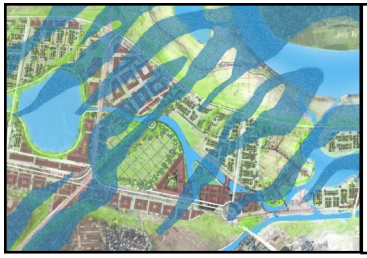
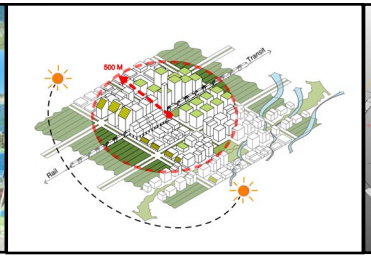
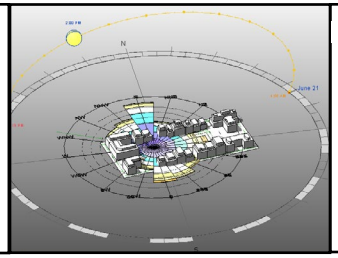
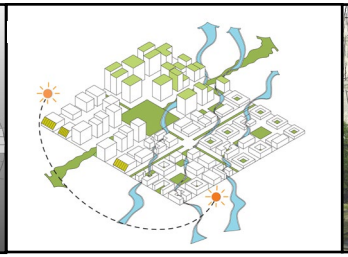
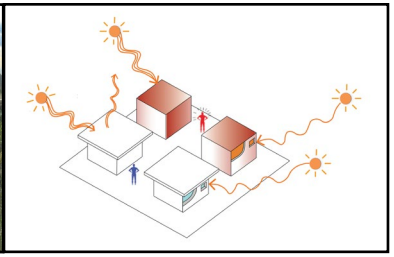
Architecture + Urban Design

Sustainable and Resilient Communities



JEFFREY RAVEN, FAIA, LEED AP

RAVEN A+U

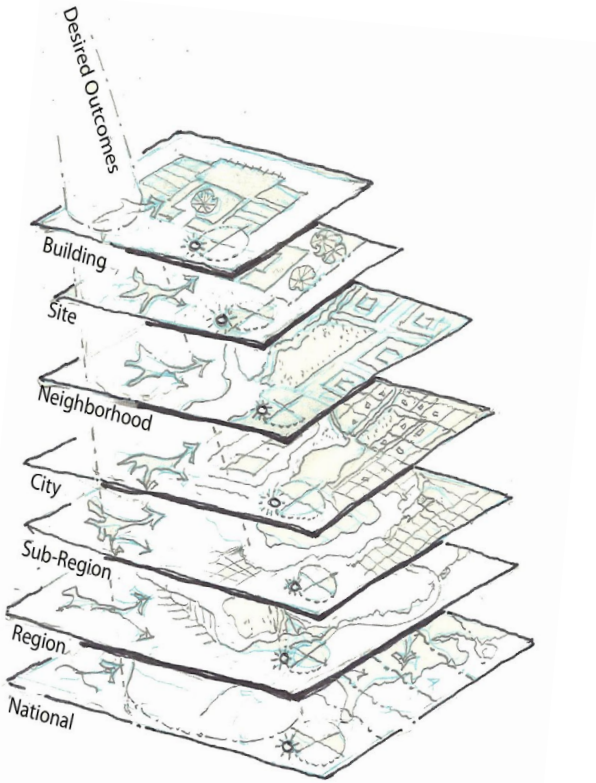
SERVICES

We provide our clients with more than 20 years of international expertise and leadership in sustainable planning and design.

These services include architecture, integrated urban design and planning, and sustainable policy guidelines.

Our approach to project visioning, green buildings, public space design and master planning capitalizes on integrated systems to enhance desired outcomes across multiple scales while shrinking the ecological footprint of our buildings and urban districts.

Our leadership in this evolving field is drawn from practical project experience and contribution to shaping policy on sustainable planning and design.



interdisciplinary synergies, sustainability at multiple spatial scales, on-site energy generation, capacity-building, leveraging limited resources

CREATING | APPLYING | DISSEMINATING

Jeffrey Raven is a recognized leader in sustainable and resilient urban design whose innovative research is applied through his professional practice and disseminated throughout the profession, academia, government and allied disciplines.

CREATING

SUSTAINABLE-RESILIENT URBAN DESIGN

Raven creates urban design research that anticipates the profession's response to unprecedented global urban growth and climate change. His research in sustainable-resilient urban design expands on the traditional influence and capabilities of architect-urbanists, integrating climate science, natural systems and compact urban form to configure dynamic, desirable and healthy communities. As Technical Advisor for STAR Communities, Raven worked for three years to develop a national sustainability and resilience rating system, now being adopted by twenty American cities. Raven's three-year collaboration with Chinese, Indian and European officials and urban experts through Project EAST tested climate-resilient urban design in Asia, resulting in publication of his *Shaping Resilient Cities in China, India and the United States*. Raven serves as Coordinating Lead Author on the Assessment Report for Climate Change in Cities, whose presentation at the UN Climate Change Conference (COP21) will provide cities with the scientific basis for effective climate-resilient planning and design strategies. Raven's widely-circulated published work, *Cooling the Public Realm: Climate-Resilient Urban Design,* provides an operational and policy framework for practicing urban design professionals and municipal governments. It was selected as a research reference report by the US Green Building Council.

APPLYING

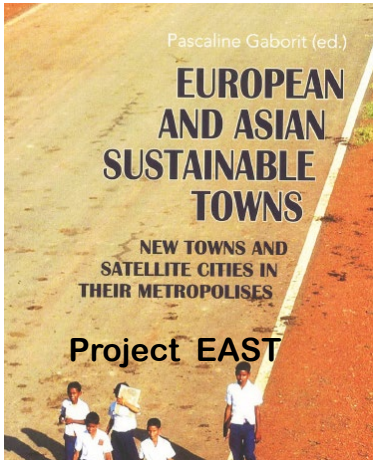
PROFESSIONAL PRACTICE

Raven's sustainable-resilient urban design research has been applied to projects in the Arabian Gulf, India, Southeast Asia, Eastern Europe and the United States through his own firm, or as Louis Berger Group Director of Sustainability and Urban Design, and as Director of the Downtown Brooklyn Plan in the *Third Regional Plan* for the New York Metropolitan Area. He applied smart growth and green infrastructure strategies in Downtown Brooklyn, New York; integrated carbon-neutral strategies to the zero-carbon Masdar city development project in the desert of Abu Dhabi; and climate-resilient urban design strategies in master plans in tropical India and Vietnam. The latter was cited extensively in the Asian Development Bank's book *Green Cities*.

DISSEMINATING

KNOWLEDGE TRANSFER

Through the university and his knowledge transfer projects, Raven disseminates his applied research worldwide to graduate students, the profession, government and allied disciplines in Europe, Asia and the United States. After serving on the faculty of Columbia University's Master of Urban Design program, Raven was appointed Director of the Graduate Program in Urban Design and Associate Professor at the New York Institute of Technology (NYIT-Manhattan) in 2012. He mentors graduate urban design students whose research, sponsored workshops and professional internships contribute to the active urban resilience dialogue in New York City. Since 2007, Raven has been influencing the profession through his accredited *Ecological City: Sustainability and Resilience* courses for mid-career professionals at The Cooper Union. It was adapted as a web-based course by the *New York Times*. Raven has been invited internationally to lecture and lead sustainable-resilient cities workshops for global experts in Europe, India, Japan and China. He led UN Development Program sustainable-resilient urban workshops for Europe and the Russian Commonwealth of Independent States (CIS) in Slovakia and for climate policy leaders who had been awarded Germany's Humboldt Foundation International Climate Protection Fellowship.



CREATING | SUSTAINABLE-RESILIENT URBAN DESIGN

1. Climate-Resilient Urban Design
2. Project EAST: Euro-Asia Sustainable Towns
3. STAR Communities: Sustainability Tools for Assessing and Rating Communities

APPLYING | PROFESSIONAL PRACTICE

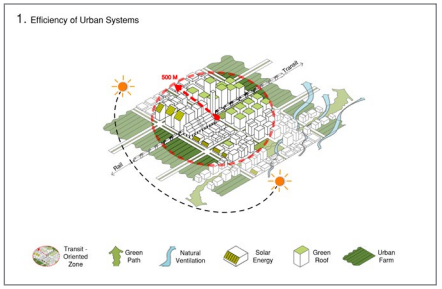
4. Masdar Carbon-Neutral Development: Abu Dhabi, UAE
5. Sustainable and Resilient Urban Design Projects: Asia - India / Vietnam
6. Regional Plan Association: Downtown Brooklyn

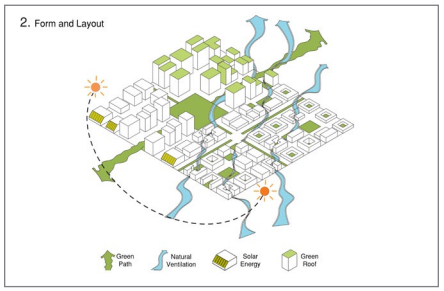
DISSEMINATING | KNOWLEDGE TRANSFER

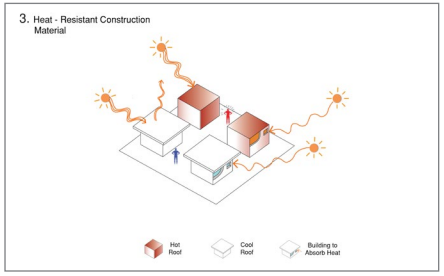
7. Graduate Urban Design Programs: NYIT and Columbia
8. Knowledge Transfer: United States
9. Knowledge Transfer: International

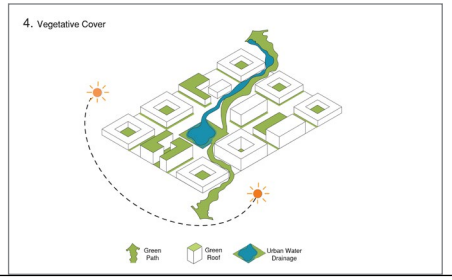
1. Climate- Resilient Urban Design

Raven creates climate-resilient urban design research that is highly collaborative and cuts across disciplines. He expands on the traditional influence and capabilities of architect-urbanists by integrating climate science, natural systems and compact urban form to configure desired community outcomes across spatial scales and urban sectors, illustrated by Raven's diagram (right). Raven's integrated research seeks to bridge the gaps in tools, methods and language between policymakers, urban designers and urban climatologists. This focus is reflected in collaborative research initiatives and published work described in this exhibit.

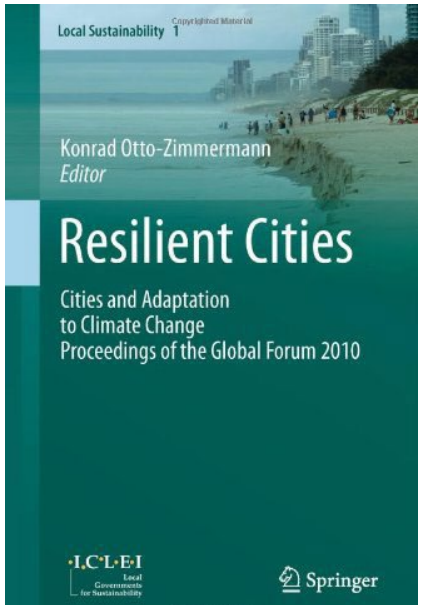








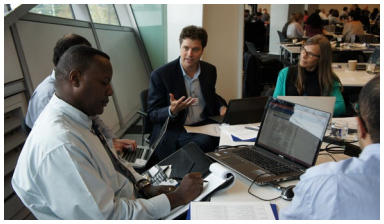
Climate-resilient public realm measures would strengthen community adaptability to climate change and mitigate the urban heat island effect through the creation of systemic, interconnected and protective micro-climates within the public realm intended to reduce energy loads, produce cleaner air and enhance civic life.
Raven, *Resilient Cities*, p.454



An expanded version was distributed by the Manchester Architecture Research Centre, England (2011), and it was selected as a US Green Building Council Research Publication, available nation-wide (above).

Raven's widely-circulated published work, *Cooling the Public Realm: Climate-Resilient Urban Design* (Resilient Cities, Springer 2011) provides an operational framework and case studies for practicing urban design professionals, and a policy framework for municipal governments. It lays out the case for configuring climate-resilient urban form to strengthen community adaptability to climate change, reduce energy consumption and enhance the quality of the public realm.

National and international initiatives are underway to research the science of urban climate change and develop strategies tailored to the scale and unique context of cities. A central challenge for 21st century architect-urbanists will be to ensure that this science is applicable so as to inform their profession's real-world decisions and actions. Raven has brought the urban design perspective to this research, enhancing cross-disciplinary dialogue between architect-urbanists, climate scientists and policymakers.



Raven leading the ARC3-2 Planning and Design workshop in London, engaging multi-disciplinary researchers

National: US Global Change Research Program

Raven contributed to two US Global Change Research Program initiatives. *The Climate Change in the Northeast* report for the *US National Climate Assessment* provides the Federal Government with the scientific basis for proposing climate-resilient planning and design strategies as a component of compact, pedestrian-friendly communities. As Steering Committee member developing the US Environmental Protection Agency's *Urban Resilience Framework* for American communities, Raven and colleagues shaped federal policy by ensuring realistic, useful and rigorous project outcomes from the practitioner's perspective.

International: Assessment Report on Climate Change in Cities

Raven serves as Coordinating Lead Author on the *Assessment Report for Climate Change in Cities* (ARC3-2), whose presentation at the UN Climate Change Conference (COP21) will provide cities with the scientific basis for effective climate-resilient planning and design strategies. He recently led the Planning and Design research at the recent ARC3-2 workshop in London (left). ARC3-2 will be published by Cambridge University Press in 2015.

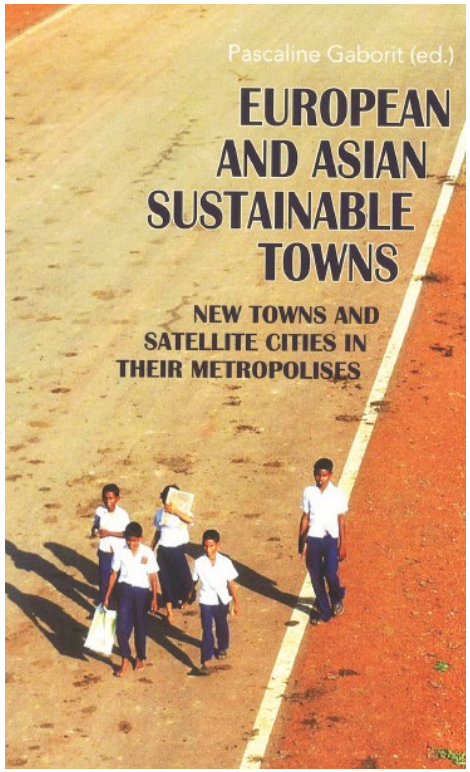
URBAN CLIMATE CHANGE RESEARCH NETWORK

ASSESSMENT REPORT FOR CLIMATE CHANGE IN CITIES

2. Project EAST: Euro-Asia Sustainable Towns

Project EAST: United Kingdom Panel

Raven's three-year collaboration with Chinese, Indian and European officials and urban experts through Project EAST tested climate-resilient urban design in Asia, resulting in publication of his *Shaping Resilient Cities in China, India and the United States*. European New Town and Pilot Cities Platform (ENTP) is the managing partner of this program, with city partners Basildon (United Kingdom), Baoshan (China), Qingpu (China), Naya Raipur (India) and the Euro-India Center. China and India face unprecedented regional population pressures from rural migration, inefficient regional sprawl and climate change. A European Union sponsored initiative, Project EAST works with Chinese and Indian city officials and experts to shape their urban sustainability and resilience strategies.



Regional and local green-blue linkages through urban zones: Project EAST

"*Resilience is often defined as the ability to bounce back after a catastrophic event. But resilient cities also need to be able to bounce forward. In this sense, sustainability and resilience in urban development should be understood as a dynamic continuum, developing physical and institutional capacity to adjust for constant change, for mitigating the impact of climate change and for meeting energy-reduction goals, as well as for sustaining population in more energy-efficient settings by providing amenities people need and want.*" (J. Raven excerpt from Conference Proceedings: Delegation of the European Union to Mumbai, 2014)

Mumbai as Mega-City: Member of European Union Delegation
Raven was the only US-based expert invited to contribute to this European-Indian forum for shaping the development of a sustainable-resilient Mumbai mega-city. Attended by high-level Indian and European officials and experts, these working sessions aligned with the Mumbai government regional planning process. Raven's presentation and panel drew from his urban design research and project experience in the United States, the Middle East and Asia; Mumbai (right).

Shaping a New Capital City to Fit Indian Life: Design Juror
The design jury reviewed international proposals for a planned new capital city called Naya Raipur. During jury working sessions with regional leaders and urban experts, Raven advocated for sustainable and resilient development to be measured from economic, social and ecological outcomes, linking regional growth to phased infrastructure investments across political jurisdictions. The competition process has led to significant revisions of the strategic plan by the Naya Raipur Development Authority (right).

China International Forum on Urbanization: Expert
Raven lectured on sustainable-resilient cities and served on a Project EAST panel of experts responding to rapidly urbanizing regions in China, sponsored by to the China Center for Urban Development under the National Development and Reform Commission (NDRC). He engaged experts and policymakers in the Baoshan and Qingpu districts of Shanghai, linking community vitality to strategic transportation, housing and ecological investments (right).

3. STAR Communities

Sustainability Tools for Assessing and Rating Communities

Twenty STAR-Certified Communties include:

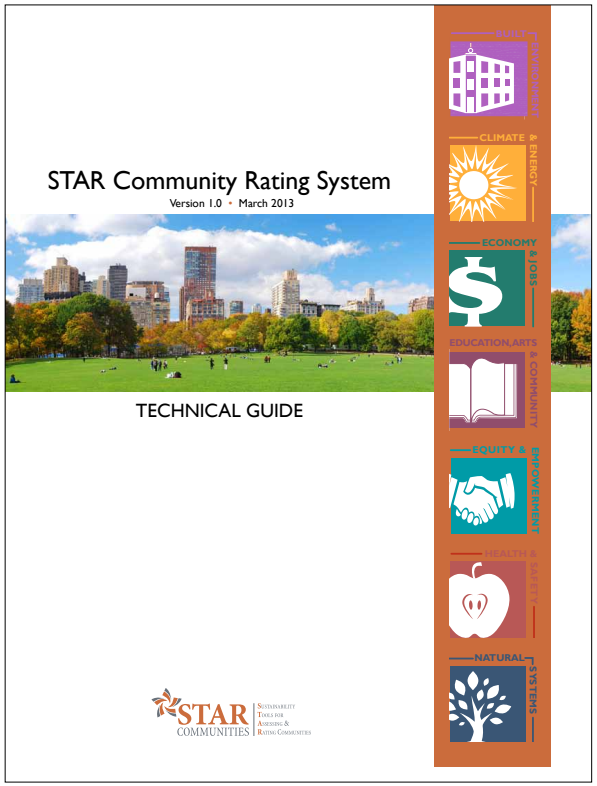
- Washington DC.
- Atlanta, GA.
- Fayetteville, AR.
- El Cerrito, CA.
- Northampton, MA.
- Broward Co, Fl.

Seven Future STAR Communities include:

- Dearborn, MI.
- Wichita, KA.
- Reading, PA.

As Technical Advisor for STAR Communities, Raven served for three years in collaboration with a wide range of experts from across the United States to develop a national sustainability and resilience rating system, now adopted by twenty American communities. For the publication *STAR Community Rating System 1.0: Technical Guide; Sustainability Tools for Assessing or Rating Communities* (2013), Raven was co-leader of the Green Infrastructure goal, and contributed to Climate Resilience/Adaptation; Comprehensive Planning; Transportation/Mobility; Compact/Complete Communities and Natural Systems.

As co-leader for the Green Infrastructure Goal, Raven helped guide the Technical Advisory Committee towards incorporating climate-resilient urban design measures into of the STAR Rating System. He focused on measures for cooling public spaces achieved through a combination of strategic vegetation, solar impacts, passive ventilation and urban morphology. The team successfully argued for Green Infrastructure to "extend well beyond storm-water harvesting and mitigation". The final Evaluation Measures require communities to "demonstrate that 35% of the jurisdiction's land area has protected vegetated surfaces performing... Localized cooling through tree canopy cover, green roofs, or green walls". The STAR text "there is mounting evidence that when 35% of a community's land area is designated as green infrastructure, the community begins to see climate adaptation benefits" originates from Raven's work with the International Association for Urban Climate and other scientific knowledge networks. The text also requires that municipalities be required to maintain its green infrastructure's ecological functions, because "maintenance helps to ensure that vegetation is performing normal evapotranspiring functions".



STAR Communities Rating System: Technical Guide

STAR COMMUNITIES | Sustainability Tools for Assessing & Rating Communities

COLUMBIA | SIPA
School of International and Public Affairs

Building the First Sustainability Rating System for Local Governments

Mr. Jeffrey Raven is a member of the Natural Systems TAC, works as an adjunct professor of Columbia University's Graduate School of Architecture, Planning and Preservation, and heads RAVEN Architecture+Urban Design, LLC in New York City. In an interview he discussed the development of STAR and considerations for creating a comprehensive rating system for sustainability, summarized below:

Desired outcomes operate on multiple spatial scales such as a building, site, neighborhood, city, sub-region and region. To achieve objectives, the impact at each level must be identified in order to define performance measures. Also, the actors of the different levels must work in collaboration.

The cross-cutting nature of objectives cannot be overlooked. For example, the Green Infrastructure objective is designated in the Natural Systems goal area in the Environment pillar as it delivers ecosystem services. However, it also relates to the other Environment pillar goal areas of Planning and Design and Energy & Climate, as well as the Equity pillar due to green infrastructure's impact on quality of life and public health.

Although large municipalities like NYC generally have significant resources to devote towards achieving sustainability, smaller communities do not necessarily lack capacity; it actually may be more difficult for NYC to achieve certain objectives because of its size. Although STAR seeks to standardize sustainability, these differences ought to be taken into account.

Raven's published interview in the joint STAR - Columbia University publication 2012

STAR communities urban strategy cards configured by J. Raven under overall categories illustrating interdependent strategies. In this image, the "Green Infrastructure" card is in the center, demonstrating its integrated, cross-disciplinary relationship to other strategies across sectors.

4. MASDAR Carbon-Neutral Development

Abu Dhabi, UAE

MASDAR Target Metrics:

- Zero Emissions
- Zero Waste
- 100% Renewable Energy

Raven's sustainable-resilient urban design research has been applied to projects in the Arabian Gulf as Louis Berger Group Director of Sustainability and Urban Design. Raven was sustainability advisor to Masdar City, a 640-hectare urban development project powered by renewable energy for a landmark one-million sf., mixed-use "positive energy" headquarters building and site that produces more energy than it consumes. He developed and led sustainability workshops, and contributed to planning and design metrics from building to city-wide scale.

During the Masdar design competition phase, Raven worked with a team of experts to develop the competition criteria and served on the internal jury to produce a short-list of finalists. During design phase, energy load was reduced through passive cooling strategies and innovative public space ventilation using wind towers. Raven worked in close collaboration with Masdar leadership to provide research and feedbacks loops to reinforce Masdar city-wide strategies. He managed an integrated evaluation process to achieve carbon-neutral Performance Indicators. Through all phases of project design, Raven led a series of cross-disciplinary sustainability sessions with Masdar leadership, the design team and international experts, presented in Raven's Masdar Sustainability Gateway Sessions.

Recently-completed districts in Masdar benefit from 15-20 degree Celsius cooler temperatures than in downtown Abu Dhabi at mid-day. At full build-out estimated at 2025, the city is expected to have 40,000 residents and 50,000 commuters.

Jeffrey Raven leading the MASDAR Sustainability Session

Sustainability advisor to "positive energy" Masdar Headquarters (Smith+Gill Architects)

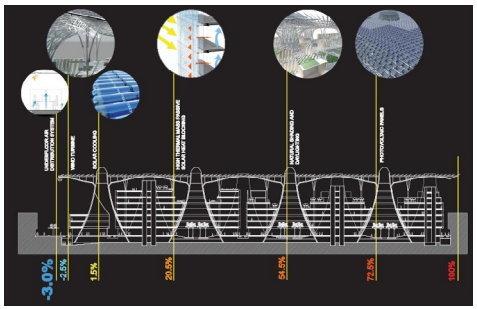
Building Sector: Carbon Mitigation

G1	**Produce 100% Renewable Energy**	103 % renewable energy production. Total electricity demand (KWh) / Total renewable energy production: (KWh) = 103%	Total electricity demand: 5,352,141 (KWh) / Total PV energy production: 5,379,037 (KWh) = 100.5%	100% renewable energy, carbon neutral at the completion of the city. S+G stated that HQ will have more efficient lighting and bldg envelope to meet goal. Actual % per energy balance calculation
G2-1	**Minimize Embodied Carbon**	550 kg CO2 e/m2 Entire Project C Neutral in 15 yrs 68,718 tCo2e 2.5m AED Carbon Credit Offsets	Current CO2e per m2 = 495 kg/m2 Total embodied carbon includes all structural elements, fenestration, finishes. Does not include MEP... or Undercroft.	**Masdar HQ Sustainability Cost-Benefit Analysis** Trellis (Top-Down Completion): Grid Connection, Construction Complexity, Cost, PV Delivery Steel Recycle Content: Schedule Concrete Additive Max: Schedule + Cost Concrete Water Curing: Schedule
G2-2	**Energy Efficient Building Systems**	Less than 20 W/m2 (peak demand) excluding plug loads 13 W/m2 exemplary Lighting +HVAC+Vertical System+Other Building System < 20W/m2	Lighting +HVAC+Vertical System+Other Building System= 18W/m2 Overall Building Lighting: 8W/m2 Office Lighting only = 7W/m2	Operational CO2= Lighting +HVAC+Vertical System+Other Building System. Plug Load is not included. Post-occupancy behavior will be tied to a "Risk Indicator Variance" protocol. Energy demand should be broken out by program, and shown with final building performance.

Sustainable Performance Indicators, managed by Raven

Masdar Rendering (Foster + Partners)

Raven (left) at MASDAR under construction



Cross-section through wind towers (S+G)

Solar panel field under construction

5. Sustainable & Resilient Urban Design Projects

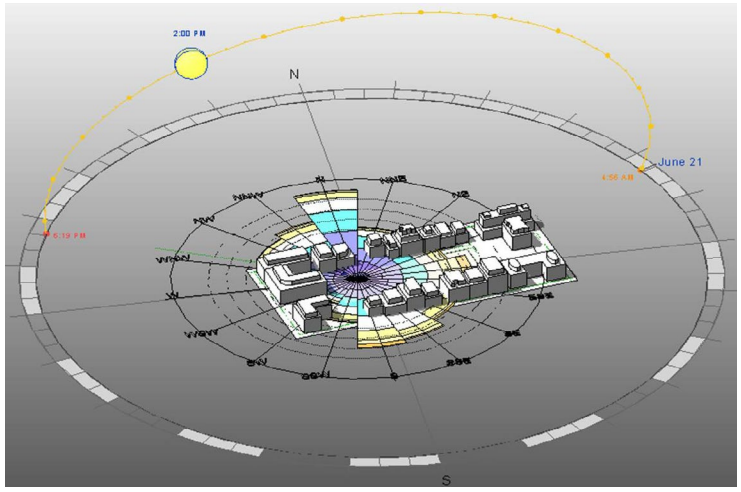
Asia

India: UK Department for International Development (DFID) and Government of West Bengal. Completed by RAVEN A+U teamed with the Louis Berger Group (India)

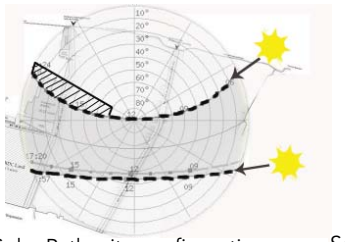
Raven's sustainable-resilient urban design research has been applied to master plans in India and Vietnam through his own firm RAVEN A+U and as Louis Berger Group Director of Sustainability and Urban Design.

Kolkata (Calcutta) Metropolitan Area, India

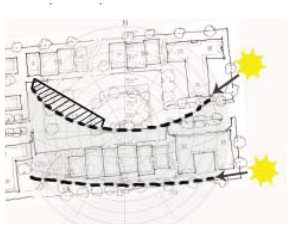
Raven developed a sustainable urban design plan for new settlements in regional growth areas in Kolkata. RAVEN A+U was the urban design lead teamed with the Louis Berger Group (India) to conduct sustainable satellite cities projects in the Kolkata regional growth zone. An important challenge was configuring a compact development pattern to respond simultaneously to strong winds, flood risks and high temperature and humidity. Raven developed design guidelines for a climate-resilient public realm, including urban ventilation during hot months, green infrastructure to mitigate flooding and heat, and solar design to capture energy generation without undesirable heat.



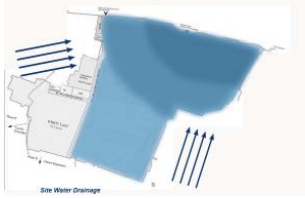
Urban design energy model, Kolkata



Solar Path- site configuration

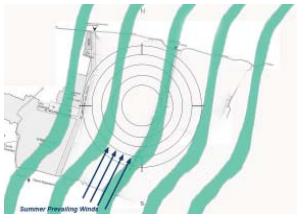


Solar Path- building design

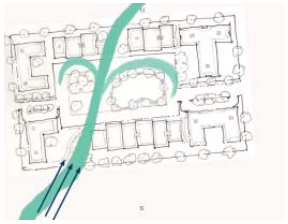


Storm-water constraints

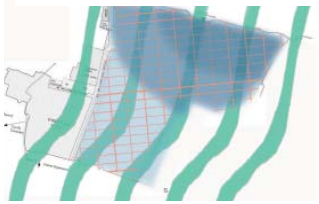
Green-blue site infrastructure



Prevailing summer breeze



Urban ventilation strategies



Climate-resilient urban design: Building and site scales

Vietnam: Thanh Hoa People's Committee Municipal Government. Completed by Jeffrey Raven, while Director of Sustainability + Urban Design at the Louis Berger Group

Thanh Hoa, Vietnam

As Director of Sustainability and Urban Design at the Louis Berger Group, Raven developed a strategic plan for the provincial capital Thanh Hoa in Northern Vietnam. One of the first comprehensive metropolitan plans for a Vietnamese city by foreign consultants, the project sought to develop Thanh Hoa as an emerging regional economic/institutional center of 500,000 people through a coherent, sustainable development framework.

Raven's strategic planning framework balanced economic growth with equity and environmental regeneration. Strategies included reconceiving the historic center and citadel as a dense walkable district, configuring low-impact waterfront development neighborhoods and connecting growth zones with green infrastructure. Innovative climate-resilient urban design measures included new canals and green corridors aligned with prevailing summer breezes and compact districts clustered around sustainable Urban Drainage System (SUDS) retention ponds.

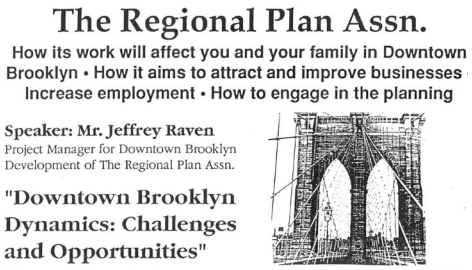
The UN Habitat and the Asia Development Bank followed this project by launching a national network of metropolitan plans for other large cities in Vietnam. The project was cited extensively in the Asian Development Bank's book *Green Cities*.

Historic citadel district: (L to R): Original; Current; Proposed
Contiguous green corridors canals and storm-water retention zones aligned with prevailing breezes (left)

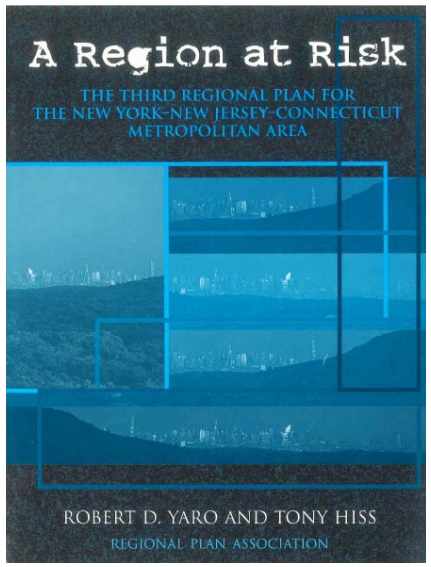
6. Regional Plan Association

Downtown Brooklyn Plan, New York

Raven was the Director of the Downtown Brooklyn Development Project for the Regional Plan Association (RPA). An integral part of the *Third Regional Plan* Centers Campaign for the New York Metropolitan Area, the comprehensive plan for Downtown Brooklyn– a Central Business District and transportation hub with a quarter million workers and visitors, serving Brooklyn's population of 2.3 million residents– combined an analysis of Downtown's economic and institutional assets with urban design, planning, infrastructure and transportation recommendations. Facing changing demographics and the emergence of alternative regional centers, the project has strengthened Brooklyn's assets, including housing-jobs proximity, mixed-use compact development, walkable streets, access to public spaces, infrastructure proximity, connected green zones, and bike-pedestrian access as integral factors in Downtown's competitive advantage. Raven directed a stakeholder-focused planning process with public workshops, collaborative graduate design studios at Pratt Institute and Columbia University and an urban design charrette with leading experts. The results were published a final RPA report title *Downtown Brooklyn: A Plan for Continued Progress*, and in the landmark *Third Regional Plan: A Region at Risk.*



Urban design analysis diagram of Downtown Brooklyn from *A Region at Risk*, p.122



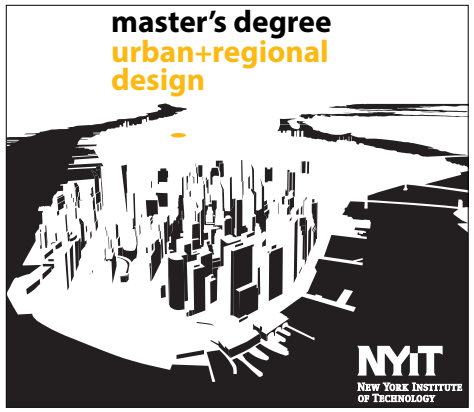
Continued Collaboration with RPA on Regional Centers
Raven has continued collaborating with RPA on strengthening the Region's centers. He was an invited panelist to the annual *Regional Assembly: Building a Green Infrastructure* (right). Moderated by James Polshek, FAIA, panelists included two New York City Commissioners leading the Departments of Design and Construction and the Department of Environmental Protection. As co-leader on Green Infrastructure for STAR Communities, Raven suggested how emerging research on the system's sustainable and resilient co-benefits could improve the New York region's quality of life.

As a specialist in integrating transit-oriented development with green infrastructure, Raven was invited by RPA to contribute to the smart-growth Downtown Visioning Charrette in Bergen County, NJ (above).

Following the attacks of 9/11/2001, Raven contributed to RPA's Civic Alliance Planning and Design Workshop in Lower Manhattan.

7. Graduate Urban Design Programs

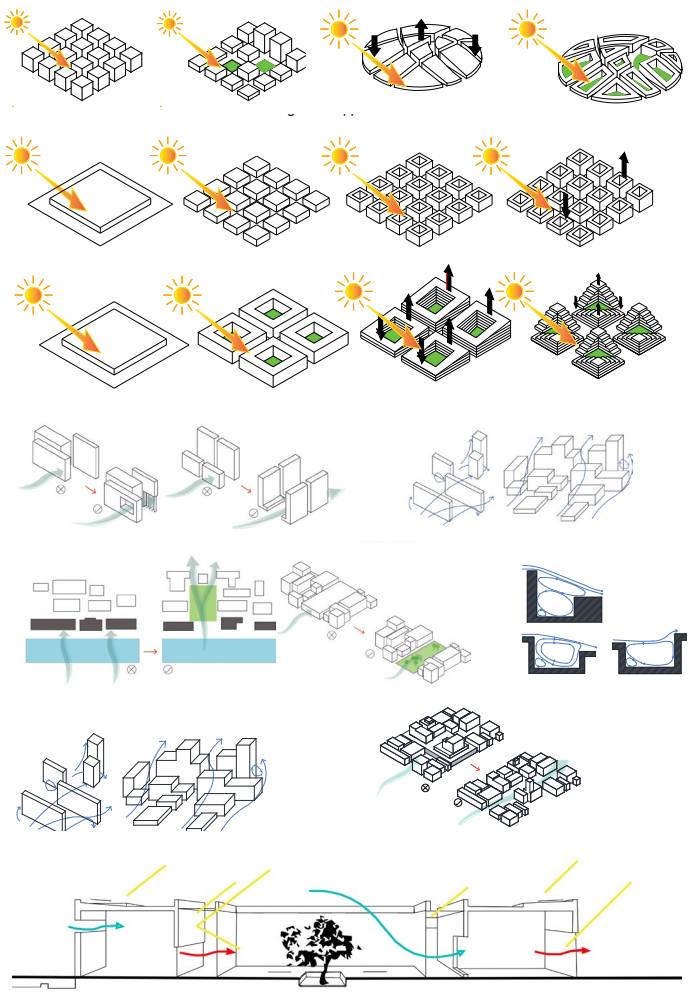
NYIT and Columbia University



After serving on the faculty of Columbia University Master of Urban Design Program, in 2012 Raven was appointed Director of the Master of Urban and Regional Design (MAURD) at the New York Institute of Technology-Manhattan (NYIT) School of Architecture and Design.

As program director, Raven's leadership at the university is shaping how the academy engages the fluid, interdisciplinary and global urban design profession that is practiced in the 21st century. As professor, researcher and advocate steeped in creative practice, Raven brings to the School of Architecture and Design his focus on the intersection of urban morphology, low-carbon cities and climate to prepare graduates confronting a rapidly urbanizing world threatened by potentially catastrophic climate-change.

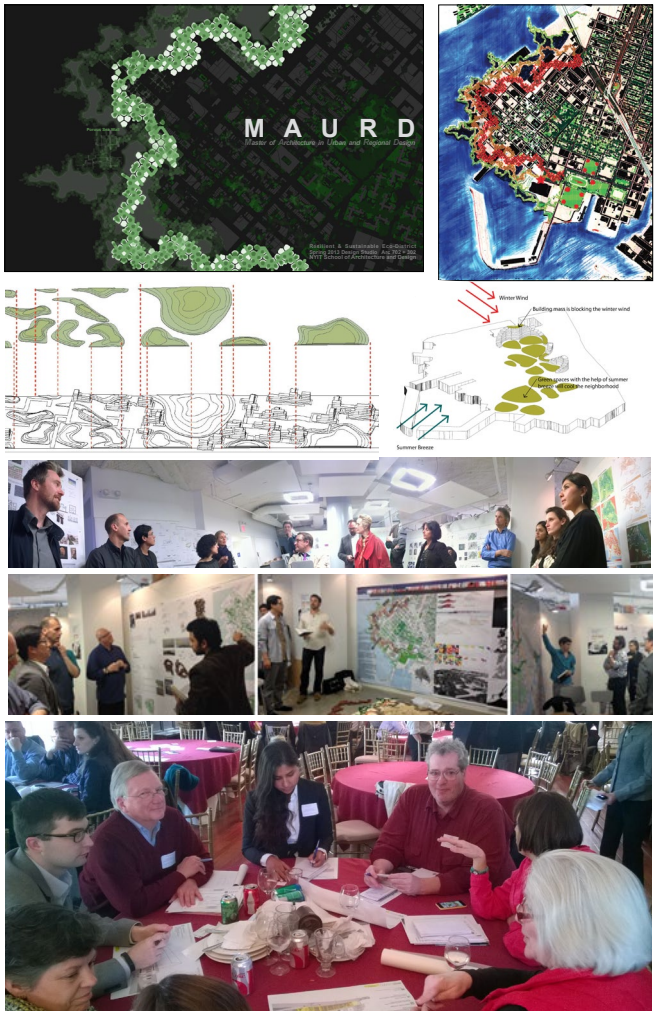
The university recognizes Raven's impact, inviting him to be the Fall 2014 speaker for the university-wide Provost Discovery Luncheon. Raven's "eco-districts" and "hot cities" design studios have drawn jury members from the US Environmental Protection Agency, the World Bank, UN Habitat, C40 Cities, NYC Office Department of Environmental Protection and NYC Office of City Planning. Graduate students are engaged in international design studios and have been awarded internships at prestigious firms and organizations, including at the Regional Plan Association, the NYC Department of City Planning and the AIA NY Design for Risk and Reconstruction Task Force (DfRR).



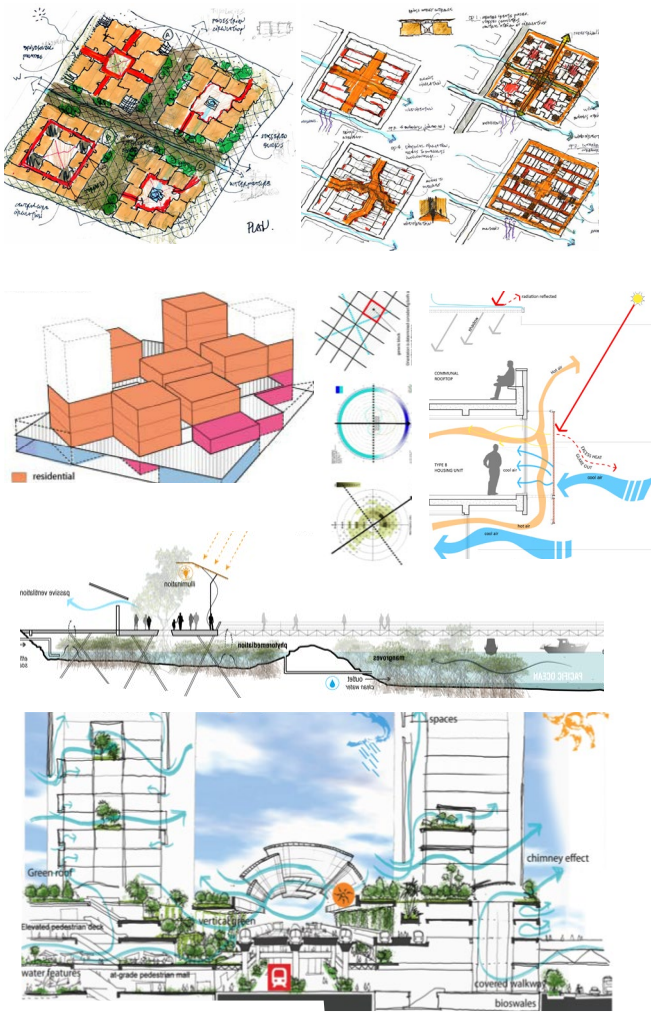
Graduate student research: Climate-resilient urban design

KNOWLEDGE TRANSFER | **Graduate Urban Design Programs: NYIT and Columbia**

"If urban design is the art and science of configuring neighborhood, communities and systems to enhance livability then sustainable and resilient urban design should be measured from a civic building perspective, when program and physical form provide the integrated resilience necessary for positive economic, social and ecological elements to flourish over time". J. Raven



NYIT MsAURD student work for Resilient Urban Design Studio; Design Studio Reviews with jury representing NYC Office of Resilience, AIA NY resilience leadership and directors of leading NYC architecture-engineering firms; Students participating in AIA Regional Resilience Workshop at NYIT. (Top to bottom)



Columbia University MSAUD student work for Raven's course *Infrastructure, Resilience and Public Space*, with focus on passive cooling, solar design and green infrastructure strategies across all spatial scales. (Top to bottom)

8. Knowledge Transfer: United States

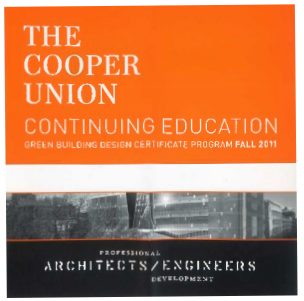
Raven moves research to impact by disseminating expertise to the profession, government and allied professions in local, regional, state and national forums throughout the United States. Through the New York Times and Cooper Union platforms, Raven works to expand the influence and capabilities of architect-urbanists in response to the emerging practice of sustainable-resilient urban design.

The Profession: ***The New York Times and The Cooper Union***
Since 2007, Raven has been influencing the profession through his accredited Ecological City: Sustainability and Resilience courses for mid-career professionals at The Cooper Union. It was adapted as a web-based course by the New York Times.

Local Government, Allied Professions and Public
Raven was a peer reviewer to the landmark *High Performance Infrastructure Guidelines* by the NYC Department of Design and Construction, that launched a new era in the design and construction of public infrastructure in New York City. Raven engages local public stakeholders on issues relating to sustainable and resilient urban design, including a recent panel on Sustainable and Resilient Cities for The National Center for Suburban Studies at Hofstra University, New York.

Regional, State, National Government and Allied Professions
At the regional level, Raven was a panelist at the Symposium on Planning Healthy, Sustainable Communities by the Regional Consortium in Northern New Jersey, after it was awarded the US HUD Sustainable Communities Planning Grant. At the state level, Raven was invited by the North Carolina Department of Transportation and American Council of Engineering Companies to present at their Sustainable Planning and Design workshop. At the national level, Raven was invited as a panelist to the Transportation Research Board's *Integrated Planning & Sustainable Transportation* in Washington DC.

Jeffrey Raven



The Ecological City: Sustainability and Resilience
Jeffrey Raven, AIA, LEED AP BD+C
Raven Architecture + Urban Design LLC/
Associate Professor and Director,
Master of Architecture in Urban+Regional Design,
New York Institute of Technology
AIA/CES, PDH/LU-HSW credits; 7 sessions

This course explores the development of an integrated multi-disciplinary urban design for creating resilient communities that can adapt and thrive in the changing global conditions, help meet carbon-reduction goals, and mitigate the impact of climate change. This approach aims to sustain urban populations in more compact settings by providing amenities that people need and want. Participants explore urban design approaches, methods and tools that strengthen resilience to climate change through a systemic, interconnected public realm and green infrastructure achieving reduced energy loads, cleaner air, and enhanced civic life. The course reviews prototype case studies and methodologies in both local and international contexts. Synergies between green and gray infrastructure will be a recurring theme.

Course description by New York Times & Cooper Union

9. Knowledge Transfer: International

Building Livable Cities: Urban Vision Symposium, Mumbai, India, 2013

Disseminating sustainable-resilient urban research solutions to global professionals, policymakers and allied disciplines is a key component of Raven's professional practice. This dissemination has led to extensive citations in Asian Development Bank's *Green Cities* publication.

Germany - Alexander von Humboldt Fellowship / UNEP / CIPSEM
Raven led workshops for climate policy leaders who have been awarded Germany's Humboldt Foundation International Climate Protection Fellowship. Also in Germany, he led workshops for the United Nations Environment Programme (UNEP) / Technische Universität Dresden's Centre *for* International Postgraduate Studies of Environment Management (CIPSEM) for experts from developing countries facing rapid urbanization, 2010-present.

England - Cambridge University Sustainable Cities Programs
Raven led workshops with Cambridge University Sustainable Cities Programs, including the *Cambridge Institute for Sustainability Leadership*, *The Prince of Wales' Business & Sustainability Programme*, and the *Cambridge International Land Institute*. Raven worked with policymakers and experts from the United States, Europe and China.

Japan - Global Forum on Urbanization + Health, UN Habitat & World Health Organization: Raven gave a video interview on the intersection of healthy cities and sustainable urban design, 2011.
[http://www.youtube.com/watch?v=U2M02IFVGMw]

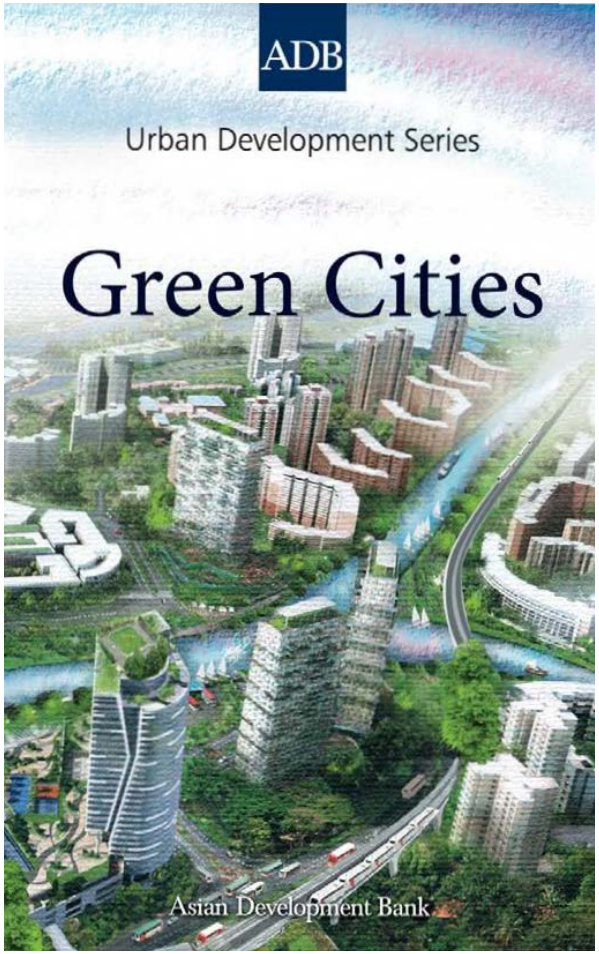
Slovakia - United Nations Development Programme (UNDP)
Raven led a training session on climate change and regional development to over sixty UNDP experts from regional offices in Eastern Europe, Russia, and Asia, 2012.

China - Shanghai SISS Institute and Xiamen Urban Design Workshop
Raven led a workshop on sustainable-resilient strategies at the Shanghai Institute for Science of Science (SISS), an institution that provides research to the Shanghai government. A Humboldt Foundation Fellow invited Raven to lead a Sustainable-Resilient Urban Design Workshop in the city of Xiamen, focused on the redevelopment of the Old Port District in the vulnerable coastal city of 3.5 million residents, 2013.

Alexander von Humboldt
Stiftung/Foundation

UNIVERSITY OF CAMBRIDGE

UNDP



Raven was an invited lecturer and panelist for the Asian Development Bank (ADB) Urban Day Conference on *Energy Efficiency and Cities*, at ADB Headquarters in Manila, The Philippines. His lecture and panel on sustainable-resilient cities was followed by additional exchanges with ADB urban development leadership. As an outcome, Raven's research was cited extensively in ADB's widely-distributed *Green Cities*, Asian Development Bank; Urban Development Series publication, Lindfield, M. and Steinberg, F. (ed.) 2012.

Raven creates urban design research that anticipates the profession's response to unprecedented global urban growth and climate change. His research in sustainable-resilient urban design expands on the traditional influence and capabilities of architect-urbanists, integrating climate science, natural systems and compact urban form to configure dynamic, desirable and healthy communities.

EcoDistricts

Cooling the Public Realm: Climate-Resilient Urban Design (Springer 2011): Raven is the author of the widely-circulated publication focused on resilient urban form. It provides an operational and policy framework for practicing urban design professionals and municipal governments, and was selected as a US Green Building Council Research Publication.

Assessment Report on Climate Change in Cities (ARC3-2): Raven serves as Coordinating Lead Author for the Design and Planning chapter, whose presentation at the UN Climate Change Conference (COP21) will provide cities with the scientific basis for effective climate-resilient planning and design strategies. ARC3-2 will be published by Cambridge University Press in 2015.

EcoDistricts Global Protocol: Raven is an Advisory Committee member developing a global Protocol for EcoDistricts, to define performance requirements for delivering district and neighborhood sustainability projects worldwide. Seven North American EcoDistrict Target Cities are underway, including Atlanta, Boston, Los Angeles and Washington DC, 2014-15.

National Science Foundation (NSF)- Urban Climate Institute (UCI): Raven was an invited Expert to the NSF Research Coordination Network project, to research the science of urban climate change and develop strategies tailored to the scale and unique context of cities, Atlanta, 2014.

The National Science Foundation- Carbon Footprint Metric in collaboration with the AIA: Raven is a focus group member to review the research and design for a Building Information Modeling (BIM)-integrated Carbon Footprint Metric (CFM) tool. This will support environmental decision making by design professionals and their clients, 2014.

City Weathers publication and the International Conference on Urban Climate (ICUC): Raven presented his research on climate-resilient urban design at the ICUC international forum, Ireland, 2012. Raven also presented *Cooling the Public Realm: Climate-Resilient Urban Design* to ICUC in Manchester, England, 2011. Raven's collaboration with leading urban climatologists strengthens the applicability of climatic knowledge to the design of better cities.

Climate Change in the Northeast, US National Climate Assessment: Raven is co-author of the Community/Urban section, with the director of Climate and Environmental Planning for the City of Boston. An extensively peer-reviewed

publication, the influential *US National Climate Assessment* summarizes the impacts of climate change on the United States, now and in the future. It provides the Federal Government with the scientific basis for proposing climate-resilient planning and design strategies, 2014.

Climate Positive Development Program (CPDP), Clinton Climate Initiative: Raven was **Technical Resource Expert** to CPDP, whose mission was to create zero-carbon models for urban districts of member cities. The experts shaped program performance standards for green energy, waste efficiency, material technologies, and integrated design. CPDP is a program within the *Sustainable Communities Initiative* of the C40 Cities Climate Leadership Group, and was developed in partnership with the US Green Building Council, 2010.

McKinsey and Company, *Unlocking the Value of Green Districts*: Raven was a **member of the External Steering Committee** for the McKinsey report. It provides cities with the value proposition for implementing sustainable district strategies, December 2012.

Benchmarking Resilience: Raven was a **member of the Advisory Panel** for the Resilient Design Institute (RDI). The panel of leading practitioners, researchers and US Green Building Council developed metrics and benchmarks relating to urban resilience and acceptable urban temperature fluctuations; New York, 2013.

Global Sustainable Urbanization Development Indicators; **US Office Housing & Urban Development (HUD)**: Raven was a **member of the Working Group** under the direction of the HUD Deputy Assistant Secretary. Launched by The White House Office of Urban Affairs to shape federal sustainable development, the group mapped global best practices and universal benchmarks, 2010-2011.

US Green Building Council (USGBC): Raven **served on a working group** for *LEED for Neighborhood Development* (LEED ND) to develop regional bonus credits. Raven served on the Climate Resilience & Adaptation working group led by the Vice-President of USGBC. Raven peer-reviewed presentations at the annual USGBC *Greenbuild International Conference* in Chicago. As LEED AP on a building design project in NYC, Raven organized and led the first LEED Sustainable Design Workshop in the City of New York, as mandated by NYC Local Law 86. A LEED AP since 2002, Raven gained his LEED BD+C specialization in 2010.

***Global Change Impacts and Adaptation Program*, US Environmental Protection Agency Office of Research and Development (EPA)**: Raven was a **member of the Technical Steering Committee** to develop an Urban Resilience Framework for American Communities based upon urban areas' resilience to climate change. The Steering Committee shaped federal policy by ensuring realistic, useful and rigorous project outcomes from the practitioner's perspective, 2012-2013.

Euro-Asian Sustainable Towns

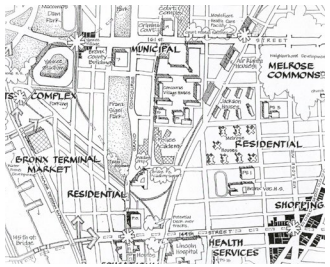
Project EAST- Euro-Asian Sustainable Towns: Raven's three-year collaboration as **technical expert** with Chinese, Indian and European officials and urban experts through Project EAST tested climate-resilient urban design in Asia, resulting in his publication *Shaping Resilient Cities in China, India and the United States*. European New Town and Pilot Cities Platform (ENTP) is the managing partner of this program, with Basildon (UK), Baoshan (China), Qingpu (China), Naya Raipur (India) and the Euro-India Center. Raven contributed to the research initiatives in Qingpu, Shanghai, as a part of a group of urban experts from China, India and Europe to survey the condition of strategic and vulnerable settlements within Shanghai's expanding regional growth zone, 2014.

China International Urbanization Forum: Raven served on a **panel of international experts** researching best practices applied to rapidly urbanizing cities in China, as part of the EU-sponsored Project EAST delegation. Organized by the China Center for Urban Development under the National Development and Reform Commission (NDRC), China Ministry of Commerce, UNDP, Shanghai Municipal Development & Reform Commission and presented on Sustainable and Resilient Cities. Raven presented to this group in Shanghai, 2012.

The Challenges of Mumbai as a Mega-City, **European Union-Bombay First**: Raven was the only US-based expert invited to contribute to this high-level European and Indian forum on low-energy cities. This process ties into the Mumbai government development of a new regional plan. Raven's presentation and panel drew from his urban design research and project experience in the US, the Middle East and Asia. Mumbai, 2013.

STAR Communities: Raven served as **Technical Advisor** for three years to develop a national sustainability and resilience rating system, now being adopted by twenty American cities. For the publication *STAR Community Rating System 1.0: Sustainability Tools for Assessing or Rating Communities* (2013), Raven was co-leader of the Green Infrastructure goal, and contributed to Climate Resilience/Adaptation; Comprehensive Planning; Transportation/Mobility; Compact/Complete Communities and Natural Systems, *2008-2013*.

Raven's sustainable-resilient urban design research has been applied to projects on the Arabian Gulf, India, Southeast Asia, Eastern Europe and the United States through his own firm, or as Louis Berger Group Director of Sustainability and Urban Design, and as Director of the Downtown Brooklyn Plan in the Third Regional Plan for the New York Metropolitan Area. Projects have applied integrated strategies for climate-resilient low-carbon communities, green buildings, smart growth, and green infrastructure across spatial scales.



Bronx Center Plan, New York City

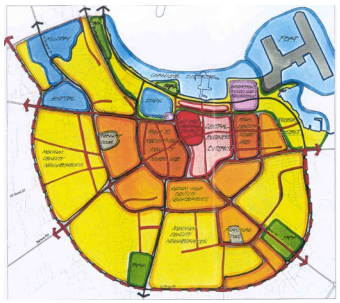
Kolkata (Calcutta) Metropolitan Area, India: Raven **was project urban design lead, to develop a sustainable plan** for new settlements in regional growth areas in Kolkata. The clients were the Government of West Bengal and Department for International Development (United Kingdom).

City of Constanza Strategic Plan, Romania: Raven was **Co-Director** for the plan and capacity-building program as a part of a Soros Foundation initiative for the ancient city of Constanza, now Romania's principal port on the Black Sea. The planning teams were comprised of over thirty Romanian urbanists, architects and economists.

***Bronx Center*, strategic plan for the South Bronx**: Raven was **Project Coordinator** for the collaborative, community based plan to revitalize a deteriorated 300 block section of the South Bronx. A multi-disciplinary process, it encompassed economic development, health and human services, education and culture, housing and transportation, urban design.

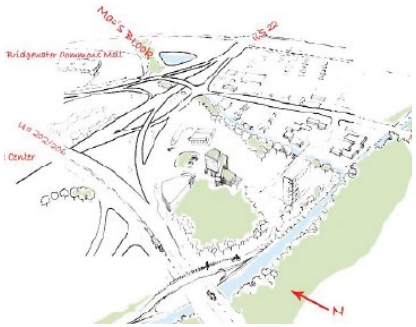
Director of Sustainability and Urban Design at Louis Berger Group Holdings

MASDAR carbon-neutral development in Abu Dhabi, UAE: As Director of Sustainablity+ Urban Design at Berger, Raven was **sustainability advisor** to Masdar, an urban development project powered by renewable energy, for a new landmark 1 million sf., mixed-use "positive energy" headquarters building and site that produces more energy than it consumes. He developed and led sustainability workshops, and contributed to planning and design metrics from building to city-wide scale.


Doha Capital City Plan, Qatar

***Physical Development Plan for the State of Qatar* (Arabian Gulf)**: Raven was **Director of the Capital City Plan**. The Comprehensive long-range planning framework used Geographic Information System (GIS) for three spatial planning scales: the physical development of the State of Qatar, the Capital Region, and the Capital City. Strategies included economic development, transportation, land use policies, development standards, design guidelines and urban design interventions.

Montclair Redevelopment Plan, New Jersey: As project urban design lead, Raven **directed the multi-disciplinary urban design process** for the public-private sustainable development for district-wide "Areas in Need of Redevelopment", including improving the quality of the built environment and public realm. Once adopted, the plan became a legislative ordinance.



Raritan Watershed Guidelines, New Jersey

Best Practices and Prototypes for Development within Fragile Raritan Watershed Areas, Lower Raritan River Watershed Management Redevelopment Study, NJ Water Supply Authority. As sustainability and urban design lead, Raven **prepared "best practice" sustainable design prototypes** balancing high-priority economic development and environmentally sensitive watershed areas-- and provided a model for future watershed protection and economic growth opportunities in the Raritan watershed and throughout the state of New Jersey.

***Thanh Hoa City Master Plan,* Vietnam**: Raven **directed the team onsite in Vietnam** to produce a comprehensive master plan for the provincial capital's development to 500,000 people. The focus was to provide a new long-term strategy for the city to attain goals based on quality of life indicators, environmental, demographic and economic criteria. One of the first comprehensive metropolitan plans for a Vietnamese city by foreign consultants, this prototype plan has been used in collaboration with the UN Habitat and the Asia Development Bank to launch metropolitan plans for other large cities in Vietnam.

***Port Redevelopment Plan,* Belford (Middletown), New Jersey**: As urban design lead, Raven **led the spatial planning scope** under a Smart Growth grant for revitalizing one of mid-Atlantic's few active, small-vessel fishing ports located along the coast of Sandy Hook/ Raritan Bay. An inter-modal terminal for NYC rapid regional commuter ferry service, the strategic plan included urban design, infrastructure, architecture and economic strategies, for sustainable viability of the fishing industry and stronger linkages to the surrounding community.

Green Airport Terminal Building, Newark Liberty International Airport: Raven was **Sustainability and LEED Advisor** to the Port Authority of New York and New Jersey for a 1.3 million sf. airport terminal building and surrounding site. The integrated design process focused on reducing the ecological footprint while improving operations and creating a landmark transportation hub. Integrated design workshops included life cycle analysis; upstream infrastructure carbon and energy saving; natural ventilation and mixed-mode conditioning; terminal footprint reduction; daylighting; solar gain reduction and seasonal heat loss; water conservation, rainwater harvesting and re-use; infrastructure integration.

***Intermodal Transit Hubs, Korea Transport Institute (KOTI),* Seoul, Korea**: Raven **worked with KOTI leadership** to develop guidelines and prototypes for Seoul's Intermodal Transit Hubs with the goal of revitalizing urban centers and reducing automobile impacts within the Seoul metropolitan area. He was invited as speaker to present to an international conference in Seoul.

Freedom Ring, the Centennial Exposition Park at the former Clark U.S. Air Force base, The Philippines. Raven was **lead urban designer and architect** for the fast-track design/build project to commemorate the 100th anniversary of Philippine independence from Spanish rule. The "Ring" site is 300 meters in diameter, comprising a 35,000-person amphitheater and stage house covered by a massive tent, and other support structures. It was the largest outdoor amphitheater in Asia.

Richmond Health Center - LEED AP

Project LEED Design and Administration: Raven **was sustainable design lead for the LEED-Accredited Adaptive Re-Use of the historic Richmond Health Center** building to state-of-the-art laboratories, clinics and medical offices; LEED Services for new Defense Information Systems Agency (DISA) facility, a 1 million sf, $345 million facility for 4,200 employees in Fort Meade, MD.; Military Installation, Picattiny Arsenal, NJ. LEED feasibility analysis for a new building at the military research facility; Detention Center, Queens, NY. High-Performance Design and LEED Tracking for NYC Department of Corrections project, RMSC detention center on Rikers Island; Queens Museum of Art, Queens, NY. LEED Advisory Services for the Queens Museum of Art project: Expansion of the historic facility, including galleries, offices and support space.

St. Louis County Energy Efficiency and Conservation Block Grant Strategy: Raven was **Project Director**, in partnership with ICLEI-Local Governments for Sustainability and HOK, providing technical support to the County of St. Louis, MO. The project created the Energy Efficiency and Conservation Strategy (EECS) as per US Department of Energy's Energy Efficiency and Conservation Block Grant funding (EECBG) scope. The Long-Term Sustainability Framework integrated energy efficiency methods and concepts; analyzed the Transportation, Waste Management, and Economic Development goals for the County and provided methods to establish the impact of sustainable projects or initiatives.

World Trade Center Memorial & Redevelopment Plan, Lower Manhattan Development Corporation (LMDC): Raven provided **Sustainability Consulting services** to LMDC to evaluate Sustainable Design Guidelines and LEED Guidelines for new buildings and site development following the attacks on 9/11/2001.

Director of Downtown Brooklyn Plan at Regional Plan Association (RPA)

Downtown Brooklyn Plan: A component of the RPA *Third Regional Plan* Centers Campaign, Raven was the **Project Director** for the Comprehensive master plan for Downtown Brooklyn– a CBD and transportation hub with a quarter million workers and visitors. It was focused on smart growth, economic, infrastructure, urban design and planning strategies.

KNOWLEDGE TRANSFER

Through the university and his knowledge transfer projects, Raven disseminates his applied research worldwide to graduate students, the profession, government and allied disciplines in Europe, Asia and the United States. After serving on the faculty of Columbia University's Master of Urban Design program, Raven was appointed Director of the Master of Urban and Regional Design (MAURD) program and Associate Professor at the New York Institute of Technology (NYIT-Manhattan) in 2012. He mentors graduate urban design students whose research, sponsored workshops and professional internships contribute to the active urban resilience dialogue in New York City.

Graduate Urban Design Programs

New York Institute of Technology, Manhattan: Raven is **Director**, Master of Architecture in Urban and Regional Design program and Associate Professor, School of Architecture & Design, 2012-present.

Columbia University: **Adj. Assistant Professor**, Master of Science in Architecture + Urban Design, 2009-2011.

Knowledge Transfer: United States

The New York Times Knowledge Network

The Cooper Union/ The New York Times: Raven has **taught the accredited certificate program** (AIA/CES and PDH/LU-HSW credits) in Green Building Design from The Cooper Union's Department of Continuing Education since 2007. The course, *Ecological City: Sustainability and Resilience* (7-10 sessions) was picked up by *The New York Times Knowledge Network* and made into a web-based course via the global New York Times platform, 2007-present.

The Atlantic Roundtable-Rockefeller Foundation: **Panelist** for the Healthy Cities forum, New York, 2013.

Sustainable Futures for Global Cities and Suburbs, Hofstra University. **Lecturer and panelist** on sustainable urban design for the event co-sponsored by the Center for Sustainable Urban Development at the Earth Institute (Columbia University) and the Center for the Sustainable Built Environment (New York University), 2013.

Symposium on Planning Healthy, Sustainable Communities, **Rutgers University, New Jersey**: Lectured on urban **sustainability rating systems** and was **panelist for the Consortium** in Northern New Jersey. The group had been awarded the US HUD Sustainable Communities Regional Planning Grant, 2012.

North Carolina, Department of Transportation (DOT) and American Council of Engineering Companies (ACEC): Lecturer to the *Joint-Technical Training Workshop on Inter-modal Transportation and Sustainable Planning* and *Design for Resilient Cities*, 2009.

KNOWLEDGE TRANSFER

TRB
TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

Transportation Research Board: Integrated Planning & Sustainable Transportation, **Washington DC**: Lectured on sustainable planning and design for resilient communities and served on a panel with the US Deputy Assistant Secretary for Transportation Policy, 2010.

New York University, Wagner Graduate School, Spotlight on Abu Dhabi *Challenges and Opportunities in an Emerging Global City*: Lectured and served on a multi-disciplinary panel of developers and academics, 2009.

Cornell University, Department of City and Regional Planning: Raven lectured on *Shaping an Ecological City in Northern Vietnam*, 2009.

New York University, Wagner Graduate School: Lectured on *Integrated Strategies and the Ecological City*, 2010.

University of North Carolina, Charlotte: Lectured and led a professional accredited course on *The Ecological City*, 2009.

National Association of Environmental Professionals: Lectured on *The Ecological City*, Phoenix, AZ, 2009.

Coastal Marine Resource Center: Lectured on sustainable planning for vulnerable coastal zones, New York, 2008.

New Jersey Institute of Technology: Panelist for the *Infrastructure Planning Program Roundtable*, 2009.

***Highline Preservation and Reuse* - Elevated Rail Line**: Moderator for the community forum, New York, 2005.

Civic Alliance Planning and Design Workshop: Workshop participant; contributed to the urban design section on post-9/11 Lower Manhattan plans with Regional Plan Association, Lower Manhattan, 2004.

American Institute of Architects committees, AIANY: Co-facilitator of the Biennial Building Type Awards jury in Urban Design, Raven was also a member of the New Visions Liaison Committee: A Lower Manhattan Coalition for renewal following the attacks of 9/11 2001. Raven is a member of the AIA Planning and Urban Design Advisory Committee.

Knowledge Transfer: International

Humboldt Foundation, **Germany**: Led a series of annual workshops for The Alexander von Humboldt Foundation's International Climate Protection Fellowship, a competitive program for future international leaders in the field of climate protection, focused on Sustainable-Resilient Cities; 2011, 2012, 2013.

Resilient-Urban Design Workshop, **Shanghai SISS Institute**: Led a workshop for the Shanghai Institute for Science of Science (SISS), an institution under the leadership of Science and Technology Commission of Shanghai Municipality and Shanghai Academy of Science and Technology, 2013.

KNOWLEDGE TRANSFER

United Nations Habitat

Global Forum on Urbanization + Health, **UN Habitat & World Health Organization**: Lecturer and panelist, Raven **gave an interview** on the intersection of healthy cities and sustainable urban design, Kobe, Japan, 2011.

United Nations Habitat, ***High-Level Meeting on Sustainable Urbanization in Konya, Turkey - Consortium for Sustainable Urbanization***: **Lecturer and panelist** with focus on sustainable cities at the UN Headquarters in New York. (2012).

United Nations Environment Programme (UNEP) and Technische Universität Dresden's Centre for International Postgraduate Studies of Environment Management (CIPSEM): Led **a series of annual workshops** on *Sustainable-Resilient Cities*, attended by international policy and technical experts, Germany, 2010, 2011, 2012, 2013.

United Nations Development Programme (UNDP) Europe and the CIS, *Sustainable and Resilient Local Development*: Bratislava Regional Centre, Slovakia: **Led a training session** for sixty UNDP experts, including Governance, Regional Development, Climate Change Advisory; regional offices in Ukraine, Moldova, Armenia, Kosovo, Macedonia, Turkey, Tajikistan, Uzbekistan, Montenegro, 2012.

Sustainable Urban Design Workshop, **Xiamen University, China**: **Led an intensive design studio** at Xiamen University for Architecture, Landscape Architecture and Environmental Design Students and Faculty for the redevelopment of Xiamen Old Port District (formerly Old Amoy) to improve the quality of the public realm. Resilient design and opportunities included a local fishing community within a broader context of rapid economic growth in the climate-vulnerable coastal city of 3.5 million residents, 2013.

***Building Livable Cities;* The Urban Vision Symposium, Mumbai**: **Lecturer and panelist** with colleagues from Indian universities, public officials and real estate developers, 2012.

Sustainability, Livability & Governance of a Metropolis: **Lecturer and panelist** to a **visiting delegation** of Indian real estate and government officials, The New Urban Vision (Mumbai) and Columbia University, 2013.

Cambridge University Sustainable Cities Programs: Lecturer and **external expert** to *The Cambridge Institute for Sustainability Leadership*, *The Prince of Wales' Business & Sustainability Programme*, *the Cambridge International Land Institute*. He presented his research and professional experience to policymakers, business leaders and experts from China, Europe and the United States. In 2012, he presented *Sustainable Cities: Shaping Resilient Communities for the 21st Century* and led a Cambridge workshop for 30 Chinese leaders from the TianJin Economic Technological Development Area, 2010-2012.

The World Bank: **Lecture** on *Planning Resilient Communities*, World Bank Headquarters, Washington DC, 2011.

PUBLICATIONS - RECOGNITION

Resilient Cities: Bonn, Germany

Resilient Cities, ***1st World Congress on Cities and Climate Change Adaptation***: Lecturer and **invited panelist, presenting** his publication *Cooling the Public Realm*, Bonn, Germany, 2010.

Asian Development Bank: **Lecturer and panelist** for the ADB Urban Day Conference on *Energy Efficiency and Cities*, Manila, The Philippines, 2010.

Publications

Raven, J. *Shaping Resilient Cities in China, India and the United States*, Gaborit, P. (ed.), European and Asian Sustainable Towns, PIE Peter Lang SA, Brussels (2014).

Raven, J. *Cooling the Public Realm: Climate-Resilient Urban Design* · Resilient Cities (2011) 1: 451-463, 2011. Cities and Adaptation to Climate Change: Local Sustainability, Vol. 1, Otto-Zimmermann, Konrad (Ed.), 2011, XLIV, 576 p., Springer. Selected as a US Green Building Council Research Publication (2011).

Raven, J. *Cooling the Public Realm: Climate-Resilient Urban Design*, Hebbert, M., Jankovic.V, Webb, B. (ed.), City Weathers, Manchester Architecture Research Centre, University of Manchester; ISBN: 978-1-907120-98-5; 2011 Manchester Architecture Research Centre (MARC), 2011. The original publication of this paper is in Resilient Cities (Springer 2011).

Spector, C. and Raven, J. *Community/Urban; Local Economy and Government*. Horton, R., Solecki, W., Rosenzweig, C. (ed) Climate Change in the Northeast: A Sourcebook, Draft Technical Input Report Prepared for the US National Climate Assessment, Island Press, 2014. This report is to be released as a final publication by Island Press.

Assessment Report on Climate Change in Cities (ARC3-2): Raven is Coordinating Lead Author to this international effort by the Urban Climate Change Research Network (UCCRN) - to help cities around the world address the causes and consequences of climate change (in progress, 2015).

STAR Community Rating System 1.0: *Sustainability Tools for Assessing and Rating Communities*, STAR Community, 2012: Raven was Technical Advisor.

Unlocking the Value of Green Districts, McKinsey & Co., 2012. Raven a member of the Technical Steering Committee.

Benchmarking Resilience, Resilience Design Institute, New York, 2013. Raven was a Technical Advisor.

Raven, J. *Belfast Plan for the Gasworks Site*; Scope: A Review of Northern Ireland, an independent urban design project to develop a 27-acre waterfront site. Exhibited at the Progressive Building Society, Belfast, 1987.

PUBLICATIONS- RECOGNITION

Montclair Plan, New Jersey

Reports

Louis Berger Group Holdings

Montclair Redevelopment Plan, New Jersey, 2008.

Green Module Design for New Urban Spaces, Calcutta, India; 2011. Urban Design Chapter by Raven A+U.

Masdar Sustainability Gateway Report, Masdar Carbon-Neutral Development, Abu Dhabi, 2008.

Thanh Hoa City by 2020 Plan: Thanh Hoa Provincial Capital, Vietnam, 2008.

Physical Development Plan for the State of Qatar, Ministry of Municipal Affairs & Agriculture, 1998.

Regional Plan Association

Downtown Brooklyn: A Plan for Continued Progress, Regional Plan Association, 1995.

Downtown Brooklyn, A Region at Risk: The Third Regional Plan for the NY Metropolitan Area, RPA, 1996.

Jury Member

Shaping a New Capital City to Fit Indian Life: Naya Raipur, India. Sponsored by L'association Les Ateliers Internationaux de Maîtrise d'Oeuvre Urbaine (Cergy-Paris), Project EAST, and the French Ministry of Sustainable Development, 2012.

Sunset Park: Beyond the Gowanus Expressway, International Design Competition, New York.

Peer Review

High Performance Infrastructure Guidelines (NYCDDC), The detailed handbook describes practices for creating sustainable city streets and green infrastructure, launching a new era in the design and construction of public infrastructure in NYC.
Greenbuild, Annual Conference for the US Green Building Council (USGBC).

Citations from Publications

Green Cities, *Asian Development Bank*; Urban Development Series publication, Lindfield, M. and Steinberg, F. (ed.) 2012. Chapter 1; Spatial Development and Technologies for Green Cities; "Defining the New Urban Landscape: The Greening of Cities", p.37-38; "Cooling the Public Realm", p. 84-85; ISBN:978-92-9092-896-6 (print), 978-92-9092-897-3 (web).

PUBLICATIONS- RECOGNITION

The Journal of the Royal Town Planning Institute

RTPI NEWS

PLANNING

WORKSHOP REFLECTS ON FINDINGS OF MAJOR URBAN CLIMATOLOGY PROJECT

ACADEMICS AND URBAN DESIGNERS VISITED MANCHESTER RECENTLY TO SHARE INSIGHTS DRAWN FROM 60 YEARS OF CITY CLIMATE STUDY, SAYS STEPHEN LORIMER

Royal Town Planning, United Kingdom

Royal Town Planning Institute, RTPI News, *Major Urban Climatology Project*, United Kingdom, 2012.

Visualizing Climate Change, Sheppard, S.; Routledge, 2012. "Visual Media Toolset", p. 345; "Green and blue fingers - urban design amenities".

Awards

Growing Green: Energy Efficiency and Conservation Plan for Saint Louis County, MO. (Project Director): US Green Building Council-St. Louis, Governance Award, 2010.

Belford Port Redevelopment Plan, Smart Growth Grant, New Jersey (Director, Sustainability and Urban Design): NJPO Achievement Planning Award, 2009.

Bronx Center (Project Coordinator): Best Practice Prototype for Human Settlements by United Nations-Habitat. Included in *Urban Revisions: Current Projects for the Public Realm*, a national exhibit sponsored by the Museum of Contemporary Art in Los Angeles, 1996.

Freedom Ring, The Centennial Exposition Park, The Philippines (Project Architect/Urban Design): NYACE Gold Prize, 1998.

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