, reduce traffic congestion, and reduce pollution from vehicles searching for parking or idling in no parking zones. It will link the tri-state cultural waterfronts together.



PROPOSED ROUNDABOUT AND SECTION OF MEMORIAL NODES



## THE 1% COMMITMENT

Perkins+Will is committed to engage its professional resources and leadership to benefit the social needs in the built environment where design can make a difference. While encouraging volunteerism by our employees in our local communities, Perkins+Will will donate 1% of its time and unique intellect to initiate and execute projects and buildings that serve those in broad society who otherwise would not have access to our professional services.



# Benjamin Banneker Memorial I Predesign Program

A Memorial to America's First Black Man of Science



[www.bannekermemorial.org](http://www.bannekermemorial.org)

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Images (in order left to right and top to bottom) 1. Benjamin Banneker, Google Images 2. Banneker's Clock, [www.bnl.gov](http://www.bnl.gov) 3. Almanac, [www.blackpast.org](http://www.blackpast.org) 4. Plan of the city of Washington in the territory of Columbia, [www.inventors.about.com](http://www.inventors.about.com) 5-8. Map of Washington DC, Google Maps 9-13. L'Enfant Plaza Images, Perkins+Will 14-15. Concept Sketches, Perkins+Will 16. L'Enfant Plaza Image, Perkins+Will 17. L'Enfant Promenade & Benjamin Banneker Park Improvements, Environmental Assessment for Improvements to L'Enfant Promenade and Benjamin Banneker Park (March 2006) District Department of Transportation Credit 18. Benjamin Banneker's Triangle, [www.mathdl.maa.org](http://www.mathdl.maa.org) (top) Science and Technology, Perkins+Will (bottom) 19. Benjamin Banneker Statue, Peggy Seats 20. Baltimore East Waterfront Statue, Peggy Seats 21. Prague Clock Tower in main square, [www.travelpod.com](http://www.travelpod.com) 22. Dan's Diner, [www.clover-film.com](http://www.clover-film.com) 23. Dublin Pavilion, Google Images 24. Typical Section of L'Enfant Promenade, Environmental Assessment for Improvements to L'Enfant Promenade and Benjamin Banneker Park (March 2006) District Department of Transportation 25. Proposed Roundabout and Memorial "Nodes" (Narrow Median Design Option), Environmental Assessment for Improvements to L'Enfant Promenade and Benjamin Banneker Park (March 2006) District Department of Transportation