About the Contributors

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**José António Tenedório** is a Geographer, Associate Professor at Universidade NOVA de Lisboa (UNL), Faculdade de Ciências Sociais e Humanas (FCSH), and Visiting Professor at Polytechnic University of Catalonia (2005-2013), Barcelona, Spain. He graduated in Geography and Regional Planning (1984) at UNL-FCSH. He attended University of Paris VI-Pierre et Marie Curie, Faculty of Sciences, where he post-graduated (DESS/M.Sc. in 1991) in Remote Sensing, and the University of Paris XII, Urbanism Institute, where he obtained a Ph.D. (1998) in Urbanism. His main scientific area of research is Urban Remote Sensing, GIS, spatial analysis, and geographical modelling. He has published more than one hundred papers (book chapters, papers in peer-reviewed scientific journals, papers in peer-reviewed conference proceedings). In 2013 he received the (first prize) SANTANDER Award for the Internationalization of the FCSH Scientific Production 2013.

**António Pais Antunes** is a Professor at the University of Coimbra, Portugal. He holds a Diploma in Civil Engineering from the University of Coimbra and a PhD in Applied Sciences, branch Spatial Planning, from the Catholic University of Louvain, Belgium. He has been the Director of Planning of the Centro Region Development Agency in Portugal (1983-85), a Visiting Fellow at Princeton University (1997/98), an Invited Professor at EPF Lausanne (2009/10), and a Visiting Professor at MIT (2013/14). His teaching and research focus on Spatial Planning and Transportation Engineering. To date, he has supervised 21 PhD students and authored over 200 scientific publications, including 48 articles in peer-reviewed journals. António Pais Antunes currently acts as Director of CIEC - Civil Engineering Research Center, an R&D unit of the Portuguese Foundation for Science and Technology, and as Director of the Doctoral Program in Transportation Systems of the University of Coimbra.
Josep Roca Cladera, PhD in Architecture (1982), Catedrático (1988) and Director (2011) of the Department of Architectural Technology. Director of the Centre of Land Policy and Valuations (CPSV) at the Technical University of Catalonia and founder of the Virtual City Modelling Laboratory (LMVC). Director of the Ph D program in Urban and Architectural Management and Valuation (1988) and the Master Degree (since 2006) with the same name. Author of urban planning and land management laws for the Spanish Government and regional and locals governments, director of research projects on issues related to urban planning, land management, quality of life, sustainability, environmental and real estate valuation, GIS and 3D models for understanding the city. Author of numerous books, journal articles, speaker at various national and internacional Conferences and Seminars, Director of the journal Architecture, City and Environment and director of the International Congress on Virtual City and Territory. Evaluator of several high impact journals, member of the Editorial Board of the Journal “Ciudad y Territorio Estudios Territoriales”, and reviewer of Research Projects at the Ministry of Education of Spain. Research Prize “Ciutat de Barcelona ” awarded by the city of Barcelona (1985) and First Research Award “Gonzalo Aguirre” awarded by the Prague Foundation (Madrid, 1987).

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Fabiola de Oliveira Aguiar works at the State University of Maranhão, where she teaches topics of transportation and urban mobility to undergraduate students of Architecture and Urbanism and has also been the person in charge of this bachelor’s degree for some time. She graduated in Architecture and Urbanism in 1998, received a M.Sc. degree in Urban Engineering from the Federal University of São Carlos in 2003, and a Ph.D. degree in Civil Engineering (Transportation) from the University of São Paulo in 2010. She has also been a visiting fellow for four months in Portugal (University of Minho) during her doctoral studies. In 2013 she joined the administration of the city of São Luís, Brazil, as the Municipal Secretary of Urban Traffic and Transport. Her major areas of interest are inclusive urban design; pedestrian facilities; planning for sustainable urban mobility; and accessibility of urban transportation.

Carla Balocco received a PhD. in Energy Engineering from Energy Engineering Department of the University of Florence (Italy) in 1995, and did post-doctorate research at the Energy Engineering Department, Industrial Energy Engineering of the University of Florence (Italy) from 1995 to 1997. She was a part of the post-doctorate research program at the Technical University of Denmark D.T.U., Department of Building and Energy I.B.E., from 1997 to 1998, and did post-doctorate research at the Chemical Department of the University of Siena (Italy), Environmental Chemistry and Physics, from 1998 to 1999.

Michael Batty is Bartlett Professor at University College London where he chairs the Centre for Advanced Spatial Analysis (CASA). His research involves the development of computer models of cities and regions, and he has published numerous books and articles in this area, such as Cities and Complexity (MIT Press, 2005) which received the Alonso Prize of the Regional Science Association, and The New Science of Cities (MIT Press, 2013). He is the editor of the journal Environment and Planning B: Planning and Design. In 2013, he received the Lauréat Prix International de Géographie Vautrin Lud. He was made a Fellow of the British Academy in 2001, received the CBE award in the Queen’s Birthday Honours in 2004 and elected a Fellow of the Royal Society in 2009.
About the Contributors

Martin Berchtold is a research associate at the Institute of Urban and Landscape Design at Karlsruhe Institute of Technology (KIT) and founder of the spatial planning and urban design studio berchtold-krass space&options, Karlsruhe, Germany. He received a diploma in spatial planning from Technical University of Kaiserslautern in 2002 and worked then as a planner at ASTOC, Cologne, with a focus on large-scale master plans. His key activities are experimental and innovative use of GIS and new digital tools, spatial analysis and visualization, and methodology of large-scale design. Berchtold is a member of the German “ICT in urban planning” Association, co-founder of the KIT network geo-Innovation and head of the working group “Networked Information Systems” of the German Association of Urban and Regional Planning.

Benjamin Sebastian Bergner is a researcher in Urban Sociology at the University of Kaiserslautern. He graduated in Spatial and Environmental Planning in 2010 at the Department of CAD & Planning Methods in Urban Planning and Architecture. In his diploma thesis “Methodical and practical Establishment of Emotional Barrier-GIS” he investigated the impact of barriers for handicapped people in urban areas. Currently, his field of research is situated in urban safety and security. His main interests concern human behavior and emotions during public events, the interaction between visitors and space and also the optimization of safety and security measures.

Cláudio Carneiro received a MS degree (1997) in Geomatical Engineer from FCUL, Lisbon, Portugal, a MS degree (2004) in Geographical Information Systems (GIS) from IST, Lisbon, Portugal, and a Ph.D. degree (2011) in Environmental Science (specialization in GIS) from EPFL, Lausanne, Switzerland. During the last eight years he leaded research related to the use of geospatial 2-D and 3-D models and data for the environmental analysis of cities, aiming to provide useful tools for urban planning and design. It is based on recent research on computational algorithms and statistical analysis for the evaluation, management and design of the urban space.

James Charlton gained a Bsc (Hons) in Architectural Technology in 2006 and a completed a PhD in 2011 from Northumbria University. He has helped in the development, management and implementation of the Virtual NewcastleGateshead project; a collaborative venture between Northumbria University and local councils to create and apply a 3D virtual model of Newcastle, Gateshead and the surrounding area. His research and teaching has concentrated on the application of design communication and performance analysis within the fields of architecture and urban design, specifically in the use of digital technologies and information modelling within design processes. James’ recent research focus has been on the utilisation of laser scanning technology to aid in the development of building information models and digital documentation for heritage purposes and 3D reproduction.

Andrew Crooks is an Assistant Professor in the Department of Computational Social Science at George Mason University. His research interests relate to exploring, understanding and the communication of the natural and socio-economic environments using geographical information systems (GIS), spatial analysis, Web 2.0 technologies, social network analysis (SNA), and ABM methodologies. He has co-edited a book entitled “Agent-based models of Geographical Systems” which brings together a comprehensive set of papers on the background, theory, technical issues and applications of ABM within geographical systems. Dr Crooks is on the editorial board of Future Internet, and regularly reviews journal articles relating to GIS and ABM from leading international journals.
About the Contributors

Gilles Desthieux is a lecturer at the Geneva Institute of Landscape, Engineering and Architecture (HES-hepia) and a consultant in urban energy planning in the company Amstein+Walthert Genève. He holds an MA in environmental engineering and sciences and a PhD from the Swiss Federal Institute of Technology Lausanne (EPFL). His recent and current research & consultancy activities deal with integrated urban and energy planning at district and municipal levels, development of GIS tools for energy mapping and planning, 3D urban modeling for environmental assessment – solar energy (application to the solar cadaster in Geneva) and flood risks, platforms for eco-neighbourhood development support, collaborative urban planning support based on geographical indicator systems.


Francois Golay received a Ph.D. degree (1992) in GIS from EPFL, Lausanne, Switzerland. Currently director of the GIS laboratory of EPFL his research focuses on improving the value and empowering the users of geographic information for environmental and land management purposes as well as for related research activities. It also contributes to developing GIS analysis and design methodologies, such as: spatial decision support systems; geographic data infrastructures and information sharing; promoting and assessing the value and usability of GIS; exploratory spatial analysis and visualization of geographic information, especially on the basis of spatial and aerial imagery.

José Alberto Gonçalves holds a degree in Surveying Engineering from the University of Porto (1988), a master degree in Geographical Information Systems (1993) and a PhD in Photogrammetry (2001), from the University College London. He is currently assistant professor at the University of Porto, where he teaches courses in Geographical Information Systems, Photogrammetry and Remote Sensing. His main research interests are in the field of the extraction of three-dimensional geographical information from images both from terrestrial and aerial platforms. He is a member of the American Society of Photogrammetry and collaborator of the ISPRS working group in Mobile Scanning and Imaging Systems for 3D Surveying and Mapping.
**About the Contributors**

Virginia Gori is currently PhD student at the UCL Energy Institute (UCL, UK), where she also completed a Master of Research in Energy Demand Studies. Virginia holds a bachelor degree in Building Engineering from Università Degli Studi di Firenze (Italy). Her bachelor dissertation focused on the implementation of a software tool (based on the “Raster Cities” approach, first introduced by Prof. Carlo Ratti and Prof. Paul Richens) that analyses raster models of urban areas to compute the heating energy needs at the district level. This project, started during a visit at the SENSEable City Lab at MIT (USA), resulted in several publications. Virginia research interests include energy demand reduction in the built environment and sustainable design, both at the urban and building level. She is also interested in exploring the physics of building elements by means of monitoring campaigns and simulation models to assess the thermodynamic performance of the building envelope.

Cristina Delgado Henriques, received a PhD in Urban Planning from the Technical University of Lisbon with a doctoral dissertation entitled “City and Geographic Information Technologies in African Context. Land Use Change Modelling in Maputo”, and graduated in Geography and Regional Planning from the Universidade NOVA de Lisboa (UNL) in 1990. Holder of a scholarship, from the Institute of Tropical Research, for the development of Cabo Verde Atlas, and of a scholarship, from Fundação para a Ciência e Tecnologia in the Military Geographical Institute, for the working up of the international project Vector Smart Map. Post-graduated in Land Information Surveying, from Erasmus Program (Ghent University and Roskilde University), in 1993, and in GIS from Instituto Superior Técnico - Technical University of Lisbon, in 2000. Currently is Assistant Professor at the Faculdade de Arquitectura, Universidade de Lisboa, lecturing disciplines related to GIS and Urban Geography and coordinates the activity of the Cartographic Center.

Margaret Horne studied Mathematics at Leicester University, UK and completed an MPhil at Northumbria University in 1998, in collaboration with Ove Arup and Partners, on the Visualisation of Photovoltaic Clad buildings. She has over 30 years of experience in the application of computing and information technologies for the built environment. In 2004 she initiated the development of a semi-immersive Virtual Reality facility. She has led a collaboration, since 2008, between Northumbria University, Newcastle City Council and Gateshead Council to create a 3D digital model of the urban core areas of both Newcastle upon Tyne and Gateshead- Virtual NewcastleGateshead project. Margaret has extensive research experience in computer modelling and visualisation for Architecture, Engineering, Construction and Urban Planning. She has recently retired from Northumbria University.

Erik Kjems holds a Ph.D. and a master’s degree within civil engineering and a graduate diploma within Economics. He holds a position as associate professor at Aalborg University, Denmark in the department of civil engineering. He has been directing the university’s Virtual Reality Lab with one of Europe’s biggest VR installation at that time for almost a decade. Presently he is the director of the Centre for 3D GeoInformation. He has a broad interest in modeling the world, not only with geographic referenced geometric 3D objects, but with objects that can contain executable behavior as well. Therefore his research area covers 3D Modeling mainly in connection with interactive systems using geographic managed objects in a broad application specific development. He has conducted several major projects within this and adjacent areas. Erik Kjems is also involved in teaching and supervision at master and Ph.D. level within his research area and topics within civil engineering in general.
Dominique Lancrenon manages since 25 years a team of experts in territorial cohesion, housing and facilities, urban planning and design; working with cities and regions as well as real estate companies. This team is now part of Antea Group, and has been developing a new department of spatial planning since January 2014. As an international engineering and environmental consulting firm, Antea Group combines strategic thinking and multidisciplinary perspectives with technical expertise and pragmatic action to effectively solve client challenges while delivering sustainable results for a better future. Dominique Lancrenon developed GéoStratège TM, a GIS tool, assisting evaluation and decision making by crossing data bases at different scales from wide territories to narrow areas. Dominique Lancrenon is the Secretary General of ECTP-CEU 2014 2017, Honorary President of ECTP-CEU, and Honorary President of the Société Française des Urbanistes.

Luís Marques is Ph.D. student in Urban and Architectonic Management and Valuations, School of Architecture, Polytechnic University of Catalonia-BarcelonaTech (ETSAB/UPC). Master (2009) and Post-Graduate (2002) in Land Use Management and Environmental Planning, Faculty of Science and Technology (FCT), Universidade NOVA de Lisboa (UNL). Degree (2001) in Geography and Regional Planning, Faculdade de Ciências Sociais e Humanas (FCSH), UNL. Senior Technician/Specialist at the Institute of Housing and Urban Renewal, Portugal, has been developing projects related mainly with Geographic Information Technologies (GIT) essentially in the production, management and dissemination of geographic information, metadata and Web Services, 3D modelling and multi device visualizations/applications (Portugal and Portuguese former colonies). Has been collaborating with several organizations of the public administration (at central, regional and local level), Academy (CPSV/ETSAB/UPC, Spain, and e-Geo/FCSH/UNL, Portugal) and private companies, mainly in research projects related to the themes of heritage, spatial planning and environment (commonly with the use of GIT).

Elena Masala received a PhD in Architecture, and in 2003 started working as Research Fellow at Politecnico di Torino (Italy). Since 2010 she has carried out her activity at SiTI - Higher Institute on Territorial Systems for Innovation, in the research field of geovisualization. Her work aims at supporting spatial planning and decision-making processes by means of visual analysis, data exploration and communication. Her activity focuses on the usability of Planning and spatial Decision Support Systems (PSS and sDSS) to be applied in the operational research. She is member in some COST Actions and she is author of several publications on both national and international books and journals.

Eugenio Morello, an architect by education, is Assistant Professor in Urban Design at POLIMI since 2010. He is also research scientist at the Laboratorio di Simulazione Urbana Fausto Curti, DASTU (ex DiAP). His research interest is urban environmental quality and urban morphology. He works in particular with digital simulations and prediction models for the integration of environmental aspects and energy systems within the design of sustainable neighborhoods. He was previously a Roberto Rocca postdoctoral fellow at the Human Space Lab, POLIMI (2009) and at the SENSEable City Lab, MIT (2008). He was also adjunct professor at POLIMI since 2006, where he taught urban design. He holds a Ph.D. in environmental design and building technology from POLIMI (2006).
**About the Contributors**

**Fabian Neuhaus** is currently a senior researcher at the Institute of Architecture, FHNW (CH) and a Knowledge Exchange Associate at UCL Advances in collaboration with UCL CASA. He received his doctorate from UCL. His main research interests are Habitus, Ornament and Type as temporal aspects of the urban environment and architecture in general and cyclical, repetitive patterns specifically. He has been a unit tutor at the Bartlett School of Architecture as well as at the University of Plymouth, School of Architecture. Currently he is a tutor on the MA course at the Institute of Architecture, FHNW. He is the author of www.urbantick.blogspot.com, the book Cycles in Urban Environments: Investigating Temporal Rhythms, published by LAP (2010) and the editor of the Springer publication Studies in Temporal Urbanism - the urbanTick Experiment (2011).

**Poul Alberg Østergaard** is associate professor in energy planning at the Department of Development and Planning at Aalborg University. Poul Østergaard holds a Ph.D. in energy planning with particular focus on integrated resource planning and the organisational structure of the energy sector. He has conducted research and authored publications on energy planning since 1995 and has been project manager, work package leader or participants in a series of research projects mostly centred on large scale integration of renewable energy sources and the development of renewable energy scenarios. In addition, he is the programme director of the M.Sc. programme in Sustainable Energy Planning and Management at Aalborg University and has been involved in various other teaching and training activities notably energy systems analyses work-shops in Denmark, Nicaragua, Jordan and Malaysia.

**Georgios Papastefanou** is senior researcher at GESIS Leibniz Institute for the Social Sciences at Mannheim, Germany. He graduated in psychology and sociology at the University of Mannheim, and received his Ph.D. from the Technical University of Berlin. In his research he is focusing on tools for measuring emotional responses in real time under real life conditions, as well on comparative analysis of subjective well-being and time use in societies.

**Amit Patel** is a post-doctoral fellow at School of Public Policy at George Mason University. Dr. Patel is currently working on developing a spatial agent-based model of slum formation in Ahmedabad, India. Dr. Patel has worked with slum communities and developed model urban health system to improve access to healthcare for over 100,000 slum dwellers in Ahmedabad. Dr. Patel’s long-term research agenda is to apply advanced methods from developed world such as GIS, agent-based modeling and simulation to problems in developing world especially concerning slums.

**Stefano Pensa** completed his PhD in Architecture and Building Design in 2013, with a thesis concerning the use of geovisualisation tool as a support for spatial planning and decision-making processes. He currently works as a researcher at SiTI - Higher Institute on Territorial Systems for Innovation, Torino (IT), where he carries out applied research and works at several European projects. His scientific interests range from the visualisation of spatial data to interactive systems, from web mapping to VGI. He also actively participates to a number of COST Actions. He is author of several national and international publications and he has been an invited speaker to a number of workshops.
Carla Rebelo received an undergraduate degree in Geographical Engineering (2001), and obtained a master degree in Geographical Engineering and Geo-Informatics (2007), both from the Faculdade de Ciências of Universidade de Lisboa. From 2002-2012 she was Assistant Professor at Universidade do Algarve. She teaches different courses in the Geomatics field in particular GIS, Photogrammetry and Cartography. Since 2010, she is currently researcher and PhD student at Research Group Geographic Modelling, Cities and Spatial Planning, e-GEO-Research Centre for Geography and Regional Planning of Faculdade de Ciências Sociais e Humanas of Universidade NOVA de Lisboa. Research interests has been in spatial data modelling from active remote sensing techniques (SAR and LiDAR), GIS, Digital Photogrammetry and Remote Sensing. Her current research is focuses on automatic extraction of urban parameters from 3D points clouds using LiDAR and UAV (Unmanned Aerial Vehicles) technologies and Free and Open Source GIS (FOSS) tools.

Elisabete A. Silva, PhD., FRICS, MRTPi – University Senior Lecturer (Associate Professor) in the Department of Land Economy and Fellow of Robinson College, University of Cambridge. Dr. Silva is Director of the Lab of Interdisciplinary Spatial Analysis, LISA Lab, Coordinator of the Ph.D. Programme in Land Economy, and editor of the journal Urban Design and Planning. Dr. Silva edited the following books: A Planner’s Encounter with Complexity, (2010, with G. de Roo) and Research Methods in Spatial and Regional Planning, (forthcoming 2014, with Patsy Healey, Neil Harris and Pieter van den Broeck).

Antônio Nélson Rodrigues da Silva is an Associate Professor at the University of São Paulo, where he is currently the coordinator of Graduate Studies in Transportation Engineering at the School of Engineering of São Carlos. He graduated in Architecture in 1984 and received his M.Sc. and Ph.D. degrees in Civil Engineering (Transportation) from the University of São Paulo in 1990 and 1993, respectively. In addition to a one-year period (1990-91) as a Visiting Scholar at the University of Wisconsin-Madison, USA, during his Doctorate Studies, he has been a Post-doctoral fellow in The Netherlands (University of Eindhoven, 1996-97) and in Portugal (University of Minho, 2002-03). He has also been a visiting researcher in Malaysia (2008), Portugal (2009), and Belgium (2013). His major areas of interest include: planning for sustainable urban mobility; education in urban and transportation planning; and spatial analysis and GIS applications in urban and transportation planning.

Emine Mine Thompson has received a BA in Landscape Architecture in 1990 and PhD in 1999 from Istanbul University and has also a MA in Landscape Architecture/Planning from Istanbul Technical University and an MSc in Digital Architecture from University of Newcastle, England. Her research and teaching interest evolve around visualisation, Virtual City Models and Building Information Modelling, and utilization of digital technologies such as augmented reality and virtual reality in order to achieve better built and natural environments. She has been part of the Virtual NewcastleGateshead initiative from the beginning in 2008 and produced related research in this area since 2006. She is a council member of the eCAADe Organisation (Education and Research in Computer Aided Architectural Design in Europe).
Sarah Wise is a Research Assistant in the Department of Civil, Environment & Geomatic Engineering at University College London and a PhD candidate in the Department Computational Social Science at George Mason University. She graduated from the University of Chicago in 2009 with a double major in Computer Science and East Asian Cultures and Language. Her research relates to exploring and forecasting the development of systems involving people, infrastructure, and information using methodologies including agent based modeling (ABM), social network analysis (SNA), data mining, statistical analysis, and geographic information systems (GIS).

Ning Wu, Ph.D. researcher at the Department of Land Economy, Cambridge University, is now doing research on dynamic simulation and computation in China. He did his Ph.D. in Land Economy with Dr. Silva (Ph.D. dissertation entitled “Artificial Intelligence Solutions for Models of Dynamic Land Use change”, 2011). Dr. Wu has authored and co-authored multiple international peer review papers.

Peter Zeile is research group leader at the University of Kaiserslautern in the department of Computer Aided Design in Urban Planning and Architecture. He graduated in Spatial and Environmental Planning in 2003 at the University of Kaiserslautern and received his Ph.D. degree in Spatial and Environmental Planning from the University of Kaiserslautern in 2010. The topic of his PhD was Real-time Planning – Development of simulation and visualization methods in urban design. Since 2010, Peter has explored new spatial planning methods in the project Development of methods for spatial planning with GeoWeb and Mobile Computing, financed by German Research Foundation (Deutsche Forschungsgesellschaft – DFG). He was a lecturer at the University of Applied Sciences (in) Rapperswil (CH) in 2011, and at the University of Kaiserslautern since 2011, as well as a visiting Researcher during a DAAD-Exchange at the University of Alexandria in 2012. Peter is a member of the SRL.