

## CURRICULUM VITAE

1. 8.2011

EDNA SHAVIV

### Professor Emeritus of Architecture & Town Planning

**Place of birth:** Israel  
**Family status:** Married, three sons (Guy, Nir, Ilan)

#### ACADEMIC DEGREES

			<u>Area of specialization</u>
1960-5	Technion.	B.Arch. and T.P. (Cum Laude)	Architecture & Town Planning
1967-8	Cornell University	MS. Architectural Sciences (Cum Laude)	Major: Architectural Structures Minor: Computer Science & Operations Research.

#### ACADEMIC APPOINTMENTS

**Present rank:** **Professor Emeritus**  
1995-2008 Professor, Faculty of Architecture and Town Planning, Technion.  
The Alfred and Marion Chair in Architecture.  
2003 –2005 **Dean of the Faculty of Architecture and town Planning**

#### **Previous academic appointments:**

1969 Adjunct Lecturer, Faculty of Architecture and Town Planning, Technion.  
1971 Lecturer, Faculty of Architecture and Town Planning, Technion.  
1975 Senior Lecturer, Faculty of Architecture and Town Planning, Technion.  
1982 Associate Professor, Faculty of Architecture and Town Planning, Technion.

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1979 - 1980 Visiting Associate Professor, Environmental Design College, University of Colorado, Boulder, CO  
1986 - 1987 Visiting Scholar, School of Architecture, Arizona State Univ. Tempe, Arizona.  
Fall – 1997-8 Visiting Professor in the Department of Architecture  
College of Environmental Design, University of California, Berkeley, CA.  
2005-2006 Visiting Scholar, Department of Architecture  
College of Environmental Design, University of California, Berkeley, CA.  
Fall 2007-8 Visiting Scholar, Department of Architecture  
College of Environmental Design, University of California, Berkeley, CA.

#### TEACHING EXPERIENCE

##### **Initiating CAAD in the Faculty of Architecture & Town Planning and teaching the following courses:**

1969-1974	Computer's Application in Arch. Design.	(graduate & undergraduate).
1973-present	Mathematical Models in Arch. Design	(graduate).
1974-1997	Computer-Aided Architectural Design I	(graduate & undergraduate).
1974-1998	Computer-Aided Architectural Design II	(graduate & undergraduate).
1974-present	Seminar in CAAD	(graduate).
1978-1979	Computer Methods in City Planning	(graduate).
1993-1997	Intr. to Computer Modeling and Representation	(undergraduate).

##### **Initiating Bio-Climatic and Passive Solar Architectural Design in the Faculty of Architecture & Town Planning and teaching the following courses:**

1979	A design course in Solar Energy	(undergraduate)
1981-present	Passive and Low Energy Building Design - A combined course of design and theory	(undergraduate)
1982-present	Seminar in Designing Passive Solar Buildings.	(graduate).
1993-2004	Climate, Energy and Architecture	(undergraduate).

##### **Other courses:**

1974-1979	Different Design Courses	(undergraduate)
1976	One-year special course in "Computer Graphics" (given to the faculty members of Mathematics, Technion.)	

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##### **Teaching at the University of Colorado, Boulder, USA.**

1979-1980	Computer Applications for Environmental Design.	(undergraduate)
1979-1980	Mathematical Models for Environmental Design.	(undergraduate)

## **PROFESSIONAL EXPERIENCE**

1958 - 1960	Israel Defense Forces, Engineering Corps. Building & Architectural Technician.
1960 - 1965	Architect's office (Prof. Al Mansfield). Architectural Draftsman & training architect.
1965 - 1966	Architect's office (Shapiro), Los Angeles, California. Architect.
1968 - 1972	Architects' office (Alrod), Tel-Aviv. Senior Architect
1974	Private consultant in architecture.
1975	Partner in architectural office (Lissar), Tel-Aviv.
1976 - 1998	Independent architect and consultant, Haifa. Dealing especially with bio-climatic and energy design aspects
1998 - 2010	President – HELIOS Climate, Energy, CAAD and Architecture Ltd. (Dimotech-The Technion Inst. for research and development Ltd.).
2008 - present	LEED AP (Leading in Energy and Environmental Design - Accredited Professional). By USGBC (US Green Building Council).

## **ADMINISTRATIVE POST & MEMBERSHIP IN TECHNION COMMITTEES**

### **(SINCE THE RANK OF ASSOC. PROF.)**

1981 - 1983	Member of a steering committee for CAD-CAM in the Technion.
1986 - 1992	Assistant Dean for computer affairs in Architecture.
<b>1986</b>	<b>Head of the "Center for Research &amp; Development in Architecture"</b>
<b>1987 - 1990</b>	<b>Head of the Technion computer users committee.</b>
1987 - 1990	Member of the Technion computer steering committee.
1988 - 1990	Member of a steering committee for Workstations in the Technion.
<b>1988 - 1994</b>	<b>Head of the graduate program in "Architecture &amp; Town Planning"</b>
<b>1994 - 1995</b>	<b>Head of the "Center for Research &amp; Development in Architecture"</b>
<b>1994 - present</b>	<b>Head of the "Climate and Energy Laboratory in Architecture"</b>
1997	Member of the "Technion Senate Permanent Committee for Honored Degrees and Honored Awards"
<b>1999 - 2003</b>	<b>Head of the "Center for Research &amp; Development in Architecture"</b>
<b>2003 - 2005</b>	<b>Dean of the Faculty of Architecture and Town Planning</b>

## **ADVANCED STUDIES ABROAD**

1966-1967	<b>CALTECH, Pasadena, LA..</b> Informal studies for a year, mainly in the Dep. of Mathematics.
1967-1968	<b>Cornell University, Ithaca, NY.</b> M.S. Architectural Sciences. Major: Structures Minor: Computer Science & Operations Research
1972	<b>Cornell University, Ithaca, NY.</b> Informal studies for a year, mainly in the Dep. of Operations Research.

## **PRIZES, AWARDS and HONOURINGS**

1958	<b>ROTARY PRIZE for high achievements in Art studies.</b> "Hareali School", Haifa.
1960-65	<b>Four Distinctions for high performance in studies.</b> Technion, Israel.
1968	<b>KELLOG PRIZE for high performance in studies.</b> Cornell University, Ithaca, NY.
1977	<b>GOLDSTEIN AWARD for special achievements in the field of buildings</b> <b>For developing a method to aid the design of external sun-shades.</b> <u>The Israeli Building Center.</u>
1978	<b>ARNAN AWARD for special achievements in the field of buildings.</b> <b>For the use of mathematical models and computers in architectural design.</b> <u>The Israel Association of Engineers and Architects.</u>
1994	<b>DORI 2ND PRIZE for special achievements in Technology.</b> <b>For the book "Climatic and Energy Conscious Design Guidelines for Residential Buildings in Temperate-Cool and Hot-Humid Mediterranean Climate".</b> (Together with I.G.Capeluto) <u>The Division of Culture - Haifa Municipality.</u>

- 1995 HONOURING WITH THE TITLE: **"PIONEER IN RENEWABLE ENERGY"**  
**For special achievements in the field.**  
"The World Renewable Energy Congress", together with the "World Renewable Energy Network"  
The price was given during the "8<sup>th</sup> World Renewable Energy Congress"
- 2003 **Best Paper Award** (with D. Perlmutter and P. Berliner )  
 Given at the Fifth International Conference on Urban Climate student presentation competition for the paper, **"Development of a scale-modeling technique for urban microclimatic analysis"**.
- 2003 **Best Paper Award** (with D. Perlmutter and P. Berliner )  
 Given at the PLEA 2003 International Conference for the paper, **"Analyzing the microclimatic influence of urban canyon geometry with an open-air scale model"**.
- 2003 Honouring by Haifa Municipality – **On high scientific achievements in Science.**
- 2006 **Project of the Year prize** First Prize in Research Category, by Architecture of Israel (AI) professional journal and by Israel Association of United Architects: **for the book: "CLIMATIC AND ENERGY ASPECTS OF URBAN DESIGN IN THE HOT-HUMID REGION OF ISRAEL"**, Division of Research and Development, Ministry of National Infrastructures. (Together with A. Yezioro and G. Capeluto).
- 2007/8 **Project of the Year prize** Second Prize in Research Category, by Architecture of Israel (AI) professional journal and by Israel Association of United Architects: **for the report: "SOLAR RIGHTS IN HIGH DENSITY URBAN DEVELOPMENT"**. Sponsored by the Ministry of Construction and Housing. (Together with A. Yezioro and G. Capeluto, T. Bleiberg).
- 2008/9 **Project of the Year prize** Third Prize in Research Category, by Architecture of Israel (AI) professional journal and by Israel Association of United Architects: **for the report: "ISRAELI STANDARD FOR THE ENERGY-RATING OF OFFICE BUILDINGS"**. Sponsored by the Ministry of Construction and Housing. (Together with A. Yezioro and G. Capeluto).

#### **PUBLIC PROFESSIONAL ACTIVITIES**

- 1981 - 1983 Member of the Ministry of Energy steering committee on Energy Conservation and Designing Solar Buildings.
- 1984 - 1985 Member of the steering committee: "Design Handbook for Energy Conservation in Residential Buildings".  
 The Israeli Ministry of Energy and Infrastructure.
- 1986 - Member of the Editorial Board "Design Computing" Journal.
- 1988 - The Israeli representative for the ISES (International Solar Energy Society) Working group on Architecture.
- 1991 - Member of the "CAAD Futures Foundation" international committee
- 1988 - present The Israeli representative for the U.I.A (Union Internationale des Architectes) Working Group on "Architecture & Energy".
- 1993 - present The Israeli representative in PLEA ASSOCIATES (Passive and Low Energy Architecture).
- 1995 - 2005 Member of the Board of Directors of the ISES/Israeli Section.
- 1995 - 2007 Member of the Editorial Board "Automation in Construction" Journal.
- 1997 - present Member of the Editorial Board "World Renewable Energy Network".
- 2000-2002 Professional consultant for the Ministry of Environment for evaluating environmental assessments on Shading and Micro-climate (Winds).
- 2004 - present Member of the Editorial Board "Architectural Science Review" Journal.
- 2005- 2007 Member of the European COoperation in the field of Scientific and Technical Research -TC for the Urban Civil Engineering Domain representing Israel.

- 2005-2007 Member of the expert committee for the Israeli standard IST-5282 –part 2: "Energy Rating of Buildings: Office Buildings"
- 2008 - 2010 Head of the Working Group on "Green Architecture", Israel Association of United Architects
- 2008 - present Member of the Editorial Board "The Open Renewable Energy Journal"
- 2009 - present Member of the expert committee for the Israeli standard IST-5281: "Sustainable Building ("Green Building")"
- 2009 - 2011 Member of the expert committee for the Revision of the Israeli standard IST-5282 – part 1: "Energy Rating of Buildings: Residential Buildings"
- 2010 - 2011 Member of the expert committee for the Revision of the Israeli standard IST-5282 – part 2: "Energy Rating of Buildings: Office Buildings"
- 2010 – present Member of the organizing committee for 2011 GBI – "Green Buildings Israel" Conference.
- 2010 – present Member of the Board of Directors ILGBC – Israel Green Building Council.

#### **MEMBERSHIP IN SCIENTIFIC AND PROFESSIONAL ASSOCIATIONS**

- 1969-present Registered Architect, Israel
- 1965-2000 Israel Association of Engineers and Architects
- 1990-2000, 2005-present Member of ASHRAE
- 1983-present Int. Solar Energy Society (ISES/IS)
- 2000-present Israel Association of United Architects
- 2003-present International Association for Urban Climate (IAUC)

#### **ACTIVE PARTICIPATION IN INTERNATIONAL CONFERENCES:**

##### **A. MEMBER OF THE ORGANIZING COMMITTEE AND TECHNICAL PROGRAM OF INT. CONFERENCES**

- 1983 Member of the organizing committee of the "2nd int. Symposium on the Impact of Climate on Planning & Building". Organized by the Int. Federation for Housing & Planning (IFHP).
- 1985 - 1986 Member of the organizing committee of "1986 Int. Daylighting Conf". Organized by AIA, ASHRAE, ACSA, IES/NA & ASES.
- 1985 - 1986 Member of the organizing committee of "The 8TH Israel Convention & Exhibition on "CAD-CAM" and Robotics". Organized by the Israel Society for CAD/CAM (ITIM).
- 1990 Member of the Technical Program of "Computability of Design", Buffalo, NY.
- 1988 - 1989 Member of the organizing committee of the int. Symposium on "Climate, Planning & Building". Organized by the Int. Federation for Housing & Planning (IFHP) and the U.I.A WG on "Architecture & Energy".
- 1990 Member of the Technical Program of "Evaluating and Predicting Design Performance", Buffalo, NY.
- 1991 Member of the Technical Program of "CAAD Futures 91", Zurich, Switzerland.
- 1993 - 1994 Member of the Technical Program of the 11th PLEA int. Conference on "Architecture for the Extremes". Organized by the PLEA (Passive and Low Energy Architecture) Network
- 1993 Member of the Technical Program of "CAAD Futures 93", Pittsburgh, USA.
- 1994 Member of the organizing committee of "the First Int. Congress on Intelligent Buildings", Tel Aviv, Israel.
- 1994 Climatic Consultant to the Technical Referees committee:  
"The International Competition for the Design of Bio-Climatic Hotel in the Dead Sea"

1995	Member of the Technical Program of the Inter. Congress on "Building Performance", Tel Aviv.
1995	Member of the Steering committee of the 1st int. Conference "TIA- Teaching in Architecture: Energy and Environment Word Network", Florence, Italy.
1995	Member of the Technical Program of "CAAD Futures 95", Singapore.
1996	Head of the organizing committee of the ISES Annual Israeli Section Meeting and Conference Technion, Haifa.
1996 - 1997	Member of the organizing committee of "The 3rd Int. Symposium on Applications of the Performance Concept in Building ". Tel-Aviv.
1997	Member of the Steering committee of the 2nd int. Conference "TIA- Teaching in Architecture: Energy and Environment Word Network", Florence, Italy.
1997	Member of the Technical Program of "CAAD Futures 97", Munchen, Germany.
1997 - 1998	Co-Chairman of the Scientific-Technical Committee of the ISES Europe Congress- <u>Charing the Bio-Climatic and Passive Solar Architecture program. ISES Europe Congress,</u> Portoroz, Slovenia, September 14-17, 1998.
1997 - 1999	Member of the organizing committee and Technical Program of the "ISES Solar World Congress 1999", Jerusalem.
2000	Head of the organizing committee of a National Workshop on "Green Architecture - Towards a Sustainable Development". TAPED - Theory and Practice of Energy Design. Sponsored by: The European Common Market <b>THERMIE B.</b> Haifa, Israel.
2000	Member of the Jury of Students International Architectural Competition for best design of Passive Solar Buildings. Organized by UNESCO/WREN.
2000	Member of the Steering committee of the 3rd int. Conference "TIA- Teaching in Architecture: Energy and Environment Word Network", Oxford, England.
2000 - 2001	Member of the scientific committee of the International Building Performance Simulation Association (IBPSA) Conference, Rio de Janeiro, Brazil.
2000 - 2002	Member of the scientific committee of the 1 <sup>st</sup> International Workshop "Architectural and Urban Ambient Environment", Nantes, France.
2001 - 2002	Member of the International Steering committee for the 7th Word Renewable Congress, Germany.
2002	Member of the Technical Program of the Inter. Conf. "EPIC 2002 AIVC", Lyon, France.
2003 - 2004	Member of the International Review Panel of the 1 <sup>st</sup> International Tropical Architecture Conference (iNTA 2004) - Architectural and Urban Design in Tropical Region; Sustainability and Society 26th -28th February 2004, Singapore
2004 -2005	Member of the International Scientific Committee Solar World Congress 2005 Orlando, Florida, August 8-12, 2005.
2004 -2005	Member of the International Scientific Committee of the second International Conference on Passive and Low Energy Cooling for the Built Environment, Santorini, Greece, May 19-21 2005.
2005 - 2006	Member of the International Steering committee for the 9th Word Renewable Congress, Florence, Italy.
2006 -2007	Member of the Technical Scientific Committee of Passive and Low Energy Architecture International. Conference "PLEA 2007", Singapore. November, 2007.
2007 -2008	Member of the Technical Scientific Committee of Passive and Low Energy Architecture International. Conference "PLEA 2008", Dublin, Ireland. October, 2008.

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| 2010 - 2011    | Member of the International Steering committee for the Word Renewable Congress 2011, Linköping, Sweden. |
| 2010 - present | Member of the Scientific Committee. SB11. World Sustainable Building Conference, Helsinki, Finland.     |

### **ACTIVE PARTICIPATION IN INTERNATIONAL CONFERENCES:**

#### **B. INVITATION FOR SESSION CHAIR**

1. 1983      **The "2nd int. Symposium on the Impact of Climate on Planning & Building".** TA  
Session: **The Impact of Climate on Planning**
2. 1986      **"2nd Int. Daylighting Conf 1986".** Long Beach, USA  
Session: **Design Tools**
3. 1987      **"Int. Congress on Building Energy Management",** Lausanne, Switzerland.  
Session: **Solar Buildings**
4. 1988      **6th Int. Conf. "Passive & Low Energy Architecture",** Porto, Portugal.  
Session: **Design Tools**
5. 1988      **"Int. Conf. Passive Solar Architecture",** Bled, Yugoslavia.  
Session: **Passive Cooling**
6. 1989      **Int. Conf. "Climate, Planning & Architecture",** Tel Aviv.  
Session: **Emerging Architecture Around the World.**
7. 1990      **"The First World Renewable Energy Congress",** Reading, UK  
Session: **Passive Cooling**
8. 1991      **"ISES Solar World Congress 1991".** Denver, Colorado.  
Session: **Emerging Architecture.**
9. 1991      **3rd Int. Conf. "Computer-Aided Architectural Design Futures".** Zurich, Switzerland.  
Session: **Applied Virtual Reality**
10. 1992      **"The Second World Renewable Energy Congress",** Reading, UK  
Session: **Passive Cooling**
11. 1993      **4rd Int. Conf. "Computer-Aided Architectural Design Futures".** Pittsburgh, USA.  
Session: **Trends in Practice**
12. 1994      **11th Int. Conf. "Passive & Low Energy Architecture",** Dead Sea, Israel.  
Session: **Design Support Tools**
13. 1994      **The Third "World Renewable Energy Congress",** Reading, UK  
Session: **Evaluation, Management and Environmental Control**
14. 1995      **The First "Int. Congress on Intelligent Buildings",** Tel Aviv.  
Session: **Computers- Controls & Software**
15. 1995      **"In Search of the Sun- ISES Solar World Congress 1995".** Harare, Zimbabwe.  
Session: **Thermal Performance of Buildings**
16. 1995      **"TIA- Teaching in Architecture: Energy & Environment Word Network".** Florence.  
Session: **Design Tools**
17. 1996      **The Forth "World Renewable Energy Congress",** Denver, Colorado.  
Session: **Trends in Practice**
18. 1997      **5rd Int. Conf. "Computer-Aided Architectural Design Futures".** Munchen, Germany.  
Session: **Multi Media**
19. 1998      **The Fifth "World Renewable Energy Congress",** Florence, Italy.  
Session: **Vernacular Architecture.**
20. 1998      **The 2<sup>nd</sup> ISES- Europe Solar Congress – "EuroSun98",** Portoroz, Slovenia.  
Session: **Solar Architecture & Building Technology.**

21. 1999 "The ISES Solar World Congress 1999". Jerusalem, Israel.  
Session: **Solar Architecture.**
22. 1999 "The ISES Solar World Congress 1999". Jerusalem, Israel.  
Workshop: **Kyoto Protocol and Energy Codes in Different Countries.**
23. 2005 "IBPSA05 – Building Simulation 2005". Montreal, Canada.  
Session: **Software Development.**
24. 2008 "PLEA08 – Passive & Low Energy Buildings", Dublin, Ireland .  
Session: **Zero Energy Building Regulation & Policy.**
25. 2009 "IBPSA09 – Building Simulation 2009". Glasgow, Scotland.  
Session: **Simulation within the Design Process.**

#### **ACTIVE PARTICIPATION IN INTERNATIONAL CONFERENCES:**

##### **C. INVITED LECTURES**

1. 1983 The "2nd int. Symposium on the Impact of Climate on Planning & Building". Tel Aviv  
**"Climate and Building Design"** (Plenary Lecture).
2. 1984 Int. Conf. on Computer-Aided Architectural Design Education (ECAADE). Helsinki., Finland  
**"The Technion Program of CAAD"**.
3. 1985 1st Int. Conf. on Computer-Aided Architectural Design Futures. Delft, The Netherlands.  
**"Layout Design Problems & Their Systematic Approach"** .
4. 1987 "Int. Congress on Building Energy Management", Lausanne, Switzerland.  
**"Solar Buildings"** (Summary of the papers)
5. 1988 Int. Conf. on Passive Solar Architecture, Bled, Yugoslavia.  
**"On the Optimum Design of Shading Devices for Windows"** (Plenary Lecture).
6. 1988 Int. Conf. on Passive Solar Architecture, Bled, Yugoslavia.  
**"Teaching Bioclimatic Design & Passive Solar Architecture in the Technion"**.  
(Together with an Invited Exhibition of student's work performed under my instruction)
7. 1989 Int. Conf. on Climate, Planning & Architecture", Tel Aviv.  
**"Passive Cooling of Buildings - Methods & Solutions in Traditional and Modern Design"** (A Review).
8. 1989 Int. Conf. on Climate, Planning & Architecture", Tel Aviv.  
**"Design Tools and Simulations for the conceptual design stage"** (A Review).
9. 1990 "The First World Renewable Energy Congress", Reading, UK.  
**"Integrated Computer-Aided Passive Solar Architectural Design System"**.
10. 1990 "The First World Renewable Energy Congress", Reading, UK.  
**"Design Tool for Solar Retrofit of Social Residential Buildings"**.
11. 1991 1st Int. Symposium on "Building Systems Automation-Integration". Madison, USA.  
**"A Knowledge Based System for the Design of Passive Solar Buildings"**.
12. 1991 3rd Int. Conf. on "Computer-Aided Architectural Design Futures". Zurich, Switzerland.  
**"Applied Virtual Reality"** (A brief introduction).
13. 1992 "The Second World Renewable Energy Congress", Reading, UK.  
**"SHADING - Analyzing Mutual Shading Between Buildings: An Integrated Computer-Aided Passive Solar Architectural Design System"**.
14. 1994 "The Third World Renewable Energy Congress", Reading, UK.  
**"MULRES-ENERGY" - A CAD Tool for Determining The Optimum Configuration of Multifamily Residential Buildings**
15. 1995 "Research Directions in CAAD" Workshop, Technical University and Nemetchek inc., Munchen, Germany.  
**"Visualizing the Unseen: The Design and Simulation of Solar and Low Energy Architecture."**

16. 1995 "TIA- Teaching in Architecture: Energy and Environment Word Network". Florence, Italy.  
**"Teaching Energy and Environment in Architecture: Round Table Discussion"**
17. 1996 "The Forth World Renewable Energy Congress. Denver, Colorado.  
**"A Knowledge Base CAAD System for Determining Thermal Comfort Design Strategies"**.
18. 1998 "The Fifth World Renewable Energy Congress", Florence, Italy.  
**"Computer Aided Energy Conscious Building Design"**.
19. 1998 " Eurosun98- the 2<sup>nd</sup> ISES Europe Congress", Ljubljana, Slovenia.  
**"Solar Architecture and Building Technology"**.
20. 1999 "The ISES Solar World Congress 1999". Jerusalem, Israel.  
**"Design Tools for Bio-Climatic and Passive Solar Buildings". (Keynote Lecture).**
21. 2000 "The Sixth World Renewable Energy Congress", Brighton, England.  
**"Thermal Mass and Night Ventilation as Passive Cooling Design Strategy"**.
22. 2004 "The 8<sup>th</sup> World Renewable Energy Congress", Denver, USA.  
**"DESIGN GUIDELINES FOR PROPER INSOLATION OF URBAN SQUARES"**
23. 2005 "World Renewable Energy Congress 2005", Aberdeen, Scotland.  
**"Low Energy Architecture"**
24. 2006 "The 9<sup>th</sup> World Renewable Energy Congress", Florence, Italy.  
**" Energy Code for Office Buildings in Israel "**
25. 2011 "Eilat-Eilat Renewable Energy - The 4<sup>th</sup> International Conference & Exhibition, Eilat, Israel.  
**"CLIMATIC AND ENERGY ASPECTS OF URBAN DESIGN IN THE HOT-HUMID REGION OF ISRAEL"**

#### **ACTIVE PARTICIPATION IN LOCAL CONFERENCES & MEETINGS:**

##### **INVITED LECTURES IN**

- 1982 "Meteorology & Energy in Israel".  
Organized by the Israel Meteorological Service & the Ministry of Energy.  
**"A simulation model for predicting the thermal behavior of Buildings"**.
- 1983 "Passive Solar Buildings". Organized by the Ministry of Energy & Infrastructure.  
**"Designing Passive Solar Buildings - Methods, Principles & Examples"**.
- 1986 "The 8TH Israel Convention on CAD-CAM & Robotics".  
Organized by the Israel Society for CAD/CAM (ITIM).  
**"Generative CAAD Tools Versus Evaluation Tools" .**
- 1988 "Computer - aided Architectural Design and Drafting". Organized by the Inst. for Working Productivity & manufacturing. **"Computer - aided Architectural Design" .**
- 1989 "Energy 1989". Organized by the Ministry of Energy & Infrastructure and the Israeli Oil Inst".  
**"The use of Passive Solar Energy - Shavivs' House" .**
- 1990 "Energy Conservation in Buildings".  
Organized by the Ministry of Energy & Infrastructure and the Israeli Electrical Comp.".  
**"Passive Cooling - Energy Conscious Design"**.
- 1991 "Alternative Energy Sources".  
Organized by the S. Neaman Institute for Advanced Studies in Science and Technology.  
**"Energy Conscious Architectural Design"**.
- 1993 "Recent development in Energy and Buildings".  
Organized by the Israel Association of Engineers & Architects.  
**"Climatic and Energy Conscious Design Guidelines for Residential Buildings"**
- 1994 "Energy in Buildings and industry".  
Organized by the Technion. **"Shading of Buildings"**
- 1994 The 25th Israel Conference on Mechanical Engineering, Haifa, Israel.  
Organized by the Faculty of Mechanical Engineering, Technion.



## "A Model for Evaluating the Mutual Shading in a Cluster of Buildings"

- 1997      "Green Buildings" Organized by: The Ministry of Environment.  
**"The project: Environmental Sciences and Energy Research Department in Weizman Inst. of Science - A Passive Solar and Low Energy Building "**.
- 1999      "Bio-Climatic Urban Design "  
 Organized by The Ministry of Environment. **"Mutual Shading among Buildings"**.
- 2000      Workshop on "Energy-Efficient Buildings"  
 Organized by Joule-Thermie, Ministry of Science State of Israel German-Israeli Cooperation in Energy Research and OPET (Organizations for the Promotion of Energy Technologies)  
**"Computer-aided energy-conscious design"**
- 2001      "Bio-Climatic Urban Design "  
 Organized by The Ministry of Environment.  
**"Winds and Sun in High Density Urban Areas"**.
- 2002      "Tall Buildings "  
 Organized by The Ministry of Interior.  
**"Shading and Winds Around Tall Buildings"**.
- 2003      "Climate Conscious Architecture Charrette "  
 Organized by Architecture of Israel Quarterly (AI).  
**"Energy Consious Building Design in Israel"**.
- 2003      "Annual Meeting of the of ISES- IS", Weizmann Institute of Science.  
 Organized by the International Solar Energy Society (ISES) - Israeli Section  
**"Solar Rights and Winds in Urban design"**.
- 2003      "Energy saving legislations in Buildings - EU and Israel, Workshop "  
 Organized by ICTAF - Interdisciplinary Center for Technological Analysis and Forecasting, Tel Aviv University. **"Energy Optimization in Buildings "**
- 2008      "Architectural Education " – The Annual Meeting of the Israel Association of United Architects  
 Organized by the Israel Association of United Architects  
**"Green Architecture in Israel and in the USA"**.
- 2008      New Legislations in Planning & Construction.  
 Organized by Ministry of Interior.  
**"Towards including "The Israeli standard IST-5282: "Energy Rating of Buildings" in the Planning and Construction Legislation."**
- 2008      "Energy in Buildings" - Forum Discussions  
 Organized by the Shmuel Neeman Institute for Advance Science & Technology.  
**"Green Architecture in the USA – What can we Learn from it"**.
- 2008      "Energy 2008 – Demands & Conservation in Industry & Housing - Possible Solutions" Conf.  
 Organized by the Israeli Assoc. of Engineers, Architects and Academic Professions.  
**"Intelligent Design of Energy Conscious Buildings"**.
- 2009      "Low, Planning & Real Estate"  
 Organized by: Bar-Ilan University, Faculty of Law.  
**"Green Buildings for protecting the Environment: Regulations and incentives for enhancing Private and Public Green Buildings"**.
- 2010      "Energy Saving in Buildings by Lighting" - Forum Discussions  
 Organized by the Shmuel Neeman Institute for Advance Science & Technology.  
**"What is a Wrong Design of Buildings and What are Good Architectural solutions to save Energy from Lighting Point of View?"**

### **PROGRAMS IN THE ISRAELI TV:**

- 1997 "The Shaviv's House- A Passive Solar and Low Energy Building "  
**Channel 8: science.** in "8 on 8 Science and Nature Magazine with Yael Dan". (17, June, 1997)
- 1997 A report on "The Climate and Energy Laboratory in Architecture, Technion "  
Mainly on "Computer Aided Design Tools for Passive and Low Energy Buildings - Green Architecture."  
**Channel 1.** in "Science Directions". (8, August, 1997).

### **MAIN RESEARCH ACTIVITIES**

#### **A. Climate, Energy and CAAD**

##### **The Development of Methods, Models and Design Tools in the Following Topics:**

Determining the Form of Fixed & Movable Sun-Shades.  
Solar Rights Determination.  
Simulating & Predicting the Thermal Performance of Buildings.  
Evaluating the Thermal Efficiency of Shading Systems.  
Evaluating the Mutual Shading in Clusters of Buildings.  
Solar Retrofit of Social Residential Buildings.  
Knowledge Based Expert System for the Conceptual Design of Low Energy Buildings.  
Shape and Performance in Intelligent CAAD Systems for Solar Building Design.  
Modeling the Design and Evaluation of Sustainable Residential Quarters.  
Modeling Intelligent Buildings.

#### **B. Solar and Low Energy Architecture**

Design and Evaluation of Solar & Low Energy Buildings.  
Solar vis a vis Conservation.  
Developing Energy Conscious Design Guidelines.  
Developing Energy Code for Buildings in Israel.  
Developing Bio-Climatic & Energy Conscious Design Guidelines on Urban scale.  
Urban Climatology.  
Energy Retrofit of Residential Buildings  
Energy Rating of Buildings-Residential Buildings  
Energy Rating of Buildings-Office Buildings

#### **C. Green Architecture**

The Energy Chapter of the Israeli Green Building Rating - Residential Buildings  
The Energy Chapter of the Israeli Green Building Rating - Office Buildings  
The Water Chapter of the Israeli Green Building Rating – Gardens & Landscaping

#### **C. Design Methods and CAAD**

##### **The Development of Methods, Models and Design Tools in the Following Topics:**

Generative vis a vis Evaluative Design Tools.  
Generation of Building Form.  
Systematic Approach to the Generation & Evaluation of Design Solutions.  
Knowledge Based Expert Systems for Generation & Evaluation of Design Solutions.  
Automated Layout Design.  
Building Systems Integration.  
Collaborative Design

### **SOFTWARE DEVELOPED AS DESIGN AND RESEARCH TOOLS**

SURFACE\_STRUCTURES - Determining the Form of Funicular Surface Structures according to predefined stresses.

SPACE\_ALLOCATION –A Model for Space Allocation in Complex Buildings".  
(Together with D. Gali)

DECOMPOSITION\_RECOMPOSITION - A Model for Decomposition and Recomposition of Multi-Cell Systems  
(Together with R. Hashimshony)

SUNSHADES- Determining the Form of Fixed & Movable Sun-Shades.

SOLAR\_RIGHTS- Solar Rights Determination.

ENERGY- Simulating and Predicting the Thermal Performance of Buildings.  
(Together with G. Shaviv)

- SOLRET- Solar Retrofit of Social Residential Buildings.  
(Together with R. Zohar).
- PSA- A Knowledge Based Expert System for Passive Solar Architecture.  
(Together with U. Peleg)
- SHADING- Evaluating Mutual Shading Among Buildings and on Open Spaces.  
(Together with A. Yezioro)
- MULRES-ENERGY- Determining the Optimum Configuration of **Multifamily Residential Buildings for ENERGY** Saving.  
(Together with G. Capeluto)
- PASYS- A Knowledge Based Expert System for Determining Design Strategies for **Passive Solar Systems**.  
(Together with A. Yezioro)
- SUSTARC- Modeling the Design and Evaluation of **Sustainable Architecture**.  
(Together with G. Capeluto)
- APS - Modeling Acoustical Performance of Sunshades.  
(Together with T. Blieberg)
- CoED - Modeling **Collaboration Enhancing** among **Design** participants.  
(Together with T. Blieberg)
- WEG - A KB Expert System for **Water Efficient Gardens & landscape** design.  
(Together with D. Drori)

#### **RESEARCH GRANTS Since 1990**

- 1990-1992**    **"The Influence of Geometrical Design Parameters on the Energy Consumption & Thermal Performance of Buildings". (022-474-1)** (Together with I.G.Capeluto as assistant investigator)  
Sponsored by: **The Ministry of Construction and Housing. (\$22,000** for 1 years).  
The S. Neaman Institute for advanced research in Science and Technology  
**(\$10,000** for 1 years).
- 1995-1999**    **"Climatic and Energy Aspects of Urban Design in Hot-Humid Region of Israel". (022-631)**  
(Together with Dr. A.Yezioro and Dr. I.G.Capeluto as associate investigators)  
Sponsored by: **The Ministry of National Infrastructures. (\$200,000** for 3 years).
- 1995-1998**    **"A Program for Demonstrating Energy Conservation Technologies Studies in Architecture". (6-022-01-1,2).**  
(Together with Dr. A.Yezioro and Dr. I.G.Capeluto as associate investigators)  
Sponsored by: **The Ministry of National Infrastructures. (\$140,000** for 2 years).
- 1998-1999**    **"The Kyoto Protocol for Reducing Greenhouse Gas Emissions – Israel Policy". Principal investigator for the chapter "Energy in Buildings" .**  
(Together with Assoc.Prof. R. Becker)  
Sponsored by: **The Ministry of the Environment. (\$35,000** for 1 year).
- 1999-2000**    **Thermi B - "TAPED- Teory and Practice of Energy Design" (022-739)**  
(Together with the following countries: England, Holland, France and Belgium)  
Sponsored by: **The European Common Market Therme B program. . (189,400 ECO** for 18 months for all participants).
- 1999-2000**    **"Energy Code for Buildings in Israel - New Conceptual Approach"**  
(Together with Dr. R. Becker and Dr. I.G.Capeluto)  
Sponsored by: **The Ministry of the Environment. (IS 100,000** for 1 year).
- 1999-2002**    **"The Construction of Tall Buildings in Israel"**  
In Charge of **"Bio-Climatic and Energy Aspects"**  
(Together with Dr. A.Yezioro and Dr. I.G.Capeluto under HELIOS)  
Sponsored by: **The Ministry of Interior. (IS 28,000** for 1 year).
- 2000-2004**    **"Thermal Performance of Buildings and the Development of Guidelines for Energy Conscious Design" (022-733). Part A: Residential Buildings in Israel". Part B: "Developing Energy Code for Office Buildings in Israel"**  
(Together with Dr. A.Yezioro, Dr. I.G.Capeluto, Assoc.Prof R. Becker and Prof. A. Warshavsky. as associate investigators)  
Sponsored by: **The Ministry of National Infrastructures ( IS 600,000** for 3 years).

- 2000-2004**     **"Climatic and Energy Aspects of Urban Design in the Cold Region of Israel" (022 – 755)**  
(Assoc. investigator together with Dr. A.Yezioro and Dr. I.G.Capeluto as Principal investigator)  
Sponsored by: The Ministry of National Infrastructures. (**IS 600,000** for 3 years).
- 2002-2004**     **"Solar Rights in High Density Urban Development" (022-732)**  
(Together with Dr. A.Yezioro and Dr. I.G.Capeluto as associate investigators).  
Sponsored by: Ministry of Housing (**IS 300,000** for 2 years).
- 2005-2008**     **"A Computerized Tool for Evaluating the Energy Performance of Buildings according to the Energy Code – Performance Approach"**, Associate investigator together with Dr. I.G.Capeluto and Dr. A. Yezioro as Principal investigator. Funded by the Ministry of National Infrastructures. (**IS 1050,000** – 3.5 years. 300,000 NSh/year).
- 2008-2010**     **"A Design Tool for Evaluating the Energy Performance of Buildings according to the Energy Code - Performance Approach". Part B.**  
Associate Investigator with Dr. A. Yezioro as Principal investigator and Dr. I.G.Capeluto, as associate investigators. Sponsored by: The Ministry of National Infrastructures. (450,000 NSh for 1.5 years, 300,000 NSh/year).
- 2009 - present **"Design Guidelines for Green Buildings in Israel- Public Clinics "**.  
Associate Investigator with Dr. A. Yezioro as Principal investigator and Dr. I.G.Capeluto, as associate investigators. (18,590 NSh). Sponsored by: Clalit Clinics (Kupat Holim Clalit).
- 2010             **"The Energy Chapter of the Israeli Green Building Standard 5281 for Building Types: Residential, Office, Hotels, Schools and Clinics"**. Principal Investigator with Dr. A. Yezioro and Dr. I.G.Capeluto as associate investigator) (237,869 NSh). Sponsored by: The Standards Institution of Israel.
- 2011 - present **"Energy Rating of Hotels, Schools and Clinic Buildings According to the Prescriptive/ Descriptive & Performance Approaches"**. Associate Investigator with Dr. A. Yezioro as Principal investigator and Dr. I.G.Capeluto, as associate investigators. Sponsored by: The Ministry of National Infrastructures. (750,000 NSh for 3 years, 250,000 NSh/year)

## **SUPERVISING GRADUATE STUDENTS**

### **a. Graduated :**

1. 1974     Dov Gali, M.Sc. Thesis:  
**"A Model for the Location of Functions in a Complex Building"**.  
SAGORSKI AWARD
2. 1976     Rifka Hashimshony, D.Sc. Thesis:  
**"A Decomposition Model for Complex Systems and it's Application to Physical Design Problems"**.  
(jointly with Prof. A. Wachman).  
(Now: Associate professor, Fac of Architecture & T.P. Technion).
3. 1978     Yehuda Kalay, M.Sc. Thesis:  
**"Mathematical Model for Analysis & Comparative evaluation of Dwelling Units.**  
(Was: Professor, College of Environmental Design, University of California, Berkeley, CA.  
Now: : Professor & Dean, Fac of Architecture & T.P. Technion).)
4. 1986     Dan Katz, M.Sc. Thesis:  
**"A Model for Intelligently Defining a Building Within an Integrated CAAD System."**
5. 1988     Rivka Oxman, D.Sc. Thesis:  
**"Expert Systems for Generation & Evaluation in Architectural Design."**  
(Now: Associate professor, Fac. of Architecture & T.P. Technion).  
REISKIN AWARD
6. 1989     Uriel Peleg, M.Sc. Thesis:  
**"A Model for the Conceptual Design of Passive Solar Buildings."**  
ONIX AWARD
7. 1989     Ruth Zohar, D.Sc. Thesis:  
**"Mathematical Model for Decision-Making for the Energetic Retrofit of Residential Buildings in Israel."**  
(Now: Faculty member, Fac of Architecture, Witzo).  
REISKIN AWARD

8. 1990 Moris Shapiro, M.Sc. Thesis:  
**"A model for Evaluating the Mutual Shading in Clusters of Buildings."**  
SHARON AWARD
  9. 1991 Isaac. G. Capeluto, M.Sc. Thesis:  
**"A CAAD System for the Design & Evaluation of Passive Solar Multifamily Buildings"**  
(Now: Associate professor, Fac of Architecture & T.P. Technion).  
SAGORSKI AWARD
  10. 1992 Avner Schartz, D.Sc. Thesis:  
**"Representing and Solving the Automated Building Design (ABD) Problem".**  
(jointly with Prof. D. Berry)
  11. 1993 Miriam Peleg, M.Sc. Thesis:  
**"The Thermal Performance of Movable-Lightweight buildings"**  
(Now: City Architect of Holon).  
REISKIN AWARD
  12. 1994 Abraham Yezioro, D.Sc. Thesis:  
**"Form and Performance in Intelligent CAAD Systems for Early Stages in Solar Building Design"**  
(Now: Senior lecturer, Fac of Architecture & T.P. Technion).  
SHRAGENHEIM AWARD
  13. 1995 Ram Nocham, M.Sc. Thesis:  
**"The Influence of Different Design Parameters on the Thermal Performance of Residential Buildings In Lower Inland In Israel"**  
(Was: Principal Architect, Engineering Corp. IDF).  
REISKIN AWARD
  14. 1995 Claudio Osinger, M.Sc. Thesis:  
**"A CAAD Model for Evaluating the Shading by Various Elements"**  
SHRAGENHEIM AWARD
  15. 1996 Isaac. G. Capeluto, D.Sc. Thesis:  
**"Architecture and Environment: Modeling a Sustainable Architecture"**  
(Now: Associate professor, Fac of Architecture & T.P. Technion).  
SHRAGENHEIM AWARD
  16. 1997 Hilla Tur-Reumi, M.Sc. Thesis:  
**"The Influence of Different Design Parameters on the Thermal Performance of Residential Buildings in the Hot Climate of Israel"**  
(Was: Principal Architect, Engineering Corp. IDF).  
REISKIN AWARD
  17. 1997 Gavriela Sharmat, M.Sc. Thesis:  
**"A CAAD Method for the Design of Shading Elements Covering Large Glazed Areas."**  
REISKIN AWARD
  18. 1997 Tamar Bliberg, M.Sc. Thesis:  
**"A CAAD Model for determining the Acoustical Performance of Shading Devices."**  
(jointly with Assoc. Prof. G. Rosenhois)  
SHRAGENHEIM AWARD
  19. 2003 Yael Perez, M.Sc. Thesis:  
**"Aspects of Energy and Climate in the Design of School Buildings in Israel"**  
(jointly with Dr. G.I. Capeluto)  
SHRAGENHEIM AWARD
  20. 2004 Tamar Bleiberg, Ph.D. Thesis:  
**"A Model for Enhancing the Collaboration among the Participants in the Process of Computer Aided Collaborative Design"**  
SHRAGENHEIM AWARD
  21. 2006 David Pearlmuter, Ph.D. Thesis:  
**"The Microclimatic Influences of Urban Surface Geometry: A Physical Modeling Study in Hot-Arid Conditions"**(jointly with Dr. P. Berliner)  
(Now: Associate professor, Desert Architecture & Urban Planning, Ben-Gurion University).  
REISKIN AWARD
- b. Thesis in progress:**
22. 2009- 2011 Dafna Drori, M.Sc. Thesis:  
**"Design Guidelines for Water Conscious Design in Israeli Green Architecture".**

#### **SUPERVISING POST DOCTORAT**

- 2011 – Present Svetlana Pushkar.  
Research Proposal: **"How Kurokawa's design and current Green building rating systems ensure the sustainable design of a building"**

## **LIST OF SCIENTIFIC AND PROFESSIONAL PUBLICATIONS**

### **A. THESIS**

Shaviv, E. , 1968. **"On the Form Analysis of Surface Structures"**.  
M.Sc. Thesis, Cornell Graduate School, Ithaca, NY.

### **B. ORIGINAL PAPERS, WITH REFEREES:**

#### **B1. ORIGINAL PAPERS IN PROFESSIONAL JOURNALS, WITH REFEREES:**

1. Shaviv E., D. P. Greenberg, 1970. **"Funicular Surface Structures - A Computer Graphics Approach"**. "Bulletin of the Int. Assoc. of Shell Structures", No. 37, Madrid, (pp. 15-26).
2. Shaviv E., D. Gali, 1974. **"A Model for Space Allocation in Complex Buildings"**. "Build International", (7), No. 6, Applied Science Publishers, England, (pp.493-518).
3. Shaviv E., 1975. **"A Method for the Design of Fixed External Sun-Shades"**. "Build International" (8), Applied Science Publishers LTD, England, (pp.121-150).
4. Shaviv E., R. Hashimshoni, A. Wachman, 1977. **"Decomposition of a Multi-Cell Complex - A Problem in Physical Design"**. "Journal of the DMG and DRS", Vol. II, No. 2, USA, (pp.113-120).
5. Shaviv E., R. Hashimshoni, A. Wachman, 1978. **"A Decomposition - Recomposition Model for Multi-Cell Systems"**. "Building & Environment", Vol. 13, Pergamon Press Ltd., England, (pp.109-123).
6. Shaviv E., G. Shaviv, 1978. **"Modeling the Thermal Performance of Buildings"**. Building & Environment, Vol. 13, Pergamon Press Ltd., England, (pp. 95-108).
7. Shaviv E., G. Shaviv, 1978. **"Designing of Buildings for Minimal Energy Consumption"**. "CAD Journal", July, Vol. 10, No. 4, IPC Business Press, England, (pp. 239-247).
8. Kalay Y., E.Shaviv, 1979. **"A Method for Evaluating Activities Layout in Dwelling Units"**. "Building & Environment", Vol. 14, Pergamon Press Ltd., England, (pp.227-234).
9. Shaviv E., 1980. **"Energy Conservation & Solar Houses"**. "The International Journal of Ambient Energy", Vol. 1, No. 1, Const. Press. Ltd., England, (pp 5-14). (Invited Paper).
10. Hashimshony R., E.Shaviv, A. Wachman 1981. **"Transforming an Adjacency Matrix into a Planar Graph"**. "Building & Environment", Vol. 15, Pergamon Press Ltd., England, (pp. 205-217).
11. Shaviv E., 1981. **"The Influence of the Orientation of the Main Solar Glazing on the Total Energy Consumption of a Building"**. "Solar Energy", 26(5), Pergamon Press Ltd., England, (pp. 443-454).
12. Shaviv E., 1984. **"The Performance of a Passive Solar House with Window Sunspace Systems"**. "Energy & Buildings", 7, Elsevier Sequoia, The Netherlands, (pp. 315-334).
13. Shaviv E., 1984. **"A Design Tool for Determining the Form of Fixed & Movable Sun-Shades"**. "ASHRAE Trans." Vol. 90, AT-84-18 No. 4, Atlanta (pp.1-14).
14. Shaviv E., 1984. **"Climate & Building Design - Tradition, Research and Design Tools"**. "Energy & Buildings", 7, Elsevier Sequoia, The Netherlands, (pp.55-69).
15. Shaviv E., 1985. **"A Solar Retrofit of a Residential House in a Low-Rise High Density Area"**. "Sunworld", Vol. 9, No. 4, USA, (pp. 98-102,128). (Invited Paper).
16. Shaviv E., 1985. **"A Model for the Site Layout of Solar Communities"**. "Sunworld", Vol. 9, No. 4, USA, (pp. 113-115,128). (Invited Paper).
17. Shaviv E., O. Gavish, U. Amir, 1989. **"Implementation of Solid Modeling in High Hierarchy Architectural Language"**, "Environment and Planning" B: "Planning and Design", vol. 17, Pion Pub. GB. (pp 205-220.)
18. Shaviv E. & U. J. Peleg 1990. **"A Knowledge Based System for the Schematic Design of Passive Solar Buildings"**. "ASHRAE Trans.", ST-90-2. Atlanta. (pp 557-562).

19. Shaviv E., Y. E. Kalay & U. J. Peleg, 1992. **"An Integrated Knowledge-Based and Procedural System for the Design of Energy Conscious Buildings"**. "Automation in Construction" Vol 1, Elsevier Science Pub., The Netherlands. (pp 123-141). **(Invited Paper)**. (Based on the Invited paper presented in the 1st Int. Symposium on "Building Systems Automation-Integration". Madison, USA, 1991 C16).
20. Shaviv E. & I. G. Capeluto, 1992. **"The Relative Importance of Various Geometrical Design Parameters in Hot-Humid Climate"**. "ASHRAE Trans.", V. AN-92-1. Atlanta. (pp 589-605).
21. Schwarz A., D. M. Berry & E. Shaviv, 1994. **"Representing and Solving the Automated Building Design (ABD) Problem"**. "CAD Journal" Vol 26 No 9. (pp 689-698). IPC Business Press, England.
22. Schwarz A., D. M. Berry & E. Shaviv, 1994. **"On the Use of the Automated Building Design (ABD) System"**. "CAD Journal" Vol 26 No 10. (pp 747-762). IPC Business Press, England.
23. Yezioro A. & E. Shaviv, 1994 **"SHADING: A Design tool for Analyzing Mutual Shading Between Buildings"** "Solar Energy". Vol. 52, No. 1, (pp 27-37). Pergamon Press Ltd., USA
24. Capeluto I.G. & E. Shaviv, 1994, **"MULRES-ENERGY" - A CAD Tool for Determining The Optimum Configuration of Multifamily Residential Buildings"**. Renewable Energy, 5 (5-8) (pp. 1159-1166)
25. Shaviv E., A. Yezioro, I.G. Capeluto, U.J. Peleg, & Y.E. Kalay, 1996. **"Simulations and Knowledge-Based CAAD Systems for Passive and Low Energy Architecture."** The paper is based on four papers presented in the 11th PLEA international Conf. Dead Sea, Israel, and was selected and accepted to be published in "Energy & Buildings", ENBO23/3, Elsevier Sequoia, The Netherlands, (pp. 257-269.). **(Invited paper)**.
26. Yezioro A. & E. Shaviv, 1996, **"A Knowledge Based CAD System for Determining Thermal Comfort Design Strategies"**. Renewable Energy 8: (1-4) (133-138), Pergamon Press Ltd., GB.
27. Shaviv E., A. Yezioro, 1997. **"Analyzing Mutual Shading Among Buildings."** "Solar Energy". Vol. 59 (pp 83-88) Elsevier Sc. Ltd.
28. Shaviv E., 1998. **"Computer Aided Energy Conscious Building Design"** Renewable Energy 15: (1-4) (343-348 Elsevier Sc. Ltd.
29. Shaviv E., 1999. **"Integrating Energy Consciousness in the Design Process"** "Automation in Construction" 8 (pp. 463-472). Elsevier Sc. Ltd.
30. Shaviv E., 2000. **"Design Tools for Bio-Climatic and Passive Solar Buildings"**, "Solar Energy". Vol 67 (pp 189-204) Pergamon Press Ltd., GB.
31. Capeluto I.G. and E. Shaviv, 2001. **"On the Use of Solar Volume for Determining the Urban Fabric"**, "Solar Energy" journal, Vol. 70, No. 3, pp. 275-280 Elsevier Science Ltd.
32. Shaviv E., A. Yezioro, I.G. Capeluto 2001. **"Thermal Mass and Night Ventilation as Passive Cooling Design Strategy"**. Renewable Energy, 24 (pp. 445-452). Elsevier Sc. Ltd.
33. Capeluto I.G., A. Yezioro and E. Shaviv, 2003. **"Climatic Aspects in Urban Design – A Case Study"**, "Building and Environment" journal, Vol 38/6 pp. 827-835, Elsevier Science Ltd.
34. Pearlmutter D., Berliner P. and Shaviv E., August 2004. **"Open-air modeling of urban surfaces in a desert climate."** In: Mills, G. (ed.) IAUC Newsletter 6, International Association for Urban Climate.
35. Capeluto I.G., A. Yezioro and E. Shaviv, 2004. **"What are the Required Conditions for Heavy Structure Buildings to be Thermally Effective in a Hot Humid Climate?"**, "Journal of Solar Energy Engineering", 126/3 pp. 886-892, American Society of Mechanical Engineers, August 2004.
36. Pearlmutter, D., P. Berliner, and E. Shaviv, 2005 **"Evaluation of urban surface energy fluxes using an open-air scale model,"** Journal of Applied Meteorology. 44(4): pp 532-545.
37. Pearlmutter, D., P. Berliner, and E. Shaviv, 2005. **"Open-air modeling of urban surface geometry and energy balance in the Negev,"** "Merchavim" journal No. 6: Climate and Environment – Climatological, Meteorological and Applied Aspects.

38. Capeluto I.G. Yezioro A. and E Shaviv, 2006. **"Keeping Solar Rights as Urban Development Strategy: Bizaron Buisness District, Tel Aviv"**, Merchavim journal No. 6: Climate and Environment – Climatological, Meteorological and Applied Aspects.
39. Pearlmutter, D., P. Berliner, and E. Shaviv, 2006 **"Physical modeling of pedestrian energy exchange within the urban canopy"**, Building and Environment Volume 41, Issue 6 , June 2006, Pages 783-795
40. Yezioro A., I.G..Capeluto, E.Shaviv, 2006 **"Design Guidelines for Proper Insolation of Urban Squares."** Renewable Energy Volume 31, Issue 7 , June 2006, Pages 1011-1023.
41. Pearlmutter, D., P. Berliner, and E. Shaviv, 2007. **"Integrated modeling of pedestrian energy exchange and thermal comfort in urban street canyons"** Building and Environment [Volume 42, Issue 6](#), June 2007, Pages 2396-2409
42. Bleiberg T., G..Rosenhouse and E.Shaviv, 2007 **"A Computerized Evaluation of the Acoustical Performance of Sunshades."** Architectural Science Review Volume 50 No. 2, June 2007, Pages 181-189
43. Pearlmutter, D., P. Berliner, and E. Shaviv, 2007. **"Integrated modeling of pedestrian energy exchange and thermal comfort in urban street canyons"** Building and Environment [Volume 42, Issue 6](#), June 2007, Pages 2396-2409
44. Pearlmutter, D., P. Berliner, and E. Shaviv, 2007. **"Urban climatology in arid regions: current research in the Negev desert"**. INTERNATIONAL JOURNAL OF CLIMATOLOGY, 27 (14): 1875-1885
45. Yezioro, A, I. G. Capeluto, T. Bleiberg, E. Shaviv, 2008. **"Regulations for Solar Rights in Urban Areas"**. Renewable Energy Yearly magazine 2008.
46. Shaviv E., A. Yezioro, I. G. Capeluto, 2008. **"Energy Code for Office Buildings in Israel"**. "Renewable Energy", Vol 33/1 pp. 99-104. Elsevier Science Ltd., GB.

## **B2. ORIGINAL PAPERS IN CONFERENCE PROC. IN WHICH THE FULL PAPER WAS REFEREED.**

47. Shaviv, E., 1973. **"Continuous Modular Surface Structures- A Computer Graphics Approach"** "IASS Proc. of the Int. Con. of Pre-fabricated Shells", Haifa.
48. Shaviv, E.,1976. **"On the Design of Surface Structures with Free Edges"**. "IASS World Congress on Space Enclosures", Montreal. (pp. 569-574).
49. Shaviv E., 1978. **"The Determination of the Form of Windows & Sun-Shades"**. "CAD 78", IPC Science & Tech Press, England, (pp.110-120 ).
50. Hashimshony R., E. Shaviv, A. Wachman, 1978. **"A Decomposition Model as a Tool for Evaluation of Multi-Cell Solutions"**. "CAD 78", March, IPC Science & Tech. Press, England, (pp. 470-481).
51. Shaviv E., 1979. **"Building Design for Passive Energy Conservation"**. "PARC 79", Berlin, Germany. (pp. 135-144).
52. Shaviv E., 1980. **"On the Determination of the Optimal Shading Factor of Windows"**. "CAD 80", April, IPC Science & Tech. Press, England, (pp. 605-614).
53. Shaviv E., 1985. **"Layout Design Problems & Their Systematic Approach"**. "CAAD Futures" 85. The Netherlands. No. 5 (pp. 28-51). (Invited Paper).
54. Shaviv E., 1986. **"Generative & Evaluative CAAD Tools for Spatial Allocation Problems"** "Computability of Design". NY. USA, (pp. 191-212).
55. Ben-Moshe, R., E. Shaviv, 1987. **"Natural Language Interface for CAAD Systems"**, "CAAD Futures 87", The Netherlands.
56. Shaviv E. & Y. E. Kalay, 1990. **"Combined Procedural & Heuristic Methods to Energy Conscious Building Design & Evaluation"**, "Evaluating and Predicting Design Performance", NY. (Is partially included in the invited paper C16, A19)



57. Shaviv E. & U. J. Peleg, 1991. **"A KB-CAAD System for the Design of Solar and Low Energy Buildings"**. "CAAD Futures 91", Switzerland. (pp 427-443). (Is partially included in the invited paper C16, A19).
58. Yezioro A. & E. Shaviv, 1999. **"Analyzing Mutual Shading Among Buildings."** "IBPSA 99". Kyoto, Japan, (pp 587-593)
59. Capeluto I.G. and E. Shaviv, 1999. **"Modeling the Design of Urban Fabric with Solar Rights Consideration"**, IBPSA 99, Kyoto, Japan, [pp. 1341-1347].
60. Shaviv E., I.G. Capeluto, A. Yezioro, 2000. **"A Simple Design Tool for Determining the Effectiveness of Thermal Mass and Night Ventilation as Passive Cooling Design Strategy"**, ROOMVENT 2000, Pergamon Press Ltd., GB.
61. Shaviv E., I.G. Capeluto, A. Yezioro, 2001. **"Sun and Winds in a New Business District in Tel Aviv"**, "IBPSA 2001" Rio de Janeiro, Brazil.
62. Yezioro A., Capeluto I.G. and E Shaviv, 2002. **"Solar Rights in the Design of Urban Squares"**, Architectural and Urban Ambient Environment International Workshop, Nantes, France (pp. 797-803).
63. Capeluto I.G. Yezioro A., Gat D. and E Shaviv, 2003. **"Energy Economics and Architecture"**, IBPSA03 International Conference on Building Simulation, Eindhoven, Netherlands. [pp 123-130].
64. Pearlmutter D., P. Berliner and E. Shaviv, 2003, **"Analyzing the microclimatic influence of urban canyon geometry with an open-air scale model."** In Bustamante, W.G. and Collados, B. (eds.) PLEA 2003 - Proceedings of Passive and Low Energy Architecture 20th International Conference - Santiago de Chile, November 2003.
65. Bleiberg T., and E Shaviv , 2004. **"Sunshades and Their Acoustical Performance"**, SimBuild 2004 – Building Sustainability and Performance through Simulation, Boulder, CO, USA.
66. Shaviv E., A. Yezioro, I. and G. Capeluto, 2005, **"A Prescription Method for the Design of Office Buildings, An Energetic – Economic Approach"**, IBPSA 05, Montreal, Canada.
67. Capeluto I. G., A. Yezioro, T. Bleiberg and E. Shaviv, 2005. **"From Computer Models to Simple Design Tools: Solar Rights in the Design of Urban Streets"**, IBPSA 05, Montreal, Canada.
68. Bleiberg T., I. G. Capeluto, A. Yezioro, and E. Shaviv, 2005, **"A Method for the Design of Solar Communities Keeping Solar Rights"**. ISES 05, Florida, USA.
69. Shaviv E., A. Yezioro, I. G. Capeluto, 2006. **"Energy code for office buildings in Israel"**. WREC06, Florence, Italy. (Invited paper) .
70. Pearlmutter, D., P. Berliner, and E. Shaviv, 2006. **"Current research and challenges in urban climate research in arid regions,"** International Conference on Urban Climate (ICUC6), Goteborg, Sweden, June 12-16, 2006 (invited plenary paper).
71. Shaviv E., T. Bleiberg, I. Capeluto, A. Yezioro, 2006. **"FROM ENERGY CONSCIOUS BUILDINGS TO CLIMATE-SENSITIVE URBAN DESIGN"**. International Conference on Urban Climate (ICUC6), Goteborg, Sweden, June 12-16, 2006
72. Capeluto G., Yezioro A., Bleiberg T. Shaviv E., 2006 **"Solar Rights in the Design of Urban Spaces"**. PLEA 2006 - Proceedings of Passive and Low Energy Architecture - Geneva, September, 2006.
73. Bleiberg T., E. Shaviv, 2007 **"OPTIMIZATION FOR ENHANCING COLLABORATIVE DESIGN."** IBPSA 07, Beijing, China.
74. Shaviv E., 2008. **"Passive and Low Energy Architecture (PLEA) VS Green Architecture (LEED) .** PLEA2008 - Proceedings of Passive and Low Energy Architecture, Dublin, Ireland, October, 2008.
75. Shaviv E., 2011. **"Do current environmental assessments methods provide a good measure of sustainability? Or: what should be a good measure for Green Building Standard?"** PLEA11 - Proceedings of Passive and Low Energy Architecture", Brussels, Belgium.

76. Drori D. and E. Shaviv, 2011. **"A Pattern Language Design Tool for Water Efficient Gardens - A Knowledge Based Computer-Aided Design (KBCAD) tool for water efficient landscape design."** PLEA11 - Proceedings of Passive and Low Energy Architecture", Brussels., Belgium.
77. Shaviv E., 2011. **"The energy chapter of the Israeli Green Building Standard"**. SB11- World Sustainable Building Conference, Helsinki, Finland.
78. Shaviv E., 2011. **"Applications of simulation and CAD tools in the Israeli "Green Building" Standard for achieving low energy architecture."** IBPSA 11, Sydney, Australia.

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