

# Mirosław J. Skibniewski

## Professional Biography

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- Date and Place of Birth: 14<sup>th</sup> September 1957, Warsaw, Poland
- Citizenship: U.S.A.
- Degrees:
  - M.Eng. *Politechnika Warszawska* (1981)
  - M.S. Carnegie-Mellon University (1983)
  - Ph.D. Carnegie-Mellon University (1986)
- Certificate: Harvard University Graduate School of Education  
Management Development Program (2001)
- Current Position/Title: ***A. James Clark Chair Professor of Construction Engineering and Project Management, Civil & Environmental Engineering***, University of Maryland at College Park
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## Summary

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Dr. Mirosław J. Skibniewski is the *A. James Clark Endowed Chair* Professor of Construction Engineering and Project Management in the Department of Civil and Environmental Engineering at the *University of Maryland* in College Park. Prior to his current appointment he served for 20 years as a faculty member at *Purdue University* in West Lafayette, Indiana, where he held a position of Professor of Civil Engineering, Construction Engineering and Management. He received his M.Eng. degree from *Warsaw University of Technology*, and M.S. and Ph.D. degrees from *Carnegie-Mellon University*. Prof. Skibniewski is also a graduate of the *Harvard University* Graduate School of Education Management Development Program. Prior to his academic career, he worked in the industry as an engineer with the Pittsburgh Testing Laboratory, a nationwide construction engineering consulting firm in Pennsylvania subsequently renamed to *Professional Service Industries, Inc.* - where he was engaged in design quality reviews, construction related claims, value engineering, forensic engineering and industrial safety investigations.

As a researcher and educator, Professor Skibniewski currently specializes in e-commerce technology applications to engineering project management for construction and in construction automation. He developed one of the first construction automation programs in the United States and collaborated with major industrial and government organizations both in the United States and overseas. Dr. Skibniewski

served as a Visiting Senior Research Scientist with the *Commonwealth Scientific and Industrial Research Organization (CSIRO)* in Melbourne, Australia, as Visiting Research Professor with the *Institute for Mechanized Construction and Rock Mining* in Warsaw, Poland, as Visiting Professor at the *University of Hong Kong, Hong Kong Polytechnic University*, and Honorary Visiting Professor at *Loughborough University* in England. He served as Alexander von Humboldt Foundation grantee at the *Technical University of Munich*, Germany, as Taiwan Science & Engineering Foundation Visiting Professor at *Chung-Hua University* and at *National Taiwan University*, and as Fulbright Senior Specialist at the *Instituto de Altos Estudios Empresariales* in Buenos Aires, Argentina.

Dr. Skibniewski served on the *National Academy of Engineering USA-Germany* and *USA-Japan Frontiers in Engineering* committees, *American Society of Civil Engineers' Robotics and Field Sensing Committee*, *Information Technology Committee*, and *Intelligent Computing Committee*, various technical committees of the *Construction Industry Institute* based at the University of Texas at Austin, and on the *National Academy of Sciences Assessment Panel* for construction automation and computer integrated construction programs at the *National Institute of Standards and Technology*. He was a founding member of the Board of Directors and is Past President of the *International Association for Automation and Robotics in Construction* currently based in Munich, Germany. Dr. Skibniewski is also Editor-in-Chief (Construction Technologies & Engineering) of *Automation in Construction*, an ISI-indexed international research journal published by Elsevier, as well as a member of editorial boards of ten other scientific journals.

Among Prof. Skibniewski's past honors are the National Science Foundation *Presidential Young Investigator Award* from President Ronald Reagan (1986), American Society for Engineering Education Best Paper Award (1991), American Society of Civil Engineers' *Walter L. Huber Research Prize* (1998), *Civil Engineering Faculty Medal* from the Slovak University of Technology (2004), *Honorary Professorship* from Warsaw University of Technology (2005) and Moscow State Industrial University (2006), and many grants and awards from government and industry for support of his research. In 2006 Dr. Skibniewski was elected as a Foreign Member of the Russian Academy of Engineering. He is listed in *Who's Who in Science and Engineering*, *Who's Who: American Men and Women in Science*, *Who's Who in Engineering*, *Who's Who Online*, and in other national and international biographical references. Prof. Skibniewski is an author or co-author of over 150 technical publications and of more than 100 invited research presentations worldwide.

As Assistant Executive Vice President for Academic Affairs and Associate Provost of Purdue University between 1997 and 2004, Dr. Skibniewski served as a member of the group of the University's chief academic officers. His work in this capacity included chairing and coordination of the University's *Academic Reinvestment Program* and the *Faculty Program of Study in a Second Discipline*. As Interim Dean of International Programs and Director of International Research between 2002 and 2004, he served as Purdue University's chief international officer responsible for foreign relations, global cooperation in research and external engagement, study abroad programs, and international students and scholars. In this capacity he represented the University on the Board of Directors of the *Midwest Universities Consortium for International Activities (MUCIA)* and served as the institutional representative to the association of senior international officers of the *Committee for Institutional Cooperation (CIC)* - an administrative and academic organization of the senior officers of the 'Big Ten' universities.

## University Appointments

### Academic

- 2005-present, **A. James Clark Endowed Chair Professor** of Construction Engineering and Project Management, Department of Civil and Environmental Engineering, University of Maryland at College Park. Teaching and research in advanced project management systems, legal aspects of engineering, selection and management of construction equipment and information technology for civil engineering and construction.
  - 1995-2006, **Professor**, Division of Construction Engineering and Management, School of Civil Engineering, Purdue University at West Lafayette, Indiana. Teaching and research in project engineering and management, construction equipment and management systems automation, computer-aided design-construction integration, administrative and legal aspects of engineering practice, enterprise resource planning applications in construction, and management of information technology.
  - 1990-95 **Associate Professor**, School of Civil Engineering, Purdue University. Teaching and research as above.
  - 1986-90 **Assistant Professor**, School of Civil Engineering, Purdue University. Teaching and research as above.
  - 1982-86 **Research and Teaching Assistant**, Engineering Planning & Management Program, Department of Civil Engineering, Carnegie Mellon University. Teaching Assistant in engineering planning and management, and traffic analysis and management. Research related to project management, industrial safety, technology transfer and management, production automation, engineering economics, and construction robotics.
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### Administrative

- 2004, **Director of International Research**, Purdue University. Coordinated planning and implementation of international research and professional training initiatives for the University. Led training program proposal preparation efforts for the acquisition of resources from the U.S. Dept. of State and from private donors worldwide.
- 2002-2004, **Interim Dean of International Programs**, Purdue University. Led formulation of the strategic plan in the area of Purdue's international relations, as well as planning and implementation of all institutional activities related to international education, research, and service. Responsible for planning, implementation and management of approx. \$4 million annual budget and for the supervision of the Associate Dean, Director of the Office of Study Abroad Programs, Director of the Office of International Students and Scholars, and approx. 40 professional staff in three offices under the responsibility of the Dean. As senior international officer of the University, represented Purdue on the Board of Directors of Midwest Universities Consortium for International Activities (MUCIA), on the Committee for Inter-institutional Cooperation (CIC), and in other multi-lateral organizations. Executed planning effort leading to the hiring of a development officer for the Office of International Programs. Designed and oversaw institutional effort to increase study abroad participation by Purdue students by over 70% in two years.
- 2001-2004, **Associate Provost**, Purdue University. Member of the group of chief academic officers responsible for all aspects of academic planning and management of the University.
- 1997-2001, **Asst. Executive Vice President for Academic Affairs**, Purdue University. Co-responsible for matters of University resource policy, university-wide research initiatives, program development, evaluation and administration, and academic budget and planning. Provided academic oversight for campus-wide computer resource acquisition programs, including a \$6 million equipment

grant from Intel Corporation. Coordinated university-wide Academic Reinvestment Program and Faculty Program of Study in a Second Discipline with annual budgets in the range of \$2 million.

### Other Professional Positions

- 1993 **Research Engineer** (25% IPA), U.S. Army Corps of Engineers Construction Engineering Research Laboratory (CERL) Robotics Center, Champaign, IL. Long-term strategic planning of Army construction robotics development program.
- 1993 **Visiting Research Professor** (sabbatical), Institute for Mechanized Construction and Rock Mining (IMBiGS), Warsaw, Poland. Planning of long-range research in construction equipment, automated construction technologies, and environmental protection for civil infrastructure and construction projects. Conducted seminars on construction automation technology and technology transfer.
- 1992 **Visiting Senior Research Scientist** (sabbatical), Division of Building, Construction and Engineering, Commonwealth Scientific and Industrial Research Organization (CSIRO), Melbourne, Victoria, Australia. Research in decision support systems for construction process automation and robotics, automated construction process modeling, advanced construction simulation and optimization.
- 1981-82 **Staff Engineer** (full time), Engineering Dept., Pittsburgh Testing Laboratory (a nationwide construction engineering consulting firm, later renamed to *Professional Services Industries, Inc.*), Pittsburgh, PA. In charge of a nationwide engineering testing program for the U.S. Department of Transportation; conducted structural engineering investigations, failure analyses, design evaluations, value engineering studies, construction claims analyses, structural and construction safety assessments, and forensic engineering projects for various corporate clients.

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### Licenses

- EIT (Pennsylvania; March 1983)

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### Citations (selected)

- Who's Who in America, since 2006
- Who's Who in Engineering, since 2003
- Who's Who: American Men and Women of Science, since 1992
- Who's Who in Science and Engineering, since 1999
- Who's Who in the Midwest, Millennium Edition 2000-2001
- Outstanding Scientists of the 20<sup>th</sup> Century, 2000
- International Who's Who of Professionals, since 2000
- Who's Who Online, since 1998
- Strathmore's Who's Who, 2000-2001 Millennium Edition

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### Awards, Recognitions and Honors (selected)

- 2006: Elected as Foreign Member, Russian Academy of Engineering
- 2006: Honorary Professorship, Moscow State Industrial University
- 2005: Honorary Professorship, Warsaw University of Technology
- 2004: Civil Engineering Faculty Medal, Slovak University of Technology
- 2004: Alexander von Humboldt Foundation *Connect* Award
- 2004: Taiwan Science and Technology Foundation Award for visiting professorship
- 2004: Fulbright Commission *Senior Specialist* Award
- 2003: Dedicated and Outstanding Service Award, Office of International Programs, Purdue University

- 2001&2002: U.S. National Academy of Engineering/ Alexander von Humboldt Foundation, USA-Germany *Frontiers of Engineering*
  - 2000: U.S. National Academy of Engineering/ Japan Academy of Engineering, USA-Japan *Frontiers of Engineering*.
  - 1998: American Society of Civil Engineers Walter L. Huber Research Prize
  - 1995-1996: Committee on Institutional Cooperation (CIC) – a consortium of ‘Big Ten’ universities - Academic Leadership Fellow
  - 1987-1992: U.S. National Science Foundation Presidential Young Investigator
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### Membership in Professional and Scholarly Societies

- *American Society of Civil Engineers (ASCE)* (since 1982)
  - Indiana Delegate, District 9 Council (1986-91)
  - Member of the Control Group, Aerospace Division Task Force on Construction Robotics (1987-89)
  - Member, Committee on Field Sensing and Robotics in Civil Engineering (since 1990)
  - Member, Intelligent Computing Committee; formerly Expert Systems Committee (since 1987)
  - Member, Information Technology Committee; formerly Database Committee (since 1988)
  - Member, Construction Research Council (1987-present)
- *International Association for Automation and Robotics in Construction (IAARC)*
  - Founding Member and Co-Director (since 1991)
  - Chairman, Newsletter Committee, (1993-95)
  - Chairman, Publication Committee (1995-98)
  - Chairman, External Relations Committee (1998-present)
  - Vice-President and President-Elect (1999-2000)
  - **President** (2000-01)
- *International Council for Building Research Studies and Documentation (CIB)*
  - W-75 Working Commission on Construction Equipment and Mechanization (1989-1996)
  - Task Group 27, Human-Machine Technologies for Construction Site (1997-2002)
  - W-78, Working Commission on Information Technology for Construction (since 1996)
  - Task Group 29, Construction in Developing Countries (since 1999)
- *International Council on Tall Buildings and Urban Habitat (ICTBUH)*
  - Co-Chairman, Committee 65, Robots and Tall Buildings (since 1991)
- *American Society for Engineering Education (ASEE)*, since 2000
- National Research Council, Transportation Research Board (NRC-TRB)
  - Member, Committee on Applications of Emerging Technologies (1994-95)
- *Sigma Xi: The Scientific Research Honorary*, since 1986
- *International Standards Organization (ISO) and American National Standards Institute (ANSI)*
  - U.S. Representative to ISO Technical Committee 195 (Construction Machinery and Equipment), 1994
- *Polish-American Contractors-Builders Association, Chicago, IL* (Academic Affiliate; 2001-2005)
- *International Association of Foundation Drilling* (Technical Affiliate; since 1998)

- *FIATECH* – Fully Integrated and Automated Technology for Capital Project Industries – Research Advisory Panel on Automated Construction Project Sites (Affiliate; since 2003)

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**Teaching**

**Courses Taught at Purdue University**

<b>Course No.</b>	<b>Title</b>
CE 221*	Construction Plans and Estimates
CE 324	Labor Relations in Construction
CE 498	Civil Engineering Design Project
CE 520	Construction Project Control Systems
CE 521	Analysis of Construction Management Systems
CE 522	Computer Applications in Construction Engineering
CE 523	Selection and Utilization of Construction Equipment
CE 524	Legal Aspects in Engineering Practice
CE 526	Construction of Temporary Facilities
CE 597C	Expert Systems in Construction Engineering
CE 597I	International Construction
CE 5970	Computer Applications in Construction
CE 621	Construction Company Management
CE 697M	Construction Robotics and Automation

**Courses Taught at the University of Maryland**

ENCE 420	Construction Equipment and Methods
ENCE 421	Legal Environment and Contracts for Construction
ENCE 626	Web-Based Project Management
ENCE 698	Research in Sensors and Sensor Networks for Civil Engineering Infrastructure Monitoring

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In addition to pre-structured, traditional classroom-taught courses, Prof. Skibniewski conducted individually tailored, directed study coursework (CE 597 and CE 697 with variable course names) with individual students at Purdue University. Topics addressed in this fashion focused on highly specialized current research areas such as automated construction systems design and analysis, expert systems

prototype development, reliability and risk analysis in construction, advanced technology transfer, neural networks and machine learning applications to construction engineering, and international construction.

In addition to working with graduate students at the M.S. and Ph.D. level, from time to time Prof. Skibniewski engages in his research undergraduate students as well. The most recent example (2005) of this activity is mentoring of a Purdue University undergraduate student in civil engineering (S. Steven) as part of the Summer Undergraduate Research Fellowship (SURF) program supported by the National Science Foundation.

### **Contributions in Course and Curriculum Development**

- CE 697M Construction Automation and Robotics.
- CE 521 Analysis of Construction Management Systems.
- CE 221 Construction Plans and Estimates.
- CE 498 Civil Engineering Senior Design Project.
- CE 520 Construction Project Control Systems.
- CE 523 Selection and Utilization of Construction Equipment.
- CE 597C Expert Systems in Construction Engineering.
- CE 597I International Construction Management.
- CE 621 Construction Company Management.

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### **Research and Scholarship**

#### **Published Works**

##### **a. Book**

1. Skibniewski, M. (1988): "*Robotics in Civil Engineering*," Computational Mechanics Publications/ Van Nostrand Reinhold, Southampton, Boston, New York, ISBN 0-442-31925-8, 233 pp.

##### **b. Book Chapters and Invited Contributions to Books (selected)**

1. Oppenheim, I., Skibniewski, M. (1988): "Robots in Construction," in "International Encyclopedia of Robotics," John Wiley & Sons, A Wiley-Interscience Publication, Vol. 1, New York, ISBN 0-471-63512-4, pp. 240-249 (this encyclopedia, edited by S. Nof, won the 1988 Technical Book of the Year Award)
2. Skibniewski, M. (1992): "Robot Implementation Issues for the Construction Industry," in "Human-Robot Interaction," Rahimi, M. and Karwowski, W., eds., Taylor & Francis Publishers, London, U.K., Washington, D.C., ISBN 0-85066-809-3, pp. 347-366
3. Skibniewski, M., Kunigahalli, R. (1997): "Automation in Concrete Construction," Chapter 17, Concrete Construction Engineering Handbook, CRC Press, Boca Raton, FL, ISBN 0-8493-2666-4
4. Chao, L-C., Skibniewski, M. (1998): "Neural Networks for Evaluating Construction Technology," Ch. 1 in "*Artificial Neural Networks for Civil Engineers: Advanced Features and Applications*," American Society of Civil Engineers, Reston, VA, ISBN # 0-7844-0344-9, pp. 1-34
5. Skibniewski, M., Budny, E. (forthcoming): "Construction Machinery," in *Handbook of Mechanical Engineering*, K.-H. Grote and E. Antonsson, eds., Springer Verlag, Berlin-Heidelberg-NewYork-Tokyo

##### **c. Articles in Refereed Archival Journals**

1. Skibniewski, M., Hendrickson, C. (1988): "Analysis of Robotic Surface Finishing Work," ASCE *Journal of Construction Engineering and Management*, Vol.114, No. 1, March, pp. 53-68

2. Skibniewski, M. (1988): "A Framework for Decision Making on Implementing Robotics in Construction," *ASCE Journal of Computing in Civil Engineering*, Vol. 2, No. 2, April, pp. 188-201
3. Russell, J., Skibniewski, M. (1988): "Decision Criteria in Contractor Prequalification," *ASCE Journal of Management in Engineering*, Vol. 4, No.2, April, pp. 148-164
4. Jarrell, D., Skibniewski, M. (1988): "Cost Comparison Model for Contracting Out Government Services," *ASCE Journal of Management in Engineering*, Vol. 4, No. 3, July, pp. 260-271
5. Ostoja-Starzewski, M., Skibniewski, M. (1988/89): "A Master-Slave Manipulator for Excavation and Construction Tasks," *Robotics and Autonomous Systems*, No. 4, Elsevier Science, pp. 333-337
6. Skibniewski, M., Nof, S. (1989): "A Framework for Programmable and Flexible Construction Systems," *Robotics and Autonomous Systems*, Vol. 5, Elsevier Science, pp. 135-150
7. Gaultney, L., Skibniewski, M., Salvendy, G. (1989): "A Systematic Approach to Industrial Technology Transfer: A Conceptual Framework and a Proposed Methodology," *Journal of Information Technology*, Association for Information Technology, Kogan Page Ltd. Publishers, London, England, Vol. 4, No. 1, March, pp. 7-16
8. Skibniewski, M., Russell, J. (1989): "Robotics Application in Construction," *AACE Cost Engineering Journal*, American Association of Cost Engineers, Vol. 31, No. 6, June, pp. 10-18. Reprinted in *Canadian Civil Engineer*, Vol. 6, No. 6, Nov./Dec. 1989, pp. 1-5 (Part I) and Vol. 7, No. 1, Jan./Feb. 1990, pp. 3 and 16-18 (Part II) (Invited Paper)
9. Hijazi, A., Skibniewski, M. (1989): "Computer Simulation of Concrete Placement Operations," *Journal of Engineering Computing and Applications*, Auerbach Publishers, New York-Boston, Vol. 4, No. 1, Summer, pp. 19-25
10. Kakoto, T., Skibniewski, M., Hancher, D. (1989): "Comparison of U.S. and Japanese Practices in Public Construction," *ASCE Journal of Construction Engineering and Management*, Vol. 115, No. 4, December, pp. 499-516
11. Skibniewski, M., Molinski, J. (1989): "Modeling of Building Production Activities for Multi-Facility Projects," *Construction Management and Economics*, E & F.N. Spon Publishers (Chapman&Hall), London, England, Vol. 7, No. 4, pp. 357-365
12. Skibniewski, M., Kassouf, P. (1990): "Potential for Application of Plastic Liner Plates in Tunneling Works," *Construction Management and Economics*, E & F.N. Spon Publishers (Chapman&Hall), London, England, Vol. 8, No. 1, pp. 3-11
13. Russell, J., Skibniewski, M. (1990): "Qualifier-1: A Computerized Decision Model for Contractor Prequalification," *ASCE Journal of Computing in Civil Engineering*, January, Vol. 4, No. 1, pp. 77-90
14. Russell, J., Skibniewski, M., Cozier, D. (1990): "Qualifier-2: A Knowledge-Based System for Contractor Prequalification," *ASCE Journal of Construction Engineering and Management*, Vol. 116, No. 1, March, pp. 157-171
15. Skibniewski, M., Armijos, A. (1990): "Linear Programming Approach to Construction Equipment and Labor Assignments," *Civil Engineering Systems*, E & F.N. Spon Publishers (Chapman&Hall), London, England, Vol. 7, No. 1, March, pp. 44-50
16. Skibniewski, M., Armijos, A. (1990): "Knowledge Based Generation of Construction Schedule Logic," *Expert Systems Journal*, Auerbach Publishers, New York, N.Y., Summer, Vol. 2, No. 2, pp. 42-47
17. Skibniewski, M. (1990): "On the Micro-Computer Use by Small Contractors: Implications of a Survey and Recommendations for the Future," *Project Management Journal*, Project Management Institute Vol. XXI, No. 1, March, pp. 25-31
18. Wright, J., Skibniewski, M. (1990): "A Graduate Course in Expert Systems Prototype Development," *International Journal of Applied Engineering Education*, Pergamon Press, Oxford-New York, Vol. 6, No. 2, pp. 233-242
19. Skibniewski, M., Hendrickson, C. (1990): "Automation and Robotics for Road Construction and Maintenance," *ASCE Journal of Transportation Engineering*, Vol. 116, No. 3, May/ June, pp. 261-271
20. Russell, J., Skibniewski, M. (1990): "An Ergonomic Analysis Framework for Construction Tasks," *Construction Management and Economics*, E & F.N. Spon Publishers (Chapman&Hall), London, England, Vol. 8, No. 3, pp. 329-338



21. Russell, J., Skibniewski, M., Vanegas, J. (1990): "A Framework for a Construction Robot Fleet Management System," *ASCE Journal of Construction Engineering and Management*, September, Vol. 116, No. 3, pp. 448-462
22. Skibniewski, M. (1991): "Information Management System for New Construction Technologies," *Construction Management and Economics*, E.&F.N. Spon Ltd. Publishers, London, England, Vol. 9, No. 1, pp. 39-49
23. Singh, A., Skibniewski, M. (1991): "Development of Flexible Production Systems for Strip Mining," *International Journal of Mining Science and Technology*, Elsevier Science Publishers, Vol. 13, No. 1, July, pp. 75-88
24. Skibniewski, M., Russell, J. (1991): "Construction Robot Fleet Management System Prototype," *ASCE Journal of Computing in Civil Engineering*, Vol 5, No. 4, October, pp. 444-463
25. Kakoto, T., Skibniewski M. (1991): "Engineering Decision Support for Automated Shield Tunneling," *ASCE Journal of Construction Engineering and Management*, Vol. 117, No. 4, December, pp. 674-690
26. Russell, J., Hancher, D., Skibniewski, M. (1992): "Contractor Prequalification Data for Construction Owners," *Construction Management and Economics*, E & F.N. Spon Publishers (Chapman&Hall), London, England, Vol. 10, No. 2, March, pp. 117-135
27. Skibniewski, M., Wooldridge, S. (1992): "Robotic Materials Handling for Automated Building Construction Technology," *Automation in Construction*, Elsevier Science Publishers, 1, pp. 251-266
28. Skibniewski, M., Chao, L-C. (1992): "Evaluation of Advanced Construction Technologies with Analytical Hierarchy Process," *ASCE Journal of Construction Engineering and Management*, Vol. 118, No. 3, September, pp. 577-593
29. Murtaza, M., Fisher, D., Skibniewski, M. (1993): "Issues in Modular Construction Decision Support," *ASCE Journal of Construction Engineering and Management*, Vol. 119, No. 1, March, pp. 115-130
30. Vähä, P., Skibniewski, M. (1993): "Dynamic Model of Excavator," *ASCE Journal of Aerospace Engineering*, Vol. 6, No. 2, April, pp. 148-158
31. Vähä, P., Skibniewski, M. (1993): "Cognitive Force Control of Excavators," *ASCE Journal of Aerospace Engineering*, Vol. 6, No. 2, April, pp. 159-166
32. Zhou, Y., Skibniewski, M. (1993): "Position-Force Adaptive Control for Construction Robots," *ASCE Journal of Aerospace Engineering*, Vol. 6, No. 2, April, pp. 167-185
33. Hastak, M., Skibniewski, M. (1993): "Automation Potential of Pipe Laying Operations," *Automation in Construction*, Elsevier Science Publishers, Vol. 2, No. 1, June, pp. 65-79
34. Skibniewski, M. (1993): "On the Implementation of Industrial Robotics in the Construction Industry," *Inzynieria i Budownictwo* (Engineering and Construction), Journal of Polish Association of Civil Engineers and Civil Engineering Technologists (PZliTB), Warsaw, Poland, No. 12, pp. 535-536 (in Polish)
35. Skibniewski, M., Kunigahalli, R., Russell, J. (1993): "Managing Multiple Construction Robots with a Computer," *Automation in Construction*, Elsevier Science Publishers, Vol. 2, No. 3, December, pp. 199-216
36. Zhou, Y., Skibniewski, M. (1994): "Construction Robot Force Control in Cleaning Operations," *ASCE Journal of Aerospace Engineering*, Vol. 7, No. 1, January, pp. 33-49
37. Skibniewski, M., Tamaki, K. (1994): "Logistics Support System for Construction Robotics Implementation," *Microcomputers in Civil Engineering*, Special Issue on Innovative Computer Technology in Construction, Blackwell Scientific Publishers, Vol. 9, No. 1, February (invited paper), pp. 69-81
38. Chao, L-C., Skibniewski, M. (1994): "Estimating Construction Productivity: Neural-Network-Based Approach," Special Issue on Neural Networks, *ASCE Journal of Computing in Civil Engineering*, Vol. 8., No. 2., April, pp. 234-251
39. Russell, J., Kunigahali, R., Skibniewski, M. (1994): "Motion Planning for Automated Construction," selected from "award quality" papers after competitive review, *Automation in Construction*, Vol. 3, No. 1, May, Elsevier, pp. 71-78 (revised and refereed version of paper from Proceedings, 10<sup>th</sup> International Symposium on Automation and Robotics in Construction, Houston, Texas, May 1993, International Association for Automation and Robotics in Construction & Elsevier Science Publishers, pp. 407-414)

40. AbouRizk S., Mandalapu S., Skibniewski, M. (1994): "Analysis and Evaluation of Alternative Technologies," *ASCE Journal of Management in Engineering*, Vol. 10, No. 3, May/June, pp. 65-71
41. Davidson, I., Skibniewski, M., (1995): "Simulation of Automated Data Collection in Buildings," *ASCE Journal of Computing in Civil Engineering*, Vol. 9, No. 1, January, pp. 9-20
42. Chao, L-C., Skibniewski, M. (1995): "Neural Network Method of Estimating Construction Technology Acceptability," *ASCE Journal of Construction Engineering and Management*, Vol. 121, No. 1, March, pp. 130-142
43. Chao, L-C., Skibniewski, M. (1995): "Decision Analysis for New Construction Technology Implementation," *Civil Engineering Systems*, Vol. 12, Gordon and Breach Science Publishers, pp. 67-82
44. Haas, C., Skibniewski, M., Budny, E. (1995): "Robotics in Civil Engineering," *Microcomputers in Civil Engineering*, Special Issue on Robotics in Civil Engineering, Vol. 10, No. 5, Blackwell Publishers, pp. 371-381
45. Son, J., Skibniewski, M. (1995): "Genetic Algorithms in Construction Engineering and Management Computations," *International Journal of Construction Information Technology*, Vol. 3, No. 2, Winter (December), pp. 1-27
46. Skibniewski, M., Arciszewski, T., Lueprasert, K. (1997): "Constructability Analysis: A Machine Learning Approach," *ASCE Journal of Computing in Civil Engineering*, Vol. 2, No. 1, January, pp. 8-17
47. Chao, L.C., Skibniewski, M. (1998): "Fuzzy Logic for Evaluating New Construction Technology," *ASCE Journal of Construction Engineering and Management*, Vol. 124, No. 4, July-August, pp. 297-304
48. Son, J., Skibniewski, M. (1999): "Multi-heuristic Approach for Resource Leveling Problem in Construction Engineering: Hybrid Approach," *ASCE Journal of Construction Engineering and Management*, Vol. 125, No. 1, (Jan./Feb.) pp. 23-31
49. Son, J., Skibniewski, M. (1999): "Advanced Resource Leveling Model for Construction Engineering," *Computer Methods in Civil Engineering*, Polish Academy of Sciences, No. 4, 1999, ISSN: 0867-5007, pp. 47-61
50. Yu, W-D., Skibniewski, M. (1999): "Quantitative Constructability Analysis with a Neuro Fuzzy Knowledge-Based Multi-Criterion Decision Support System," *Automation in Construction*, Elsevier Science Publishers, Oxford, U.K., Vol. 8, No. 5, pp. 539-558
51. Yu, W-D., Skibniewski, M. (1999): "A Neuro-Fuzzy Computational Approach to Constructability Knowledge Acquisition for Construction Technology Evaluation," *Automation in Construction*, Elsevier Science Publishers, Oxford, U.K., Vol. 8, No. 5, pp. 559-566
52. Abduh, M., and Skibniewski, M. (2000): "Survey on Utility of Internet-based Applications for Supporting Design-Build Activities," *Civil Engineering Journal*, Institute of Technology, Bandung, Indonesia, Vol. 7, No. 4, October
53. Skibniewski, M. (2001): "Strategic Planning and Development Issues for Polish Colleges and Universities," *The Sarmatian Review*, ISSN 1059-5872, Vol. XXI, No. 2, April, pp. 781-786
54. Skibniewski, M. (2001): "New Directions and Developments in Robotics and Site Automation in the USA," *Zeszyty Naukowe (Scientific Letters)*, Vol. 4, College of Communication and Management (WSKiZ), Poznan, ISSN 1640-2839, pp. 9-22
55. Skibniewski, M., Nitithamyong, P. (2001): "Measuring Effectiveness of Internet-Based Distance Learning in Project Management," *Zeszyty Naukowe (Scientific Letters)*, Vol. 5, College of Communication and Management (WSKiZ), Poznan, ISSN 1640-2839, pp. 9-15
56. Skibniewski, M., Harmelink, D., Jiang, J-P. (2001) "Methodology for Valuation of Information Technology for Construction Management Applications," *Zeszyty Naukowe (Scientific Letters)*, Vol. 5, College of Communication and Management (WSKiZ), Poznan, ISSN 1640-2839, pp. 16-38.
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**e. Other Proceedings Articles** (selected)

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2. Skibniewski, M. (1994): "Automation and Robotics, and Intelligent Buildings," Proceedings, Robotics Twenty-Twenty Symposium and Exposition, Johor Bahru, Malaysia, December (invited keynote paper)
3. Skibniewski, M. (1995): "Decision Support Tools for Effective Technology Transfer and Innovation in Construction", Proceedings, 7<sup>th</sup> International Symposium on Technological Innovation in Construction, Santiago, Chile, September (invited paper)
4. Skibniewski, M. (1996): "Computer Aided Construction Research in the United States," *Zukunft Bauen* - National Conference on Future Construction Techniques, Dresden, Germany, April (in German)
5. Skibniewski, M. (1996): "State of the Art in Computer Aided Construction Engineering and Construction Technology Transfer in the United States, Proceedings, International Conference on

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#### **f. Reports (selected)**

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  12. Tamaki, K., Hasegawa, Y., Skibniewski, M. (1991): "Task and Motion Planning for Designing Group Control Systems in Robotic Construction Work," Chapter 6, Technical Report of WASCOR Project Consortium, WASCOR III-2, II-R-01, Waseda University Systems Science Institute, Tokyo, Japan, November, pp. 255-327 (in Japanese). Also re-published as Hasegawa, Y., Tamaki, K., Skibniewski, M. (1992): "Robotization of Building Construction Operations (Part 6) – Task and Motion Planning for Design of Group Control System in Robotic Construction, Research Report No. 23, March, Waseda University Systems Science Institute, Tokyo, Japan (in Japanese), pp. 131-159
  13. Skibniewski, M. et al. (1992): "CREMS - Construction Robotic Equipment Management System," Final Report to the Obayashi Corp., Division of Construction Engineering and Management, School of Civil Engineering, Purdue University, April, 235 pp.
  14. Fisher, D., Skibniewski, M.: (1992): "Computerized Decision Support for Modularization of Industrial Construction," Source Document No. 72, Task Force on Modularization, Construction Industry Institute, Bureau of Engineering Research, University of Texas at Austin, May, 120 pp.
  15. Fisher, D., Skibniewski, M.: (1992): "MODEX: Automated Decision Support System for Modular Construction," Publication No. 29-1, Task Force on Modularization, Construction Industry Institute, Bureau of Engineering Research, University of Texas at Austin, May, 17 pp.
  16. Skibniewski, M., Russell, J. (1992): "Evaluation and Quantification of Risk by Surety Companies Underwriting Surface Reclamation Bonds," Final Report to U.S. Bureau of Mines, Office of Surface Mining, Division of Construction Engineering and Management, Purdue University, August, 168 pp.
  17. Neil, C., Salomonsson, G., Skibniewski, M. (1993): "Robot Implementation Decisions in the Australian Construction Industry," Report to the Australian Building Research Grant Scheme, No. DBCE DOC 93/37 (M), Commonwealth Scientific and Industrial Research Organization; Division of Building, Construction and Engineering; Planning and Management Systems Department, March, 96 pp.

18. Skibniewski, M. (1993): "Potential for Robotics Application within the Long Range Science and Technology Plan at the U.S. Army Construction Engineering Research Laboratory and Affiliated Labs," Report to USA-CERL Robotics Center, Champaign, IL, December
19. Skibniewski, M., Lueprasert, K., Yu, W-d. (1996): "Automated Constructability Review System," Final Report to the Obayashi Corporation, Tokyo, Japan, June, 567 pp.
20. Harmelink, D., Skibniewski, M., Castro-Lacouture, (2001): "Analysis of [Object Recognition] Software Applications [for Project Estimating] in the U.S. Construction Industry," Final Report to VHSOFT Technologies Co., Inc., Hong Kong, May, 53 pp.

**g. Professional Magazine Articles** (selected, reviewed by editors only)

1. Skibniewski, M. (1989): "Robotics in America," *Civil Engineering*, American Society of Civil Engineers, Vol. 59, No. 5, May, pp. 78-79
2. Skibniewski, M. (1991): "East European Construction Markets: A New Frontier," *Construction Business Review*, Vol. 1, No. 6, November/December, pp. 44-49
3. Skibniewski, M., Nitithamyong, P. (2002): "Use of Web Technologies in Construction Project Management: What are the Critical Success/Failure Factors?," *Information Management*, Vol. 15, No. 3/4, Fall, Information Resources Management Association, Idea Group Publishing, ISSN 1080-286X, pp. 15-16 & 31.
4. Skibniewski, M., Nitithamyong, P. (2004): "Web-Based Construction Project Management Systems: Practical Advantages and Disadvantages," *Construction Bulletin*, No. 27, March, Publication of Centre for Advanced Construction Studies, Nanyang Technological University – Building and Construction Authority, pp. 4-9 (abbreviated from *e15*)

**h. Book Review**

1. Skibniewski, M. (2001): "Industrialized and Automated Building Systems: A Managerial Approach" by Warszawski, A., 2<sup>nd</sup> Edition, E&F Spon, London 1999, 464 pp., ISBN 0 419 20620 5. *Construction Management and Economics*, Vol. 19, Taylor & Francis Publishers, p. 119.

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**Invited Presentations** (selected)

1. "Construction Robotics for Building Exterior Maintenance," Seminar at the Technical University of Berlin (West), November 1985
2. "Economic Justification of Construction Robots," Invited Lecture at the University of Illinois at Urbana-Champaign, September 1986
3. "State-of-the-Art" in Construction Robotics Application," Presentation for Bechtel Western Power Corp., Norwalk, California, January 1987
4. "Research Needs and Implementation Potential for Automated Construction Equipment," Presentation for Bechtel Group Inc., San Francisco, CA, January 1987
5. "Automated Construction Research at Purdue University," Presentation at Stone & Webster Engineering Co., Boston, MA, March 1987
6. "Technology Transfer Challenges in Construction Automation," Seminar at the University of California at Berkeley, March 1987
7. "State-of-the-Art in Construction Automation," Lecture at Warsaw Polytechnic, Poland, June 1987
8. "The Role of Automation in Advancing the U.S. Construction Industry," Guest Speaker, ASCE Indianapolis Metropolitan Branch, September 1987
9. "Evaluation Methodologies for Construction Robotics," Presentation for the Technical Research Center of Finland, Helsinki, May 1988

10. "Robotics for Concrete Placement and Finishing," Lecture at the American Concrete Institute (ACI) Annual Convention, Atlanta, GA, February 1989
11. "Robotics Technology for Road Construction and Maintenance," Workshop Leader and Speaker at the ASCE First International Conference on Applications of Advanced Technologies in Transportation Engineering, San Diego, CA, February 1989
12. "Future of Expert Systems in Construction," Seminar at the ASCE Construction Congress I, San Francisco, CA, March 1989
13. "Current Trends in the U.S. Construction Engineering Education," Invited Speaker, Technical University of Poznan, Poland, May 1989
14. "Current Trends in Automated Construction Equipment R&D - the U.S. Experience," Invited Speaker at the International Symposium on the Automation of Construction Processes and Construction Machines, International Council for Building Research Studies and Documentation (CIB), Technical University of Magdeburg, Germany, May 1989
15. "International Competition in the Engineering and Construction Industries," Guest Speaker, ASCE Indianapolis Metropolitan Branch Meeting, November 1989
16. "State-of-the-Art in Construction Robotics," Guest Speaker, Australian Robot Association, Sydney, March 1990
17. "Construction Robotics Research and Development," Guest Speaker, University of New South Wales, Sydney, Australia, March 1990
18. "Short Course on Robotics Technology for Construction Applications," Principal Speaker, Commonwealth Scientific and Industrial Research Organization (CSIRO), Division of Building, Construction and Engineering, Melbourne, Australia, March 1990
19. "Construction Robotics Applications," Guest Speaker, Swinburne Institute of Technology, Melbourne, Australia, March 1990
20. "Advanced Computer and Automation Technology Applications in Construction," Guest Speaker, Institute for Intelligent Robotic Systems, Monash University, Melbourne, Australia, March 1990
21. "Artificial Intelligence and Automation Research in Construction," Guest Speaker, Wayne State University, Detroit, MI, April 1990
22. "Automated Construction Equipment for Hazardous Environments," Guest Lecture at the University of Mining and Metallurgy, Kraków, Poland, June 1990
23. "Industrialization and Automation in the Construction Industry," Speaker, Short Course at the Slovak Technical University, Bratislava, Czechoslovakia, June 1990
24. "Automation Technology in Construction," Guest Speaker, City University, London, England, June 1990
25. "Automated Construction Research in the United States," Invited Speaker, 6<sup>th</sup> Canadian Construction Congress, National Research Council of Canada, Toronto, December 1990
26. "Short Course on Robotics in Conventional and Hazardous Construction Environments," Speaker, ASCE Second Construction Congress, Boston, MA, April 1991
27. "Intelligent Construction Equipment Research and Development," Invited Speaker, Seminar/Short Course on Automation and Robotics in Construction, International Construction Fair CONSTRUMAT, Catalan Institute of Construction Technology, Barcelona, Spain, April 1991
28. "Robotics in the Construction Industry," Seminar Speaker at the University of Colorado at Boulder, April 1991
29. "Construction Automation - Research into the Future," Guest Speaker, University of Miami, Florida, December 1991
30. "Robot Technology Applications in Construction," Guest Speaker, Department of Robotics and Digital Technology, Monash University, Melbourne, Australia, August 1992
31. "Automation Technology Applications in Construction," Guest Speaker, University of Melbourne, Australia, August 1992
32. "Robotics and Automation in Construction: a Professional Challenge," Guest Speaker, Queensland University of Technology, Brisbane, Australia, September 1992
33. "Robotics for Construction and Maintenance Tasks," Guest Speaker, Royal Melbourne Institute of Technology, Australia, October 1992
34. "Automation Technology Applications in Building," Guest Speaker, University of New South Wales, Kensington, Australia, October 1992

35. "Automation Technology Applications in Building Task Design," Guest Speaker, Sydney University, Australia, October 1992
36. "Automation Technology Applications in Civil Engineering Projects," Guest Speaker, University of Tasmania, Hobart, Australia, October 1992
37. "Construction Automation and Robotics Research Progress," Invited Speaker, National University of Singapore, November 1992
38. "Construction Automation Implementation Research," Invited Speaker, Nanyang Technological University, Singapore, November 1992
39. "Construction Automation Costs and Benefits," Invited Speaker, University of Hong Kong, November 1992
40. "Advanced Construction Equipment Controls," Invited Speaker, Asian Institute of Technology, Bangkok, Thailand, November, 1992
41. "Automated Construction Equipment Design and Performance Guidelines," Invited Speaker, Technical University of Karlsruhe, Germany, December 1992
42. "Construction Mechanization vs. Automation: a Comparison" Seminar Series Speaker, Institute for Mechanized Construction and Rock Mining, Warsaw, Poland, December 1992 - April 1993
43. "Construction Automation Research in the United States", Guest Speaker, Technical University of Krakow, Poland, March 1993
44. "Construction Automation Research at Purdue University", Guest Speaker, Technical University of Warsaw, Poland, March 1993
45. "Mobile Robotics for Hazardous Environments," Invited Speaker, University of Agriculture, Warsaw, Poland, March 1993
46. "Advanced Automation for Construction Equipment," Invited Speaker, Military University of Technology, Warsaw, Poland, March 1993
47. "Construction Engineering and Management Education Curricula in the United States," Guest Professor at the Slovak Technical University, Bratislava, Slovakia, March 1993
48. "Robotics in Agriculture and Environmental Protection," Invited Speaker, University of Agriculture, Krakow, Poland, April 1993
49. "Advanced Robotics in Construction," Invited Speaker, Federal Research Institute for Construction and Road Building Machinery, Moscow, Russia, April 1993
50. "Graduate Construction Engineering Education in the United States," Guest Speaker, Warsaw Polytechnic, Poland, April 1993
51. "Automated High Rise Building Construction Systems," Guest Speaker, Wayne State University, Detroit, MI, October 1993
52. "Automation in the Construction Industry," Invited Speaker, Robotics Center and Civil Engineering Program, Florida Atlantic University, Boca Raton, January 1994
53. "Robotics for Road Construction and Maintenance - Summary of 10<sup>th</sup> ISARC Topics," Invited Speaker, 73<sup>rd</sup> Annual Conference, Transportation Research Board, National Research Council, Washington, D.C., January 1994
54. "Construction Automation and Field Sensing," Invited Speaker, Remote Sensing and Image Processing Laboratory, Louisiana State University, Baton Rouge, April 1994
55. "State-of-the-Art in Automation and Robotics for Road Construction and Repair," Invited Speaker, National Taiwan University, Taipei, Taiwan, June 1994
56. "Planning for Construction Technology Transfer for Mega-Projects," Invited Lectures (2), Dept. of Civil & Structural Engineering, Hong Kong University, June 1994
57. "Computer-Aided Automated Constructability Review Systems," Invited Presenter, Obayashi Corporation Technical Research Institute, Tokyo, Japan, June 1994
58. "Construction Automation in Large Infrastructure Projects," Keynote Speaker, 7<sup>th</sup> International Symposium on Technological Innovation in Construction, Santiago, Chile, September 1995
59. "Advanced Automation Techniques for Structural Assembly Tasks," Invited Speaker, Urban Systems Engineering Program, George Mason University, Fairfax, VA, February 1996
60. "Automated Construction and Maintenance Techniques," Invited Keynote Presentation, Construction Technologies Conference, Chartered Institute of Building, Hong Kong, March 1996
61. "Impact of Technical Innovation on Construction Management Methods," Invited Keynote Speaker, *Zukunft Bauen* - National Conference on Future Construction Techniques, Dresden, Germany, April 1996 (in German)

62. "Advanced Construction Engineering Education Issues in the USA," Invited Speaker, Kraków University of Technology, Krakow, Poland, May 1997.
63. "State of the Art in U.S. Construction Automation R&D," Invited Keynote Speaker, Construction Automation Symposium at *Zukunft Bauen* - Leipzig Construction Trade Fair, Leipzig, Germany, October 1997
64. "Research Issues in Construction Automation for the Utility Industry," Invited Keynote Speaker, Workshop organized for the gas utility industries by Gas Research Institute, Maurer Engineering Inc., and Jason Consultants Inc., Tarrytown, NY, November 1997
65. "Structural Design Evaluation for Automated Constructability Analysis," Invited Speaker, Lehigh University, Allentown, PA, February 1998
66. "Construction Automation R&D in the USA," Invited Plenary Speaker, Fifth International Conference on Automation Technology and 1998 International Conference on Production Research (Asia Meeting), Taipei, Taiwan, National Chiao Tung University and Chinese Institute of Automation Engineers, July 1998
67. "Advanced Technology Transfer for Infrastructure Engineering," Invited Speaker, Louisiana State University, October 1998
68. "Automation Technology Transfer to Civil Engineering and Construction," Invited Speaker, Distinguished Speaker Series, The Urban Systems Engineering Institute, George Mason University, October 1998
69. Robotics for Inspection and Maintenance of Tall Buildings, Invited Speaker, City University of Hong Kong, December 1998
70. "Comparison of U.S. and Polish Institutions of Higher Learning," Invited Speaker, Seminar/Workshop for Presidents and Senior Executives of Polish Colleges and Universities, Pułtusk, Poland, April 2000
71. "New Research in Construction Automation," Invited Speaker, Chung Hua University, Taiwan, September 2000
72. "New Construction Techniques and Construction Automation," Invited Speaker, 6<sup>th</sup> World Congress of the Council on Tall Buildings and Urban Habitat, Melbourne, Australia, March 2001
73. "E-Commerce and E-Work Concepts for the Construction Industry," Invited Professor, *Universidad Carlos III de Madrid*, Spain, February 2002
74. "E-commerce Applications in the U.S. Construction Industry: State-of-the-Art," Invited Keynote Speaker, "eLEGAL:" European Conference on Legal Aspects of Information and Communication Technology Application in Project-Based Business, Loughborough University, England, October 2002
75. "Current Research on Web-Based Tools for Construction Project Management," Invited Keynote Lecture, Special Symposium on the 5<sup>th</sup> Anniversary of Collaborative Research Between Purdue University and Cracow University of Technology, Krakow, Poland, November 2002
76. "Constructability Analysis and Decision Support," Invited Keynote Speaker, CONMAT: Construction Materials and Management International Conference, Indian Institute of Technology – Kharagpur, India, January 2003
77. "Automation Technologies for High Rise Building Construction," Invited Keynote Speaker, 49<sup>th</sup> Annual Civil Engineering Conference, Polish Academy of Sciences Civil Engineering Committee and Polish Institution of Civil Engineers and Technologists, Krynica, Poland, September 2003
78. "Making Web-Based Project Management Systems Successful," Invited Keynote Speaker, 2<sup>nd</sup> International Conference on Construction in the 21<sup>st</sup> Century: Sustainability and Innovation in Management and Technology, Hong Kong Polytechnic University, December 2003 (unable to attend)
79. "Impact of IT Investment on Construction Company Performance," Invited Keynote Theme Speaker, 9<sup>th</sup> East Asia Pacific Conference on Structural Engineering and Construction, Bali, Indonesia, December 2003 (unable to attend)
80. "Automated High-Rise Building Construction Technologies," Invited Keynote Speaker, 49<sup>th</sup> Annual Conference on Research in Heavy Machinery and Construction Equipment, Zakopane, Poland, January 2004
81. "Critical Factors in Assuring Application Success of Web-Based Project Management Systems in Construction," Invited Keynote Theme Speaker, INCITE 2004 – International Conference on Construction Information Technology, Langkawi, Malaysia, February 2004 (unable to attend)

82. "E-Commerce and Web-Based Project Management Technologies for Construction," Invited Keynote Speaker, 4th International Conference on Construction Project Management: Remaking Construction in the Knowledge-Based Economy, Center for Advanced Construction Studies, Nanyang University of Technology and Building & Construction Authority, Singapore, March 2004
83. "Critical Success Factors for Application of Web-Based Project Management Systems," Invited Speaker, National University of Singapore, March 2004
84. "Combining Intellectual Productivity of University Faculty with Economic Development Goals of the State of Indiana: Discovery Park and Research Park at Purdue University," Invited Speaker, Jagiellonian University, Kraków, Poland, June 2004
85. "Web-Based Project Management – Success or Failure?," Invited Keynote Speaker, European Conference on Process and Product Modeling in the Building and Construction Industry, Istanbul Technical University, Turkey, September 2004
86. "Recent Developments in Web-Based Project Management Tools," Invited Speaker, Hanyang University (Ansan Campus), Seoul, Korea, September 2004
87. "Statistical Research on Success and Failure of Web-Based Project Management Systems in Construction," Invited Speaker, Seoul National University, Korea, September 2004
88. "Web-Based Project Management," Invited Speaker, Information and Communication University, Daejeon, Korea, September 2004
89. "Managing Construction through the World-wide Web," Invited Speaker, Mokwon University, Taejeon, Korea
90. "E-Commerce Tools for Construction Materials Procurement," Invited Keynote Speaker, International Seminar on Automation in Construction, Korean Institute of Construction Technology, Seoul, September 2004
91. "Engineering Design Collaborations over the Worldwide Web," Invited Speaker, China Engineering Consultants, Inc., Taipei, Taiwan, October 2004
92. "Web-Based Tools for Construction Project Management," Invited Speaker, Taiwan Construction Research Institute, Taipei, October 2004
93. "Utility of Web-Based Project Management Systems in Different Construction Scenarios," Invited Speaker, Chaoyang University of Technology, Taichung, Taiwan, October 2004
94. "Web-based Interactions Among Construction Management Professionals," Invited Speaker, National Taiwan University of Science and Technology, Taipei, October 2004
95. "Impact of IT Investment on Financial Performance of Construction Firms," Invited Speaker, National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan, October 2004
96. "World-Wide Web Technologies for Project Management," Invited Speaker, National Central University, Jung-li, Taoyuan, Taiwan, October 2004
97. "Utility of Web-Based Project Portals for Construction Applications, Invited Speaker, National Chiao-Tong University, Hsinchu, Taiwan, October 2004
98. "Issues in Learning, Discovery and Advancement for Engineering Education," Invited Keynote Speaker, National Conference on Engineering Education, National Taiwan University, Taipei, October 2004
99. "Management Education for Engineers in the United States," Invited Speaker, *Universidad de Buenos Aires*, Argentina, November 2004
100. "Web-Based Project Portals for Engineering Management Collaborations," Invited Speaker, *Universidad Nacional de Cordoba*, Argentina, November 2004
101. "Information Technology Challenges for the Construction Industry: Integrating Enterprise Resource Planning and Web-Based Project Management," Invited Speaker, University of Southern California, Los Angeles, March 2005
102. "Critical Challenges for Information Technology in Construction Engineering and Management, Invited Speaker, Construction Industry Executive Forum, SAP Corporation, Philadelphia, PA, April 2005
103. "Recent Advances in Automated Construction Systems Development," Invited Speaker, Vilnius Gedyminas Technical University, Lithuania, June 2005
104. "Automated Construction Research – State of the Art in the United States," Invited Speaker, Moscow State Industrial University, Russia, June 2006

## Other Evidence of Excellence in Research

### a. Citations in Books by Other Authors

1. Hendrickson, C. and Au, T.: "Project Management for Construction," Prentice-Hall, 1989, ISBN 0-13-731-266-0, 537 pp.
2. Warszawski, A.: "Industrialization and Robotics in Building," Harper&Row Publishers, 1990, ISBN 0-06-046944-7, 466 pp.
3. Warszawski, A.: "Industrialized and Automated Building Systems," E&FN Spon (Routledge) Publishers, ISBN 0-419-20620-5, 464 pp.
4. Chen, W-F, ed.: "Civil Engineering Handbook," CRC Press, 1995, ISBN 0-8493-8953-4, 2640 pp. (Winner of the Choice Outstanding Academic Book Award for 1996 Publisher Listing)
5. Hasegawa, Yukio: "Robotization in Construction," Kogyo Chosakai Publishers, Tokyo 1999, ISBN 4-7693-2145-7, 680 pp. (in Japanese)

### b. Referee of Technical Articles and Books (selected)

1. Paper Reviewer, Journal of Transportation Engineering, ASCE, 1987-89
2. Paper Reviewer, Journal of Computing in Civil Engineering, ASCE, since 1987
3. Book Reviewer, Harper and Row Publishers, Inc., 1988
4. Book Reviewer, Van Nostrand Reinhold Publishers, Inc., 1988
5. Paper Reviewer, Sixth International Symposium on Robotics and Automation in Construction, Construction Industry Institute, San Francisco, CA, 1989
6. Paper Reviewer, International Conference on Robotics and Automation, Institute of Electrical and Electronics Engineers (IEEE), Scottsdale, AZ, May 1989
7. Book Chapter Reviewer, Computational Mechanics Publications, 1990
8. Book Chapter Reviewer, ASCE Monograph on *Knowledge Acquisition in Civil Engineering*, 1990
9. Book Reviewer, John Wiley & Sons Publishers, 1991
10. Paper Reviewer, Special Issue on 'Microcomputers and Workstations in Construction,' ASCE Journal of Construction Engineering and Management, 1992
11. Book Chapter Reviewer. ASCE Monographs on Neural Network Applications in Civil Engineering, 1992-95
12. Paper Reviewer, International Journal of Construction Information Technology, 1993
13. Paper Reviewer, Engineering Construction and Architectural Management (International Journal), Blackwell Publishers, since 1994
14. Invited Member, Paper Review Committee, 10<sup>th</sup> Annual Conference, Association of Researchers in Construction Management, Loughborough University, England, September 1994
15. Paper Reviewer, ASCE Journal of Aerospace Engineering, 1994
16. Paper Reviewer, ASCE Journal of Irrigation and Drainage Engineering, 1994
17. Paper Reviewer, Microcomputers in Civil Engineering/ Journal of Computer-Aided Civil and Infrastructure Engineering, Blackwell Publishers, since 1994
18. Book Reviewer, Legal Aspects of Engineering Practice, Kendall/Hunt Publishing Co., 1995-96
19. Invited Member, Paper Review Committee, ASCE Conference and Exposition/ Demonstration on Robotics for Challenging Environments, Albuquerque, NM, June 1996
20. Paper Reviewer, *Construction Management and Economics* journal, Chapman & Hall, since 1996
21. Paper Reviewer, *Journal of Artificial Intelligence for Engineering Design, Analysis and Manufacturing*, Cambridge University Press, 1996
22. Paper Reviewer, *Journal of Construction Engineering and Management*, ASCE, since 1987
23. Paper Reviewer, IEEE Transactions on Engineering Management, Institute of Electrical and Electronics Engineers, since 1997
24. Book Reviewer, Singapore University Press, since 1997
25. Paper Reviewer, *Kuwait Journal of Science and Engineering*, since 1998

26. Paper Reviewer, *Journal of Harbin University of Civil Engineering and Architecture*, ISSN: 1006-6780, The Chinese Research Institute of Construction Management, since 1999
27. Paper Reviewer, *International Journal of Computer-Integrated Design and Construction*, since 1999
28. Paper Reviewer, *European Journal of Purchasing and Supply Management*, Special Issue on Construction Supply Chains, 1999
29. Paper Reviewer, *Advances in Engineering Software Journal*, since 2000
30. Paper Reviewer, *IEEE Robotics & Automation Magazine*, since 2000
31. Paper Reviewer, CIB W78 International Conference on Construction Information Technology, Reykjavik, Iceland, 2000
32. Paper Reviewer, *European Journal of Operational Research*, since 2001
33. Paper Reviewer, ASCE Construction Research Congress Proceedings, Honolulu, HI, 2003
34. Paper Reviewer, *Omega: The International Journal of Management Science*, University of Michigan at Ann Arbor, since 2003
35. Paper Reviewer, Proceedings, 5<sup>th</sup> European Conference on Product and Process Modeling in AEC Industry, Istanbul Technical University, Turkey, 2004
36. Paper Reviewer, Proceedings, 21<sup>st</sup> International Symposium on Automation and Robotics in Construction, Jeju, Korea, 2004
37. Paper Reviewer, *Zhejiang University Journal: Science*, since 2004
38. Paper Reviewer, ASCE Construction Research Congress Proceedings, San Diego, CA, April 2005

**c. Technical Society, Funding Agency and Examination Panels (selected)**

1. Research Proposal Reviewer, National Science Foundation, Structures and Building Systems, 1987
2. Invited Member, National Science Foundation Workshop, "Robotics and Automation in Construction," Lehigh University, Allentown, PA, 1987
3. Invited Member, Construction and Engineering Industries Task Force on Strategic Management Information Needs, The World Electronic Community (WELCOM) Network, World Economic Forum, Geneva, Switzerland, 1987
4. Research Proposal Reviewer, National Science Foundation, Systems Engineering for Large Structures, Fundamental Research for Emerging and Critical Engineering Systems, 1988
5. Invited Member, Construction Industry Institute, Austin, Texas; Advanced Technological Systems Task Force, Automation Research Advisory Team, 1988-90
6. Proposal Reviewer, Purdue Engineering Faculty XL Grant Program, 1989
7. Invited Member, Construction Industry Institute, Task Force on Modularization, 1989-93
8. Research Proposal Reviewer, U.S. Environmental Protection Agency, Office of Research and Development (Risk Reduction Engineering), 1991
9. External Examiner, M.Sc. theses, National University of Singapore, 1992-present
10. External Examiner, Ph.D. theses, School of Civil Engineering, Queensland University of Technology, Brisbane, Australia; 1994, 2003
11. External Assessor, University Grants Committee, Hong Kong, annually since 1995
12. Invited Member, External Evaluation Committee (Ph.D. Dissertations), Indian Institute of Technology, Bombay, India, 1995
13. Invited Member, Panel for Building and Fire Research - National Institute of Standards and Technology. Appointed by the National Research Council, Washington, D.C., January 1996 - December 1998; re-appointed January 1999 - December 2002
14. Research Proposal Reviewer, National Science Foundation, Structural Systems and Construction Processes Program, 1996
15. External Assessor, Research Grants Committee, Australian Research Council, Canberra, Australia, since 1996
16. Research Proposal Reviewer, Office of Research, Queensland University of Technology, Brisbane, Australia, 1996
17. External Examiner, B.Sc. (Building) Course, National University of Singapore, 1996-99
18. External Examiner for Ph.D. theses, National University of Singapore; 1997, 2004, 2005



19. Proposal Reviewer, Research Committee, City University of Hong Kong, annually since 1997
20. Proposal Reviewer, National Science Foundation, International Collaborative Research Program, 1997
21. Panel Review Member, National Science Foundation, Knowledge Based and Distributed Intelligent Systems, 1999
22. Program Proposal Reviewer, The Croucher Foundation, Hong Kong, 2000
23. Funding Proposal Reviewer, Advanced Automation Technologies in Remediation of Nuclear Waste Contamination, U.S. Department of Energy, 2001
24. Panel Review Member, *Ramon y Cajal* Program, Spanish Foundation for Science and Technology (FECYT), Madrid, Spain; 2002, 2003
25. External Examiner, Master of Science in International Construction Management and Postgraduate Diploma Program in Construction Management, School of Civil & Environmental Engineering, Nanyang Technological University – Building and Construction Authority Centre for Advanced Construction Studies, Singapore, 2002-2004
26. Accreditation Committee Member, M.S. Degree Program in Engineering Management, American University of Sharjah, Ministry of Higher Education and Scientific Research Accreditation Commission, United Arab Emirates, June 2003
27. Research Consultant, Construction Knowledge Management, National Taiwan University and Ministry of Higher Education and Scientific Research, Taipei, 2004
28. Accreditation Committee Member, M.S. Degree Program in Project Management, British University in Dubai, Ministry of Higher Education and Scientific Research Accreditation Commission, United Arab Emirates, June 2004
29. Accreditation Committee Member, B.S. Degree Program in Civil Engineering, American University in Dubai, Ministry of Higher Education and Scientific Research Accreditation Commission, United Arab Emirates, November 2004
30. External Examiner, Ph.D. thesis, University of Cape Town, South Africa, September 2004
31. External Examiner, Ph.D. thesis (Manufacturing Engineering), Indian Institute of Technology Madras, India, April 2005
32. Accreditation Committee Member, M.S. Degree Program in Information Technology Management, British University in Dubai, Ministry of Education Accreditation Commission, United Arab Emirates, November 2005
33. Accreditation Committee Member, M.S. Degree Programs in Information Technology Management and Engineering Management, University of Wollongong in Dubai, Ministry of Education Accreditation Commission, United Arab Emirates, April 2006
34. Graduate School External Faculty Member, Purdue University, 2006-present

**d. Editorial Positions** (selected)

1. Editor-in-Chief, Construction Technologies and Engineering, *Automation in Construction* (An International Research Journal), Elsevier, 1994-present
2. Member, Editorial Board, *Automation in Construction* (International Journal), Elsevier, 1992-1994
3. Guest Editor, Special Issue on “Robotics in Civil Engineering,” *Microcomputers in Civil Engineering*, Blackwell Publishers, Cambridge, MA, March 1994 - September 1995
4. Member, Editorial Board, *International Journal of Continuing Engineering Education and Lifelong Learning*, Inderscience Enterprises Ltd. and United Nations Educational, Scientific and Cultural Organization (UNESCO), since 1998
5. Corresponding Member, Editorial Board, *Construction Management and Economics*, E&FN Spon, since 1998
6. Member, Editorial Board, *Journal of Strategic Property Management* (formerly: *Real Estate Valuation and Investment*), ISSN: 1648-0635, Vilnius Technical University, since 1998
7. Member, Editorial Board: *Journal of Construction Research*, ISSN 1609-9451, Hong Kong Institute of Building, since 1999
8. Member, International Editorial Board, *International Journal of Construction Management*, ISSN 1562-3599, The Chinese Research Institute of Construction Management, since 2001

9. Member, International Editorial Board, *Journal of Civil Engineering and Management*, Lithuanian Academy of Sciences and Vilnius Gediminas University, ISSN 1392-3730, since 2000
10. Member, Editorial Board, *International Journal of Advanced Technology*, Institute of Advanced Technology (ITMA), University Putra Malaysia Press, since 2000
11. Member, Editorial Board, *Information Management*, Information Resources Management Association, Idea Group Publishing, ISSN 1080-286X, since 1999
12. Member, Editorial Board, *International Journal of Architectural Engineering and Design Management*, James & James Science Publishers, London, UK, since 2003
13. Member, Editorial Board, *Journal of Field Robotics*, John Wiley Publishers, since 2005

#### **e. Leadership in Conference Panels**

1. Session Chairman, Fifth International Symposium on Robotics and Automation in Construction, Japan Industrial Robot Association, Tokyo, June 1988
2. Workshop Organizer and Chairman, Robotics Symposia, ASCE Construction Congress I, San Francisco, CA, March 1989 and ASCE Construction Congress II, Cambridge, MA, April 1991
3. Session Co-Chairman, Sixth International Symposium on Robotics and Automation, Construction Industry Institute, San Francisco, CA, June 1989
4. Invited Panelist and U.S. Representative, 9<sup>th</sup> International Symposium on Automation and Robotics in Construction, Tokyo, Japan, June 1992
5. Session Chairman, 9<sup>th</sup> International Symposium on Robotics and Automation in Construction, Japan Industrial Robot Association, Tokyo, June 1992
6. Invited Member, Local Organizing Committee, 10<sup>th</sup> International Symposium on Automation and Robotics in Construction, IAARC and CII, Houston, Texas, May 1993
7. Session Co-Organizer, Underground, Underwater and Construction Applications, IEEE/ Robotics Society of Japan International Conference on Intelligent Robots and Systems "Intelligent Robots for Flexibility," Yokohama, Japan, July 1993
8. Invited Member, International Advisory Committee, International Conference on Total Quality Management in Construction, Bratislava, Slovakia, September 1993
9. Invited Session Organizer and Chairman, ASCE Conference and Exposition/ Demonstration on Robotics for Challenging Environments, Albuquerque, NM, February-March, 1994
10. Invited Member, Local Organizing Committee, 12<sup>th</sup> International Symposium on Automation and Robotics in Construction, Warsaw, Poland, May-June 1995
11. Invited Member, International Advisory Committee, and Session Chairman, International Conference on Computing and Information Technology for Architecture, Engineering and Construction, Singapore, May 1996
12. Session Chairman, ASCE 2<sup>nd</sup> Conference and Exposition/ Demonstration on Robotics for Challenging Environments, Albuquerque, NM, June 1996
13. Invited Speaker, Plenary Session and Panel Presentation, 13<sup>th</sup> International Symposium on Automation and Robotics in Construction, Japan Robot Association, Tokyo, Japan, June 1996
14. Chairman, Technical Session, 13<sup>th</sup> International Symposium on Automation and Robotics in Construction, Japan Robot Association, Tokyo, Japan, June 1996
15. Invited Member, International Advisory Committee, International Conference on Developments in Building Construction Technology, Bratislava, Slovakia, September 1996
16. Invited Member, Advisory Committee, Session Organizer and Chairman, ASCE Construction Congress V, Minneapolis, MN, October 1997
17. Session Chairman and Invited Panel Member, Joint 5<sup>th</sup> International Conference on Automation Technology and 1998 International Conference on Production Research (Asia Meeting), Taipei, Taiwan, July 1998
18. Invited Member, Review Committee, ASCE Computing Congress, Boston, MA, October 1998
19. Member, Scientific and Technical Committee, First South African International Conference on Total Quality Management in Construction, Cape Town, South Africa, December 1998
20. Session Chairman, Robotics in Mining, Excavation and Construction, American Nuclear Society 8<sup>th</sup> Topical Conference on Robotics and Remote Systems, Pittsburgh, PA, April 1999

21. Invited Member, International Scientific Committee, International Conference on Business Information System (BIS '99), Poznań, Poland, April 1999 and April 2000
22. Invited Member, International Organizing Committee, International Conference on Construction Process Re-engineering, Sydney, Australia, July 1999
23. Invited Editorial Board Member, Fifth International Conference on the Application of Artificial Intelligence to Civil and Structural Engineering, Oxford, England, September 1999
24. Member of International Organizing Committee and Session Chairman, 16<sup>th</sup> International Symposium on Automation and Robotics in Construction, Madrid, Spain, September 1999
25. Invited Member, International Scientific and Technical Committee & Session Chairman, International Conference on Construction Information Technology 2000, Hong Kong, Jan. 2000
26. Member, International Scientific Committee, CIB-W78/IABSE/EG-SEA-AI CIT 2000, International Conference on Construction Information Technology, Reykjavik, Iceland, June 2000
27. Invited Member of International Advisory Board, 17<sup>th</sup> International Symposium on Automation and Robotics in Construction, Taipei, Taiwan, September 2000
28. Invited Editorial Board Member, Sixth International Conference on the Application of Artificial Intelligence to Civil and Structural Engineering, Vienna, Austria, September 2001
29. Invited Member of International Advisory Board, 18<sup>th</sup> International Symposium on Automation and Robotics in Construction, Krakow, Poland, Sept. 2001
30. Invited Member of International Advisory Committee, 4<sup>th</sup> International Conference on Developments in Building Technology, Bratislava, Slovakia, Sept. 2001
31. Member, International Advisory Committee, International Conference on Construction in the 21st Century, Florida International University, Miami, April 2002
32. Invited Member, Program Committee, International Conference of the Information Resources Management Association, Seattle, Washington, May 2002
33. Invited Member of International Advisory Committee, The Second World Engineering Congress, Kuching, Sarawak, Malaysia, Malaysia Institution of Engineers, July 2002
34. Invited Member, Steering Committee, 19<sup>th</sup> International Symposium on Automation and Robotics in Construction, National Institute of Standards and Technology, Gaithersburg, Maryland, September 2002
35. Invited Member of International Advisory Committee, International Conference on Advances in Building Technology, Hong Kong, December 2002
36. Invited Member, International Advisory Committee, International Workshop and Conference on Construction Management and Materials, Indian Institute of Technology, Kharagpur, India, January 2003
37. Invited Member, Program Committee, International Conference on Modeling and Simulation of Business Systems, Vilnius, Lithuania, May 2003
38. Member, International Advisory Committee and Session Chairman, 20<sup>th</sup> International Symposium on Automation and Robotics in Construction, Technical University of Eindhoven, The Netherlands, September 2003
39. Invited Member, Editorial Board, AICIVIL-COMP 2003: the 7<sup>th</sup> International Conference on the Application of Artificial Intelligence to Civil and Structural Engineering, Civil-Comp Press, Egmond aan Zee, The Netherlands, September 2003
40. Invited Member, International Advisory Committee, 9th East Asia – Pacific Conference on Structural Engineering and Construction, Bali, Indonesia, Dec. 2003
41. Invited Member, Scientific Committee, World IT in Construction Conference, Construction Industry Board of Malaysia, Hong Kong Polytechnic University, University of Salford (UK), Langkawi, Malaysia, February 2004
42. Invited Member, International Advisory Committee, 4th International Conference on Construction Project Management: Remaking Construction in the Knowledge-Based Economy, Singapore, March 2004
43. Invited Member, Scientific Committee, e-Society Conference, International Association for the Development of Information Society, Avila, Spain, July 2004
44. Invited Member, International Advisory Committee, 3<sup>rd</sup> Scientific Conference in Construction Project Management: Clustering in Construction Project Management, National Technical University of Athens and Aristotle University of Thessaloniki, Greece, September 2004

45. Invited Member, International Scientific Committee, 5<sup>th</sup> European Conference on Product and Process Modeling in the Building and Construction Industry: e-Work and e-Business in AEC, Istanbul Technical University, Turkey, September 2994
46. Member, International Advisory Committee, 21<sup>st</sup> International Symposium on Automation and Robotics in Construction, Jeju Island, Korea, September 2004
47. Invited Member, International Panel, 1<sup>st</sup> International Conference on Complexity, Science and the Built Environment, Liverpool, England, September 2005
48. Invited Member, International Scientific Committee, 3<sup>rd</sup> International Conference on Construction in the 21<sup>st</sup> Century, Athens, Greece, September 2005
49. Invited Member, International Scientific and Technical Committee, 3<sup>rd</sup> International Structural Engineering and Construction Conference, Shunan City, Japan, September 2005
50. Invited Member, International Organizing Committee, 22<sup>nd</sup> International Symposium on Automation and Robotics in Construction, Ferrara, Italy, September 2005
51. Invited Member, International Program Committee, 1<sup>st</sup> International Conference on Construction Engineering and Management, Korean Institute of Construction Engineering and Management, Seoul, Korea, October 2005
52. Invited Member, International Program Committee, International Robotics Program International Workshop on “Adaptive and Intelligent Robots: The Present and the Future,” Council on Robotics and Mechatronics, Russian Academy of Sciences, Moscow, November 2005
53. Invited Member, International Advisory Committee, 6<sup>th</sup> International Conference on Tall Buildings, Hong Kong, December 2005
54. Invited Member, Conference Scientific Committee, CIB W89 International Conference on Building Education and Research, Hong Kong, April 2006
55. Member, International Scientific Committee, National Science Foundation (U.S.A.) International Conference on Civil Engineering Infrastructure Systems, American University of Beirut, Lebanon, June 2005 (postponed until 2006)
56. Invited Member, International Program Committee, 8<sup>th</sup> International Conference on Computer-Aided Engineering, Polanica, Poland, June 2006
57. Invited Member, 23<sup>rd</sup> International Symposium on Automation and Robotics in Construction, Tokyo, Japan, October 2006
58. Invited Member, International Scientific Committee, World Conference on IT in Design and Construction (ITCSED/INCITE), New Delhi, India, November 2006
59. Invited Member, Scientific Committee, 9<sup>th</sup> International Conference on Modern Building Materials, Structures and Techniques, Vilnius, Lithuania, May 2007

#### **f. Short Term International Visiting Appointments**

1. Visiting Professor, National Taiwan University of Science and Technology, Taipei, July-August 2006
2. Senior Specialist (sabbatical supported by the Fulbright Commission), IAE - *Instituto de Altos Estudios Empresariales (Universidad Austral)*, Buenos Aires, Argentina, November-December 2004
3. Visiting Professor (sabbatical supported by Taiwan Science & Engineering Foundation), Chung Hua University and National Taiwan University, September-October 2004
4. Visiting Research Professor (supported by the “Connect” Award from the Alexander von Humboldt Foundation), Technical University of Munich, Germany, July-August 2004
5. Honorary Visiting Professor, Loughborough University, England, periodically 2001-2003
6. Visiting Professor, Hong Kong Polytechnic University, July 1999
7. Visiting Professor, Hong Kong University, Hong Kong, CPD intensive short courses for practicing engineers, periodically 1994-2001
8. Visiting Professor, intensive short courses for construction management executives, Yonsei University, Seoul, Korea, January-February 1996
9. Visiting Professor (sabbatical), Asian Institute of Technology, Bangkok, Thailand, November 1992

10. Visiting Professor, Slovak Technical University, Bratislava, Slovakia, June/July 1990 and March 1993
11. Visiting Scholar, Fraunhofer Institute of Production Automation, Stuttgart, Germany, November 1985
12. Visiting Scholar, Nuclear Research Center, Karlsruhe, Germany, November 1985

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## Involvement in Graduate Research

### a. Major Professor for Completed Doctoral Theses and Dissertations

Date	Name	Degree	Title
F 88	J.S. Russell (currently Prof. and Head of Civ. and Env. Engrg. at Univ. of Wisconsin-Madison)	Ph.D.	A Knowledge-Based System Approach to Contractor Prequalification Process
S 90	A.Singh <sup>[1]</sup> (currently Assoc. Prof. at Univ. of Hawaii-Manoa)	Ph.D.	Systems Analysis Tools for Flexible Production Systems in Earthmoving
F 93	L-C. Chao (currently Assoc. Prof. at National Kaohsiung First Univ. of Science and Tech., Taiwan)	Ph.D.	Adaptive Neural Network Approach to Estimating User Acceptability of New Construction Equipment
S 96	W.D. Yu (currently Prof. and Dir./V.P. for Research., Chung-Hua University, Taiwan)	Ph.D.	Construction Technology Capability Evaluation with AI-Based Methods
S 96	K. Lueprasert (currently Prof. and Assoc. Dean of Engr., King Mongkut Institute of Technology, Thailand)	Ph.D.	Constructability Analysis - Machine Learning Approach
S 97	J. Son (currently Asst. Prof. at Hanyang University; Ansan, Seoul, Korea)	Ph.D.	Genetic Algorithms for Construction Task Resource Leveling
S 00	M. Abduh (currently Assoc. Prof. at Institute of Technology Bandung, Indonesia)	Ph.D.	Utility Assessment of Internet Based Technologies for Design-Built Projects
S 03	A. F. Salman (currently Asst. Prof. at Zagazig University, Egypt)	Ph.D. <sup>[2]</sup>	Feasibility of Build-Operate-Transfer Infrastructure Projects in Egypt
S 03	D. Castro-Lacouture (currently Asst. Prof. at Georgia Tech., Atlanta)	Ph.D.	E-Commerce Applications for Acquisition of Construction Reinforcement Steel
F 03	P. Nitithamyong (currently Asst. Prof. at Malaysian Univ. of Science and Technology, Kuala Lumpur/ affiliate of MIT, Cambridge, MA)	Ph.D.	Critical Success/Failure Factors in Application of Web-Based Project Management Systems in Construction
F 03	S. Park (currently Assoc. Dir., Ministry of Construction and Transport, Seoul, Korea)	Ph.D.	Impact of Information Technology Investment on Productivity in Korean Construction Firms

<sup>[1]</sup> Co-major Professor

<sup>[2]</sup> In collaboration with Zagazig University, Egypt

**b. Major Professor for Current Doctoral Candidates**

Expected Date	Name	Degree	Research Area
S 2006	Omer Tatari	Ph.D.	ERP Systems Application Strategy for the Construction Industry
S 2007	Boo-Young Chung	Ph.D.	ERP Systems Integration with Project Management Systems – Cost-Benefit Analysis Techniques
F 2007	Won Suk Jang	Ph.D.	Sensor Network Strategies for Infrastructure Condition Monitoring

**c. Major Professor for Completed and Current Masters Students**

Date	Name	Degree	Research Topic - Report/Thesis Title
1987	A. Borroughs	M.S.C.E.	Microcomputers and Small Contractors - Survey of Implementation Problems
1988	S. Nekoomaran	M.S.C.E.	Computer Simulation of Concrete Placement Operations
1988	D. Cozier (currently Cmdr., U.S. Navy)	M.S.C.E.	Expert System Software Development for Contractor Prequalification
1989	T. Kakoto	M.S.C.E.	Comparison of Contractual Practices Between U.S. and Japanese Public Work Contractors
1990	J. Corrigan (currently Col., U.S. Army)	M.S.C.E.	Robotic Applications in Masonry Construction
1990	J. Cruz (currently Cmdr., U.S. Navy)	M.S.C.E.	Construction Robotics Laboratory Experimental Designs
1991	C. Cornejo	M.S.C.E.	Construction Robotic Equipment Implementation Logistics
1991	O. Salah (currently Chairman and CEO, Century Investment Group, Amman, Jordan)	M.S.C.E. (thesis)	Expert System Prototyping for Decision Support in Modular Construction
1992	S. Wooldridge (Ph.D. in Facilities Mgmt. from MIT; currently Major, U.S. Army, Commandant of Army Health Facilities in Europe)	M.S.E.	Automated Materials Handling Workcell for Automated Building Construction Technology
1993	W-D. Yu	M.S.C.E.	Fuzzy Expert Systems Application in Construction Management
1994	J. Son	M.S.E.	Genetic Algorithms Applications in Construction Engineering Optimization
1994	K. Fukuoka	M.S.C.E.	Comparison of Japanese and U.S. Professional Construction Management Practices
1994	C-C. Lai (currently Mgr. at China Engineering Consultants, Taipei,	M.S.C.E.	Optimal Use of Historical Construction Data in Project Cost Estimating

	Taiwan)		
1996	R. Wirahadikusumah	M.S.C.E.	Safety Incentives for Indonesian Construction Industry
1997	S. Rizwan (currently Mgr. at Bechtel Corp., Dallas, TX)	M.S.C.E.	Maintenance Optimization for Large Construction Equipment Fleets
1997	E. Shammass	M.S.C.E.	TQM Procedures for Construction Methods Improvement
1999	T. Adriana Nunez-Sierra	M.S.	Legal Constraints in Advanced Construction Technology Transfer
1999	A. R. Cheema	M.S.C.E. (thesis)	Integration of Computer Aided Design Software and Robotic Controllers for Execution of Construction Tasks
2000	Harish Hiremath	M.S.C.E.	UML Modeling of Object-Oriented Management Systems for Construction Processes
2000	Seungki Park	M.S.C.E.	Continuous Data Acquisition Technology Planning for Civil Engineering Construction
2000	Vincent Ji-Ping Jiang	M.S.C.E.	Cost Benefit Analysis of Electronic Networking Technologies in Construction
2001	Katarzyna Wróbel <sup>[1]</sup>	M.S.Econ	E-commerce Solutions for Job Creation in the Podkarpackie Region
2002	Ahmed Dede	M.S.C.E.	Build-Operate-Transfer Project Management Approaches and Feasibility for Infrastructure Projects in Turkey
2003	Omer Tatari	M.S.I.E.	Automated CAD/Takeoff Software for Construction
2005	Patrycja Jaworska-Garrett	M.S.E.	Analysis of Risk Factors Facing U.S. Construction Firms Undertaking Projects in Poland
2006	Saamyendu Ghosh	M.Eng.	Impact of ERP Systems on Key Performance Indicators in Construction Firms
2007	Gustavo Vecino	M.Eng.	Web-based Project Management System Development Issues for Dredging Construction Projects

<sup>[1]</sup> In collaboration with University of Information Technology and Management, Rzeszów, Poland

**d. Major Professor for Completed Post-Doctoral Fellows and Visiting Faculty at Purdue University**

Dates	Name	Research Topic
1989	Dr. J. Russell (currently Prof. and Chair of Civil & Environmental Engr., Univ. of Wisconsin-Madison)	Quantification of Risks by Surety Companies Underwriting Surface Mining Reclamation Bonds
1990-91	Dr. P. Väha (on leave from VTT-Technical Research Center of Finland)	Control Systems for Robotic Excavation
1990-92	Dr. K. Tamaki (on leave from Waseda University, Tokyo, Japan)	Construction Robotics Application Logistics
1996	Assoc. Prof. K. Mathur (on leave from National University of Singapore, currently Sr. Associate with Resource Management Corp., Washington, D.C.)	Computer Aided Constructability Analysis
2001	Dr. J. Wrona <sup>[1]</sup> (on leave from Military University of Technology, Warsaw, Poland, NATO Advanced Scientific Fellowship, currently Research Director at Polish Ministry	Innovative Control Technologies for Heavy Construction Equipment

	of Defense)	
2002-2004	Dr. Ryoo Boong-yeol (on leave from Intellix Corp., Seoul, Korea; currently Asst. Prof. at Florida Int'l Univ.)	E-Commerce Technology Applications in Construction Project Management

<sup>[1]</sup> Joint advisee

In addition to his involvement with research advisory roles for the above students and scholars, Professor Skibniewski has served, and is currently serving, on additional Ph.D. thesis and Masters committees in Civil Engineering. He has also served on doctoral thesis committees in Electrical and Computer Engineering, Industrial Engineering, and Forestry and Natural Resources at Purdue University.

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**Research Grants and Awards Received** (selected)

Start Date	End Date	Sponsor	Topic	Approx. Total Amount (US\$)	Proposal Involvement and Project Responsibility
1986	1987	CERL	Construction Industry Study of Emerging Building Technologies	35,000	Co-PI
1986	1988	Bechtel National, Inc. (two grants)	Automation and Robotic Applications in Construction	15,000	PI
1987	1994	NSF	Presidential Young Investigator-Construction Automation	312,500	PI
1987	1988	PRF	Expert Systems for Functional Design and Evaluation of Construction Robotics	31,120	PI
1988	until expended	Charles Pankow Constructors, M.W. Kellogg	PYI Matching Funds	11,000	PI
1988	1989	NSF	Construction Robotics Systems Laboratory	40,500	PI
1988	1992	Obayashi Co.	Design and Development of Construction Robotics Fleet Management Systems	160,000	PI
1988	1992	IMMRRI	Automated Equipment Processes in Surface Mining	65,500	PI
1989	1989	CII	Construction Robotics Continuing Education Short Course Development	5,000	Co-PI



1989	1992	USBM	Evaluation and Quantification of Risks Confronted by Surety Companies Underwriting Reclamation Bonds	218,800	PI
1990	until expended	Waseda Univ.	Systems Science Institute Systems Engineering Research in Construction Automation	27,000	PI
1990	1992	CII	Expert Systems for Modular Construction	77,500	PI
1993	1993	CERL	Construction Robotics Center Long Range Research Plan	8,150	PI
1993	1996	Obayashi Co.	Automated Constructability Review Systems R&D	112,500	PI
1999	2001	PRF	Utility Assessment of Electronic Networking Technologies for Construction Project Management	28,000	PI
2000	2001	Yau Lee Holdings Ltd./VHSoft	Utility Assessment of Object Recognition Software for Project Quantity Take-offs	30,000	Co-PI
2003	2004	Purdue University Discovery Park/ e-Enterprise Center	<i>TeleTool</i> : Virtual Work Environment for Collaborative e-Work	50,000	PI
2003	2004	European Union <i>Leonardo da Vinci</i> Program	English-Medium Educational Materials for Construction Managers in EU Member Countries	200,000	Project Associate
2004	2004	Korea Water Corp.	Construction Management Training	9,000	PI
2004	2005	SAP Corp./ Vanguard	ERP Systems Implementation Strategies for Construction Firms	79,000	PI
2006	2006	Minta-Martin Foundation	Ubiquitous Computing Applications in Airport Infrastructure Condition Monitoring	34,500	PI
2006	Until expended	Clark Construction Group LLC	Impact of Pending U.S. Immigration Legislation Reform on Availability and Cost of Construction Labor in the United States	50,000	PI

CERL = Construction Engineering Research Laboratory of the U.S. Army Corps of Engineers  
 CII = Construction Industry Institute, University of Texas-Austin  
 IMMRRRI = Indiana Mining and Mineral Resources Research Institute

NSF = National Science Foundation

PRF = Purdue Research Foundation

USBM = U.S. Bureau of Mines, Office of Surface Mining and Reclamation

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### University Extension, Service and Outreach Activities

#### a. Professional Society/ Organization Programs (selected)

- Judge, ASCE District 9 Council Terrell Award Program (Civil Engineering student paper and presentation competition on the subject of professional ethics), 1988-1989
- IVHS America Education Committee, 1994

#### b. University Programs (selected)

- Instructor for minority, gifted student and “4-H Round-Up” summer programs (MITE - Minorities in Technology and Engineering, STEP - Seminars for Top Engineering Prospects, Introduction to Civil Engineering), Purdue University Dept. of Freshmen Engineering, 1986-1989

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### Professional Workshops and Short Courses (selected)

1. “Construction Automation Short Course for Practicing Engineers,” Invited Short Course, Institution of Engineers of Hong Kong and University of Hong Kong, June 1994
2. “Robotics in Civil Engineering: State-of-the Art Review,” Invited Short Course, Robotics Exhibition ‘94, Malaysian Industrial Development Authority, Johor Bahru, Malaysia, December 1994
3. “Advanced Computing Techniques in Construction,” Invited Short Course, Yonsei University, Seoul, Korea, January-February 1996
4. “Cost Effective Construction Technology Innovations,” Invited Short Course, Institution of Engineers of Hong Kong and University of Hong Kong, March 1996
5. “Legal Aspects of Construction Engineering Practice and Advanced Construction Technology Implementation,” Invited Short Course, Institution of Civil Engineers of Hong Kong and University of Hong Kong, March 1997
6. “Sustainable Construction Engineering and Management,” Invited Short Course, Institution of Engineers of Hong Kong and University of Hong Kong, March 1998
7. “Construction Project Administration,” Invited Short Course, Institution of Engineers of Hong Kong and University of Hong Kong, June 1999
8. “Internet-Based Project Management Systems,” Invited Short Course, Institution of Engineers of Hong Kong and University of Hong Kong, January 2000
9. “Construction Management Graduate Education Programs,” Invited Short Course, *Techint* Engineering and Construction Corp., Buenos Aires, Argentina, December 2004

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### Student Counseling

As member of the Civil Engineering Graduate Admissions Committee representing the Construction Engineering and Management area, Professor Skibniewski served as the first faculty advisor to all incoming graduate students in construction engineering and management in the School of Civil Engineering at Purdue. In addition to his work with graduate students, he is typically responsible each semester for approx. 15 undergraduate students in civil and construction engineering. Professor Skibniewski served as Faculty Advisor of *Beta Tau*, a Construction Engineering Honorary at Purdue University (1993-96), and of Purdue Students for Life (1998-2001). He served as Faculty Advisor to the Polish Students Association at Purdue (2002-2005), and is the founder and faculty advisor to the Polish Students Association of Washington, D.C. (since 2005). He also currently serves as faculty advisor to the

University of Maryland's student chapter of Associated Builders and Contractors of Washington, D.C. metro area.

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## **University and Department Administrative Service**

### **a. Civil Engineering Committees**

- 1986-88 Member, Committee on Counseling and Guidance
- 1987-89 Member, Committee on Interactive Research
- 1987-99 Member, Committee on Civil Engineering Seminars
- 1988-89 Chairman, Committee on Counseling and Guidance
- 1989-90 Chairman, Committee on Interactive Research
- 1991-92 Member, Faculty Search Committee, Geotechnical Engineering Area
- 1993-94 Member, Faculty Search Committee, Transportation and Urban Engineering Area
- 1994 Member, Faculty Search Committee, Division of Construction Engineering and Management
- 1994-95 Elected Member, Area Heads Election Committee
- 1994-95 Elected Member, Committee on School Structure and Function
- 1995-96 Chairman, Committee on Civil Engineering Seminars
- 1995-2006 Member, Primary Committee (for Faculty Promotion and Tenure Decisions at Purdue University)
- 1996 Member, Faculty Retreat Planning Committee
- 1996-97 Chairman, Faculty Search Committee, Geotechnical, Structural, Transportation, Environmental and Hydraulics Areas
- 1996 Member, Area Heads Election Committee
- 2000 Member, Faculty Search Committee, Civil Engineering Materials Area
- 2000-01 Member, Civil Engineering Internal Awards Committee
- 2005 Member, CEM Division Head Search Committee
- 2005 Member, Faculty Promotion and Tenure Review Subcommittee
- 2005-present Member, Graduate Admissions Committee
- 2006 Chairman, Project Management Ph.D. Examination Committee

### **b. Engineering Committees (Purdue University)**

- 1987 Member, *ad hoc* Committee on Undergraduate Student Distribution
- 1991-93 Member, Academic Personnel Grievance Committee
- 1990,1996 Member, Purdue Research Foundation Summer Faculty Grant Evaluation Committee
- 2003-04, Coordinator, Purdue Recruitment Overseas (special initiative in diversity in Ph.D. student recruitment)
- 2003-04, Member, Purdue University UAE Special Initiative

### **c. University Committees (Purdue University)**

- 1996-1999 Invited Member, Editorial Board, Purdue University Press
- 1996 Invited Member, Library Committee on Serials Acquisition
- 1997-1999 Co-Chairman, Intel Corp. University Grant Executive Committee
- 1997 Member, University Open Computing Facilities Committee
- 1997-2004 Chairman, Academic Conflict of Interest University Committee
- 1997-1998 Co-Chairman, Lecturer Employment Policy Committee
- 1997-1998 Instructional Computing Facility Policy Committee
- 1998 Co-Chairman, Purdue University Computational Center (PUCC) Performance Review Committee

- 1999-2000 Member, Intellectual Property University Policy Committee
  - 1999-2002 Member, University Computing Resources Committee
  - 2001 Coordinator, University Facilities Planning Committee
  - 2002-03 Member, Afghanistan Higher Education University Assistance Committee
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#### **Community Service Activities** (selected)

- Judge, Lafayette-Indiana Regional Science and Technology Fair, 1987-88
  - Program Editor and Host, WBAA (Purdue University) radio program, 1988
  - Foreign Language Instructor, International Center, West Lafayette, IN, 1988-95
  - Lector, St. Thomas Aquinas Center, Purdue University, 1993-96
  - Member, Board of Directors, International Center of Greater Lafayette, 2000-02
  - Founding Faculty Advisor, Polish Students Association of Washington, D.C. Metro Area, 2005-present
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#### **Consulting and External Advisory Activities** (selected)

- Consultant, construction robotics international survey, *Byggecentrum*, Copenhagen (Building Research Institute of Denmark), 1988
  - Consulting Research Professor, strategic planning of construction equipment research and development, Institute for Mechanized Construction and Rock Mining, Warsaw, Poland, since 1993
  - Consultant, academic central administration and management, *Ana Mendez* University System, Puerto Rico, 1999-2000
  - Consulting Professor, e-commerce and business decision support systems, University of Information Technology and Management, Rzeszów, Poland, 2000-2005
  - Advisor, international cooperation, College of Communication and Management, Poznań, Poland, 2000-2004
  - Consultant, proposal reviews for advanced automation technologies in remediation of nuclear waste contamination, U.S. Department of Energy, 2001
  - Foreign Member of the Senate, College of Commerce and International Finance, Warsaw, Poland, since 2001
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#### **Special Skills**

- Working knowledge of several foreign languages.