

HANNA SHAPIRA

Citizenship: United States
Residence: 114 Montana Avenue
Oak Ridge, TN 37830
Phone: (865) 483-4474
E-mail: hshapira@techno-info.com

Ms. Shapira, the owner of Techno-Info Comprehensive Solutions (TICSs), has extensive experience with both web technologies and systems/programs integration. Ms. Shapira holds a B.Arch. degree from Rhode Island School of Design (RISD), and an M.E.D degree from Yale University (Computer Based Systematic Planning).

Her career experience includes research, management of research projects, systems integration, and development of computer-based design tools. The author of numerous scientific papers she also holds a USA patent in Solar Energy. As a system engineer for large projects she initiated and headed the development of databases that covered all the design criteria developed by all disciplines involved in the projects. She is well published in scientific journals and proceedings and her research work has appeared in the front page of Wall Street Journal. Her research results received extensive coverage in the Popular Science magazine as well as on national TV media.

Ms. Shapira was the originator of many of the ideas that lead to the development of TICSs web applications. She initiated and directed the development of EPSRA (Electronic Paper Submission and Review Application), Intellectual Property databases, meetings' registrations with online credit card approval and meetings' planning tools, as well as other sophisticated online electronic transaction applications software that utilize web browsers as Graphical Users Interface (GUI).

Ms. Shapira who enjoys design and production is intimately involved in the web design, graphic production, and development of other multi-media support.

Ms. Shapira is on the teaching staff of the University of Tennessee Professional Development Program where she teaches several internet programming and design classes.

Ms. Shapira is a member of the American Museum of Science and Energy Foundation Board, Children's Museum of Oak Ridge Board of Directors, an active member of the American Nuclear Society (ANS), Oak Ridge Chamber of Commerce, Knoxville Chamber of Commerce, and Rotary International.

RESEARCH AND PROFESSIONAL EXPERIENCE

1996-PRESENT Techno-Info Comprehensive Solutions (TICSS)

Owner/CEO

Company's capabilities are attached. Web site includes partial list of clients and/or web sites.

1997- Present University of Tennessee – Professional Development Program

Instructor

Teaching HTML, Microsoft FrontPage, Adobe Photoshop, Doing Business in Cyberspace,

1977-1996 Oak Ridge National Laboratory (ORNL), Oak Ridge, TN

Research Staff Member

- Initiated and directed the development of CAPES (Capabilities And Professional Expertise System) Demo Model. CAPES optimizes personnel data management as well as provides skill search and marketing capabilities.
- System Integrator and Project Architect for the Advanced Neutron Source (ANS), a \$ 2.8 billion reactor based research facility proposed to be built at ORNL. Ms. Shapira's activities included: preliminary design, integration covering the interfaces between all research, operation, and design disciplines focusing on design criteria. She coordinated and directed facility design activities between ORNL and the subcontract A/E. Ms. Shapira conceived and built an extensive Building and Site Planning Requirement database. She conceived and directed the Maintenance and Operation Integration (MOI) group and the development of a design-integration tool ICL/MORRZ -interface checklist (maintenance, operation, research, and radiation zone database) as integration design tool of large-scale projects or facilities.
- Produced and maintained the World Wide Web (WWW) - Advanced Neutron Source (ANS) Web Site.
- Leader - Cost and Energy Comparison Study of Passive Solar Homes.
- Developed and patented the Reflective Insulating Blinds (RIB).
- Leader - Research Utilization Task - Building Thermal Envelop Systems and Insulating Materials (BTESIM)
- Leader - Multi family and commercial structures -Building Energy Performance Standards (BEPS).
- Member of ORNL Internet Working Group.
- Project Architect for High Temperature Materials Laboratory (HTML).
- Project Architect for the Joint Institute for Heavy Ion Research (JIHIR) office/dormitory facility. The building design includes many passive solar features and served as a model for the US Department Of Energy - DOE) Passive Solar program.
- I was responsible for buildings upgrade for the High Flux Isotope Reactor -HFIR) Sparkle program as well as provided assistance in buildings and space planning and procurements to other ORNL programs when needed.

1973-1974 Yale University, School of Architecture

Teaching Assistant

- Building Systems: graded papers and assisted students.
- Structural Steel Design: designed a user-friendly computerized steel design model.

1968-1974 Offices of Frank C. Chapman, Architects and Planners, and Alden R. Berman, Architect, New Haven, CT, and office of Adi Ambor, Architect, Haifa, Israel.

- Job captain for several projects
- Drafting and limited design of low-cost, turnkey housing.

EDUCATION

1972-1974

Yale University - M.E.D., School of Architecture, New Haven, CT
Degree: M.E.D. awarded in May 1974

1969-1971

Rhode Island School of Design - Dept. of Architecture, Providence, RI
Degree: B. Arch. awarded in June 1971

1967-1969

Technion-Israeli Institute of Technology - Architecture, Haifa, Israel
Received the Alexander Berwald Award (1968) for scholastic excellence

COMMUNITY SERVICE

- Chairperson and Music Director - Hadassah Youth Aliyah Competition and Concert. 1994 to present. This fund-raiser activity that brings children from all over East Tennessee to audition for an opportunity to play in a local concert. Winners 1 and 2 also get to play as soloists with the Oak Ridge Symphony in its annual School Concert.
- Building Committee - Beth El Center Oak Ridge. Designed, pro-bono, the renovation/facelift for Beth El Center.
- Volunteered for several years for EACH (Effective Advocacy for Citizens with Handicaps) and served on the State Board. Shapira's involvement with this group brought about change in the delivery and monitoring of education to handicapped children in Oak Ridge and other communities.
- American Museum of Energy Foundation Board.
- Children's Museum of Oak Ridge Board of Directors.
- Rotary International member responsible for the Oak Ridge Rotary Club web site and weekly newsletter.
- Oak Ridge Chamber of Commerce. Active member of several committees and co-chair for the Oak Ridge City Beautification program.

CONTRIBUTIONS¹

Patent

"Reflective Insulating Blinds for Windows and the Like," Patent No. 4,292,763 (issued 10/06/81) assigned to the U.S. Department of Energy.

Publications

1. "Computer Aided Design," H. B. Shapira and R. S. Frew, Invited paper, 11th Design Automation Workshop, Denver, CO, June 1974. Sponsored by ACM and IEEE, published.
2. "An Earth Covered Residential Concept for the Humid Continental Region," C. V. Chester, H. B. Shapira, P. R. Barnes, and G. A. Cristy, Earth Covered Settlements Conference, Ft. Worth, TX, May 1978, published.
3. "RIB - Reflective Insulating Blinds," H. B. Shapira and P. R. Barnes, Proceedings of the 4th National Passive Solar Conference, American Section of ISES, Killen, TX, 1979, pp. 393-394.
4. "An Earth Integrated Design: Office Dormitory Facility," H. B. Shapira and P. R. Barnes, Proceedings of Earth Sheltered Housing Conference Exhibition-land, Minneapolis, MN, April 1980, pp. 5-17.
5. "Passive Solar Heating and Natural Cooling of an Earth Integrated Design," P. R. Barnes and H. B. Shapira, Proceedings, Earth Sheltered Building Design Innovations, Oklahoma City, OK, April 1980, pp. VII 29-31.
6. "Reflective Insulating Blinds," H. B. Shapira and P. R. Barnes, Sunworld, Vol. 4, No. 2, p. 58, Pergamon Press Ltd.
7. "Assessing the Performance of an Energy-Saving Design," H. B. Shapira and P. R. Barnes, Underground Space Vol. 5, No. 3, 1980 (Nov./Dec.) Pergamon Press.
8. "Reflective Insulating Blinds for Window Applications," H. B. Shapira, Invited paper and presentation at DOE Passive and Hybrid Solar Energy Program Update Meeting, September 21- 24, 1980, Proceedings CONF- 800972.
9. "Up and Down, Energy and Cost Comparison," H. B. Shapira, S. E. Brite, and M. B. Yost, Proceedings of the 1981 Annual Meeting, Philadelphia, PA, American Section of the International Solar Energy Society, Inc., Vol. 4.2, pp. 931-935, 5/26/81.
10. "Passive Cooling and Heating Program at ORNL for FY-1981," H. B. Shapira, S. I. Kaplan, C. V. Chester, Proceedings of the Passive and Hybrid Solar Energy Program Update Meeting, August 9-12, 1981, Washington, DC.
11. "RIB - Energy-Saving Window Application," H. B. Shapira, Abstract, Proceedings of Solar World Forum, International Solar Conference, Brighton, UK, August 23- 28, 1981.
12. "Final Progress Report Commercial and Multifamily Buildings Energy and Risk Analysis," K. R. Corum, G. A. Cristy, D. M. Hamblin, G. H. Llewellyn, H. B. Shapira, and R. L. Shelton, ORNL/CF-81/308, 1981.
13. "Cost and Comparison Study of Above- and Below-ground Dwellings," ORNL/CON-91, H. B. Shapira, G. A. Cristy, S. E. Brite, and M. B. Yost, 1983.
14. "Cost and Comparison Study of Above- and Below-ground Dwellings," H. B. Shapira, G. A. Cristy, S. E. Brite, and M. B. Yost, Underground Space Journal, Vol. 7, No. 6, 1983.
15. "Hazard Mitigation Potential of Earth Sheltered Residences," C. V. Chester, H. B. Shapira, G. A. Cristy, M. Schweitzer, S. A. Carnes, and D. T. Safdi, ORNL-5957, 1983.
16. "THE HOME AS A HAVEN -Drawings for a Blast Upgradable Hazard-Resistant Earth Sheltered Residence," C. V. Chester, D. T. Safdi, G. A. Cristy, and H. B. Shapira, Taylor, Journal of Civil Defense, Vol. XVII, No. 2, April 1984.
17. "Specification and Cost Manual for Energy Retrofits on Small Commercial and Multifamily Buildings," C. Bircher, N. Carlisle, K. Hunter (SERI), and M. MacDonald, H. B. Shapira, T. A. Vineyard, and J. Kolb (ORNL), July 1984, SERI/SP-253-2372, DE84012753.
18. "Designed as a User Facility" H.B. Shapira, ANS News Source Number 3 March 1993. Published by Oak Ridge National Laboratory.
19. "Maintenance, Operation, Research, and Radiation Zones (MORRZ) - A Design/Operation

¹ **Note:** The list of publications and contributions refers to the research experience prior to forming Techno-Info Comprehensive Solutions. Presentations from 1997 and on are not covered.

- Tool for Intelligent Buildings with Application to the Advanced Neutron Source (ANS)," H.B. Shapira and R.A. Brown, *New Methods and Technologies in Planning and Construction of INTELLIGENT BUILDINGS*, Proceedings of IB/IC Intelligent Buildings Congress '95, ISRAEL. Editor A. Lustig February 6-8, 1995
20. "The Advanced Neutron Source: Designing for Science," R.A. Brown, R.M. Harrington, J.B. Hayter, T.J. McManamy, D.L. Moses, F.J. Peretz, C.C. Queen, H.B. Shapira, P.B. Thompson, and C.D. West. *Progress in Nuclear Engineering Journal*. (1995).

Ms. Shapira's work was also covered and/or mentioned (among others) in:

1. *Progressive Architecture*, November 1981, p. 141, in the article "Interior Techniques: Daylight Control;"
2. *Popular Science*, Sept. 1980, p.24, "Reflective Insulating Blind Traps Solar Heat," by Edward Moslander;
3. *Wall Street Journal* - Tuesday, February 2, 1984, Page 1, BRIEFS by J.A. Tannenbaum
4. *Popular Science* - Underground debate, May 1984, Sept. 1984, and January 1985.

There are many ANS publications that also cover my work. Oral Presentations and others

1. Annual Hospital Design Institute Workshop of the American Hospital Association, November 1973, New Orleans, LA, Invited by the AHA to be a team leader assistant.
2. 11th Design Automation Workshop, June 1974, Denver, CO, invited talk - "Computer Aided Design," sponsored by ACM and IEEE.
3. Earth Covered Settlements Conference, May 1978, Ft. Worth, TX, "An Earth Covered Residential Concepts for the Humid Continental Region."
4. U'Bahn International Earth Sheltered Conference, March 18, 1979, Kansas City, MO, invited talk on Earth Sheltering and Passive Heating and Cooling.
5. Energy Division Information Meeting, technical highlights presentation at the Oak Ridge National Laboratory, April 24, 1979, "Underground Structures for Energy Conservation."
6. U'Bahn Earth Homes, Canada, Ltd. Earth Sheltered Conference, October 13, 1979, Winnipeg, Manitoba, Canada, Invited talk on Passive Solar Heating and Earth Sheltering.
7. A presentation on Solar Energy and Conservation to the Finnish Solar Energy Specialists, U.S. Tour, headed by Osmo Ville Kettuneu, Finnish Embassy, Washington, DC, at ORNL, January 15, 1980.
8. Earth Sheltered Housing Conference and Exhibition-I, April 9, 1980, Minneapolis, MN, "An Earth Integrated Design Office/Dormitory Facility."
9. Scientists and Engineers for Appalachian, Passive Solar Heating and Cooling Workshop, UT- Knoxville, April 25, 1980, "RIB and Earth-Integrated Design."
10. U.S. Department of Energy Passive and Hybrid Program Update Meeting, Sep. 21-24, 1980, Washington, DC, Invited talk on "Reflective Insulating Blinds for Window Applications."
11. Solar Rising Conference, American Section of the International Solar Energy Society, Inc., May 26-30, 1981, Philadelphia, PA, "Up and Down, Energy and Cost Comparison."
12. Underground Space Conference and Exposition, American Underground Space Association, June 8- 10,1981, Kansas City, KS, "Up and Down, Energy and Cost Comparison."
13. Underground Space Conference and Exposition, American Underground Space Association, June 8- 10,1981, Kansas City, KS, Chairperson of "Commercial Case Studies and Design Issues" session.
14. "Solar Architecture," Israeli Society of Engineers and Architects, guest lecturer at "Engineer's Center" Tel- Aviv, Israel, June 25, 1981.
15. "Solar Architecture," Israeli Society of Engineers and Architects of the Greater Haifa Region, Haifa, Israel, July 16, 1981.
16. "Earth Sheltered Design, Significance, and Experience," East Tennessee Community Design Center, February 12, 1982, Knoxville, TN.
17. "Earth Sheltered Design, Significance, and Experience," 1982 World's Fair, ACT 82

- Pavilion, Knoxville, TN, June 11, 1982 and August 6, 1982.
18. "Disaster Mitigation Potential of Earth-Sheltered Residences," U.S.C.D.C. FEMA Region IV Meeting, Nashville, TN, July 16, 1982.
 19. "An Earth-Integrated Design - Dormitory Office Facility," UT-Knoxville Industrial Energy Management Workshop, Oak Ridge National Laboratory, August 11, 1982.
 20. "An Earth-Integrated Design - Dormitory Office Facility," UT-Knoxville Passive Solar Conference, Oak Ridge National Laboratory, August 29, 1982.
 21. "Earth Sheltered Hazard Mitigation Potential," a briefing at FEMA headquarters, Washington, DC, March 11, 1983.
 22. "Reducing the Cost of Shelters and Energy Conservation in Design," UCLA School of Architecture, May 28, 1983.
 23. "Earth Sheltered Housing, Passive Solar Energy Techniques and Research Utilization Activities at ORNL for DOE/BERD," June 17, 1983, Technion-Israel Institute of Technology, Department of Civil Engineering, Haifa, Israel.
 24. "Earth Sheltered Housing, Passive Solar Energy Techniques and Research Utilization Activities at ORNL for DOE/BERD," June 20, 1983, Technion-Israel Institute of Technology, Department of Architecture and Urban Planning, Haifa, Israel.
 25. "Earth Sheltered Structures - Energy Conservation, Hazard Mitigation, and Optional Earth Utilization in Design and Construction," Department of Physics and Applied Mathematics, Nahal Soreq Research Institute, July 7, 1983.
 26. "Passive and Hybrid Solar Energy, Innovative Structures, and BTESIM Programs at ORNL," July 13, 1983, Beer Sheva University, Sdeh Boker Campus.
 27. "ORNL Guest Facility - Design and Data Results," WATTEC 11 - The Energy Annual Conference and Exposition, Knoxville, TN, February 21-24, 1984.
 28. "Conservation, Passive Solar Heating and Their Effect on Design," Linden School, Oak Ridge, TN, March 30, 1984.
 29. "Conservation, Passive Solar Heating and Their Effect on Design," Oak Ridge Associated Universities, Energy Education, Oak Ridge, TN, August 28, 1984.
 30. Organized and chaired: "ANS-Site and Facility Planning Workshop," Oak Ridge National Laboratory, FEDC, Oct. 18-19, 1989.
 31. "Maintenance, Operation, Research, and Radiation Zones (MORRZ) - A Design/Operation Tool for Intelligent Buildings with Application to the Advanced Neutron Source (ANS)," An invited talk at the International Intelligent Building CONF. In Tel Aviv, Israel February 8, 1995.
 32. "MORRZ-ICL Systems Integration in the Design Process", Faculty of Architecture and Town Planning, Technion, Israel Institute of Technology. Israel. Feb. 12 1995 Numerous

WORKSHOPS

Organized, planned, and chaired the ANS Site & Facility Planning workshop, Oct. 18-19, 1991.

OTHER EDUCATION, TRAINING, AND EXPERIENCE

- 02/94 Introduction to Oracle - Oracle Education Centers
- 04/94 Administer the Oracle7 Database I -Oracle Education Centers
- 05/92 "ProArch" application - Intergraph Corporation
- 06/91 ALARA for Design and Operations Engineers - ORNL
- 11/79 Design Tools for Passive Solar Systems-Programmable Calculators - University of Wisconsin Engineering Institute
- 08/79 Design Analysis of Subterranean Structures."- Oklahoma State University Architectural Extension
- 05/78 Solar Utilization Now - East Tennessee State University
- 12/73 Hospital Design Institute Workshop - American Hospital Association, New Orleans, LA

Techno-Info Comprehensive Solutions (TICsSs)

<http://techno-info.com>²

Founded in early 1997, the company's mission is to provide comprehensive solutions to problems relating to modern technology and information management ranging from R&D to implementation.

Our tools allow the web owner to generate/update and display content on the web enabling dynamic dialogs between the web owner and his/her clients. Our solutions are robust and work equally well on all platforms and browser in order to provide information accessibility to all business sectors and web surfers, TICsSs has been involved in rapid release of time-sensitive material before the terms 'dynamic content management' and 'owner maintenance' were known in the web industry. TICsSs has developed the oakridger.com web site and has trained the staff to perform the daily upload of all news content starting in Feb. 97. TICsSs was among the pioneers of online peer reviews applications developers. We have developed numerous web sites for technical meetings for which the web site served as the 'control center'. Abstract submissions, reviews, response to authors, paper auction, and program generation are all done automatically via an online web interface. EPSRA (Electronic Paper Submission and Review Application) was developed by TICsSs in 1999/2000 and is continually used by various chapters of the American Nuclear Society. Other dynamic and interactive 'owner maintained' tools we have developed include online product/image database (Crossville Ceramics), Intellectual Property database (Hebrew University and ORNL), Community Calendar (Knoxville Convention and Visitors Bureau, Oak Ridge Community Calendar), online 'speakers bureau' for Illinois and South Carolina Departments of Education. We have developed web sites which include online 'on the fly' credit card transaction and approval. Shopping cart technology has been successfully utilized in other sites for creating a personal itinerary (personal page which includes all the items picked by the visitor surfing the site). The visit-or.org web site has been selected as one of the top 6 tourism industry web sites in North America by Destination. Zeitgeist tourism marketing newsletter rated ORCVB web sites as one of the two best on the internet and commended the design for utilizing a low-tech flash which quickly market the site ("So...To Splash or not to Splash. That is the question. Whether it is nobler to show-off for no other purpose than the vanity of the designer...or choose not to be part of this folly. True, there are a precious few that do it right. But they are few and far between.")

Simply providing a list of all the web sites employing these and other technologies will not do TICsSs justice since the owner management aspect of these sites is almost always password protected. We thus offer to meet with the interested clients and let them experience these user-friendly interfaces hands-on.

Services

TICsSs provides services in the following areas:

- Implementing information management systems using advanced methods for data storage, retrieval, and manipulation,
- Preparing comprehensive web design solutions,
- Providing systems / project integration and planning, and
- Developing new technologies and products utilizing optimization systems.

The TICsSs team includes designers, scientists, engineers, and computer and network security experts with a unique and diverse blend of expertise in basic and applied research, development, engineering, design, programming, data management, and product development.

² An abbreviated list of clients and web sites can be found at <http://techno-info.com/clients/>