K

Board of Zoning Adjustment
District of Columbia
CASE NO. 17149
EXHIBIT NO. 29A4

Sidwell Friends School Wisconsin Avenue Campus
Site Lighting Master Strategy
Preliminary Concept

BENYA LIGHTING DESIGN – SEAN O'CONNOR ASSOCIATES
May 12, 2004

Introduction

The expansion and renovation program for the Wisconsin Avenue campus naturally requires an overall lighting master plan to ensure an attractive, efficient and neighbor-friendly result. As part of developing this program, the existing exterior lighting has been examined in detail and its strengths and weaknesses taken properly into account.

In developing this Master Strategy, a broad and long-term sustainability initiative has been implemented. Using the US Green Buildings Council LEED system as a guide, all lighting on the campus will be capable of achieving the LEED Dark Sky requirements. These stringent requirements are sufficiently strict as to ensure virtually complete "neighbor friendly" results on all sides of the campus. Moreover, these requirements will virtually eliminate glare and offensive lighting on campus as well, increasing the appeal of the buildings and grounds at night while preserving safety and security. The only lighting for outdoor sports will be the new tennis courts to be constructed north of the Upper School, internal to the campus.

Standards

Lighting designs will be consistent with USGBC LEED 2.1 Dark Sky requirements, including applicable USGBC interpretations and rulings.

Lighting levels will be consistent with IESNA recommended practices and standards, with consideration for IESNA RP-33-99, Exterior Environmental Lighting. In general, the site should be treated as E3, semi-urban, but meeting the E2, rural requirements for off-site light trespass, except along Wisconsin Avenue where E3 light trespass will be permitted and in fact is desired for increased security of the sidewalk. Typical interior walkway light levels will be about 0.75-1.0 footcandles, and parking lots generally 1.5-2.0 fc. Building entries will be about 2-5 fc.

General Approach

Virtually all existing lighting, with the exception of soffit lights at the Upper School, will be removed. The overall age, condition, appearance and performance do not warrant keeping these fixtures.

New lighting will employ ceramic metal halide or compact fluorescent lamps, to achieve a warm toned white light with excellent color.

Lighting mounted high onto building facades will be removed. Lights mounted at pedestrian level will be replaced with glare free luminaires. Lights under soffits and overhangs will be full cut off or recessed. In general, buildings will not be accent lighted. Additional lighting may be added around entrances and exits as needed. Possible luminaire types will be selected and included in the final Master Strategy.

Pole lights, fully shielded, carefully following the path with no upward or spill light will principally illuminate pathways. Pole height will be limited to pedestrian scale, 15' high or lower. A pole standard will be selected and included in the final Master Strategy.

Special lighting as needed will be carefully evaluated on a project basis relative to the Master Strategy. With the overall intent to create a consistent and appealing solution, unusually decorative lighting and unnecessary uses of lighting, such as landscape lighting, are not recommended.

L

KIERANTIMBERLAKE ASSOCIATES LLP

STEPHEN JAMES KIERAN, FAIA

EDUCATION

M.Arch., University of Pennsylvania, 1976
B.A., Yale University, *magna cum laude* with Departmental Honors in the History of Art, 1973

PROFESSIONAL EXPERIENCE

KieranTimberlake Associates, Partner 1984 - Present
Venturi, Rauch and Scott Brown, 1978 - 82
Allan Greenberg, Architect 1976 - 78

ARCHITECTURAL REGISTRATION

NCARB CERTIFICATE NO. 32937, 1984
Pennsylvania, 1984
Registrations in other States: Connecticut, Massachusetts, New Jersey, North Carolina, California and the District of Columbia

ACADEMIC AFFILIATIONS

Max Fisher Visiting Professor, University of Michigan, 2004 - Present
Adjunct Associate Professor, University of Pennsylvania, 1995 - Present
Eero Saarinen Distinguished Professor of Design, Yale University, 1994
Institute for Urban Design
Parsons School of Design
Princeton University
Syracuse University
University of Arkansas
University of Karlsruhe, Germany
University of Tennessee

ACADEMIC AND PROFESSIONAL HONORS

19 Design Awards, Philadelphia Chapter, American Institute of Architects and Pennsylvania Society of Architects, 1988-98
Fellow, American Institute of Architects, 1996
Graham Foundation for Advanced Studies in the Fine Arts, Grant Recipient, 1992
Fellow, American Academy in Rome, 1980-81

PROFESSIONAL ASSOCIATIONS

American Collegiate Schools of Architecture
American Institute of Architects
The Athenaeum of Philadelphia
Society of Fellows, American Academy in Rome
Pennsylvania Society of Architects

Stephen Kieran, FAIA, Partner, received his B.A., magna cum laude, from Yale University and his Master of Architecture from the University of Pennsylvania, with honors. He has 28 years of professional experience and is a founding partner of the firm. He is a registered architect in Connecticut, Massachusetts, Pennsylvania, New Jersey, North Carolina, California and the District of Columbia. Mr. Kieran served as the Design Partner for Little Hall renovations at Princeton University, Berkeley, Pierson, Davenport and Silliman residential college renovations at Yale University, and the new Keohane Quadrandgle residential and student center complex at Duke University.

AMELIA FLORESTA, AIA *(Associate)*
REGISTRATION
Pennsylvania, 1989

EDUCATION
M.Arch., Yale University, 1988
B.A., Environmental Design, *cum laude*, North Carolina State University, 1982

PROFESSIONAL EXPERIENCE
KieranTimberlake Associates LLP, Associate, 1988 – Present
Cesar Pelli & Associates, 1987
Eric Epstein Architect, 1986-87

AWARDS
Everett Victor Meeks Fellowship, Yale University, 1988
AIA Scholarship, Yale University, 1987
Kenneth A. Householder Scholarship, Yale University, 1986

Amelia Floresta, AIA, Associate, received her Bachelor's degree from North Carolina State University, cum laude, and her Master of Architecture from Yale University. She is a registered architect in the Commonwealth of Pennsylvania. With the firm since 1988 and an associate since 1999, Ms. Floresta has served as associate-in-charge for design and planning projects at Little Hall, Residential College Program Study, New College Program and Site Selection Study, and Wilson College Assessment and Feasibility Study at Princeton University; Berkeley College Renovations at Yale University; the West Campus Residential Initiative at Cornell University; a master plan and design of six building projects at Sidwell Friends School; and Renovations to Mackay Campus Center at Princeton Theological Seminary.

MARTIN J. WELLS, P.E.
PRESIDENT

PROFILE: Mr. Wells has 29 years of experience in traffic, transportation, transit, parking, and pedestrian planning and engineering. He has worked for private real estate developers; federal, state, and local governments; and institutions in 30 states and overseas. This experience includes traffic impact studies, transportation analyses of mixed-use developments, travel demand management studies, parking policy and needs studies, transit planning, and highway and parking facility design. Mr. Wells has provided expert testimony before numerous planning boards, elected officials, administrative hearing officers, and citizens groups.

EXPERIENCE:

Traffic Impact Studies. Conducted numerous traffic impact studies for large and small residential, commercial, and mixed-use projects in every major jurisdiction in the Washington metropolitan area and in 15 other states. This includes preparation of reports and expert testimony in support of rezoning, subdivisions, site plan approvals, and comprehensive plan and proffered condition amendments.

Mixed-Use/Town Center Developments. Conducted multi-modal transportation studies for 12 million square foot mixed-use residential, office, retail, and hotel projects for the Potomac Yard in Alexandria/ Arlington, Virginia; Reston Town Center, Fairfax County, Virginia; The Village at Shirlington, Arlington County, Virginia; Columbia, Maryland; WorldCom and Evergreen Mills in Loudoun County, Virginia; The Gallery at Harborplace in Baltimore, Maryland; Carlyle and Mark Center in Alexandria, Virginia; Xerox Landsdowne in Loudoun County, Virginia; Colgate-Palmolive Company in Jersey City, New Jersey; River Walk in New York City; Eden Isles in Slidell, Louisiana.

Major Event Use Studies. Prepared traffic, parking, and traffic management plans for stadiums and entertainment complexes including The John F. Kennedy Center for the Performing Arts in the District of Columbia; FedEx Field (Washington Redskins), Landover, Maryland; Jordan Hare Stadium, Auburn, Alabama; Arlington County Major League Baseball Stadium; Merriweather Post Pavilion, Columbia, Maryland; Nissan Pavilion, Prince William County, Virginia; Middle River Racing Associates in Anne Arundel County, Maryland; and Oriole Park at Camden Yards, Baltimore, Maryland.

Interchange Justification Studies. Conducted studies for modifying existing interchanges and for new interchanges on Interstate highways in Virginia, Maryland, New Jersey, Texas, and Louisiana.

Travel Demand Management Studies. Developed travel demand management programs, including group riding, transit, flexible work hour, and other actions, for major development projects in Montgomery and Prince George's County, Maryland; and Arlington County, Alexandria, Vienna, and Fairfax County, Virginia.

Travel Demand Forecasting. Forecasted regional and corridor travel demand in Arlington, Fairfax, and Loudoun County, Virginia; Jersey City, New Jersey; Columbia, Gaithersburg, Howard County, and Prince George's County, Maryland; Arlington, Virginia; Birmingham, Alabama; Fort Meyers, Florida; and Buenos Aires, Argentina.

Neighborhood Traffic Management Studies. Identified actions to reduce through traffic and vehicle speeds in East Bethesda, Chevy Chase Section IV, Maryland, Fairfax County, Virginia; and Paulus Hook, Jersey City, New Jersey.

Retail Traffic and Parking Studies. Prepared traffic, parking, transit, and pedestrian studies for Main Street, town center, regional shopping centers, large-scale value retail centers, and power strip centers in Arlington, Fairfax County, Loudoun County, and Richmond, Virginia; Owings Mills, Baltimore City, Columbia, Gaithersburg, Anne Arundel County, and Prince George's County, Maryland; North Barrington, Illinois; Atlanta, Georgia; Plano, San Antonio, and Fort Worth, Texas; Coral Gables, Tampa, and Orlando, Florida; New Haven, Connecticut; Boston, Massachusetts; and Puebla, Mexico.

Parking Studies. Conducted parking policy, needs, feasibility, and shared-use studies for public agencies, parking operators, and real estate developers, including Arlington County, Fairfax County, Alexandria, and Middleburg, Virginia; Nashville/Davidson County and Memphis, Tennessee; Hartford, Connecticut; Coral Gables and Jacksonville, Florida; Syracuse, New York; the Washington Metropolitan Transit Authority; and The Rouse Company.

Transit Station Impact Analyses. Conducted site access, joint development, parking, and pedestrian impact studies at numerous bus and rail transit stations in the Northeast Corridor, metropolitan Washington, San Antonio, Atlanta, Jersey City, and Buenos Aires, Argentina.

Transit Studies. Devised transit circulator systems for various downtowns and major activity centers, and prepared transit development programs throughout Pennsylvania and North Carolina.

Health Care Facilities. Prepared traffic and parking plans for hospitals, universities, professional office buildings, and nursing homes, including the Yale-New Haven Medical Center; Georgetown University Medical Center; Fairfax (Virginia) Hospital; Inova Fairfax (Virginia) Hospital; Fair Oaks (Virginia) Hospital; Washington Adventist Hospital; Shady Grove Adventist Hospital; Montgomery County, Maryland; Washington Hospital Center; Loudoun Memorial Hospital; Mission Memorial Hospital, Asheville, North Carolina; Baptist Medical Center, Birmingham, Alabama; and University of Rochester.

Schools. Conducted traffic, parking, bus, and pedestrian analyses of public and private elementary, middle, and high schools, including Cranbrook, Bloomfield Hills, Michigan; St. Patrick's Episcopal Day School, Washington, D.C.; Edmund Burke School, Washington, D.C.; Sidwell Friends School, Washington, D.C. and Bethesda, Maryland; The Sheridan School, Washington, D.C.; The Potomac School, McLean, Virginia; The Langley School, Fairfax County, Virginia; French School, Montgomery County, Maryland; Garrison Forest School, Baltimore County, Maryland; and public schools in Arlington and Fairfax County, Virginia, and Montgomery and Howard County, Maryland.

Environmental Impact Studies. Prepared the transportation components of environmental documents in Washington, D.C.; Prince George's County, Maryland; New York, New York; Jersey City, New Jersey; Slidell, Louisiana; and Charleston, South Carolina.

EDUCATION: Master of Science, Civil Engineering, Carnegie-Mellon University, Pittsburgh, Pennsylvania, 1975.

Bachelor of Science, Civil Engineering, Wayne State University, Detroit, Michigan, 1973.

REGISTRATIONS: Registered Professional Engineer: Virginia, Maryland, New Jersey, Florida, Illinois, Texas, Pennsylvania, Colorado, Ohio, Missouri, Connecticut, North Carolina, New York, Michigan, and the District of Columbia.

AFFILIATIONS: Institute of Transportation Engineers
American Planning Association
Congress for the New Urbanism

PUBLICATIONS: "Colgate-Palmolive Site Traffic Impact Assessment Case Study," American Society of Civil Engineers, Site Impact Traffic Assessment Conference, June 1992.

"Neo-Traditional Neighbor Developments: Can You Go Home Again?," National Trust for Historic Preservation, National Meeting on Main Street, April 1992.

"Parking and Easy Access - The First Steps Toward Recovery," Health Facilities Management Magazine, December 1991.

"Review of Methods for Assigning Work to Part-Time Operators," Annual Meeting of the Transportation Research Board, Washington, D.C., 1985.

"Integrating Public Transportation into the San Antonio, Texas Street System," International Public Works Congress and Equipment Show, Atlanta, Georgia, 1981.

"Neighborhood Automobile Restraint: The Chevy Chase Section Four, Maryland Experience," Annual Meeting of the Transportation Research Board, 1981.

"Planning for Shared-Ride Taxi Service," 58th Annual Meeting of the Institute of Transportation Engineers, 1978.

EMPLOYMENT HISTORY

1991 - Present — **Wells & Associates, LLC**
McLean, Virginia
President

Responsible for business development, administration, management of professional, technical, and clerical staff, technical analyses, quality control, documentation, and expert testimony.

1981 - 1991 — **Gorove/Slade Associates, Inc.**
Washington, D.C.
Principal Associate

Responsible for the transportation planning practice. Responsibilities included business development, project administration, management of professional, technical, and clerical staff, technical analyses, quality control, documentation, and expert testimony.

1980 - 1981 — **San Antonio Metropolitan Transit Authority (VIA)**
San Antonio, Texas
Director of Planning

Responsible for long-range, short-range, and day-to-day operations planning for a 550-bus transit system serving a metropolitan area of over 1,000,000 people.

1975 - 1980 — **Barton-Aschman Associates, Inc.**
Washington, D.C.
Associate/Senior Associate

Responsible for transportation planning, transit planning, and traffic engineering analyses.

JAMI L. MILANOVICH, P.E.
SENIOR ASSOCIATE

PROFILE:

Ms. Milanovich has nine years of experience in a wide range of traffic and transportation projects including: traffic impact studies, corridor studies, parking analyses, traffic signal design, intersection improvement design, and signing and pavement marking design. She has worked for both public and private sector clients.

EXPERIENCE:

Traffic Impact Studies. Conducted numerous traffic impact studies in support of rezoning, subdivision, and site plan approvals for large and small residential, commercial, office, retail, and institutional developments in the mid-Atlantic region. Her work includes experience in Pennsylvania, Virginia, Maryland, and Washington, D.C. Specific Washington, D.C. projects include the following:

- Rosemount Center Traffic and Parking Study
- Sidwell Friends School Transportation Study
- Traffic and Parking Study for the Broad Branch Market and Child Development Center
- Traffic Impact Study for the Emerson Street Townhouses
- Fort Totten Apartments Traffic Impact Study
- Square 486 Traffic Impact Study
- Squares 483 and N-515 Traffic Impact Study

Corridor Studies. Conducted several corridor studies, which have evaluated the effects of various geometric and traffic signal system improvements on specific corridors. She has utilized Synchro and SimTraffic software to both analyze the potential improvements and make presentations for agencies and the general public.

Traffic Signal Design. Prepared numerous traffic signal designs for new installations and modifications to existing installations, including the development of coordination timings for interconnected intersections. Her work has included preparation of signal permit drawings for state agencies and construction drawings for contractors.

Intersection Improvements. Prepared many intersection improvement plans throughout Pennsylvania, often in conjunction with traffic signal designs. Design of intersection improvements typically

consists of roadway widening, drainage improvements, utility coordination, maintenance and protection of traffic considerations, and signing and pavement marking plans.

Traffic Calming Studies. Investigated traffic calming measures to reduce travel speeds and "through" traffic on residential streets. Alternatives included chicanes, chokers, diverters, speed tables, and one-way street options.

Interchange Justification Studies. Prepared Point of Access Study for the completion of the partial diamond interchange for submission to the Pennsylvania Department of Transportation and the Federal Highway Administration. Study included an origin-destination study and capacity/level of service analyses at eight intersections and an inventory of existing and approved developments within the study area. Data analyses were conducted for scenarios with and without the proposed interchange.

Origin-Destination Studies. Conducted several origin-destination studies as part of larger projects to determine travel patterns through specific areas. Methods used included license plate matching, post-card surveys, personal interviews, and car-following.

Speed Limit Studies. Conducted speed limit for two-lane, rural roadways in Pennsylvania. Methodology utilized was safe running speed method in accordance with ITE guidelines.

EDUCATION: Master of Engineering, The Pennsylvania State University, University Park, Pennsylvania, December 2000

Bachelor of Science, Civil Engineering, The Pennsylvania State University, University Park, Pennsylvania, May 1995

REGISTRATIONS: Registered Professional Engineer: Pennsylvania

AFFILIATIONS: Institute of Transportation Engineers

EMPLOYMENT HISTORY

2003 - Present — **Wells & Associates, LLC**
McLean, Virginia
Senior Associate

1997 - 2003 — **Herbert, Rowland & Grubic, Inc.**
Harrisburg, State College, and Pittsburgh, Pennsylvania
Traffic Engineer

Ms. Milanovich was a project manager responsible for the preparation of traffic engineering studies, traffic signal design, and intersection improvement designs.

1995 - 1997 — **Transportation Resource Group, Inc.**
York, Pennsylvania
Traffic Engineer-in-Training

Ms. Milanovich was responsible for data collection efforts and conducting traffic engineering studies. Her duties also including overseeing technical support staff.