

Q3 2021

OPPORTUNITIES IN BUILDING RENOVATION FROM CONDOMINIUMS TO CITIES





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IMPACT OF TAX INCENTIVES ECOBONUS AND SUPERBONUS

ECONOMIC SCENARIO

Building renovation works 375 condominiums with contracted works for 2019-2021: 14,109 units of which 51 with the 65% Ecobonus and 324 with the 110% Superbonus

























REDUCTION IN GAS CONSUMPTION



Average reduction in gas m3 per annum



81% Average current seasonal efficiency







45% Reduction in average annual expenditure for gas

SUMMARY OF THE DECRETO RILANCIO (RELAUNCH DECREE) OF 19 MAY 2020 - 110% SUPERBONUS

"Legislative update of the Relaunch Decree to Decree Law 77 of 2021"

PRIMARY INTERVENTIONS

1) Ecobonus

- a) Thermal insulating building covering for a surface area of > 25% of the opaque dispersing surface area (Thermal cladding)
- b) Replacement of heat generator with:
 - Class A condensing boilers
 - Class A heat pump

Implementation of <u>at least one</u> of the above interventions will offer the possibility to add other works permitting **110%** deduction, including:

- 1. Windows and doors: purchase and installation of windows, including frames. Maximum expenditure €60,000.00
- Photovoltaic systems with or without accumulation.
 Maximum expenditure €48,000.00
- Infrastructure for charging electric vehicles in buildings.
 Maximum expenditure €3,000.00
- Solar shades.
 Maximum expenditure €60,000.00
- Solar energy. Maximum expenditure €60,000.00
 Duilding Automotion
- 6. Building Automation. No maximum expenditure limit

The maximum expenditure amounts are subdivided as follows:

Condominium cladding intervention						
Single-family buildings or units situated in multi-family buildings, provided they are functionally independent and have one or more autonomous access points from the outside	€ 50,000.00					
Buildings consisting of 2 to 8 units (multiplied by units)	€ 40,000.00					
Buildings consisting of more than 8 units (multiplied by units)	€ 30,000.00					
Condominium system intervention						
Buildings consisting of 2 to 8 units (multiplied by units)	€ 20,000.00					
Buildings consisting of more than 8 units (multiplied by units)	€ 15,000.00					
Replacement of existing winter air conditioning systems in single-family buildings or units situated in multi-family buildings	€ 30,000.00					
Condominium/units supplementary interventions						
For which the deduction is always 110%	VARIOUS MAXIMUM EXPENDITURES					

2) Sismabonus

• For interventions designated for specific anti-seismic works on buildings, such as seismic adaptation and/or improvement with the objective of dropping by at least one class of seismic risk in seismic zones 1,2,3.

The maximum expenditure amounts are:

Condominium or individual unit

€96,000.00 per unit



WHO IS ENTITLED

- Condominiums.
- **Condominiums** with mixed use provided that over 50% of the area is for residential use

.....

- **Natural persons**, outside of the exercise of business, trade or profession involving real estate units, for interventions on single-family buildings or units in multiple-family buildings, functionally independent and with one or more access points from the outside. The expenses sustained are for works carried out on a maximum of two units. This limitation does not apply for expenses incurred for works carried out on common areas of the building, as well as for anti-seismic interventions.
- IACP (Istituto autonomi case popolari Autonomous Institutes of Public Housing), as well as entities having the same purpose as the aforementioned institutes (which do not conduct retail activities) established as companies that meet the requirements of European legislation in regard to "in-house providing".
- Joint ownership housing cooperatives for works on properties owned by them.
- **Non-profit organisations** of social utility, volunteer organisations and social promotion associations.
- Amateur sports associations and clubs limited to works on buildings or parts of buildings used as changing rooms only.
- "Renewable energy communities" limited to renewable energy plants operated by such entities.
- Non-profit organisations of social utility (hospitals, nursing homes, convents, etc.), pursuant to Art. 33 of DL 77/2021.

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PREREQUISITES

- Realisation of at least one of above primary interventions pursuant to paragraph 1, 1b and 1c.
- Secondary interventions must be carried out during the period between the beginning and end of the primary interventions.
- Retrofitting works, primary interventions and any secondary interventions must overall ensure, jointly with works for installation of photovoltaic plants with possible storage systems, improvement by at least two energy classes or, if not possible, achievement of the higher energy class, supported by an energy performance certificate (A.P.E. - Attestato di Prestazione Energetica) pursuant to Article 6 of Legislative Decree no. 192 of 19 August 2005) before and after the intervention, issued by a qualified technician with a sworn declaration.
- Sworn certification of technical requirements and cost-effectiveness.
- Compliance with minimum environmental criteria on insulation systems.
- Performance requirements for cladding-energy systems underlying the increase in energy class.
- Tax conformity certificate issued pursuant to Art. 35 or Art. 32 of Decree 241/97 to the taxpayer entitled to incur the expense.



REPORT SUMMARY

Gabetti's Research Department, together with Gabetti Lab, conducted an analysis of the impact of the tax incentives (Ecobonus, Sismabonus, Superbonus 110%) subject to credit transfer. The main objective was to quantify the relative economic savings, through the analysis of 375 condominiums that deliberated on energy retrofitting works. In particular, the advantage for condominiums entitled to the 110% Superbonus was compared with that of those entitled to the 65% Ecobonus. Secondly, the impact of works on energy savings and reduction in CO2 emissions was estimated, through an analysis of 171 of these condominiums.

INTRODUCTION

In this edition of the Report, the fourth since May 2020, the effects triggered by the tax measures of the Superbonus on household savings and environmental sustainability became even more evident thanks to the possibility of processing an even larger analysis sample compared to the previous editions of the report.

The Report is divided into two main sections. The **first part** highlights the **tangible effects** of the Ecobonus and Superbonus, through the elaboration of statistics based on a sample of condominiums located throughout Italy, which have carried out or are about to works to enhance energy efficiency. These data further confirmed the large-scale **benefits of energy retrofitting** of residential buildings in terms of lowering the cost of the investment, improving living comfort, reducing gas consumption, saving on energy bills, enhancing the security of condominiums, improving the appearance of the facades and reducing CO2 emissions.

The **second part** illustrates the results of a **case study** analysed as part of an in-company thesis, involving a condominium situated in the **NoLo neighbourhood of Milan**, redeveloped by Gabetti Lab*. The possible effects of energy retrofitting were analysed at the **building**, **block and neighbourhood level**. The objective of the study was to demonstrate that in addition to being a tax lever, the Superbonus is one of the most concrete **urban regeneration tools of neighbourhoods**, and that this instrument must become increasingly important among the policy and decision makers who in various ways take part in the management and transformation of our cities.

Not surprisingly, the PNRR (*Piano Nazionale di Ripresa e Resilienza - National Recovery and Resilience Plan*), through



which the Italian Government has implemented the Next Generation EU programme, also recognises the importance of energy retrofitting of buildings. In achieving the "Green Revolution and Ecological Transition" objective, energy retrofitting is identified as the fundamental pillar to relaunch the construction industry. This would stimulate the country's economic sector and accelerate the process of reducing emissions in order to meet European targets by 2030.

Lastly, the final part of the case study illustrates the effects of energy retrofitting on living comfort, presenting the results of a survey of condominium owners, which indicated high satisfaction for the interventions carried out and related benefits, as well as a propensity towards improvement, not only of the quality of living within the building, but of the quality of living within the neighbourhood as well.

While comfort is often expressed as an indicator of **temperature**, **light**, **noise and humidity**, all important characteristics but which neglect the cultural component, it is also impacted by **subjective and perceptive processing**. Indeed, we can define other "non-energy" benefits, such as improvement of the indoor quality of living space, increase in living comfort and greater security within the home. Another indirect benefit that contributes to well-being is the reduction of costs connected to energy consumption, both concretely and emotionally.

In the context of **sustainable policies**, the right to **more liveable homes** (which means greater living comfort and better aesthetic quality) is as important an objective as regenerated neighbourhoods, more sustainable transport patterns and improved social and environmental infrastructure of our cities.

GABETTI LAB NUMBERS

Gabetti Lab leading company in the promotion of sustainable living, as well as in the refurbishment of Italian properties through tax advantages for energy efficiency, is working on **500 condominium** redevelopment projects already approved between 2020 and 2021 under the Superbonus, for a total value of € **900 million in contracts acquired**. A further increase of approximately 200 projects is envisaged for the second half of 2021 and for 2022.

During the three-year period 2019-2020-2021, Gabetti Lab will reach a total of over €1 billion in contract acquisitions, numbers that make the company national leader in the redevelopment of condominiums with credit transfer, through the only integrated supply chain in Italy, a distinctive feature of Gabetti Lab.

* A. LIPPI: The effects of energy retrofit measures: a multi-scalar analysis, Turin Polytechnic, Master's Degree in Territorial, Urban and Landscape-Environmental Planning

ECOBONUS AND SUPERBONUS: TANGIBLE EFFECTS

Gabetti's Research Department, in conjunction with Gabetti Lab, conducted research on the economic and energy impact of the tax incentives (Ecobonus, Sismabonus, Superbonus 110%) subject to the credit transfer.

The sample comprised **375 condominiums** for a total of **14,109 units** that resolved to carry out energy efficiency measures using the tax breaks of the Ecobonus.

In particular, 44 condominiums have already completed the works, 62 have works underway, and the remainder have works deliberated and/or stipulated in a contract and planned for 2022.

With regard to the tax advantages, of the total of 375 condominiums, the majority (324) has used or will use the 110% Superbonus, while 51 will use the 65% Ecobonus.



LOCATION OF ANALYSIS SAMPLE

Based on the analysis of the sample of condominiums that benefited from the tax incentives, the report demonstrates, on the one hand, their economic convenience, and on the other, their impact in terms of reduction of energy demand, energy savings and decrease in CO2 emissions. This was done by estimating and comparing in numerical terms the amount of CO2 abatement, the reduction in energy demand, the energy savings and the cost of the investment for **171 condominiums**, for a total of **6,566 units**.

ECONOMIC IMPACT ANALYSIS

With regard to the economic scenario, the analysis considered the entire sample of 375 condominiums. From this sample, it was possible to calculate the economic savings generated through recourse to the Ecobonus (at both 65% and 110%), the turnover generated, the tax credit, the residual amount borne by the condominiums, the cost for interventions involving upgrading of the central heating system, and the costs for interventions on the cladding.

The total amount of works resolved is \in **586,679,899**, of which a residual portion of 3% regards building refurbishment works unrelated to energy efficiency.

In terms of energy retrofitting, nearly the entire total of € 541,044,011 regards works on thermal insulation of opaque vertical, horizontal and inclined surfaces (thermal cladding) affecting the covering of the buildings, while approximately 5% (equal to € 29,288,024) regards works to replace winter air conditioning systems (heat generators)



In terms of payment method, adding the works envisaged for all 375 condominiums, a transfer of the tax credit of \in 561,735,885 is envisaged (including the amount for building refurbishment), and a residual amount borne by the condominium of \in 24,944,014. In percentage terms, this means that a total of 96% of the cost of works is transferred, and a residual amount of 4% is borne by the condominiums.

TOTAL ECOBONUS/SUPERBONUS SAMPLE

Analysing the sample, of the 375 condominiums:

- **51 condominiums** (1,301 units) benefited from the 65% Ecobonus for total works generated of € 49,353,753. Of these, the transferred tax credit is equal to € 35,693,861 (72%) for a total borne by the condominium of € 13,659,892 (28%).
- **324 of them** (12,808 units) benefited from the 110% Superbonus for a total amount of works of €537,326,146, of which € 526,042,024 (98%) is the transferable amount, while € 11,284,122 (2%) is the residual amount borne by the condominiums.

Analysis of the cases where the **110% Superbonus** was used shows that 26% benefited from a tax credit of 100%, with a consequent residual amount to be paid of zero. This is followed by 51% of the sample, whose projects generated a **tax credit of between 96 and 99%**, and 16%, which benefited from a rate of between 91 and 95%.

Of the condominiums that carried out works with the **Ecobonus** (at 65%), plus the cases of Facades Bonus (90%) and Sismabonus (70-80%), some 45% benefit from a **deduction of between 61 and 69%**. These are followed by those entitled to a tax credit of between 70 and 80%, accounting for about 24% of cases.

The comparison clearly shows the **tax advantage of the Superbonus over the Ecobonus**. This is despite the complexity of the works, which may involve a portion of building renovation or in some cases exceed the maximum limits envisaged for application of the 110%.

		TOTAL		ECOBONUS 65%		SUPERBONUS 110%	
	NO. UNITS	14,109		1,301		12,808	
	NO. CONDOMINIUMS	375		52		324	
	CLIENT TAX CREDIT	527,823,898 €	98 %	33,601,553 €	77 %	494,222,345 €	99%
BUILDING ENCLOSURE	RESIDUAL BORNE BY CONDOMINIUM	12,976,243 €	2%	9,974,420 €	23%	3,001,824 €	1%
	TOTAL ENERGY RETROFIT AMOUNTS	541,044,011 €	100%	43,575,973 €	100%	497,468,038 €	100%
	CLIENT TAX CREDIT	27,452,704 €	94 %	2,011,407 €	57 %	25,441,297 €	99%
	RESIDUAL BORNE BY CONDOMINIUM	1,835,320 €	6%	1,530,416 €	43%	304,903 €	1%
	TOTAL ENERGY RETROFIT AMOUNTS	29,288,024 €	100%	3,541,823 €	100%	25,746,201 €	100%
	CLIENT TAX CREDIT	6,321,462 €	<mark>3</mark> 8%	80,902 €	4%	6,240,560 €	<mark>44</mark> %
WORKS NOT LINKED TO RETROFITTING	RESIDUAL BORNE BY CONDOMINIUM	10,103,379 €	62%	2,155,056 €	96%	7,948,324 €	56%
	TOTAL ENERGY RETROFIT AMOUNTS	16,368,864 €	100%	2,235,958 €	100%	14,132,906 €	100%
	TOTAL CLIENT TAX CREDIT	561,735,885 €	96%	35,693,861 €	72 %	526,042,024 €	98%
TOTAL	TOTAL RESIDUAL BORNE BY CONDOMINIUM	24,944,014 €	4%	13,659,892 €	28%	11,284,122 €	2%
	TOTAL AMOUNT OF WORKS	586,679,899 €	100%	49,353,753 €	100%	537,326,146 €	100%

QUANTIFICATION OF AVERAGE ENERGY SAVINGS PER RESIDENTIAL UNIT AND REDUCTION OF $\mathrm{CO_2}$

Of the 375 condominiums, 171 (total 6,566 units) were analysed to extract statistics relative to:

- average energy savings and average reduction of CO2 emissions per unit
- average percent reduction in thermal transmittance for the various components of the building enclosure (walls, roofs, floors, windows/doors)
- reduction in gas consumption

The reduction in average estimated energy demand for the condominiums analysed is 54%, with a total of 750,263 sqm of thermal insulation, while the average estimated percent **energy savings** is 46%. Also confirming these positive values is the **jump in average energy class**, estimated at around 3,3.

Another positive aspect identified by the analysis is the reduction in gas consumption. Starting from the estimate of total gas consumption of the condominiums prior to the works, **the estimated reduction in post-intervention cubic metres of gas consumption is 39%**.

The savings in terms of less gas used to heat the home and to produce hot water also leads to a reduction in annual gas **consumption costs** which, for the 171 buildings in the sample, is estimated at **45%**.

The **average seasonal efficiency** of the ratio of heat supplied by the boiler to energy consumed has also improved. Analysis of the data indicates that, from the 82% prior to works, retrofitting interventions increase the efficiency to up to 102%. Improvements that have a significant impact both in terms of savings on energy bills and condominium costs, as well as in terms of increasing the property's market value.

Lastly, a third figure that was obtained is the s**avings in CO₂ emissions**, which for the 171 condominiums analysed is estimated at around **52%**.

AVERAGE REDUCTION GAS CUBIC METRES PER ANNUM	AVERAGE SEASONAL EFFICIENCY AFTER RETROFITTING	REDUCTION IN AVERACE ANNUAL EXPENDITURE FOR GAS	REDUCTION IN AVERAGE DEMAND	% AVERACE ENERCY SAVINGS	% SAVINGS OF CO ₂ EMISSIONS	AVERACE CLASSINCREASE
39%	102%	45%	54%	46%	52%	3,3

Average energy savings following energy renovation interventions

PERCENT REDUCTION IN THERMAL TRANSMITTANCE

A further indicator provided by the research is the percentage of transmittance reduction, namely to what extent the building enclosure's capacity to insulate the indoor environment from the outside environment and contain heat loss has improved after retrofitting.

Analysis of the data on estimated transmittance before and after the works enabled calculation of the percent reduction of the various elements comprising the building enclosure (walls, roofs, floors, windows/doors). In particular, the resulting percent reduction in thermal transmittance is as follows:

- opaque vertical structures (floors): 81%
- opaque horizontal or inclined structures (roofs): 83%
- opaque horizontal or inclined structures (floors): 83%
- opaque horizontal or inclined structures (windows/doors): 74%

Reduction in percent thermal transmittance

OPAQUE VERTICAL STRUCTURES	OPAQUE HORIZONTAL OR INCLINED STRUCTURES (ROOFS)	OPAQUE HORIZONTAL OR INCLINED STRUCTURES (FLOORS)	OPENINGS AND SIMILAR CLOSURES
81%	83%	83%	74%

CASE HISTORY MILAN NOLO DISTRICT

The **tax incentives** allocated for **energy retrofitting** are the main financial opportunity available for interventions on buildings, with a view to reducing their consumption and cutting CO2 emissions. However, if implemented only through individual interventions, their potential would be limited to the building element alone. Instead, the improvement of energy performance could impact not only refurbishment of the building but, if backed by careful and integrated urban and energy planning, it could become a **valid driver** in **urban regeneration processes**.

Based on the above premise, the following case study of a **condominium in the NoLo area of Mi-Ian**, redeveloped by Gabetti Lab, addresses the issue of energy efficiency interventions through an approach that analyses energy retrofit works at the building, block and neighbourhood level. The analysis was carried out as part of an in-company thesis for the Master's Degree in Territorial, Urban and Landscape-Environmental Planning of the Turin Polytechnic, care of the Gabetti Research Department^{*}.

The goal is to highlight the potential behind tax incentives as a tool to enrich and innovate the **urban regeneration process**. The results obtained may act as a **support to public administrations and to designers in the sector**, guiding energy policies from the block level to the urban level.

Lastly, we present the results of a qualitative survey of condominium owners, aimed at examining the effects of energy retrofitting on living comfort.

*A. Lippi: The effects of energy retrofit measures: a multi-scalar analysis, Turin Polytechnic. Author: Marco Santangelo, Co-authors Marta Bottero, Federico Dell'Anna, 2020/2021

CASE HISTORY MILAN NOLO DISTRICT

BUILDING DESCRIPTION

Municipality: **MILAN** Region: **LOMBARDY** Year of intervention: **2019/2020** Climatic region: **E** Number of residential units: **56**

INTERVENTION DESCRIPTION

- Insulation of vertical walls
- Tax Bonus: 65% Ecobonus



ANALYSIS OF CONDOMINIUM WORKS

Starting from an independent intervention in a **condominium** situated in the NoLo district of Milan, we analysed the effects generated by the tax measure, assessing the impact in energy terms, economic terms and perceived benefits. Secondary, we analysed all of the elements whose outcomes have a spatial impact on the city.



To assess the improvement in the building's energy performance, an analysis of the energy savings and demand reduction indicators was conducted prior to the works. In particular, an increase of 2 energy classes resulted in an energy savings of 21% and a **reduction in demand of 35%. Furthermore, a reduction in Co, emissions of 33% was estimated**.

This made it possible to reconstruct the status prior to works and against which to carry out the comparative assessment and examine the post-works status in terms of effectiveness and efficiency.

The energy performance certificate (A.P.E) is the assessment tool used to demonstrate the benefits achieved by the condominium, in terms of energy savings and demand, as well as for a more efficient energy class.

We then estimated the post-works real estate value using the Market Comparison Approach, which allows one to calculate results that are close to the real market value. The analysis indicated a variable increase in market value of **3-5% for each increase in energy class**.

Analysis conducted with the support of Patrigest, valuation company of the Gabetti Group

ANALYSIS OF INTERVENTIONS AT BLOCK LEVEL

Following the analysis conducted at building level, **we moved on to block level**, the elementary unit of urban space in which increasingly detailed factors and interactions come into play.



The block level was handled through the method of **estimating energy demand**. This involved associating the corresponding consumption to each building on the block, estimated based on type and geometric variables, which are factors that affect the thermal demand for winter air conditioning (heating) and for the production of hot water: **construction period and shape factor**, which expresses the compactness of a building and is obtained as the ratio of dispersing surface area (external walls, roof, ground slabs) and air conditioned volume.

This permitted an examination of the most appropriate energy retrofitting interventions and determination of the energy and economic savings following an improvement in energy class.



Processing of Istat data, Enea data and direct measurements

Energy analysis results - Block

In the case examined, the block predominantly comprises buildings constructed prior to 1918, synonymous with a consolidated building fabric that completed its building transformation between 1946 and 1960¹.

The **building type**, determined through an analytical process based on shape, but also easily identified through an on-site survey, highlights the presence of numerous compact multi-storey buildings (more commonly known as condominiums), as well as small blocks of apartments buildings with two to three storeys above ground.

Having defined the key data impacting energy consumption in buildings, within the context of the block, we calculated for each shape-to-construction-period ratio a specific energy consumption value EPgl (energy performance index expressed in kWh/sqm/year), the values of which confirm the presence of a **majority of buildings in class C and F**.²

Based on the construction period, we then calculated the sum of current energy consumption at the block level which, compared to the estimated energy demand following the various energy retrofitting works, shows a clear percent reduction.

Particular mention goes to the high energy consumption of buildings constructed in the period 1946-1960, as they significantly impact the sqm considered: 1,559 compared to 737 for the period prior to 1919, and 98 for the period from 1919 to 1945.

¹ Processing of Istat 2011 data and in-field observation.

² The benchmark used for the calculation and the relative ratios were taken from: "A model to assess the energy consumption for the heating of residential buildings. The case study of Turin", G.Mutani, M. Pairona, Journal: Engineering Dept, Publ. Maggioli, Italy, Vol. 5, 2014, pages 21-36.

Percentages used with regard to reduction of consumption¹:

- Replacement of window/door frames 17% (<1919), 17% (1919-45), 15% (1946-60)
- Insulation of roof 24% (<1919), 26% (1919-45), 17% (1946-60)
- Insulation of lower floor slab 9% (<1919), 8% (1919-45), 4% (1946-60)
- Insulation of vertical walls **20%** (1946-60)
- Overall retrofitting 43% (<1919), 42% (1919-45), 30% (1946-60)

Among all of the possible works to increase energy efficiency, **overall retrofitting** appears to be the **most effective strategy** in reducing energy demand, followed by insulation of the roof.

Lastly, it was also possible to calculate the **economic savings** as the product of cost in \notin /sqm of natural gas for the estimated energy savings, with regard to replacement of the window/door frames and insulation of the roof and vertical walls³.

We also calculated the time for **return on investment** (TDR), which highlighted the need for a greater number of years for replacement of the window/door frames.

PROSPECTS FOR THE NEIGHBOURHOOD

The analyses conducted trigger a discussion on the possible multiplier effect of the energy retrofitting works on the neighbourhood, becoming a development driver for the city. Indeed, the energy retrofitting measures produce tangible effects with repercussions throughout the entire urban surroundings. Effects which, with respect to the social and economic context of said surroundings, are specific and cannot be replicated to the same extent in other contexts.

> Square Urban green area Railway station and line NoLo residential buildings

Cycling path Tram line Major and commercial thoroughfares Zone 30 (under PTG 2030)

Subway station Planned subway station Bus stop

1 Average energy consumption of residential buildings by period of construction and relative differences following various retrofitting works, G. Mutani, Energy consumption for winter heating of residential buildings. A model for Turin", 2014, pg. 21. 2 An average natural gas cost of 0.076 € per kWh was used for the calculation.

3 The average costs of Enea were used to calculate total costs: horizontal or inclined walls, $92.13 \notin m^2$, vertical walls, $104.72 \notin m^2$, window/door frames 889.51 $\notin m^2$. To calculate the return on investment (TDR), the total cost of the intervention (average cost * estimated area) wad divided by the annual economic savings, obtained following the potential retrofitting.

RESIDENTIAL COMFORT SURVEY

CONDOMINIUM MILAN - NOLO DISTRICT

The objective of the survey was to examine the propensity and satisfaction of users who took advantage of the tax deduction (Ecobonus) for the energy retrofitting of their condominium. To this end, the analysis sample consisted of the condominium situated in Milan's NoLo neighbourhood, which in 2019-2020 carried out, through consulting by Gabetti Lab, works on cladding of the building envelope. Parco Trotter Very Parco Durante

An anonymous questionnaire comprising 17 questions was sent to condominium owners, on both paper and online, to acquire information on the experience, as well as to ask a number of questions in order to determine which factors would lead to an improvement in quality of living.

A total of 46 questionnaires were collected, corresponding to 82% of the 56 residential units.



In terms of **target**, the predominant **age class is 31-40 years** (28.2%), followed by over 70 (21.7%). The condominium has a predominance of three-room and two-room apartments, and 78.3% of those interviewed own their unit.

How old are you?

4.3%	28.2 %	13%	19.5%	13%	21.7 %
< 30	31 - 40	41 - 50	51 - 60	61 - 70	>70

INCENTIVE FACTORS AND RESULTS OBTAINED

One objective of the survey was to investigate the reasons driving users to retrofitting works, representing a useful insight into understanding the key expectations in terms of benefits. Although each item was rated in a range of between 1 and 5, a transversal interpretation of the results can be made.

The tax incentive (68%), which provides an economic advantage for energy upgrade works, has in fact had a significant impact in terms of both construction sites launched and cash flows within the energy retrofitting industry.

Indeed, in the absence of incentives, financial barriers are among the main constraints that discourage private investments in energy renovation, and in fact also lead to significant uncertainty in the decision-making process of condominium owners. Lack of monetary savings and resources, as well as income disparity, can - in the absence of appropriate tax incentives such as the Ecobonus - result in uncertainty with respect to widespread measures to improve the efficiency of housing stock.

Furthermore, with regard to renovation of the facade, as in this case, and taking into account the **thermal insulation** aspects, this measure had the advantage of achieving two objectives with a single investment. On the one hand, **future utility bill savings** perceived by 58% of users, while 55% attached significant importance to the building's aesthetic-functional improvement. On the other, achievement of improved **living comfort**, which for 44% of condominium owners was the main reason to undertake the energy retrofitting works. The survey did not stop at just the reasons but also focused on an objective evaluation of the benefits obtained following the intervention. **The aesthetic improvement of the facade** (57%) is the most noticeable, presumably due to its material effect directly perceived by users, but also a sign of high satisfaction with the work carried out. Conversely, aspects demonstrating the multi-dimensional nature of comfort, such as air quality (44%), indoor temperature (38%), reduction of outside noise (36%) and brightness (26%) achieved the consensus indicated and with satisfaction varying between three and four points. This is surely due to the perceptive and subjective component impacting the assessment of living comfort, as well as the fact that it requires longer evaluation times.



WORKS CARRIED OUT

What persuaded you the most to participate in the energy retrofitting works in your condominium?

Tax incentives	7.8%	2.6%	15.7%	10.5%	68%	Indoor comfort	8.3%	11.1%	11.1%	2.5%	44 %
	1	2	3	4	5		1	2	3	4	5
improvement	10.5%	5.2%	10.5%	18.4%	55%	Future savings	13.8%	2.7%	13.8%	11.1%	58%
of the building	1	2	3	4	5	in utility bills	1	2	3	4	5

INFORMATION ON THE TAX INCENTIVES

An aspect not to be underestimated in redevelopment of the existing building stock, particularly for condominiums, is **that of correct information and dissemination** of tax opportunities that could benefit the end user.

Indeed, despite the wide range of incentives made available as a result of recent regulatory changes, **the role of the condominium administrator** is of fundamental support. With regard to the measures taken to respond to questions from the owners, 31% believe said administrator plays a very important role, whereas only 14% believe the administrator is not a prominent figure with regard to the use of tax incentives.

The relationship between owners and the condominium administrator is also highly important, mainly due to the administrator's role in ensuring correct and specific dissemination of technical knowledge, as well as providing security in order to avoid compromising proper implementation of the shared plan. Although almost complete satisfaction was reported, with 52% considering the information to be complete, 45% of the sample had to seek further information in order to better comprehend the methods and advantages of investing in energy retrofitting.



WAS THE INITIAL INFORMATION THAT YOU RECEIVED CLEAR?

Last but not least, information and dissemination methods also play an important role in the knowledge of the benefits generated by tax measures. Some 59% of interviewees confirm to have discovered the incentives through the condominium administrator, 29% through TV and 6% from newspapers, internet and/or advertising.



HOW DID YOU BECOME AWARE OF THE TAX ADVANTAGES OF THE ECOBONUS?

Although the ultimate goal is achieved through the construction of a participatory and shared process, technical support by experts in the field is even more important. In this case, Gabetti Lab, company of the Gabetti Group and leader in the retrofitting of condominiums and residential units, coordinated the network of players involved in the property upgrading process. In fact, in light of the experience, 88% provided a positive evaluation and unanimously recommend the Gabetti Lab product and Gabetti Condominio.

LIVING THE NEIGHBOURHOOD

Living does not end within the home but is a dynamic process in one's surroundings. Therefore, if energy retrofitting can be considered a multi-faceted driver, able to achieve individual domestic well-being and collective reduction of CO2 emissions, then acting on the spatial and relational component of living could lead to an improvement in the quality of life of citizens.

Energy efficiency measures could become not only a pretext for renovation of the building, but also an input to **revitalise the urban surroundings** in which they are situated. Moreover, real estate should play an active role in creating new relationships between space and society, improving quality of life and the way in which people experience the city.

Neighbourhoods can play a fundamental role as generators of quality space, providing a qualitative response to living requirements. This is confirmed by 56% of the respondents, who claim that tax incentives can have **benefits for society**, particularly in terms of improving the aesthetic quality of a city's neighbourhoods, while 44% declare that they can improve **well-being** within the homes.

Safety was ranked as the most important factor for improving well-being within their neighbourhood by 84% of condominium owners, while 58% attached importance to **public spaces, parks and gardens**.

WHICH OF THE FOLLOWING ASPECTS IS MOST IMPORTANT TO IMPROVE QUALITY OF LIFE IN YOUR NEIGHBOURHOOD?

84 %	57.8%	55.2%	55.2%	47.3%	47.3%	44.7%	23.6%	23.6%
Safety	Parks, gardens and public areas	Care of common areas	Aesthetic quality of buildings	Presence of public services	Presence of retail services	Efficient public transport	Cycling paths	Type of of neighbours

Not to be underestimated is the evident **change in the use of urban spaces**, particularly during the **Covid-19 pandemic**, where **green areas** have become islands of escape and places of nature that provide relief from segregation within the home. The lack of social interaction has highlighted the importance of public areas as a connecting element of relational space. It is therefore necessary to support this change, at the urban scale and also in one's own home, embracing this **new balance** that is being created between **work and private life** and, as 47% of respondents indicated, to embrace the idea of a city where services for citizens are close to home. The need for better care of common areas and improvement in the aesthetic quality of buildings is also expressed by 52%, while 45% of condominium owners indicate a need for efficient transport.

The results show a propensity for investment in the **aesthetic-functional improvement of sidewalks**, approved by 68% of respondents, while 60% indicated public gardens and a slightly lower figure indicated piazzas and pedestrian zones. Similarly, 34% assigned importance to roads and urban decor, and 13% to electric charging stations.

IN WHICH OF THE FOLLOWING URBAN ELEMENTS DO YOU THINK IT WOULD BE APPROPRIATE TO INVEST RESOURCES FOR THEIR AESTHETIC-FUNCTIONAL IMPROVEMENT?

68%	60.5%	57.8%	50%	34.2%	34.2%	28.9%	26.3%	13.1%
Sidewalks	Public gardens	Piazzas	Pedestri- an zones	Roads	Urban decor	Market	Cycling paths	Colonnine per ricarica elettrica

These data highlight the weaknesses of the neighbourhood in which the energy retrofitting project is located, future food for thought for specific measures by public administration.

NOTES

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 - Leaseholds
 - Prestigious Homes Market
 - Investment Overview
 - Office Market Overview

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