

SKILLS

- Extensive technical and management contributions in semiconductor manufacturing, energy efficiency, resource efficiency, renewable energy, and sustainability
- Broad background in building and facility design, construction, management, and resource optimization from residential to industrial scale
- Author ([The Joy of Efficiency](#)) and speaker on topics of energy, water, sustainability and climate

RECENT

President

April 2016 – Present

RE:source Design – <https://resourcedesign.org>

- Worked with the Rocky Mountain Institute (RMI) to develop best practice guides for industrial systems.
- Developed an existing facility energy efficiency program for Trinity Industries in Dallas.
- Participated in a workshop in Toronto, Canada to develop a net zero energy grocery store.
- Led a 3 day energy efficiency design session for a large new semiconductor factory planned for Taiwan. Identified over 250 million kWh in annual savings possible with short payback. Developed system metrics targets and best practice guides for this >\$40B company.
- Consulted on energy, water, and sustainability issues for a new manufacturing facility in TX.
- Worked with a national manufacturing firm to address energy, water, and sustainability issues at a TX location. Provided best practices guides for that, and other, facilities.
- Taught online courses in passive house design, solar PV, net zero homes, and mechanical systems.

EXPERIENCE

Sustainable Development Manager

January 2002 – March 2016

Texas Instruments International Facilities, Dallas, TX

- Led the effort to incorporate resource-efficient design and LEED (Leadership in Energy and Environmental Design) certification into TI's new \$3 billion, 1.1-million square-foot wafer fabrication facility, which became the first LEED Gold certified semiconductor facility in the world. Sold the idea to management, wrote the white papers, organized the design charrette with RMI, calculated the ROI, and managed the "green" design and construction. Facility is 40% more efficient than the next best. <https://resourcedesign.org/docs/RFABfactsheet.pdf>
- Led design and certification efforts for the first LEED project completed in the Philippines, a new 178,000 square-foot LEED Silver-certified manufacturing facility in Baguio, then for an 832,000 square-foot manufacturing facility in Clark that certified as LEED Gold. Completed a LEED Gold certified 168,000 square-foot TI office building/development lab for TI in Sugar Land, TX in 2015.
- Managed energy and sustainability activities around the world with a \$5-10 million annual budget. Doubled TI's global energy efficiency in 9 years and water efficiency in 11 years.

Various Roles

January 1983 – January 2002

Texas Instruments, Dallas, TX

- Managed the engineering, plant operations, and maintenance teams for a wafer fab.
- Managed the design and construction of a major upgrade to facilities systems for an aging 150-mm wafer fab conversion to 200-mm – while it was operating.
- Facilities Manager for three different semiconductor manufacturing facilities during a 10-year period; responsibilities included all facilities, safety, and environmental issues.
- Project manager for several clean-room design and construction projects.

EDUCATION

B.S. in Mechanical Engineering

- Louisiana State University, Baton Rouge, LA 1982

OTHER

- Senior Fellow with the U.S. Department of State's Energy & Climate Partnership of the Americas (ECPA) program, 2012-2013. Worked on efficiency and renewable programs in Honduras, Bolivia, Colombia, and Peru. ECPA profile - https://resourcedesign.org/docs/ECPA_bio_Westbrook.pdf
- Fellow for the Hunt Institute for Engineering and Humanity at SMU - [LINK](#)
- Designed my award-winning passive/active solar house. <https://enerjazz.com/house>
- Named the North Texas Municipal Water District's Water Genius award winner in 2009 for water conservation practices and outreach activities.
- Member and Chairman of the Fairview Parks and Recreation Board for nine years (2001-2010). Chairman of Fairview's environmental committee from 2011-2018; assisted with development of the town's green building standards. Helped strengthen dark sky ordinance. Named Fairview Citizen of the Year in 2008.
- President and lead alto saxophone player for the 18-piece Texas Instruments Jazz Band (now Texins Jazz Band) since 1986.

SIGNIFICANT PROJECTS, PRESENTATIONS, AND AWARDS

- 2022, Apr – Taught course on Mechanical Systems for Net Zero Energy Homes
- 2022, Apr – Guest lecturer at SMU Sustainability Course
- 2021, Oct – Held virtual solar tour of our house
- 2021, Sep – Dallas College presentation on Net Zero Energy Buildings
- 2021, July - Named as a Fellow at the Hunt Institute for Engineering & Humanity at SMU
- 2021, Jun - Featured in an article on solar power for homes in Waxahachie360
- 2021, Mar - Gave presentation on Resilience in Extreme Weather at the NTREG meeting
- 2021, Jan & Apr - Taught an online Passive House course for Half Moon Education
- 2020, Oct - Taught "Introduction to Solar Electricity" class for Dallas College (online)
- 2020 Oct - Held solar home tour virtually with online Q&A sessions. Videos on YouTube
- 2020, May – Presented on Ground Source Heat Pumps for the North Texas Renewable Energy Group
- 2020, Mar - Panelist for the North Texas Climate Change Symposium
- 2020, Feb - Guest speaker at the IEEE Consultants Network meeting in Dallas
- 2020, Jan - Presentation on the History of Sustainability at Texas Instruments
- 2019, Nov - Guest speaker at Mensa convention in Dallas
- 2019, Jun - Taught Passive Solar House design course in Arlington, TX
- 2019, Apr - Guest lecture on energy efficiency at Prince of Peace High School
- 2019, multiple - Served on the Advisory Committee for the city of Dallas Climate Action Plan
- 2019, multiple - Board member for an eco-village in Tanzania
- 2018, Nov - Moderate a building panel at the North Texas Renewable Energy Group (NTREG) meeting
- 2018, Oct - Lead a design charrette for a 2 million square foot semiconductor fab design in Taiwan
- 2018, Mar – Gave a presentation on Climate Change at the North Texas Climate Change Symposium
- 2018, Mar – Guest lecturer at the SMU Masters of Sustainability course
- 2017, May – Taught Net Zero Energy and Water at the Building Professional Institute (BPI) conference at the University of Texas Arlington – Presentation Link
- 2017, Mar – Received a Sustainability Commendation from AIA Dallas
- 2017, Mar – Presented on Radical Efficiency at the SPECS Retail Store Conference in Orlando, FL
- 2016, Oct – Presented at the Sierra Club Earth, Wind, and Fire conference - Integrated Design - The Key to Efficiency
- 2016, Jun – Presented three topics at the AIA Dallas Getting to Zero series – Monetizing Energy Efficiency, Building Code Outlook, and Employee Engagement
- 2016, Apr – Moderated a panel on clean energy policy at Earth Day Texas
- 2016, Apr – Guest lectured at Yavapai College in Prescott, AZ
- 2016, Apr – Presented at the AIA Dallas – Getting to Zero series – Integrated Design
- 2016, Mar – Gave a TEDxSMU talk on “Redefining the Smart Home”
- 2016, Nov – Taught at SMU Masters of Sustainability course
- 2015, Aug – Featured in the external TI E2E (Engineer to Engineer) blog: Paul Westbrook – Renaissance Man
- 2015, May – Taught sustainability and integrated design to a group of college professors from south and central Texas schools. Session organized by Texas State University in San Marcos, TX. I supported the grant application to develop this program.
- 2015, Apr – Presented at the AiChE Spring Meeting in Austin, TX
- 2015, Mar – Presented at the Energy Thought Summit (ETS) in Austin, TX
- 2015, Feb – Guest speaker at the ASME North Texas Section meeting
- 2014, Nov – Luncheon speaker at the Clean Air Through Energy Efficiency (CATEE) Conference in Dallas.
- 2014, Nov - Taught at SMU Masters of Sustainability course.
- 2014, Sep – Accepted an award for TI from the Department of Energy for meeting our 2020 energy intensity goal 7 years early.
- 2014, Mar – Presented at the inaugural Energy Thought Summit (ETS) in Austin, TX
- 2014, Mar - Participated on a Sustainable Business panel at the request of UNT for The Southwest Academy of Management conference in Dallas
- 2013, Dec – Named to the Who’s Who in Energy List by the Dallas Business Journal.
- 2013, Nov – ECPA Colombia. Returned to Colombia to focus on renewable energy . Visited several ECPA training centers. Visited a small remote community and discussed solar water pumping to replace the hand carrying from the river. Led a two day training session on energy efficiency, renewable energy, and project management for 23 SENA leaders from across the country.
- 2013, Nov – Texas Architects Convention, Fort Worth, TX. Gave presentation on integrated design.
- 2013, July – ECPA Colombia. Met with the National Planning Department, the Ministry of Housing, and the Ministry of Energy about policy and planning for improving energy and resource efficiency to combat climate change effects, some of which are already occurring. Met with professors at a university in Bogota and spoke at a conference on climate change mitigation.
- 2013, January – Speaker at the GRI Training Course in Dallas
- 2012, November – ECPA Peru. Met with the Minister of Energy and the Minister of the Environment to discuss policy and programs to support energy and resource efficiency.
- 2012, October – Taught at SMU Masters of Sustainability course.
- 2012, September – Presented at the USGBC North Texas forum.

- 2012, September – Singapore Presentation. Attended the National Efficiency Conference and gave two presentations: one on integrated design and the other about the TI RFAB Facility.
- 2012, July – ECPA Bolivia. Visited with government officials in LaPaz and discussed policy improvements to support efficiency and renewable energy sources. Worked with the local Green Building Council in Santa Cruz and presented at a large conference attended by many design/construction industry professionals and students.
- 2012, May – ECPA trip to Honduras. Worked with the local Green Building Council, visited large architecture and engineering firms, and guest-lectured in several universities. Subjects were energy and resource efficiency and integrated building design.
- 2011, November – Speaker at the Xyntéo Global Leadership and Technology Exchange (GLTE) forum in San Francisco, California.
- 2011, September – Named one of 20 Senior Fellows for the US State Department's Energy & Climate Partnership of the Americas (ECPA).
- 2011, August – Energy Champion Workshop at TI.
- 2011, July – Taught energy and sustainability at the Dallas Museum of Nature & Science Discovery Corps.
- 2011, April– Guest speaker at the Dallas County Community College's District Sustainability Summit
- 2011, January – Toured the Dallas Morning News editorial board and several reporters through RFAB.
- 2010–2013 – Performed energy assessments at seven large TI manufacturing facilities.
- 2010, November – Met with three Singapore Economic Development board members.
- 2010, November – Assisted a graduate student at Columbia University who is working to establish an energy management program for the Port Authority of New York and New Jersey.
- 2010, October – Presented "Silicon in Solar & Electronics" at the Energy Expo 2010.
- 2010, September – TI Taiwan energy assessment.
- 2010, August – Guest speaker at the Dallas Chamber of Commerce Sustainable Technologies committee meeting.
- 2010, August – Attended a meeting in Austin with TI, Texas Association of Manufacturers, Sierra Club, EDF, Public Citizen, SEED, and TREIA to find common ground for upcoming legislation on support for non-wind renewables in Texas.
- 2010, July – Guest speaker at the Discovery Corps at the Dallas Museum of Nature and Science.
- 2010, June – Met with Singapore Economic Development Board representative to discuss sustainability.
- 2010, May – Spoke at the Sustainable Operations Summit in San Antonio along with President Clinton.
- 2010, April– Held Earth Day forum with guests Tom "Smitty" Smith and Garrett Boone (founder of the Container Store).
- 2010, March – Guest lectured at SMU for an Energy and the Environment course.
- 2010, February – Met with Texas State Senator Kirk Watson to discuss state energy policy.
- 2010, February – Toured the TI Board of Directors through RFAB and highlighted sustainable features.
- 2009, November – I was announced at GreenBuild as the first recipient of a national Sustainable Practices Award. The award is for advancing sustainability at home, at work, and in the community.
- 2009, October – Represented TI on a corporate panel for Reinventing Fire, hosted by the Rocky Mountain Institute.
- 2009, October – Did a presentation and assisted with TI product demos and recruiting at the Solar Decathlon in Washington D.C. The University of Illinois team (which I advised on behalf of TI) took second place overall and had the only perfect score for water heating.
- 2009, September – My Op-Ed piece for the Solar Decathlon was picked up by several outlets, including Electronics Advocate and the Austin American-Statesman. Abbreviated version ran in the Dallas Morning News.
- 2009, September – Gave the keynote speech at the Live Green Awards in Plano.
- 2009, September – Selected as the North Texas Municipal Water District's first Water Genius Award Winner for my decades of water conservation efforts.
- 2009, July – TI is featured, and I am quoted on the back cover, in the just released book "The Green Workplace" by Leigh Stringer, Vice President of HOK.
- 2009, June – Guest lecturer for the SMU Engineering Master's program in Sustainability.
- 2009, May – Presented at the North Texas Municipal Energy Management Systems class, which helps local governments implement energy efficiency in facilities.
- 2009, April – Guest lecturer at SMU's Environment and Technology, Ecology, and Ethics course.
- 2009, April– Guest speaker for the CREATE Executive Dinner at Arizona State University,
- 2009, April – Served on a panel for the Plano Live Green Expo with TV environmental evangelist Ed Begley Jr.
- 2009, March – Taught an Environmental Leadership session at the Women's Museum for about 60 girls (6th grade) from the DISD Irma Rangel Leadership Academy.
- 2008, December – Accepted the award for TI from the Clean Air through Energy Efficiency conference; Judge Margaret Keliher presented TI the commercial/industrial award.
- 2008, November – My energy blog (TInergy) cited favorably in a story on a ZDNET.
- 2008, October – Spoke at the Energy Star Industries in Focus Forum and attended the World Energy Engineering Conference in D.C
- 2008, October – Spoke at the MexEEdev conference in Guadalajara.
- 2008, September – Held two "green" workshops for Harvesting Partnerships forum in September (Women's Business Council workshop supported by TI).
- 2008, September – Guest lecturer for the SMU Engineering Leaders Masters program in Sustainability

- 2008, July – Toured the CEO and staff of Bright Automotive through RFAB. 2008, August – Toured College of Engineering Assistant Dean, Site Facilities Manager, and campus architect from the University of New Mexico campus as they are striving to be carbon-neutral.
- 2008, June – Toured about 50 high school girls from Plano ISD's Physics Summer Camp through RFAB.
- 2008, April – Interviewed by Tom Friedman for his new book `Hot, Flat and Crowded: Why We Need a Green Revolution. Why America Needs To Lead It.' TI is highlighted in Chapter 12, "The Naked Gun 2½ Rule: If It Isn't Boring, It Isn't Green."
- 2008, March – Gave sustainability presentation to the TSPE student chapter at SMU.
- 2008, February – Guest lecturer at the University of Texas Global Environment and Energy course
- 2008, February – Participated in a large computer services company data center charrette that led to one of the world's most efficient data centers.
- 2008, January – Represented TI on a Climate Change forum at Richland College.
- 2007, November – Participated in a work session to develop a Sustainable Certificate Program and Master's Program at SMU.
- 2007, November – Quoted in a Wall Street Journal story about green building; handled about a dozen spin-off inquiries that week.
- 2007, November – Toured the Climate Savers Computing Initiative Board and a large computer services organization board of directors through RFAB.
- 2007, October – Gave a presentation at the Solar Decathlon in Washington DC and did a number of media interviews before, during, and after the trip: Wall Street Journal Online; Forbes; CNN Money; Washington Times; Fast Company; Associated Press.
- 2007, October – Gave ISSM Keynote speech in Santa Clara.
- 2007, August – Presented and served on a panel at a UT sponsored sustainability session in Austin.
- 2007, May – Interview by Popular Science about RFAB and green semiconductor manufacturing.
- 2007, April– Gave Plenary Session address at the Engineering Sustainability Conference in Pittsburgh.
- 2007, January – Presented at the National ASHRAE Conference in Dallas and hosted a tour for ASHRAE participants.
- 2006, October 9 – Newsday editorial cites TI's RFAB as a good example of "green" building principles that save both energy and costs: "Building 'green' holds the key; Wise use of energy-efficient technology can solve many of our power needs, make environment cleaner."
- 2006, July – Invited by Amory Lovins to speak at the Aspen Institute as part of a Rocky Mountain Institute lecture series.
- 2006, June – RFAB appears in Friedman documentary "Addicted to Oil."
- 2006, May – Cover and feature story in the inaugural edition of Dallas CEO magazine: <http://resourcedesign.org/docs/Article-from-Dallas-CEO-publication.pdf>
- 2006, May – Guest on WBAP radio's "The Energy Show."
- 2006, March – Westbrook invited to Washington DC to address (5) US Senators on green building and sustainability – Sen. Clinton (NY), Nelson (NE), Cantwell (WA) , Bingaman (NM), and Salazar (CO).
- 2006, March – Keynote speaker at the Government Services Administration annual conference in Kansas City, MO. with Bill Browning
- 2006, March – New Texas Instruments Plant Touted as a Model in Energy Efficiency
- 2006, March – RFAB featured in Mechanical Engineering Magazine, "Efficiency Is Its Own Reward."
- 2006, February – Editorial in D Magazine – "Texas Instruments is way ahead of the rest of us"
- 2006, January – RFAB featured in a New York Times Column – Thomas Friedman
- 2005, October – ISMI Symposium on Manufacturing Effectiveness. Westbrook presented "Sustainable Fabs: LEED, Follow, or Get Out of the Way."
- 2005, September – RFAB presented with the Summit Award for Environmental Leadership – LEEDS School of Business at the University of Colorado in Boulder