

Institute Honors and Awards Fellowship



THE AMERICAN
INSTITUTE
OF ARCHITECTS

2016 AIA Fellowship

Entry 117123

Nominee Daniel Watch
Organization Perkins+Will
Location Atlanta
Chapter AIA Atlanta

Category of Nomination

Category Two - Research

Summary Statement

Dan Watch, global leader in laboratory design, has authored four books, designed over 12 million sf across four continents and won six international design competitions. His work, advocating sustainability, writing, and lecturing has educated thousands.

Education

University of Pennsylvania; Philadelphia, Pennsylvania; 1980 - 1983; Master of Architecture, Master of City Planning, and Certificate in Urban Design
University of Tennessee; Knoxville, Tennessee; 1976 - 1980; Bachelor of Architecture

Licensed in: Georgia, Kansas, Maryland, New York, Pennsylvania, and South Carolina

Employment

Perkins+Will: 1996 to Present (19 years)
Gresham Smith & Partners: 1995 (1 year)
Kling Lindquist: 1989 to 1994 (5 years)

PERKINS+WILL

September 16, 2015

Ms. Diane Georgopoulos, FAIA
Chair, Jury of Fellows
The American Institute of Architects
1735 New York Avenue, NW
Washington, DC 20006-5292

Dear Ms. Georgopoulos and FAIA Jury Members,

I first met Dan Watch twelve years ago when my former firm and Perkins+WII joined together. Since that time Dan and I have had the opportunity to work closely together on major research facilities, including three highly complex National Laboratories; the NIH/University of Texas Galveston National Laboratory, and the Department of Homeland Security's National Biodefense Analysis and Countermeasures Center, and the National Bio-Agro Defense Facility. Each important national research assets for our country.

As the firm's Global Science and Technology Leader, Dan's expertise, collaborative nature and forward-thinking approach to research facility planning and design is recognized both nationally and internationally. His outstanding portfolio of innovative, flexible and sustainable laboratory projects have consistently incorporated inventive ways to reduce the high energy consumption inherent in complex research buildings, while providing healthy and high quality research environments that are conducive to scientific discovery. As a result, Dan's work has received recognition through numerous awards for design excellence.

Throughout his career Dan has generously shared his extensive knowledge, both as a mentor to younger staff within our own firm, as well as hundreds of other architects and stakeholders around the world. He has been an invited speaker at dozens of national and international conferences, has written numerous articles on research facility design, as well as authored three books that have achieved global recognition on the subject. Dan will complete by the end of this year his fourth book on the critical role of facility design in medical education.

I have experienced firsthand Dan's professionalism, skill, resourcefulness and passion to continually "raise the bar" that has resulted in his extraordinary body of work. I strongly support and recommend Dan's elevation to Fellowship in the AIA.

Sincerely,



Raymond L. Beets, FAIA
Principal

Component Nomination



Name of Component Organization **AIA Atlanta**
Name of Chapter President **Melody Harclerode, AIA**

Signature of Chapter President

Melody L. Harclerode



SECTION 1. SUMMARY

SUMMARY STATEMENT

Dan Watch is a global leader in laboratory design. Author of four books, designer of over 12 million sf in four continents, and winner of six international design competitions, his work, advocating sustainability, writing, and lecturing have educated thousands.

Dan has had a lasting impact, is widely recognized globally, and provides inspiration to others in the field and the profession. He has designed some of the most significant research facilities with most receiving major national and some international awards. He has supported the research institutions at the Centers For Disease Control (CDC), National Institutes of Health (NIH) and Department of Homeland Security (DHS) after 9/11 to address bioterrorism by leading teams on major bio-containment projects when the country benefitted from his help. He speaks each year around the world on the best sustainable design solutions to help educate architects and engineers as well as have a positive impact with key decision makers in the government of developing countries like China, Saudi Arabia, Qatar, Kuwait and Singapore. He intends to continue to focus on helping others with his expertise, passion and drive to support others.

SUMMARY OF ACHIEVEMENTS

Dan has advanced the science and art of planning and building by advancing the standards of architectural practice, education and training.

Practice / Dan has designed over 12,000,000 square feet of laboratory research and science buildings in his career. He has successfully designed and built hundreds of different types of labs to support better research models. Recently he has led six teams to win major international competitions in China, Brazil and Singapore.

BENEFITS OF DAN'S WORK

Share the latest technologies and success stories with clients in developing countries to accelerate their growth and to benefit their population.

To transfer knowledge to people, from information learned by working in various cultures and building with other construction techniques from around the world that can improve design.

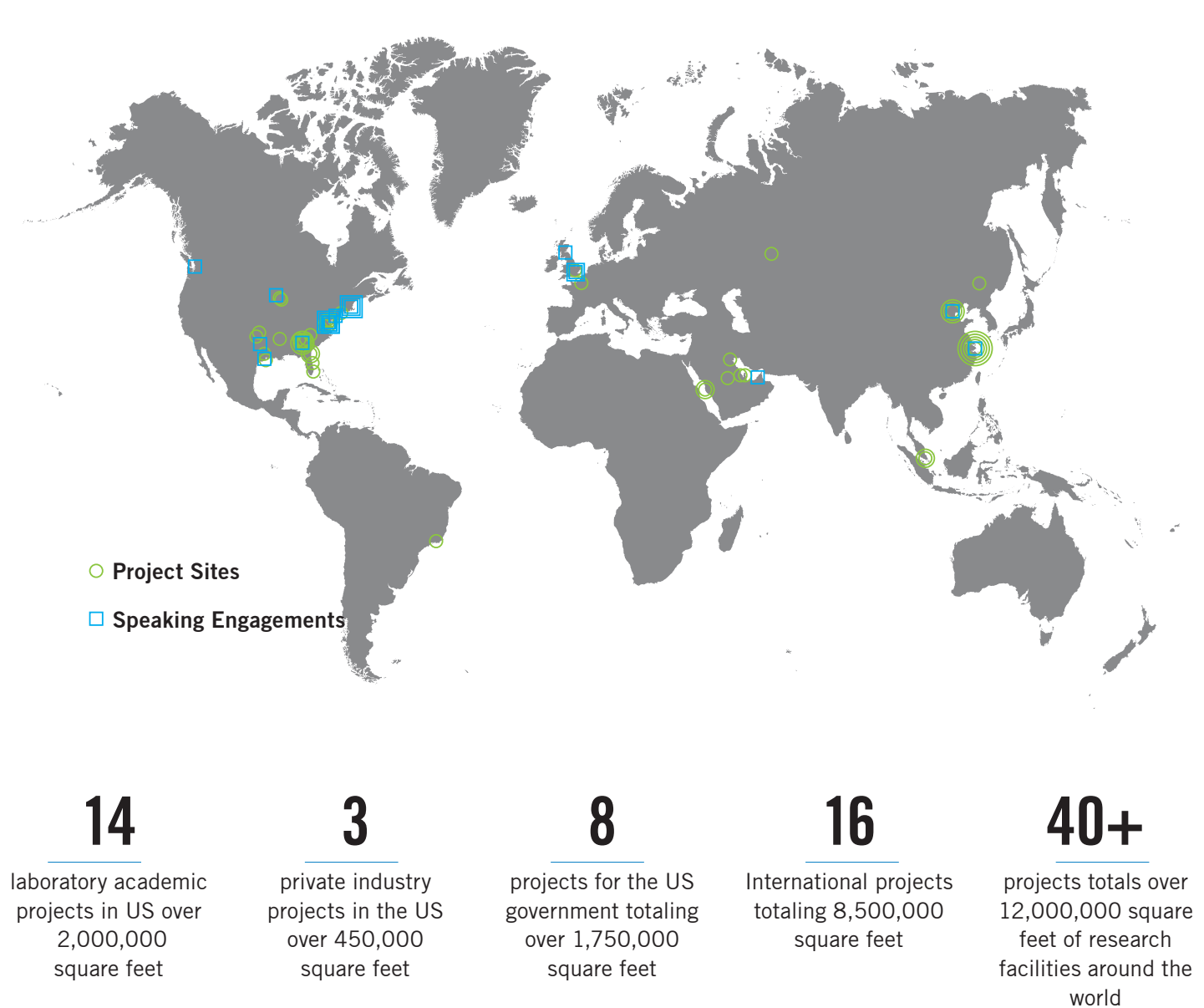
To challenge himself and his teams on each project to raise the bar to provide new solutions in lab design to address changes in research and to also educate local engineers in various countries on the latest energy efficient solutions.

Give young architects opportunities to work on projects around the world and to see the world by traveling to client meetings.

SECTION 2.ACCOMPLISHMENTS

2.1 / SIGNIFICANT WORK OF THE NOMINEE

Dan has traveled on over 60 business trips (which include talks to universities about sustainability) to China, over 50 to Europe and over 45 to the Middle East. An average of one major international trip every two months for twenty five years. He has shared his knowledge around the world while designing a wide range of laboratory project types. The following list is focused on academic teaching and research projects from biomedical to engineering labs. He has designed every type of laboratory commonly used for research and teaching. In the last eight years Dan has led six major international competition winners for new research campuses. His work is known around the world.



SECTION 2. ACCOMPLISHMENTS

2.1 / SIGNIFICANT WORK OF THE NOMINEE

Dan's role on most projects was as the principal in charge responsible for the client, overall management, design coordination, budget and schedule, as well as the laboratory designer. He is almost always leading the architectural team in all client meetings and is the key person to work directly with the researchers on the design of their laboratories. There are a handful of projects where Dan has helped the team and client in just the laboratory designer role because of his expertise and ability to develop innovative new laboratories.

BIO-CONTAINMENT FACILITIES FOR THE US GOVERNMENT AGENCIES AFTER 9/11



Centers for Disease Control Building 110-National Center for Environmental Health Atlanta, GA 2005 / Principal in Charge and Laboratory Designer

This new project designed after 9/11 required a 24-hour research facilities turnaround to address emergencies. That day and event has changed how people in the U.S. view disasters and must design buildings to protect against and respond to disasters. The head of the CDC, Dr. Koplan, asked Dan to develop new systems that enable a lab's complete reconfiguration in 24 hours to ramp up research when global threats such as SARs or Ebola arise. Some key solutions were to locate all engineering pipes and wires on the structural column to provide easy access to "plug and play" and allow easy and safe modifications to the casework and laboratory equipment. Almost all the casework changed from fixed to mobile. The engineering systems were a generic design that allowed the researchers to customize and create 64 different labs as they moved in. The building was designed for environmental research as well as to address chemical bioterrorism. It was the first LEED® Gold research building.



National Biodefense Analysis and Countermeasures Center (NBACC) Ft. Detrick, MD 2014 / Principal in Charge and Laboratory Designer

Managed by the Department of Homeland Security Science and Technology Directorate, this 154,000-square-foot laboratory strengthens the nation's ability to defend against biological warfare. Dan was the managing principal and high-containment laboratory designer for the BSL-3 laboratories located on the new National Interagency Biodefense Campus, which promotes scientific collaboration among the Department of Defense, U.S. Department of Agriculture (USDA) and NIH. Heightened security was one primary reason to design NBACC as DHS's first new research center.



Department of Homeland Security, National Bio and Agro Defense Facility (NBAF) Manhattan, KS 2020 / Principal in Charge and Laboratory Designer

Entrusted to Dan and his team to deliver new and unique high containment laboratories, the project also had to address further concerns from 9/11. Dan is managing principal and high-containment laboratory designer of Bsl-2 and 3 labs for this 520,000-square-foot facility to research high- consequence biological threats involving zoonotic (transmitted from animals to humans) and foreign animal diseases. The facility will provide animal testing necessary to license vaccines, as well as for threat characterization, forensics and detection. This building has hardened structures to withstand level 5 tornados, to protect the sensitive nature of research inside. This is the first time a research facility will be built at such stringent criteria which is very similar to a nuclear plant.

Seeking concrete information about how to improve the design of large animal research facilities, Dan initiated the first-ever peer review of large animal researchers and the people who maintain these facilities. A week-long summit of over thirty representatives from Canada, United Kingdom, Australia and six states in the U.S. interacted with architects and engineers to develop a lessons learned document and best practices that is being used as a global resource.

SECTION 2. ACCOMPLISHMENTS

2.1 / SIGNIFICANT WORK OF THE NOMINEE

Research buildings require at least twice as much energy as a hospital and over five times as much as an office building, so achieving sustainable measures is challenging and very important. Since the CDC Building 110 project all of Dan's laboratory projects, except two bio-containment projects, have received LEED gold rating or higher. Most of Dan's projects are creating a living laboratory for sustainable design that the client meters and monitors, while Dan's team collects, evaluates, shares and advises the client and industry. His recent books have documented the sustainable solutions for his projects. He shares his data with the Rocky Mountain Institute, Is2I (formerly Labs 21) and students who request information for their academic studies.

DESIGNING HIGHLY SUSTAINABLE AND HEALTHY RESEARCH BUILDINGS



National Institutes of Health (NIH) Phase II Porter Neuroscience Research Center 2014 / Principal in Charge and Laboratory Designer

This 322,000 square foot new biomedical laboratory completes the largest neuroscience research center in the world. Dan was the managing principal and laboratory designer. The project was shovel ready and the first to be constructed on President Obama's Federal Initiative for Energy Efficient Buildings. Dan worked with the engineers and leadership at NIH on a two year study of HVAC systems with the results indicating chilled beams as the best value. Now all Dan's projects and NIH projects constructed as well as renovated are built with chilled beams. This has now become an industry standard in the US and is developing into the international standard. Dan has written several articles on NIH's website under Whole Building Design Guide. He also was an invitee expert to review and update NIH 2015 Design Review Manual(DRM).



Oklahoma Medical Research Foundation (OMRF) Bethesda, MD 2014 / Principal in Charge and Laboratory Designer

This 160,000-square foot non profit research center was designed at a LEED gold rating with chilled beams, water management solutions and renewable energy. For public understanding and support of OMRF, with Dan's leadership as managing principal and laboratory designer, built 16 wind turbines on the roof for branding to project a positive image. The branding was important to better express to the public what research facilities do and the importance of researchers' work. The project has increased grant funding and donations significantly by gaining support and enhancing recruitment. The image of the project is on the cover of Dan's second book.

Dan has 14 LEED gold or higher research projects, totalling over 5.9 million square feet with an annual energy savings estimated at over \$6,000,000.

SECTION 2. ACCOMPLISHMENTS

2.1 / SIGNIFICANT WORK OF THE NOMINEE

All work presented has been completed at Perkins+Will over the last twenty years. In 1998 Dan started designing facilities in China and has designed seven major projects to date that are considered the benchmarks in China. Since then he has designed new state of the art research centers in developing countries including Singapore, Qatar, and Saudi Arabia. He has also worked in the United Kingdom from 1989 and France soon after on major pharmaceutical campuses.

DESIGNING MAJOR RESEARCH CENTERS IN DEVELOPING COUNTRIES



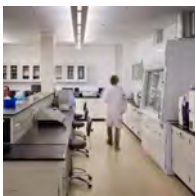
Singapore National Research Foundation Campus for Research Excellence + Technical Enterprise (CREATE) Singapore
2014 / Laboratory Designer

Dan focused on the laboratory facility for over 600,000 square feet that is highly flexible to accommodate a wide range of laboratories for academic, government and private industry. The building is highly sustainable and designed to improve working environments and promote healthy design. Researchers spend long hours at microscopes and screens. Dan transformed the typical windowless lab environment to airy, light-filled spaces that re-energize researchers and provide safer labs. Collaboration in the center provides connection opportunities that are very effective today as the building is in full operation. Healthy building solutions include natural indirect light into spaces, great views from all program spaces outside to nature, stairs that are designed comfortably to encourage use, and use of materials that have been made of safe chemicals and natural materials. This project was one of six recent international competition award winners Dan has been responsible for.



HuaNeng Group , Talents + Innovation + Entrepreneurship Beijing, China
2014 to present / Managing Principal and Laboratory Designer

This 1,800,000 sf research campus consists of ten buildings with Dan as the managing principal and laboratory designer for all the research buildings totaling 900,000 square feet. This building is located in Beijing and when this project and other research facilities are completed in this research center it will be the largest in the world. This project was another recent international competition award winner. Dan has provided presentations translated in Mandarin on life safety, how to manage chemicals in labs, how to work in the laboratories and how the design is able to change as needed to support their research.



King Abdullah International Medical Research Center Riyadh, Saudi Arabia
2015 / Managing Principal and Laboratory Designer

Dan was the managing principal and lab designer for the entire 330,000-square foot project and was asked by the leadership of the medical school “to design the best international research center in the world”. The building has the King’s name on it and has some significant research programs. Dan worked closely with the researchers to design the second largest blood bank in the world. During the project the development of automated blood banks evolved three times which gives the institution the best new equipment available. The samples will be from 250,000 Saudis and be tracked over decades to help research around the world on specific areas. Stem cells from the umbilical cord are saved and may be used in the future when research solutions are discovered. The project is very forward thinking serving the entire population in Saudi Arabia. Dan has also focused on presentations to the contractor to help improve safety on site and commissioning of the buildings.

SECTION 2. ACCOMPLISHMENTS

2.1 / CONFERENCES + PRESENTATIONS

Dan has spoken at over 100 conferences throughout his career to over 100,000 people. His intent is always to share information with others to support the architectural profession. Key movements and focus areas include laboratory design, sustainable design, energy efficient laboratories, healthy building design and green chemistry. Many presentations have included accompanying white papers that are published and shared with a larger audience.

2015

Tsinghua University, Healthy Buildings, *Beijing, China*

Beijing Sanzen Energy Technology CO., LTD, Latest in Sustainable Laboratory Design and Healthy Buildings, *Beijing, China*

Virginia Tech College of Architecture and Urban Studies, Latest in Laboratory Design and Healthy Buildings, *Blacksburg, Virginia*

2014

sLab Conference, "OMRF Research Tower," presentation after receiving award, "Singapore CREATE Design," which received Lab of the Year, *London*

ARABLAB Expo, "Lessons Learned Creating a Global Collaborative Research Environment," Keynote Address, *Dubai, UAE*

MedEd Facilities Conference, "Master Planning for New Medical Schools in the US and Middle East," *Boston, MA*

2013

Construction Owners Association of America (COAA) Spring Owners Conference, "Net Zero: Funding Your Energy Retrofit Projects with Energy Savings," *Atlanta, GA*

Design Futures Council Sustainability Summit, "2030 Challenge: Getting to Zero Energy Costs," *Minneapolis, MN*

NIH Health in Buildings Roundtable (HiBR), "Healthy Buildings," Keynote Speaker, *Bethesda, MD*

2012

NIH International Conference on Sustainable Laboratories: Choosing the Right Equipment, "Reducing Energy, Carbon and Costs," Keynote Speaker, *Bethesda, MD*

AIRI (Association of Independent Research Institutions), "Oklahoma Medical Research Foundation (OMRF) design," *Washington, DC*

Peking University, "Research Building Design Trends," *Beijing, China*

Tongchi University, "Sustainable Laboratory Design Solutions," *Shanghai, China*

2011

Innovation UK SciTech 2011 Conference, "Improving the Science of Science," *London*

Association of University Research Parks BioParks Conference, "KAUST ScienceTown: The Future of Research," *Washington, DC*

National Institutes of Health Lessons Learned Conference for Biomedical and Animal Research Facilities, "Improving the Science of Science," *Bethesda, MD*

2009

Scientific Equipment and Furniture Association Spring Meeting, "Latest Ideas in Research,"

Research Laboratory Design Conference, "Research for the Global Good"

Webcast, "Laboratory Design"

2008

SEFA (Scientific Equipment and Furniture Association) Webcast, "Laboratory Design"

LabWize, "Sustainable Laboratories," *Orlando, FL*

2007

Labs21, "Nanotechnology Design," *Dallas, TX*

2006

Scotland Research Parks Conference, "Laboratory Design," *Edinburgh, Scotland*

Pittcon, "Laboratory Design Trends since 9/11," *Philadelphia, PA*

Tradeline, "NBACC," *Baltimore, MD*

2005

AURP (Association of University Research Parks) Conference, "Laboratories of the 21st Century," *Houston, TX*

2003

Presentation at Wuhan University on laboratory design, December of 2003 four months after he and his wife adopted Quinn Connelle Watch from Wuhan, China at one year of age. Two years later they adopted their second child from Guilin named Lucie Jingru Watch.

SECTION 2. ACCOMPLISHMENTS

2.1 / ACADEMIC INVOLVEMENT



2002

Harvard Graduate School of Design- 3 day course,
“Continuing Education on The Latest Academic Teaching Laboratory Trends,” *Cambridge, Massachusetts*

100 attendees; text for the course was “Research Laboratories” authored by Dan

Dan lectured at Harvard University on the design of laboratory facilities. The course focused on the three driving forces behind the shift in laboratory design: the development of the competitive global marketplace.

The move toward team-based research.

The use of computer technology to accelerate the research process. Private sector labs, government labs, and academic institutions were discussed as well as new ideas for wet and dry labs, basic science, physical science and engineering labs. The course was attended by researchers, administrators, facility engineers and architects who are involved in the renovation or new construction of laboratory facilities.

The seminar consisted of four parts over the three days. The first day was an overview of good laboratory design practice, then focus on the design of the latest biomedical research facilities, and engineering teaching and research labs. On the second day, there was the focus on undergraduate teaching labs, the benefits of space utilization studies, programming methods, and sustainable design. There was also an overview of the key engineering issues that impact the design of laboratory facilities. At the end of each afternoon was a tour of an academic laboratory in the Boston area.

Textbook: Building Type Basics for Laboratory Facilities,
Daniel Watch, John Wiley & Sons, Inc. 2001.

The Latest Design Models for Academic Laboratory Facilities

A new model for laboratory design was emerging one that creates lab environments that are responsive to present needs and capable of accommodating future demands. Dan discussed several key needs are driving the development of this model:

- Create “social buildings” that foster interaction and team-based research
- Achieve an appropriate balance between “open” and “closed” labs
- Flexibility to accommodate change
- Design for technology
- Environmental sustainability
- Develop science parks to facilitate partnerships between government, private-sector industry, and academia

“Every lecture was well organized, the material was interesting, their pacing was impeccable, and the written material was exceptionally thorough. There was an abundance of detailed data that was always important. It was an unexpected experience because it was never boring!”

ALLAN GREENBERG, ARCHITECT
ATTENDED HARVARD COURSE

SECTION 2. ACCOMPLISHMENTS

2.1 / ACADEMIC INVOLVEMENT

Education / Dan has helped over 10,000 people in the 100+ conferences at which he has presented by writing books and articles as well as speaking at conferences and working on project teams. He speaks at least 4-6 times a year at major conferences in the US and internationally on topics from laboratory design, sustainable design and success stories of his recently completed award winning projects. He has trained dozens of young architects every day for over 25 years to have a strong and positive impact on the architectural profession. He has taught two courses at Harvard Continuing Education program to approximately 200 professionals. His books have been the source for each course.

2014

Health Sciences Conference

In May of 2014 Dan gathered experts in the health sciences fields for two days of brainstorming to address changes in health care and education. Many ideas were discussed and documented to what has evolved into his fourth book titled “Health Sciences Education: Architects as Change Agents”. The intent was to address real issues and problems then discuss potential solutions.

Publication / The following cover is the Health Sciences Education book that has evolved over the last 18 months based on the initial thoughts and conversations from the conference. Dan worked with the attending experts and reached out to many more to create this book which focuses on ideas that have mostly been developed in the last three years. The book is also an e-book that will be updated each year, similar to an app.



Far right: Dan Watch

Far left: Dwight Warren, Ph.D., M.S.Ed., Emeritus Professor of Cell and Neurobiology
Keck School of Medicine, University of Southern California

To the left of Dan: Hilliard Jason, MD, EdD, University of Colorado Denver School of Medicine. Clinical Professor,
Department of Family Medicine

Co-founder; Director, Educational Affairs, iNSoMed (international New School of Medicine, a medical education charity
in England and Wales, in formation)

The remaining people are representatives from Perkins+Will, NUSOM (a new medical school in Astana, Kazakhstan) and
FIU medical school.

SECTION 2. ACCOMPLISHMENTS

2.1 / MENTORING

2012

Training the Next Generation of Architects Program

In 2012, Dan created an initiative within Perkins+Will to accelerate the growth of young architects “Creating Science & Technology Experts”. Twelve people were chosen to work together over this period of time. Experts from within and outside the firm met with the group on a monthly basis to focus on specific issues. The twelve individuals created 3 teams of four and each focused on specific project that was critiqued each month by the invited guests(s).

Objectives

1. Develop next generation Science & Technology subject matter experts.
2. Develop next generation Science & Technology business developers.

Result

*“The biggest benefit of the program was a more **enhanced ability to think about our practice more strategically**, and how to focus my efforts as an architect to respond more directly to the **needs and values of my clients**.”*

*“The program **empowers us as leaders** to go out and speak intelligently to clients and potential clients with the goal of improving the way they work and conduct their research activities.”*

*“The discussions have been fascinating - I truly feel like I have learned so much and **grown professionally** as a result of this program.”*



Dan (far left) with 12 architects in mentoring program touring recently completed laboratory buildings in Vancouver.

SECTION 2. ACCOMPLISHMENTS

2.1 / RESEARCH

Dan has made research a key part of his professional life. The first major research project Dan undertook was writing his first book. He toured 150 laboratory projects and documented what was working well and what could be improved. Evaluating facilities based on talking to end users, he writes to share the latest thinking with other architects, engineers, contractors, faculty and researchers.

Sustainable Design /

Dan has been advocating sustainable design solutions for the past fifteen years. Related accomplishments include:

- Second Perkins+Will employee to become LEED accredited.
- Spoke at early USGBC conferences to share information with other professionals.
- All research, except the biocontainment facilities, achieved LEED Gold status since 2001.
- Recent projects he has been able to design to cost less than standard construction.
- Worked with NIH on a two year study finished in 2007, that showed chilled beams were the best value over traditional air systems.
- Most projects in the past ten years designed with chilled beams (costs less than air system).
- Invested time at the beginning of each project to educate clients and facility engineers of added value of sustainable solutions.
- Other design solutions include high ceilings for more natural indirect light and drama in the spaces, use of condensate for irrigation and a focus on energy efficient laboratory equipment.

"Mr. Dan Watch...introduced many advanced building sustainable solutions to our company. He hosted my visit of building sustainable technology manufacturers in the States. Dan was invited by Zhong Guan Cun and gave a speech on building sustainable technology."

**LI HONGXIA, CHAIRMAN/ GENERAL MANAGER,
BEIJING SANZEN ENERGY TECHNOLOGY CO., LTD**

Presentations made by Dan focused on his sustainability research to encourage and educate architects and society to design and operate more energy efficient buildings:

Construction Owners Association of America (COAA) Spring Owners Conference, "Net Zero: Funding Your Energy Retrofit Projects with Energy Savings," Atlanta, GA, 2013

Design Futures Council Sustainability Summit, "2030 Challenge: Getting to Zero Energy Costs," Minneapolis, MN, 2013

NIH International Conference on Sustainable Laboratories: Choosing the Right Equipment, "Reducing Energy, Carbon and Costs," Keynote Speaker, Bethesda, MD, 2014

Tongchi University, "Sustainable Laboratory Design Solutions," Shanghai, China, 2012



Dan providing a tour of NIH discussing chilled beam solution with Ms. Li

SECTION 2. ACCOMPLISHMENTS

2.1 / RESEARCH - HEALTHY BUILDINGS



Interior oxygen gardens increase oxygen levels creating a stimulating environment- raising oxygen levels, reducing stress and CO2, and improving air

NIH Health in Buildings Roundtable (HiBR),
“Healthy Buildings,”
Keynote Speaker, *Bethesda, MD*

Research on Sustainable Design /

Much of Dan’s focus has been on sustainable design and creating healthy building solutions by working with researchers to assure holistic solutions. He has been at the forefront of the sustainable movement over the last 15 years with most his projects receiving at least LEED Gold. He has written dozens of articles on the topic and speaks throughout the year to universities, governments and private industry. For the design of laboratories he has toured over 200 facilities to benefit from lessons learned of the end users. This information is then shared globally through his books, speaking engagements, articles and webcasts.

Healthy Building Design Principles /

Dan is currently focusing on research to help clients, architects and other professionals build healthier campuses and buildings. Key ideas include:

Safe Chemicals / Using safe chemicals in building construction. He started this effort about ten years ago working with Paul Anastas and students at Yale University. The initial focus was to understand green chemistry better to allow Dan to talk to faculty and decision makers to teach and do research with safer and more sustainable chemicals.

Plants / Bringing plants into the

The diagram to the right focuses on water conservation. The water condensates from air handlers is used to cool the supply air into the building, cool the pedestrian area then for irrigation of the plants.

building design. Recently Dan has been collaborating with landscape architects at Perkins+Will and other institutions to understand the value to occupants when plants are in buildings. For his current projects the researchers have agreed to test the air quality and provide evidence based data to better determine the added value of plants to their lives.

Oxygen Gardens / Development of oxygen gardens. Dan was asked by the Qatar Foundation to study this idea with his team to enable them to install the gardens in the atrium of their newly completed hospital. The evidence based data will be published globally.

Daylight + Views / Use of windows for views and light. All of Dan’s buildings in the last 25 years have focused on providing excellent indirect light in and views out of the laboratories.

Communicating Stairs / Stairs that are designed to encourage their use and improve people’s lifestyle. Recently he has convinced clients of the value of quality stairs beyond just fire stairs to locate where people will use them throughout the day.



SECTION 2. ACCOMPLISHMENTS

2.1 / RESEARCH



Collaborations with Yale University /

Green Chemicals / Dan has worked with Yale University for the past ten years on important research projects related to sustainable design. The first project was with Paul Anastas, former Assistant Director of the EPA, and his team on documenting green chemicals to be used in research for safety, sustainability and cost effectiveness. Dan hired a graduate student, Eric Fournier, to work with him one summer to develop more detailed information on green chemistry to communicate to architects, faculty and students. Green chemistry is now main stream in most chemistry programs across the US and is a focus of change and development in private industry with the pharmaceutical companies. The green chemistry study evolved into the “Precautionary List” which is on Perkins+Will’s website to access what chemicals are good and what are not in building construction.

<http://transparency.perkinswill.com/Home/MoveOn?url=/Home/PrecautionaryList>

When Dan received new materials or products from companies they were sent to Yale for Paul’s group to validate the chemicals that make that product and if they are cradle to cradle solutions

Balancing Energy and Water Savings / Many energy saving solutions actually require more water to be effective, which most architects and engineers do not understand. Dan has recently been collaborating with Dr. Julie Zimmerman and post docs at Yale University on projects to identify better solutions to manage and save water while also saving energy. Water has been identified a key global problem and Dan is studying in more detail design solutions having more holistic sustainable solutions.

VALUE OF DAN’S RESEARCH TO SOCIETY:

Develop solutions then distribute that information through the profession.

Advise companies and institutions to implement a strategic plan to manage water resources much more efficiently.

Determine cost, or cost savings, of solutions that save water.

Become better stewards of our natural resources.

Focused on verifying solutions holistically.

SECTION 2. ACCOMPLISHMENTS

2.2 / COMPETITION WINNERS + RECENT AWARDS

Dan has had a lasting impact, is widely recognized globally, and provides inspiration to others in the field and the profession. He has designed some of the most significant research facilities in eight countries, on four continents, with most receiving major national and some international awards. He has supported the research institutions at the Centers for Disease Control, National Institutes of Health and Department of Homeland Security after 9/11 to address bioterrorism by leading teams on major bio-containment projects when the country benefitted from his help. He speaks each year around the world on the best sustainable design solutions to help educate architects and engineers. This has resulted in having a positive impact with key decision makers in the government of developing countries. His focus on helping others with expertise, passion and drive to support others is notable: a true example of servant leadership to the profession and society.

6 INTERNATIONAL AWARD WINNING PROJECTS



Beijing Institute of Nano-energy + Nano-systems Construction Park Project | Beijing, China 2015



COFCO Research Towers and Mixed-Use Complex | Beijing, China 2011



HuaNeng Group Talents Innovation + Entrepreneurship Base | Beijing, China 2012



L'Oreal Research and Innovation Facilities | Rio de Janeiro, Brazil 2012



PetroChina Center for Petrochemical Engineering and Scientific Research Achievement | Beijing, China 2012



Singapore National Research Foundation Campus for Research Excellence and Technological Enterprise (CREATE) | Republic of Singapore 2009

Dan has been the team leader and laboratory designer for award winning projects that have been listed below from the last 10 years. Most projects have received multiple awards from agencies around the world such as AIA. The awards are for overall building design, laboratory design and/ or sustainable design.

2015

Porter Neuroscience Research Center, Phase II

Notable Green Project
USGBC National Capital Region

L'Oreal Research and Innovation Facilities

WAF Awards Shortlist: Experimental - Future Projects
2015 World Architecture Festival Awards

Florida International University's Science Classroom Complex

PCI Design Award: Honorable Mention - Higher Education / University Category
Precast/Prestressed Concrete Institute (PCI)

2014

Porter Neuroscience Research Center, Phase II

Award of Excellence: Best of Biotech/Science & Healthcare
NAIOP, Maryland/DC National Institutes of Health (NIH)

Oklahoma Medical Research Foundation's New Research Tower

2014 International Award for Best New Research Building
S-Lab Conference

Memphis Bioworks Foundation's New Research Center and Vivarium

TurnKey Facility of the Year Award
ALN Magazine

SECTION 2. ACCOMPLISHMENTS

2.2 / AWARDS

2013

Campus for Research Excellence and Technological Enterprise (CREATE)

2013 Laboratory of the Year Award
R&D Magazine

L'Oreal Research and Innovation Facilities



2013 Honor Award: Unbuilt Category
AIA Miami Chapter

2012

PetroChina's Center for Petrochemical Engineering and Scientific Research Achievement



Merit Award
AIA Georgia Chapter

Porter Neuroscience Research Center, Phase II

Honorable Mention - Green Champion Award for Sustainable Design and Facilities
Department of Health and Human Services

KAUST Science Town

Emerging Research Park of the Year Award
Association of University Research Parks (AURP)

2011

Oklahoma Medical Research Foundation's New Research Tower



Honor Award
AIA Georgia Chapter

Campus for Research Excellence and Technological Enterprise (CREATE)

Emerson Cup Award: New Building Category
Emerson Climate Solutions

KAUST Science Town

Honor Award: Master Plan
ASLA, Georgia Chapter

King Saud bin Abdulaziz University, Jeddah Campus



Merit Award
AIA, Orange County Chapter

Florida International University's Science Classroom Complex



Unbuilt Honor Award
AIA Florida Chapter and AIA Miami Chapter

Florida International University's Science Classroom Complex

National Design Award of Recognition
Society of American Registered Architects (SARA)

2009

United States Department of Homeland Security, National Biodefense Analysis and Countermeasures Center (NBACC)

Mega Project Excellence in Construction Award
Associated Building and Contractors, Metro Washington and Virginia Chapters

University of Texas Medical Branch's Galveston National Laboratory

Educational Gold Award Winner
Brick in Architecture

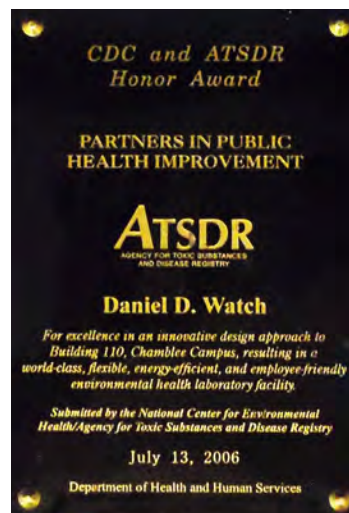
2008

CDC National Center for Environmental Health

Partner in Public Health Award
Centers for Disease Control and Prevention (CDC)

CDC National Center for Environmental Health

Best of the Best Award: Best of Green Buildings Category
IIDA, Georgia Chapter



The CDC awarded Dan with the "CDC Partners in Public Health" for "excellence in an innovative approach to Building 110, Chamblee Campus, resulting in a world-class, flexible, energy-efficient and employee-friendly environmental health laboratory facility."

2006

Georgia Institute of Technology's Klaus Advanced Computing Building

Southeast Region Honor Award
Brick Industry Association

2005

Winona State University's New Science Facility

Award of Excellence: New Construction Over \$7.5 Million Category
Minnesota Construction Association

2004

University of Texas Medical Branch's BSL-4 Laboratory

APEX Award for Excellence for Laboratory Design/Construction

American General Contractors Association

SECTION 2. ACCOMPLISHMENTS

2.3 / PUBLICATIONS

Dan was the sole author of the following industry leading reference books setting the standard for labs.

Publications / Dan has written three seminal books on laboratory design that have been recognized globally as the most important books on the topic. The Chinese government went as far as publishing 5000 copies in Mandarin then distributing them across their country as the resource on the best laboratory design guidelines. He has sold nearly 50,000 copies of books he has authored. His fourth book, to be published by the end of 2015, will be his first e-book that will be interactive and can be updated periodically in digital form like an app. He is always trying to share knowledge in the profession.



2001

Building Type Basics for Research Laboratories

Steven Kliment, an editor at John Wiley & Sons asked Dan to write the book to be included in the Building Types series Mr. Kliment had developed. He viewed Dan as the expert in this building type. The Wiley Building Type Basics series provides architects and other professionals with the essential information they need to jump-start the design of a variety of facilities. This volume covers the design of research laboratories, with the practical information necessary to meet the construction and renovation needs of this increasingly complex industry. The first edition sold over 10,000 copies.

"It contains the kind of essential information to which architects, consultants, and their clients need ready access, especially in the crucial early phases of a project."

STEVEN A. KLIMENT, EDITOR



2002

Building Type Basics for Research Laboratories (Mandarin version)

The Chinese government published 5,000 copies of the book in Mandarin and distributed across the country as the design guide for laboratories.



2009

Building Type Basics for Research Laboratories (Second Edition)

Featuring more than 200 illustrations, the Second Edition now addresses laboratory construction in Asia, the Middle East, and Europe, and updates its information for post-9/11 research needs and trends, including the current International Building Codes. New and updated projects from a variety of designers including Duke University's Medical Science Research Building, GlaxoWellcome's laboratories in the UK, and the US government's Argon laboratory.

SECTION 2. ACCOMPLISHMENTS

2.3 / PUBLICATIONS

Dan was the sole author of the following industry leading reference books setting the standard for labs.



2010

Research for the Global Good: Supporting a Better World for All

The book seeks to inspire readers to support research that can improve the lives of people worldwide. In exploring the dynamic changes taking place in research and the monumental impact these changes will have on our lives. Dan sheds light on the vast research opportunities at hand and shows how economies, health, education and the environment can be transformed through dedicated research and development.

By encouraging leaders of private industry, academic institutions, politicians, philanthropists and scientists to join with others to support research, whether through financing, political decision-making, education, laboratory construction or through conducting the actual research, Dan is passionate in his belief that the scientific potential can be maximized for the greater good.



2015

Health Sciences Education: Architecture as Change Agent

This book is about the critical role of facility design in medical education and how architecture can help improve the learning experience. The primary intent of this book is to assist decision makers in the design and operations of a Health Sciences campus and the buildings on that campus. This book should help administrators, architects, planners, and people in the health science fields to understand many of the issues and opportunities in medical education by all the various experts who contribute in the process.

The focus of this book is on Health Sciences Education, and how this type of education is changing and developing to be more effective. Examples on how architects can support change through the built environment are provided throughout this book.

Dan has also made this into an interactive e-book that can be updated like an app, is interactive, can be distributed electronically and downloaded on an iPad.

This is a new idea that Dan believes will become more common in the near future to communicate more effectively.

SECTION 2. ACCOMPLISHMENTS

2.3 / PUBLICATIONS

Recent Articles (Last Five Years) /

Dan Watch. "International Design Ideas for Research Laboratories." Whole Building Design Guide: National Institute of Building Sciences by Dan Watch. November 9, 2014.

Dan Watch, Jason Chan, and Mark Rahe. "Reducing Air Changes Rates, Reducing Carbon, and Saving Energy in Research Laboratories." Whole Building Design Guide: National Institute of Building Sciences by November 8, 2014.

Dan Watch. "Renovating Research Buildings to be Zero Carbon." Whole Building Design Guide: National Institute of Building Sciences. November 4, 2014.

Dan Watch and Deepa Tolat. "Sustainable Laboratory Design." Whole Building Design Guide: National Institute of Building Sciences by Dan Watch, October 18, 2012.

Dan Watch, Deepa Tolat, and Alex Clinton. "Security and Safety in Laboratories." Whole Building Design Guide: National Institute of Building Sciences. September 20, 2012.

Dan Watch and Paula Vaughn. "Using LEED on Laboratory Projects." Whole Building Design Guide: National Institute of Building Sciences. September 17, 2012.

Dan Watch. "Trends in Lab Design." Whole Building Design Guide: National Institute of Building Sciences. September 9, 2012.

Dan Watch and Gary McNay. "Teaching Laboratories: Building Community through Science." Whole Building Design Guide: National Institute of Building Sciences. June 2, 2011.

Dan Watch. "The Lab Module - Basis for Laboratory Design." Whole Building Design Guide: National Institute of Building Sciences. June 1, 2011.

"Sustainable Laboratory Design." Kimberly Clark Professional, The Science Link. June 28, 2012.

"4 Things the U.S. Can Learn From Innovative Foreign Companies." Fast Co. Design Blog. May 12, 2011.

Dan writes 3 to 7 articles a year with estimated 100-plus written in his career.

SECTION 3. EXHIBITS

3.0 / LIST OF EXHIBITS

- 3.1 / Centers for Disease Control & Prevention, National Center for Environmental Health (Building 110)**
Atlanta, GA / 2005
- 3.2 / Department of Homeland Security, National Biodefense Analysis and Countermeasures Center (NBACC)**
Ft. Detrick, MD / 2009
- 3.3 / NC State University Research Buildings I, II and III**
Raleigh, NC / 2004-2010
- 3.4 / National Institutes of Health, Porter Neuroscience Research Center**
Bethesda, MD / Phase II: 2013
- 3.5 / Oklahoma Medical Research Foundation, New Research Tower**
Oklahoma City, OK / 2011
- 3.6 / National Guard Health Affairs, King Abdullah International Medical Research Center**
Riyadh, Saudi Arabia / 2015
- 3.7 / Department of Homeland Security, National Bio and Agro Defense Facility (NBAF)**
Manhattan, KS / Phase I & II: complete, Phase III: in construction
- 3.8 / Singapore National Research Foundation, Campus for Research Excellence and Technological Enterprise (CREATE)**
Singapore / 2009
- 3.9 / China Huaneng Group, Talents Innovation & Entrepreneurship Base**
Beijing, China / Phase I: 2014, Phase II: in construction
- 3.10 / Qatar Foundation, Qatar Fundamental Sciences Building**
Doha, Qatar / Finished design

SECTION 3. EXHIBITS

3.1 / CENTERS FOR DISEASE CONTROL & PREVENTION, NATIONAL CENTER FOR ENVIRONMENTAL HEALTH (BUILDING 110)



Architecture Firm

Perkins+Will

Design Firm

Perkins+Will

Completed

June 2005

Role of Nominee

Principal In Charge/Laboratory Designer

Awards + Publications

LEED Gold

CDC and ASTDR Honor Award, Partners in Public Health Improvement

2006 IIDA Georgia, "Best of the Best" award for Green Interiors "CDC Lab First of its Kind to Achieve Gold LEED Certification," *Government Product News*, September 18, 2007

Challenge

After 9/11, Dan and his team were asked to quickly re-design CDC's new research facility to address chemical bioterrorism with highly flexible laboratories that the researchers could change the entire building in less than 24 hours to focus on one threat.

Resolution

The Center for Disease Control (CDC) National Center for Environmental Health is leader in determining the health effects on humans of environmental hazards. In 2001, the CDC engaged Dan and his team to create a modern work environment in Building 110, to replace several substandard, energy-inefficient lab buildings dating from the 1940s through the 1970s.

Design was still in conceptual stages on 9/11/2001 when Dan watched the World Trade Towers go down while meeting with CDC researchers, many of whom were taken to Ground Zero that evening. Much of Building 110's research space was designated for biomonitoring, measurement of toxicants in people, with the intent of preventing disease from exposure to toxic chemicals in the environment and responding to terrorism and public health emergencies involving chemicals.

With 9/11 heightening the significance of Building 110's work, the head of CDC Dr. Jeffrey Koplan asked Dan to take a radical approach to laboratory design to allow complete reconfiguration in 24 hours to address global chemical threats from terrorism, outbreaks, and other disasters. Dan's team accomplished this directive with an interstitial floor, all mobile casework and engineering services accessible from the structural columns and the ceiling. The lab floor could be re-arranged in hundreds of different solutions.

*Recognizing "excellence in an innovative approach resulting in a world-class, flexible, energy-efficient and employee friendly environmental health laboratory facility," CDC and the Agency for Toxic Substances and Disease Registry awarded **Dan Watch** the Partners in Public Health Improvement Honor Award*

DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee's responsibility for the project listed above. That responsibility included:

- ☒ Responsible for all laboratory design and coordination
- ☒ Project under direction of nominee

Lewis Nix, FAIA

SECTION 3. EXHIBITS

3.1 / CENTERS FOR DISEASE CONTROL & PREVENTION, NATIONAL CENTER FOR ENVIRONMENTAL HEALTH (BUILDING 110)

At move-in, CDC's research teams customized laboratories into 64 different configurations. This new generation of highly flexible laboratory design became the basis for most research labs built after Building 110. Dan shared this post 9/11 flexible lab model in speeches nationwide and his 2009 book, *Building Type basics for Research Laboratories Update*.

Dan also revolutionized laboratory planning to achieve an energy-efficient and collaborative environment in a research building, a building type historically known for high energy consumption and compartmentalized work areas.

He led a series of charrettes to identify sustainable design

opportunities, such as using intersittial space to afford high ceilings, which allowed natural daylight to penetrate 30 feet into labs. At 149,000 square feet, Building 110 was the first complete research building in the US to receive LEED Gold certification. Its design achieved 23.7 percent reduction in energy over similar conventional buildings. Water conserving measures include capturing water condensate in underground containers to provide 100 percent of site irrigation.

"Building 110 will save approximately \$175,000 per year in energy costs alone over a non-LEED building. That's savings for taxpayers."

JAMES MYRICK, PH.D., CDC RESEARCH CHEMIST



High ceiling developed through solar studies

SECTION 3. EXHIBITS

3.2 / DEPARTMENT OF HOMELAND SECURITY, NATIONAL BIODEFENSE ANALYSIS AND COUNTERMEASURES CENTER (NBACC)



Architecture and Design

Firm

Perkins+Will

Completed

December 2008

Role of Nominee

Principal In Charge/
Laboratory Designer

Awards + Publications

2009, Mega Project
Excellence in Construction
Award, Metro Washington
and Virginia Chapters of the
Associated Builders and
Contractors

Challenge

To design the newly created Department of Homeland Security's first biocontainment facility to address terrorist attacks and threats on a tight schedule and at a time when construction escalation was a problem.

The NBACC Facility is comprised of two centers: The Biological Threat Characterization Center (BTCC) for conducting research to better understand current and future biological threats as well as the National Bioforensic Analysis Center (NBFAC), the lead Federal agency for conducting bioforensic analysis of evidence from investigations of biocrime or terrorism.

Resolution

Department of Homeland Security entrusted Dan to lead the design team and be responsible for the laboratories of their first new research facility. This was a critical new containment laboratory facility that had to be designed and built quickly after 9/11 to address the newly formed agency Department of Homeland Security's needs. The biocontainment spaces in this facility were very detailed to address forensics. The type of forensics focused on signature of bombs and how they were made and who built. The laboratories include vivarium space for animal research, BSL-2, 3, and 4 laboratories. All of these laboratories are highly customized and will be very difficult to change. Many of the walls are made of concrete, and the mechanical systems are dedicated to specific laboratories. Much time was spent with the researchers to develop their labs that focus on global terrorism.

SECTION 3. EXHIBITS

3.2 / DEPARTMENT OF HOMELAND SECURITY, NATIONAL BIODEFENSE ANALYSIS AND COUNTERMEASURES CENTER (NBACC)



Dan made sure the facility met each researcher's unique needs with extensive face to face meetings until the designs were resolved and fit together efficiently in a very complex floor plan. People must enter and exit their own research suite without seeing, working or knowledge of who else is working in the building. Dan was able to work with the researchers to figure ways to get the samples in safely to their labs and have the ability to go from one lab to the next and maintain confidentiality. Dan has throughout his career been able to address unique research criteria to meet the goals of the project with his wide range of knowledge. His ability to design a wide range of labs was very evident and needed to design this very important structure to address our country's needs in a critical time in history.

"Since the attacks of Sept. 11, 2001, and the anthrax attacks a month later, NIH has made tremendous strides toward developing countermeasures to protect all Americans from bioterrorism. Working in conjunction with Homeland Security means that we have the ability to anticipate, prevent, respond to and recover from current and next-generation biological threats to our citizens."

WASHINGTON POST EDITORIAL TOMMY G. THOMPSON, SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES TOM RIDGE, SECRETARY, DEPARTMENT OF HOMELAND SECURITY

DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee's responsibility for the project listed above. That responsibility included:

- ☒ Largely responsible for laboratory design and coordination
- ☒ Project under direction of nominee

SECTION 3. EXHIBITS

3.3 / NORTH CAROLINA STATE UNIVERSITY RESEARCH BUILDINGS I, II AND III



Challenge

NC State charged Perkins+Will with the task of relocating their College of Engineering (COE) from a variety of existing buildings on the Main Campus to the Centennial Campus, an advanced technology community for university, industry and government partners located approximately two miles from the center of the Main Campus.

Resolution

Dan designed materials engineering labs for research building 1. The Electrical and Computer Engineering and Computer Science building is Phase II. This building, housing 210,000 square feet of offices, classrooms and flexible laboratory space, forms the northern boundary of “The Oval.” The third building houses both graduate and undergraduate programs for Mechanical and Aerospace Engineering and Biomedical Engineering. Key Program elements include two wind tunnels (1- supersonic wind tunnel), flight research, Dyno Lab, Wolfpack Motor Sports Lab (teaching lab for motor sports), and alternative fuels research lab. **Dan designed over 100 different teaching and research laboratories in the three buildings.**

DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee’s responsibility for the project listed above. That responsibility included:

☒ Largely responsible for laboratory design

Architecture and Design Firm
Perkins+Will

Building I Completed
2004

Role of Nominee
Laboratory Designer

Construction Cost
\$32 Million

Size
157,000 sf

Building II Completed
2005

Role of Nominee
Laboratory Designer

Construction Cost
\$38 Million

Size
195,000 sf

Building III Completed
August 2010

Role of Nominee
Laboratory Designer

Construction Cost
\$70 Million

Size
230,000 sf

NORTH CAROLINA STATE UNIVERSITY RESEARCH BUILDINGS I, II AND III



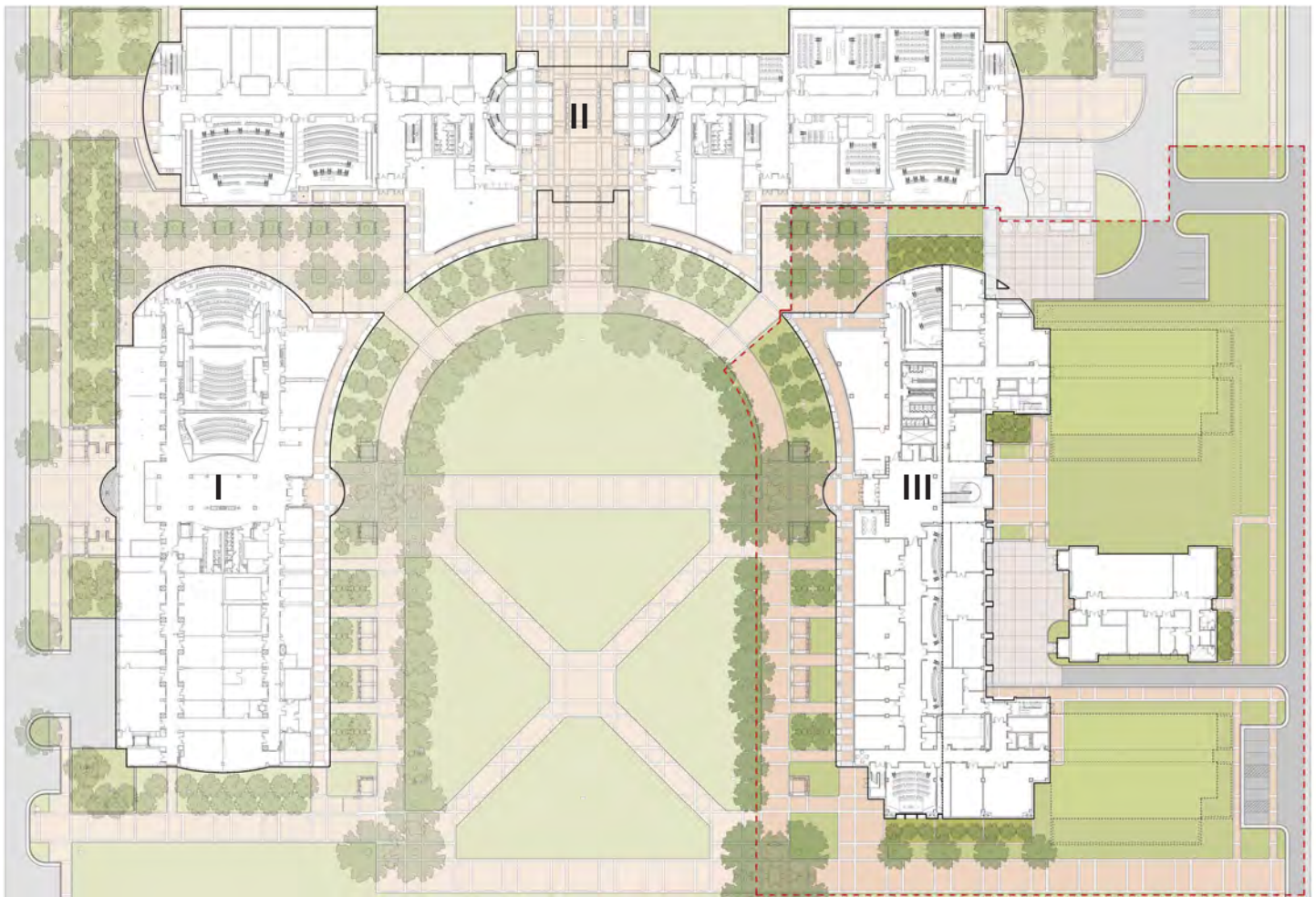
High bay lab of engineering research equipment that is custom but can easily be modified.



Teaching Labs



Creating flexible teaching labs for the students to set up



Phase 1 to the left, Phase 2 at the top, and Phase 3 to the right are the original three buildings to start the “Oval” on Centennial Campus.

SECTION 3. EXHIBITS

3.4 / NATIONAL INSTITUTES OF HEALTH, PORTER NEUROSCIENCE RESEARCH CENTER



Architecture and Design

Firm

Perkins+Will

Completed

March 2014

Role of Nominee

Principal In Charge/

Laboratory Designer

Awards + Publications

2012, Sustainable Design
and Facilities Honorable

Mention, Small Group

Award, HHS Green

Champion Awards, Honor

Award for 100k+ SF at IIDA

LEED Gold

Three Green Globes rating

in Green Globes for New

Construction

Notable Green Project,

USGBC National Capital

Region Annual Awards

Challenge

To design Phase II to coordinate with Phase I designed by another team. One key challenge was to design within budget, which was a problem in Phase I. Also it was necessary to meet the President's new initiative for sustainable design and improve on the laboratory design that was completed in Phase I.

Resolution

Dan led the design of the first new major project to be built under the Federal Initiative for sustainable design. The Phase II design incorporates numerous sustainable initiatives to achieve LEED Gold certification through the U.S. Green Building Council.

The project design includes energy efficient systems such as high performance perimeter window glazing, LED lighting and lighting controls, and a chilled beam mechanical system for heating and cooling in conjunction with other mechanical and building envelope features. The Porter Phase II building represents the first large scale federal research facility designed with a chilled beam system. The project was funded through the American Recovery and Reinvestment Act (ARRA) of 2009 and encouraged a broader emphasis on and commitment to sustainable design features.

The Porter Neuroscience Research Center is the first building to incorporate a closed-circuit loop Ground Source Heat Pumps as a supplementary cooling system to remove heat loads from its labs and reduce the building's carbon footprint.

DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee's responsibility for the project listed above. That responsibility included:

- ☒ Largely responsible for laboratory design and coordination
- ☒ Project under direction of nominee

Farhad Memarzadeh, PH.D, P.E.

Director, Division of Technical Resources, National Institutes of Health

NATIONAL INSTITUTES OF HEALTH, PORTER NEUROSCIENCE RESEARCH CENTER PHASE II



TOP Central Gathering Space

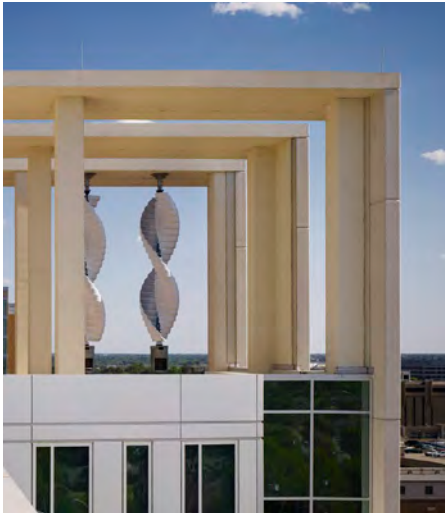
LEFT Chilled Beams evolved over a two year study finished in 2007 as the best value to NIH. The chilled beams are parallel to and directly above the casework. Chilled beams have now become standard practice in the design of laboratories, in part because of Dan's work at NIH.

SUSTAINABILITY SAVINGS

- Energy Savings (EPACT - excluding process loads): 34.2% (over baseline)
- Water Use Intensity Reduction: 36.1% (from baseline)

SECTION 3. EXHIBITS

3.5 / OKLAHOMA MEDICAL RESEARCH FOUNDATION, NEW RESEARCH TOWER



Architecture and Design Firm

Perkins+Will

Completed

April 2011

Role of Nominee

Principal In Charge/Laboratory
Designer

Awards + Publications

2014, S-Lab Award, "New
Laboratory - Research" Category:
Safe, Successful, Sustainable
Laboratories for Best New Research
Building Worldwide
2011, Design Award, AIA Georgia
2008 Associated Builders and
Contractors Award, Infrastructure
Category
LEED Gold
Stratigize Magazine, 2010

Challenge

Create a forward looking design to improve the brand image of OMRF and provide new state of the art laboratories to support a creative and collaborative culture.

Oklahoma Medical Research Foundation's new Research Tower is an investigative research entity. The research encompasses Alzheimer's, lupus, cancer, cardiovascular disease among others.

Resolution

Dan created a new brand image for the institution that has enabled them to receive important grant funding from NIH and to hire several key new researcher to join their campus. He assisted three lead researchers in writing their grant applications for NIH funding- which they were later awarded.

The building design has been a great success for the following reasons:

- The overall building image featuring wind turbines and an iconic, progressive exterior has inspired the local population and research community.
- OMRF has built their research vision into the Oklahoma City skyline as highly motivated institution that encourages those that view the building to dream, be innovative, and succeed.
- The pinwheel floor plan concept is a unique solution that encourages increased collaboration.
- The open laboratory layout encourages researches to reconsider the ways in which they perform research within their space.
- The sustainable design solutions were carefully crafted to result in a LEED Gold certification that costs less than standard construction. Based on contractor bid numbers, the chilled beam solution costs 8.3% less than the typical air solution.
- 23.4% energy reduction, resulting in 19.6% savings by cost equaling \$165,460 annually.

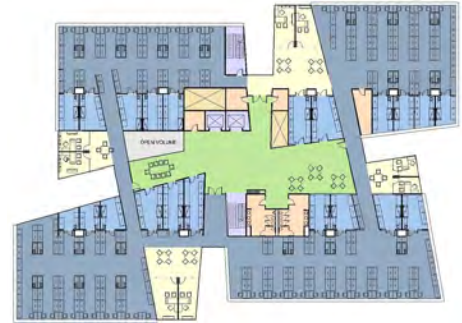
DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee's responsibility for the project listed above. That responsibility included:

- ☒ Largely responsible for design
- ☒ Project under direction of nominee

Chip Morgan; Executive Vice President & Chief Operating Officer
Oklahoma Medical Research Foundation

OKLAHOMA MEDICAL RESEARCH FOUNDATION, NEW RESEARCH TOWER



- The clinical research space seamlessly merges with the research space and provides an uplifting patient-care environment
- The volume of the building is used imaginatively with a variety of spaces as well as efficient interstitial spaces
- All of this has been accomplished with a very cost effective solution of \$376 per gross square foot, proving that good design does not have to be expensive

In 2011, based on surveys completed by OMRF staff, The Scientist magazine ranked OMRF as one of its “Best Places to Work in Academia” and “Best Places to Work for Postdoctoral Fellows.” In the results, which relied heavily on staff members’ feedback regarding their institution’s research facilities, OMRF was one of only three institutions to be named to the nation’s top 10 on both lists.

When the tower went online in 2011, OMRF had a full complement of researchers poised to move into the labs. Already, those 14 scientists have secured more than \$17 million in grant funding.

“OMRF has been very pleased to work with Dan Watch and his colleagues. All commitments made by Mr. Watch in the first interview process were met. For example, during the design process Mr. Watch committed 70% of his personal time to this project. His personal involvement and leadership helped OMRF achieve our goal of building this best building possible within our budget restraints. In summary we are on time, within budget, and expect our new building to win design awards that complement our biomedical research mission.”

MIKE D. “CHIP” MORGAN, EXECUTIVE VICE PRESIDENT AND COO, OKLAHOMA MEDICAL RESEARCH FOUNDATION

SECTION 3. EXHIBITS

3.6 / NATIONAL GUARD HEALTH AFFAIRS, KING ABDULLAH INTERNATIONAL MEDICAL RESEARCH CENTER



Architecture and Design

Firm

Perkins+Will

Completed

Anticipated Fall 2015

Role of Nominee

Principal In Charge/
Laboratory Designer

Awards + Publications

LEED Gold

Challenge

To design and build a state of art biomedical research center in Saudi Arabia. Program includes BSL-2 laboratories, vivarium, transgenic suite, bio-bank, imaging suite and BSL-3 suite.

Resolution

Designed the first major new biomedical research building in Saudi Arabia when finished in construction. Dan was given a great opportunity to design what he thought was the best ideas for a new biomedical research building for the King of Saudi Arabia. He developed the design solutions based on the best international standards from the National Institute of Health and the work he had completed with pharmaceutical companies on the Lab of the Future studies. The building was planned by Dan using the most innovative laboratory design trends in an effort to develop a research program that will rise to the forefront of the international health science research community.

Dan worked in collaboration with a leading casework manufacturer to develop a line of extremely flexible, modular casework specifically for this project. There is a very large vivarium in the basement, three floors of biomedical laboratories and a wing which will house the best imaging equipment in the world, the second largest bio-bank and a simulation suite on the top floor.

The laboratories were designed to test new ideas. There is curved casework in half of the laboratories with the intent to encourage the research teams to think differently about their work. The Vivarium has secure connections to the BSL-3 Lab and the inter-operative Imaging / surgery suites to streamline the validation of genetic and biological research. The Imaging Suite has a vibration dampened structural system for the bays supporting electron microscopes and an isolated slab supports a 500 ton 7T MRI to bring world class imaging into this robust research environment.

Dan has the unique ability to design a wide range of laboratories as well as develop successful solutions for new specialized equipment and processes. Dan has provided many lessons learned presentations to the contractor in Saudi Arabia to help improve safety on site, construction quality and to get the building fully operational based on US standards.

DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee's responsibility for the project listed above. That responsibility included:

- ☒ Largely responsible for laboratory design and coordination
- ☒ Project under direction of nominee

Jean Mah, FAIA

NATIONAL GUARD HEALTH AFFAIRS, KING ABDULLAH INTERNATIONAL MEDICAL RESEARCH CENTER



SUSTAINABLE SOLUTIONS

- 76% reduction in municipality-supplied potable water for non-potable uses
- 14% reduction in energy
- First LEED Gold research building in Saudi Arabia

SECTION 3. EXHIBITS

3.7 / DEPARTMENT OF HOMELAND SECURITY, NATIONAL BIO AND AGRO DEFENCE FACILITY (NBAF)



Architecture and Design

Firm

Perkins+Will

Completed

Phase I and II Completed
Anticipated 2020

Role of Nominee

Principal In Charge/
Laboratory Designer

Dear Dan Watch:

NBAF will further empower the bio/agro security space with the tools to conquer many of the most difficult challenges we will face. The facility's state-of-the-art features will provide a foundation for innovative new approaches that are necessary to protect our animal agriculture.

I am grateful for your partnership in working to make NBAF a reality and look forward to the positive impact it will have on our Nation's security for generations to come.

Sincerely,

Dr. Reginald Brothers

Under Secretary for
Science and Technology

Department of Homeland
Security

Challenge

To design and build a high containment facility for large animal research that will become a national laboratory facility and international asset.

Resolution

The NBAF is an integrated foreign animal and zoonotic disease research, development and testing facility that will allow for research to enhance agricultural public health. It will replace and expand the existing mission of the Plum Island Animal Disease Center (PIADC) and enhance capabilities to meet the mandated national and bio and agro-defense mission requirements of the Department of Homeland Security (DHS) and the United States Department of Agriculture (USDA).

Dan also initiated an international peer review of top researchers focused on large animal research as well as people who operate and maintain those facilities. There was a week long summit in Atlanta with representatives from the UK, Canada, Australia and the US- the primary places that have large animal research facilities. These people had never had the opportunity to share information about their facilities with each other. This week was extremely beneficial and memorable to everyone and was set up and led by Dan. The results of this week of meetings benefitted many countries and institutions.

As a key national asset, NBAF will become the international icon for biocontainment around the world.

Visible sustainable strategies of water management (capture and reuse), green roofs, on-site renewable energy (photovoltaic panel), automated building system controls (day lighting controls and occupancy sensors) were developed with Dan's leadership.

This is the first high containment (BSL-3Ag & BSL-4) project that has ever come this close to being LEED certified. We are currently tracking LEED Gold Certification.

DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee's responsibility for the project listed above. That responsibility included:

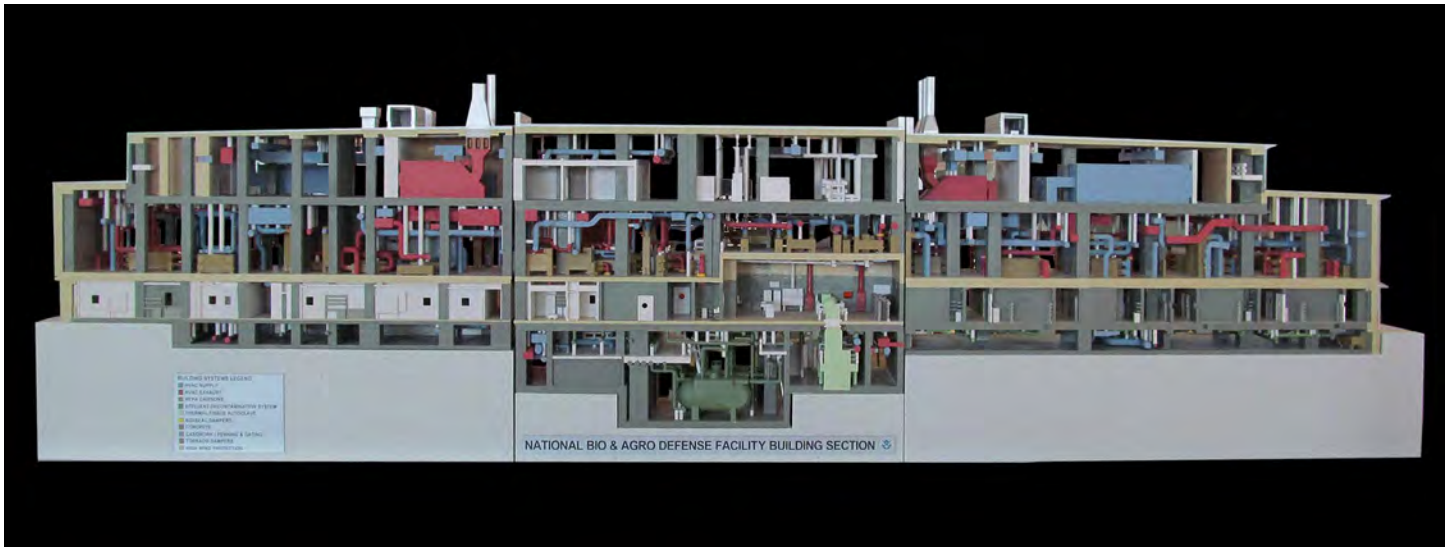
- ☒ Largely responsible for design of BSL-2 and BSL-3 laboratories
- ☒ Project under direction of nominee

Danny Hager; (retired) Chief Bio-containment Procurement Branch
Federal Law Enforcement Training Center, U.S. Department of Homeland

DEPARTMENT OF HOMELAND SECURITY, NATIONAL BIO AND AGRO DEGENCE FACILITY (NBAF)



Karl Johnson (Researcher - discovered Ebola in Bolivia in 1963), Steven Copping (Pirbright, United Kingdom), Joanne Jones-Meehan (DHS Biosafety), Jerry Jax (Kansas State University), Uwe Mueller-Doblies (Pirbright, United Kingdom), Larry Barrett (Director, PIADC Department Homeland Security), Bruce Harper (Researcher at Department Homeland Security), Dan seated to far right.



MIDDLE The building design is one of the most complex in the world with only 19% as useable space, with the bottom floor to handle waste management, the ground floor for research and the top two floors to clean and manage the air.

LEFT Dan spends much of his time talking to and working with researchers in their labs. Here he is in the high containment labs at Plum Island to help understand current issues to make the new labs more efficient.

SECTION 3. EXHIBITS

3.8 / SINGAPORE NATIONAL RESEARCH FOUNDATION, CAMPUS FOR RESEARCH EXCELLENCE AND TECHNOLOGICAL ENTERPRISE (CREATE)



Biomedical Lab

Architecture Firm

DP Architects

Design Firm

Perkins+Will

Completed

January 2013

Role of Nominee

Laboratory Designer

Awards + Publications

Lab of the Year, R+D Magazine,
2013 International Competition
Winner Green Mark
Platinum (Singapore)

Challenge

To design the research center within the larger campus that is highly sustainable. The laboratories need to be highly flexible for academia, private industry and government agencies for a wide range of physical and life science programs.

Resolution

One key concept Dan developed was to have all the standard amenities and vertical risers outside the research bars to allow the research bars to be highly flexible as large ballrooms. For CREATE, he proposed two central cores that have all the amenities people share to connect with others in the three research building. The people now come out of their lab buildings and go to these center cores to meet and collaborate much more. The labs bars are extremely efficient with no obstacles and the two central cores draw the people together as one very effective building. Dan has spent extensive time studying other architects' work to help him improve and share new ideas with his teams and clients. Now most of his projects have the buildings connect and have clear entry cores for people to meet throughout the day.

CREATE pushes the boundaries of conventional lab design — the buildings are 20m deep with cores and corridors at the perimeter to introduce maximum daylight and flexibility. The universal module supports the full range of lab types from computational science, wet biology, dry chemistry, as well as quality office space. As the first increment of the campus, CREATE embodies commitment to exploring and discovering new sustainable technologies. This unique place establishes CREATE's brand and resonates as a scholarly center for academia, corporate entrepreneurship, student life and public curiosity.

Dan created the floor plan parti that works for over a dozen institutions who have created over 50 custom laboratories.

Sustainable Savings

- Estimated Energy Savings: 9,000,000 kWh/yr
- Estimated Water Savings: 66,000 m³/yr
- ETTV (Envelope Thermal Transfer Value): 37.61 W/m²

DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee's responsibility for the project listed above. That responsibility included:

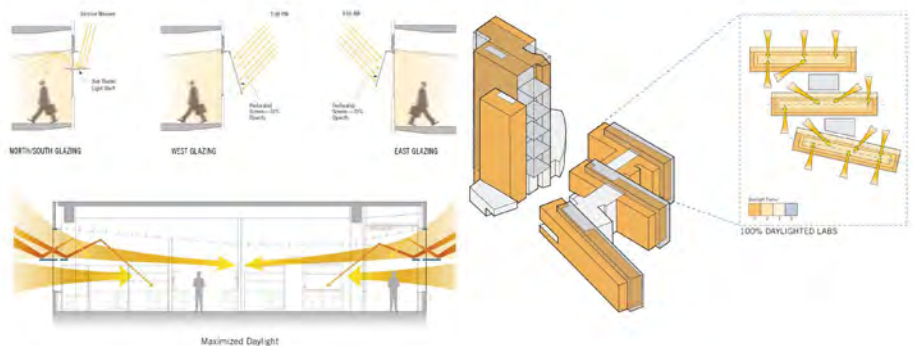
☒ Largely responsible for laboratory design and coordination

Allison Williams, FAIA, NCARB, LEED AP;
Vice President & Director of Design AECOM

SINGAPORE NATIONAL RESEARCH FOUNDATION, CAMPUS FOR RESEARCH EXCELLENCE AND TECHNOLOGICAL ENTERPRISE (CREATE)



Stairs that are well-lit and easy to use to encourage a healthy lifestyle.



Engineering Lab



SECTION 3. EXHIBITS

3.9 / CHINA HUANENG GROUP, TALENTS INNOVATION & ENTREPRENEURSHIP BASE

**Architecture Firm**

Perkins+Will

Design Firm

Design Institute

Completed

Phase I - 2014

Phase II - In Construction - Complete
2018

Role of Nominee

Principal In Charge/Laboratory
Designer

Awards + Publications

International Competition Winner

“HuaNeng Group Innovation Park is located in Beijing Future Technology City. It is a high tech research and development center. It is a critical part of the national “Thousand Talents Plan”.

“Mr. Dan Watch has broad professional experience and is the key person of the success of our project.”

YONG PENG

**DIRECTOR, HUANENG GROUP
TECHNOLOGY INNOVATION
CENTER, CONSTRUCTION OFFICE**

**VICE PRESIDENT, CHINA
HUANENG GROUP CLEAN
ENERGY TECHNOLOGY RESEARCH
INSTITUTE**

Challenge

Create one of the world’s largest research campus to attract top global talent to advance renewable energies.

Resolution

China’s Thousand Talents Plan of Foreign Experts is a government initiative to encourage high-end foreign talent to relocate to China to work in management or research positions. China HuaNeng Corporation, one of the largest state-owned power generation companies, fully embraced this initiative. In 2012, they held a design competition for a 2.7 million-square-foot research campus to attract global talent to work alongside Chinese researchers in advancing the progress of power generation technology in China.

Dan led a multi-national team of architects in his firm’s Atlanta and Shanghai to win the commission and is overseeing the design. Responding to the client’s desire for a park-like environment to foster innovation, collaboration, and dedication to energy research, the campus plan organizes laboratory buildings around shared exterior courtyards and an interior main street where common amenities are located. Laboratories incorporate unique 50-foot-high high-bay pilot plants to allow HuaNeng to build and test equipment mock-ups.

With phase one construction of laboratory buildings complete, construction is underway on a corporate office tower, international exhibition and conference center, residential block and sports complex over an underground parking and service infrastructure. All designs are targeting LEED Gold certification.

Following along in the technology transfer spirit of the Thousand Talents Plan, Dan created a series of presentations, translated in Mandarin, to make sure facilities are being used safely and effectively. Topics include life safety, addressing how to manage chemicals in labs, as well as ways to use the building design to encourage change in presentations to the end users, architects, and engineers.

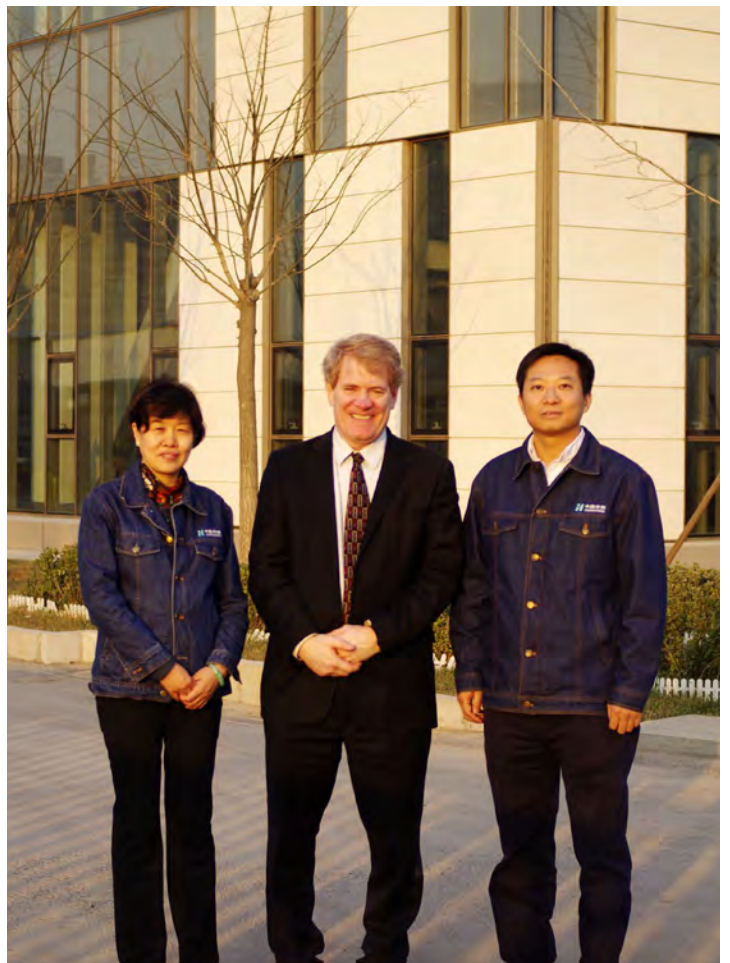
DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee’s responsibility for the project listed above. That responsibility included:

- ☒ Largely responsible for laboratory design and overall coordination
- ☒ Project under direction of nominee

Yong Peng, Vice President, China Huaneng Group Clean Energy Technology Research Institute

CHINA HUANENG GROUP, TALENTS INNOVATION & ENTREPRENEURSHIP BASE



SECTION 3. EXHIBITS

3.10 / QATAR FOUNDATION, QATAR FUNDAMENTAL SCIENCES BUILDING


Architecture and Design Firm

Perkins+Will

Completed

Anticipated 2019

Role of Nominee

Principal In Charge/Laboratory Designer

Challenge

Create a living laboratory for sustainable design, where research projects can be evaluated as part of the actual building and landscape. Provide a pedestrian-friendly environment in a desert setting where temperatures reach 117 degrees Fahrenheit.

Resolution

Dan is leading a team of architects, landscape architects in designing a 522,800-square-foot complex that will be a living laboratory to push the boundaries of science and the understanding, prediction, design, control and manipulation of materials at different scales.

To simultaneously address the need for healthy buildings, collaborative spaces and a pedestrian-friendly environment, building components are laid out as “science weave” along a green central spine. The building’s orientation maximizes north/south facing facades reducing the amount of east/west exposure to intense heat, but floor plate depth is minimized in labs to allow natural daylight. Meeting rooms and balconies bridge over the spine, shading the courtyard below. Transparent interior and exterior walls place science and innovation directly on display for easier communication. The building’s form and movement reinforce the connection of science, scientists, and the public within a framework of active, collaborative research laboratories.

Six lushly planted courtyards extend vertically in “oxygen gardens,” providing a connection with nature while maximizing daylight. Cooling stones integrated into sculptural seating provide respite from the desert heat. Green walls line the back of the interior stairs connecting the different disciplines of research. The condensate from air handling units will be integrated into hydrothermal cooling features in the landscape that moderate the outdoor temperature and make the most out of Qatar’s limited water resources. Dan also led the team in recommending ways to monitor and measure the success of the spaces, such as testing the air quality of the oxygen gardens.

| Energy End Use | Proposed Building kWh(e) | Baseline Building kWh(e) | Percent Savings% |
|---|--------------------------|--------------------------|------------------|
| Space Heating | 8,554,203 | 11,998,997 | 28.7% |
| Space Cooling | 15,108,771 | 22,448,299 | 32.7% |
| Pumps | 948,868 | 1,053,890 | 10.0% |
| Heat Rejection | 3,189,867 | 4,716,078 | 32.4% |
| Fans | 16,246,018 | 24,732,080 | 34.3% |
| Total Annual Energy Use kWh/year | 45,668,704 | 68,260,469 | 33.1% |

DECLARATION OF RESPONSIBILITY

I have personal knowledge of the nominee’s responsibility for the project listed above. That responsibility included:

- ☒ Responsible for laboratory design and overall coordination
- ☒ Project under direction of nominee

QATAR FOUNDATION, QATAR FUNDAMENTAL SCIENCES BUILDING



Green walls and architectural stairs support healthy building design.

SECTION 4. REFERENCE LETTERS

4.1 / REFERENCE WRITER LIST

1. Farhad Memarzadeh, Ph.D., P.E.

Division of Technical Resources, Building 13,
Room 211, MSC 5759, Bethesda, MD 20892

**Director, Division of Technical Resources,
National Institute of Health**

Client, Peer

2. Danny T. Hager

Manhattan, KS 66503

**(Retired) Chief Bio-containment Procurement
Branch, Federal Law Enforcement Training
Center, U.S. Department of Homeland Security**

Client for 3 Major Projects: CDC, NBACC, NBAF

3. Jon Crane, FAIA, LEED AP

1100 Peachtree Street, NE, Ste 400, Atlanta,
GA 30309

Senior Vice President, Director, HDR

Peer

4. Brad Fiske, FAIA

108 Arch Street, #801, Philadelphia, PA 19106

**Design Principal, Jacobs (Formerly Kling
Lindquist)**

Peer, Worked Together from 1989 to 1995

5. Ralph Johnson, FAIA

330 N Wabash Ave Ste 3600, Chicago, IL
60611

Director of Design, Perkins+Will

Partner and Co-Worker

6. Michael LeFevre, FAIA, NCARB, LEED BD+C

3333 Riverwood Pkway SE Ste 400, Atlanta,
GA 30339-3304

**Vice President, Planning & Design Support,
Holder Construction Company**

Peer, Collaborated as Contractor

7. Edward Mazria, FAIA, FRAIC

Santa Fe, NM 87505

Founder / CEO, Architecture 2030

*Peer that Collaborated with on 2030
Initiative*

Five additional FAIA members have signed projects that they have collaborated on and listed in Section 3 Exhibits.

- | | |
|---------------------------|-----------------|
| 1. Lewis Nix, FAIA | Atlanta |
| 2. Philip A. Shive, FAIA | Seattle |
| 3. Jean Mah, FAIA | Los Angeles |
| 4. Allison Williams, FAIA | San Francisco |
| 5. Ed Feiner, FAIA | Washington D.C. |

Sponsor:

| | |
|------------------------|---------|
| Raymond L. Beets, FAIA | Houston |
|------------------------|---------|

