


Event:  
Date:  
Place:

**ENERGY in BUILDINGS 2018**  
Saturday November 3, 2018  
Athens, Hellas



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| <b>#</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>Stylios Karatzas</b><br/>         Credentials ( Diploma in Electrical Engineering, MSc<br/>         in Operations Management, PhD Cand.)</p> |  |
| Title:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | PhD (c), Civil Engineering Department, University of Patras, Greece                                                                                |                                                                                     |
| email:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ksteliosk@hotmail.com                                                                                                                              | •                                                                                   |
| Presentation title:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p><b>An Energy Demand Flexibility Driven Risk Assessment Framework at Buildings &amp; District Level</b></p>                                      |                                                                                     |
| <p>Inelasticity of Demand along with the continuously increasing presence of distributed intermittent energy sources pose significant challenges and undoubtedly have considerably negative impact on the overall grid balance. Local network stresses continuously necessitate for costly upgrades towards increasing capacity and flexibility that will allow for the efficient integration of variable generation. Towards this direction, demand side management (DSM) is examined as the means to exploit the available demand flexibility of consumers, in response to particular conditions within the electricity system (e.g. peak period network congestion &amp; high prices). In order to optimally incorporate DSM as part of a holistic reliability assessment analysis a detailed modeling of the system parameters is required. In this paper, a systemic risk analysis and assessment model is proposed to exploit the potential of demand flexibility (as a parameter of the network) to address local and global grid situations. The overall framework is proposed on the basis of STAMP accident causality model as a new systems thinking approach to engineering safer systems. Along with the definition of the innovative risk assessment model framework, we further evaluate the applicability and performance in a reference case study in electricity grids.</p> |                                                                                                                                                    |                                                                                     |

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CV:

### **Stylios Karatzas, Ph.D. Cand.**

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### **Studies - Degrees**

- Ph.D. Research Title: BIM and Business Process Reengineering for Building Energy Management.
- Master of Science (M.Sc) in Operations Management, Business School, BATH University, UK (2002).
- Diploma in Electrical Engineering and Computer Technology (Specialized in Automation and Control Systems), Department of Electrical Engineering and Computer Technology, University of Patras (1995-2001).

### **Professional and academic experience**

- He is currently working as an Associate European Project Manager (GRASPINO and CROCODILE projects) at Civil Engineering Department, University of Patras.
- He is a teaching assistant in 'Information Technology Systems and Building Information Modeling (BIM) in Construction' and 'Smart Cities, Transportation and Infrastructures' courses, Civil Engineering Department, University of Patras.
- He has worked as Operations and Project Manager in a variety of Energy and Construction Projects in Greece and abroad (Dubai, Palm Island project) with Operational and Managerial responsibilities such as quality management, cost control and scheduling, staff training and management, progress reporting and contract management (2002-2013).
- He has worked as a Business Process Reengineering Consultant (Bedor Excem Consulting), with responsibilities of developing and implementing innovative Management Systems (Lean Project Design) and process re-engineering , company resource optimization and procedures improvement (2014-2015).

### **Professional Training**

- Participation in international course in Business Process Engineering, Lecce University, Italy (2015)
- Project Management Diploma, National & Kapodistrian University of Athens, Greece (2003)

### **Professional Skills**

Design software: Revit Architectural, MEP Revit, Autocad,  
Energy Simulation software: Insight 360, Energy Building Studio  
Business Process Modeling: Adonis BPM, AG's ARIS Business Process Analysis (BPA) Platform

### **Scholarships and Honors**

IKY PhD Scholarship (3 years scholarship from 04/2018)  
IKY Scholarship: Sheffield Hallam University (01-06/1997)

### **Publications (Selected)**

1. Karatzas S. and Chassiakos A. (2019). 'System-Theoretic Process Analysis (STPA) of Demand-Side Load Management in Smartgrids'. STAMP Workshop, Massachusetts Institute of Technology (MIT), Boston, USA (full paper accepted).
2. Chassiakos A., Karatzas S., Farmakis P.(2018). " BIM and Lean-Business Process Reengineering for Energy Management Optimization of Existing Buildings" In: 35th CIB W78 2018, 1-3 October, Conference: IT in Design, Construction, and Management , Chicago, Illinois, United States (full paper accepted).
3. Karatzas S. (2018). "BIM based Holistic Energy Performance Management of Existing Building Stock", In: Smartgreens- 7th International Conference on Smart Cities and Green ICT Systems, Funchal, Madeira - Portugal.
4. Karatzas S. and Chassiakos A. (2017). 'BIM-based building energy assessment: The Greek "Energy Performance of Buildings Regulation (KENAK)" case'. In SmartCities@Maas-2017, Patras, Greece.
5. Karatzas S. and Chassiakos A. (2017). "Building Information Modeling as a Cost Control Tool for Critical Chain Construction Project Management" In: Proc. Lean & Computing in Construction Congress (LC3), Vol. 3 (IGLC), Heraklion, Greece