College of Architecture, Texas Tech University

Architecture Research and Design Center (A R D C) Report
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Accomplishments in Research, Scholarship and Creative Activities

Compiled by Saif Haq, Ph.D., Associate Dean for Research
Architecture Research and Design Center (ARDC) facilitates and coordinates research, scholarship and design activities within the College of Architecture (CoA). It assists faculty and students in their research/scholarship/creative endeavors, serves as a liaison to other research centers and institutes, and provides architectural/research services to the public.

The ARDC is headed by the associate dean for research of CoA, and has two staff members. Physical resources include a fully equipped conference room and space for four research assistants. It also offers high definition laser scanning equipment, ground penetrating radar, and a virtual reality projection system, among others. ARDC showcases faculty research, scholarship, and creative activities and houses a permanent exhibition of faculty productions. A list of faculty expertise is also available.

In the academic year 2011-2012, ARDC hosted the CoA Symposium ‘Re-Presentations’ in addition to two others in the college; ‘Topological Urbanism’, and ‘Cultural Heritage Symposium’. CoA faculty and students have 18 full papers either published or accepted, lectured in 40 national and international venues, and displayed their creative work in 25 exhibitions. As a group, CoA faculty have submitted grant proposals worth more than half a million dollars. Additionally, they have served as peer reviewers of journal articles and books, panelists, nominators and editors. Full details of their research related activities are presented in the following pages.

Saif Haq, PhD. Associate Professor
Associate Dean for Research
College of Architecture
PUBLICATIONS

Book Proposals

Book Chapters

Journal Articles
7. Neiman, B, ‘Bebop Performances’, in CENTER, University of Texas at Austin (forthcoming)

Papers in Conference Proceedings


**Abstracts Published**


**Invited Publications**


**PRESENTATIONS AND EXHIBITIONS**

**Conference and Symposia Presentations, Invited Lectures**


Conference on the Beginning Design Student (NCBDS) 2012, Penn State University, March 29, 2012

4. Driskill, D., ‘What is our role in addressing the needs of the communities we serve?’ in Association of Community Design National Conference, Salt Lake City, June 28, 2012


19. Vernooy, A., ‘Beauty is not a four letter word’, in Re-Presentations, Texas Tech University College of Architecture Research Symposium, Lubbock, TX, 25 Feb 2012,


Conference Posters


Conference Proposals
1. Al Ajlouni, R. ‘Octagon-based Quasi-crystalline Formations in Islamic Architecture’ In APERIODIC 2012 - The 7th International Conference on Aperiodic Crystals, International Union of Crystallography, Cairns, Australia, September 2-7, 2012 (abstract accepted for presentation)
5. Nesbit, J, ‘The Canyon Lakes Along the West Texas Yellow House Draw’ in Local Identities Global Challenges, ACSA Regional Conference, Houston, TX (paper accepted but not presented)
7. Shacklette, Ben, ‘Pedagogy and Curriculum A Report on Integrating Service-Learning with the Graduate Level Comprehensive Architecture Design Studio Course’, 11th Annual Hawaii International Conference on Arts and Humanities, , Jan 11-14, 2013
Exhibitions

23. Jaddo, L., 25 paintings and wood burning pieces in invitational one person exhibition, In Pieces, Louise Hopkins Underwood Center for the Arts, Lubbock, April 1st to June 1st, 2012
Exhibition Proposals

Publications of Graphic work, Photography, Art etc.

FUNDED RESEARCH

Ongoing Research
1. **Al Ajlouni, R.**, *Quasi-Crystalline Geometry: A New Class of Symmetry in Ancient Architecture*, FY12 Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University. $20,000. Awarded: Nov. 03, 2011
2. **Davis, J.**. *Expressions of Architectonic Subjects as Fine Art through Watercolor Painting*, FY12 Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University. $10,000. Awarded: Nov. 03, 2011
4. **Hill, Glenn E.**, *Financially Responsive Low-Energy Multi-Family Housing*, A joint research project with Humphreys and Partners, LLP, Architects, Engineers, and Planners. Funding from the Office of the Vice President of Research to develop a proposal to private industry ($3,000). Expected Funding Level: $500,000. Initiation Date: 14 June 2012.

6. **Pongratz, C**, *Green Curtains in Stone*, FY12 Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University. $20,000. Awarded: Nov. 03, 2011


8. **Zugay, B**, *Catalogue of American Stock-Plan Church Designs*, Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University. $2,759.54 Awarded: Nov. 03, 2011


**Research Grants and Fellowship Proposals**

1. **Driskill, D**, *Design Charrettes for the Homeless Community*, submitted to the CH Foundation amount $10,000, Dec 2011

2. **Flueckiger, U.**, *28 dollars and 12 ½ Cents*, Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University, $8580.00, July 2012

3. **Gómez J.**, *Architecture in the Threshold of the Twenty first Century*, Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University, $19937.17, July 2012

4. **Gómez J.**, *Life, Culture and Arts in Colonial Mexico*, [Lecture and Paper], TTU Cross-Cultural Academic Advancement Center, $1,428.64. Dec. 9, 2011


7. **Gonzales, R.**, *The Building Mentor Lab & Website: Student-Architect Construction Management Networks and Job-Sites as Teaching Labs*, NCARB Grant, $7300.00, 2011

8. **Haq, S.**, *Is a Complex Building like a Small City?*, FY12 Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University, $8571.70. Oct, 2011


11. **Louden, E.**, *HABS Level I: Recordation of the 1931 Art Deco Lubbock Jail* submitted to the CH Foundation, approved for submission, amount $24,290.91.
12. **Perbellini, M.,** *A Textbook on Digital Media* Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University, $9976.00, July 2012

13. **Perbellini, M.,** *Digital Design and Fabrication Book on Student Work* submitted to the CH Foundation, amount $11,800, Dec 2011


15. **Pongratz, C.,** *100% Gravity*, Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University, $20,000, July 2012


17. **Pongratz, C, Driskill, D and Perbellini, M.,** *The Cloud, Artistic installation in Lubbock Cultural District*, ArtPlace, Ford Foundation and the National Endowment for the Arts, Chicago, IL, $250,000

18. **Taylor, C.,** *Great Salt Lake exploration Platform*, Internal Competitive Funding Opportunity to Advance Scholarship in the Creative Arts, Humanities and Social Sciences. Texas Tech University, $19919.00, July 2012

**RESEARCH RELATED SERVICE**

**Editor / Peer Reviewer / Jury Member / Panelist / Correspondent**

1. **Haq, S.,** *Book Reviewer*, Taylor and Francis, July 2012

2. **Haq, S,** *Technical Sub-Committee member and peer reviewer*, (19 abstracts and 11 papers) International Seminar on Architecture, Education and Practice, Faculty of Architecture and Planning, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh

3. **Haq S,** *Peer Reviewer*, Space Syntax Symposium 8, Santiago, Chile (5 papers)

4. **Haq S,** *Peer Reviewer*, Automation in Construction, (1 paper)

5. **Haq S,** *Peer Reviewer*, Computers, Environment and Urban Systems, (1 paper)

6. **Haq S,** *Peer Reviewer*, Journal of Environmental Psychology, (3 papers)

7. **Louden, E,** *Peer Reviewer*, Association for Preservation Technology, Bulletin Journal. (1 paper)


9. **Pongratz, C.,** *International Correspondent*, “Stein-Zeitschrift fur Naturstein” Callway Verlag (Publisher), Munchen, Germany, June 2012

10. **Pongratz, C.,** *Committee Member*, Ministry of Education, Universities and Research, MIUR, Rome Italy,


12. **Pongratz, C.;** *Roundtable panelist*, international symposium of universities in the *Forum del Marmo*, 46th Marmomacc, Veronafiere, Verona, Italy, September 2011;

13. **Shacklette, B,** *Associate Editor*, The International Journal of Interdisciplinary Social Sciences. vol 6, issue 8 (2 papers)
14. **Shacklette, B, Associate Editor**, The International Journal of Interdisciplinary Social Sciences. vol 6, issue 8 (1 paper)
15. **Taylor, C., Invited nominator**, 17th Annual Heinz Awards

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**Symposium/Intensives Organized, Exhibitions Curated, Workshops Offered**

1. **Haq, S**, *Re-Presentations*, 2012 Faculty Research Symposium, College of Architecture, Texas Tech University, 25 Feb 2012,
5. **Nesbit, J, Topological Urbanism, Symposium, College of Architecture, Texas Tech University, 24 March, 2012**
7. **Taylor, C., Land Arts 2011 Exhibition Louise Hopkins Underwood Center for the Arts, LHUCA Warehouses on Mac Davis Lane, Lubbock, TX, 6 – 28 April 2012**

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**Invited Lectures**

1. **Al Ajlouni, R. ‘A New Discovery Reveals Signs of Advance Math in Ancient Islamic Architecture’ in Applied Mathematics Seminars. Department of Mathematics and Statistics, Texas Tech University, May 02, 2012**
3. **Davis, J., ‘Watercolor Demonstration and AV presentation on Philosophy of Painting’, to the West Texas Watercolor Society meeting at the Louis Hopkins Underwood Center for the Arts, April 22, 2012**
4. **Haq, S, ‘Spatial Cognition Research as Evidence—Base for Architectural Design(ing)’, in Spatial Cognition for Architectural Design, A symposium of researchers, educators, and industry practitioners, organized by Spatial Cognition Research Center (SFB/TR 8; Universities of Bremen and...**
Freiburg, Germany), Spatial Intelligence and Learning Center (SILC, USA), German Research Foundation (DFG) and the US National Science Foundation (NSF). New York, Nov 17th Nov 2011


PROFESSIONAL / DESIGN / GRAPHIC / PRODUCTION WORK

1. Jaddo, L., Associate Producer of film Amal’s Garden, producer Nadia Shihab


3. Nesbit, J, Gandy Residence, project for a new 2,800 sft residence, Lubbock, schematic design 2012

4. Peters, M., Roberts County Courthouse, $ 4.2 million restoration, completed

5. Peters, M., Dickens County Courthouse, Master plan completed and approved.

6. Peters, M., Grayson County Administration Building, Submitted RFQ for renovation and adaptive reuse.

7. Peters, M., Mullin Hoard & Brown Law Offices, Lobby and entry renovation
8. **Peters, M,** Langston Residence, Lubbock, TX., Schematic Design

9. **Pongratz, C,** and **Perbellini, M,** *Pinto Residence,* project for 2600 sqft renovation, Residential, Lubbock, completed October 2011

10. **Pongratz, C,** and **Perbellini, M,** *Villa Tripoli,* Façade cladding design, private house, Tripoli, Libya, completed in December 2011

11. **Pongratz, C,** and **Perbellini, M,** *S. Emilio Masterplan,* 25,000 sq.mt, Urban Design project, transformation of an area in residential, zoning, 3rd phase development presentation to the Municipal Authority in Verona, Italy, December 2011;

12. **Shacklette, B,** *Roots Historical Arts Council, Lubbock.* Master Planning, Building Renovation Design and New Addition, Schematic Phase complete

13. **White J.,** and **White J.,** *Historic documentation of the 1880 SF Huckabee house,* Lubbock

14. **White J.,** and **White J.,** *Carl Andersen Residence,* Andersen Ranch, Dickens County, 2500 SF


16. **Luo, Y.,** Cover Design for Chemical Communications, Volume 28, No. 6
Design Competition Submissions


3. Pongratz, C., Perbellini, M, and Driskill, D., ‘DRYLANDS DESIGN’, an open ideas Competition for retrofitting the American West, The California Architectural Foundation in partnership with the Arid Lands Institute at Woodbury University and the AIACC Academy for Emerging Professionals


HONORS, AWARDS, RECOGNITIONS, PUBLICITY


3. Al Ajlouni, R. article about her work, ‘Ancient Islamic architects created perfect quasicrystals’ written by James Dacey, in Physics World, Publication of the Institute of Physics (Jan, 2012)


5. Al Ajlouni, R. news item, ‘Architecture professor wins award for her discoveries, research’ by Nicole Molter, Daily Toreador (April 5, 2012)


8. Haq, S., Presidents Academic Achievement Award, nomination, College of Architecture, Texas Tech University


11. **Neiman, B.**, *Bebop Constructions* featured the Cover of ACSA News, 40: 5, January 2011,


14. **Perbellini, M.**, Outstanding Researcher Award, College of Architecture, Texas Tech University


EQUIPMENT AVAILABLE IN THE ARDC

3D Laser Scanner(s)

Leica HDS 3000 is a high definition laser scanner for the documentation of communities, historical architecture and archaeology. Uses include the collection of 3D point cloud data for historical structures documentation such as the Statue of Liberty and high definition documentation of archaeological sites such as Mesa Verde National Park.

Leica Scan Station C10 is an upgrade to the HDS 3000. This equipment includes the functionality of an optical total station which allows users to traverse, resection or use scan targets for maximum flexibility in dealing with site logistics. It also conducts general 360° and focused areas scans faster, can be setup & moved faster, lets users locate targets, register & geo-reference faster, and lets users check scan results faster.

Global Positioning System (GPS) Survey Equipment

Trimble survey grade GPS is for site and structure documentation. Uses include positioning data set for inclusion into Geographical Information Systems (GIS) and surveying of architectural and archaeological sites. This is usually used in conjunction with the 3D laser scanner (Leica HDS 3000) on documentation projects to give survey co-ordinates to the point cloud data gathered by the scanner.

Optical Total Station (Survey Equipment)

This Leica survey instrument is for the documentation of architecture and communities. Uses include establishing control grids for the documentation of architecture, communities and archaeology. This is typically used in conjunction with the GPS survey equipment in our historical documentation projects.

Creaform Handheld 3D Scanner

The Creaform handheld 3D Scanner is a portable, high resolution (sub-millimeter) scanner. Uses include 3D scanning of existing objects, 3D archiving, complex shape acquisition, measurements archiving, digital models and mock-ups and rapid prototyping.

FLIR Infrared Camera

The FLIR Infrared Camera captures images in the infrared spectrum allowing the user to detect the difference in temperature between an area and its surroundings. The FLIR infrared camera is an excellent, non-contact, tool for Building Diagnostics, Energy Audits, Moisture Detection, and Restoration & Remediation.

Ground Penetrating Radar

The ground penetrating radar system uses radar pulses to image the subsurface. GPR can be used in a variety of media, including rock, soil, ice, fresh water, pavements and structures. It can detect objects, changes in material, and voids and cracks. Applications include nondestructive testing (NDT) of structures and pavements, locating buried structures and utility lines, and studying soils and bedrock. In environmental remediation, GPR is used to define landfills, contaminant plumes, and other remediation sites.
## FACULTY EXPERTISE

### College of Architecture, Texas Tech University

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