

Thomas Spiegelhalter, Full Professor

EU Licensed Architect, Engineer, Town Planner

Academic

- Università degli Studi di Genova (UNIGE), Italy, PhD architettura e design, 2021-2024
- Keio University, Shonan Fujisawa Campus, Tokyo, Japan, Global Visiting Professor Grant at Research Center for Climate Change Adaptation, Faculty of Environmental Information Studies, 2023-2024
- Florida International University (FIU), Miami, CARTA, College of Architecture, Co-Director of the Structures and Environmental Technologies Lab (SET), Full Tenured Professorship, August 2009-present
- Università degli Studi di Genova (UNIGE), Italy, Visiting Professor, EU-ERASMUS mobilità programma, 2017
- University of Southern California (USC), Los Angeles, School of Architecture, Building Science, Professorship, 2003 – 2009
- Cass Gilbert Visiting Professor for Innovations in Sustainable and Renewable Energy, University of Minnesota, Minneapolis, MN, 2006
- Carnegie Mellon University, Pittsburgh, Visiting Professor at the Center for Building Performance and Diagnostics, Intelligent Workplace, 2000 –2003
- University of Hannover, Germany, Tenured University C3-Professor Position Call, Minister of the State Low-Saxony, Science and Culture, Germany, 2000
- Guest Professor, Sustainability and Design, Sustainability and Environmental Systems, Mundaneum, Universidad del Desino, Facultad de Arquitectura y Urbanismo, San Jose, Costa Rica, 2000-2002
- University of Houston G. Hines College of Architecture, US-German-DAAD Visiting Professor Grant, 1999
- University of Applied Science Leipzig, Germany, Tenured Full C3-Professor, Minister of the State Saxony, Ministry of Science and Culture, Germany, 1993-1999
- Technical University of Kaiserslautern, Architecture, Engineering and Town Planning, Germany, Assistant Professor, 1990–1992

Professional Experience:

Design, Engineered and built projects across Europe, Asia, Africa, and the Americas

- Studio Thomas Spiegelhalter for Resilient, Carbon-Positive Architecture, City Planning and Environmental Design Engineering, Freiburg-Berlin, Germany, E.U. - Miami, Carbon Neutral Design Projects (CND LLC, Reg. FL). Founder, Principal, Executive Architect, Engineer, and Town Planner: *licenses: Permitted in all EU Member States 10/06/85 No. 85/384 EWG0 (A.C.E., Council of Europe) 1988-present.*
- Distinguished Lifetime Member (Friedrich Schinkel Prize 1986, Berlin), Architecture and Engineering Society of Berlin, Germany, 1986 - Present
- USGBC LEED AP, US, 2002 (Los Angeles, CA) - present
- France, Switzerland, and Southwest Germany, Stipendiary (Awardee) with primary responsibilities in preservation and renovation projects of historical objects: PRO VENETIA VIVA, European Stipend (UNESCO), 1978-1980

Recent Exhibitions, Awards and Global Events, 2021-2024 (Selected)

2023-04-03 | **First Prize, International S.Arch 2023 Award for the Small Projects Competition for my AI Generatively Designed and topologically optimized "Hybrid Robot 3D-WAAM Printed 50m Long Steel Bridge Realization" project in Germany.** The project was presented at The 10th International Conference on Architecture and Built Environment with Architecture AWARDS held in Berlin on April 4th, 2023. The S.Arch Award Jury panel consisted of 20 members, including renowned architects such as Toyo Ito, Sou Fujimoto, Kengo Kuma from Japan, Vivian Lee from Richard Meier Partners in the USA, Viviana Muscettola from Zaha Hadid Architects, Philipp Rahm from France, Lars Krueckberg from GRAFT in Germany, Gieto Sugianto from Singapore, and Robert Greenwood from Snohetta. (International S.Arch 2023 Conference and Architecture Competition).

[Venice Architecture Biennale 2023, Italy.- FIU Carbon-Positive Design Studio Prof. Thomas Spiegelhalter,](#) Publication and Exhibition, European Culture Centre, Palazzo Bembo, May -November 2023.

Climate Resilient Urban Nexus Choices for carbon-neutral city scenarios for Miami Greater Islands 2019 to 2100, American Institute of Architects (AIA MCAD) in downtown, May 1st to June 25th, 2021

Carbon-Positive, and Synthetic Biological Architecture Imaginations for Miami Greater Islands 2021 -2100, Digital Exhibition at the World Event of the International Union of Architects (UIA), the Brazilian Institute of Architects (IAB), the **27th World Congress of Architects UIA 2020 RIO**, and the **UIA 2020 Rio Scientific and Executive Committee**, postponed due to Covid-19 to July 2021

Carbon-Positive, and Synthetic Biological Architecture Imaginations for Miami Greater Islands 2021 -2100, Video Installation at the Italian Pavilion for “Comunita Resilienti”, **VENICE ARCHITECTURE BIENNALE, September 2021**.

VENICE ARCHITECTURE BIENNALE, September 2021: Synthetic Biology for Carbon-Positive Architecture, 2021 -2100, Exhibition and globally broadcasted panel discussion. **PANEL:** Thomas Spiegelhalter (Moderator). International Expert Panel on Synthetic Biology for Carbon-Positive Architecture: 1. Andrew Hessel (Chairman Genome Project-write, Autodesk Life Science, microbiologist and geneticist, Singularity University, San Francisco, US), 2. Prof. Dr. Mitchell Joachim, (Terraform ONE, Architect, New York, US), 3. Prof. Dr. Rachel Armstrong (Scientist on Living Systems, New Castle, UK), FrancoAngeli Publisher (Milano, Italy). **VENICE BIENNALE, September 2021**.

Publications *(peer-reviewed)*

Books

1. **Generative AI-ML-assisted SynBio Climate Design Tools, Concepts, Workflows, Protocols, and Explorations, 1974-2100**, Book draft completed, In Editing-Print Process, Release approximate May 2024
2. CRUNCH DESIGN RESEARCH - Food, Water, Energy Nexus. Volume 4 - **Carbon Positive Island High-Rise Clusters**, Author Thomas Spiegelhalter, pp. 188, 1^a Edizione 2020, Nuova Serie di Architettura, FrancoAngeli, Milano (ISBN: 9788891792_TBA), published in September 2021 for the Venice Biennale Event
3. CRUNCH DESIGN RESEARCH - Food, Water, Energy Nexus. Volume 1 - **Urban Hybrids**, Authors Thomas Spiegelhalter, Darren Ockert pp. 188, 1^a Edizione 2020, Nuova Serie di Architettura, FrancoAngeli, Milano (ISBN: 9788891792921), published
4. CRUNCH DESIGN RESEARCH - Food, Water, Energy Nexus. Volume 2 - **Net-Zero High-Rises**, Author Thomas Spiegelhalter, pp. 188, 1^a Edizione 2021, Nuova Serie di Architettura, FrancoAngeli, Milano (ISBN: 9788835111177), published
5. CRUNCH DESIGN RESEARCH - Food, Water, Energy Nexus. Volume 3 - **Carbon Positive 2020-2100**, Author Thomas Spiegelhalter, pp. 188, 1^a Edizione 2020, Nuova Serie di Architettura, FrancoAngeli, Milano (ISBN: 9788891792921), published
6. **Climate Responsive Architecture / Climate change adaptation and resource efficiency. Adaptation to climate change and resource efficiency**. "Climate Responsive Architecture - Carbon Neutral Hybrids, FrancoAngeli Edizioni, Italy (with G Panarelli and C Di Tonno), 2016.
7. **Post-Parametric Automation in Design and Construction**, London, UK: ARTECH HOUSE, (with A. Andia), 2013.
8. **Best Practices in Sustainable Building Design + Interactive Learning Environment**, Fort Lauderdale: J. Ross Publishers Inc (with S Vassigh and E Özer), 2012.
9. **Architektur-Kiste (Architecture Box)**, Darmstadt, Germany: Juergen Haeusser Verlag, (M Wasa) 1999.
10. **Intelligent Buildings - Klimawerkzeug Architektur**, Darmstadt, Germany: Jürgen Häusser Verlag, 1992
11. **Mediatecturen und Deponiekörper, Projekt Beryl A**, Darmstadt, Germany: Jürgen Häusser Verlag, 1992
12. **Solare Kieswerk-Architektur. Zum Wohnen und Arbeiten**, Darmstadt, Germany: Jürgen Häusser Verlag, 1992.
13. **Gravel Pit Architecture Projects 1980-1990**, Darmstadt, Germany: Juergen Haeusser Verlag, 1990.

Monograph on Architecture of Thomas Spiegelhalter

14. Panarelli, G. "**Adaptable Technologies—Le architetture di Thomas Spiegelhalter - The architecture of Thomas Spiegelhalter, Le Architetture della Tecnologia - Architecture of Technology, Architetture della Tecnologia,**⁴(Italian and English)", Milan: Franco Angeli srl, 2008.

Book Chapters *(Selected)*

1. **"Generative AI-Synbio Blue-Green-Structures 2023-2100, FIU Carbon-Positive Design (CBC)."** In *Time-Space-Existence*. Venice 2023 Architecture Biennial. European Cultural Centre (ECC). ISBN/EAN 9789082943474, pp. 340-341. 2023-04-01
2. Spiegelhalter, Thomas, Levente Juhasz, and Shrikanth Namuduri. **"Genetic Food-Water-Energy Nexus Design Research for Miami's Greater Islands - Climate Resilient Urban Nexus Choices (CRUNCH) Scripting and Coding AI-MLs."** In *Designing Sustainable and Resilient Cities: Small Interventions for Stronger Urban Food-Water-Energy Management*. New York - London: Routledge - Taylor & Francis Group, 2023..
3. Spiegelhalter, Thomas. **"Data-Driven Planning and Scenario Tools."** In *Designing Sustainable and Resilient Cities: Small Interventions for Stronger Urban Food-Water-Energy Management*. Chapter 1.3. New York - London: Routledge - Taylor & Francis Group, 2023.
4. Spiegelhalter, Thomas, Levente Juhasz, and Shrikanth Namuduri. **"Genetic Water-Energy-Food Nexus Design Research for Miami's Greater Islands - Climate Resilient Urban Nexus Choices (CRUNCH) - Scripting and Coding AI-ML's."** In *CRUNCH 2018-2022*. Edited by Claire Coulter, Alessandro Melis, and Julia Brown. London: Routledge, Taylor & Francis Group, LLC., 2022.
5. Spiegelhalter, Thomas; Werner, Liss C. **"Methods for in Silico Environmental Resilience, 2019 to 2100."** Sustainable Built Environment D-A-CH Conference - Built Environment within Planetary Boundaries, sbe22 Berlin. Hosted by Natural Building Lab of TU Berlin in cooperation with KIT Karlsruhe, ETH Zürich (Swiss) and TU Graz (Austria), Sept. 2022.
6. **Carbon-Neutral High-Rise Envelope Nexus - Generative Design and Engineering for Extreme Subtropical Climates**. Facade Tectonics 2020 World Congress Submitted Fall 2020
7. **Chapter: Genetic Water-Energy-Food Nexus Design Research for Miami's Greater Islands - Climate Resilient Urban Nexus Choices (CRUNCH) - Scripting and Coding AI-ML's**, In: *CRUNCH 2018-2021*, Routledge, Taylor & Francis Group, LLC Book. edited by Claire Coulter, Alessandro Melis, and Julia Brown, UK, published October 2021 published October 2021.
8. **Chapter 1.a. IDSS app data and methods to 1.i. IDSS Application functionality:** (Authors Prof. Thomas Spiegelhalter, coauthors: Dr. Levente Juhasz, FIU-GIS Centre; Shrikanth Namuduri, FIU College for Computation) In: *CRUNCH 2018-2021*, Routledge, Taylor & Francis Group, LLC Book. edited by Claire Coulter, Alessandro Melis, and Julia Brown, UK, published October 2021.
9. **Generative and synthetic biological design imaginations for the Miami bay area**. Authors: Thomas Spiegelhalter, Alfredo Andia, Juhasz Levente, Srikanth Namuduri. Book Publication of the 38th eCAADe Conference – Education and Research in Computer Aided Architectural Design in Europe conference on Anthropologic – Architecture, and Fabrication in the cognitive age... From smart to behavioral... From digital to material, Technical University Berlin, page 11-20, September 2020.
10. **"First worldwide carbon-neutral design movements (Primeros movimientos mundiales de diseño con carbon neutral)"** In: *Mundaneum 1999-2019 (mondo nostrum)*, Alvaro Rojas; Editors: Federico Soriano Pelaez, Dolores Palacios Diaz, Eduardo Castillo Vinuesa, Madrid:

Edición Fisuras de la cultura contemporanea, 2018.

11. **Diesseits der Form: Architektur auf dem Weg zur Energiewende - Xia Intelligente Architektur**, 100 Beiträge aus 100 Ausgaben, 1994 - 2017, Stuttgart: Alexander Koch, 2017.
12. **“Emerging Workflows, Techniques, and Design Protocols for Carbon-Neutral Buildings”**
In: 102nd Annual Meeting of the Association of Collegiate Schools of Architecture, Miami Beach: ACSA, 2014.
13. **“Chapter 19 Towards Net-Zero-Energy Buildings In 2018”** In: Analytics for Building-Scale Sustainable Ecosystems (BSSE) – U.S. China Research Perspectives, Part IV: Green Buildings in China and US, Edited by Yong X. Tao, University of North Texas, USA and Yi Jiang, Tsinghua University, China, New York & Connecticut: Begell House, 2013.
14. **“Mitigate, Adapt, Sustain: Emerging Workflows and Design Protocols for Subtropical Carbon Neutral H2 Cities”** In: The 2013 ACSA Fall Conference: SUBTROPICAL CITIES, Fort Lauderdale: ACSA, 2013.
15. **“Capítulo II -Arquitectura Bioclimática (ojalá en el Trópico Húmedo) - Arq. Thomas Spiegelhalter (Chapter II Bioclimatic Architecture in the Neotropics)”** In: Environmentally Responsible Architecture in the Neotropics, Edited by Katiana Murillo and Alvaro Rojas, EAE: Editorial Académica Española, LAP LAMBERT Academic Publishing GmbH & Co, 2012.
16. **“Passive and Active Micro-Generation Building Systems for Cooling, and Dehumidification in Hot and Tropical Climates”** In: Environmental Engineering and Sustainability, Athens: ATINER, 2012.
17. **“Sostenibilita su base prestazionale: colmare il divario tra progettazione urbana e tecnologie adattabili (Performance-based sustainability: bridging the gap between community design and adaptable technology)”** In: Adaptable Technologies – Le

architettura di Thomas Spiegelhalter, Edited by Gianmichele Panarelli, Milan: FrancoAngeli, 2008.

18. **“In Sessione III: La ricerca e la sperimentazione progettuale – Sostenibilità dei progetti e nuove tecnologia nei paesaggi urbani e postindustriali”** In: Involucri energetic, Edited by Filippo Angelucci and Gianmichele Panarelli, Pescara, Italy: SALA-editori s.a.s, 2003.
19. **“New Park – Visions Need Space”** In: Visions and scenarios for development concepts for investors of new sustainable industrial and business parks in the Emscher Lippe Region, (with P Drecker and D Fuerst), Düsseldorf, Germany: Ruhr Kohle Publishing House, 2000.
20. **“Feasibility study for the environmental site evaluation and reactivation of abandoned industrial areas”** In: The new urban development in the Ruhr Valley, (with P Drecker and A Wolf), Ruhrgebiet, Germany: EW Oestliches, 1998.
21. **“Solare Stadtreihenhäuser in Freiburg Rieselfeld (Architekt Prof. Thomas Spiegelhalter) – Stadtreihenhäuser mit aktiver und passiver Solarnutzung (Solar City Row Houses)”** In: Aktueller Praxisratgeber für Umweltfreundliches Bauen (Actual Guidelines for Best Practice in Environmentally friendly Construction), Edited by Bernhard Kolb, WEKA Baufachverlage GmbH für Architekten und ingenieure, 1998.
22. **“Fassadenintegrierte Photovoltaik- u. Informationssysteme”** In: TERRATEC '94.
23. **Energie-Energie-Ökonomisches Bauen** - Internationale Fachmesse und Kongress für Umweltinnovationen, Edited by Volker and Rolf Thiel, Stuttgart: B.G. Teubner Verlag, 1994.
24. **“Innovative Holzbauweisen für den Wohnungsbau (Innovative Wood Constructions for Housing)”** In: Informationsdienst Holz - Wohnungsbau, Reihe 4, Ausgabe 1993.
25. **Entwicklungsgemeinschaft Holzbau in der Deutschen Gesellschaft für Holzforschung** (with W Lewitzki), Düsseldorf, Germany: Deutsche Arbeitsgemeinschaft Holz e.V., 1993.
26. **“Gravel Pit Architecture, Karl-Hofer-Preis 1990”** In: Karl-Hofer-Symposium 1990, University of the Arts Berlin, Berlin: Colloquium Verlag, 1991.
27. **“Sablière, Drop-off II, Kieswerk IN SITU, Espace Vert, Pelouse des Ciments d’Origny”** In: Les Ateliers Du Sundgau Nr.1, De Tout Bois-Installations-Expositions, CRAC, Centre Régional D’Art Contemporain Alsace, France: Mulhouse, 1990.

Journals (Selected)

1. Performance-based, AI-ML-assisted Generative EA Design with Bio-inspired Topological Optimisations of a 50m, 3D-printed Steel Bridge, AI-ML-assisted Generative Design (GD) using Evolutionary Algorithms (EA) techniques and Topology Optimization (TO). International Journal of Structural and Civil Engineering Research, <http://dx.doi.org/10.18178/ijscer.12.3.63-67>, 2023.
2. Methods for In-Silico Environmental Resilience, 2018 to 2100, IOP Conference Series: Earth and Environmental Science, <http://dx.doi.org/10.1088/1755-1315/1078/1/012139>, 2022.
3. Designing Urban Hybrids in Miami Beach for the 2020 to 2100, Food- Water-Energy Nexus, International Union of Architects (UIA), the Brazilian Institute of Architects (IAB), the 27th World Congress of Architects UIA 2020 RIO, and the UIA 2020 Rio Scientific and Executive Committee, July 2021.
4. “Carbon Neutral Water-Energy-Food Nexus Research for Miami and the Greater Islands” Design Principles and Practice Journal, ACSA Summer 2019.
5. “Quantitative BIM Workflow for Climate Change Design Choices on an Urban Scale” (with D Ockert) Journal of Building Performance Simulation, Journal of Building Performance Simulation, Summer 2019.
6. Carbon Neutral Water-Energy-Food Nexus Research for Miami and the Greater Islands, Advocacy in Design: 2020 Engagement, Commitment, and Action - Fourteenth International Conference on Design Principles & Practices, Summer 2020.
7. BIOLOGICAL IMAGINATIONS FOR THE BISCAYNE BAY ESTUARY ACSA 108 Annual Meeting Summer 2020 with A.Andia, 2020.
8. AUTOMATING DESIGN AND CONSTRUCTION: THE EMERGENCE OF " OFFSITE MANUFACTURING with A.Andia. ACSA 108 Annual Meeting Summer, 2020.
9. Generative and synthetic biological design imaginations for the Miami bay area, eCAAD International, Anthropologic – Architecture and Fabrication in the cognitive age... From smart to behavioral... From digital to material, Education and Research in Computer Aided Architectural Design in Europe, (w. Levente, A. Andia), TU Berlin, <https://www.ecaade2020.tu-berlin.de/>, September 2020.
10. “Energy Modeling and Data Structure Framework for Sustainable Human-Building Ecosystems (SHBE) -A Review” (with S Talele, C Traylor, L Arpan, C Curley, C Chen, J Day, R Feiock, M Hadzikadic, S Ingman, OT Karaguzel, KP Lam, C Menassa, S Pevnitskaya, WJ Tolone, W Yan, D Yeatts, Y Zhu, and Y Tao) Journal Frontiers in Energy, 2018.
11. "Parametric-algorithmic, Sea-level-rise Building Design Solutions: Long-term Design Testing and Optimization Scenarios for Miami Beach 4 Buildings in Florida" (with U Eco, X Feng, R Morbiducci, and C Lepratti) Journal of the Twelfth International Conference on Design Principles & Practices, Special Focus: No Boundaries Design /Design No Fronteras, 2018.

12. "Comparative International Carbon-neutral Campus Building Design Operation Strategies: University of Genoa, Italy and Florida International University in Miami, United States" (with A Del Borghi) Journal of the Twelfth International Conference on Design Principles & Practices, Special Focus: No Boundaries Design /Design No Fronteras, 2018.
13. "Design Agent based Real Time Scenario Planning and Benchmarking for Salutogenic Environments" (with H Yi) Building Science & Engineering, Union of International Architects, World Congress, UIA Seoul, 2017.
14. "Automating Carbon Neutral Design and Practice for Optimization, Manufacturing, and Post Occupancy Evaluation" (with A Biermann) Journal of the 10th International Conference on Design Principles & Practices at PUC, 2017.
15. "New Design Protocols for Industrial-scaled Modes of Production for Carbon Neutral Buildings" The International Journal of the Constructed Environment, 2015.
16. "Exergy Analysis and Design Optimization for Carbon-Neutral Architecture" International Journal for Design Principles and Practices, 2013.
17. "New Design Protocols for Industrial-scaled Modes of Production for Carbon Neutral Buildings" The International Journal of the Constructed Environment, Volume 3, Issue 3, 2013.
18. "Hacia La Evaluación Comparativa Global, Más Allá De La Arquitectura Verde" Sostenibilidad el reto de la arquitectura moderna. Sociedad Colombiana de Arquitectos, 2012.
19. "Modeling Net-Zero-Fossil-Energy Buildings with 3D/4D Parametric BIM Performance Tools" Journal of Green Building, Industry Research Section, Volume 7, Issue 4, 2012.
20. "Roadmap for Developing Low-Carbon Buildings and Cities in the United States by 2050" The International Journal on the Constructed Environment, 2012.
21. "Climatic Tropism in Buildings: Designing with Natural Response Cycles for Better Performance" Design Principles & Practices – An International Journal, Volume 5, Number 4, 2012
22. "Designing Net-Energy-Zero Buildings with Natural Systems" The International Journal of Sustainable Development and Planning, 2012.
23. "Designing Net-Energy-Zero Buildings with Natural Systems" The International Journal of Sustainable Development and Planning, 2012.
24. "Designing Net-Energy-Zero Buildings with Natural Systems" The International Journal of Sustainable Development and Planning, 2012.
25. "Tropical Architecture with Micro-Generation for Cooling and Dehumidification" Journal of Civil Engineering and Architecture, 2012.

26. "From Theory to Practice in Measuring and Benchmarking Design/Build Sustainable Architecture: Local Examples, Global Perspective" Design Principles and Practices - An International Journal, Volume 5, Number 2, 2011.
27. "Ein selbstreferentielles System Anspruch und Wirklichkeit energieeffizienter und klimagerechter Städte in den USA" Edition Thema: Stadt & Energie, Stadt, Bauwelt Magazine, Nr. 189, 2010.
28. "Global Benchmarking? Taking a Critical Look at Eco-Architectures" the International Journal on Ecology and the Environment: ECO-Architecture III - Harmonisation Between Architecture and Nature, Volume 128, 2010.
29. "Designing Cities of the Future with the Principles of Biomimicry and Circular Metabolism" Design Principles and Practices - An International Journal, Volume 4, Number 2, 2010.
30. "Biomimicry and Circular Metabolism for the Cities of the Future" The International Journal of Sustainable Development and Planning: The Sustainable City VI - Urban Regeneration and Sustainability, Vol. 129, 2010.
31. "Global Benchmarking? Taking a Critical Look at Sustainable Design in the US" Beyond LEED. The Journal of the AIA, California Council, 2010.
32. "Zero-Fossil-Energy Powered Infrastructure and Buildings on Catalina Island in Southern California" Ecosystems and Sustainable Development VII, The International Journal of Design & Nature and Ecodynamics, Vol. 122, Section 6, 2009.
33. "Lazos de retroalimentación y el metabolismo circular por las ciudades del futuro" MUNDANEUM 10 años, VI Reunión Internacional de Arquitectura 2009. IUCN International Union for the Conservation of Nature, Universidad del Diseño, San Jose, 2009.
34. "Solar architectural site alignment strategies for performance-based design" EUROSOLAR Sun and Sense 2008, 2008.
35. "Involucri Energetici - Energetic Envelopes" Sostenibilità Dei Progetti E Nuovo Tecnologia Nei Paesaggi Urbani E Post Industriali, Atti Del Convegno, ARAEN Agenzia Regione Abruzzo l'Energia, Programma Comunitario, 2003.
36. "Towards Zero-Energy-Urban-Infrastructures" The Future of Architecture, Report and Outlook, UIA White Book 2002, Union Internationale des Architectes, UIA, BDA, Berlin-Paris-Basel-Boston-NYC: Birkhaeuser, 2002.
37. "Niedrigenergiehäuser im Vergleichstest: Solare Doppelstadt-häuser (Low-Energy-Buildings in Comparison Test
38. Solar TownHouses)" Zurich-Paris-Milan-New York: WEKA Baufachverlag, 1998
39. "Solar Hybrids - Tecnologia e decostruzione" Strumenti, Ambiente Territorio, Edilizia Urbanistica, Aldo Capasso, 1998.

40. "Designing Net-Energy-Zero Buildings with Natural Systems" The International Journal of Sustainable Development and Planning, 2012.
41. "Tropical Architecture with Micro-Generation for Cooling and Dehumidification" Journal of Civil Engineering and Architecture, 2012.
42. "From Theory to Practice in Measuring and Benchmarking Design/Build Sustainable Architecture: Local Examples, Global Perspective" Design Principles and Practices - An International Journal, Volume 5, Number 2, 2011.
43. "Ein selbstreferentielles System Anspruch und Wirklichkeit energieeffizienter und klimagerechter Städte in den USA" Edition Thema: Stadt & Energie, Stadt, Bauwelt Magazine, Nr. 189, 2010.
44. "Global Benchmarking? Taking a Critical Look at Eco-Architectures" the International Journal on Ecology and the Environment: ECO-Architecture III - Harmonisation Between Architecture and Nature, Volume 128, 2010.
45. "Designing Cities of the Future with the Principles of Biomimicry and Circular Metabolism" Design Principles and Practices - An International Journal, Volume 4, Number 2, 2010.
46. "Biomimicry and Circular Metabolism for the Cities of the Future" The International Journal of Sustainable Development and Planning: The Sustainable City VI - Urban Regeneration and Sustainability, Vol. 129, 2010.
47. "Global Benchmarking? Taking a Critical Look at Sustainable Design in the US" Beyond LEED. The Journal of the AIA, California Council, 2010.
48. "Zero-Fossil-Energy Powered Infrastructure and Buildings on Catalina Island in Southern California" Ecosystems and Sustainable Development VII, The International Journal of Design & Nature and Ecodynamics, Vol. 122, Section 6, 2009.
49. "Lazos de retroalimentación y el metabolismo circular por las ciudades del futuro" MUNDANEUM 10 años, VI Reunión Internacional de Arquitectura 2009. IUCN International Union for the Conservation of Nature, Universidad del Diseño, San Jose, 2009.
50. "Solar architectural site alignment strategies for performance-based design" EUROSOLAR Sun and Sense 2008, 2008.
51. "Involucri Energetici - Energetic Envelopes" Sostenibilità Dei Progetti E Nuovo Tecnologia Nei Paesaggi Urbani E Post Industriali, Atti Del Convegno, ARAEN Agenzia Regione Abruzzo l'Energia, Programma Comunitario, 2003.
52. "Towards Zero-Energy-Urban-Infrastructures" The Future of Architecture, Report and Outlook, UIA White Book 2002, Union Internationale des Architectes, UIA, BDA, Berlin-Paris-Basel-Boston-NYC: Birkhaeuser, 2002.
53. "Niedrigenergiehäuser im Vergleichstest: Solare Doppelstadt-häuser (Low-Energy-Buildings in Comparison Test
54. Solar TownHouses)" Zurich-Paris-Milan-New York: WEKA Baufachverlag, 1998
55. "Solar Hybrids - Tecnologia e decostruzione" Strumenti, Ambiente Territorio, Edilizia Urbanistica, Aldo Capasso, 1998.

Conference Proceedings (*Selected*)

- 1) AI-assisted Generative EA Design with topological optimisations for an 80 or 50 meters long Hybrid 3D-printed WAAM Steel Bridge in Germany, Architectural Research Centers Consortium (ARCC) 1 (ISBN: 978-1-935129-33-2), 2022.
- 2) Hybrid Robot 3d-Printed 50 M Long Steel Bridge Realization - Ai-MI Assisted Generative Ga/Ea Design Workflows and Optimizations. World Conference on Mechanical Engineering (WCME), 2022.
- 3) Carbon-Neutral-Campus Building: Design Versus Retrofitting of Two University Zero Energy Buildings in Europe and in the United States, AD Borghi, T. Spiegelhalter, L Moreschi, M Gallo, Sustainability 13 (16), 1-16
- 4) "The Water-Energy-Food Nexus: A new approach in support of Carbon-Neutral, Resilient and Blue-Green Infrastructural Developments for the Cities of Miami Beach and South Miami," Conference on Urban Sustainability: Social Actors, Policy and Governance, (with D Ockert), Florida State University, Tallahassee, FL. April 15 - 16, 2019.
- 5) "Biomimetic Energy-Water-Food Nexus Design and Hybrid Research - Towards the Carbon-Neutral Indian Creek Infrastructure of Miami Beach," Conference on Urban Sustainability: Social Actors, Policy and Governance, (with D Ockert), Florida State University, Tallahassee, FL. April 15 - 16, 2019.
- 6) "Design Agent based Real Time Scenario Planning and Benchmarking for Salutogenic Environments," Union of International Architects, World Architecture Congress, UIA Seoul. 2017.
- 7) "The Future of Physical Infrastructure Miami & Resilient Smart City Panel," One Community One Goal Physical Infrastructure Access Conference, Miami, FL. April 13th, 2017.
- 8) "Miami Beach Urban Studios, Sea Level rise and the Public Realm: An Advanced Urban Design Studio in Miami & South Florida," Consulate of the Netherlands and ARCADIS, Miami, FL. Feb. 9, 2017.
- 9) "Carbon Neutral Buildings and Blue Infrastructures for Miami," SEA LEVEL RISE AND CIVIC TECHNOLOGY: AN OPEN DISCUSSION, Code for Miami, Miami, FL. February 27, 2017.
- 10) "Cross-American Experiences in an Ambitious Energy Reduction and Policy Implementation Project," ACSA 2016 International Conference, (with C Rosales), Santiago, Chile. June 29 - July 1, 2016.
- 11) "Carbon-Neutral Design Education and Practice in the Caribbean Region: A European Union funded Holistic Integrated Project Delivery Approach," ACSA 2016 International Conference, Santiago, Chile. June 29 - July 1, 2016.
- 12) "Innovative approaches for new developments for Smart Cities," The 3rd MEC International Conference,(with G Pannarelli and C Di Tonno), Muscat, Oman. March 15-16, 2016.
- 13) "Best Practices in Training in Sustainability, Climate Change Adaptation and Energy Efficiency of International Universities and Professional Organizations relevant to the Caribbean Region." 5th Caribbean Urban Forum (CUF5), UN-Habitat, St. Lucia, 2015.
- 14) "New Technological Design Protocols for Carbon-Neutral Architectural and Urban Projects," MUNDANEUM Conference, Managua, Nicaragua, 2015.

- 15) "Total Building Automation for The Nearly Net-Zero-Fossil-Energy Q1 Thyssenkrupp Headquarter," 31st International PLEA 15 Conference on Architecture in (R)evolution, Bologna, Italy. September 9-11, 2015.
- 16) "Mitigate, Adapt, Sustain: Design Protocols for Carbon-Neutral Adaptive Blue Infrastructures," 2015 Rising Seas Summit, Association of Climate Change Officers, Boston, MA. 2015.
- 17) "Large-Scale Climate Change Responsive Parametric Design Projects," DOMUS Conference, Universidad Francisco Marroquín, Guatemala. 2014.
- 18) "Automating Green Practice," AIA-ACSA Intersections Conference, (with A Andia), Atlanta, GA, 2015.
- 19) "Towards Resilient best Practices: Net-Zero-Energy Building Designs," Grand Renewable Energy Conference, (with S Vassigh). Tokyo, Japan, 2014.
- 20) "Emerging Workflows, Techniques, and Design Protocols for Carbon-Neutral Buildings," 102nd Annual Meeting, Association of Collegiate Schools of Architecture, Miami, FL, 2014.
- 21) "SUSTAINABLE HABITAT FOR DEVELOPING SOCIETIES," 30th International PLEA (Passive and Low Energy Architecture) Conference, Ahmedabad, India, December 16 – 18, 2014.
- 22) "Topological and Parametric-Algorithmic Carbon-Neutral Design in Architectural Academia," Alfredo Emerging Carbon-Neutral Design Protocols for Tropical Architecture in Sea Level Rise Areas, (with A Andia). ACSA-AIA Conference, Washington, 2014
- 23) Eurosun 2014 - International Conference on Solar Energy and Buildings, International Solar Energy Society (ISES), Aix-les-Bains, France. 2014.
- 24) "Carbon Neutral Architecture – Best Case Studies," Congreso Internacional de Arquitectura 2013: Sostenibilidad – Patrimonio, San Jose, Costa Rica, 2013.
- 25) "New Industrial Design Protocols for Carbon Neutral Buildings." Association of Collegiate Schools of Architecture ACSA 101: NEW CONSTELLATIONS / NEW ECOLOGIES, San Francisco, CA, March 21, 2013.
- 26) "Climatic Tropism in Buildings: Designing with Natural Response Cycles for Better Performance," The 6th International Conference on Design Principles and Practices, UCLA, Los Angeles, CA. January 20, 2012.
- 27) "Designing and Manufacturing Zero-Fossil-Energy Buildings with 3D Parametric Performance Tools." The 6th International Conference on Design Principles and Practices, UCLA, Los Angeles, CA. January 21, 201

- 28) "Roadmap for Developing Low-Carbon Buildings and Cities in the United States by 2050," Conference on the Constructed Environment, University Center in Chicago, Chicago, IL. October 2011.
- 29) "Development and Moderation: Global benchmarking? Taking a Critical Look at the Resource Use and Performance of Sustainable Buildings in the U.S." Greenbuild International Conference, Chicago, IL. 2010.
- 30) "Measuring and Benchmarking: Local Examples, Global Perspective," Greenbuild 2010, International Forum, Federal Summit. Washington, DC. 2010.
- 31) "Legislating Green Buildings – Best Practice Examples from Europe and Asia," American Institute for Architects (AIA) Pasadena-Los Angeles, CA. 2009.
- 32) "Sustainable Energy Technology in Germany and the U.S." Centre of Applied Research on Sustainable Energy Technology, Los Angeles, CA. 2009)
- 33) "Measuring and Benchmarking: Local Examples, Global Perspective," Greenbuild 2010, International Forum, Federal Summit. Washington, DC. 2010

Research Grants / Contracts *(Selected)*

Competitive Funded Research in Progress at FIU and other Universities:

- 1) **CRUNCH, Climate Resilient Urban Nexus Choices, Research Urban Living Labs (ULL)** in South End on Sea/London, UK; Glasgow, UK; Eindhoven, NL; Gdansk, Poland; Uppsala, Sweden; MIAMI, USA; Taipei, Taiwan. Urban Europe, EU Commission, Belmont Forum, Intelligent Europe, Sustainable Urbanization Global Initiative (SUGI). **Sub-Award: City of Miami, South Miami**, Consultant: FIU GIS, STANTEC, 2018-2021. PI Miami ULL: T Spiegelhalter, Consultants: FIU GIS Centre, Levente Jennifer Fu. Intl. Budget: \$1.9 Million (\$590,000 for FIU CARTA) February 1, 2018 – April 31, 2024.
- 2) **CRUNCH FIU at The International Architecture Exhibition at Italian Pavilion - Venice Biennale 2021**. 2000 sqm surface. **RESILIENT COMMUNITIES AND REGENERATION OF SUBURBS. PARTNERS:** PI: A Melis, UK, Co-PI's partner universities among them CRUNCH PI T Spiegelhalter. Budget: Italian Ministry NDA, Sept. 2021
- 3) CIF21/DIBBS/EI/MIFI: **Virtual Information-Fabric Infrastructure (VIFI) for Data-Driven Decisions from Distributed Data**. Sponsor: University of North Carolina at Charlotte; Period: October 2016 September 2020. PI: William Tolone. Co-PI's: Stanislav Djorgovski, Yong Tao, Mirsad Hadzikadic Ehab Al-Shaer.; Senior Investigators: Thomas Spiegelhalter, others. Award \$3,999,531.00. 2016-2019.
- 4) others (NDA - no release)

Completed Funded Research

- 1) Grant Assistance (CFDA) Number: 19.750, Department of State Bureau of Western Hemisphere Affairs. **Energy and Climate Partnership of The Americas (ECPA) Energy Efficiency Competition**. PI: Camilo Rosales, Architecture; Co-PI: Thomas Spiegelhalter, Architecture; Brian Fonseca, FIU Advanced Research Center (ARC) Budget: \$799,099.00. Period: 2013-2016.
- 2) **Predictive Modeling Network for Sustainable Human-Building Ecosystems (RCN-SEES: SHBE)**. National Science Foundation. Tao, Yong X., PI; University of North Texas, Co-PI's: Zhu, Y., LSU; Lam, K.P., Cartes, D.A., Tolone, W.J.. Senior Personnel: Spiegelhalter, T., Hadzika-dic, M., Feiock, R., Thompson, R., Yan, W., Menassa, C., D'Souza, D.; Nepomechie, M. \$652,846. 2013-2018.
- 3) **Agent Based Design Technology and Automation in the Sustainable Built Environment**, Cejas Family Foundation. \$1,500. 2014-2015.
- 4) **Assessment of Programmes of the Built Environment in the Caribbean Higher Education and of Best Practice Training in Sustainability in other International Universities**, Intelligent Europe – European Union, University of the West Indies, Trinidad-Tobago. \$20,000. July 2014-December 2014.
- 5) US Environmental Protection Agency (EPA) Assistance Award: **“On Track to Carbon Neutral Buildings & 66.516 - P3 Award: National Student Design Competition for Sustainability.”** PI: Yimin Zhu. Co-PI's: Thomas Spiegelhalter, ARC; Nezi Pala, Shu-Ching Chen, Computer Engineering;; Senior Personnel: Ismail Guvenc, Electrical Engineering. Budget: Phase 1: \$15,000, Period; August 2013 – August 2014.
- 6) Paul Cejas Initiative Research Grant **No Architectural School Left Behind – NET-ZEB Masterplan. Analysis, Scenario Modelling and Master Planning for the transformation of PCA to a Net-Zero Energy Building complex**. SEED Budget: \$3,000. 2012-2013.
- 7) **Solar Decathlon China Competition. Joint Project of Tsinghua University (THU) in China** and FIU. Funding: \$100,000 (\$30,000 for FIU), Status: Ongoing. Source: US Department of Energy, National Energy Administration China (Subcontract through Tsinghua University) Advisory Faculty: FIU-Architecture: M. Nepochemie, T. Spiegelhalter; FIU Department of Construction Management: Yimin Zhu; FIU Department of Electrical Engineering: N. Pala; FIU Department of Mechanical Engineering: Chen-Xia Lin. Amount: \$30,000, Period: 2012-2013.

- 8) U.S. Environmental Protection Agency (EPA), Technology and Science, P3: **“People, Prosperity and Planet Student Design Competition for Sustainability”**. Research Object: FIU SIPA. Spiegelhalter, T., PI; Pala, N., PI; Zhu, Y., PI. \$30,000. 2013-2014.
- 9) **District 11 Strategic Development Plan Project, Community Engagement Grant**, Not peer-reviewed. The project is a planning and development study for District 11, Miami-Dade County Commissioner's Office. The research project examines existing urban conditions including physical conditions, traffic analysis, and economic, social and demographic data to develop strategic development guidelines for this unincorporated area of Miami-Dade County. Architecture. Budget: \$95,733. Period: May 2013 – December 2013.
- 10) **Solar Decathlon China 2013, FIU, Tsinghua University, ‘O’ House**. U.S. Department of Energy and National Energy Administration China. \$100,000. 2012-2013.
- 11) **An Open-Source Integrated Computing Infrastructure to Support the Life Cycle Design and Engineering of High-Performance Building**. FIU-CEC Seed Grant (Project ID: 800000879): Case Study – FIU-SIPA. Zhu, Y., FIU PI; Nepomechie, M., Co-PI and Faculty Advisor, Architecture; Spiegelhalter, T. Co-PI. \$30,000. 2012-2013.
- 12) **Cyber Enabled, User Oriented, Interoperability Modeling for Engineering Sustainable Built Environments**, US | China Workshops. National Science Foundation 1207807, 1242177. Tao, Y.X., University of North Texas, PI., Co-PI's and SI's: Jiang, Y., Tsinghua, China; Lam, K.P., CMU; Spiegelhalter, T., FIU; Zhu, Y., FIU; Tolone, W., UNC; Tan, H., Tongji, China; Nader, R., UNT; Yan, D. (Manager) Tsinghua, China; Hadzikadic, M., UNCCU, Menassa, C., UWisc, Feiock, R., FSU, Deng, K., Barooah, P, Stan, I., Cao, Y., Cartes, D. \$600,000. 2011-2013.
- 13) **Solar Decathlon FIU PerFORM[D]ance House**, U.S. Department of Housing and Urban Development. Nepomechie, M. PI; Spiegelhalter, T., Rovira, R., Rosales, R., Zhu, Y., Co-PIs. Peterson, E. SI. \$13,800. 2011.
- 14) **Solar Decathlon FIU PerFORM[D]ance House**, Skanska, MC Harry, BNi, PMM, Project Caine, Professional Services + Materials [In Kind]. Nepomechie, M., PI. \$250,000. 2011.
- 15) **SET Structural and Environmental Technology Lab**. FIU Technology Fee, Spiegelhalter, T., PI; Vassigh, S., PI. \$67,000. 2008-2010.
- 16) **Building Literacy: The Integration of Building Technology and Design in Architectural Education**. U. S. Department of Education. Vassigh, S., PI. Co-PIs, Senior Personnel: Spiegelhalter, T., Chandler, J., Danford, S., English, K., Khan, O., MacKay, K., LeCuyer, A., Özer, E., and Winer, E. \$553,000. 2007-2011.
- 17) **SET Structural and Environmental Technology Lab. SET Structural and Environmental Technology Lab** - an applied research, design and educational facility for advancing knowledge in the area of environmental and structural technologies and design. Project Team PI's: Thomas Spiegelhalter, Shahin Vassigh. Department Chair: John Stuart; deans: Adam Drisin, Brian Schriener. Construction value: \$350,000. 2011-2013.
- 18) **An Open-Source Integrated Computing Infrastructure to Support the Life Cycle Design and Engineering of High-Performance Building. FIU-CEC Seed Grant Award** (Project ID: 800000879): Case Study - FIU-SIPA campus building. Interdisciplinary Research: FIU-PI: Shu-Ching Chen, SCIS; Co-PI's: T, ARC; Y Zhu, CM; Scott Graham, SCIS Steve Luis, SCIS; N Pala, ECE; S Vassigh, ARC. Funding: \$30,000. 2011-2012.
- 19) **US-China Workshop for Cyber Enabled, User Oriented, Interoperability Modeling for Engineering Sustainable Built Environments, Beijing**. NSF Award #: 1207807 and 1242177. (12/11-11/13). PI: Yong X. University of North Texas; Tao, CO-PI's: Yi Jiang, Tsinghua University, China; K P Lam, Architecture, CMU; T Spiegelhalter, Architecture, FIU; Y Zhu, FIU; W Tolone, UNC; H Tan, Tongji University, China; R Nader, UNT; D Yan (Workshop manager) Tsinghua University, China; Mirsad Hadzikadic, UNCCU, C Menassa, WISC, R Feiock, FSU, K Deng, P Barooah, I Stan, Y Cao, D Cartes. Grant: \$59,552. 2011-2012.
- 20) **DOE/ NREL Solar Decathlon 2011 Competition**. Application Phase Sustainability Graduate Spring Studio 2010 Submission (Phase 2) November 2009 –December 2011. Principal Investigator: M Nepomechie, Co-Principal Investigators: C Rosales, T Spiegelhalter, S Vassigh, R Rovira, S Sherman, Y Tao, G Bitsuamlak, Y Zhu. Grant: \$100,000. Total Solar Decathlon House Cost incl. traveling, accommodation: approximate \$750,000. 2010-2011.
- 21) **Technology Fee Grant. Florida International University, Environmental and Structural Technology Laboratory (ESTL)**, Equipment grant for establishing ESTL. T Spiegelhalter, Co-Pi, with CO-Founder and Co-PI S Vassigh. Grant: \$67,000. 2009-2012.

- 22) **Building Literacy: The Integration of Building Technology and Design in Architectural Education. U.S. Department of Education**, Fund for the Improvement of Postsecondary Education, Project developed an educational simulation environment to teach sustainability and systems integration in building design. PI: Shahin Vassigh. CO-PI's, Senior Personnel: T Spiegelhalter, J Chandler, S Danford, K English, O Khan, K MacKay, A LeCuyer, E Özer, and E Winer. Grant: \$553,000. 2009-2011.
- 23) **The E.U. URBACT Program for the re-development of cities and neighborhoods with energy efficient housing models.** In collaboration with Prof. G Panarelli, DiTAC (Department of Technologies x for the Built Environment) at the University of Pescara, Italy. 2006-2010.
- 24) **Environmental Management System Implementation (EMS) and Post-Occupancy-Monitoring at the USC School of Architecture**, Energy-Efficiency-Retrofits, USC-FFEI Applied Research. (USC-Provost's Research No. 22-1102-9130). Grant: \$25,000. Project values approximate \$125,000. 2007-2009.
- 25) **Sustainable Infrastructure Assessment, and Near-Term Action Plan for the Island of Catalina.** Project size: 194.19 km². PI Infrastructure: Dr. M. Bernstein, PI Buildings with infrastructures: T. Spiegelhalter. Grant: \$60,000. 2007-2009.
- 26) **Towards sustainable urban housing bridging the gap between community design and adaptable technology.** USC Urban Initiative, Los Angeles. Research Contract: \$10,000. 2005-2009.
- 27) **Solar Zero-Fossil-Energy-Building-Development (22-1101-1051).** USC-SURG SEED Fund \$10,000. 2003-2009.
- 28) **Solar Decathlon Design and Engineering Proposal.** (53-4100-3820). NREL Research SEED Fund \$5,000. 2003-2009.
- 29) **CMU Solar Decathlon Building Realization with POE's, 950 sf² two story Solar Building, Pittsburgh, and Washington D.C.** (Completed Solar Building Post-Occupancy Monitoring Report, "Solar Decathlon 2002", DOE/GO- 102004-1845, June 2004). Project Partner: CMU School of Architecture Completed. Sponsors: NREL National Renewable Energy Laboratory, U.S. DOE, EPA, Solar BP, Heinz Endowment. PI's and Faculty Advisors S Lee (Phase 2, 3), T Spiegelhalter (All Phases 1, 2, 3), and CMU graduate students. Project value: approximate \$350,000. 2000-2002.
- 30) **Solar City Research Program Development for Pittsburgh, PA, and San Jose, Costa Rica.** Subtask-A: Solar City Community Strategies and Sustainable Urban infrastructure development; Sub-task-B: Sustainable targets, baseline studies, and scenario building; Sub-task-C: Urban renewable energy technology systems and industry development (Partly-funded by the Center for Building Performance and Diagnostics at CMU). PI: T. Spiegelhalter, with IEA-Task 30 Committee on Energy Research and Technology (CERT), Coordinator P. Droege (WCRE), Australia. 2001-2002.
- 31) **Built school environments and interiors. Wüstenrot-Foundation, Klett publishing house Stuttgart.** Academy Hessian, with Prof. Dr. P. Grosz. Research contract: 55,000 DM (\$35,966.83). 1997-1998.
- 32) **Solar Energy Gaining System Implementations for Prefabricated Buildings.** Research with onsite thermal insulation systems (3, 299 sf² transparent insulation), test implementations, and energy saving monitoring. Research locations: Wohnblock-Hochhaeuser Rathenau (Residential High-Rise Rathenau, 182,000sf²), and P. Robenson School in Leipzig (FA 31,215sf²), Germany. Collaboration HTWK Leipzig and FhG-ISE Leipzig. Research Sponsor: Saxon Ministry of State, and BMWI Germany. Research Chair and PI: T Spiegelhalter with CO-PI Dr. C Russ, FhG-ISE, Fraunhofer Institute for Solar Energy Systems Leipzig. Research contract: €375,000.00 (\$479,625.05). 1994-1996.
- 33) **Intelligent Buildings. Research project of the University of Kaiserslautern,** Department of Architecture, Schueco International, Publisher J. Haeusser, Darmstadt, Germany. PI: Thomas Spiegelhalter, Co-PI's: W. v. Aaen, H. Ermel. Funding: €36,000.00 (\$46,044.00). 1990-1994.

Lectures / Presentations / Conferences (Selected)

- 1) *"SynBio-calibrated Carbon-Positive-Building Infra-Design Research"* - BIOCALIBRATED: TOOLS AND TECHNIQUES FOR BIODESIGN PRACTICES SYMPOSIUM", Session 7, "REGENERATIVE SYSTEMS AND CIRCULAR MATERIALITY," hosted by MA Biodesign at Central Saint Martins - University of the Arts London, happening from November 30th to December 1st, 2023.
- 2) *"Envisioning Carbon-Positive Masterplans: Green-Blue Infrastructures and Adaptive Building Scenarios from 2018-2100,"* showcased three decades of research and design work spanning Europe, Africa, and the US. Research Workshop at Keio University's Shonan Fujisawa Campus, Tokyo, Japan in my role as a Global Visiting Professor at Keio University, Nov. 2023
- 3) Keynote by Thomas Spiegelhalter on *"Exploring Challenges and Best Practices of Generative AI and Topological Design Optimizations in Mechanical, Industrial, Structural, and Architectural Fields"* at the 2nd World Conference on Mechanical Engineering in Amsterdam, Netherlands, on June 24, 2023.
- 4) Keynote Lecture @Forum: Thomas Spiegelhalter: *"Disruptive AI Data-Driven, Carbon-Positive, Bio-Inspired Optimization Design Work Flows, 2020-2100"* at the International 38th eCAADe Conference – Education and Research in Computer Aided Architectural Design in Europe conference on Anthropologic – Architecture, and Fabrication in the cognitive age... From smart to behavioral...From digital to material, Technical University Berlin, September 2020.
- 5) "Carbon-neutral high-rise envelope design and engineering for extreme tropical climate impacts," Facade Tectonics 2020 World Congress (FTI WC2020). Face Time 2020: Better Buildings through Better Skins, Los Angeles, CA. forthcoming March 25-26, 2020.
- 6) "Carbon Neutral Scenarios for Food-Water-Energy Nexus Research Projects in Miami," International CRUNCH conference of participating Universities from UK, Poland, Netherlands, USA and Tapei, University of Eindhoven, forthcoming May 21-22, 2019.
- 7) "EU-Belmont: FIU-KEIO Food-Water-Energy Nexus Research Projects in Tokyo-Miami," Keio University Shonan Fujisawa Campus, Tokyo, Japan, forthcoming May 14, 2019.
- 8) "Resilience and Sea Level Rise Mitigation Research in Miami," American Institute of Architects, AIA Japan, Architects Regional Council Asia, ARCASIA, Kokushikan University, (with M Nepomechie, S Vassigh, and G Read), Tokyo, Japan, forthcoming May 11, 2019.
- 9) "The Water-Energy-Food Nexus: A new approach in support of Carbon-Neutral, Resilient and Biomimetic Energy- Water-Food Nexus Design," National Science Foundation RCN-SEES Conference on: Predictive Modeling Network for Sustainable Human-Building Ecosystems (SHBE), Workshop on Urban Sustainability: Social Actors, Policy and Governance, Florida State University, Tallahassee, FL. April 15 -16, 2019.
- 10) "E.U. Belmont CRUNCH – Climate Resilient Urban Nexus Choices Workshop Conference," Olivia Business Centre, Gdansk, Poland. June 20, 2018 and Kuznia Wodna & Gdansk University of Technology, Gdansk, Poland, Sept. 12-13, 2018.
- 11) "Carbon-Neutral Architecture and Infrastructural Projects (Generative Coding, Scripting and BIM Scenario modeling)," Universidad Veritas, San Jose, Costa Rica. June 20, 2018.
- 12) "Parametric Algorithmic, Sea Level Rise Building Design Solutions: Long-term Design Testing and Optimization Scenarios for Miami Beach Buildings in Florida," Twelfth International Conference on Design Principles & Practices, Special Focus: No Boundaries Design / Design No Fronteras, (with F Xu, U Grosso, and R Morbiducci) Barcelona, Spain, March 2018.
- 13) "Comparative International Carbon Neutral Campus Building Operation Strategies between University of Genoa and Florida International University in Miami," Twelfth International Conference on Design Principles & Practices, Special Focus: No Boundaries Design / Design No Fronteras, (with A del Borgi) Barcelona, Spain, March 2018.

- 14) "Design Agent based Realtime Scenario Planning and Benchmarking for Salutogenic Environments," UIA General Session – Design Works, Sub Theme: Nature, Category or Topic: 9. Building Science & Engineering, Union of International Architects, World Congress, UIA Seoul, 2017.
- 15) "Sea Level Rise Adaptation and the Future of Coastal Cities," International GREEN SURF FESTIVAL (with R Morbiducci, F Xu, and U Grosso), Italy. July 16, 2017.
- 14) "Carbon Neutral Buildings and Blue Infrastructures for Miami," Sea Level Solution Center and the University of Pennsylvania, the Consulate of the Netherlands and Arcadis, Miami, FL. Feb. 9, 2017.
- 15) "Carbon Neutral Buildings and Blue Infrastructures for Miami," SEA LEVEL RISE AND CIVIC TECHNOLOGY: AN OPEN DISCUSSION (with U Grosso and F XU), Miami, FL. February 27
- 16) "Tallahassee," International MUNDANEUM 2013: VIII REUNIÓN INTERNACIONAL DE ARQUITECTURA NECESARIA, Granada, Nicaragua. June 13-15, 2013.
- 17) "Extreme tropical facades," International MUNDANEUM 2013: VIII REUNIÓN INTERNACIONAL DE ARQUITECTURA NECESARIA, Granada, Nicaragua. June 13-15, 2013.

- 18) "Micro-Climate Sensitive Carbon Neutral Architecture in the Neotropics – Cases Studies and Experiments," International MUNDANEUM 2013: VIII REUNIÓN INTERNACIONAL DE ARQUITECTURA NECESARIA, Granada, Nicaragua. June 13-15, 2013.
- 20) "Carbon Neutral Architecture - Best Case Studies." XI Internacional Congreso Arquitectura 2013, Sostenibilidad – Patrimonio – Educacion, Sponsored by Universidad, Colegio de Arquitectura de Costa Rica and Costa Rican Association of Engineers and Architects (Colegio Federado de Ingenieros y Arquitectos-CFIA), San Jose, Costa Rica. May 1-4. 2013.
- 21) "AIA + 2030 Building Sector Energy Challenge: 10 Sessions," Sponsored by American Institute for Architects (AIA) Pasadena-L.A., Los Angeles, CA. 2010-2012.
- 22) "No Architect Left Behind – Carbon Neutral Design: 4 Sessions," Sponsored by American Institute for Architects (AIA) Pasadena, Los Angeles, CA. 2012-13.
- 23) "Globally Benchmarked Buildings Versus Green Washed Buildings," AIA sponsored public lecture series with AIA credits, University of Maryland, College of Architecture, Planning, and Preservation, Washington D.C. January 26, 2011.
- 24) "Development and Moderation: Global benchmarking? Taking a Critical Look at the Resource Use and Performance of Sustainable Buildings in the U.S.," Greenbuild International Conference and Expo, Chicago, IL. November 19, 2010.
- 25) "Energy Efficient Buildings and Cities in the U.S." The POLYCITY Project - Visions of Sustainable Urban Energy Systems, Stuttgart, Germany. September 2010.
- 26) "Measuring and Benchmarking: Local Examples, Global Perspective," Greenbuild 2010, US Green Building Council, International Forum and Federal Summit, Washington D.C. May 19, 2010.
- 27) "Research Case Studies and POE's in Germany 1990-2003," FIU Energy Conference, Department of Engineering and Construction Management, Miami, FL. March 12, 2010.
- 28) "Ecology-Design-Synergy, Form Follows Performance." 10th International Mundaneum 2009 Symposium. IUCN International Union for the Conservation of Nature, Universidad del Diseño, San Jose, FUDEU Foundation for Urban Developments. San Jose, Costa Rica. June 2009.
- 29) BIM (Building Information Modelling) and Sustainability," AIA Los Angeles Computer Committee, Gin Wong Conference Center, USC, (with O Kimmon, K Kensek, and M Gangi), Los Angeles, CA. May 13, 2009.
- 30) "USC Green Development Conference," Panelist for International Green Building Benchmarking, Annenberg School for Communication, University of Southern California, Los Angeles, CA. April 18, 2009.
- 31) "International Energy Efficiency in Construction Symposium," Moderator, German Federal Ministry of Economics, BMI, AHK San Francisco, USC Energy Institute, AIA Pasadena, Los Angeles, CA. March 10, 2009.
- 32) "Legislating Green Buildings," The American Institute of Architecture Pasadena & Foothill and Design Within Reach, AIA, Pasadena, CA. March 6, 2009.
- 33) "Sustainability and Construction", International Sustainability Conference, Centro Nacional de Producción más Limpia, Alcaldía de Medellín, Medellín, Colombia. February 2009.
- 34) "FORUM: Is it possible to build sustainable cities in Central America?" International HABITAT-UN Conference, International Union for Conservation of Nature (IUCN), Holcim, Fudeu, IUCN/Mesoamérica, Colegio Federado de Ingenieros y Arquitectos Auditorium, San José, Costa Rica. November 26-28, 2008.
- 35) "Phase Changing Materials in Solar Architecture," ACSA: Material Ecology & Sustainability - Material Matters Conference, 2008 ACSA Association of Collegiate Schools of Architecture, USC Los Angeles, CA. 2008.

- 36) "Sustainability and Zero-Fossil-Energy-Architecture," Work Report, University of Minneapolis, MN. 2008.
- 37) "Performance based sustainability," Work Report, Lecture, University of Michigan, Ann Arbor, MI. March 2008.
- 38) "Performance Based Architecture and Systems Integration," Work Report, University of North Carolina. 2008.
- 39) "Energy Efficient Architecture," Work Report, Lecture, Technical University of Applied Research Cologne Germany. 2007.
- 40) "GREEN ON GREEN – Celebrating Urban Living. Presenting provocative ideas on Sustainable Urban living, Solar Cities, and Experimental Architecture," The American Institute of Architecture Pasadena & Foothill and Design Within Reach, Pasadena, CA. 2007.
- 41) "Innovations in Solar and Renewable Energy in Architecture - Transitions to a Renewable Future," USC School of Architecture Public Lecture Series, Los Angeles, CA. 2006.
- 42) "Keynote lecture: Look at sustainable buildings differently?" International Summer Academy for Architecture, Reurbanization and Sustainability, ars-Berlin, TFH Berlin and New York City CUNY, Sto-Stiftung, DAAD, Bauhaus Academy Berlin, Berlin, Germany. 2006.
- 43) "Opening Keynote Lecture for the Architecture Exhibition 2050 -Visions for Berlin." Vernissage at the German Ministry for Foreign Affairs in Berlin, ARS Berlin, Sustainable Designs of TFH Berlin, New York City CUNY, DAAD German Federal Foreign Office, Berlin, Germany. July 2006.
- 44) "Innovations in Solar and Renewable Energy in Architecture – Minnesota Architecture Transitions to a Renewable Future," 2nd Annual Earth Day Forum: College of Architecture and Landscape Architecture, University of Minnesota, CALA, USGBC Mississippi Headquarters Chapter Minnesota Pollution Control Agency, Sustainable Development Unit, AIA MN Committee on the Environment, Minneapolis, MN. April 25, 2006.
- 45) "Innovations in Green Architecture," Meeting the Sustainability Challenge: USC Center for Sustainable Cities Symposium, Los Angeles, CA. 2006.
- 46) "Zero-Fossil-Energy-Building-Design," Green Economy Forum Session 4, Earth Day Symposium, Audubon Society, and Audubon Center, Los Angeles, CA. 2005.
- 47) "Sustainable Performative Architecture and Urban Design," Atelier 1: Residenza, Atelier 2: Aree Industriali, Atelier 3: Vuoti Urbani, Università degli Studi D'Annunzio, Dipartimento di Tecnologie per l'Ambiente Costruito, Pescara, Italy. 2005.
- 48) "Experimental Architecture," International Symposia States of Mind – Design Evolution, University Tasmania, Launceston, Australia. 2004.
- 49) "Performative Urban Architecture," Forum for Architecture and Urban Design, Design College of Environmental Design, Department of Architecture, Cal Poly Pomona, Los Angeles, CA. 2004.
- 50) "Towards Solar-Zero-Fossil-Energy-Urban Building Infrastructures," SCI-Arc-2GA, Los Angeles, CA. 2003.
- 51) "Solar Architecture and Urban Reclamation, International Green Mundaneum Symposium." III Reunion Internacional de Arquitectura, City of San Jose and Universidad del Desino, San Jose, Costa Rica. 2003.
- 52) "The Solar Multi-Hybrid Home for the Rich and Poor in the Information Age," La Vivienda Sostenible en la Era Digital Contribution: Congreso Internacional Sobre La Vivienda del Futuro, Catalanian Architects Professional Association, the Catalanian Government, Asociacion Nacional para la Vivienda del Futuro ANAVIF, Barcelona, Spain. 2003.
- 53) "Industrial Design and Architecture," University of the Arts, Hamburg, Germany. 2003.

- 54) "Solar Architecture and Urban Planning." International Solar Architecture Symposium, A.I.A. Los Angeles, CA. 2002.
- 55) "Experimental Solar Architecture and Urban Planning," Convegno Internazionale, Involucri energetici, Strategie Innovative Per Le Sistema Fotovoltaico, DiTAC Dipartimento di Tecnologie per l' Ambiente Costruito, Pescara, Italy. 2002.
- 56) "Solar Cities of Tomorrow - with or without the U.S.," International Architecture Symposium da-vin-ci, Technical University Darmstadt, Schueco International, Hebel Porenbeton, Fels GmbH, Germany. 2001.
- 57) "Solar City Pittsburgh," IEA International Solar City Program Workshop, Melbourne, Australia. 2001.
- 58) "Under the Sun - With the Wind," Rice Design Green Spring Lecture Series, Museum of Fine Arts in Houston, TX. 2001.
- 59) "Climate Tools Architecture." Symposium City of Leipzig with Sister City of Houston, UH Houston, TX. 2001.
- 60) "Building a Solar City Framework for Sustainable Communities." Universidad del Desino, San Jose, Costa Rica. 2001.
- 61) "Solar City Pittsburgh, PA, San José, Costa Rica," IEA International Energy Agency - Solar City Program Workshop Lecture Series, The Hague, Netherlands. 2000.
- 62) "Experimental Solar Architecture," International Jill Watson Festival, Carnegie Mellon University, Pittsburgh, PA. 1999.
- 63) "Experimental Solar Architecture", International Congress of Experimental Architecture, V Encuentro Internacional de Arquitectura UDLA, Puebla, Universidad de las Américas, Puebla V Congreso, Puebla, México. 1999.
- 64) "Nachhaltige Architektur," University of Applied Science Stralsund, Germany. 1999.
- 65) "Sustainable Architecture." Department of Interior Architecture, University of Wales Institute Cardiff, UK. 1998.
- 66) "Climate Tools - Solar Buildings," National Scientific Expert Conference on Energy and Building Technology, HTWK Leipzig, Germany. 1998.
- 67) "Main Street Reclamation," G. H. School of Architecture, University of Houston, TX. 1998.
- 68) "Architecturale Visie of Antwerpse, Droogdokken." De Groote Witte Arend Antwerpen, Belgium. 1997.
- 69) "Critical consideration of former East German Architecture (DDR) by the example of the Karl-Marx-Allee," International Workshop, Hessian and Berlin Chamber of Architect Organization, Federal German Architecture Museum, Frankfurt, Germany. 1996.
- 70) "Tell me how you will build," Suedbaden Architect Organization, Südwestfunk Baden-Baden, Germany. 1996.
- 71) "The creation of Solar Hybrids," Università degli di Napoli," Federico II," Dipartimento di Progettazione Urbana Sezione Tecnologia e Ambiente, Italy. 1995.
- 72) "Climate responsive architecture - Solar energy forms in environmental design," Environmental Institute Leipzig, Germany. 1995.
- 73) "Aus Zwei mach Drei - neue Konzepte des Holzbaus," Deutscher Werkbund, Frankfurt am Main, Germany. 1994.
- 74) "Nachhaltige Architektur." Work Report - Lecture. University Stuttgart and Cottbus University, Germany. 1994.
- 75) "Lifestyle and Design." Lecture at Symposium Solar Cultural Center Breisach am Rhein, Gallery Blau, Freiburg. 1993.

- 76) "Experimental Housing – Between Laboratory and Playground." International Symposium Lebensmittel Wohnung, Architects Day, European Academy of the Arts, Trier, Germany. 1993
- 77) "Houses of the Future - Buildings and Environment - Low Energy Houses," University of the Arts, Hamburg, Germany. 1993.
- 78) "Innovative Holzbauweisen im Wohnungsbau", Holzbau 1993, Holzbautagung, Leipzig, Germany. 1993.
- 79) "Recycling in Civil Engineering and Architecture," Sustainability Symposium, Nachhaltigkeits-symposium, Frankfurt Airport GmbH, German Federal Ministry of Building and Housing, Bonn, Germany. 1992.

Conference and Session Topic Chair *(Selected only from 2008)*

- 1) Moderator of two eCAAD conference platforms: 1. BioData / Bio tectonics for Architectural Design, 2. Health and Materials in Architecture and Cities at the International 38th eCAADe Conference – Education and Research in Computer Aided Architectural Design in Europe conference on Anthropologic – Architecture, and Fabrication in the cognitive age... From smart to behavioral... From digital to material, Technical University Berlin, September 2020.
- 2) "SESSION 3 – BREAKING EVEN: CARBON-NEUTRAL HIGH-RISE ENVELOPE DESIGN AND ENGINEERING FOR EXTREME TROPICAL CLIMATE IMPACTS," Los Angeles Façade Tectonics Conference: Emerging Strategies and Design Practices for Facade Systems, Buildings and Urban Habitat, Los Angeles, CA. March 22, 2019.
- 3) "Emerging Workflows, Techniques, and Design Protocols for Carbon-Neutral Buildings," 102nd Annual Meeting of the Association of Collegiate Schools of Architecture, Miami Beach, FL. April 10 - 12, 2014.
- 4) "Measuring and Benchmarking: Local Examples, Global Perspective" Greenbuild 2010, International Forum and Federal Summit, Washington, DC. May, 2010.
- 5) "Sustainable Energy Technology in Germany and the U.S." International Conference and Symposium, Sponsored by the German Ministry Technology Export Initiative, the State of Baden-Württemberg International, Daimler-Benz, Bosch, and the Zafh.net Centre of Applied Research on Sustainable Energy Technology, West Hollywood, Los Angeles, CA. November 8, 2009.
- 6) "Second International Energy Efficiency in Construction Symposium," LADWP Davidson Conference Center, Sponsored by LADWP Green Program, German Federal Ministry of Economics, BMI, Energy Efficiency Export Initiative, The Federal Ministry of the Interior of the Federal Republic of Germany, AHK San Francisco, GABA, USC Energy Institute, AIA Pasadena, Los Angeles, CA. March 10, 2009.
- 7) "Greening Architecture, Ethics, and the Environment, Lecture by Architect Ian Ritchie, London, Royal Academy, UK," (with M Chow), Sponsored by Award Visions and Voices, British Airlines, and AIA, Los Angeles, CA. January 21, 2009.
- 8) "Zero-Net-Energy Infrastructure and Sustainable Architecture Innovation Lecture by Architect Christoph Ingenhoven, Germany," Sponsored by: USC Energy Institute, GLUMAC, GENSLER, AIA Pasadena, USGBC Chapter Los Angeles, USC Davidson Conference Center L.A., Los Angeles, CA. October 2, 2008.

Awards and Honors (Selected)

Professional Awards, Prizes, and Honors (Selected)

- 1) FIRST PRIZE in the renowned International S.Arch 2023 AWARD for the Small Projects Competition for “AI Generatively Designed and topologically optimized “Hybrid Robot 3D-WAAM Printed 50m Long Steel Bridge Realization” project in Germany. The project was presented at The 10th International Conference on Architecture and Built Environment with Architecture AWARDS held in Berlin on April 4th, 2023. The S.Arch Award JURY panel consisted of 20 members, including renowned architects such as Toyo Ito, Sou Fujimoto, Kengo Kuma from Japan, Vivian Lee from Richard Meier Partners in the USA, Viviana Muscettola from Zaha Hadid Architects, Philipp Rahm from France, Lars Krueckberg from GRAFT in Germany, Gieto Sugianto from Singapore, and Robert Greenwood from Snohetta. Source of all the awards and honors: <https://lnkd.in/g7DKb5HJ>, 2023.
- 2) Sustainable Residential and Commercial Development for Rwanda 2023-2024 - International African Property Awards for the Carbon-Neutral Vision City Phase 2, a Master Plan. In collaboration with Thomas Spiegelhalter (CND LCC), CIEM (Alan Ocampo Guth), BA Ingeniería & PPAR (Jose Vargas Hidalgo & Dana Viquez Azofeifa).
- 3) 3rd Prize: Invited (Sponsored) Competition for KRAFTWERK “Freiraumgestaltung im Umfeld des Künstlerdorfes” in Schöppingen (Artist Colony Schöppingen) in Germany in collaboration with Landscape Architect Office Peter Drecker, Bottrop-Halle-Hannover, 2017
- 4) Winner of the International Award for Excellence for Volume 3 of The International Journal of the Constructed Environment for “New Design Protocols for Industrial-scaled Modes of Production for Carbon Neutral Buildings.” 2016.
- 5) AIA PASADENA Further Education Initiative Fund. No Architect Left Behind Initiative. Developing a creative, Southern California climate-specific AIA Carbon Neutral Building 2030 Challenge course for architects, engineers, and other field related professionals from 2012 to 2013. Contract Award: \$20,000. 2011.
- 6) DESIGN VANGUARD AWARD 2003, 10 firms shape the globe. ARCHITECTURAL RECORD Magazine, New York City. International Competition, Open. 2003.
- 7) Meritorious Award, Sustainable Malama Campus High-School Kapolei, Hawaii. International Architecture Design Competition (open), 683 entries, (with C. Kapeller and M De Jarnett), Los Angeles, CA. 2003.
- 8) 1st Prize, International CONCOURS CONSTRUCTION ACIERS 2002 for design and built Steel Suspension Bridge, Belgium-Luxembourg, Europe. 2002.
- 9) State Award for Distinguished Cultural Work at Solar Cultural Center Breisach. State Baden-Wuerttemberg Competition, Germany. 2001.
- 10) 5th Prize, New Park Visions. International Expert Design Competition (with P Drecker), Germany. 2001.
- 11) German Solar Recognition Award for Design, Build, Benchmarked Solar Town Houses in Ihringen, DGS (Deutsche Gesellschaft für Solare Energie), National Design Realization Competition, Germany. 1999.
- 12) 4th Prize, LE JARDIN DES DEUX RIVES Strasbourg, France. International Open Urban and Landscape Design Realization Competition, 497 entries (with J Dittus), France. 1999.
- 13) 2nd Prize, Redevelopment Master Plan Coal Mining Area of Espenhain-South Leipzig. Invited National Expert Design Competition (with P Drecker and Montana Property Development Society) Berlin, Germany. 1998.
- 14) 2nd Prize, Solar Powered Middle and Highschool Ihringen by Freiburg. National Design Realization Competition, Germany. 1995.
- 15) 2nd Prize, Coal Mining Area Redevelopment Wattenscheid, Germany. Invited National Expert Design Competition, (with P Drecker), Germany. 1995.
- 16) German Architecture Recognition Award for Buildings in Concrete. Cultural Center Breisach, Cologne, Germany.
- 17) Special Recognition Award for Media Center (Mediatek) Design, City of Lörrach. National Design Realization Competition, Germany. 1994.

- 18) Recognition Award for the Regional Commission Building Design (Regierungspräsidium) in Freiburg. National Design Realization Competition, Germany. 1994.
- 19) Special Recognition Award for the Library and Municipal Headquarter Design, City of Loerrach. National Realization Competition, Germany. 1993.
- 20) 1st Prize, Redevelopment Master Plan and Design for the 'Zeche Osterfeld Oberhausen' (former Coal Mining Area and Steel Factory Infrastructure) of the International Building Exhibition Emscher Park (IBA). International Design Realization Competition (open), 631 entries, (with P Drecker and J Dittus), Germany. 1993.
- 21) 1st Prize, Redevelopment Master Plan and Design for the Health Park Bottrop of the International Building Exhibition Emscher Park, IBA. International Design Realization Competition (open), (with P. Drecker), Germany. 1993.
- 22) Special Recognition Award for Institute of the Pharmacy and Pharmacology Building Design, Inner City Campus University of Freiburg. National Design Realization Competition, Germany. 1993.
- 23) 3rd Prize, Helmholtzplatz Prenzlauer Berg Berlin. International Urban and Landscape Design Realization Competition w. Jochen Dittus (Landscape Architect), Germany. 1993.
- 24) Special Recognition Award for Kindergarten and Daycare Design, City of Offenburg. National Design Realization Competition, Germany. 1993.
- 25) Special Recognition Award for High-School Building Design, City of Stühlingen. National Design Realization Competition, Germany. 1993.
- 26) 1st Prize for New Protestant Church and Conference Center Design, City of Bad Herrenalb. National Design Realization Competition of the German National Protestant Organization and the City of Bad Herrenalb, Germany. 1992.
- 27) 1st Prize, Karl-Hofer-Award Berlin for the Research Realization Projects of GRAVEL PIT ARCHITECTURE, Berlin. National Design Research Competition, Germany. 1992.
- 28) Special Recognition Award, Logo-Motiv, Urban design competition for Ecological Neighborhood Design Proposal, City of Weil. National Design Realization Competition (with G Duerr), Freiburg, Germany. 1992.
- 29) Special Recognition Award, Headquarter Sewage Treatment Demonstration Facility Design, City of Freiburg. National Design Realization Competition of the Sewage Federation Breisgauer Bay in Freiburg, Germany. 1992.
- 30) Recognition Award, Ecological Building Design and Low-Energy Building Master Plan Proposal, City of Bahlingen-Riedel. National Urban Design Competition, (with G Duerr), Germany. 1992.
- 31) 2nd Prize, Municipality Town Hall Design, City of Offenburg. National Design Realization Competition, Germany. 1992.
- 32) 2nd Price for Russian Military Infrastructure Area Redevelopment Master Plan, City of Magdeburg. International Urban & Landscape Design and Realization Competition for the 'Bundesgartenschau Magdeburg' (Federal Garden Show sponsored with E.U. funds), 873 entries, (with P Drecker, J Dittus), Germany. 1992.
- 33) Special Recognition Award for Community Center (Buergerhaus) Design, City of Schutterwald. State Design Realization Competition, Germany. 1991.
- 34) 2nd Prize, Public Art Design for the District Office Building, City of Freiburg. State Design and Realization Competition, Freiburg, Germany. 1989.
- 35) 1st Prize, Urbanization Proposal of the Berlin Wall between East and West, City of Berlin. International Urban Design Competition for Urban Planners, Architects, and Designers of Mythos Berlin and the Museum Checkpoint Charlie, 917 entries, Germany. 1987.
- 36) 1st Prize (Schinkel Prize), Satellite High-Rise District Maerkisches Viertel Master Plan Proposal, City of Berlin. National Design Realization Competition Berlin, Germany. 1986.
- 37) Recognition Award - Seeing-Recognition-Drawing Competition of the Rudolf-Lodders-Endowment Society.

National Design Competition, Architects Chamber Hamburg, Germany, 1985.

Academic Awards (Selected)

- 1) FIU CARTA Faculty Research Award: \$2,000. 2018.
- 2) EU ERASMUS + (KA107) AWARD: SS 2017 at University Degli Studi di Genova, Italy, Stipend \$5,984. 2017.
- 3) Solar Decathlon China US-DOE National Energy Administration China, FIU-Tsinghua University Beijing Partnership, 5th Place overall, 1st. Prize Energy Balance + Thermal Comfort, 3rd Place Engineering. 2016.
- 4) Miami Business Award, Solar Decathlon US-DOE-FIU Dance House. 2016.
- 5) AIA Miami Design Award, Solar Decathlon US-DOE-FIU Dance House, 2015; Florida foundation Award, Solar Decathlon US-DOE-FIU Dance House, 2013.
- 6) US Environmental Protection Agency (EPA) Assistance Award: "On Track to Carbon Neutral Buildings & 66.516 - P3 Award: National Student Design Competition for Sustainability." Award for Phase 1: \$15,000. 2013-2014.
- 7) Research Award State of Florida, Solar Decathlon US-DOE-FIU House, 2013.
- 8) EPA People's Choice First Prize, Technology and Science, P3: "People, Prosperity and the Planet Student Design Competition for Sustainability in Washington, D.C., 2012.
- 9) Solar Decathlon US-DOE, 11th Place overall, 1st. Prize Energy Balance + Thermal Comfort, 2011.
- 10) US Green Building Council Student Project Award for New Orleans Residential Designs, 2011.
- 11) Paul Cejas Strategic Initiative Research Award "No Architectural School Left Behind – NET-ZEB Masterplan." Analysis, Scenario Modelling and Master Planning for the transformation of the PCA-building Complex (designed by Bernard Tschumi) to a Net-ZEB facility. Strategic Initiative Award: \$3,000, 2012-2013.
- 12) FIU-CEC Seed Grant Award: An Open-Source Integrated Computing Infrastructure to Support the Life Cycle Design and Engineering of High-Performance Building – Case Study "FIU LEED SILVER certified SIPA campus building." Funding: \$30,000, 2011-2012.
- 13) FIU Technology Fee Award for equipment grant to establish the Environmental and Structural Technology Laboratory (ESTL), Funding: \$67,000. 2009-2012.
- 14) Greening Architecture Ian Ritchie, Ethics and the Environment, Sustainability Event Proposal, USC Arts and Humanities Initiative Award with additional funding from the British Consulate, Virgin Atlantic, the USC Architectural Guild, COE Architecture International, and AIA Los Angeles (with M Chow) Funding: \$26,800. 2.5 LU/HSW/SD hours for all AIA members, 2008.
- 15) Environmental Management System (EMS) - USC School of Architecture, USC Future Fuels and Energy Initiative (FFEII) Applied Research Award. Funding: \$25,000. 2007.
- 16) Towards Sustainable Urban Housing Bridging the Gap between Community Design and Adaptable Technology, USC-Urban Initiative Policy Briefing Award. Funding: \$10,000. 2005.
- 17) Solar Zero-Fossil-Energy-Building-Development, USC-Undergraduate Research Fund Award (SURG). Funding: \$10,000. 2003.
- 18) DAAD Stipend AWARD (Deutscher Akademischer Austauschdienst Stipendium), German Academic Exchange Program for research faculty, International Academic Cooperation Bonn – New York. Funding: €18,000 (\$24,120). 1999.
- 19) Awarded Postgraduate Scholarship, University of the Arts Berlin, Germany, Master's Program (Meisterschüler Studium). 1988.
- 20) Pro Venetia Viva, Centro Europeo di Venezia: IL CENTRO: PUNTO D'INCONTRO PER LA CULTURA DELLA CONSERVAZIONE, Awarded Scholarship by the UNESCO office, Venice, Italy. 1977.

Supervised Student Awards (*Selected*)

- 1) A.I.A. MIAMI 2020 Design Award-winning project by Master Thesis Student Amalia Tomey of FIU MIAMI CRUNCH Design Studio Prof Thomas Spiegelhalter, June 2020, <http://crunch.fiu.edu/about/research/>
- 2) Solar Decathlon China 2013, Qualification Competition. Application Phase 1 and Submission Phase 2 - Sustainability Graduate Spring Studio 2010. Grant amount: \$100,000. Status: Current, Source: US Department of Energy, National Energy Administration China [Subcontract through Tsinghua University]. Amount: \$30,000, Period: 2012 – 2013.
- 3) Industry-Government-Communities Sponsored Solar Decathlon Research Realization Projects in the US and China: (1) Sponsored \$550,000 FIU Solar Decathlon Project (\$100,000 Awarded Solar Decathlon 2011 Competition by U.S. Department of Energy), and (2) Sponsored THU (China)-FIU Collaboration of the International Chinese Solar Decathlon Net-Zero-Energy Project led by Tsinghua University (THU) in China (\$100,000 by the China National Energy Administration and the U.S. Department of Energy). 2010-2013.
- 4) 101 Years ACSA Archive Exhibition Graduate Student Project Selection: Post-Fabrication, Haiti. Studio/Course: ARC 5362 Graduate Design 9, Spring 2011.
- 5) 1st and 2nd prizes at Regional USGBC Sustainable Housing National Competition 2010, Sustainability Design Graduate Studio Students, Award: each student with \$1,000. 2010.
- 6) Solar Decathlon U.S. Department of Energy 2011, Qualification Competition. Application Phase 1 and Submission Phase 2 - Sustainability Graduate Spring Studio. Grant amount: \$100,000. 2011.
- 7) First Prize, USC GPSAW Graduate and Professional Students Award for the Development and Validation of a U-BIM Model for mitigating the Urban Heat Island. 2009.
- 8) 3rd Prize, Sustainable High-Rise Building Design for the Exposition Park in Los Angeles. AIA 2x8 Swell, 2006.
- 9) Selection Award for Solar Decathlon Design Proposal 2005, USC School of Architecture. NREL, DOE, Solar BP. EPA. Grant Amount: \$5,000. 2003.
- 10) Special Solar Decathlon Good Neighbor Award 2002 for the Carnegie Mellon University School of Architecture Donation of Solar House to Pittsburgh Community Organization. 2002.
- 11) 2nd Prize, Solar Decathlon Competition, Category Contest 2, Design Presentation and Simulation, NREL, DOE, for the Carnegie Mellon University School of Architecture team. 2002.
- 12) Selection Award for Solar Decathlon Design Proposal, CMU School of Architecture Pittsburgh, NREL, DOE. (Phase 2). 2001.
- 13) 1st Prize, Int'l Competition HTWK Leipzig-UH Houston, Marina Gruna Peninsula-Memory and Renewal, Leipzig, Germany. 1998.
- 14) Recognition Award, International Student Competition Leipzig-Houston, Gruna Peninsula - Columna Vertebralis, HTWK Leipzig, Germany. 1998.
- 15) Recognition Award, International Student Competition Leipzig-Houston, Gruna Peninsula – Design Project 8, HTWK Leipzig, Germany. 1998.
- 16) Recognition Award, Student International Competition Leipzig-Houston, Gruna Peninsula – Design Project 8. HTWK Leipzig, Germany. 1998.
- 17) Recognition Award, Student International Competition Leipzig-Houston, Gruna Peninsula – Design Project 8. HTWK Leipzig, Germany. 1998.
- 18) International Student Competition Award - Solar Passive House Idea Competition for Urban Row Houses. Isorast-Bausysteme and Passiv Haus Institute Darmstadt, HTWK Leipzig, Germany. 1994.

Invited Competition Juror (Selected):

- 1) Invited Jury member for the 'International Design FUNDECOR HEADQUARTER Competition,' San Jose, Costa Rica. October 2011.
- 2) Invited Jury member for the "National Design Low-Energy-Office-Building Competition." City of Kirchzarten, Germany. 2008.
- 3) Invited Jury member for the "International Design Duft Museum (Parfum Museum) Competition," with competing firms: COOP HIMMELBLAU, HAUS Rucker Co. and others, Cologne, Germany. 2006.
- 4) Invited Jury member for the "International Design Steel Mining Structure Competition Zwenkau," City of Zwenkau, Germany. 1998.
- 5) Jury Chair of the "National German 1000 Photovoltaic Roof System Competition." BMF (The Federal Ministry of Finance), BMWi (Federal Ministry of Economics and Technology) FhG -ISE (Fraunhofer Institute for Solar Energy Systems), Freiburg, Germany. 1995.

Other Recognition (Selected):

- 1) Invited and nominated as the 'Series Editor for Building Technology' at Artech House Publishers Inc., London, U.K. and Boston, MA. 2012–2015

Service to Professional Associations / Societies

- 1) Member of the **International Advisory Board of Resilient Communities at the Venice Biennale 2021**, Italian Pavilion, 2020- ongoing.
- 2) Professional **Autodesk Developer Network (ADN)** Member, 2018- ongoing
- 3) Steering Committee Member of the **US-UK NETWORK FOR BIOSENSING-ENABLED, WELLBEING-CENTRIC SUSTAINABLE BUILT ENVIRONMENT ECOSYSTEMS**, 2018-present.
- 4) **Dynamo-Rhynamo-BIM-User Group** of the Autodesk User Group International Inc. <https://www.augi.com/local-user-groups/group/dynamo-bim-user-group>), 2015-present.
- 5) Steering Committee Member of the National Science Foundation **RCN-SEES Predictive Modeling Network for Sustainable Human-Building Ecosystems (SHBE) Network**, 2014-present.
- 6) “AIA 2030 Challenge” further Education “Carbon Neutral Buildings Imitative” course module development and coordination for the AIA Pasadena and Los Angeles; Four AIA No Architect Left Behind Sessions, Three AIA CES Learning Units, April 2010-present.
- 7) **ACE Architects’ Council of Europe**. 2006-present.
- 8) Exhibition Committee **Bruno Zevi Foundation**, Scientific Committee Member, Rome, Italy. 2006-present.
- 9) Scientific **DiTAC Working Group** Member of **URBACT**, European Program for Sustainable Development. 2005-present.
- 10) **GABA German-American Business Association**, Los Angeles and Miami. 2004-present.
- 11) **U.S. Green Building Council**, and **Emerging Green Builders**, Chapter Los Angeles and Miami. 2003-present.
- 12) **AIA – NCARB**, Frequent internship program supervisor for enrollment and support for students seeking licensing, 1999- present
- 13) Numerous Guest Lectures, Design Studio Critics, Directed Research Consultancies at Universities of Taranto, Genoa, Florence, Milano, Pescara-Chieti in Italy, HTWK Leipzig, TU Berlin, UdK Berlin, TU Darmstadt, TU Karlsruhe, University of San Jose, Costa Rica, University of Sydney, University of Melbourne, Tsinghua University in Beijing, China, University of NOVA University, University of Miami, SCI-Arc, Woodbury University, Cal Poly Pomona, UCLA Architecture department, Art Center Pasadena, Audubon Center and Green Technology Institute UCLA, LADWP Solar & Green Program, USBC Green Building Alliance of Los Angeles, and many more. 1990- present.

Association / Society Memberships:

- 1) **ICLEI Global – Local Governments for Sustainability**, 2018-present
- 2) **American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE)**. 2009-present.
- 3) **DESERTEC Foundation**, Solar Energy for Europe and Africa, Munich, Germany. 2007-present.
- 4) **IBPSA - International Building Performance Simulation Association**. 2006-present.
- 5) **Green Building Connect, USA**. 2006-present.
- 6) **Sustainable Construction and Planning**. 2006-present.
- 7) Member, **GABA German-American Business Association**. 2005-present.
- 8) **Biomimicry & Innovation**. 2005-present.
- 9) Member, **US Green Building Council**, **USGBC Regional Chapter Los Angeles**. 2003-present.
- 10) Member, **Society of Building Science Educators SBSE, USA**. 2003-2004.
- 11) Member, **Architects’ Council of Europe, A.C.E.** 2001-present.
- 12) Member, **Sustainable Pittsburgh, PA, USA (inactive)**. 2000-present.
- 13) Member, **IEA-International Solar City Program, Task 30**. 2000-2002.
- 14) Member, **International Council for Local Environmental Initiatives (ICLEI)**. 2000-2002.
- 15) Member, **International Solar Energy Society, ISES, American Solar Energy Society**. 1999-present.
- 16) Member, **Deutscher Werkbund**. 1993-1994.
- 17) Member, **Deutsche Bundesarchitektenkammer (German Architecture Chamber)**. 1988-present.
- 18) **Professional Organization of the German Association of Artists Berlin and Freiburg**. 1983-97.

Invited Referee, Editor, and Associated Editor:

- 1) Frequent Invited Peer Reviewer of the Journal “Future Cities and Environment”, University of Nottingham, UK, 2014-present.
- 2) Frequent Invited Peer Reviewer of the Journal of “Green Building”, Mindspring, 2014-present.
- 3) Invited Reviewer of the Journal of “Technology Innovations in Renewable Energy”, LifeScienceGlobal, 2013-present.
- 4) Invited Conference Paper Reviewer for the 75th Anniversary of the American Society of Mechanical Engineers (ASME) Heat Transfer Division (HT2013). Minneapolis, July 2013 in Minneapolis, Minnesota, ASME Journal of Heat Transfer, and IMECE in November in San Diego, CA. 2013.
- 5) Frequent Invited Peer Reviewer for SUSTAINABLE BUILDING CONFERENCES in 2013 and 2014 (SB13/SB14): Construction Products and Technologies SB13 in Graz, Austria; BESS-SB13 (Building Enclosure Sustainability Symposium), California; and SB13 in Abu Dhabi, UAE. 2013-2014.
- 6) Invited Scientific Committee Member at the 2nd World Construction Symposium 2013 on “Socio–Economic Sustainability in Construction: Practice, Policy and Research.” Organizers: The Ceylon Institute of Builders (CIOB), International Council for Research and Innovation in Building and Construction (CIB) and Building Economics and Management Research Unit (BEMRU). Colombo, Sri Lanka, June 12-15, 2013.
- 7) Invited Associate Editor and Referee for the volume 5, The International Journal of the Constructed Environment. 2012-present.
- 8) Invited Reviewer (Referee) by the Chief Editor for the Journal of Civil Engineering and Architecture, USA, Editorial Office (Chicago: David Publishing Company). 2011-present.
- 9) Invited Associate Editor and Referee for the Volume 5, The International Journal of the Constructed Environment 2011- present.
- 10) Invited Associate Editor and Referee for the volume 4, Design Principles and Practices: An International Journal 2010-2011.
- 11) Invited Associate Editor and Referee for the volume 3, Design Principles and Practices: An International Journal 2009-present.
- 12) Frequent Invited Peer Reviewer of the ELSEVIER and ScienceDirect Journal “Building and Environment,” 2003-present.