

REGIONAL STRATEGIES FOR THE DEVELOPMENT OF SUSTAINABLE BUILDING



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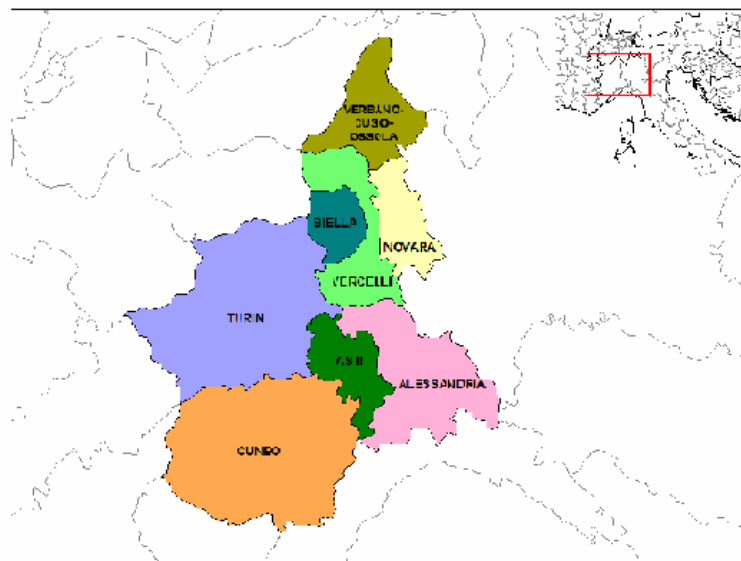
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Summary

The Italian Regions have developed a sustainability assessment tool called “Itaca Protocol”. Piedmont Region is experimenting the assessment tool and developing policies and projects for urban renewal and building sustainability.

Keywords: Sustainable Building Certification System, Itaca Protocol, Green Buiding Challenge, iiSBE Italy, Piedmont Region, Social Housing Program, Skyscrapers, Sustainable District, Municipalities, Sustainable School Building, Sustainable Health Building

1 Introduction



Piedmont is an Italian region, part of north-western Italy, bordering France and Switzerland. It is economically prominent amongst the twenty Italian regions. Piedmont and its capital city, Turin, are focusing on urban renewal as the main way to develop sustainable building practices. With the industrial areas' displacement, the regional government and the local administrations have found a way to redeem the mistakes in architecture and urban planning made from the 60s through the 70s.

Parts of the former factories are destined to new functions (i.e. museums); other industrial buildings are replaced by new areas, which will reweave the urban fabric and remove its rifts.

In such context, Piedmont promotes sustainable building through its policies and incentives. The Region works towards sustainable building through strategies such as urban renewal and industrial reorganization; the projects include new buildings which will be models for future realizations.

For these projects Piedmont allotted 4 billion euros, to be used over the next 6 years.

2 Urban renewal and the territory

Urban renewal involved 17 important Piedmont municipalities. The urban planning choices have been made towards redeveloping industrial areas transformation; these projects notably include a strong support to sustainable building, through increased investments in sustainable building.

The regional funding contest requires the application of the ITACA Protocol (based on GBC) to assess buildings. This requirement encourages qualified design, emphasizing the use of new materials, and a focus on water reuse and renewable energy.

These programs, called "district contracts", require investments for ca 700 million euros; 54% of these investments (375 millions euros) are made by private funds. The second version of the district contracts' program required the application of the abridged version of ITACA Protocol. This version evaluates twelve criteria, and is the most commonly used adaptation of the system approved by the regions. On a stronger take on the subject of sustainable building, Piedmont launched the "Regional housing program: 10.000 apartments within 2012". This program requires the application of ITACA Protocol.

The regional housing program covers:

- 6063 apartments to rent, destined to social housing;
- 1973 apartments partly in permanent location, partly redeemable in 15 years;
- 300 flats for people over 65 years old;
- A warranty fund up to 60.000 euros for apartment, granted to the buyers of apartments realized by builders which took part in the program.

The assessments are carried out by iiSBE Italy. The certifications issued grant a reimbursement for additional building costs, covering 4%-8% of the total cost; the overall allocation sums up to 56 million euros.

The first results of the housing program are now available; the program has generated investments for over 1 billion euros, involving about eighty Piedmontese municipalities, working with builders, housing cooperatives, and ATCs (Agenzie Territoriali per la Casa - Territorial Housing Agencies, formerly Social Housing Independent Institutes) (**Fig. 1, 3**).

Another group of projects, launched in some of the main towns of Piedmont, will allow the realization of new districts; these areas will mainly house the families of army staff and police officers. Each of these projects will include housing for ca 1000 people, and the realization of new commercial areas and services. Currently 6 of these projects are planned. Before the building phase starts, the projects must be assessed by iiSBE Italy through ITACA Protocol; every project must achieve a score of at least 2 points on the Protocol scale. The total investment for these projects is ca 500 million euros (**Fig. 2**).

The effort towards sustainability goes beyond housing projects; the Region launched a new plan for 2007-2009, concerning schools. The school building involved in the plan will be refurbished, focusing on high structural and service standards. The assessment will be carried through an experimental version of ITACA Protocol, which will evaluate the fulfilment of eco-efficiency standards. The main areas of assessment include energy performance and indoor air quality. Piedmont allotted 25 million euros on this plan for schools' renewal.

In the town of Novara (near Milan, with ca 90.000 inhabitants) the Region has placed its "Health City", a new hospital, research and university complex. This project received a fund of ca 360 million euros; every building in the project must fulfil the requirements of ITACA Protocol, which will be adjusted by iiSBE Italy to suit these peculiar building typologies.

An interesting application of the ITACA Protocol will be carried out in Valdieri, a small thermal centre near Genoa. The thermal complex will be designed to achieve a score of 2 on the Protocol scale.

3 The skyscrapers

As of today, the Piedmont Region has 15 departments, each with its head offices, all in Turin. In order to concentrate all the activities in one headquarter, the Regional Executive Committee has planned the realization of two towers designed by Massimiliano Fuksas; one of the towers will be 220 metres tall, and will be linked to the second through a lower building, destined to lodge an indoor garden (**Fig. 4a**).

The area will also include residential buildings, shopping centres and underground parking lots; the project will renew the former Fiat Avio area, close to Lingotto (previously hosting the Fiat group headquarters, known for its roof track for test drives). The area's ground level will be destined to public park, for pedestrians only.

The Regional Executive Committee resolved to apply ITACA Protocol to the whole area, requiring a minimum score of 2.5. Due to the complexity of the area, the protocol will be adjusted by iiSBE Italy and I.T.C.-C.N.R.¹ to ensure the fulfilment of the sustainability requirements by all buildings. The regional investment for the towers alone adds up to 200 million euros.

On the other side, the Intesa-San Paolo banking group has chosen the Porta Susa district for its headquarters. Porta Susa is planned to become Turin's main train station, and will be displaced underground. The new Intesa-San Paolo headquarters will be hosted in a skyscraper, 219 m tall, designed by Renzo Piano (**Fig. 4b**). The project's highlights are the use of geothermal power, coupled with an highly insulated envelope, and the use of the

¹ Istituto Tecnico Delle Costruzioni – Centro Nazionale Ricerche (Building Technical Institute – National Research Centre)

stack effect during summer. Every floor of the building will host an indoor garden facing south. This building as well will be assessed through ITACA Protocol, to evaluate the performance of the systems and techniques used.

On a side note, the Group Intesa – San Paolo has recently created a new financial product, called Aedifica-Bioedilizia, to encourage sustainable building. Both the builder and the buyer will receive funding, upon verification of the building's eco-efficiency level. A third skyscraper will be built close to the Intesa – San Paolo one, by the insurance society Sai – Fondiaria. The tower, 140 m tall, will collect most of the society's offices in a place conveniently close to the Porta Susa station, in the renewed area called "Spina 2". This building too will follow energetic and environmental criteria.

4 The sustainable district and the wood manufacturing process

The paradigm shift towards sustainable building happens in part through the aforementioned programs (including social housing, incentives, notable buildings such as skyscrapers); but these projects need a strong technological backup, which must be developed on the territory.

Piedmont will use 800 million euro from the F.E.S.R. (European Fund for Regional Development) to encourage the design of sustainable materials and technologies, and to help the former industrial processes to take part in the production of such new materials. The aim is to develop and produce sustainable technology in Piedmont.

In the Monregalese area, in southern Piedmont, a similar project is under way. The effort is to create a productive network in the whole area, which will cover various steps of the wood manufacturing; the Monregalese area will host the production and the first stages of wood processing. The following steps up to the final product could be made in the province of Alessandria (southeastern Piedmont, ca 70.000 inhabitants) which is renowned for its wood processing industry.

5 The agreement protocols

The Region, wishing for a correct application of ITACA Protocol and its sustainability principles, promotes work agreements with the municipalities; one of this agreement protocols has been concluded with the Alessandria province and municipality. The Region's target is to allow the drafting of local energy and environment management plans and building regulations.

The protocol includes tutoring by iiSBE Italy to assist the municipalities in drafting new projects for sustainable building.

Piedmont has also arranged an agreement with iiSBE Italy (control body of ITACA Protocol) to provide training and technical counselling to builders enrolled in the "Regional housing program: 10.000 apartments within 2012".

6 Sustainable building examples in Piedmont

- Vercelli: renewing Sambonet industrial area (**Fig. 1**);
- Torino: new district for security corpses' families (**Fig. 2**);
- Alessandria: new photovoltaic village (**Fig. 3**);

- Torino: Regional headquarters' skyscraper (**Fig. 4a**);
- Torino: Intesa- San Paolo banking group skyscraper (**Fig. 4b**).

7 Conclusions

Every Country has its own problems, but undeniable common need are: developing strategies to manufacture new ecological materials, building reference projects to boost future sustainable realizations, and strongly supporting sustainable building wherever possible, through public financial support.

Piedmont and Itaca, through iiSBE Italia's activities, strive to set a pattern for sustainability policies.

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