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# **PBL FOR SUSTAINABLE CITIES**

## **RESULTS OF THE CITYLAB LA PROJECT**

**ENGAGING STUDENTS WITH SUSTAINABLE CITIES IN LATIN-AMERICA**



**ACADEMIC CONFERENCE 19TH-21ST SEPTEMBER 2018**

**UNIVERSIDAD DEL ROSARIO**

**BOGOTÀ - COLOMBIA**



Co-funded by the  
Erasmus+ Programme  
of the European Union



PBL FOR SUSTAINABLE CITIES CONFERENCE

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*Results of the Citylab LA Project  
Engaging students with sustainable cities in Latin-America  
19th-21st September 2018 - Bogotá, Colombia*

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CityLab conference is organised by the European project "CityLab. Engaging students for sustainable cities", and hosted by the Universidad del Rosario

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## **Welcome!**

### **PBL for Sustainable Cities Conference 2018**

Dear PBL for Sustainable Cities Conference 2018 delegates,  
We are proud to present the book of abstracts of the PBL for sustainable cities conference in Bogota, September 19-22, 2018. This book is an important result of the CITYLAB LA project, co-funded by the Erasmus+ programme of the European union. The CITYLAB project brought 12 Latin-American and 5 European partners together around a common goal: innovating the way we teach so that the next generation of urban professionals will be better equipped to make our life in cities more sustainable. Cities provide both challenges and opportunities to deal with global trends such as mass migration, ageing, resource depletion, climate change, degrading environmental conditions and urban poverty and injustice. In dealing with these complex problems, it is increasingly clear that old disciplinary ways of thinking and siloed approaches will not suffice any longer. There is a need for inter- and transdisciplinary approaches that look in a holistic way at these problems. Professionals of the future will therefore need a whole set of hard and soft competences that allow them to find original, out-of-the box and collaborative solutions.

The Citylab LA project aims to innovate teaching for sustainability through the introduction and development of problem based learning methods in the curricula of higher education institutions, in particular in the urban sector. Problem based learning is a pedagogical approach that is suited in education for sustainability education because it focuses on the problems to be addressed and not on the existing knowledge as point of departure. It encourages students to take the learning process in their own hands. It stimulates soft skills such as intrinsic motivation, critical thinking and collaborative problem solving.

The participating universities of the project have each developed Citylab modules in their curricula following the principles of problem based learning, in which students from different disciplines collaborate on



problems of urban sustainability. They have been coached by teachers from different faculties. In order to make the Citylab modules a realistic learning environment also real practitioners from urban governments and other urban actors have been involved. Moreover, the project encouraged teacher mobility through the exchange of experts during the project. In the period between 2015-2018, Citylab modules have run at 15 different universities. The project involved no less than x teachers spread over 15 different campus teams and in total more than 3000 students have been enrolled in the Citylab modules.

This book is not a traditional book of abstracts, but reflects the hybrid nature of the conference. It compiles experiences from different perspectives of the participants of the Citylab project: academics, teachers and students. The first part contains the scientific output of the conference. The keynote speeches address the core issues of the Citylab project. Erik de Graaff from the university of Aalborg is an authority on Problem based learning and addresses opportunities and pitfalls in PBL for sustainability education. Terry Maguire is director of the national forum for the Enhancement Teaching and Learning in Ireland and focuses in her speech on the competencies for teachers. Rogier van den Berg is project manager of the urban planning and design lab of UN Habitat.

We encouraged academics involved in the project to critically reflect on their teaching experience in the Citylab project and to position themselves in the broader field of sustainability education. The results are reflected in the abstracts which cover 5 different themes: innovation in education for sustainability, collaboration between universities and external actors, implementation of educational innovations, experiences with international expert exchanges and finally sustainable development goals for cities.

The second part describes the results of the Citylab modules. For each Citylab module a description is given on the modalities of the module by the participating teachers. It is the result of the campus teams that have developed and implemented the module at their university. From each module, the best student team has been selected at the

*Results of the Citylab LA Project  
Engaging students with sustainable cities in Latin-America  
19th-21st September 2018 - Bogotá, Colombia*



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partner universities to present at the conference. Students have worked on urban sustainability problems with the aim of contributing to the sustainable development goals.

We wish you a pleasant lecture of this book and we hope that it can inspire you as a teacher, student or urban professional.

Coordinator of the project  
*Prof. Dr. Ir. Tom Coppens*  
tom.coppens@uantwerpen.be





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P4 - Politecnico di Torino POLITO



**Atelier Architecture heritage preservation and enhancement A**  
 Architecture and Design Department  
 Politecnico di Torino, Italy

*The Atelier concludes the second degree programme in Architecture for Heritage Preservation and Enhancement. It introduces students to the problems of economic - financial viability in the conservation of historical, architectural, environmental heritage assets. Through a case-study students experience the PBL approach, in which they face real problems involving stakeholders, including the local administration that plays a key role. It is conceived as a multidisciplinary module, with the main contribution of Restoration and Project Economic Evaluation, but it is expected the direct involvement of other disciplines from Engineering. External actors will be involved: Public Administration (Municipality), Superintendence for Cultural Heritage, Piedmont Region, Private Foundations and associations, Private bodies, Investors, Citizens.*

*The Citylab module focuses on the potentialities of the PBL addressing real problems by identifying sustainable and effective design processes and by developing skills to analyze also non-technical aspects of problems. The students involvement methods are explicated, in order to highlight how they have been made to feel responsible, collaborative and active within a real community. The role of the stakeholders and the ways of interacting with them are detailed to demonstrate the related positive impacts on the learning process and on the development of multidisciplinary, concrete and sustainable redevelopment projects.*



CITYLAB LA - Engaging students with sustainable cities in Latin America

PROGRAM(S) **Master of Science in "Architecture for Heritage Preservation and Enhancement"**

LEVEL **Master** STUDENTS **40**

MODALITY **Studio course** ECTS **6**

TIMING **Oct 2018 - Jan2019** SDGs **11.4**

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## **Economic and cultural value, urban and built heritage, architecture education: the active role of stakeholders**

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Innovation in architecture education is increasingly oriented towards the analysis of real problems considered in their multi-dimensionality and the active involvement of the stakeholders. In learning processes, it is useful to face real case studies so that students acquire disciplinary tools and technical knowledge for the definition of sustainable projects, closely linked to the territorial reality, the socio-economic context and the needs expressed by the different stakeholders involved. With an approach of students' inclusion and involvement in the process of knowledge and definition of the problem under study, they are responsible for their project, collaborate with each other and with external stakeholders and become active in the community of reference. For the students this implies competences in engaging with stakeholders establishing consistent vocabularies, and facilitating participatory research and decision making in collaboration with experts from academia, industry, government, and civil society.

Assuming these premises, the aim of this paper is to highlight how the active role of the stakeholders can improve the economic and cultural value of enhancement projects developed in Architecture and Planning Schools, focusing on the potentialities of the Problem-Based Learning (PBL) approach in addressing sustainable and effective design processes.

For this purpose, a three steps methodology based on PBL approach is presented in order to facilitate the active involvement of the stakeholders in improving the economic and cultural value of complex building



heritages at the architectural and urban scale, starting from real problems and developing sustainable and feasible projects. Each step of the proposed methodology was applied during the atelier “Heritage Preservation and Enhancement”, carried out at the Politecnico di Torino and implemented as a module within the Erasmus + EU project “Citylab. Engaging students with sustainable cities in Latin-America”, co-funded by the European Commission.

Specific results were achieved for each step through the interaction among stakeholders, teachers and students and the application of evaluation tools. In particular, the steps and the related findings mainly regarded the context and the main problem definition, the knowledge acquisition and management and the development of feasible and sustainable projects.

This experience highlighted the learner’s role in defining problems and alternative design solutions, focusing not so much on the intended result (project) as on the path to get there and so start the transformation from a project-based approach to a PBL one.

**Keywords:** *Problem Based Learning; architecture education; sustainable cities; cultural heritage economic evaluation; stakeholders*