

# **CURRICULUM VITAE**

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10<sup>th</sup> April 2018

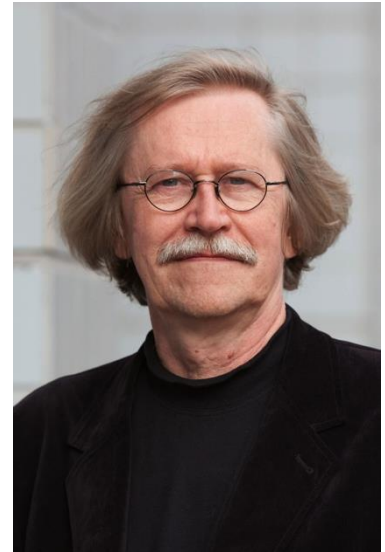


Photo: Suvi Kiviniemi

### **Table of Content**

1	Studies .....	2
2	Employment .....	2
2.1	Other Academic Positions.....	2
3	Awards and Grants.....	3
4	Information Technology R&D .....	3
4.1	R&D Projects at the University of Liverpool.....	3
4.2	R&D Projects at the University of Salford.....	3
4.3	Industrial Collaboration at the University of Salford .....	4
4.4	PhD Supervision and Assessment.....	4
4.5	R&D Projects at Olof Granlund 2008-2010 .....	6
4.6	Projects at VTT, Technical Research Centre of Finland 1996-2008 .....	6
4.7	Teaching .....	7
4.8	Committee Memberships and Evaluation Tasks .....	7
4.9	Publications and Presentations .....	13
4.10	Lecturer in Universities and Other Organizations .....	31
4.11	Studio Kivi, Helsinki 1990-1996.....	32
4.12	Architect Office Arto Sipinen, Helsinki 1985-1991 .....	33
5	Design Career 1972-1996 .....	33
5.1	Studio Kivi, Helsinki 1990-1996.....	33
5.2	Architect Office Arto Sipinen, Helsinki 1973-1991 .....	33
5.3	Architect Office Keskus-Sato Oy, Helsinki 1972-1973 .....	35
6	Tasks in Professional Organizations .....	37
6.1	Associations in UK and USA.....	37
6.2	Associations in Finland.....	37
7	Professional Photography .....	37
8	Personal details .....	37

## 1 Studies

- Ph.D. dissertation: "Requirements Management Interface to Building Product Models", GPA of courses 4.0 out of 4.0. CIFE, Civil and Environmental Engineering Department, Stanford University, USA, 2005
- Post-graduate/doctorate studies on construction ICT. Royal Institute of Technology (KTH), Stockholm, Sweden 1996-1999. Continued in Stanford University in 2003.
- Master of Science in Architecture ('with Honours' in US terminology, 'with Distinction' in UK terminology) at Department of Architecture in Helsinki University of Technology (HUT, now known as Aalto University), Finland, 1982
- First part of Master of Science in Architecture (equivalent to Bachelor of Architecture) at Helsinki University of Technology (HUT), Finland, 1973
- Matriculate Examination in Hyvinkään Uusi Yhteiskoulu with general grade of laudatur (maximum grade), 1970

## 2 Employment

- **University of Liverpool**, School of Architecture, UK since 1<sup>st</sup> September 2013: Professor of Digital Architectural Design, Director of MSc Building Information Modelling programme, Leader of the Digital Architecture Research Group, Chair of the School of the Arts Ethics Committee
- **The University of Salford**, School of Built Environment, UK 2010-2013: Professor of Digital Architectural Design, Head of Design Directorate, Member of SCRI (Salford Centre for Research and Innovation), Member of HaCIRIC (The Health and Care Infrastructure Research and Innovation Centre)
- **Insinööritoimisto Olof Granlund Oy** (Engineering Office), Helsinki 2008-2010: Vice President for Innovation and Development
- **VTT, Technical Research Centre of Finland**, Espoo 1996-2008: Research Professor of ICT for Built Environment 2006-2008, Chief Research Scientist 1999-2006, Senior Research Scientist 1996-1999. Research Coordinator of "ICT and Processes in Built Environment" at VTT 2008. Visiting fellow and PhD student at Stanford University, California 2003-2005.
- **Tampere University of Technology, Department of Architecture**, Tampere 1990-1996: CAD Lecturer. Responsibility to organize and implement CAD education in the Department of Architecture.
- **Studio Kivi Oy** (Architect Office), Helsinki 1990-1996: Managing Director and Owner
- **Arcadia Oy Arkkitehtitoimisto** (Architect Office), Joensuu 1990-1996: Partner
- **Arkkitehtitoimisto Arto Sipinen Ky** (Architect Office), Helsinki/Espoo 1973-1991: Office Manager 1977-1991, Project Architect 1973-1977
- **Keskus-Sato Oy Arkkitehtiosasto** (Architect Office), Helsinki 1972-1973: Assistant Designer
- **Walter Hebel KG** (Drafting Equipment Manufacturer), Kirchen, Germany, 1969: Assistant Mechanic (Hilfsmechaniker)

### 2.1 Other Academic Positions

- **Politecnico di Milano**, member of the Advisory Board for the School of Architecture, Urban Planning and Construction Engineering (AUIC)
- **University of Reading**, External Examiner of MSc Information Management for Design, Construction and Operation in the School of Construction Management & Engineering since 2016
- **Dublin Institute of Technology** (DIT), External Examiner of DT168 MSc in Construction Informatics since 2016

- **École de technologie supérieure** (ETS), Montreal, Canada, Associate Professor, 2013 – 2016

### 3 Awards and Grants

- Fellow of buildingSMART International for the significant contribution to the development of open digital standards for the built asset industry, 2017
- Knight, First Class, of the Order of the White Rose of Finland, granted by the President of Republic of Finland based on the proposal by the Association of Finnish Architects (SAFA) for the national and international merits in the visionary work and development of technology and processes for the architectural design, 2012
- Fiatech CETI (Celebration of Engineering & Technology Innovation) Outstanding Researcher Award for the international merits in developing integrated BIM, 2009
- Confederation of Finnish Construction Industries' Grant for Ph.D. studies, 2002
- UICB Building Information Award with Hannu Penttilä, 1996
- Medal of Merit from Association of Finnish Architects SAFA, 1990
- Väinö Vähäkallio Foundation Award, 1984

### 4 Information Technology R&D

#### 4.1 R&D Projects at the University of Liverpool

- **S\_IMPLER** (**S**olid Wall, **I**nnovative Insulation and **M**onitoring **P**rocesses using **L**ean **E**nergy efficient **R**etrofit) research project as a sub-contractor for the University of Huddersfield since February 2015

#### 4.2 R&D Projects at the University of Salford

- BIM-FM Implementation: Manchester Town Hall Complex, with Ricardo Codinhoto, Sergio Kemmer and Cecilia Gravina da Rocha, 2013
- Design4Energy EU funded project with 16 European partners, 2013-2017. Approved for funding with a total budget of 4.3 million euros for the six academic partners.
- BCO (British Council for Offices) Building Information Modelling Research with HOK together with Patricia Tzortzopoulos Fazenda and Jason Underwood, 2012-2013. Results published in BCO book "Building Information Modelling for Commercial Office Buildings" in May 2013
- CIRIA Lean & BIM Guide with Bhargav Dave, Lauri Koskela, Robert Owen and Patricia Tzortzopoulos Fazenda, 2012-2013
- Learning from Others work package of the UK Government's BIM Strategy Programme, joint leadership with Jennifer Whyte (University of Reading), 2012
- Director of Open BIM Learning Xchange at the University of Salford 2012-2013
- HEA (Higher Education Academy) BIM Education for AEC professionals workshop and leader of the Focus Group 2012
- Development of BSc Architecture Programme for the University of Salford with Benachir Medjdoub and Tuba Kocaturk 2011-2012
- Use of Building Information Modelling in the Management of Supply Chain and Product Information for the Finnish Project Re-engineering (PRE) Programme, 2011
- BIM Implementation: Manchester Town Hall Complex, with Ricardo Codinhoto, Sergio Kemmer and Cecilia Gravina da Rocha, 2010-2011
- Development of MSc in Sustainable Building Design Programme for the University of Salford with Patricia Tzortzopoulos Fazenda 2010-2011
- Development of MSc in BIM and Integrated Design Programme for the University of Salford with Patricia Tzortzopoulos Fazenda 2010-2011

- Facility Design, Services and Operations & Tools for Engagement and Decision Making in HaCRIC (The Health and Care Infrastructure Research and Innovation Centre) 2010-2013

#### **4.3 Industrial Collaboration at the University of Salford**

- Development of RIBA (Royal Institute of British Architects) BIM CPD in 2012-2013
- Membership in BIM Leadership Team of Balfour Beatty 2011-2012
- Co-organiser and speaker in Balfour Beatty's Global BIM Expo in Salford June 2011
- Development workshops for BIM Strategy of Wates Construction 2010-2011

#### **4.4 PhD Supervision and Assessment**

##### *4.4.1 PhD Supervisions at the University of Liverpool*

- Mohammad Alabbasi, since October 2017
- Mustapha Munir "Enhancing Value of Physical Assets through the Development of a BIMasset Value Realisation Model", since February 2017
- Gulnaz Aksenova "Why BIM Implementation Across Organisational Boundaries is Failing in Some Projects and Successful in Others?", since February 2016
- Sujesh Sujan "Investigating Non-tool Oriented Factors that Affect Collaborative Practice in the AEC Industry", since December 2015
- Zuhair Nasar "The Potential Impacts of Parametric Simulation Models on Energy Performance Gap", since November 2015
- Mohammad Qabshoqa "Reformulating the Operational Model of Architecture; a contemporary approach for capturing values in architectural practices focusing on Big Data", since January 2015. Submission for viva in September 2017, passed viva in November 2017, final submission of the thesis on 26<sup>th</sup> February 2018, official graduation in July 2018.
- Sa'id Kori "BIM Business Value Creation for SME Firms in Nigeria Using Intellectual Capital Development", since October 2014. Submission for viva in August 2017, passed viva in November 2017, final submission on ?? 2018, official graduation in July 2018.
- Elaheh Gholami "Exploiting BIM in Energy Efficient Domestic Retrofit: Evaluation of Benefits and Barriers", 3rd supervisor since September 2013, primary supervisor since May 2015. Passed viva in August 2017, final submission of the thesis on 14<sup>th</sup> November 2017, graduated on 5<sup>th</sup> December 2017
- Yang Zou "BIM and Knowledge Based Risk Management System", since September 2014. Passed viva in May 2017, final submission of the thesis on 14<sup>th</sup> October 2017, graduated on 6<sup>th</sup> December 2017

##### *4.4.2 PhD Supervisions at the Aalto University*

- Severi Virolainen "Algorithms, Parametric Design and Printing of Buildings", since September 2014
- Francisco Samso "BIM for Building Operations - A Strategic Business Framework for Implementation", since September 2013

##### *4.4.3 PhD Supervisions at École de technologie supérieure*

- Gulnaz Aksenova: "An Activity Theory Approach to Manage BIM-driven Practices in the AECO Industry", July 2013 – January 2016

##### *4.4.4 PhD Supervisions at the University of Salford until 31<sup>st</sup> August 2013*

- Marveh Jaberansari: "Atrium Design for Tall Buildings to Optimize Thermal Comfort in Extreme Climate", started in October 2012, Interim Assessment July 2013
- Rasha Sayed Suleiman: "BIM-based Risk Management in Construction Process", started in April 2012, Interim Assessment March 2012

- Mehdi Bafava: "Accurate Structural Design through Building Information Modelling", started in January 2012, Interim Assessment December 2012. Graduated in August 2015.
- Nathaniel Butters: "Defining Requirements for Sustainable Design Using Life Cycle Building Models", started in October 2011, Interim Assessment September 2012
- Matthew Bacon: "Engineering Low Carbon Hospitals Using an Integrated Decision Support Methodology", started in October 2011, Interim Assessment 26/09/2012, Internal Evaluation March 2013. Graduated in November 2014.

#### 4.4.5 PhD Assessments/Examiner roles

- External Evaluator of Daniela Pasini's PhD dissertation "Real-time information management for engaging end-users in building operation", Politecnico di Milano, Italy, March 2018
- External Examiner of Niels Tredal's PhD dissertation "Digitalization as Driver for Standardized Specification and Design of Buildings - In Search of an Efficient Building Design Management Methodology", DTU (Technical University of Denmark), October 2017
- External Evaluator of Noor Akmal Adillah Ismail's PhD dissertation "Construction Cost Estimating Incorporating Building Information Modelling (BIM) in the Malaysian Construction Industry", Queensland University of Technology, Australia, May 2017
- External Evaluator of Manuele Cassano's PhD dissertation "Construction Site Information Modeling - Implementing building, context and operational information to manage construction site design", Politecnico di Milano, Italy, March 2017
- Internal Evaluator of Alejandro Andres Veliz Reyes' PhD dissertation "Augmented Pedagogies", University of Liverpool, UK, May 2015
- External Evaluator of David Marchant's PhD dissertation "Capturing and Integrating the Design Brief in Building Information models", UNSW (University of New South Wales), Australia, April 2015
- External Evaluator of Bianca Toth's PhD dissertation "Energy Simulation for Decision Support in Early Architectural Design", QUT (Queensland University of Technology), Australia, December 2014
- External Evaluator of Apeksha Gupta's PhD dissertation "Developing a BIM-based methodology to support renewable energy assessment of buildings", Cardiff University, UK, November 2013
- External Evaluator of Alexanda Cemesova's PhD dissertation "Enhancing BIM-based Data Transfer to Support the Design of Low Energy Buildings", Cardiff University, UK, July 2013
- Internal Evaluator of Ahmad Tarmizi Haron's PhD dissertation "Organisational readiness to implement Building Information Modelling: A framework for design consultants in Malaysia", University of Salford, UK, April 2013
- External Evaluator of Ruben Verstraeten's PhD dissertation "Architectural Design Models and Performance Evaluation: Bridging the Gap?", Genth University, Netherlands, December 2012
- External Evaluator of Ole Berard's PhD dissertation "Building Information Modeling for Managing Design and Construcion - Assessing Design Information Quality", DTU (Technical University of Denmark), Copenhagen, Denmark, October 2012
- External Evaluator of Shen Weilin's PhD dissertation "A BIM-based Pre-occupancy Evaluation Platform (PEP) for Facilitating Designer-Client Communication in the Early Design Stage", The Hong Kong Polytechnic University, Hong Kong, December 2012
- External Evaluator of Topi Kallinen's PhD dissertation "On Multilevel Planning of Intelligent Homes – How to Avoid Excessive Trial-and-Error Iterations when Planning Personified Automation Solutions", Preliminary Examiner, University of Oulu, Finland, 2009
- External Evaluator of Christer Finne's PhD dissertation "Opportunities for the Use and Provision of Information in the Construction Value Chain", Preliminary Examiner, Helsinki University of Technology, Finland, 2008

#### **4.5 R&D Projects at Olof Granlund 2008-2010**

- HosPilot - Intelligent Energy Efficiency Control in Hospitals, funded by EU, 2009-2010
- USA Business Model, funded by Tekes, 2009-2010
- Leader for preparations of "B<sup>3</sup> – BIM-based Business" program for Strategic Centre for Research and Innovation for Built Environment (RYM-SHOK) 2009-2010

#### **4.6 Projects at VTT, Technical Research Centre of Finland 1996-2008**

- SCOBÉ - Sustainable Construction Operations Knowledge Base 2008
- RYM-SHOK - Research Agenda for Strategic Centre for Science, Technology and Innovation for the Finnish Real Estate and Construction Cluster 2008
- INBIS - Integrated Building Information Strategy 2008
- BOSS Roadmap - Business Oriented Software Strategy Roadmap for Ruukki Construction with Sami Kazi 2008
- Skanska BIM Strategy 2008
- Tekla White Paper "Information Modeling in Improved Management of Building Construction" with Stephen Fox 2007-2008
- CIB IDS - Integrated Design Solutions 2007-2008
- GPS II - Global Project Strategies Phase II, collaboration project with CRGP/Stanford University 2007-2008
- ECPIP – Engineering and Construction Project Information Platform, collaboration project with CIFE/Stanford University 2007-2008
- Product Models and Visualization in the of Building Performance and Lifecycle Management 2006-2008
- HospiTool - User-oriented Hospital Space with Esa Nykänen 2006-2008
- BuildNova - Building Innovation in the European Construction Sector with Sami Kazi 2006-2008
- FoundIT - Taking eCollaboration Techniques into Productive Use in the Construction Industry 2005-2008
- BIM Guidelines for Senate Properties leading the workgroup 2006-2007
- TUMA - BIM Research Capabilities at VTT with Tarja Mäkeläinen 2006-2007
- Skanska – Management of Client Requirements in Residential Production 2006-2007
- Strat-CON - R&D Strategies for ICT in Construction with Sami Kazi and Matti Hannus, 2006-2007
- TUOVI - Building Information Models and Visualization 2006-2007
- RASI - Product Code System for Building and Fitting Industries 2006-2007
- ISCIS - Integrated Supply Chain Information Systems 2005-2007
- VBE II - Virtual Building Environments Phase II 2005-2007
- Future Engineering Technology Roadmap for VTT 2006-2007
- GPS - Global Project Strategies, collaboration project with CRGP/Stanford University 2005-2006
- Analysis of the Norwegian Infrastructure Product Data Model System 2005-2006
- Design and Production Information Systems Strategy for Honkarakenne Oyj 2006
- INFRA 2010 - Roadmap for the Finnish Infra Sector with Pertti Lahdenperä 2005
- Virtual and Augmented Reality Roadmap for VTT as one of the authors 2005
- PREMISS - Requirements Management Interface to Building Product Models as a visiting fellow and Ph.D. student in Stanford University 2003-2005
- Programme Manager of the Finnish national Technology Programme "Vera - Information Networking in the Construction Process" 1997-2002, Programme consisted of 161 project with a total budget of 46.7 M€

## 4.7 Teaching

### 4.7.1 University of Liverpool

- Leader of MSc BIM programme, Liverpool since 2016, London 2014-2015
  - Theory of BIM and Integrated Project Delivery (30 credits)
  - nD modelling with BIM (30 credits)
  - Managing collaborative workflows for BIM (15 credits)
  - BIM-enabled sustainable design (15 credits)
  - Critiques & communications (15 credits)
  - Research methodology (15 credits)
  - Dissertation (60 credits)
- Module leader of ARCH361 Integrated Technical Project Design 2015-2016
- Introductory lectures of BIM in several UG and PG modules since 2013

### 4.7.2 University of Salford

- Leader of MSc BIM and Integrated Design 2011-2013
  - Building Information Modelling Theory and Practice (30 credits)
  - Integrated BIM Projects (30 credits)
  - Lean Integrated Design and Production (30 credits)
  - Sustainable Design Theory and Practice (30 credits)
  - Dissertation (60 credits)
- Temporary Leader of MSc Digital Architectural Design 2010-2011
- Introductory lectures of BIM in several UG and PG modules since 2010

## 4.8 Committee Memberships and Evaluation Tasks

### 4.8.1 Memberships in International and UK Organizations

- Member of the Scientific Committee of the Airport Booklets Collection published by the DidA Press at University of Florence since 2017
- Member of Expert Panel for the R&D work of the Digital Built Britain programme 2017
- Member of the Scientific Committee in the Editorial Board of the Airport Studies Booklets by FUP Firenze University Press 2015-2017
- Member of CIOB BIM Education Workgroup 2014-2016
- Member of BIM Academic Forum (BAF) since 2014
- Member of CIOB (The Chartered Institute of Building) BIM Group and Leader of the Benchmarking/Maturity Gap Workgroup 2012-2015
- UK CIC (Construction Industry Council) BIM Forum, representative of CEBE (Centre for Education in the Built Environment) 2011-2013
- Czech BIM Council, honorary member since 2011
- CIB IDDS (Integrated Design and Delivery Solutions), member of the Core Workgroup since 2010
- FIATECH, member of several committees: Academic Committee since 2010, European Advisory Committee 2011-2013, Interoperability Committee 2011-2013, Conference Planning Committee 2011-2013
- ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers): member of the BIM Steering Committee since 2009
- buildingSMART Korea, member of the Advisory Committee 2009-2013
- Salford University, member of the School of the Built Environment's Design Directorate Steering Committee 2009-2010

- Salford Centre for Research and Innovation, Salford University, UK, Chairman of the Steering Committee 2002-2009, member 2009-2010
- buildingSMART/International Alliance for Interoperability (IAI)
  - International Technical Advisory Group (TAG): member since 2005
  - International Technical Management Committee (ITM): Chairman 2005-2007
  - International Council (IC) and Executive Committee (ExCom): Chairman 1998-2000, Deputy Chairman 2000-2001, member 2005-2007
  - Board of buildingSMART Nordic/IAI Nordic Chapter: Chairman 1996-1998 and 2000-2002, Business Manager 1999, member 2005-2008
  - buildingSMART Finland/IAI Forum Finland: Chairman 1996-2002 and 2005-2008, member of the board 2008-2010
- BLIS - Building Lifecycle Interoperable Software Association
  - International Chairman 2001-2003
  - International Deputy Chairman since 2003
- CIB focus area "Integrated Design Solutions" (IDS), Project Leader 2008
- BuildingEnvelopes.org project, CDI (Center of Design Informatics), Harvard University, member of the Scientific Committee 2001-2004
- Representative of Tekes in the Industrial Advisory Board and Technical Advisory Board of CIFE 1999-2005

#### *4.8.2 Editorial Boards of Journals*

- Member of the Scientific Committee in "Dn - Building Information Modeling, Data & Semantics" since 2017, DEI Genio Civile
- Guest Editor of "Building Information Modelling – Strategy, Practice and Research" in Frontiers in Built Environment Journal with Hugo Rodrigues and Maria Fernanda Da Silva Rodrigues, 2016-2017
- Guest Editor of Special Issue "Evidencing Changes in Engineering and Design Practice" in the Architectural Engineering and Design Management (AEDM) Journal with Dr Ricardo Codinhoto, 2015-2016
- Member of the Editorial Board of the International Journal of 3-D Information Modeling (IJ3DIM) since 2015, IGI Global
- Member of the Editorial Board of the Journal of Computing for the Built Environment since 2015, Springer Publishing
- Member of the Editorial Board of the Journal of Ontology Development and Applications since 2014, eSci Journals Publishing, <http://escijournals.net/ontology>
- Member of the Editorial Board of the Buildings Journal (ISSN 2075-5309) 2014-2016 <http://www.mdpi.com/journal/buildings/>

#### *4.8.3 External Examiner or Adviser for Academic Programmes or Positions*

- External Examiner of MSc Information Management programme at University of Reading, 2016-2021
- External Examiner of MSc in Construction Informatics programme at Dublin Institute of Technology, 2016-2019
- External Adviser in the interview panel for Chair in Architectural Structures, Materials and Construction in the Faculty of Engineering at University of Nottingham, October 2016

#### *4.8.4 International Committees for Conferences and Seminars*

- 35<sup>th</sup> Annual CIB W78 Conference, member of the Scientific Committee. Illinois Institute of Technology, Chicago, USA, October 2018
- ECPPM 2018 (12<sup>th</sup> European Conference on Product and Process Modelling), member of the Scientific Committee. Copenhagen, Denmark, September 2018



- 36th annual eCAADe Conference (Education and research in Computer Aided Architectural Design in Europe), member of the Conference Review Committee. Lodz, Poland, September 2018.
- 6th International Workshop "When Social Sciences meet Lean and BIM", member of the Advisory Board. University of Huddersfield, UK, January 2018
- International Conference on Sustainable Futures, member of the Scientific Committee. Applied Science University in Bahrain, November 2017
- LC3 and IGLC 25 (Lean & Computing in Construction Congress and 25th Annual Conference of the International Group for Lean Construction), member of the Program and Review Committee. Heraklion, Crete, July 2017
- 5th International Workshop "When Social Sciences meet Lean and BIM", member of the Advisory Board. Aalborg University, Denmark, January 2017
- CIB W78 2016, Brisbane, Australia, November 2016. Member of the Scientific Committee
- ALIU 2016 (Architecture, Landscape, Interior Design & Urban Planning), SGER 2016 (Sustainability, Green Buildings, Environmental Engineering & Renewable Energy) BDC 2016 (Building Information Modelling, Digital Fabrication & Computational Simulation/Visualization) and CMC 2016 (Civil, Mechanical Engineering & Construction Management) International Conferences by NZAAR (New Zealand Academy of Applied Research), Malaysia, December 2016. Member of the Scientific Committee
- ECPPM 2016 (11<sup>th</sup> European Conference on Product and Process Modelling). Member of the Programme Committee. Limassol, Cyprus, September 2016,
- MSSCE2016 (Materials, Systems and Structures in Civil Engineering) DTU, Lyngby, Denmark, August 2016. Member of the Program Committee
- 34th annual eCAADe conference (Education and research in Computer Aided Architectural Design in Europe), Oulu, Finland, August 2016. Member of the Conference Review Committee
- ICALBE 2016 (International Conference on Architecture, Landscape and Built Environment) by NZAAR (New Zealand Academy of Applied Research), Kuala Lumpur, Malaysia, June 2016. Member of the Scientific Committee
- ID@50 Conference in Bath University, United Kingdom, June/July 2016. Member of the Scientific Committee
- OSDOT 2.0 (XI) Seminar in Ferrara University, Italy, November 2015. Member of the Scientific Committee
- 16th International Conference on Computing in Civil and Building Engineering (ICCCBE2016) in Osaka, Japan, July 2016. Member of the Scientific and Programme Committees
- WBC16 - CIB World Building Congress 2016 in Tampere Finland, June 2016. Member of the International Scientific Programme Committee
- 4th International Workshop "When Social Sciences meet Lean and BIM", member of the Advisory Board. University of Huddersfield, UK, January 2016
- CITA BIM Gathering 2015 in Dublin, Ireland, November 2015. Member of the Scientific Committee
- 32nd CIB W78 Conference in Eindhoven, the Netherlands, October 2015. Member of the International Scientific Committee
- 6th International Conference on Construction Engineering and Project Management (ICCEPM 2015) in Busan, Korea, October 2015. Member of the Technical Committee
- 3rd Annual International Conference on Architecture and Civil Engineering (ACE 2015) in Singapore, April 2015. Member of the Programme Committee
- 3rd International Workshop "When Social Sciences meet Lean and BIM", Chair of the Organising Committee. University of Liverpool, UK, January 2015

- 40<sup>th</sup> IAHS World Congress "Sustainable Housing Construction" in Funchal, Portugal, December 2014. Member of the International Scientific Committee
- 2<sup>nd</sup> BIM International Conference in Lisbon, October 2014. Member of the Scientific Committee
- ECPPM 2014 Conference in Vienna, September 2014. Member of the Scientific Committee
- ICCCBE 2014 & CIB W78 Conference in Orlando, May 2014. Member of the Scientific Committee
- 2nd International Workshop "When Social Sciences meet Lean and BIM", member of the Advisory Board. Helsinki University, Finland, November 2013
- eCAADe 2013 (Association for Education and Research in Computer Aided Architectural Design in Europe), in Delft, the Netherlands, September 2013, Member of the Scientific Review Committee
- CAAD (Computer-Aided Architectural Design) Futures 2013, at Tongji University, Shanghai, July 2013, Member of the Programme Committee
- 1st BIM International Conference, Porto, Portugal, June 2013. Member of the International Programme Committee
- Fiatech 2013 Technology Conference & Showcase in San Antonio, Texas, March 2013, Member of the Programme Committee
- 1st International Workshop "When Social Sciences meet Lean and BIM", member of the Advisory Board. University of Salford, UK, December 2012
- ECPPM 2012 Conference in Reykjavik, July 2012, Member of the Scientific Committee
- Fiatech 2012 Technology Conference & Showcase in Miami, Florida, April 2012, Member of the Programme Committee
- CIB W078 & W102 Joint Conference in Sophia Antipolis, October 2011, Member of the Scientific Committee
- ECPPM 2010 Conference in Cork, September 2010, Member of the Scientific Committee
- icccb<sup>e2010</sup> Conference and the eg-ice10 Workshop in Nottingham, June 2010, Member of the International Scientific Committee
- CIB IDS 2009 Conference "Improving Construction and Use through Integrated Design Solutions" in Helsinki, June 2009, Member of the Scientific Committee
- EuropIA.12 Conference in Paris, March 2009, Member of the Scientific Committee
- CIFE Summer Program in Helsinki, June 2008, Member of the Organizing Committee
- Joint CIB W96 & W102 Conference in Helsinki, June 2008, Member of the Scientific Committee
- IABSE 2008 Conference in Helsinki, June 2008, Member of the Scientific Committee
- Build ICT 2008 Conference in Helsinki, June 2008, Member of the Organizing Committee
- EuropIA.11 Conference in Montreal, Canada, September 2007, Member of the International Advisory Board
- CIB-W78 Conference in Maribor, Slovenia, June 2007, Member of the Scientific Committee
- ECPPM 2005 Conference in Valencia, Spain, September 2005, Chairman of the Scientific Committee, member of the Steering Committee
- EuropIA.10 Conference in Damaskus, Syria, September 2005, Member of International Advisory Board
- ENIA 2005 Conference, V Encontro Nacional de Inteligência Artificial in Brazil in July 2005, Member of the Technical Program Committee
- CIB-W78 Conference in Toronto, May 2004, member of the Technical Committee
- EIA9 9th EuropIA International Conference, Delft University of Technology and Istanbul Technical University, Istanbul October 2003, member of the International Advisory Board
- 10th ISPE International Conference on Concurrent Engineering: "4D/ nD modelling" Madeira Island, Portugal, July 2003, member of the International Scientific Committee

- 9th ISPE International Conference on Concurrent Engineering, Research and Applications (CE2002): "Mobile Computing in Engineering" Cranfield University, UK July 2002, member of the International Scientific Committee
- ECPPM 2002 (European Conference of Product and Process Modelling): "eWork and eBusiness in AEC" Portoroz, Slovenia September 2002, member of the Editorial Board and Program Committee
- CIB W78 Conference in Aarhus June 2002, member of the International Scientific Committee
- 2nd Worldwide ECCE symposium: "Information and Communication Technology in the Practice of Building and Civil Engineering", Espoo June 2001, member of the Technical Advisory Committee
- ILCDES 2000: "Integrated Life-Cycle Design of Materials and Structures", Helsinki May 2000, member of the Scientific Committee

#### *4.8.5 National and International Evaluation Tasks*

- External Evaluator for professorial nominations for DTU (Technical University of Denmark) 2018
- External Evaluator for professorial promotions for Northumbria University 2017
- External Evaluator for professorial promotions for Cardiff University 2016
- External Evaluator for a research project of University of Sharjah 2016
- Member of the Interview and Assessment Panel for UK Government's "Digital Tool for BIM" Competition, Phase 2 for Innovate UK and TSB (Technology Strategy Board) 2014
- International Evaluator of the Built Environment Process Re-engineering (PRE) programme results for RYM (Strategic Centre for Science, Technology and Innovation of Built Environment in Finland) 2014
- External Evaluator for professorial promotions and nominations for University of Salford 2014
- External Evaluator for professorial promotions and nominations for Tampere University of Technology 2014
- External Evaluator for professorial promotions and nominations for the Chinese University of Hong Kong 2014
- Several confidential evaluations and peer reviews of project proposals in Australian and Canadian research programmes 2005...2012
- ClassOfYourOwn: UK finals for CEFPI's International 2012 competition "School of the Future", member of the Jury 2012
- EPSRC's (The Engineering and Physical Sciences Research Council) 2nd Annual review of IMRCs (Innovative Manufacturing Research Centres) in UK: International Evaluator of Innovative Construction Research Centre at Reading University, January 2004
- FaceIT 2001: Competition of the Best Information Technology Application for Building and Facility Management in Sweden in 2001, member of the Jury
- FaceIT2000: Competition of the Best Information Technology Application for Building and Facility Management in Sweden in 2000, member of the Jury
- Finnish representative and evaluator in COMBINE 2 (Computer Models for Building Industry in Europe 1992-1995), Dublin 1995

#### *4.8.6 Official Representative in International Conferences*

- ENCI - Extended Nordic Construction IT Network meeting, Helsinki August 1998
- IAI representative in ISO SC4 (STEP) meetings, Orlando February 1998 and Bad Aibling June 1998
- Finnish representative in ISO TC10/SC8/WG16 "Preparation for new construction industry documentation standards development" 1998-1999

- IAI International Council and Technical meetings, International Chairman 1998-2002, Deputy Chairman 2000-2002, Nordic representative 1996-2002
- Finnish representative in ISO TC10/SC8/WG13 "CAD Technique - Use of Computers for preparation of construction documentation, 1994-1999
- Member of the Finnish delegation in an invited CAD-conference of Nordic Associations of Architects in (Nordiska IT-seminariet), Stockholm 1993

#### *4.8.7 Membership in National Technology Policy Development Workgroups*

- Member of the Scientific Committee of the Built Environment Process Re-engineering (PRE) programme of RYM (Strategic Centre for Science, Technology and Innovation of Built Environment in Finland) 2012-2014
- Leader of the "Integrated Business Processes for the Lifecycle of Built Environment" R&D program preparations for RYM-SHOK (Strategic Centre for Science, Technology and Innovation for the Finnish Real Estate and Construction Cluster) 2009
- Coordinator of the "Innovative Processes Enabled by ICT" research area in the RYM-SHOK preparation group 2008
- Digital Product Process Program, member of the Preparation Steering Committee 2007
- Vision 2010 - The Finnish Real Estate and Construction Cluster's vision for 2010, member of the ICT workgroup 2001-2002 and 2005
- Construction Cluster Technology Program (SARA), member of the preparation workgroup 2001-2002
- INFRA Technology Program, member of the ICT workgroup 2001-2002
- VERA Technology Program, member of the preparation workgroup 1996-1997, Program Manager in the Steering Committee 1997-2002.

#### *4.8.8 Steering Committee Memberships in Finnish R&D Projects*

- Turva-BIM (Use of BIM in Safety Planning), VTT 2007-2008
- Artuos - Development and Deployment of BIM, Finnmap Consulting Oy 2007-2008
- Service Beyond Technology Strategic Theme Project, VTT 2005-2008
- Technology in Community Strategic Steering Group, VTT 2005-2008
- DigiBuild - Roadmap for ICT-based Opportunities in the Development of Built Environment, VTT 2007
- Product Code System for Building and Fitting Industries, Rasi 2006-2007
- AEC-FM software opportunities in the USA, VTT 2002-2003
- LifePlan - Service Life Planning from theory to practical processes, VTT 2002-2003
- Development of IFC R3 HVAC Domain Models in BS-8 co-operation, VTT 2002-2003
- PC-VR - PC technology Based Virtual Reality, VTT 2002-2003
- BS-VE - 3D Visualization of Building Services in Virtual Environment, HUT Telecommunications Software and Multimedia Laboratory 2001-2002
- ÄLMARA - Intelligent Building Materials Indicating Moisture and Emissions, VTT 2001-2002
- IFC Model Server, Secom Ltd and VTT 2001-2002
- PCC-IFC - Precast Concrete Construction IFC -project, Finnish Association of Construction Product Industries 2001-2002
- Roadmap for Intelligent IFC Product Model, VTT 2000-2002
- BS2000 - Product Data for Building Services Software, Satakunta Polytechnic: Development and Research Centre O'Sata 2000-2002
- 3D Visualization of Building Services in Virtual Environment, HUT Telecommunications Software and Multimedia Laboratory 2000-2001
- ICT Future Projects Committee of VTT 1999-2002
- MoPo - Models for the Construction Process, VTT 1999-2001

- IAI BS-7 - Building Performance Monitoring, VTT 1999-2001
- KAIMA - Knowledge Acquisition for IFC-Product Model Analysis, Solibri Inc. 1999-2000
- Transfer of Finnish Information Technology to Japanese and Chinese Construction Business Markets - pre-study, VTT 1999-2000
- Digital HVAC Product Information, LVI-tietokeskus 1999-2000
- Product Code System for Building and Fitting Industries - feasibility study, Rasi 1999-2000
- SPADEX - Spatial Data Exchange, YIT Oyj 1998-2001
- FinnST-1 - Finnish participation in the IAI ST-1 Steel frame construction -project, Finnish Constructional Steelwork Association (FCSA) 1998-2001
- Information Networks in Facility Management, Tampere University of Technology 1998-2000
- Construction IT Thesis, Tampere University of Technology 1998-2000
- RINET - Building Product Database, VTT 1998-1999
- Assistant for the International Technical Director in IAI, ToCoMan Oy 1998-1999
- VIRAPS - Virtual apartments, University of Art and Design Helsinki 1997-2001
- Development of the Data Management and Construction Process, Skanska Oy 1997-1999
- Project Manual for Construction Clients, The Finnish Association of Building Owners and Construction Clients (RAKLI) 1997-1999
- RATAS Manual for Structural Engineering, The Building Information Ltd (Rakennustieto Oy) 1997-1998
- TIMI - Benefits of IT in the Construction Industry, ToCoMan Oy 1997-1998
- IAI Forum Finland, VTT 1996-2002
- RATAS: Main Committee IT Expert Member 1994-2001

## 4.9 Publications and Presentations

### 4.9.1 Doctoral Dissertation

- Doctoral dissertation "Requirements Management Interface to Building Product Models", Civil and Environmental Engineering Department, Stanford University, USA 2005, UMI publication number 3162341, CIFE Technical report TR161, 2005 (URL: <http://cife.stanford.edu/sites/default/files/WP161.pdf>), VTT Publications 1235-0621, ISBN 951-38-6655-6 and VTT's online PDF 1455-0849, ISBN 951-38-6656-4 (URL: <http://www.vtt.fi/inf/pdf/>)

### 4.9.2 Journal Papers

- Aksenova, G., Kiviniemi, A. & Kocaturk, T. (2017) Lessons for Organisational Leaders from BIM Development in the AECO Industry's Knowledge Ecosystem. Construction Management and Economics, in the review process
- Zou, Y., Kiviniemi, A., Jones, S.W. & Walsh, J. (2017) Systematic Project Risk Management and Information Sharing using 4D BIM with a Risk Breakdown Matrix. Automation in Construction, in the review process.
- Zou, Y., Kiviniemi, A. & Jones, S.W. (2017) Retrieving Similar Cases for Construction Project Risk Management Using Natural Language Processing Techniques. Automation in Construction. Volume 80, August 2017, pages 66-76. <https://doi.org/10.1016/j.autcon.2017.04.003>
- Zou, Y., Kiviniemi, A., Jones, S.W. (2016) Developing a Tailored RBS Linking to BIM for Risk Management of Bridge Projects. ECAM (Engineering, Construction and Architectural Management) Journal. Volume 23, Issue: 6, pp.727-750, <https://doi.org/10.1108/ECAM-01-2016-0009>
- Zou, Y., Kiviniemi, A., Jones, S.W. (2016) A Review of Risk Management through BIM and BIM-related Technologies. Safety Science Journal (Elsevier), Special Issue "Risk and Land

Use", January 2016.

<http://www.sciencedirect.com/science/article/pii/S0925753516000072>

- Alhava O, Laine E & Kiviniemi A (2015). Intensive Big Room Process for Co-creating Value in Legacy Construction Projects. ITcon Vol. 20, Special Issue ECPPM 2014 - 10th European Conference on Product and Process Modelling, pg. 146-158, [http://www.itcon.org/cgi-bin/works/Show?2015\\_11](http://www.itcon.org/cgi-bin/works/Show?2015_11)
- Gilkinson, N., Raju, P., Kiviniemi, A. & Chapman, C. (2014). Building information modelling: the tide is turning. Proceedings of the ICE - Structures and Buildings, Volume 168, Issue 2, September 2014 pages 81 –93. Thomas Telford Ltd. DOI: <http://dx.doi.org/10.1680/stbu.12.00045>
- Kiviniemi, A. & Codinhoto, R. (2014). Challenges in the Implementation of BIM for FM - Case Manchester Town Hall Complex. Computing in Civil and Building Engineering 2014: pp. 665-672. DOI: 10.1061/9780784413616.083
- Palos, S., Kiviniemi, A. & Kuusisto, J. (2013). Future Perspectives on Product Data Management in Building Information Modeling, Construction Innovation: Information, Process, Management journal, Volume 14, Issue 1, December 2013, pp. 52-68. DOI: <http://dx.doi.org/10.1108/ci-12-2011-0080>
- Codinhoto, R., Kiviniemi, A., Kemmer, S. & Gravina da Rocha, C. (2013). BIM-FM Implementation: An Exploratory Investigation, International Journal of 3-D Information Modeling (IJ3DIM), Volume 2, Issue 2, October 2013 pp. 1-15. DOI: <http://dx.doi.org/10.4018/ij3dim.2013040101>
- Laakso, M. & Kiviniemi, A. (2012). The IFC Standard - A Review of History, Development, and Standardization, Information Technology in Construction, ITcon Vol. 17, May 2012, pp. 134-161, [http://www.itcon.org/cgi-bin/works/Show?2012\\_9](http://www.itcon.org/cgi-bin/works/Show?2012_9)
- Owen, R., Amor, R., Palmer, M., Dickinson, J., Tatum, C.B., Kazi A.S., Prins, M., Kiviniemi, A. & East, B. (2010). Challenges for Integrated Design and Delivery Solutions. Architectural Engineering and Design Management Journal, Volume 6, Issue 4, IDDS Special Edition. January 2010, pp. 232-240. Informa UK Limited. DOI: <http://dx.doi.org/10.3763/aedm.2010.idds1>
- Wilkins, C. & Kiviniemi, A. (2008). Engineering-centric BIM. ASHRAE Journal, Volume 50, No 12, December 2008, pp. 44-48
- Garcia, A.C.B., Kunz, J., Ekström, M. & Kiviniemi, A. (2004). Building a Project Ontology with Extreme Collaboration and Virtual Design and Construction. Advanced Engineering Informatics, Volume 18, Issue 2, April 2004, pp. 71-83. DOI: <http://dx.doi.org/10.1016/j.aei.2004.09.001>
- Howard, R., Kiviniemi, A. & Samuelson, O. (1998). Surveys of IT in the Construction Industry and Experience of the IT Barometer in Scandinavia. Electronic Journal of Information Technology in Construction – ITcon Vol. 3, pp. 47-59, <http://www.itcon.org/1998/4, 1998>
- Björk, B.C., Löwnertz, K. & Kiviniemi, A. (1997). ISO DIS 13567 - The Proposed International Standard for Structuring Layers in Computer Aided Building Design. Electronic Journal of Information Technology in Construction – ITcon Vol. 2, pp. 32-55, <http://www.itcon.org/1997/2, 1997>

#### *4.9.3 International Keynote Presentations and Papers*

- Keynote "Project integration based on Open BIM" in the Reality Check BIM, 1st Symposium of Digitalisation by Bundeskammer der ZiviltechnikerInnen, Linz, Austria, March 2018
- Keynote "Potential and Future in Using BIM for Heritage Buildings" in 6th European Congress on the Use, Management and Conservation of Buildings of Historical Value, Vienna, Austria, October 2017

- Keynote "BIM today and in 2020s – Thoughts about the digitalisation of the AECO industry..." in Trimble BIM Forum, Helsinki, Finland, October 2017
- Keynote "The future of application & marketing of new technologies in architecture – Virtual Reality" in Brick in Architecture Seminar. Hamburg, Germany, September 2017
- Keynote "BIM adoption in Europe - Some thoughts based on the experiences in Finland and UK" in ISTeA (Italian Society of Science, Technology and Engineering of Architecture). Florence, Italy, September 2017
- Keynote "BIM education – the current and future approach by universities?" in EDUBIM 2017. Paris, France, July 2017
- Keynote "Project integration based on Open BIM" in Graphisoft BIM event in the Royal Academy of Engineering. London, UK, May 2017
- Keynote "Challenges and Opportunities in BIM-based Project Management" in Tietomallihankkeiden ohjauksen haasteet projektin loppuseminaari (The End Seminar of the Challenges to Steer BIM Projects). Helsinki, Finland, November 2016
- Keynote "Interdisciplinary Collaboration Using Open BIM" in the Third GCD Symposium (Geometry and Computational Design). Vienna, Austria, November 2016
- Keynote "Potential and Challenges in Using BIM (Building Information Modelling) for Heritage Buildings" in the 1<sup>st</sup> International Conference of Sustainable Vital Technologies in Engineering & Informatics. Cairo, Egypt, November 2016
- Keynote "Experiences from the BIM adoption in Finland and UK – Clients as the drivers of innovation" in BIM, Research and Education 2016 Strategic Workshop. Montreal, Canada, October 2016 (<http://gridd.etsmtl.ca/en/archives/1396>)
- Keynote "BIM & Education – Do we need a new teaching paradigm?" in BIM, Research and Education 2016 Strategic Workshop. Montreal, Canada, October 2016
- Keynote "Project integration based on Open BIM" in Graphisoft BIM event. Edinburgh, UK, September 2016
- Keynote "AEC Education – Do we need a new teaching paradigm?" in 1<sup>st</sup> International BIM Academic Forum Conference. Glasgow, UK, September 2016
- Keynote "Status and a vision of Open BIM in architectural and engineering education in UK" in MSSCE2016 - Building Information Modelling in Civil Engineering. Copenhagen, Denmark, August 2016
- 1<sup>st</sup> International BIM Conference in Croatia. Keynote "Collaborative Design – BIM as an opportunity for architects". Zagreb, Croatia, May 2016
- Graphisoft BIM event in the Royal Academy of Engineering. Keynote "Project integration based on Open BIM". London, UK, March 2016
- 4<sup>th</sup> International Workshop "When Social Sciences meet Lean and BIM". Keynote "Built Environment and Our Digital Future", University of Huddersfield, UK, January 2016
- GeoBIM Europe 2015. Keynote "BIM education - a bottleneck in BIM adoption?", Amsterdam, the Netherlands, December 2015
- BIM event of Nederlands Instituut voor de Bouw. Keynote "BIM - just a fashion or real change?", Maarsse, the Netherlands, December 2015
- Future of BIM: Looking Beyond 2016. Leading Address "Exploiting BIM in Energy Efficient Domestic Retrofit: Evaluation of Benefits and Barriers" with Elaheh Gholami. London, UK, December 2015
- BIM Forum 2015 by buildingSMART German Speaking Chapter. Keynote "Experiences from the BIM-Adoption in Finland and UK – Clients as the drivers of innovation", Berlin, Germany, December 2015
- CIOB International Inspiring Construction Conference. Keynote "An international perspective on data and construction", London, UK, November 2015
- CITA 2015 BIM Gathering. Keynote "BIM in Education - What skills do future professionals need?", Dublin, Ireland, November 2015

- AEC Hackathon. Keynote "Built Environment and Our Digital Future", Helsinki, Finland, November 2015
- International Government BIM Symposium and 2015 World City Day. Keynote "Public clients' role in BIM adoption - Experiences from Finland and UK", Shanghai, China, October 2015
- Digital Construction Symposium. Opening Address "Digital Future", Tampere, Finland, October 2015
- BIM Alliance Conference. Keynote "BIM education in the UK - The current situation and challenges?", Stockholm, Sweden, September 2015
- "Collaborative Design and Engineering - Issues with IFC and Interoperability?", ArchiCAD Summer School, Liverpool, UK, September 2015
- Nordic Road Forum "BIM tager planlægning af veje og gader til et nyt niveau". "Keynote Design in the Future", Helsinki, Finland, May 2015
- ENTAC 2014 - XV Encontro Nacional de Tecnologia do Ambiente Construído. Keynote "BIM - Evolution or revolution in the construction industry?", Maceio, Brazil, November 2014
- GeoSmart 2014 Conference. Keynote "BIM & GIS – can we connect the dots?", Hong Kong, June 2014
- BIM on Site Seminar: Keynote "Status and Future of BIM", Vantaa, Finland, November 2013
- Seminar of RYM PRE Programme (Built Environment Process Re-engineering): Keynote "International View to the Future of BIM", Espoo, Finland, November 2013
- buildingSMART Schweiz Conference "Zusammen Bauen or Zusammenbauen": Keynote "BIM and Architecture - Controversy?", Zurich, Switzerland, November 2013
- Novapoint User Meeting 2013: Keynote "Public Clients as the Driver for BIM Adoption - Why and how UK Government wants to change the construction industry?", Stockholm, Sweden, October 2013
- 1st BIM International Conference: Keynote "How to include BIM in the future curricula of AEC professionals?", Porto, Portugal, June 2013
- Tekla Central European BIM Forum 2013: Keynote "Challenges and opportunities - current trends in the global BIM practices", Düsseldorf, Germany, June 2013
- Tekes Digital Product Process Seminar: Keynote "Digitalisation of the AEC Industry – BIM as a global trend", Jyväskylä, Finland, June 2013
- Open BIM 2013 Conference: Keynote "Public Clients as the Driver for BIM Adoption - Why and how UK Government wants to change the construction industry?", Stockholm, Sweden, April 2013
- Building Innovation 2013 Conference, BIM Academic Education Symposium: Luncheon Speech "Challenges and opportunities in the BIM education - How to include BIM in the future curricula of AEC professionals?", Washington DC, USA, January 2013
- Seminar "3Dexperience – AEC & BIM" by Dassault Systemes: Keynote "Just complying with BIM requirements or BIM as a competitive advantage?", London, UK, December 2012
- IV Project Manager's Day: Keynote "BIM as a Strategic Issue in AECO Companies and Projects", at TTK University of Applied Sciences, Tallinn, Estonia, November 2012
- MADE EXPO 2012 (Milano Architettura Design Edilizia): Keynote "Challenges and Opportunities in Using BIM in Integrated Design", Milan, Italy, October 2012
- FINNBUILD EXPO 2012: Keynote "The effects of Governmental requirements in the BIM adoption in UK", Helsinki, Finland, October 2012
- CONENX 2012: Keynote "International Drivers and Trends of Integrated BIM", Fortaleza, Brazil, July 2012
- ASTA National User Forum: Keynote "BIM Opportunities and Challenges - An International Viewpoint", London, UK, February 2012



- Il Building Information Modelling: Come sta cambiando l'industria delle costruzioni?: Keynote "Where is BIM going? Promises and challenges for the AEC industry", Turin, Italy, January 2012
- Skanska's BIM Seminar: Keynote "International Drivers and Trends of BIM", Helsinki, Finland, January 2012
- International CEO meeting of Eleco Plc: Keynote "What could BIM mean for our business?", London, UK, November 2011
- Seminar "Getting Ready for a Big Change in the Industry" by Dassault Systemes: Keynote "Experiences with 3D BIM", London, UK, November 2011
- International BIM Summit by Hilti: "International Drivers and Trends of Integrated BIM", Lichtenstein, November 2011
- Skanska's BIM Seminar: Keynote "International Drivers and Trends of BIM", Helsinki, Finland, October 2011
- 2º Seminário BIM Modelagem Da Informação Da Construção: Keynote "International Drivers and Trends of Integrated BIM" Sao Paolo, Brazil, October 2011
- Seminar "Tilaja avainasemassa tietomallien käytölle" (Clients as the Key for BIM Adoption) by RIL (Association of Finnish Civil Engineers)": Keynote "BIM into practice in UK - Is the conservative UK passing Finland in BIM adoption?", Helsinki, Finland, October 2011
- Conference "Architecture for People": Keynote "Drivers and Obstacles for Adoption of Integrated BIM", Prague, Czech Republic, September 2011
- Open BIM Event by Tekla in the Finnish Embassy: Keynote "Open BIM and Governmental Requirements" London, UK, March 2011
- SB2010 Finland Conference "Sustainable Community": Keynote "BIM in Evaluation and Management of Sustainability" with Erik Bichard. Extended abstract in Conference proceedings ISBN 978-951-758-506-4, pp.4-5, Espoo, Finland, September 2010
- CIB IDS 2009 Conference "Improving Construction and Use through Integrated Design Solutions": Keynote "A Survival Strategy - How to Integrate Design Systems and Processes in a Fragmented Industry?" extended abstract in Conference proceedings ISBN 978-951-758-506-4 pp. 9-11, Helsinki, Finland, June 2009
- Second London International Conference on buildingSMART. Two keynote presentations (Government & Industry Workshop and Conference): Keynote "Finland's Strategy to Transform the Competitiveness of its Construction Industry 10 Years On", London, UK, June 2008
- bibs IT/CAD Conference: Keynote "Integrated BIM: leading edge or bleeding edge? Some Finnish experiences and views", Odense, Denmark, October 2007
- International Symposium on Building Information Modelling - the Next Big Change in Construction: Keynote "IDS & BIM, 10 Years' Perspective: Dream and Reality", Brussels, Belgium, October 2007
- ASCE, CIB-W78 & ICCBE Joint International Conference on Computing and Decision Making in Civil and Building Engineering Keynote "Ten Years of IFC Development; Why are we not yet there?", Montreal, Canada, June 2006
- CRC Construction Innovation Conference "Clients Driving Innovation: Moving Ideas Into Practice": Keynote "Adopting Innovation: Building Information Models in the Finnish Real Estate And Construction Cluster", Gold Coast, Australia, March 2006. Published in the Conference proceedings by CRC Cooperative Research Centre for Construction Innovation, pp. 15-23, 2006
- eSmart Conference: Keynote with John Mitchell and Stefan Larsson "From 2D Projections to Product Model Information", Manchester, UK, November 2002
- Australasian Chapter IAI Seminars: Four keynotes "Changing Industry Culture - The Effects of ICT on the Construction Industry" in Sydney, Brisbane and Melbourne, Australia and Auckland, New Zealand, November 2002

- Japan IAI Seminar: Keynote "Interoperable ICT tools in Real Construction Projects - Finnish Experiences of New Processes", Tokyo, Japan, October 2002
- Construction Plus E-Construction Conference "Priceless Objects": Keynote presentation "Finnish ICT Strategies for the Construction and Real Estate Cluster", London, UK, February 2002
- ECAADE 2001 Conference: Keynote "Information Sharing on Internet in AEC/FM Processes", Helsinki, Finland, August 2001
- Annual Spring Conference of Architectural Institute of Korea: Keynote "IT in Collaborative Design and Construction Process", Seoul, South Korea, April 2001
- IAI Korea Chapter's Industry Day: Keynote "Information Sharing in Collaborative Design and Construction Process", Seoul, South Korea, April 2001
- 2nd International Symposium on Prefabrication: Keynote "Integrated Processes, Software Interoperability and Information Networking in the Construction Industry". Due to late invitation the paper was distributed separately in the conference. Helsinki, Finland, May 2000
- Nordbygg Exhibition, Seminar for Building Owners: Keynote "Vera - Information Networking in the Construction Process", Stockholm, Sweden, March 2000
- IAI Road Show: Three keynotes "Vera - Information Networking in the Construction Process" in Melbourne, Sydney and Brisbane, Australia, February 2000
- CAAD Futures Conference: Keynote "Software Interoperability in the AEC-FM Industry". Due to late invitation the paper was distributed separately in the conference. Atlanta, USA, June 1999
- 8th International Conference on Durability of Building Materials and Components: Keynote "IAI and IFC - State-of-the-Art". Conference Proceedings "Durability of Building Materials and Components 8", Volume 4 "Information Technology in Construction", ISBN 0-660-17743-9, pp. 2157-2168. Vancouver, Canada, June 1999
- Japan A/E/C Systems Show: Keynote "Need for Global Standards in AEC-FM Industry", Tokyo, Japan, September 1998
- ACS Exhibition: Keynote "Online and in the Net". Due to late invitation the paper was distributed separately in the conference. Frankfurt, Germany, November 1996

#### 4.9.4 *International Invited Presentations and Papers*

- "Project Collaboration in Integrated BIM Environment" a invited lecture in Università degli Studi di Firenze, Italy, March 2018
- "Project Collaboration in Integrated BIM Environment" a PhD workshop in Politecnico di Milano, Italy, March 2018
- "How BIM is used in the UK" in Rakennuttaminen (Construction Management) 2018 Conference in Tampere, Finland, January 2018
- "Architectural Education – Does BIM require a new teaching paradigm?" in the University of Huddersfield, UK, January 2018
- "BIM Collaboration with Open BIM" in BIM Summer school at Aalto University. Helsinki, Finland, June 2017
- "Architectural Education – Do we need a new teaching paradigm?" in Politecnico di Milano, Italy, March 2017
- "Project integration based on Open BIM" in Graphisoft BIM event, Manchester, UK, December 2016
- "Digitalisation of the AECO industry" in the KIRA-digi Roundtable Workshop. Helsinki, Finland, November 2016
- "Collaborative Design and Engineering – Open BIM and interoperability" in Technical University of Munich, Germany, June 2016

- "Experiences from the BIM adoption in Finland and UK – Clients as the drivers of innovation" in Technical University of Munich, Germany, June 2016
- "Architectural Education – Do we need a new teaching paradigm?" in the "BIM in Architectural Education" Symposium, Dublin School of Architecture, DIT, Dublin, Ireland, May 2016
- "The current and future BIM education" in BRE BIM Prospects Conference. Watford, UK, April 2016
- "BIM, new Design Methods and Techniques in the Design Management" in Rateko Construction Production Management Education. Helsinki, Finland, March 2016
- "The True Meaning of Open BIM?" in BIMRECC webinar, October 2015. Presentation available at <http://bimrec.com/previous-webinars/prof-arto-kiviniemi/>
- "Barriers and Benefits of BIM" in BIM Today Conference by GovToday, Mermaid Conference Centre, London, UK, June 2015
- "Collaborative Design and Engineering with IFC in the Netherlands" with Leon van Berlo (TNO, Netherlands). BIMMY Award for the best presentation in BIM Show Live 2015, Manchester, UK, April 2015
- "Early BIM Research, Development and Adoption in Finland", BIM World 2015, Paris, France, March 2015
- "Emerging BIM – An Update of UK's Current Situation", BIM Breakfast, Aalto University, Espoo, Finland, September 2014
- "Future BIM – Thoughts from the Research and Education", ACSA (ArchiCAD Spring Academy), Espoo, Finland, May 2014
- "BIM education – a bottleneck in BIM adoption?", Tekla European BIM Forum, Berlin, Germany, January 2014
- "Is Education Now the Bottleneck of BIM Adoption?", 3<sup>rd</sup> International "When Social Science Meets Lean and BIM" workshop, Helsinki, Finland, November 2013
- "Challenges and Opportunities of BIM in Lifecycle Assessment", 21. Internationales Industrieauseminar "Building Information Modelling for Life Cycle Structures", Vienna, Austria, June 2013
- "Where are we on the BIM journey?", SCALA Study Day, Stoke-on-Trent, UK, June 2013
- "Designing the Future: Sustainable Buildings & Infrastructure", Grand Challenges lecture series at Queensland University of Technology, Brisbane, Australia, May 2013
- "Challenges and opportunities - current trends in the global BIM practices", UKTFA Fabric First and BIM Conference, Bristol, UK, April 2013
- "Value of BIM in FM/OM – why have we failed in attracting owners and operators?" in Aalto University invitation BIM in FM/OM workshop, Helsinki, Finland, April 2013
- "BIM and Open Standards – an international overview" in Tocoman Easy BIM product launch, Helsinki, Finland, March 2013
- "The present and future of BIM" at Indiana State University, Terre Haute, USA, January 2013
- "People Issues and BIM – a view from the trenches", 1<sup>st</sup> International "When Social Science Meets Lean and BIM" workshop, University of Salford, UK, December 2012
- "Opportunities and Challenges in Adopting Integrated BIM" at Tallinn University of Technology, Estonia, November 2012
- "SOBE - School of Built Environment" at DTU (Technical University of Denmark), Copenhagen, Denmark, October 2012
- "Challenges in BIM repository development and implementation in industry?" in BIM Repository Workshop at KTH (Royal Institute of Technology), Stockholm, Sweden, June 2012

- "Challenges and Opportunities for Implementing Integrated BIM" and "Some Case Studies Illustrating the Application of Integrated BIM" in the International Construction Management Programme, University of Bath, UK, June 2012
- "Drivers and Obstacles for Adoption of Integrated BIM in Teaching & Learning" in iBEE 2012 - Innovation in Built Environment Education, Salford, UK, May 2012
- "BIM from Owner's Perspective" in CIBSE North West Technical Seminar on BIM, Manchester, UK, February 2012
- "Integrated BIM" PhD Workshop in Politecnico di Torino, Turin, Italy, January 2012
- "Global Drivers and Obstacles for Integrated BIM" in Hong Kong Polytechnic University, Hong Kong, January 2012
- "Changes and Challenges Emerging from the IGT Low Carbon and BIM Reports" panel in LEAF International 2011 (Leading European Architects Forum), London, UK, September 2011
- "International Drivers and Trends of Integrated BIM" in Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil October 2011
- CIB IDDS workshops Melbourne and Brisbane, Australia, May and April 2011
- "Challenges in Teaching Integrated Design & Building Information Modelling" (co-author Dr Patricia Tzortzopoulos Fazenda) and "BIM Implementation and Adoption Process for a Small Architectural Practice" (co-authors Dr Yusuf Arayici and Paul Coates) in FIATECH Technology Conference & Showcase, Phoenix, USA, April 2011
- SCRI Forum "How Design Change Through BIM?": Presentation "BIM Guidelines and Impacts of Integrated BIM in Design Process", Salford, UK, December 2010
- NCC Nordic CEOs Annual Meeting: Invited presentation "VDC/BIM Status Overview", Helsinki, Finland, November 2010
- Workshop and Seminar of the Estonian Group for Lean Construction "Building Information Modelling in Construction Education": Invited participation in workshop and concluding comments of the seminar, Tallinn, Estonia, November 2010
- SCRI Forum "Clients and BIM: How to realise the benefits?": Presentation "Clients' BIM Requirements", Salford, UK, October 2010
- Global Summit on Sustainable Built Environment "Better Building Better World": Invited presentation "BIM/VDC: Adoption, Policy, Standards", Shanghai, China, August 2010
- LEAF 2010 (10th Annual Leading European Architects Forum): Invited member in the panel discussion "Architecture for the Future", London, UK, September 2010
- Symposium "Agenda for 21st Century Architectural Education: Furthering the Debate": Invited presentation "Barriers to Collaboration in Practice – How Might Architectural Education Respond to a Collaboration Agenda?", Manchester, UK, June 2010
- Lecture Series "BIM Management and Processes" at Aarhus School of Architecture: Invited presentation "Challenges of Interoperable BIM in and between Organizations", Copenhagen, Denmark, January 2010
- CIFE Summer Program 2009: Invited presentation and moderator in the Session "Energy Modeling, Analysis and Performance in Design and Practice", Washington DC, USA, June 2009
- International Symposium "Distributed Intelligence in Design": Invited presentation "The Effects of Integrated BIM in the Process and Business Models", Salford University, UK, May 2009
- CIFE Summer Program 2008: Invited presentation "Practice and Vision for VDC/BIM to Support Integration and Automation", Helsinki, Finland, June 2008
- International buildingSMART Forum: Invited presentation "BIM and IFC in Finland - State-of-the-Art and Some Case Studies", Tokyo, Japan, April 2008
- International Workshop on Collaborative Human Futures - A New Design Paradigm: Invited paper: "Potential Obstacles to Use BIM in Architectural Design" with Martin

Fischer. Workshop Proceedings pp. 53-65, Hong Kong Polytechnic University, Hong Kong, November 2007

- Health Capital Assets Managers Consortium Conference: Invited presentation "Life Cycle Management of Information from Brief to Commissioning and Management", Brisbane, Australia, November 2007
- International buildingSMART Forum, Queensland Government Session: Invited presentation "Integrated BIM in Finland Senate Properties' BIM requirements", Brisbane, Australia, November 2007
- International Workshop on Lean Construction and Automation in Infra Sector: Invited presentation "Model-based Information Systems", Berkeley University, USA, April 2007
- Virtual Futures for Design and Construction Workshop: Invited Presentation "Integrated Building Information Models as Virtual Prototypes", Salford University, UK, September 2006
- IAI UK Annual Conference 2006: Adopting Innovation: Invited presentation "BIM & IFC in Finland", London, UK, June 2006
- 15th Annual Workshop of The Workplace Network: Invited presentation "VBE/BIM Status Overview", Helsinki, Finland, May 2006
- CRC Construction Innovation Breakfast Seminar: Invited presentation "Innovation & Efficiencies in Construction Project Delivery and Property Management through Information and Communication Technologies and Building Information Models", Melbourne, Australia, March 2006
- CSIRO Requirements Management Workshop: Invited presentation "Requirements Management Interface to Building Product Models", Melbourne, Australia, March 2006
- University of New South Wales: Invited presentation "IFC for Open Collaboration - a Case Study of the ProIT Project", Sydney, Australia, March 2006
- University of New South Wales: Invited Faculty Lecture "What Is the Role of BIM in Education for Professionals in the Built Environment?", Sydney, Australia, March 2006
- University of Queensland: Invited presentation "Building Information Models", Brisbane, Australia, March 2006
- Executive CRC Construction Innovation Briefing: Three invited presentations "Adopting Innovation - Building Information Models in the Finnish Real Estate and Construction Cluster", CRC Construction Innovation and CSIRO, Brisbane; RAI Member Seminar, Sydney; John Holland Group Executive Briefing, Melbourne, Australia, March 2006
- Executive Seminar "New Paradigm in Property Development: Healthy, Comfortable and Ecological Buildings in a Modern City": Three invited presentations "Management of Customer Requirements in Product Model Environment", Abu Dhabi, Dubai and Bahrain, October 2005
- International Workshop on Lifetime Engineering of Civil Infrastructure: Invited paper "Integrated Product Models in Life-Cycle Evaluation and Management of the Built Environment", Yamaguchi University, Ube, Japan, October 2005
- GCADS 2004, Computer Aided Requirement Management Workshop: Invited paper "Room Related Requirements Model Concept in Building Product Model Environment" with Martin Fischer. Workshop proceedings, pp. 3-21. Carnegie Mellon University, Pittsburgh, USA, July 2004
- CIFE Summer Program 2004: Invited presentation in the panel session "Owners 2010 Vision & Strategic Plan", Stanford University, Palo Alto, USA, June 2004
- AIA Conference "Building Connections": Invited presentation "Global Perspectives on Interoperability and Data Exchange Standards", Washington DC, USA, April 2004
- Finnish Software Day in CIFE: Invited presentation "Overview of the Finnish AEC/FM Software Market", Stanford University, Palo Alto, USA, April 2004

- ProIT Seminar 2004: Invited presentation "Requirements Management Interface to Product Models", Helsinki, Finland, January 2004
- AIA Conference "Connecting the Dots": Invited presentation "Virtual Building Environments - Integrating Knowledge, Data, and Software for Multidisciplinary Design, Analysis, and Visualization" with Professor Martin Fischer and Dr. Vladimir Bazjanac, San Francisco, USA, October 2003
- AIA Conference "Connecting the Dots": Invited presentation "Federal Agency Initiatives and International Case Studies in 3D Object Modelling and XML Schema Development: 3D Object Modelling and XML Development" with Stephen Hagan, Calvin Kam and Bambi Tran, San Francisco, USA, October 2003
- IAI Industry Day 2003: Invited presentations "VERA - Information Networking in the Construction Process & Integrated Finnish Construction" and "BLIS – Design Coordination using IFC Project Models" with Yoshinobu Adachi, Dianne Davis, Robin Drogemuller, Jan Karlshoej and Kari Karstila, Washington DC, USA, May 2003
- A/E/C Systems 2002 "Ripple Effect": Invited Panel Session "Global Networking Address", Anaheim, USA, June 2002
- IT Construction Best Practice Conference: Invited presentation "Sharing of Information - an International View", London, UK, May 2002
- EFCA 2002 Conference "Information Society - New Challenge for Consulting Engineers": Invited presentation "ICT and R&D for Construction and Life Cycle Management", Helsinki, Finland, May 2002
- AIA Conference "Six Degrees of Collaboration": Invited presentation "Collaboration Technology in Design, Construction and Facility Management", Washington DC, USA, April 2002
- EU Workshop "New Ways of Working": Invited presentation "Clustering Multidisciplinary Research", Brussels, Belgium, January 2002
- RECI 2001, Real Estate, Construction and the Internet Conference: Invited presentation in the panel session "New Business Models for the Building Industry", CDI/Harvard University, Cambridge, USA, November 2001
- Interop AEC+FM 2001 Conference: Invited presentation "Overview of Finnish Approach to ICT R&D for AEC/FM Industry", Sydney, Australia, October 2001
- ICIS 2001 Conference: Invited presentation "Finnish ICT Strategies in Technology Development Programs for the Construction and Real Estate Cluster", Helsinki, Finland, June 2001
- Nordic IT workshop "Udvikling af Byggeriet" [Development of Construction]: Invited presentation "Information Networking in the Construction Process", Copenhagen, Denmark, March 2001
- International Symposium "New Technologies in Architecture: Digital Design and Manufacturing Techniques": Invited presentation "Information Sharing on Internet in Collaborative Design and Construction Process", Harvard University, Cambridge, USA, October 2000
- IAI International Business Briefing "Building Design, Construction and Operation: Leveraging Technology For Business Advantage": Invited presentation "Industry and Government Partnership: Finland's Competitive Edge", London, UK, October 2000
- CIFE Summer Program 2000: Invited presentation "What you can expect of the IFCs", Stanford University, Palo Alto, USA, September 2000
- ILCDES 2000 Conference: Invited presentation "Software Interoperability and Information Networking in the Construction Industry", Helsinki, Finland, June 2000
- Construction IT members meeting: Invited presentations "Vera - Information Networking in the Construction Process" and "Rembrand - A Technology Program for Real Estate Business and Services", Loughborough, UK, May 2000

- Japan CAD Data Exchange Consortium: Invited presentation "European and Finnish Construction R&D projects", Tokyo, Japan, September 1998
- Malaysian IAI Seminar: Invited presentation "IAI Nordic Chapter & Vera Program", Johor Bahru, Malaysia, October 1997

#### 4.9.5 *Papers in International Conferences (refereed if not mentioned otherwise)*

- Alhava, O., Laine, E. & Kiviniemi, A. (2017) Construction Industry Needs an AirBnB of Its Own! Shaping Tomorrow's Built Environment Conference, Salford, UK, September 2017. CIOB Prize as the best paper in Construction Management
- Qabshoqa, M., Kocaturk, T. & Kiviniemi, A. (2016). A Data-Driven Business in Architecture, an approach for data implementation in design business, ASCAAD 2016 - 8th International Conference of the Arab Society for Computer Aided Architectural Design. London, November 2016
- Sujan, S., Aksenova, G., Kiviniemi, A. & S. W. Jones (2016). A Comparative Review of Systemic Innovation in the Construction and Film Industries. ECPPM 2016 (11th European Conference on Product and Process Modelling). Limassol, Cyprus, September 2016
- Alhava, O., Laine, E. & Kiviniemi, A. (2016). Emotional Intelligence - Improving the performance of Big Room. ECPPM 2016 (11th European Conference on Product and Process Modelling). Limassol, Cyprus, September 2016
- Zou, Y., Jones, S.W. & Kiviniemi, A. (2015). BIM and Knowledge Based Risk Management System: A Conceptual Model. Proceedings of the CITA 2015 BIM Gathering. Dublin, Ireland, November 2015
- Gholami, E. & Kiviniemi, A. (2015). Implementing Building Information Modelling (BIM) in Energy- Efficient Domestic Retrofit: Quality Checking of BIM Model. Proceedings of the 32<sup>nd</sup> CIB W78 conference. Eindhoven, Netherlands, October 2015
- Zou, Y., Kiviniemi, A. & Jones, S.W. (2015). BIM-based Risk Management: Challenges and Opportunities. Proceedings of the 32<sup>nd</sup> CIB W78 conference proceedings. Eindhoven, Netherlands, October 2015
- Alhava, O., Kiviniemi, A. & Laine, E. (2015). 5D Use Case in Design Phase – Intensive Big Room. Proceedings of 5D Conference 2015. Constance, Germany, May 2015
- Heikura, H. & Kiviniemi, A. (2015). Improving Productivity through Alliance Implementation between Contractors. Proceedings of 5D Conference 2015. Constance, Germany, May 2015
- Juntunen, J.T., Kiviniemi, A. & Alhava, O. (2015). The Use of Modification of PPC Measurement in Design management. Proceedings of 5D Conference 2015. Constance, Germany, May 2015
- Gholami, E., Kiviniemi, A., Kocaturk, T. & Sharples, S. (2015). Exploiting BIM in Energy Efficient Domestic Retrofit: Evaluation of Benefits and Barriers. Proceedings of the ICCBEI 2015 (2nd International Conference on Civil and Building Engineering Informatics). Tokyo, Japan, April 2015
- Kori, S. & Kiviniemi, A. (2015). Toward Adoption of BIM in the Nigerian AEC Industry; Context Framing, Data Collecting and Paradigm for Interpretation. Proceedings of 9th BIM Academic Symposium & Job Task Analysis Review. Washington DC, USA, April 2015
- Aksenova, G., Tahrani, S., Forgues, D., & Kiviniemi, A. (2014). Use of Collaborative Platform to Facilitate Informal Design Communication – A Case Study. Paper presented at the COMMON'14 Symposium – Multimodal Communication and Instrumented Collaboration, Perspectives on Enunciation, Presentation & Modality. University of Liege, Belgium September 2014
- Alhava, O., Laine, E. & Kiviniemi, A. (2014). Interactive Client Centric Design Management Process for Construction Projects. Proceedings of the ECPPM 2014. Vienna, Austria, September 2014

- Codinhoto, R. & Kiviniemi, A. (2014). BIM for FM: A Case Support for Business Life Cycle. Proceedings of the PLM14 - IFIP WG5.1 11th International Conference on Product Lifecycle Management. Yokohama, Japan, July 2014
- Kiviniemi, A. & Codinhoto, R. (2014). Challenges in the Implementation of BIM for FM - Case Manchester Town Hall Complex. Proceedings of the ICCCBE & CIB W78 2014 Conference. Orlando, USA, June 2014
- Laine, E., Alvha, O. & Kiviniemi, A. (2014). Improving Built-in Quality by BIM-based Visual Management. Proceedings of the IGLC 2014 Conference (International Group for Lean Construction). Oslo, Norway, June 2014
- Bavafa, M. & Kiviniemi, A. (2013). Interoperability in Semi-Intelligent Civil Engineering Agent. Proceedings of the CIB W078 2013 Conference. Beijing, China, October 2013
- Kocaturk, T. & Kiviniemi, A. (2013). Challenges of Integrating BIM in Architectural Education. Proceedings of the eCAADe 2013 Conference. Delft, Netherlands, September 2013
- Bavafa, M., Kiviniemi, A. & Weekes, L. (2012). Optimised Strategy by Utilising BIM and Set-based Design: Reinforced Concrete Slabs. Proceedings of the CIB W078 2012 Conference. Beirut, Lebanon, October 2012
- Laakso, M., & Kiviniemi, A. (2011). A Review of IFC Standardization – Interoperability Through Complementary Development Approaches. Proceedings of the CIB W078 2011 Conference, p.10. Sophia Antipolis, France, October 2011.
- Arayici, Y., Kiviniemi, A., Coates, P., Koskela, L., Kagioglou, M., Usher, C. & O'Reilly, K. (2011). *BIM implementation and adoption process for an architectural practice*. FIATECH Conference, April 2011, Phoenix, USA. Not refereed.
- Häkkinen T., & Kiviniemi, A. (2008). Sustainable Building and BIM. Proceedings of the SB08 World Sustainable Building Conference. Melbourne, Australia, September 2008
- Kiviniemi, A. (2008). IFC Certification Process and Data Exchange Problems. Proceedings of the ECPPM 2008 Conference "eBusiness and eWork in AEC" (ISBN 978-0-415-48245-5), pp. 517-522. Sophia Antipolis, France, September 2008
- Kiviniemi, A. (2008). Need for integration - CIB's new focus area, Integrated Design Solutions, IDS. Extended abstract in the proceeding of the Joint CIB-W96/102 Conference "Improving Performance" (ISBN 978-951-758-492-0), pp. 71-72. Helsinki, Finland, June 2008
- Koppinen, T., Kiviniemi, A., Kojima, J., Mäkeläinen, T., Rekola, M., Hietanen, J. & Kulusjärvi H. (2008). Putting the Client in the Back Seat – Philosophy of the BIM Guidelines. Extended abstract in the proceeding of the Joint CIB-W96/102 Conference "Improving Performance" (ISBN 978-951-758-492-0), pp. 93-94 and full paper in the Conference CD. Helsinki, Finland, June 2008
- Bazjanac, V. & Kiviniemi, A. (2007). Reduction, Simplification, Translation and Interpretation in the Exchange of Model Data. Proceedings of the CIB-W78 2007 Conference "Bringing ITC knowledge to work" (ISBN 978-961-248-033-2), pp. 163-168. Maribor, Slovenia, June 2007
- Lahdenperä, P., Korkiala-Tanttu, L. & Kiviniemi, A. (2006). A roadmap for the development of transport infrastructure management. Proceedings of the Joint 2006 CIB W065/W055/W086 Symposium "Construction in the XXI century: Local and global challenges". Rome, Italy, October 2006
- Kiviniemi, A. & Haymaker, J. (2005). Integration of Multiple Product Models. Proceedings of the CIB-W78 Conference (CIB publication 304, ISBN 3-86005-478-3), pp. 35. Dresden, Germany, July 2005
- Kiviniemi, A., Fischer, M. & Bazjanac, V. (2005). Integration of Multiple Product Models: IFC Model Servers as a Potential Solution. Proceedings of the CIB-W78 Conference (CIB publication 304, ISBN 3-86005-478-3), pp. 37-40. Dresden, Germany, July 2005



- Kiviniemi, A., Fischer, M. & Bazjanac, V. (2005). Multi-model Environment: Links between Objects in Different Building Models. Proceedings of the CIB-W78 Conference (CIB publication 304, ISBN 3-86005-478-3), pp. 277-284. Dresden, Germany, July 2005
- Kiviniemi, A. & Fischer, M. (2004). Pilot implementation of a requirements model. Proceedings of the ECPPM 2004 Conference "eWork and eBusiness in Architecture, Engineering and Construction" (Balkema, ISBN 04 1535), pp. 117-125. Istanbul, Turkey, September 2004. DOI: <http://dx.doi.org/10.1201/9780203023426.ch17>
- Kiviniemi, A. & Fischer, M. (2004). Requirements Management Interface to Building Product Models. Abstract in the proceedings of the ICCCBE-X (10th International Conference on Computing in Civil and Building Engineering) (ISBN 3-86068-213-X), page 252, full paper on the conference CD. Weimar, Germany, June 2004
- Kiviniemi, A. & Fischer, M. (2003). Requirements Management with Product Models. Proceedings of the First International nD Workshop by the University of Salford, pp. 25-29. Manchester, UK, January 2003
- Howard, R., Samuelson, O. & Kiviniemi, A. (2002). The latest developments in communications and e-commerce - IT Barometer in 3 Nordic countries. Proceedings of the CIB-W78 Conference, volume 2 (ISBN 87-90078-34-9), pp. 149-156. Aarhus, Denmark, June 2002
- Kiviniemi, A., Laitinen, J., Lautanala, M. & Kangas, R. (2000). Monitoring a National Construction IT Program. Proceedings of the CIB-W78 Conference. Reykjavik, Iceland, July 2000
- Hyytinen, M., Tulla, K. & Kiviniemi, A. (1999). Information Management for User-orientated Real Property Industry. Proceedings of the International Facility Management Conference, pp. 23-27. Moscow, Russia, 1999
- Bo-Christer Björk, B.C., Löwnertz, K. & Kiviniemi, A. (1997). ISO 13567 - The proposed international standard for structuring layers in computer aided building design. Proceedings of the ECCE Symposium "Computers in the Practice of Building and Civil Engineering" by Association of Finnish Civil Engineers RIL (ISBN 951-758-378-8), pp. 85-89. Lahti, Finland, September 1997
- Lautanala, M., Kiviniemi, A. & Kaitainen, K. (1997). VERA - Information Networking in the Construction Process. Proceedings of the CIB-W78 Conference (ISBN 086-443-636X), pp. 207-214. Cairns, Australia, July 1997
- Björk, B.C., Löwnertz, K. & Kiviniemi, A. (1996). ISO 13567 - the Proposed International Standard for Structuring Layers in Computer Aided Building Design. Proceedings of the CIB-W78 conference "Construction on the Information Highway" (ISBN 961-6167-11-1), pp. 77-88. Bled, Slovenia, June 1996
- Kiviniemi, A. (1995). Design Integration in the ICL Finnish Headquarters Project. International ArchComp95 seminar. Espoo, Finland, September 1995

#### 4.9.6 Books

- Penttilä, H. & Kiviniemi, A. (1995). Rakennus CAD [*CAD in the Building Design*]. Rakennustieto Oy [*Building Information Ltd*] ISBN 951-682-378-5

#### 4.9.7 Chapters of Books

Refereed papers, which are published as chapters of the conference proceedings, are listed in Section 4.9.5.

- Aksenova, G., Kiviniemi, A., Kocaturk, T., Lejeune, A. (2017) Suomen BIM-Innovaatiomatka (Finnish BIM Innovation Journey), Rakentajain kalenteri 2018 (Builders' Calendar 2018). Rakennustieto Oy (Building Information Ltd), pp. 71-81. ISBN 641-8-616-22361-6
- Aksenova, G., Kiviniemi, A., Kocaturk, T., Lejeune, A. (2017) Oppia suomalaisesta BIM-kehitystyöstä (Lessons Learned from the Finnish BIM-Development Process), Rakentajain

kalenteri 2018 (Builders' Calendar 2018). Rakennustieto Oy (Building Information Ltd), pp.1-12. ISBN 641-8-616-22361-6

- Codinhoto, R. & Kiviniemi, A. (2014) BIM for FM: A Case for Support Business Life Cycle in Product Lifecycle Management for Global Market - IFIP AICT Series: Advances in Information and Communication Technology, eds. Fukuda, S., Bernard, A., Gurumoorthy, B. & Bouras, A. Springer, Volume 442, pp 63-74. Springer Science + Business Media. ISBN 978-3-662-45937-9, DOI: [http://dx.doi.org/10.1007/978-3-662-45937-9\\_7](http://dx.doi.org/10.1007/978-3-662-45937-9_7)
- Kiviniemi, A. (2011). The Effects of Integrated BIM in Processes and Business Models. Book "Distributed Intelligence in Design", eds. Kocaturk, T. & Medjdoub B. Wiley Blackwell, ISBN 978-1-4443-3338-1, pp. 125-135. DOI: <http://dx.doi.org/10.1002/9781444392395.ch9>
- Kiviniemi, A. & Fischer, M. (2009). Potential Obstacles to Use BIM in Architectural Design. Book "Collaborative Construction Information Management", eds. Shen, G., Brandon, P. & Baldwin, A. Taylor & Francis, ISBN 978-0-415-48422-0, pp. 36-54
- Kiviniemi, A. (2000). Internet rakentamisessa [*Internet in the Building Industry*]. Book Rakentajain kalenteri 2001 [*Builders' Calendar 2001*]. Rakennustieto Oy [*Building Information Ltd*], ISSN 0355-550 X, pp.793-799
- Kiviniemi, A. (2000). Information Sharing on the Internet in Collaborative Design and Construction Process. Book "New Technologies in Architecture; Digital Design and Manufacturing Techniques". Harvard University, Graduate School of Design, ISBN 0-935 617-55-8, pp. 53-57
- Kiviniemi, A. (1999). CAD ja puu [*CAD and Timber*]. Book "Metsä ja puu IV - Puinen rakennus" [*Forest and Tree IV – Wooden Building*], ed. Paloheimo, E. Rakennustieto Oy [*Building Information Ltd*] ISBN 951-682-527-3, pp. 264-281
- Kiviniemi, A. (1998). CAD-piirustusten kuvatasosuositus [*CAD Layering Recommendation*]. Book "Rakentajain kalenteri 1999" [*Builders' Calendar 1999*] Rakennustieto Oy [*Building Information Ltd*] ISSN 0355-550 X, pp.176-178
- Kiviniemi, A. (1997). Arkkitehdin raportti tiedonsiirrosta. Pilottina ICL Oy:n toimitalo [*Report of the architectural design data transfer. Case ICL Finnish Headquarters*]. Book "Talo 90. Tiedonsiirto kiinteistönpidossa. Rakennuksen tuotemallin siirtäminen kiinteistöpitomalliksi" [*Data Transfer in Facility Management*], ed. Vahala, P. Rakennustieto Oy [*Building Information Ltd*] ISBN 951-682-466-8, Appendix 1, 41 pages
- Kiviniemi, A. (1995). Several sections in "Arkkitehdin RATAS käsikirja" [*RATAS Manual for Architects*]. Rakennustieto Oy [*Building Information Ltd*] ISBN 951-682-352-1, pp. 24-35, 45-55, 63-64, 69-79, 84-90
- Kiviniemi, A. (1995). Tiedonsiirron organisointi [*Organization of the Data Transfer*]. Book "RATAS tiedonsiirtosuositus ja tuotemalliohje" [*RATAS Recommendation for the Data Transfer and Guide for the Product Modelling*] Rakennustieto Oy [*Building Information Ltd*] ISBN 951-682-351-3, pp. 35-41
- Kiviniemi, A. (1989). CAD arkkitehdin työssä [*CAD in Architectural Design*]. Book "CAD/CAM 89 - Tietokoneavusteisen suunnittelun ja valmistuksen vuosikirja" [*CAD/CAM 89 – Yearbook of Computer Aided Architectural Design and Manufacturing*], Makromakko Oy, ISBN 952-9513-00-3, pp. 105-109

#### 4.9.8 Book reviews

- Kensek, K. (2014) Building Information Modelling Pocket Architecture: Technical Design Series, Routledge. Review published in International Journal of Architectural Computing. Multi-Science Publishing Co. Ltd. September 2014. DOI: <http://dx.doi.org/10.1260/1478-0771.12.3.357>

#### 4.9.9 Technical Reports and Working Papers

- Codinhoto, R., Kiviniemi, A., Kemmer, S., Essiet, M., Donato, V. & Tonso, L.G. (2013). BIM – FM: Manchester Town Hall Complex - Research Report. University of Salford &

Manchester City Council. Available at [http://www.bimtaskgroup.org/wp-content/uploads/2014/03/MCC2\\_Final-Report\\_web.pdf](http://www.bimtaskgroup.org/wp-content/uploads/2014/03/MCC2_Final-Report_web.pdf)

- Owen, R., Amor, R., Dickinson, J., Prins, M. & Kiviniemi, A. (2013). Research Roadmap Report – Integrated Design & Delivery Solutions (IDDS) [http://cibworld.xs4all.nl/dl/publications/pub\\_370.pdf](http://cibworld.xs4all.nl/dl/publications/pub_370.pdf)
- Dave B., Koskela, L., Kiviniemi, A., Owen, R. & Tzortzopoulos, P. (2013). Lean & BIM - Implementing Lean in Construction. CIRIA Research Publication RPP978, London. <https://ciria.sharefile.com/download.aspx?id=c5712f37116b46b3#>
- Codinhoto, R., Kiviniemi, A., Kemmer, S. & Gravina da Rocha, C. (2011). BIM Implementation: Manchester Town Hall Complex - Research Report. University of Salford & Manchester City Council.
- Kiviniemi, A., Tzortzopoulos Fazenda, P. & Kocaturk, T. (2011). Use of Building Information Modelling in the Management of Supply Chain and Product Information. Internal report for VTT
- Kiviniemi, A., Tarandi, V., Karlshøj, J., Bell, H. & Karud, O.J. (2008). Review of the Development and Implementation of IFC compatible BIM, a technical report with for the ERABuild funders in Denmark, Finland, Norway, Sweden and the Netherlands. Published at <http://erhvervsstyrelsen.dk/file/9498/ReviewoftheDevelopmentandImplementationofIFCcompatibleBIM.pdf>
- Kiviniemi, A. (2007). Support for Building Elements in the IFC 2x3 Implementations based on 6th Certification Workshop Results in May 2007, a technical report of IFC certification problems. Published as an internal report in the IAI/buildingSMART
- Koppinen, T. & Kiviniemi, A. (2007). Requirements Management and Critical Decision Points. VTT Working Papers 74, ISBN 978-951-38-7153-6 [http://www.vtt.fi/vtt\\_show\\_record.jsp?target=julk&form=sdefe&search=58062](http://www.vtt.fi/vtt_show_record.jsp?target=julk&form=sdefe&search=58062)
- Kiviniemi, A. (2007). ICT-barometri 2007 - ICT:n käyttö Suomen rakennusalalla [ICT barometer 2007 - Use of ICT in the Finnish Construction Industry]. VTT report for "SARA - Value Networks in Construction 2003-2007" Technology Program by Tekes. Finnish report available at [http://cic.vtt.fi/projects/vbe-net/data/2007\\_ICT-barometri\\_raportti.pdf](http://cic.vtt.fi/projects/vbe-net/data/2007_ICT-barometri_raportti.pdf) and presentation of the results in English at [http://cic.vtt.fi/projects/vbe-net/data/2007\\_ICT\\_barometer.pdf](http://cic.vtt.fi/projects/vbe-net/data/2007_ICT_barometer.pdf)
- Hyvärinen, J., Porkka, J., Pienimäki, M., Korkiala-Tanttu, L., Mäkeläinen, T. & Kiviniemi, A. (2006). InfraPDM Infra-alan tuotetietomalliselvitys – Yhteenvetoraportti [*Product Model Study for the Infra Sector – Conclusions, available only in Finnish*]. VTT Net Publications (<http://www.infra2010.fi/Aineisto/tuotemalliselvitys.pdf>)
- Hyvärinen, J., Porkka, J., Pienimäki, M., Korkiala-Tanttu, L., Mäkeläinen, T. & Kiviniemi, A. (2006). InfraPDM Report 1: Objectives and Ramifications of Product Model Based System in Finnish Infra Sector. VTT Net Publications (<http://www.infra2010.fi/Aineisto/Report%201.pdf>)
- Hyvärinen, J., Porkka, J., Pienimäki, M., Korkiala-Tanttu, L., Mäkeläinen, T. & Kiviniemi, A. (2006). InfraPDM Report 2: Quadri General - Properties of Quadri Product Model Concept. Concept Usage in Norway. VTT Net Publications ([http://www.infra2010.fi/Aineisto/Report2\\_Quadri\\_General.pdf](http://www.infra2010.fi/Aineisto/Report2_Quadri_General.pdf))
- Hyvärinen, J., Porkka, J., Pienimäki, M., Korkiala-Tanttu, L., Mäkeläinen, T. & Kiviniemi, A. (2006). InfraPDM Report 3: Technical Evaluation of Quadri Concept for Finnish Conditions. VTT Net Publications (<http://www.infra2010.fi/Aineisto/Report%203.pdf>)
- Carroll, T.N., Burton, R.M., Levitt, R.E. & Kiviniemi, A. (2004). Fallacies of Fast Track Tactics: Implications for Organization Theory and Project Management, with. Stanford University, CRGP Working Paper 005
- Kiviniemi, A., Fischer, M., Bazjanac, V. & Paulson, B. (2004). PREMISS - Requirements Management Interface to Building Product Models: Problem Definition and Research

Issues. Stanford University, CIFE Working Paper WP092, available at <http://cife.stanford.edu/sites/default/files/WP092.pdf>

- Garcia, A.C.B., Kunz, J., Ekström, M. & Kiviniemi, A. (2003). Building a Project Ontology with Extreme Collaboration and Virtual Design and Construction. Stanford University, CIFE Technical report TR152. Published also in *Advanced Engineering Informatics*, Volume 18, Issue 2, April 2004, pp. 71-83. available at <http://cife.stanford.edu/sites/default/files/TR152.pdf>

#### 4.9.10 *Papers in Finnish Conferences and Seminars*

List does not include the presentations which did not include a published paper; approximately 10-20 Finnish presentations of Construction ICT, BIM and Interoperability annually after 1997. *English name in italic is just a translation of the Finnish title; the material exists only in Finnish.*

- Kiviniemi, A. (1977). Vera teknologiaohjelma - Tietoverkottunut rakennusprosessi [*VERA - Information Networking in the Construction Process*] teoksessa: Santala, J. & Järvinen, J. (toim.) Moniulotteisen ympäristöme geometrisen mallintaminen ja visualisointi. Maanmittaustieteiden päivät, Maanmittaustieteiden Seura ry, no 34. ISBN 951-22-3817-9, pp. 58-73. Espoo 1997
- Kiviniemi, A. (1995). Arkkitehdin tuotetietomalli kiinteistönpidossa [*Architect's Product Data Model in Facility Management*]. Rakennuttajapäivät 1995, Helsinki
- Kiviniemi, A. (1991). AutoCAD luovan suunnittelun apuvälineenä [*AutoCAD as a Tool in the Creative Process*]. CAD-SAFA:n kevätseminaari 1991, Helsinki
- Kiviniemi, A. (1990). AutoCAD-käyttäjän oma sovelluskehitys [*AutoCAD User's Own Application Development*]. CAD-SAFA:n syysseminaari 1990, Helsinki
- Kiviniemi, A. (1990). AutoCAD – ArchiCAD, kaksi järjestelmää [*AutoCAD – ArchiCAD, two systems*]. CAD-SAFA:n kevätseminaari 1990, Helsinki
- Kiviniemi, A. (1987). AutoCAD-käyttäjän puheenvuoro [*Address of an AutoCAD user*]. CAD/CAM yhdistys 1987, Helsinki

#### 4.9.11 *International Articles*

- Kiviniemi, A. (2008). It's Getting Better - a review of the development and implementation of IFC compatible BIM. *Times Journal of Construction and Design* 03/2008, pp.38-40
- Kiviniemi, A. (2000). Informationsvernetzung in der Bauindustrie & Information Networking in the Construction Industry, *Betonwerk + Fertigteil Technik / Concrete Plant + Precast Technology* 7/2000, ISSN 0373-4311, pp. 56-65
- Kiviniemi, A. (1998). Finnish Vera Programme. IAI Japan Chapter News Letter 1/1998

#### 4.9.12 *Finnish Articles and Interviews*

- Haastattelu "Arkkitehtikoulutuksen yhteys rakennetun ympäristön muuhun opetukseen säilytettävä" [*The connection between architectural and other education for built environment must be preserved*], *Arkkitehtiutiset* 10/2010, sivut 10-12
- Haastattelu "Rakennusalallakin tarvitaan nörttitaitoja" [*Interview "Building Industry Needs ICT Nerds Too"*] *Block* 2008
- Haastattelu "Mallinnus tullut jäädäkseen" [*Interview "Modelling is here to stay"*], *SKOL jäsenlehti* 11/2007
- Haastattelu "Tietomallivaatimukset talotekniikan suunnitteluun" [*Interview "BIM Requirements for the Building Services Engineering"*] *Projektiutiset* 09/2007
- Artikkelit "Tietomallivaatimukset" [*Article "BIM Requirements"*] *Projektiutiset* 06/2007
- Haastattelu "Senaatti alkaa vaatia tuotemallipohjaista suunnittelua" [*Interview "Senate Properties Will Start to Require BIM-based Design"*], *Rakennuslehti* 12/2006
- Haastattelu "Ohjelmistotalot karkkyvät infran tuotemalliapajia" [*Article "Software Vendors Are After the BIM Markets in Infra Sector"*], *Rakennuslehti* 11/2006

- Haastattelu "Asiakasvaatimukset kytketään rakennuksen suunnitelmiin" [*Article "Client Requirements Linked to the Building Design"*], Skanskan asiakasesite Tuotemallintaminen – Virtuaalinen ja varma tapa toimia 2005
- Haastattelu "Uusi toimintamalli yhdistää rakennusten vaatimukset suunnitteluun" [*Interview "New Process Links Buildings' Requirementens to the Design Models"*], Rakennuslehti 24/2005
- Haastattelu "Tutkijanvaihto toi puhtia rakennussuunnittelun tutkimukseen" [*Interview "Research Exchange Accelerated Research of the Building Design"*] Tekniikan näköalat (Tekes) 4/2003
- Artikkeliki "Rakennuksen tuotemalli tiedonsiirron välineenä – kaupallinen läpimurto alkamassa" [*Article "Building Product Model as the Media for Information Transfer – Commercial Break-through Starting"*] with Bo-Christer Björk, Rakennuslehti 11/2002
- Haastattelu "Kohti parempaa informaation hallintaa" [*Interview "Towards Improved Information Management"*] Rakennusteollisuus RT 3/2002
- Haastattelu "ScaleCAD yhdistää elementtisuunnittelun ja tuotannon toimivaksi kokonaisuudeksi" [*Interview "ScaleCAD links the design and manufacturing processes of the pre-casted concrete facades"*] Viides elementti, 2/2002
- Artikkeliki "Tietoyhteiskunnan vaikutukset kiinteistö- ja rakennusalalla" [*Article "The Impact of Information Society into the Real Estate and Construction Industry"*] Valokynä lokakuu 2001
- Artikkeliki "IFC-standardi ja sen käyttösovellukset" [*Article "IFC Standard and Its Applications"*] Rakennustekniikka 1-2/2001
- Artikkeliki "Suunnittelun ja tuotannon uudet tietotekniset työkalut ja sovellukset" [*Article "The New IT Tools and Applications for Design and Production"*] Rakennustekniikka 1-2/2001
- Artikkeliki "Kiinteistö- ja rakennusalan tietotekniikan tulevaisuus" [*Article "The Future of Information Technology for Real Estate and Construction Industry"*] VTT Rakennustekniikan asiakaslehti maaliskuu 2000
- Haastattelu "Tietotekniikalla saadaan talon vaiheet talteen" [*Interview "Information Technology Helps to Store the History of the Building Process"*] ReTee (VTT Rakennustekniikka) maaliskuu 2000
- Haastattelu "Asenteet jarruttavat tietotekniikan hyväksikäyttöä" [*Interview "Construction Industry is Building Networks on Money"*] Kauppalehti Extra toukokuu 2000
- Artikkeliki "Tietojen yhteiskäyttöisyys toteutumassa" [*Article "Data Interoperability Is Becoming to a Reality"*] Kauppalehti Extra toukokuu 2000
- Artikkeliki "Tietoverkottunut rakentaminen" [*Article "Information Networks in Construction"*] Rakennuslehti 17/1999
- Haastattelu "Vera luo työkaluja rakentamisen osapuolten tiedonsiirtoon" [*Interview "Vera Creates Tools for Information Exchange in the Construction Process"*] Rakennuslehti 5/1999
- Interview "Vera breaks down the walls for IAI", Views on Finnish Technology (Tekes) 1999
- Haastattelu "Rakennusala tarvitsee tiedonsiirron standardeja" [*Interview "Construction Industry Needs Standards"*] Locus (Rakli) 3/1998
- Artikkeliki "Vera - Tietoverkottunut rakennusprosessi teknologiaohjelma 1997-2002" [*Article "Vera – Information Networking in the Construction Industry"*] Projektitoiminta 1/1998
- Haastattelu "Tietoverkottuminen himottaa rakennusala" [*Interview "Construction Industry Interested in the Information Networks"*] Net (ICL) 1/1998
- Artikkeliki "Internet rakennuttamisen työvälineenä" [*"Internet as a Tool for Building Owners"*], LOCUS (Rakli) 1/1997, s. 48-50

- Artikkele "ISO kuvatasostandardi" [Article "ISO CAD layering" in the Finnish Journal of CAD/CAM and Computer Graphics] Valokynä 1/1997, ISSN 0780-0843, s. 4-6.
- Artikkele "IAI ja IFC - rakennusalan uusi standardi" [Article "IAI and IFC - the new standard of IT in building industry" in the Finnish Journal of CAD/CAM and Computer Graphics] Valokynä 1/1997, ISSN 0780-0843, s. 16-18
- Artikkele "IAI ja IFC - rakennusalan tietotekniikan uusi perusta" [Article "IAI and IFC - the new foundation of IT in building industry"]. Rakennuslehti 29/1996, ISSN 0033-9121
- Haastattelu "CAD unohdettu arkkitehtien koulutuksessa" [Interview "CAD Has Been Ignored in the Architectural Education"] Rakennuslehti 6/1996
- Haastattelu "Tuotemalli helpottaa suunnittelun integrointia" [Interview "Product Model Makes Integrated Design Easier"] Rakennuslehti 9/1995
- Artikkele "Arkkitehdin tuotemalli" [Article "Architect's Product Model"] Rakennuttaja 2/94, pp. 14-17
- Several articles about CAD and project integration in the Finnish magazines and newspapers 1987-1994

#### 4.9.13 Lecture Handouts

- "Tilatietojen hallinta AutoCAD- ja Excel-ohjelmilla" ohjelmistojen käyttöohje [Management of Room Program Using AutoCAD and Excel, software manual] 1998
- AutoCAD 3D luentomoniste, Tampereen teknillinen korkeakoulu, TKK ja AEL [AutoCAD 3D Modelling lecture handout, Tampere University of Technology (TUT), Helsinki University of Technology (HUT) and AEL] 1993
- AutoCAD luentomoniste, Tampereen teknillinen korkeakoulu, TKK ja AEL, useita versioita 1991-1995, liite vuodelta 1993 [AutoCAD lecture handout, TUT, HUT and AEL, several editions 1991-1995, appendix from TUT 1993]

#### 4.9.14 Published Official and Company Standards

In all official standards published by the Building Information Ltd (Rakennustieto Oy), Arto Kiviniemi has produced the main content of the standard and participated in the approving workgroup.

- Kiviniemi, A., Rekola, M., Belloni, K., Kojima, J., Koppinen, T., Mäkeläinen, T., Kulusjärvi, H. & Hietanen, J. (2007): BIM Guidelines for Senate Properties, 9 volumes in Finnish and in English. BIM Guidelines for Senate Properties, 9 volumes in Finnish and in English. These documents formed the basis of the current COBIM 2012 Finnish National BIM Requirements:
  - Volume 1: General part (Finnish Osa 1: Yleinen osuus)
  - Volume 2: Modeling of the starting situation (Finnish Osa 2: Lähtötilanne)
  - Volume 3: Architectural Design (Finnish Osa 3: Arkkitehtisuunnittelu)
  - Volume 4: MEP design (Finnish Osa 4: TATE-suunnittelu)
  - Volume 5: Structural design (Finnish Osa 5: Rakennesuunnittelu)
  - Volume 6: Quality assurance and merging of models (Finnish Osa 6: Laadunvarmistus)
  - Volume 7: Quantity take-off (Finnish Osa 7: Määrälaskenta)
  - Volume 8: Using models for visualization (Finnish Osa 8: Havainnollistaminen)
  - Volume 9: Use of models in MEP analysis (Finnish Osa 9: TATE-analyysit)
- Huoneselosteen laatimisohe ja malli. [Rooms, Room Specifications] Building Information Ltd 1997. RT 15-10650
- Kalusteselosteen laatimisohe ja malli. [Equipment, Equipment Specifications] Building Information Ltd 1997. RT 15-10649
- Ikkunaselosteen laatimisohe ja malli. [Windows, Window Specifications] Building Information Ltd 1997. RT 15-10648

- Oviselosteen laatimishoje ja malli. [*Doors, Door Specifications*] Building Information Ltd 1997. RT 15-10647
- Ovi-, ikkuna-, kaluste- ja huoneselosteiden laatimishoje. [*Door, Window, Equipment and Room Specifications*] Building Information Ltd 1997. RT 15-10645
- Piirustuslehti. RT 15-10634 [*Building Drawings: Size of Sheets, Title Block and Revisions*] Building Information Ltd 1997. RT 15-10634
- Mitoituksen esittäminen. Rakennuspiirustukset. [*Building Drawings: Dimensioning, Methods and Reference Lines*] Building Information Ltd 1997. RT 15-10641
- Esitystapaohjeet. Rakennuspiirustukset. [*Building Drawings: Projection Methods, Scales, Lines, Texts and Abbreviations*] Building Information Ltd 1997. RT 15-10635
- CAD kuvatasot rakennesuunnittelussa. [*CAD Layers in Structural Design*] Building Information Ltd 1997. RT 15-10624
- CAD-standardi, Oulun yliopistollinen keskussairaala [*CAD Standard, Oulu University Hospital*] 1996
- CAD-integraatio-ohje, VKL [*CAD Integration Manual, Senate Properties*] 1996
- CAD kuvatasot arkkitehtisuunnittelussa [*CAD Layers in Architectural Design*] Building Information Ltd 1996. RT 15-10600
- CAD kuvatasot [*CAD Layers*] Building Information Ltd 1996. RT 15-10599

#### 4.9.15 Program Brochures

- Productivity and Quality with Information Management, Vera Program 2000
- Tuottavuutta ja laatua kokonaisvaltaisella tietojen hallinnalla, Vera ohjelma 2000
- Vera – Information Networking in the Construction Process, Vera Program 1997
- Vera – Tietoverkottunut rakennusprosessi, Vera ohjelma 1997

#### 4.9.16 Electronic Publishing

- "Vera – Tietoverkottunut rakennusprosessi 1997-2002" loppuraportti CD-levynä / "Vera – Information Networking in the Construction Process 1997-2002" Final Report on a CD, Tekes 2003. About 620 MB, the same report is also available at <http://cic.vtt.fi/vera/>
- Internet pages "PREMISS - Product Model Extension for Requirement Management Interfaces" at <http://cic.vtt.fi/projects/premiss/info.htm>, about 180 MB 2002-2005
- Internet-sivusto "Vera – Tietoverkottunut rakennusprosessi", about 250 MB, 1997-2002
- Internet pages "Vera – Information Networking in the Construction Process", about 200 MB 1997-2002
- Internet pages "IAI Nordic Chapter" at <http://cic.vtt.fi/niai/> About 620 MB 1996-2002

### 4.10 Lecturer in Universities and Other Organizations

- Course "Organizational Models and Simulation in Project-based Organizations", Helsinki University of Technology, Department of Industrial Engineering and Management 2005
- Basic and advanced CAD courses annually at Tampere University of Technology. The tasks included the planning, preparations and implementation of the CAD education in the Department of Architecture 1990-1996
- CAD courses in several organisations
  - Helsinki University of Technology, Faculty of Architecture 1993, University of Art and Design Helsinki 1993, Helsinki Institute of Technology, 1990-1991, Centre for Technical Training; AEL in Helsinki 1993-1995, Finnish Broadcasting Company; TV2 Tampere 1995, Edutech in Tampere University of Technology 1996, ICL (Fujitsu Corporation), City Of Helsinki, SAFA and NCC 1986 - 1996

## **4.11 Studio Kivi, Helsinki 1990-1996**

### *4.11.1 Software Development 1990-1996*

Registered AutoCAD developer. KIVI applications and libraries for architectural design, one of leading applications for architectural design in Finland in early 1990's.

Wide range of consultation and education activities.

### *4.11.2 CAD Integration Projects 1994-1996*

- Varma-Sampo Office Building Fredrikinkatu 46, for Pekka Salminen Architects 1996
- Helsinki-Vantaa Airport, for Pekka Salminen Architects 1996
- Building of the Computer Science Department in HUT, for Engel Oy 1996
- Building for the Court of Justice and Police Department in Jyväskylä, for Engel 1996
- General project definitions for the University Hospital in Oulu 1996
- General project definitions for the Prison Department of the Ministry of Justice 1996
- Sanomatalo, for SARC Architects Ltd 1995-1996
- Atria Meat Manufacture Ltd, for Lohman Architects Oy 1995
- Vantaa Prison 1994-1995
- ICL Finnish Headquarters in Helsinki 1994-1996

### *4.11.3 FM Consultation Projects 1995-1997*

- VAHO (Prison Department of the Ministry of Justice) 1996-1997
- State Real Property Agency (Currently Senate Properties) 1996-1997
- Oulu University Hospital 1996
- ICL Finnish Headquarters in Helsinki 1995-1996

### *4.11.4 National and International R&D Projects 1992-1996*

Member of the team or CAD/design expert:

- Data transfer definitions from design model to facility management, Case study of ICL Finnish Headquarters, member of the project team. Rakennustieto Oy 1995-1996
- Information structures in integrated planning, member of the project team. RAKLI (Finnish Association of Building Owners and Construction Clients), SKOL (The Finnish Association of Consulting Firms), SAFA 1994
- User integrated housing design in Dessau Germany, ICT expert. VTT and ToCoMan Oy 1993-1994
- Integrated Building Design, part of STAR-project, design expert. VTT 1994-1996
- Information structures in building design; VTT 1993-1994
- CAD-system for fittings and joints, ICT and design expert. Technological developing program of Finnish Building Industry and VTT 1993
- CAD-systems for concrete building on site, ICT and design expert. Technological developing program of Finnish Concrete Industry and VTT 1993
- CAD-system for architectural design of prefabricated facades. ICT and design expert. Technological developing program of Finnish Concrete Industry and VTT 1993
- Information structure in architectural planning, ICT and design expert. VTT and Rakennustieto Oy (Building Information Ltd) 1992-1995
- CAD-system in renovation of buildings and rooms, ICT and design expert. HUT (Helsinki University of Technology) and VTT 1992 -1995



## **4.12 Architect Office Arto Sipinen, Helsinki 1985-1991**

CAD development, education and deployment

### *4.12.1 Software Development 1985-1991*

- Several conversion applications between different CAD software 1989-1991
- Lotus 1-2-3 applications 1989-1990
- Document management system for AutoCAD 1988
- Quantity take-off applications for AutoCAD 1986-1987
- AutoCAD applications and libraries 1986-1991
- 3D software 1985, integration to AutoCAD 1986

### *4.12.2 CAD Integration Projects 1986-1991*

- Health Care and Social Services Institute for Helsinki Polytechnic 1990-1991
- Cultural Centre of Kuusamo 1989-1990
- Municipal Office Building in Mäntsälä 1989-1991
- Municipal Office Building in Lieto 1989-1991
- Municipal Office Building in Tammela 1988-1989
- Hotel Alba in Jyväskylä 1988-1989
- Accelerator Laboratory for Department of Physics in Jyväskylä University 1988-1990
- Buildings for the Department of Chemistry in Jyväskylä University 1986-1990

## **5 Design Career 1972-1996**

### **5.1 Studio Kivi, Helsinki 1990-1996**

Owner and Partner of Architect Office Arcadia in Joensuu 1991-1996

Main activities in CAD development and consultation (see 4.11)

#### *5.1.1 Main Building Projects*

- Würth Office Building and Warehouse 1989-1994
- ICL Finnish Headquarters with Tommila Architects 1994-1996

### **5.2 Architect Office Arto Sipinen, Helsinki 1973-1991**

Project Architect 1973-1977, Office Manager 1977-1991

#### *5.2.1 Competitions as the Main Assistant of Arto Sipinen*

##### **1<sup>st</sup> prizes**

- Invited competition for the Municipal Office Building and Library of Iitti 1989
- Invited competition for the Cultural Centre of Kuusamo 1989
- Invited competition for the Municipal Office Building of Tammela 1988
- Invited competition for the Noljaakka Area Centre in Joensuu 1987
- Open Nordic competition: Helsinki City Centre 1986, shared with two other 1st prizes
- Open competition for the Cultural Centre of Lahti 1983
- Invited competition for the Municipal Office Building of Kauhajoki 1981
- Invited competition for Imatra Cultural Centre 1981
- Open competition for the Espoo Cultural Centre in Tapiola 1980
- Open competition for the urban structure of Kumpula University area 1979, shared with two other 1st prizes
- Invited competition for the Administrative Centre of Tuusula 1977
- Open competition for the Administrative Centre of Raisio 1977

### **Other prizes and purchases**

- 2nd prize in open competition for the Municipal Office building of Kiuruvesi 1980
- 3rd prize in open competition for the Cultural Centre of Kajaani 1982
- 1st purchase in open competition for the Cultural Centre of Kerava 1985 (own project)
- 1st purchase in open competition for the Concert and Congress Hall of Tampere 1983
- 1st purchase in open competition for the Itäkeskus Centre in Helsinki 1977
- 2nd purchase in open competition for the Municipal Office Building of Mikkeli 1982

### *5.2.2 Building Projects*

Completed projects as the Project Manager and Leading Architect:

- Health Care and Social Services Institute for Helsinki Polytechnic 1990-1991
- Cultural Centre of Kuusamo 1989-1990
- Municipal Office Building of Tammela 1988-1989
- Hotel Alba, Jyväskylä 1988-1989
- Accelerator Laboratory for Department of Physics in Jyväskylä University 1988-1990
- Buildings for the Department of Chemistry in Jyväskylä University 1986-1990
- Office and shop centre in Tapiola, Espoo 1985-1986
- Concert Hall Mikaeli, Mikkeli 1984-1986
- Cultural Centre of Tapiola, Espoo 1981-1989
- Cultural Centre of Imatra 1981-1986
- Raisio Town Hall and Municipal Office Building 1978-1981
- Tuusula Town Hall and Municipal Office Building 1978-1980
- Two university buildings in Mattilanniemi for Jyväskylä University 1978-1980
- HOAS 36 dormitory building, Helsinki, 1978-1979
- Training Center for National Board of Civil Aviation at Helsinki-Vantaa 1977-1978
- Technical Telecommunication building, Kangasniemi 1977-1978
- Technical Telecommunication building, Kajaani 1976-1978
- Office building for HOAS, Helsinki 1974-1977
- HOAS 26 dormitory building, Helsinki, 1974-1977
- HOAS 13 dormitory building, Espoo, 1974-1979
- Lohkopellontie 3 apartment house, Helsinki 1974-1976
- HOAS 20a dormitory building, Helsinki, 1974-1976
- HOAS 10 dormitory building, Helsinki, 1973-1975

Completed projects as an assistant designer:

- Musica and Athenaeum of Arts of Jyväskylä University 1974-1977, Main Library of Jyväskylä University 1973-1974

### *5.2.3 Urban Planning as the Leading Architect*

- Kamppi-Töölönlahti City Center in Helsinki 1987 -1991
- Area for administration buildings in Raisio 1978-1979
- Seminaarinmäki area of Jyväskylä University 1977-1978

### *5.2.4 Interior Design with Ursula Lähteenkorva-Nakai*

- Architect Office Arto Sipinen 1989
- Hotel Alba in Jyväskylä 1988-1989
- Cultural Centre of Tapiola, Espoo 1986-1989
- Cultural Centre of Imatra 1984-1986
- Municipal Office Building of Raisio 1979-1981

### 5.3 Architect Office Keskus-Sato Oy, Helsinki 1972-1973

Assistant designer in several apartment building projects in Jyväskylä

#### Some project examples



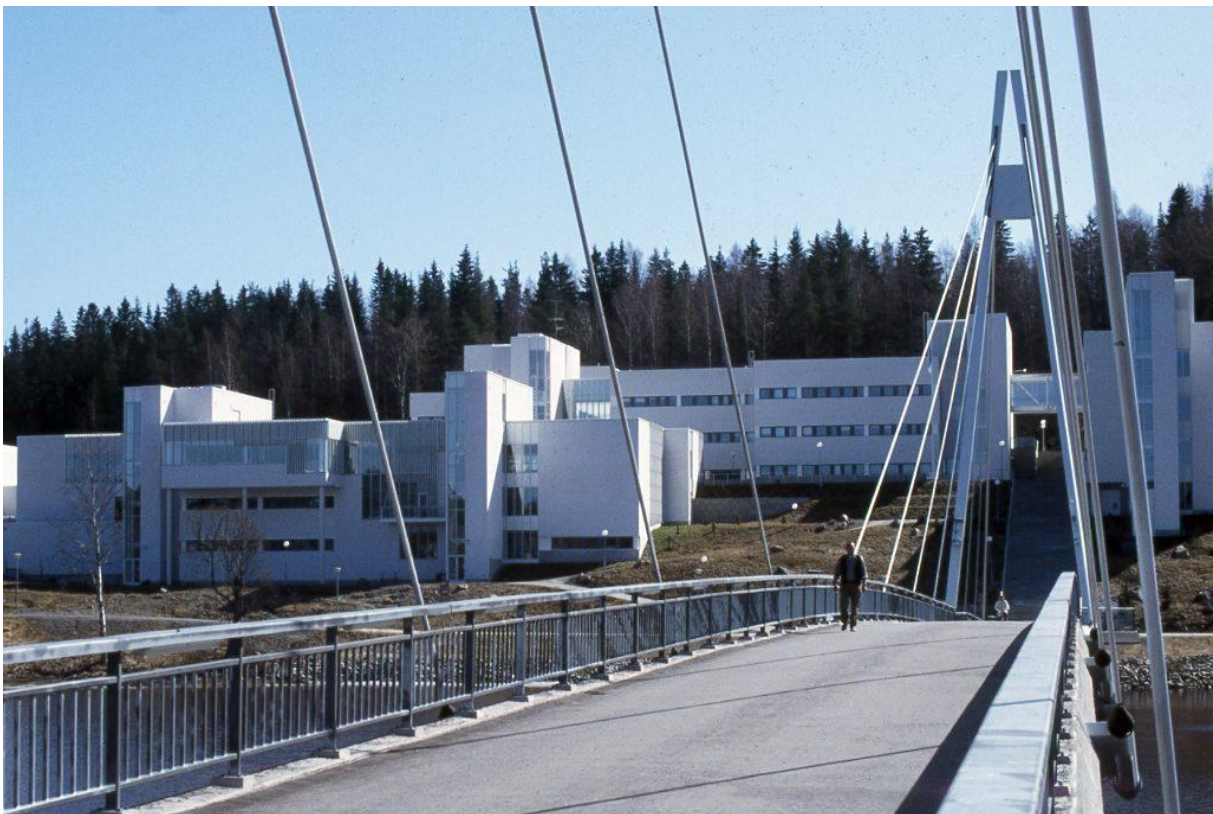
**Cultural Centre of Tapiola, Espoo 1981-89** – as the Project Manager and Leading Architect at Architect Office Arto Sipinen



**Raisio Town Hall and Municipal Office Building 1978-81** – as the Project Manager and Leading Architect at Architect Office Arto Sipinen



**Concert Hall Mikaeli, Mikkeli 1984-86** – as the Project Manager and Leading Architect at Architect Office Arto Sipinen



**Buildings for the Department of Chemistry in Jyväskylä University 1986-90** – as the Project Manager and Leading Architect at Architect Office Arto Sipinen

## 6 Tasks in Professional Organizations

### 6.1 Associations in UK and USA

- CIOB (The Chartered Institute of Building), member of BIM Work Group and Leader of the Benchmarking/Maturity Gap Task Group since 2012
- UK CIC (Construction Industry Council) BIM Forum, representative of CEBE (Centre for Education in the Built Environment) 2011-2013
- ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers: BIM Steering Committee member since 2009

### 6.2 Associations in Finland

#### 6.2.1 SAFA - Finnish Association of Architects

- Council member 1994-1995, 1998-2000
- Education Committee member 1996
- Confidence Committee member 1992-1993
- CAD-SAFA Board: Chairman 1998-1999, Vice Chairman 1993-1994, 1996 and member 1988-1992, 1995, 1997, 2000
- YAPA-SAFA (Practicing Architects) Board: member 1990-1993

#### 6.2.2 ATL - Association of Finnish Architects' Offices

- Member of the Quality Certification Committee of RAKLI, SKOL and ATL 1996-2002
- Quality System Committee member 1996-1998
- Erityisasiantuntijana "Arkkitehtisuunnittelun laatujärjestelmän" tietotekniikkaosoiden kehittämistyössä [Leading Expert in the information technology related issues in the development of "Quality Manual for Architectural Design"] 1996-1998
- CAD and Quality Workgroup member 1992-1993

## 7 Professional Photography

All publication photographs for Architect Office Arto Sipinen 1974-1990. These photos are in the archive of the Museum of Finnish Architecture and have been published in several Finnish and international magazines and books of Finnish Architecture since 1974.

- Main Library, Lahti 1990, Helsinki City Centre, Kamppi-Töölönlahti Project, Helsinki 1989, Cultural Centre of Tapiola, Espoo 1989, Concert Hall Mikaeli, Mikkeli 1988, Cultural Centre of Imatra 1986, Municipal Office Building of Kauhajoki 1984, HOAS 36 Dormitory, Helsinki 1981, Municipal Office Building of Raisio 1981, Municipal Office Building of Imatra 1975, Musica and Athenaeum of Arts of Jyväskylä University 1977-1978, Main Library of Jyväskylä University 1974-1976

## 8 Personal details

- Born 9<sup>th</sup> November 1951 in Kuopio, Finland
- Married since 1972 with Eeva Verkasalo
- Three daughters: Katja (1975), Tiina (1978) and Suvi (1979)
- Four grandchildren: Tommi (2000), Maria (2001), Kristian (2003) and Alisa (2008)
- Main hobbies: Photography (<http://www.artophoto.net/>) and hiking