

# Newsletter

Residential Renovation towards nearly zero energy CITIES



## Welcome to the 3<sup>rd</sup> R2CITIES Newsletter!



**We are fast heading towards completion of our second year of activities to transform three residential districts in three different countries into smarter energy efficient urban areas to be mirrored on a large-scale across Europe.**

We are now up to cruising speed as we head into our second year and the consortium is intensively collaborating to fine-tune and plan the interventions at the [demonstration sites](#).

Over the last few months, all the project partners as well as various external stakeholders have been involved in the preliminary activities of the intervention packages. Each [demo site](#) has been organising its tender and public grant procedures and reaching out to local residents to obtain their buy-in. In Valladolid for instance, the work programme and quality control plan have been defined and the demo team are now in the negotiation stage with the building owners who are to contribute financially to the interventions. Both Genoa and Kartal demo sites are fully engaged in selecting companies for retrofitting operations and have been organising on-site inspections to facilitate submissions.

As this tendering process unfolds, we are also determining and consolidating the “project management teams” who will work together to deliver on the goals set. The teams will be made up of a BIM managers, energy experts and quality controllers to ensure consistency across all the complex assignments and results areas.

The focus is therefore on the final preparations before the intervention packages start over the coming months. In January, Kartal Municipality hosted our third periodic meeting which brought together the entire consortium. It was planned to coincide with a number of project milestones and was pivotal as we set about the actual retrofitting phase. In this issue, our partners [ONYX](#) and [VIVA](#) will be in the spotlight, and we will be featuring interviews on the multifold challenges of retrofitting on district level and on how third parties play role in making buildings more energy efficient.

With best wishes

**Rubén García Pajares** - R2CITIES Coordinator  
Fundación CARTIF



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## Kartal Municipality in Turkey plays host to R2CITIES 3<sup>rd</sup> periodic meeting from 21 to 23 January



The R2CITIES consortium convened in Kartal for its 3<sup>rd</sup> periodic meeting welcome by the Mayor, Dr. Altınok Öz. The visit to the demo site in the Yakacık district, an exploitation workshop and four parallel work sessions turned the meeting into a very interactive occasion for the partners to stock of the project's progress and lay the basis for future milestones.

The meeting comes at a time when the project is enjoying fresh stability with the integration of new Turkish partners Ekodenge, Mir, Reengen and Solitem, while heading into the retrofit intervention packages on a challenging schedule. As coordinator Rubén García from Fundación CARTIF stated "we have now made excellent headway in integrating our new partners - all systems are go. However we must remain focused and maintain momentum if we are to fulfil our objectives according to the timeline set out".

The demo sites are currently involved in the tendering processes for the interventions in the cases of Genoa and Kartal and in the public grant procedure in Valladolid. A clear issue underlined by the three demo sites teams is the relevance of taking into account the social acceptance of the interventions by the tenants: the teams are acutely aware of the need to engage directly with tenants as end-users. In the case of the Cuatro de Marzo district in Valladolid, dwelling owners will have to pay for up to 25% of the cost of the retrofitting, and this means careful planning and communication so that they totally buy into the project. And this highlights the wisdom of integrated project delivery (IPD) which involves end-users from an early stage.

The meeting, which was hosted by Kartal Municipality, was opened by mayor, Dr. Altınok Öz and R2CITIES coordinator Rubén García. The parallel sessions covered major components in our project's delivery which are, ultimately, key for its overall success: integrated project delivery, lifecycle analysis and costing, refinement of District Sustainable Indicators and monitoring and decision support systems via an ICT platform.

During the trip to Kartal's Yakacık district Burak Korkmaz, an architect working at Kartal Municipality, showed delegates through the main building set to be retrofitted. The building was designed as a housing complex for the elderly and that it included residents' flats, common areas, conference rooms. The insulation - despite the building's relatively young age - and domestic water heating and lighting need to be improved there and throughout the district. All heating systems will also be improved including heat pumps, geothermal drills and solar solutions. Two nearby smaller residential buildings are also part of the R2CITIES retrofit plan.

The project's second exploitation workshop saw Frederik Metzger and Charlotte Schlicke from Steinbeis Europa Zentrum deliver a highly interactive session on IPR management and value propositions. This exercise was part of R2CITIES' exploitation strand and involved partners getting to grips with matching their backgrounds to exploitation results and detecting results owners.

The focus now is on moving to a deeper level with the intervention packages taking shape and being implemented with a renewed drive.

## Four key project components under the microscope at the R2CITIES 3<sup>rd</sup> periodic meeting in Kartal, Turkey

January saw the R2CITIES consortium convene in Kartal, Turkey, for its 3<sup>rd</sup> periodic.



It was the opportunity to engage all the partners in four key work sessions on integrated project delivery, lifecycle analysis and costing, refinement of district sustainability indicators, and the ICT platform for information management.

As R2CITIES fast approaches the end of year two, **partners are developing** what will determine the course of the project to its successful completion – **an integrated design methodology** for systemic energy efficient renovation of districts throughout Europe. This involves partners **benchmarking and analysing** the optimum combination of the technologies deemed suitable for each demo site.

The work session on **lifecycle analysis and costing (LCA/LCC)** took delegates through the basics before focusing on how R2CITIES is applying the principles to the demo sites. A preliminary LCA is being conducted to support decision making the design phase of the interventions at all three demos (Kartal-Turkey, Genoa-Italy and Valladolid-Spain), and then full LCA will be applied using the monitoring data acquired after the demonstrations.

Central to this procedure is data quality as too is the extent the municipalities involved can collect the data directly from the owners. The LCA results obtained will allow us to define criteria to compare the performance of retrofitted and non-retrofitted buildings using data on different materials used. We will then be able to scientifically assess our results and the energy savings achieved. Discussion centred on materials and how decisions about these need to be accounted for during the tendering processes.

Another topic under study was the design methodology involving the refinement of district sustainability indicators and the selection of renovation scenarios. To achieve this, R2CITIES is drawing on **integrated project delivery and multi-criteria decision analysis** since the number of sustainability indicators requires sound processing. The session first set out the

framework applied and its three stages – district audit, optimal integral design, and evaluation – so that all the delegates could benefit from knowing more about this vital part of R2CITIES.

Since the framework calls on various players, much of the session was then devoted to making progress on the “expert groups” that will each play a pivotal role in the delivery of the design methodology. These groups include owner/promoter representatives, design and execution team with BIM and energy experts, and technology suppliers.

The ultimate aim of the session was to formalise and engage with the expert groups in evaluating alternative retrofit solutions and defining sustainability indicators. Two other work sessions focussed on the deployment of a building/district management system and integrated project delivery. The sessions brought together the involved partners ahead of deployment that has to be completed by late 2015.

**The management system will be used to control energy generation, storage and use through an open-source platform such as a database server or reporting engine.** Its main objective is to integrate all the methodologies, solutions and algorithms developed within the other work packages. The session on IPD focused on how integrated project delivery can be applied to the demo sites; discussion centred on the roles of energy specialists, BIM managers and quality plans. Our periodic meetings therefore involve a hands-on approach where the fact of having all the partners together is leveraged to maximum effect. This is particularly crucial at this stage of the project due to the complexity of issues being tackled and the diversity of experts involved.

## Transparency and residents' involvement make retrofitting work

A residential energy-saving retrofitting program adopts strategies to convince local inhabitants of its benefits.



One of the **biggest challenges of retrofitting projects** is to make them attractive to residents. Now, one of them, the EU-funded project R2CITIES, is **analysing the initial first feedback received from residents** of the *Cuatro de Marzo* district. And there is a lot at stake. Being successful will help to replicate and extend these solutions elsewhere. “[our showcase site] is a mirror to [what can be done in] other European cities,” says **César Alonso González**, general manager of a company for land and housing, called VIVA (Sociedad Municipal de Suelo y Vivienda), which is owned by the Valladolid municipality, in Spain. VIVA is a partner in the project, due to be completed in **July 2017**.

This project also includes two other showcase sites: namely **Kartal, in Turkey**, and **Genoa, in Italy**. But the *Cuatro de Marzo* showcase in Valladolid is more complicated than the other two, as it includes **private householders**. This means that for retrofitting to proceed, **a majority of apartment owners in each building has to agree on such work**, according to Alonso González.

The level of retrofitting work is manifold. The simplest renovation package is the **addition of a thermal insulation envelope around the building**. The complete solution includes the replacement of individual gas boilers by a small district heating that includes a biomass boiler and the installation of a lift. **The creation of this small district heating is an important decision for residents**. The installation is a joint decision between several buildings, as it **requires changing habits** as the boiler is no longer individually, but centrally-controlled, which may be perceived negatively by owners who are older people, according to Alonso González.

Since the heat network is financed by public funds, it should not be an obstacle to convince users. But some

have recently undertaken work in their own home. “They understand the benefits of the actions, and despite being incentive subsidies, [they] don’t want to spend more money,” says Alonso González. Then, **there are people who are against any municipal initiative, for ideological reasons**. Nevertheless, he believes, there will be a very important number of requests for change from residents.

By contrast, **the Lavatrici neighbourhood owned by Genoa Municipality is in a different situation**. “It is very easy to engage the people in this project,” says **Margherita Scotto**, a civil engineer at D’Appolonia, an engineering and consultancy company, based in Genoa, Italy and one of the project partners. They have been **delivering questionnaires to people**, just to have an idea of the level of user acceptance of this initiative.

The showcase area in Genoa is part of a larger residential district. Some tenants—who have not been involved in the project—have been asking why they are not addressing the whole district. “The Genoa team has decided to exploit this opportunity, with limited available resources,” says Scotto. She adds: “but of course, **in the future, the intention is to replicate the [retrofitting] intervention, should we achieve the planned benefits from this project.**”

Similarly to the Spanish showcase, future replication of the project findings in the *San Pietro* district of Genoa would require private owners’ consent to invest in retrofitting solutions. And this could represent a barrier, Scotto tells R2CITIES. **If good results are achieved, the models applied and developed within the other demo site could also be used as guideline**, Scotto believes.

For the success of such initiative, it is essential that the benefits are visible to people. For example, **residents who benefit from the project could spread the news to others residents of the benefits of thermal insulation and of lower spending on heating**, says Alonso González. Finally, Rubén García, the project coordinator from CARTIF, hopes to have a global project document that analyses all the case studies, all the possible solutions and shows results. This will help to replicate the model in other cities, he believes.

A similar initiative about energy retrofitting is EU-funded ZenN project. **Part of this project showed lack of knowledge and interest for energy efficiency among residents and building owners.** “The mistrust is generated by lack of knowledge. We have seen cases where people do not understand why they need to improve the energy efficiency of their homes beyond window changes,” says Francisco Rodríguez Pérez-Curiel, R&D project manager in Tecnalia, Bilbao, Spain, who is also the project coordinator of ZenN. Sometimes the barriers are cultural differences too, he tells R2CITIES. Countries of Southern Europe, for example, tend to reject forced ventilation solutions; indeed the most widely used solution is to open a window for ventilation.

In his experience, residents check improvements in comfort and reduction of consumption, following retrofitting. **This lead to a situation where “satisfaction is very high,” he believes.** He adds: “It’s very easy to perceive the advantages when you can see the transformation of the neighbouring building,” adds Rodríguez Pérez-Curiel. However, he believes, public administrations must help the poorest, both by increasing their financing capacity in developing retrofitting projects in their own housing stock and in supporting highly visible actions.

*Article by Joan Carles Ambrojo*



## Retrofitting: all stakeholders involved upfront

Involving all the players in a comprehensive retrofitting project from the start, an approach known as Integrated Project Delivery, could be the key to its success.



*Cuatro de Marzo* is a district in the southern part of the Spanish city of Valladolid. It is a dense residential area with 190 privately-owned dwellings, developed in 1955. The area is populated by a series of buildings of medium to poor quality, which are progressively ageing. There, the R2CITIES project, funded by the European Union, is carrying out a comprehensive retrofitting of the buildings. **The project involves improving façades and implementing renewable energy systems, both measured being designed to achieve a near zero energy consumption in the district.** To reach their objective, promoters are using a method that they refer to as Integrated Project Delivery (IPD). This involves all the stakeholders working together from the very beginning of the process.

From the kick-off meeting right through the end of the construction phase, *Cuatro de Marzo* residents have a chance to have a say about the different renovation options available to achieve energy efficiency. “The clients preferences are being taken into account,” says **Carolina Wendys**, project manager of the sustainability and eco-efficiency department of Acciona a Spanish building contractor, specialising in the development of renewable energies. She adds that when such preferences are not feasible, the project partners explain the reasons behind such constraints, based on data obtained from an accurate diagnosis phase where the district barriers and opportunities are analysed. They then offer them other options.

**Stakeholders participating in the project are the Valladolid municipality, construction and energy service companies, technology centres and other industrial partners, as well as residents.** To involve home owners and to align their aims with those of other stakeholders, the project methodology is relying on a powerful method called Integrated Project Delivery (IPD). The American Institute of Architects (AIA) defines IPD as a method of project management characterised by a contractual arrangement between at least the owner, the constructor and the design professional. It is designed to harness the talents and insights of all these stakeholders with the aims of optimising efficiency through all three phases of design, fabrication and construction.

IPD is proving to be essential in the Valladolid project, Wendys tells R2CITIES, “**because the most difficult obstacle of the rehabilitation is the question of**

**management, due to the multiples expectations of the stakeholders.**” She adds: “this collaborative approach is turning out to be as important as having the technology at hand.” She believes it offers an opportunity for collaborative work, for example, through the so-called Building Information Modelling (BIM), an open platform for parallel work, where all the participants have free access to the state-of-the-art of the process in order to avoid mistakes and enhance the quality. Thus, this approach helps to save money and time.

IPD facilitates the collaboration of all the parties involved, according to **Miguel Ángel García**, architect and expert in energy efficient buildings and cities at the CARTIF Technology Centre, an applied research institute located in Valladolid. But **it also helps with risk sharing because decisions are made jointly in the first phases of diagnosis and design.** Therefore risks are supported by the same stakeholders if they are present at the execution, commissioning or evaluation phases.

IPD tools and the simulated outcomes of their application are extremely powerful, according to Matteo D’Antoni, senior researcher in the sustainable heating and cooling group of the Institute for Renewable Energy of the European Academy of Bolzano (EURAC). He believes that, if used wisely, **it can give very important input to the design of building retrofitting, be it in the case of public non-residential, commercial or residential buildings.**

D’Antoni, who is an expert in simulation and numerical calculus, also believes stakeholders in the construction sector should be given different options through simulated processes in order to make the best decisions about how to proceed with renovation projects, from the very beginning of the process. “**What should be exported is the methodology, how to approach the project**”, says D’Antoni. He concludes: “This is the added value that European projects can bring to the community.”

*Article by Marta Espar*

## Multifold challenges for districts level retrofitting



Retrofitting a district is quite different from retrofitting a single building: the technological challenges involved are far greater.

The Cuarto de Marzo district of Valladolid, Spain, is an area spreading over 81,000 square metres with 190 buildings. It is now the focus of a retrofitting project, called R2CITIES, funded by the EU. Its objective: a 60% reduction in energy consumption in individual buildings and in the district as a whole. One of the project partners is a company called Onyx Solar, specialist in integrating photovoltaic glass in buildings, referred to as building-integrated photovoltaic (BIPV). **Leonardo Casado**, research and development project manager for Onyx, talks to R2Cities about the viability of implementing facades equipped with photovoltaic glass at an entire district level.

### Have such challenges been addressed in other buildings before?

Nobody has yet taken the leap to using these technologies to retrofit an entire district, which is a much greater challenge. As part of the project, we are putting together a series of packages of energy efficient measures that can be applied to any retrofitting projects. We will create a catalogue of solutions so that any architect or construction company can adopt the most suited for their own project. **The innovative aspect of the project is that all of these technologies — namely, conventional photovoltaic, BIPV, solar thermal, new technologies systems — have until now only been applied to single buildings or to newly-constructed buildings. In particular, the BIPV technology that we developed has been successfully tested in newly constructed buildings. There, we have complete**

control over the design of the building. The challenge now is to apply this technology to the ventilated facade. This type of facade is a multi-layered building envelope consisting of an outer layer made of different materials and connected to the existing inner layer using a ventilated air gap, which constitutes the thermal insulation. Up until now we have only used it in a different type of constructions, as skylight.

### How does such technology challenge compare with those in other parts of the project?

**One of the other sites in the project has adopted different technological solutions.** In the Kartal showcase site, in Turkey, for example, SOLITEM, one of the partner company, is integrating novel systems to make maximum use of available heat. Their approach is based on solar thermal energy. This means heating up a fluid by absorbing the heat from the sun. This is a completely different solution from ours. The advantage of our technology is that it improves thermal performance, in addition to producing electric energy. In the ventilated facade, for example, we are going to achieve a 20% improvement by thermally insulating the building. In other words, it is like another layer of skin, another protection for the building. But technological solutions implemented depend on the climate too. **In the showcase based in Genova, Italy, for example, the heating requirements are not as demanding as for Valladolid.** This is because it is a coastal Mediterranean city. Apart from installing insulating systems similar to ours, they are also including a hidden photovoltaic system to produce electric energy.

### Is the cost of technology an important factor?

To adapt to the budget of each resident of the district, we have put together different packages of measures at different costs. Each resident can choose the right one for them. The most economical set of measures includes merely insulating the building and connecting to district heating systems with biomass boilers. The most expensive option includes BIPV installations. The difference is €30 per square metre, which covers the electrical consumption of all the communal areas and the lifts at a reasonable price. We believe that these are economically viable solutions because they can be financed by bank loans or ESCO (Energy Service Companies) loans with attractive conditions. Also huge savings can be made on electricity bills, bearing in mind how expensive electricity is in Spain. There is nothing more economical than consuming energy, which you have generated yourself.

*18 December 2014, Marta Espar*





## César Alonso: third parties play a key role to making buildings energy efficient



The town council of Valladolid, Spain, is renovating its heritage buildings to achieve near-zero energy districts, while involving all stakeholders.

In a strategic plan for the municipality, the town council of Valladolid, in Spain, has given top priority to the renovation of its heritage buildings to achieve nearly zero energy districts. In one of its neighbourhoods, called *Cuatro de Marzo*, such renovation has already started to happen. It has been pioneered by the company for land and housing, called VIVA—Sociedad Municipal de Suelo y Vivienda— and owned by the Valladolid municipality. It operates within the European project R2CITIES, whose aim is to develop and demonstrate strategies for designing and constructing nearly zero energy districts.

**César Alonso** manager at VIVA in Valladolid, speaks to youris.com about the importance of taking into account residents' opinion and of involving so-called Energy Service Companies in financing the process.

### What are the advantages of building energy efficient buildings?

All regulations concerning incentives and initiatives to do with the renovation of buildings include the idea of energy efficiency. Both the Valladolid town council and VIVA want to be first in the queue to get European funding to implement these changes.

These are not only beneficial to the residents, who are directly involved, but also to the city as a whole. The main priority of the project is energy efficiency. But we are also concerned with renovating the buildings in terms of accessibility, as requested by residents. This is necessary because we are dealing with buildings from the 50s and 60s, which were built in a way which is now considered

obsolete. We are also providing financial assistance to residents for such renovation.

### What approach have you adopted?

The project has both a theoretical and a practical part. The main aim of the theoretical part involves developing a guidance document. It will be used as a tool to analyse the specific challenges and the different options available when renovating a neighbourhood to make it energy efficient. This document relies on examples of various cities characterised by diverse climates and specificities.

The practical part is the development of a series of implementation measures, based on all the different energy efficiency options. In the case of Valladolid, these choices are made by VIVA. The process starts by getting the main beneficiaries involved —namely, these are the residents and owners of the buildings.

### How do you involve the residents?

The direct participation of the residents is the most important part of the whole process. Prior to offering grants to the residents, we asked them about their three main concerns. The answers were: what do I have to do to become energy efficient? How much is it going to cost? And how much financial assistance will I get? Then, we had meetings with all the residents of the neighbourhood to explain the philosophy of the project and to try and get them involved.

They choose from between different renovation packages. The simplest involves the addition of a thermal insulation envelope around the whole building. The most comprehensive includes the same envelope combined with the replacement of individual gas boilers by a biomass boiler, which serves at least a hundred residences, as well as the installation of a lift.

**What is the role of Energy Service Companies, or ESCOs, in the process?**

The ESCOs play a vital role because they provide residents with a way of financing the initiative. This approach is particularly valuable in neighbourhoods, like Cuatro de Marzo, where it is actually the residents who make the decisions. The ESCOs give them the incentive and the assistance needed to transform the heating network and to make the change from individual boilers to collective biomass boilers. The ESCOs can finance this work in a way that the residents, who are making savings on their energy bills thanks to this work, can make comfortable repayments on these loans.

**Do you think that the involvement of the ESCOs play a key role in this type of initiative?**

It is not going to be an easy task. But if we manage to persuade the residents of 10 buildings to get rid of their individual boilers and install a biomass boiler, then the idea of this initiative will spread across the neighbourhood. We will be on the road to energy efficiency when residents, who have already made this change, explain to their neighbours that they are now paying much less in energy bills.

*Article by Marta Espar*



## In the spotlight #1: ONYX Solar

The core business at Onyx Solar is the development of high efficient, cutting-edge and customized BIPV solutions for buildings.

These multifunctional products combine both active and passive properties and are used for easily replacing any non-active conventional building materials. These innovative solutions allow buildings to generate its own energy thanks to the sun power providing at the same time passive benefits as heat insulation, daylight entrance or acoustic comfort.

From a real application point of view, ONYX makes real the mentioned multifunctional concept through the integration of different constructive solutions such as PV ventilated façades, brise-soleils, canopies, skylights, curtain walls and even PV walkable floors from the design stage until turn-key scope.

### ONYX MAIN ROLE IN R2CITIES

The main role of Onyx Solar in R2CITIES is to obtain by means of research activities the best options for integrating PV technologies mainly based on c-Si and a-Si as sustainable measures for building retrofitting at a district level.

Despite the wide range of BIPV solutions available for buildings, it was decided since the first stages of R2CITIES project that applications based on thin film a-Si (amorphous silicon) technology would be the most appropriate to be considered for its use within a district approach at 4 de Mayo Neighbourhood, where it is being studied the implementation of a PV Ventilated Façade. With respect to the energy generation, the main challenge which is being investigated by Onyx Solar is the way of upscale the already known behaviour of this solution in residential buildings to district spaces as a whole.

### New concepts of urban mobility: PV Parking Lot

Within R2CITIES Project, it is expected to obtain an innovative Urban Mobility concept at a district level. In this sense, Onyx Solar efforts are being focused on the design and development of a specific solution: Parking-lot based on thin film a-Si or c-Si PV technologies mainly for charging electric vehicles.

The main challenge is to optimize the possible configuration of the solution in terms of structural, electrical and specific BIPV matters. The objective is to enhance this as a Distributed Energy Resource for district applications, taking advantage of its benefits for both sustainable urban mobility and the possible use of the energy generation for other particular needs as an on-site renewable energy source capable of satisfying energy demands.



## About ONYX Solar

*“All these solutions provide the architect and the customer the opportunity to count on a great variety of designs for their projects differentiating Onyx Solar from the traditional photovoltaic industry. Semi-transparency degrees, colors, patterns, designs, sizes, thickness are just some of variables combined in order to develop the most innovative, efficient and beautiful BIPV solutions for each project and for each client need”,*  
Elena Rico

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## In the spotlight #2: VIVA

VIVA is the Municipal Society of Housing and Land of Valladolid whose main function is the development of the policy to promote social housing from the City Council of Valladolid.

Its aim is to facilitate, preferably for rent, dwellings in perfect conditions to people who need them. Within this group, it pays special attention to young people seeking for their first home. We promote the access to social housing in terms of equality and objectivity. To facilitate the access to a social dwelling in terms of equality and objectivity, VIVA has developed various regulated, streamlined and simplified procedures.

In addition, nowadays, taking into account the situation of crises of real estate sector, VIVA is also an important instrument for the promotion of the renovation of buildings and urban renewal of the districts, in order to improve the quality of life of its citizens and the energy performance conduct in them.

At this moment, we participate in three retrofitting projects. Two of them are cofounded for European Commission: R2CITIES and REMOURBAN projects. The third one is ongoing and it is a very ambitious project to transform and old district in a new one with efficiency energy targets. This one is called "29 de Octubre".

In R2CITIES, we are the promoter and main responsible of the Valladolid demo site "Cuatro de Marzo" coordinating all the work and interventions taking place here. Previous experience in district retrofitting buildings were made at the ARI LA RONDILLA. The Rondilla District of Valladolid is one of the most populated of the capital, with about 40.000 residents spread in more than 80 acres. It consists mainly of buildings built over half a century ago.



*"R2CITIES will be the mirror for other districts in the city of Valladolid or other cities in Europe. The most important challenge of this project to the CITY of Valladolid is to manage not only a Smart City but also and more important is to manage smart citizens. For that, perhaps the most important part of the project is the social acceptance plan"*

**Carolina Fernández**

*"The main priority of the project is energy efficiency. But we are also concerned with renovating the buildings in terms of accessibility, as requested by residents. This is necessary because we are dealing with buildings from the 50s and 60s, which were built in a way which is now considered obsolete. We are also providing financial assistance to residents for such renovation".*

**César Alonso**

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## News from the demo sites



New partners joining the Turkish team.

Kartal Municipality has become partner in The R2CITIES (Renovation of Residential Urban Spaces: Towards Nearly Zero Energy Cities) Project that is supported 7th frame program of EU.

TUBITAK (Turkey Scientific and Technologic Research Institution) is the national coordinator of the 7th frame program that has support the multi-national research and technologic projects in EU. The R2CITIES Project launched by a consortium of sixteen partners from six countries is the Turkey's biggest project under the 7th frame program in the meaning of budget and number of partners.

The R2CITIES Project started on 01.07.2013 and will be ended on 01.07.2017. It has been implemented also in Valladolid of Spain and Genoa of Italy beside Kartal. The Project is implemented under the partnership of Kartal Municipality, Istanbul Technical University, MIR-Arge A.s, Ekodenge Ltd. Sti., Reengen and Solitem Group.

Under the Project, improving energy efficiency in residential areas by using new insulation technics and alternative energy methods, also contributing expansion of the new model to national and international scale is aimed at. An energy efficiency pilot model will be created by working on the nursing home within in Kartal that's belongs to our municipality, and expansion of this model will be

provided by promotion in national and international scale.

The Project for improving energy efficiency in a nursing home is first time ever and works related to the methods that will be applied under the project has been carried out for approximately one year.

In this context, Ruben Garcia PAJARES who is Project Coordinator of CARTIF from Spain and Miguel Angel GARCIA has visited our Municipality on 03.06.2014. A meeting has been held in attendance with Kartal Municipality's Mayor Op. Dr. Altınok ÖZ, Vice Mayor, Gülcemal FİDAN, Kartal Municipality Project Team, TUBITAK and representatives of our partners İstanbul Teknik Üniversitesi, Ekodenge, Mir Ar-Ge and Solitem. Presentations have been done throughout the day, and also Kartal demo-site has been examined by a technical visit onsite.





In the framework of R2CITIES project the activities within the Genova demo site are progressing and during M19-January 2015 different practical activities had started.

The two tender procedures related to the works to be performed in the whole demo site are in a good track. The tender related to the windows and doors has been already closed and the winner identified among the 84 proposals received. Conformity checks are ongoing to define the validity of the winner proposal. After all the formal check procedure (more or less 1 month) the procurement will be definitively awarded,

the contract will be signed and the works should start. In parallel the tender for Heating Plant has been launched and the closure is fixed for the mid of February.

With reference to the laboratory in situ installation in empty dwellings has started and in parallel humidity and temperature sensors have been installed within the occupied dwellings.



Early January saw the end of the public call for the public grants. This comes after an in-depth consultation process organised by VIVA with owner associations that had lasted around six months. This involved energy experts explaining different scenarios based on the performance simulations and data collection that had been conducted beforehand. The call established requirements for applying, the technical requirements for the interventions as well as the relationship between dwelling owners and the contractors who will be working alongside R2CITIES partners.

A first agreement concerns work on the façades to improve isolation and on a connection to a heating networked powered by a biomass boiler. Another agreement has been reached for work on façades and the building envelop for other buildings.

A particular challenge with the first series of interventions is the layout of the blocks earmarked to be connected to a heating

network powered by a biomass boiler. These blocks are relatively far apart from one another, and this would mean laying pipes across an area of 81 000m<sup>2</sup>. Given the scale of the work and the inconvenience this would cause residents, another solution was put on the table. This alternative would involve integrating into the network devices that use pellets. This would be an adequate solution as a first stage of district renovation but in the long term, the heating network would have to be implemented throughout this district containing some 190 buildings and 1 946 dwellings.

## News from our networks

As a demonstration project, R2CITIES is keen to engage with various communities relevant to its interests.



### MySmartCityDistrict group now extends to CITYfIED, READY, SINFONIA and City-zen.

The **CITYfIED**, **SINFONIA**, **READY** and **City-zen** projects have recently been incorporated into the MySmartCityDistrict group (MSCD) taking the number of members to five smart city projects. The group was set up last year between fellow projects **EU-GUGLE**, **R2CITIES** and **ZenN** in a bid to boost synergy and leverage greater visibility of their demonstration activities under a single banner.

The seven projects consortia are always on the lookout for opportunities to showcase their work and perspectives to targeted stakeholders under this brand image. Their sights have set on the European Sustainable Energy Week (EUSEW) due to take place between 15 and 19 June this year. As part of this unique series of events, MSCD are planning to open some of their pool of demo sites to the public as an Open Houses operation. The aim is to fully engage with wide but local audiences who stand to benefit from the retrofitting and energy efficiency gains these projects offer. Various showcases are being discussed since the Open Houses can take different forms – guided visits, exhibitions, demonstrations of technology etc.

In the run-up to these events during EUSEW, the MSCD group will be publishing updates and articles on social media. The group can now be followed on Twitter, and you can join the group on LinkedIn and exchange with some 185 smart cities geeks about their projects and yours.

[Find out more](#)



### MSCD has launched Twitter account

Follow us on **Twitter Account** ([@MySmartCityD](#)) and [Join the LinkedIn discussion Group](#)

## News from our networks

As a demonstration project, R2CITIES is keen to engage with various communities relevant to its interests.



### Ruben García participates chairing one action cluster in the EIP-SCC action cluster kick off event

More than 300 stakeholders attended the Action Clusters Kick-off Event of the Marketplace of the European Innovation Partnership on Smart Cities and Communities (EIP-SCC) in Brussels. Rubén García, Head of Smart City projects in CARTIF and R2CITIES coordinator, participated in this event as co-chair of the Action Cluster “Integrated Infrastructures & processes (& Open data)”. During the event, he chaired this group together with representatives of the EC and Sherpa members of the High-level group of the EIP-SCC. 99 Commitments related to Smart Cities initiatives are associated to this Action Cluster.

The EC Vice Presidents for Energy and Digital Agenda, Mr. Günther H. Oettinger and Ms. Neelie Kroes, respectively, were in attendance at the opening ceremony of this event. In this first session it was reinforced the commitment that the EC has in relation to the European Smart Cities initiative. Mr. Günther also highlighted the results of the lighthouse projects call (SCC1 call) as reference for future cities in Europe. CARTIF is leading one of these projects, REMOURBAN, with the cities of Valladolid (ES), Nottingham (UK) and Eskesihir-Tepebasi (TK).

The EIP-SCC brings together cities, industry and citizens to improve urban life through more sustainable integrated solutions. This includes applied innovation, better planning, a more participatory approach, higher energy efficiency, better transport solutions, intelligent use of Information and Communication Technologies (ICT), etc.

This event was related to the Invitation for Commitments that closed on 15th June, 2014. More than 400 commitments were submitted while 371 were approved by the EC, involving around 2500 partners. The Marketplace has been designed as a new Communication and information hub of the EIP-SCC, designed for those who are active in the challenging area of Smart Cities and willing to know more about ongoing and foreseen activities throughout Europe.



## News from our networks

As a demonstration project, R2CITIES is keen to engage with various communities relevant to its interests.



(continued from above)

During the event, the 6 Action Clusters (AC) set up so far were introduced. An AC is an assembly of partners committing to work on specific issues related to Smart Cities, by sharing the knowledge and expertise with their peers, giving added-value to their national and local experience and identifying gaps that need to be fulfilled at European level.

The 6 Action Clusters which have been set up so far are:


- Business models
- Citizen Focus
- Integrated infrastructure & processes
- Policy & Regulations / Integrated planning
- Sustainable Districts and Built Environment
- Sustainable Urban Transport

The meeting was attended as well by Mónica Antón (CARTIF Coordinator of International Projects) representing the Smart City Valladolid & Palencia Association. This initiative for public-private collaboration is aimed for both cities to become scenarios for innovative projects. Smart City V&P leads a commitment based on its strategic planning process and operational agenda execution. This commitment has been allocated in the action cluster of Policy & Regulation and Integrated Planning, together with around 40 other else.

The challenge for the near future, for the commitments in all action clusters, is to start collaborating, sharing practices, getting common knowledge, and definitely to create a real market place for smart city solutions and trends.

Source: [www.cartif.es](http://www.cartif.es)

## Recommended events

Events	Description
 <p data-bbox="428 449 751 709">Meet CARTIF and youris.com at the South-East European Exhibition on Energy Efficiency and Renewable Energy <b>11 – 13 March, Sofia, Bulgaria</b></p>	<p data-bbox="805 438 1515 541">Targeting professionals, the second edition of the international exhibition about energy efficiency and the white-green economy.</p> <p data-bbox="805 583 1515 898">This 3-day event is held annually and in conjunction with parallel events on energy efficiency &amp; renewables; waste management &amp; recycling and emergency management. The 2015 edition will promote the latest energy developments and encourage their large-scale implementation in South-East Europe as well as speed up foreign investment in the regional economy. It is a great networking place for the international and local industry players.</p> <p data-bbox="805 940 1515 1182">Given the exhibition's potential for dissemination with its 5000 + business visitors along with its conference, this year R2CITIES partners Fundación CARTIF and youris.com will be operating a stand to present four of the projects in which they are involved including R2CITIES. So if you are attending this event, do come to the stand and meet some of the R2CITIES experts face to face.</p> <p data-bbox="805 1224 1515 1392">R2CITIES coordinator Rubén García Pajares to present a paper entitled "How to finance Smart-City projects: nine real case studies across EU", by R. García-Pajares, M. A. García-Fuentes, A. Vasallo, S. Sanz, at the EE &amp; RE Conference.</p> <p data-bbox="805 1402 1515 1648">The conference which coincides with the exhibition will include the above paper but also another one titled "A comprehensive methodology based on IPD, MCDA, and District Sustainability Indicators to evaluate residential districts renovation towards nearly Zero Energy Districts (nZED)", by M. A. García-Fuentes, R. García-Pajares, A. Vasallo, W.C. Pujols, R. Morbiducci, H. Sozer.</p>

[For further information](#)

Events	Description
 <p>Meet R2CITIES partner EKODENGE at the 3rd International GreenAge Symposium <b>15-17 April in Istanbul, Turkey</b></p>	<p>This third edition of GreeAge Symposium will focus on sustainable integrated design – creative and innovative approaches. Subjects covered at this international symposium include lifecycle cost and assessment, material use and sustainability and urban resilience. Our partner EKODENGE – specialists in sustainable building design and environmental management – will be attending</p> <p><a href="#">For further information</a></p>
 <p>Energy Cities Annual Conference 2015 <b>22-24 April Aberdeen, UK</b></p>	<p>This annual conference is organised by Energy Cities, the European Association of local authorities in energy transition. Since its creation in 1990, Energy Cities represents over 1000 towns and cities in 30 countries. At the conference with Energy Cities' 25th anniversary, European local authorities will share examples of successful energy transition projects, the new business models they based on and their positive impact on the local economy.</p> <p><a href="#">For further information</a></p>
 <p>International Building Physics Conference 2015 <b>14 - 17 June, Turin, Italy</b></p>	<p>The International Building Physics Conference (IBPC) takes place every 3 years and is organized by the International Association of Building Physics (IABP). IBPC 2015 will focus on « building physics for a sustainable built environment ». Particular topics include energy efficient design and retrofit of buildings, indoor environment control, optimization and modeling techniques as well as a broad range of building integrated renewable energy sources and nearly zero energy buildings. In addition to presentations of technical papers, IBPC 2015 will also include expert keynote talks, workshops, special sessions for IEA and EU research projects and doctoral student seminars.</p> <p><a href="#">For further information</a></p>
 <p>Smart European Union Sustainable Energy Week EUSEW2015 <b>15 – 19 June 2015</b></p>	<p>During EUSEW2015 several demo sites will be opening their doors to become for a day Open Houses. Guided visits, exhibitions and demonstrations are currently under discussion to reach out to wide but local stakeholders as well as the general public. Keep an eye on the R2CITIES website to find out where and when!</p> <p><a href="#">For further information</a></p>

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More information on this Newsletter and related dissemination and communication activities of the project available at:

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