

# Faenza: Extra cubature for developers in return for green space

<b>Climate change impacts addressed</b>	High temperatures
<b>Spatial scale</b>	Town or city
<b>Response type</b>	Regulations Incentive scheme
<b>Core drivers</b>	Response to current climate Mitigation of climate change Quality of life and attractiveness of place Development need despite climate impacts
<b>Factors of success</b>	Cohesive delivery of multiple benefits Public engagement

## Summary

The Municipality of Faenza has implemented a bio-neighbourhood incentive programme for developers. This is included in their Town Planning Regulations. The incentive programme aims to achieve energy savings, promote aesthetic qualities of neighbourhoods, and also create better microclimate conditions to prepare for future rising temperatures associated with climate change. The incentive programme allows developers to extend the cubature of buildings in bio-neighbourhoods in excess of approved standards, if the buildings meet certain criteria of environmental sustainability. These include green roofs, green walls and water retention systems, and also the creation of continuous public green spaces by developers. The unique characteristic of the regulations is that there are no set standards, with the development conditions negotiated on case-by-case basis. The negotiations between town authorities and developers or housing associations significantly shorten the wait for building permits to be obtained therefore providing an incentive to engage in the scheme, and in addition engage a wider range of stakeholders into the town planning process.

## Case study location

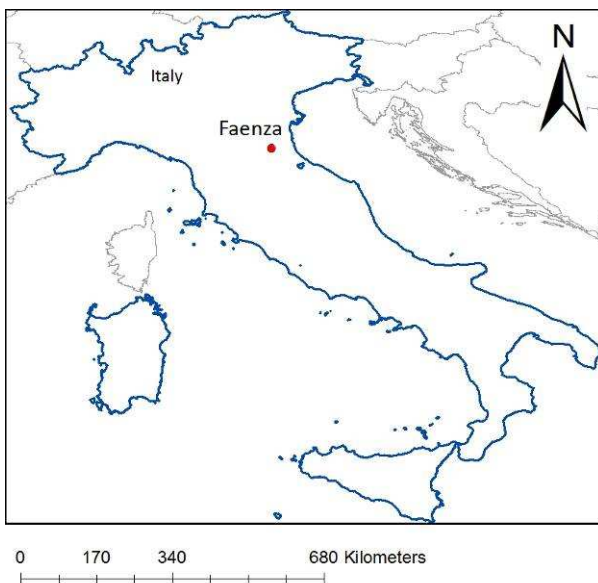


Figure 1. Location of Faenza

Faenza is an Italian city in the province of Ravenna, Emilia Romagna, situated 50 km southeast of Bologna. Faenza has nearly 58,000 residents and population density is 267 people/km<sup>2</sup>. The town is located at the foot of Subapennine hills and is surrounded by vineyards and orchards. In the nearby green valleys of the rivers Samoggia and Lamone there are great number of 18th and 19th century stately homes, set in extensive grounds or preceded by long cypress-lined driveways. Faenza is noted for its manufacture of majolica ware glazed earthenware pottery, known from the name of the town as "faience".

The location is characterized by temperate climate with hot and humid summers with little rainfall. Winters are rather cold. The future climate projections estimate the increase of maximum summer temperatures by between 3.9°C (B2 climate change scenario, or medium CO<sub>2</sub> emissions) and 5.5°C (A2 scenario, or medium-high emissions).

## Development of the initiative

### *Key aims*

The main aim of the bio-neighbourhood incentive programme include within the Town Planning Regulations in Faenza is to incentivise developers (including housing associations set up by residents) to construct buildings. The programme encourages these buildings to be sustainable, utilizing appropriate materials and implementing energy-saving and water-saving measures for example. The aim is also to situate the buildings in a way that allows a continuous area of green space to be maintained. Therefore, the objectives of the initiative range from issues including climate change adaptation, energy saving and improving urban quality.

### *Themes driving the initiatives*

Key issues taken into account in the preparation of the 1999 Town Planning Regulations, which include the bio-neighbourhood incentive programme, are protection of the historic and natural features of the area, protection of archeological sites, protection and creation of open space, promoting consistency of building types, and enhancing the well-being of the citizens.

Inclusion of the rules on bio-neighbourhoods in the Town Planning Regulations was specifically driven by the need to create beautiful, livable, and low-energy neighborhoods to improve the quality of life of people living in Faenza.

The prior mechanisms that have set a framework for the bio-neighbourhoods programme include:

- **Engagement of Faenza residents in environmental issues** linked to economic development.
  - "Faenza 2010 - The City We Want", an awareness raising campaign that started in 1998;
  - Awarding "Blue stickers" for cars and heating systems, which highlights the adherence to fuel- and energy-use standards;
  - "City Center by bike" transport initiative.
- **Local Agenda 21:** In 1999, the Municipality of Faenza joined the national project "Agenda 21" for urban areas: a pilot initiative involving some small-medium sized cities in Italy. This helped to promote development rules and practices based on the direct involvement of developers and citizens in the urban design process.
- **Focus on green spaces:** During the preparation of the 1999 Town Planning Regulations, Faenza approved a new "Municipal Rule of Green", which emphasizes the role of green spaces in the improvement of urban quality.

### *Details of the initiative*

The Town Planning Regulations 1999 (*Piano Regolatore Generale*) introduced an incentive scheme for developers to incorporate sustainable practices in building design. This approach was confirmed and extended by the Municipal Structural Plan in 2009. The incentive scheme utilizes the principle of "transfer of development rights" (*perequazione urbanistica*). At the design stage, the developer is allowed to extend the cubature of buildings (both the number of floors and the size of the buildings), or include more use types (residential, commercial, or industrial etc), if the development is characterized by certain criteria relating to environmental sustainability and aesthetic quality.

To qualify for the incentive scheme, new developments need to meet the following four main criteria:

1. Full utilization of space inside dwellings.
2. Soundproofing of buildings and indoor areas.
3. Maximising ground permeability and water retention is encouraged utilizing measures such as water metering, use of technical devices reducing the waste of water and re-use of grey water. Systems of rainwater collection, filtering and storage are also promoted.
4. Creation of green areas and appropriate landscaping of the external environment. This includes promoting high quality design of courtyards and communal areas.

In addition, in order for the developer to benefit from increasing the building's size and variety of permitted uses, the green building criteria must be followed. These criteria are listed in the "Rules for the implementation of incentives to green building measures", which were developed by professional engineers of the Building Commission of the Faenza Municipality (Box 1). It is also significant that if the development incorporates existing buildings, these must also be up-graded and reorganized to secure the sustainability of the entire project.

**Box 1. The green building criteria**

- Spatial orientation: the buildings should have large windows facing south-east and west
- Promote use of natural and environmentally friendly materials
- Avoid sources of pollution (including electromagnetic and acoustic pollution)
- Promote natural ventilation
- Use electrical systems which limit alteration of natural electromagnetic field
- Use low-energy, low-emission and efficient heating systems
- Use rainwater-recovery systems and use rainwater for watering plants
- Green spaces should be arranged in a way that provides shading and cooling, as well as screening of wind and noise. Appropriate tree species should be selected.
- Take into account local context, e.g. the environment, architecture and building types

Furthermore, developers may create buildings of a larger volume if they minimize land consumption by concentrating the development in one part of the plot of land. This then leaves the remaining land as open, public space, therefore improving urban quality and providing cooling and shade. The required expansion of green space depends on the context of the development (Figure 2). In urban areas less green space is required for a development to qualify for the incentives, whilst in peri-urban areas the greater availability of land means that the developer is required to commit a proportionally larger part of the total plot to green space (Figure 3).



**Figure 2. Examples of green/permeable space landscaping and buildings in the bio-neighbourhoods**



**Figure 3. Examples of bio-neighbourhoods in Faenza. Developers received permission to extend the size of a group of buildings. In exchange, the buildings had to be clustered in the north of the site in order to minimize the use of land, and to create a large, continuous green space that can provide shading and cooling.**

## Implementing the initiative

In order to receive the incentive, i.e. the permission to construct larger buildings, the developer needs to provide the Municipality of Faenza with documentation describing the design of the project. This includes:

1. Analysis of the immediate building development context and the surrounding environment
2. Building plans and description of the infrastructure and building materials.

The developer needs to present at least three different proposals of development of the site (such as one presented in Figure 4).

This documentation is checked for compliance with the green building criteria list. Therefore, the “transfer of development rights” is carried out on a case-by-case basis, and involves considerable flexibility according to the particular circumstances of the development. There are no set standards (such as traditional building standards), and the decision is made based on the performance of each particular building and the plot within which it sits.

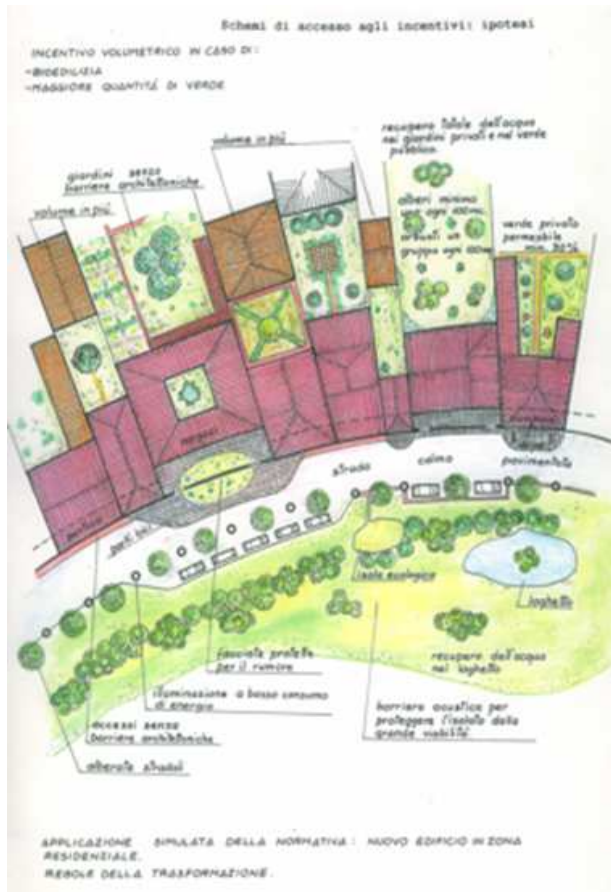


Figure 4. Example of a development proposal

## Monitoring and evaluation

Municipal Administration of Faenza has the power to assess, upon completion of the development project, whether the developer has actually followed the approved design of the plan, based on criteria included in "Rules for the implementation of incentives to green building measures" (see Box 1).

## Stakeholder engagement

The municipal administration of Faenza was the leading actor in the development of the initiative. The full support and political buy-in of the Municipality in implementing the bio-neighbourhood incentive scheme in the TOWN PLANNING REGULATIONS was an important factor in promoting the sustainability of development activities as a priority issue. Other main stakeholders are the developers, or groups of individual citizens, who want to construct a bio-neighbourhood. The nature of the regulations enables stakeholders to be involved in negotiations on the design of buildings and bio-neighbourhoods, and consequently become engaged in the town planning process. The role of

citizens is fundamental to the town planning process in Faenza, and their engagement is essential to secure new continuous green spaces and the improvement of overall environmental and aesthetic quality in the municipality

## Sources of funding

The project was funded by Municipal and Regional Funds.

## Can it have an impact?

Due to its inclusion in Town Planning Regulations, the bio-neighbourhood initiative covers the whole territory of the Municipality of Faenza. As of 2010, two bio-neighbourhoods have been developed including a total of 500 apartments in 250 private property units. However, now that they are established, measures such as the green building criteria, requirements for permeable surfaces and rainwater recovery, and requirement for reduction of noise pollution, may be applied to all developments within the municipality.

The most important aspect of this initiative is its inclusion in the Town Planning Regulations. The Faenza bio-neighbourhoods approach represents a true environmental planning initiative, where the regulations go beyond a focus on traditional economic goals and are instead based on urban sustainability achieved through flexible rules and cooperation with citizens.

The emergent green areas together form a "green system", which links the town with the countryside, providing space for recreation and biodiversity functions (see also the case study of

Mirandola, Appendix 1). Due to the improvement in town quality, the population of Faenza has grown by 6%.

The lack of set standards encourages developers to search for and implement innovative solutions to the design of the buildings and the surrounding area. Furthermore, the negotiations between the developers and the municipality based around flexible rules are less time consuming than the process of checking adherence to rigid building standards. Reduced time of obtaining building permits (thanks to the participative character of town planning process) encourages developers to invest in Faenza. Similar incentive systems are now being used in other municipalities in the region (see short case study of Mirandola).

The Town Planning Regulations in Faenza have received a wide recognition and a number of awards, both nationally and internationally:

- First prize in National ENEA (National Agency for New Technologies, Energy and Environment) 1999 scheme for the innovative approach of their Town Planning Regulations.
- Faenza was among six urban plans that the UK Royal Town Planning Institute chose to present at the Johannesburg World Summit on Sustainable Development (2002) as exemplary examples.
- The Municipality of Faenza (RA) received a European Prize for Urban and Regional Planning (Challenges 2009) for environmental protection, the consideration and promotion of energy and environmental sustainability, the application of bio-climatic techniques, the adoption of flexible procedures, and the innovative incentive system.

## Key messages

- The use of flexible rules in Town Planning Regulations to promote sustainable development can be as efficient as rigid standards;
- The participative character of the process means that the details of the development are negotiated, what can save time and resources for both the developer and the municipality;
- The use of an innovative approach in Town Planning Regulations means that the municipality of Faenza is now recognized in Italy and in Europe for high quality planning and the example is followed by other municipalities in the region;
- Agreements with individual developers can lead to the creation of continuous green spaces in areas where land is privately owned;
- While the Town Planning Regulations were driven by energy efficiency, aesthetic qualities and quality of life, they are likely to bring climate change adaptation benefits in terms of reducing the impact of high temperatures and lessening flood risk.

## Resources

<http://www.edilia2000.it/633d3526613d3226703d333837312c6e6577732631313d3126353d34/più-sostenibilità-prg-faenza.html>

[http://www.urbanisti.it/old/consiglio-europeo-n/Articolo\\_Premio\\_IT.htm](http://www.urbanisti.it/old/consiglio-europeo-n/Articolo_Premio_IT.htm)

[http://g5.ambra.unibo.it/portale/documents/Comunicazione/home\\_comunicazione.php?id\\_page=204](http://g5.ambra.unibo.it/portale/documents/Comunicazione/home_comunicazione.php?id_page=204)

[http://g5.ambra.unibo.it/portale/documents/Comunicazione/home\\_comunicazione.php?id\\_page=504](http://g5.ambra.unibo.it/portale/documents/Comunicazione/home_comunicazione.php?id_page=504)

<http://www.planum.net/4bie/main/m-4bie-faenza.htm>

[http://www.comunefinale.net/download/regolamento\\_verde.pdf](http://www.comunefinale.net/download/regolamento_verde.pdf)

## Acknowledgements

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