



**A global multidisciplinary network on housing
research and learning**

Final Report

Public Part

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Project coordinator: Dr. Leandro Madrazo
Project coordinator organisation: FUNITEC – Fundació Privada Universitat i Tecnologia
Project coordinator telephone number: +34 93 290 24 49
Project coordinator email address: madrazo@salleurl.edu

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Executive Summary

[OIKONET](#) is the follow-up of the [OIKODOMOS](#) Virtual Campus which was carried out from 2007 to 2009 and from 2010 to 2011. The objective of OIKONET –the OIKODOMOS Network– is to foster the exchange of knowledge, methodologies and good practices among higher education institutions, research groups and community and professional organizations which are concerned with contemporary dwelling on a global scale. OIKONET is structured in three intertwined areas of activity, each one making a sub-network within the network: research on housing studies, participatory actions and pedagogical activities. The construction of the network has been a development process spanning over various stages: identifying and visualizing the network components (people, courses, themes, case studies); initiating interactions within each subnetwork; fostering connections between sub-networks; and consolidating the connections across the network.

A total of 9 learning spaces have been collaboratively designed and implemented, with the participation of the 15 EU schools of architecture and urban planning and 2 schools outside Europe: “[Introduction to Housing](#)”, “[Habitat Regeneration Strategies](#)”, “[Threshold Matters](#)”, “[Housing Systems](#)”, “[Contemporary Living Patterns](#)”, “SMALL is power”, “Urban Housing Regeneration”, “Urban Systems”, and “Thinking Dwelling”. The design and implementation of these learning spaces has been facilitated by the use of a template developed during the project. A variety of media (OIKODOMOS Workspaces, Facebook, Google+, Blogs) have been used to support a blended-learning pedagogical model which combines activities carried out at each institution with those performed in the on-line learning environments.

Four [participatory activities](#) to engage local stakeholders (professionals and citizens, local administrations and civic organizations) in the processes to define the living environment, from domestic to urban scales, have been carried out in Barcelona (Spain), Rimini (Italy), Bratislava (Slovakia) and Skopje (Macedonia). Through these project-based actions participants have dealt with issues such as co-design, affordable housing shortage, and participatory urban planning.

The work of the research sub-network is reflected in two Readers, 30 entries added to [Oikopedia](#) knowledge-base (in English and six other languages), and a matrix which synthesizes the knowledge and expertise of the network with regard to contemporary housing research. This matrix has been instrumental in creating a compendium of learning outcomes and competences for a learning programme about “Global Dwelling”.

The [OIKONET web portal](#) has been created to foster the communication and collaboration among partners and to disseminate the project activities within and beyond the consortium. A usability test was conducted to verify the functionality of the digital platform. In addition to the new web portal, two environments of the previous OIKODOMOS Virtual Campus – [Workspaces](#) and [Oikopedia](#) – have been enhanced to meet the demands of users. Also, a new web-based learning environment has been created to support the activities of the “[Thinking Dwelling](#)” learning space.

Project activities have been disseminated throughout the project in a variety of media, formats and events: newsletters, social web, local media, exhibitions, international conferences (taking place in Barcelona, Bratislava and Manchester), papers and journals and a book which reflects the work carried out in the project. The quality of the project activities has been assured through a systematic evaluation of the different realms of the project: events, learning activities and digital platform. Different surveys have been conducted during the project to identify the interests, objectives and opportunities with the purpose of creating a sustainable community of practice after the end of the period of funding.

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1 Project Objectives

Contemporary societies –inside and outside Europe– are facing similar challenges with regard to housing: the need to upgrade the fabric of existing buildings to improve the living quality, to reduce energy consumption, to avoid social exclusion due to the difficulties to access a home, to integrate social housing with public spaces, to engage citizens in the design and preservation of the built environment, among others. To face these challenges, it is necessary to count on the participation and collaboration of architects and planners, teachers and researchers, citizens and local administrators, financial institutions and social organizations.

Nowadays, most higher education institutions are addressing the study of housing from a disciplinary perspective, for example by considering it from the architectural, urban or economic point of view. The study programmes reflect this disciplinary approach. Therefore, there is still a lack of multidisciplinary and interdisciplinary pedagogic approaches to contemporary housing. Furthermore, such approaches should not be circumscribed to academia; rather they should foster the participation of other stakeholders such as political representatives, social leaders and professionals, in the contemporary debate on housing problems and solutions. Therefore, the purpose of OIKONET is to provide a flexible, inclusive and multidisciplinary pedagogic framework to enable the design and implementation of learning activities to study contemporary housing, globally, which implies:

- To acknowledge the existence of common driving forces influencing the contemporary habitat, in different cultures, societies and places.
- To adopt an inclusive approach to solving the “housing problems”, involving all actors: dwellers and professionals, community organizations and local administrations.
- To build a multidisciplinary perspective, embracing the different disciplines concerned with housing.

The aim of OIKONET is to facilitate the exchange of knowledge, methodologies and good practices among research groups and higher education institutions which are part of the network. The activities carried out in the project enable partners to interlink research activities with the collaborative design of learning, and to embed learning processes in social, cultural and economic environments. Collaborative learning activities are designed around housing issues at specific locations which encompass multiple housing dimensions (participation, access to home, refurbishment, energy efficiency, digital fabrication) and stakeholders (architects, citizens, social organizations, local authorities). These learning activities bring together different types of courses (seminars, workshops, design studios) from the various academic programs of the participating higher education institutions and promote the interaction between students and faculty members with researchers and community representatives. This multidisciplinary and participative learning approach of OIKONET is based on the application of a diversity of digital tools –open and proprietary– which are used to design the learning, to implement the activities and to disseminate the results.

2 Project Approach

OIKONET is the follow-up of the OIKODOMOS Virtual Campus project which was developed under the auspices of the Life Long Learning Programme from 2007 to 2009 and from 2010 to 2011 (www.oikodomos.org). The OIKODOMOS Virtual Campus is an inclusive learning space which integrates different schools (architecture, urban planning), subject matters (housing design, urban planning, energy efficiency, sustainability), courses (design studios, seminars), academic levels (bachelor, master) and learners (students, citizens). It adopts a blended-learning approach to integrate disciplines and courses from various higher education institutions (mostly architecture and urban planning). The design and implementation of the collaborative learning activities was carried out in web-based learning environments specifically developed for the virtual campus. Around 1000 students and 100 teachers from 15 higher education institutions in Europe participated in the learning activities carried out during the three-year project.

Continuing further along this line of work on pedagogic innovation in the field of housing studies, the objective of OIKONET –the OIKODOMOS Network– has been to enhance the previous virtual campus to transform it into a platform of collaboration, in which academia, research and community representatives collaborate in the study of contemporary housing from a multidisciplinary and global perspective encompassing the multiple dimensions which condition the dwelling in today's societies: architectural, urban, environmental, economic, cultural and social. The consolidated OIKODOMOS Virtual Campus has grown into a network by:

1. Incorporating other disciplines to the study of contemporary housing, such as economics, social studies and historical preservation;
2. Enhancing partners' profiles to include social and community organizations;
3. Addressing the global dimension of housing research, incorporating non-European countries;
4. Expanding the OIKODOMOS Virtual Campus to a larger number of institutions, inside and outside Europe and
5. Enhancing the existing digital platform with new environments which will support the network's activities.

2.1 Network structure

OIKONET intertwines three areas of activity each one making a sub-network within the network:

1. **Research** on housing studies from a multidisciplinary and global approach;
2. **Participatory actions** to engage communities in the definition, solution and evaluation of housing problems; and
3. **Pedagogical activities** which bring together different stakeholders, learning environments and disciplines.

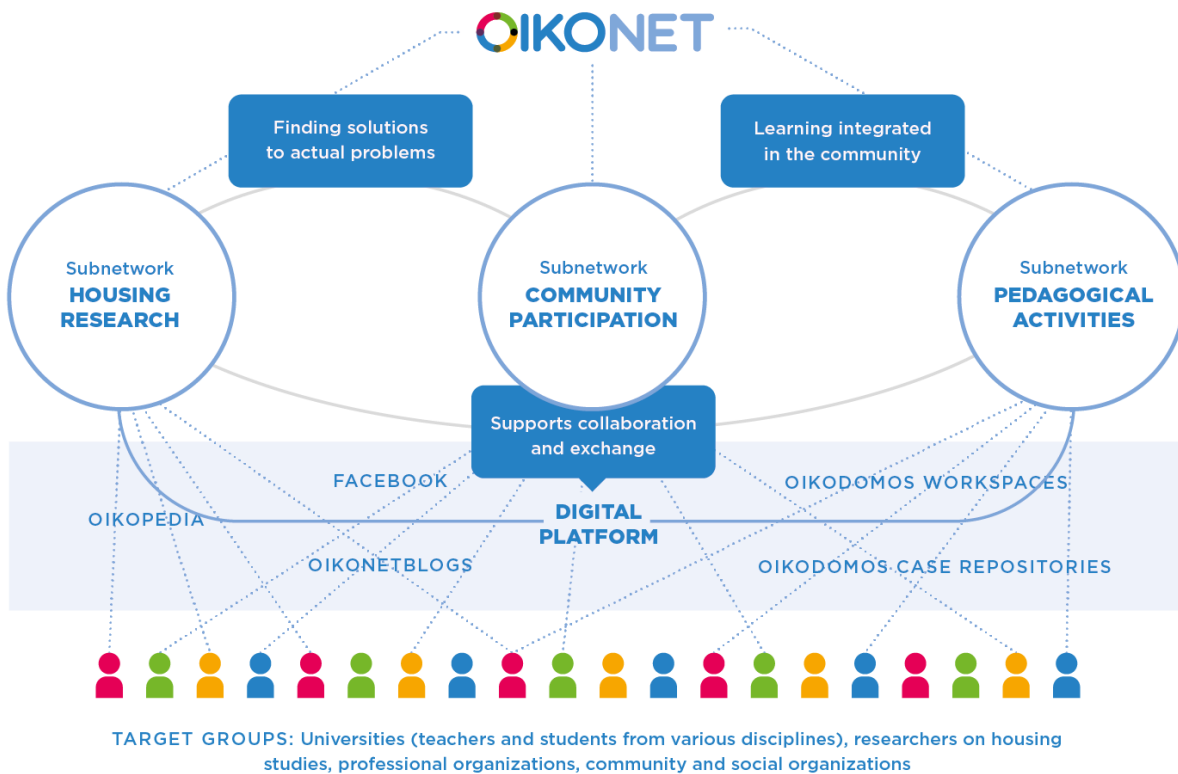


Figure 1. Structure of the OIKONET project

2.2 Building the network

The purpose of the OIKONET network is to establish links among:

- **Institutions**, European and non-European, representing different disciplines concerned with housing studies;
- **Themes of study** on contemporary housing proposed and debated by the project partners;
- **Learning activities**, designed in collaboration and carried out following a blended learning approach; and
- **Learners**, from different institutions, inside and outside academia, constructing knowledge in collaboration through participatory processes in the various learning activities.

Creating such a network of relationships has been a construction process spanned over the three-year project in the following phases:

- **Identifying and visualizing the network components** (people, courses, themes, case studies). This was achieved through the preparation of shared learning spaces, the organization of joint workshops, writing position papers and describing themes of research.
- **Initiating interactions within each subnetwork** (Housing Research, Community participation, Pedagogical Activities). These interactions have been brought about as a result of identifying themes of research which were relevant for all partners, and by designing learning activities which involved members of different subnetworks.

- **Fostering connections between subnetworks.** Identifying spaces of confluence across the three sub-networks to carry out concrete collaborations, such as engaging researchers in the design of learning activities or involving citizens in project-based activities.
- **Consolidating the connections across the network.** This has been achieved by means of the joint preparation of contents for this book, and by creating a compendium of learning outcomes and competences for a learning programme about “Global Dwelling” based on the integration of research and community actions into pedagogical activities.

3 Project Outcomes & Results

The outcomes resulting from the activities in the different areas of the project are summarized next.

3.1 Pedagogical activities

Collaborative learning spaces. The pedagogic model developed in the previous OIKODOMOS project has been the starting point of the pedagogic work carried out by the network. The basic features of this model are:

- A shared learning space dedicated to a common theme of study is created by a group of teachers.
- Within a learning space, learning processes are structured as sequences of learning activities and tasks carried out synchronously and/or asynchronously by students and teachers from the participating schools
- The blended learning process involves the learning activities and tasks being performed both at the schools and in the on-line learning platforms

A “Learning space” refers to a learning environment designed and implemented by a group of tutors who decide to collaborate in the design and implementation of some shared “Learning activities” around a particular theme over a specific period of time. These learning activities are made up of “Tasks” which can be either single or grouped in sequences. A sequence of tasks can be constrained to a single “Learning Activity”, or they may cut across different ones. This learning structure is sufficiently flexible and neutral as to support different kinds of activities - from the collaborative development of an architectural or urban project to course assignments - which can be done by students working individually or in groups, as well as by schools working independently or in collaboration with others.

A total of 12 learning spaces (some of them with different editions) have been collaboratively designed and implemented using OIKODOMOS Workspaces (Figures 4, 5), with the participation of over 1.400 students and 280 tutors from the partner organizations. Each learning space has been dedicated to a theme thus enabling different approaches concerning contemporary housing at a global scale:

- **“Civic Housing”**, a learning space created in the context of a participatory action involving architecture students and members of a housing cooperative in the renovation of a housing block in the city center of Barcelona, led by the School of Architecture La Salle (Leandro Madrazo and Ángel Martín Cojo, coordinators)
- **“Introduction to Housing” (5 editions)**, dedicated to introducing first year students to housing, it has been carried out in three successive editions and was led by School of Architecture, Polytechnic University of Valencia (Carla Sentieri, coordinator).
- **“Habitat Regeneration Strategies”**, focused on the redevelopment of deprived areas at various scales (housing, neighbourhood, city, metropolitan area) encompassing multiple aspects of city life: physical, social, economic and environmental. It was led by the University of Belgrade (Mirjana Devetakovic, coordinator) and by the Faculty of Architecture, Slovak University of Technology (Viera Joklova, coordinator).
- **“Threshold Matters”** focused on the study of the intersection of public and domestic spaces. It is led by KUL (Tomas Ooms, coordinator).
- **“Housing systems”** was devoted to the study of the concept of housing system, from design to construction, which has been led by LA SALLE (Leandro Madrazo and Angel

Martin, coordinators).

- **“Contemporary living patterns”** dedicated to the preparatory activities to be done by participants in the Lisbon workshop, coordinated by Institut d’Urbanisme de Grenoble (Adriana Diaconu, coordinator).
- **“SMALL is power” (2 editions)**, aimed at reflecting on our contemporary way of spatially organising living and more specifically the transition from the private spheres to the public realms, and vice versa. It has been led by KUL (Tomas Ooms, coordinator).
- **“Contemporary Living Patterns: Growth / Shrinkage”**, dedicated to the preparatory activities of the Cottbus Workshop, coordinated by Institut d’Urbanisme de Grenoble (Adriana Diaconu, coordinator).
- **“Urban Housing Regeneration”**, dedicated to the redevelopment of social housing in Dublin, by simulating architectural practice in actual conditions. It was led by DIT (Jim Roche, coordinator).
- **“Urban Systems”**, was an introduction the basic principles of systemic thinking applied to planning of liveable cities. It was led by LA SALLE (Leandro Madrazo and Angel Martin, coordinators).
- **“Thinking Dwelling”**, a learning space which brings together students and faculty from the OIKONET partner schools in a joint reflection about the forms of living in the contemporary world. It was led by LA SALLE (Leandro Madrazo and Adrià Sanchez Llorens, coordinators).
- **“Renewing / Revitalizing: Creating Liveable Cities”**, dedicated to the preparatory activities of the Belgrade Workshop, coordinated by the School of Architecture La Salle.

Learning spaces have been planned by tutors involved in the activities using a template that was developed during the project (see Appendices in Deliverable 4.1 “Learning spaces”). This learning plan encompasses the theme, objectives, participants and their roles, schedules, learning activities and tasks, and expected learning outcomes. Then, to implement the plan, tutors set up their own strategies to link the learning activities in the shared learning space with those carried out at the courses at their schools.

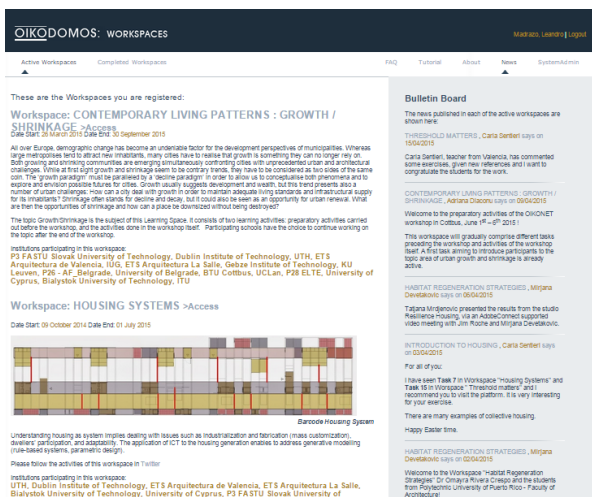


Figure 4. Home page of [OIKODOMOS Workspaces](#)

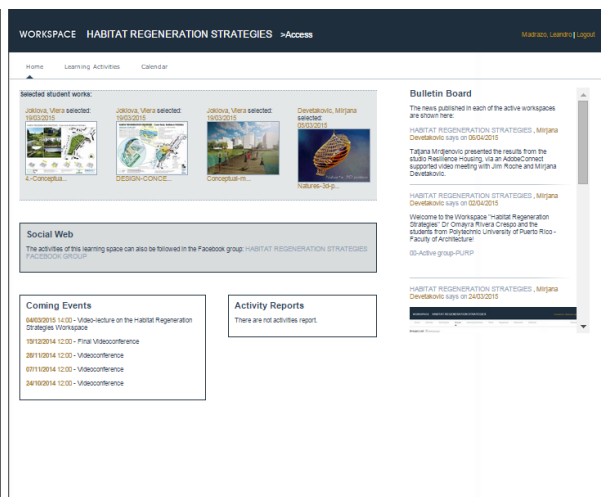


Figure 5. Home page of learning space [“Habitat Regeneration strategies”](#)

The activities have been designed and implemented in the OIKODOMOS Workspaces environment, which in some cases have been supplemented with social web tools (Facebook

groups, Twitter, and blogs). The combined use of both kinds of environment –the structured learning in Workspaces, and the less structured contents shared through the social web provides– has been particularly explored in the learning spaces “Habitat Regeneration Strategies” and “Threshold matters”.

International workshops. Three international workshops have been organized dedicated to addressing global housing issues which are also relevant for the local communities where they took place:

- **Lisbon Workshop: “Contemporary living patterns in mass housing in Europe: Formal / informal” – 14 -19 July, 2014. University Institute of Lisbon (ISCTE-IUL), Portugal**

The topic of the [Lisbon Workshop](#) was “Contemporary living patterns in mass housing in Europe”. The objective of the workshop was to develop a cross-disciplinary dialogue aimed at identifying the meanings and forms of contemporary living patterns in mass housing in Europe, by opposing “formal” and “informal” housing. These two patterns were exemplified by two neighbourhoods in the city of Lisbon: one representing formal mass housing – “Portela de Sacavém” – and, another one – “Bairro da Liberdade” – which is the result of self-build, informal housing. Before meeting in Lisbon, participants carried out some preparatory activities working distantly using the [OIKODOMOS Workspaces](#) learning environment as well as some social media (blogs, Facebook). The work done at each school in these preparatory phase was presented in a public session on the first day of the workshop.

48 students and 26 tutors from 15 EU schools participated in this workshop. Besides, 3 researchers from the field of pedagogy and educational technologies were involved in the evaluation. Representatives of the city of Lisbon and civic associations participated in the workshop programme.

Students were challenged to develop an evolving housing design based on customized prefabricated wood panels that could be used 1. to adapt existing dwellings to contemporary living patterns and 2. to produce new incremental homes as a response to today’s needs. By the end of the six-day workshop, each group of students had built a 1:1 scale module using the digital fabrication tools facilitated by the Vitruvius FABLAB-IUL (Figure 6).

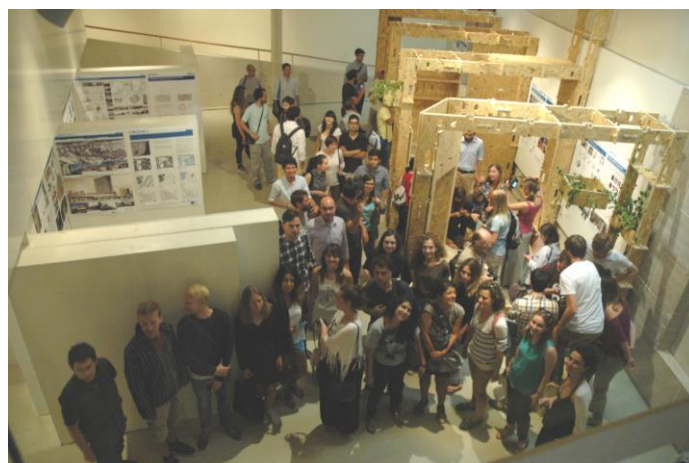


Figure 6. Lisbon Workshop participants

The results of the students’ work were shown in an exhibition at the ISCTE-IUL premises. Later on, the posters were displayed in other exhibitions in Lisbon, Barcelona, Valencia and Dublin. The work carried out in this workshop has also been disseminated through publications in

conference papers, journal articles and book chapters. A special radio report was produced during the workshop by the UK-based magazine [Monocle](#).

- **Cottbus Workshop: “Contemporary living patterns: Growth / Shrinkage” – 1-6 June, 2015. Brandenburg Technical University (BTU), Germany**

The objective of the [Cottbus Workshop](#) was to address the issues of growth and shrinkage by juxtaposing both scenarios exemplified in Berlin and Cottbus. The two cities served as fields of investigation to speculate and experiment with possible ways of dealing with the reciprocal influence of growth and shrinkage and its effects and requirements on housing schemes and urban strategies.

52 students and 21 tutors from 15 European schools of architecture and urban planning, partners in the OIKONET project, participated in the workshop. Students carried out preparatory activities before meeting in Cottbus, on the [OIKODOMOS Workspaces](#) learning environment. The preparatory work done at each school was presented in a public session on the first day of the workshop.

The workshop activities included lectures by representatives of the municipality of Cottbus and Berlin, as well as from BTU professors specialized in the different subjects encompassed in the workshop programme (demographic changes, rural exodus, growth of urban agglomerations, consequences for both urban and rural landscapes, infrastructural consequences), guided visits to the two cities and design studio work. Students summarized their work in posters which were hung in the final exhibition at BTU design studio, together with models at different scales. Tutors acted as critics in this final presentation. In the days after the workshop tutors commented on the submitted projects on the [workshop blog](#).

- **Belgrade Workshop: “Renewing/Revitalizing. Creating Liveable Cities” – 6-11 June, 2016. University of Belgrade, Serbia.**

This workshop was dedicated to examining the strategies that embrace the multiple dimensions, scales and actors involved in the process of creating liveable cities. The area of study was Kosačićev Venac, a historical part of the city of Belgrade. It is a heterogeneous, mixed-use area connecting the Sava riverfront with the main pedestrian zone. Despite its excellent position and evident potential for revitalization, this area has been deteriorating for decades, losing part of its inhabitants and failing to attract new ones. Its predominant use is residential, although there are many educational and cultural institutions nearby.

The Belgrade workshop brought together 58 students and 24 tutors, from 17 higher education institutions. The preparatory stage of the workshop was done entirely online, using [OIKODOMOS Workspaces](#). At this stage the students received the necessary information about the selected site in Belgrade in various formats (plans, regulations, photos), as well as a selection of readings about liveable cities and regeneration strategies for contemporary cities. As in the previous two workshops, the design studio work in Belgrade was done by mixed teams of students from various institutions. The teams made strategic proposals to intervene in Kosačićev Venac, at the micro, mezzo and macro scales. The presentation of final proposals was organized as a performance in which students acted as external experts in charge of the development of the area, some of the tutors acted as international investors from their respective countries, and other tutors played the role of the City of Belgrade government.

The workshop activities were broadcasted by a program of the [Serbian National TV](#) and the students' works presented in a poster exhibition at the European Centre for Culture and Debate Grad, in Belgrade.

MOOC. A Massive Open Online Course was designed, planned and delivered twice (from September thru November 2015, and from May thru June 2016). The MOOC subject was “Housing Design: from Concept to Fabrication” and it was intended as an introduction to the design of housing for novice learners. The pedagogical design was based on constructive alignment as implemented in previous OIKODOMOS projects, and the topics follow the same pattern and broad scope as implemented in the OIKONET workshop held in Lisbon. The programme of the workshop integrated five subjects around the design of a housing prototype: sustainability, energy efficiency, parametric design, digital fabrication, and participatory processes. For the MOOC, the housing prototype was simplified to suit the starting knowledge of the students and the concept of a “Dolls House” (“Play House” second edition of the MOOC) was adopted as a unifying theme. The five main topics, treated as individual course modules, led participants from social considerations for design of this simple model through a series of modules leading up to the final outputs required for digital fabrication. The [Canvas MOOC environment](#) was used for delivery.

3.2 Community participation activities

Four [participatory activities](#) to engage local stakeholders (professionals and citizens, local administrations and civic organizations) in the processes to define their living environment, from domestic to urban scales, have been carried out in Barcelona (Spain), Rimini (Italy), Bratislava (Slovakia) and Skopje (Macedonia).

- **Barcelona: A pedagogic experience with co-housing**

Students and tutors of the School of Architecture La Salle and members of the housing cooperative Sostre Cívic, participated in this activity from October 2013 to January 2014. Its purpose was to develop methods and tools to foster the participation of dwellers in the design process of their future homes. Architecture students and members of the cooperative took part in a collaborative process aimed at defining the housing needs of the dwellers of a multi-story building which is going to be renovated, in the historical city centre. The task given to students was to design a collaborative process to enable dwellers to express their visions about their current and future living places. Students analysed and processed the inputs received from the dwellers and created design guidelines based on their inputs. The work was shared with other OIKONET partners through [OIKODOMOS Workspaces](#). A [video](#) summarizing the process and outcomes of this participatory action has been produced.

- **Rimini: Defining strategies to facilitate access to social housing in a medium-size city**

A participatory action was carried out by Heriscape and the Chamber of Architects (Ordine degli Architetti di Rimini) from June 2014 to March 2015. The main purpose of this action was to define feasible strategies to support solutions for the social housing problems in a medium-size city, fostering the collaboration of the private and public sectors. The following institutions participated in the two-round tables organized as part of the action: the Rimini municipality departments of Housing Policy, Youth Policies, and Urban Planning and Territorial Management; ACER Rimini; Carim Bank Foundation; Papa Giovanni XXII Association; San Giuseppe Foundation; Slash Association; Caritas Rimini and Social Cooperative Fratelli è Possibile. Also participating in the discussions were some advisers of the Chamber of Architects of Rimini. Four strategic plans to provide affordable housing to young people were discussed in these meetings: Housing First, Villaggio Tre Tende Project, Housing Esperienziale and FERSH Fund.

A brochure (in Italian) summarizing the purpose of the action and the conclusions has been produced and distributed among the participants in Rimini. The work done in this action and the results achieved have been documented in a [video](#). Finally, the Chamber of Architects of

Rimini and Heriscape organized a one-day conference in Rimini, September 27, 2016, on the theme “Housing sociale e partecipazione di comunità” where the conclusions of the participatory action were discussed. The conference was recorded in [video](#).

- **Bratislava: Urban walk in the Zemník area**

The purpose of this participatory action was to gather the views of the experts, municipality, residents, general public, community associations and organizations involved in the development of the Zemník area located at the Danube riverfront, next to the city of Bratislava. A project to build a national centre of canoeing and rowing has been presented to the city. As author of the general city master plan, the municipality is responsible for awarding the building permissions. Before granting it to the project developer, the city wanted to know the opinions of the stakeholders involved. With this purpose, an urban walk through the Zemník area was organized. Representatives of the Urban Planning department (responsible of the master plan), the Slovak Canoeing Association (project developer); the Slovak Anglers Association and the Slovak Nature Protection Association explained participants their views about the proposed urban development and about the future of the area.

An [invitation](#) to attend the urban walk was posted on the webpage of the city of Bratislava and disseminated through the [social web](#). The news was further disseminated with the help of local media, mainly in the on-line editions of local newspapers.

- **Skopje: A community action in Ilinden**

With the purpose of fostering community participation in the urban development, three schools of architecture—UKIM, Macedonia; POLIS, Tirana; and Faculty of Architecture, Belgrade—collaborated in a community development planning project called “Living-Dwelling” in the Ilinden neighbourhood, near Skopje, during the academic year 2014-2015. The programs from the three schools became intertwined through the joint learning activities carried out in relation with the project. Current housing problems in Ilinden were jointly analysed by students and teachers, residents and local administrators. The underlying research issue was the process by which physical boundaries of public and semi-private spaces are negotiated.

Overall, this initiative has contributed to pedagogic innovation in the field of housing studies by exploring ways to involve the academic community in the transformation of the social and physical environment. Both students and dwellers were learners in this project-based learning approach. The students learned how to create and use surveys as tools to analyse the social dynamics of a community. On the other hand, the dwellers became aware of the value that semi-private spaces have for social interaction. The action has helped to create a sense of community by bringing together students and tutors, dwellers and local administrators in discussions about the future urban development of the neighbourhood.

3.3 Research activities

The work carried out by the research sub-network has contributed to highlighting some of the relevant issues in contemporary housing research which are being investigated by partners. This mapping of research topics has contributed to identifying potential synergies between research, pedagogy and participation. The work done by the research sub-network has been materialized in three kinds of outputs:

- **Readings on contemporary housing research.** The topics which are being investigated by members of the research sub-network have been compiled in two on-line Readers: [Reader 1](#) (8 chapters) and [Reader 2](#) (10 chapters). Partners have commented on and discussed the contributions of other partners in the on-line forums. The research topics covered in these readers is supplemented with the concepts introduced in Oikopedia.

- **Oikopedia.** 30 new entries have been added to [Oikopedia](#) by members of the subnetwork Housing Research: Affordable housing, Area-based interventions, Brownfield regeneration,

Building performance evaluation, Capacity-building, Codesign, Community participation for housing delivery, Crime prevention through environmental design, Gentrification, Healthy cities, Hedonic prices, Housing innovations, Housing careers, Housing regeneration, Housing rights, Interplace, Participatory design, Participatory planning, Passive design, Post-occupancy evaluation, Public open space in urban areas, Public rental housing programme as innovation, Resettlement, Social housing in the developing world, Sustainable communities, Sustainable design, Sustainable design – learning by doing, Urban greening, Urban heat islands mitigation and Urban regeneration. The entries have been written in English and translated into French, Italian, Slovak, Spanish, Russian and Turkish.

- **Research Matrix – Mapping of research within network.** In order to map existing knowledge and expertise about research on contemporary housing within the network, a matrix (Figure 8) was developed during the early stage to the project to record the research activity at partner organisations in order to enable knowledge exchange and collaboration across the three sub-networks. It has been structured in three main research areas, with their corresponding topics and subtopics:

1. SUSTAINABILITY (Environmental, Social, Economic)
2. DESIGN (Methods, Concepts, Applications in Architecture and Spatial Planning)
3. PARTICIPATION

At the end of the project, a second version of the matrix was produced in order to better map the outputs of the project to the research topics identified in the first release. These mappings between outputs and research issues are reflected in the visual maps of the [Oikonetwork](#) environment. This final version of the research matrix has been instrumental to create a compendium of learning outcomes and competences for a learning programme about “Global Dwelling”.

3.4 Digital platform

A new digital platform has been created to foster the communication and the collaborative work among project partners and to disseminate the project activities within and beyond the consortium. The core of the platform is the [OIKONET web portal](#) which has been developed specifically for this project. It fulfils two basic objectives:

- To facilitate continuous and updated information of the project activities to OIKONET partners as well as to external users
- To provide access to the public project outcomes – reports, publications, videos

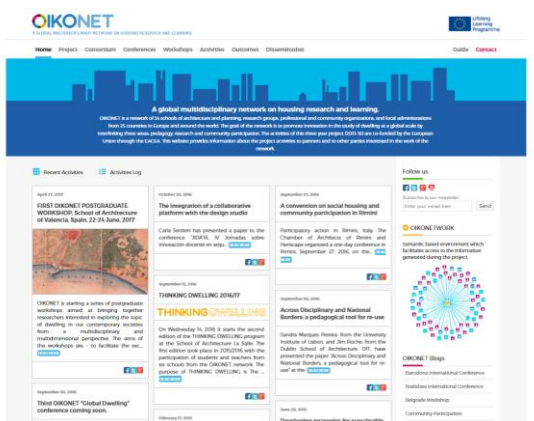


Figure 7. Home page of the OIKONET web portal

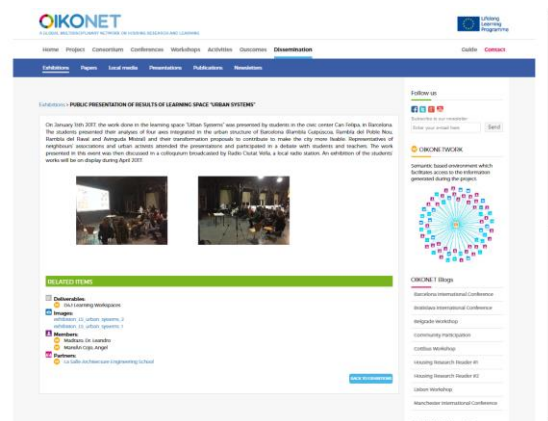


Figure 8. Associative navigation

The [OIKONET web portal](#) (Figure 7) has been developed using semantic technologies. The semantically structured data that is introduced in the information system can be later displayed in multiple ways in the web portal:

- In the dynamic contents of a page in the OIKONET web portal (Figure 8). The contents of the menu items contain a list of associated elements to the one selected in the menu.
- In the [dashboard](#) (home page of the OIKONET web portal, view list). This shows the activities and outcomes in a table view, which can be filtered by categories.
- In a visual map in the [OIKONETWORK](#) environment. Within this environment, users can navigate from one node to another, retrieving the items associated with each node (e.g. reports, images, videos). Users can navigate seamlessly between the visualization modes, from the web pages to the visual graph (Figure 9).

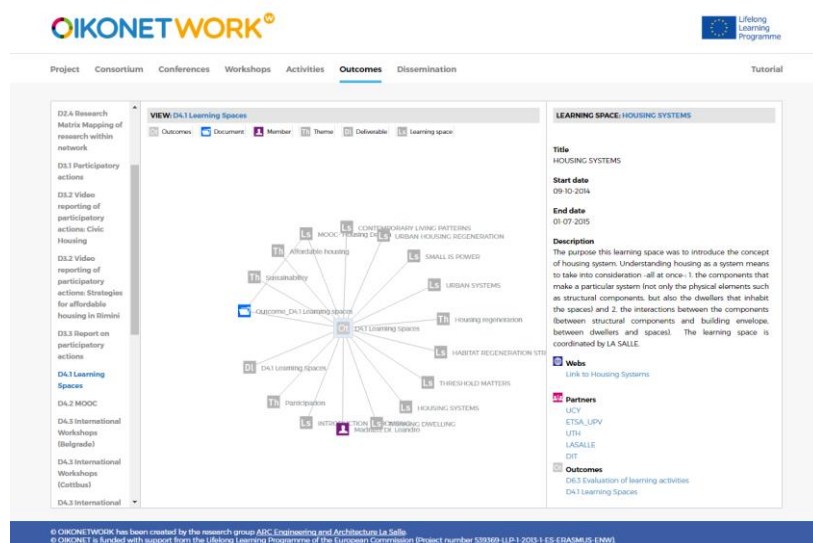


Figure 9. OIKONETWORK

The web portal facilitates access to the blogs created to support specific project activities, such as conferences, workshops and participatory actions.

A usability test was conducted in the second half of the project to verify the functionality of the digital platform. 34 users from 27 partner organizations have taken part in the test (see Appendices in Deliverable 5.1 “Digital platform”). The feedback received from users helped to improve the platform functionalities and the usability of its different components.

In addition to the new web portal, two environments of the previous OIKODOMOS Virtual Campus – [Workspaces](#) and [Oikopedia](#) – have been enhanced following the requests formulated by users. Also, a new web-based learning environment has been created to support the activities of the “[Thinking Dwelling](#)” learning space.

3.5 Dissemination

Project activities have been disseminated throughout the project in a variety of media, formats and events:

Newsletters. A total of 9 [Newsletters](#) (6 regular issues; 3 special issues dedicated to the international conferences) were distributed during the project)

Social web. Project activities have been disseminated through the web portal, [Facebook page](#) and groups, [Google+](#), [Blogs](#), [Twitter](#) and [YouTube](#). Besides, the project is present in LinkedIn and in Researchgate portals.

Local media. The work done during the project has been disseminated locally through on-line media, publications (leaflets, book chapters), radio and television reportages, and events (conferences, presentations).

Exhibitions. A total of 20 exhibitions were set up in the different locations in Europe, in the partner organizations and elsewhere.

International conferences. Three conferences on the theme “Global Dwelling” have been organized in [Barcelona](#) (2014), [Bratislava](#) (2015) and [Manchester](#) (2016). The [proceedings](#) of each conference are available in the project web portal. Besides, the proceedings of the Manchester conference have been published in a book by WIT Press.

Papers and journals. 3 articles have been published and 11 papers presented in international conference organized by third parties. Besides, partners have presented 40 papers in the three conferences organized by the project.

Book. The book “Global Dwelling. Intertwining research, pedagogy and community participation” is available on-line and in printed form.

3.6 Quality assurance

The quality of the OIKONET project has been assured through a systematic and continuous evaluation of the different realms of the project, in accordance with the “Evaluation plan”. In particular, the evaluation has encompassed:

- **Events:** the 3 project general meetings, the 18 subnetwork meetings, and the 3 OIKONET international conferences on “Global dwelling” have been evaluated. The goal of these evaluations was to assess the event’s effectiveness in reaching the project outcomes, their impact on stakeholders and the satisfaction of participants.
- **Learning activities:** 8 Learning Spaces (in some cases in their different editions) and the 3 international workshops and the corresponding preparatory activities in the learning spaces have been evaluated. The goals of these evaluations were to assess the effectiveness of the learning activities, the achievement of the learning outcomes, the overall learning and teaching process, and the effectiveness of the integration of the digital tools into the learning and teaching processes.
- **Digital platform:** the OIKONET platform has been evaluated through online questionnaires, through an analysis of the usages of the different tools that have been used during the project as communication and collaboration tools, and through a usability analysis of the OIKONET web portal.

The results of the evaluations have been used to improve and refine the activities all the way through the project, thus contributing to enhance its quality as the project progressed.

4 Partnerships

34 organizations representing universities, research groups, social organizations, local administrations, professional organizations and international agencies from 25 European and 4 non-European countries, have participated in the OIKONET network. The expertise covered by these organizations include architecture and urban planning, engineering, housing studies, urban policies, sociology, social studies, and pedagogy.

Higher education institutions (19)

- School of Architecture La Salle, Ramon Llull University (FUNITEC), Spain
- School of Architecture, Polytechnic University of Valencia Spain (ETSA-UPV)
- Faculty of Architecture, Slovak University of Technology (FASTU), Slovakia
- Faculty of Architecture KU Leuven (KUL), Belgium
- Brandenburg Technical University (BTU), Germany
- Department of Architecture, Design and Media Technology, Aalborg University (AAU), Denmark
- Department of Architecture, University of Cyprus (UCY), Cyprus
- Institut d'Urbanisme de Grenoble, Université Grenoble Alpes (UGA), France
- School of Architecture, Dublin Institute of Technology (DIT), Ireland
- Faculty of Architecture, Gebze Technical University (GTU), Turkey
- Department of Architecture and Urbanisme, Lisbon University Institute (ISCTE-IUL), Portugal
- Faculty of Architecture, University of Belgrade (AF-Belgrade), Serbia
- Faculty of Architecture, Bialystok University of Technology (BUT), Poland
- Faculty of Architecture, Istanbul Technical University (ITU), Turkey
- Department of Architecture, Faculty of Engineering at the University of Thessaly (UTH), Greece
- School of Architecture at the Polytechnic University of Puerto Rico (UPPR), Puerto Rico
- POLIS University (POLIS), Albania
- Faculty of Architecture and Urbanism, University of Chile (FAU), Chile
- Volgograd State University of Architecture and Civil Engineering (VSUACE), Russia

Research groups (10)

- Chalmers University of Technology (CHALMERS), Sweden
- Institute for Housing and Urban Development Studies (IHS) The Netherlands
- Faculty of Architecture, Ss. Cyril and Methodius University (UKIM), Macedonia
- Faculty of Mechanical Engineering, University of Ljubljana (UL), Slovenia
- Faculty of Architecture and Urban Planning, Riga Technical University (RTU), Latvia
- Grenfell-Baines School of Architecture, Construction and Environment, University of Central Lancashire (UCLan), UK
- Faculty of Law, University of Zagreb (PFZ), Croatia
- Oslo and Akerhus University College of Applied Sciences, NOVA – Norwegian Social Research (HiOA-NOVA), Norway
- Faculty of Social Sciences, Eötvös Loránd University (ELTE), Hungary
- New Media in Education Laboratory, Università della Svizzera italiana (USI), Switzerland.

Social organizations (2)

- Heriscape Heritage and Landscape, Training and Consulting, Italy;
- Housing cooperative Sostre Cívic, Spain

Local administrations (1)

- City of Bratislava, Slovakia

Professional organization (1)

- Ordine degli Architetti, Pianificatori, Paesaggisti e Conservatori della provincia di Rimini (OAPPCR) Italy

International agency (1)

- UN-HABITAT, Kenya

5 Plans for the Future

Different surveys have been conducted among OIKONET partners during the project to identify the interests, objectives and opportunities with the purpose of creating a working sustainable community after the end of the period of funding.

The benefits and driving factors for continuing the network were identified as follows:

- Building a portfolio for future activities and applications
- Establishing groups around specific topics (research, pedagogy, participation issues)
- Identifying groups of interested people within each institution
- Continuing with the shared learning spaces/courses
- Writing joint research applications

In particular, the following activities could be carried out by the network in the future:

- Joint annual scientific events, for example, continuing with the annual conference on "Global Dwelling".
- Sharing learning resources (e.g. video lectures), pedagogical tools and methods through the digital platform
- Setting-up joint seminars for smaller groups on specific topics (e.g. pedagogical innovation, liveable cities, housing design, etc.)
- Continuing with the MOOC, promoting its uses within the partner schools
- Designing joint masters to continue a more in-depth study of some of the issues addressed in the project activities
- Preparing joint publications, following the trend initiated in the project

Following the discussion with the management boards at each organisation, the following issues were raised with regard to the continuation of the network:

- Most schools are committed to continuing the network activities and highly value the opportunities and benefits of supporting OIKONET
- There is a concern about the financial implications of a follow-up: most schools claimed to have limited resources available. Therefore, they encouraged staff to work on new applications.
- Network activities could be linked to on-site activities, for example, with course modules, exhibitions, and other events organized at the partner institutions.
- There is a high interest in continuing to develop blended learning approaches in architecture and urban planning.
- There is widespread interest in continuing with the exchange of pedagogical materials
- Some partners are interested in organising OIKONET workshops, writing joint applications, setting up thematic meetings, joint seminars, MOOCs, delivering video lectures, etc.
- There has been an important increase in the number of ERASMUS exchange students between partners. The network could be supported via these exchanges.
- Several partners are interested to continue exploiting the OIKODOMOS Workspaces actively. However, there is general agreement that this environment should be redone.

At the time of completing this report, network activity is continuing after the end of the funding period in the following ways:

- The [first OIKONET Postgraduate Workshop](#), to take place at the School of Architecture in Valencia, 22-23 June, 2017-05.
- The elective OIKONET course "ON A MOMENT OF ARCHITECTURE" taking place at KU Leuven in the spring semester 2017.

- The collaborative learning space [Danube Urban and Cultural Studies](#), coordinated by FASTU, with the participation of partners outside the OIKONET consortium.

6 Contribution to EU policies

The project has contributed to the fostering pedagogical innovation in the following areas:

- **Promoting cooperation between research, education and society, by bringing together stakeholders from different areas to formulate and discuss contemporary problems regarding housing at a European and global scale.** Students and tutors, local administrators, professionals and social organizations, and citizens have been actively involved in the collaborative learning activities, workshops (in Lisbon, Cottbus and Belgrade) as well as in the participatory actions in Barcelona, Rimini, Bratislava and Skopje.
- **Providing students, teachers, researchers and other stakeholders with the competences necessary to work in a readily accessible international environment.** Students participating in the learning activities have had the opportunity to develop these skills, cooperating with students, teachers and researchers from other institutions, both in on-site and on-line learning environments. The skills they need to face the challenges of creating contemporary living environments in our global societies have been compiled in a document.
- **Encouraging the active participation of these stakeholders in the creation of innovative learning spaces which overcome disciplinary and institutional boundaries.** The implemented learning spaces have brought together a variety of subject-matters, theoretical approaches and course typologies from different institutions. In this regard, these learning spaces have contributed to overcoming established disciplinary and institutional boundaries.
- **Facilitating cooperation between different academic programs which include housing (in its different dimensions) as subject matter.** This cooperation has taken place with different degrees of intensity, from the integration of separate programs in a joint learning structure (e.g. learning space “Introduction to housing”), to ad-hoc collaborations to address a specific topic (e.g. collaborations between DIT, UTH and LA SALLE on the learning spaces “Housing systems” and “Urban Systems”).
- **Fostering physical and virtual mobility across partner institutions, by means of workshops, seminars, conferences and shared learning activities in blended learning scenarios dedicated to study contemporary housing issues.** This has been achieved through the successful implementation of the three workshops in Lisbon, Cottbus and Belgrade. Besides, virtual mobility has been reinforced through the signature of Erasmus exchange agreements between partners.
-
- **Contributing to the internationalisation of the European cooperation, incorporating third countries to the network. This will facilitate the exchange and mobility at the international level, preparing the ground for further cooperation among network partners in future programs (Erasmus Mundus).** Third countries have been especially involved in the learning activities, particularly UPPR (Puerto Rico) and VSUACE (Russia). Tutors from these institutions have given lectures and presentations by videoconference (e.g. UPPR in learning space “Civic Housing”), their students have contributed to the learning spaces (VSUACE in “Urban regeneration strategies”; UPPR in “Thinking Dwelling”) and have even participated in one of the workshops (VSUACE in Belgrade).
- **Promoting new forms of international cooperation, through the design and implementation of shared learning activities carried out following a blended learning approach with the digital environments of the OIKODOMOS virtual**

campus. The pedagogic model developed in OIKODOMOS has been expanded and adopted by a larger number of partners. As a result, some improvements have been introduced both in the methodology as well as in the on-line platforms (e.g. OIKODOMOS Workspaces has been further enhanced). With regard to the first, the agreement on the template to be used to design a plan of a learning space is one of the most useful contributions made by the network. Various forms of cooperation have taken place by jointly designing collaborative learning spaces, interlinking activities of their respective courses (AAU and BTU); exchanges between teaching and research staff (KUL and UCLAN); and inviting partners as guest critics in courses at others schools (face-to-face, and on-line).

- **Establishing evaluation procedures to guarantee the quality of the pedagogic activities to be implemented by network partners, in mixed formal and informal pedagogical settings.** A comprehensive table of learning outcomes and competences to be used in the design of learning activities on the theme “Global Dwelling” has been created. This table can be instrumental in the design of future courses carried out by OIKONET partners, either in their own curricula or in joint courses with other partners.
- **Reinforcing the societal roles of academic institutions in a culturally and linguistically diverse Europe, by embedding the learning activities in those social milieus in which solutions for housing problems are needed (integration, immigration) thus activating knowledge through interaction with society.** Most of the learning activities which have been carried out are rooted in the social and academic milieu, in particular, the case studies selected for each of the three workshops in Lisbon, Cottbus and Belgrade, and the four participatory actions in Barcelona, Rimini, Bratislava and Skopje.
- **Enhancing interdisciplinarity and transdisciplinarity, by creating new learning spaces which bring together different disciplines into the solution of housing problems.** This has been achieved through the cooperation between researchers and teachers in the design and implementation of learning activities, in particular, the learning spaces “Small is Power” (cooperation between KUL and UCLAN) and “Urban Systems” (LA SALLE and CHALMERS). Likewise, the book “Global Dwelling” can be a source of inspiration to continue on the path of integrating disciplines and realms.
- **Contributing to the development of technology enhanced learning, embedding ICT in the learning processes and learning structures.** The application of the OIKODOMOS Virtual Campus tools (Workspaces, Case Repository) to design and implement learning activities has demonstrated once more that there is a need for these kinds of tools which are not provided by existing LMSs nor can be found in the social web. The network is exploring ways create a new web-based learning platform to support collaborative learning activities after the end of the project. In the meantime, new web-based learning environments such as [“Thinking Dwelling”](#) have been created to support a specific pedagogical methodology.