Sufficiency in the building sector – for the EU Whole Life Carbon Roadmap

Final report

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Executive summary

Recent research[1] has unveiled the significance of new construction emerging as a second emission hotspot, alongside operational emissions. Adopting sufficiency policies in the building sector could effectively address the climate, environmental and housing crises all at once. By prioritising the use of the existing building stock before constructing new buildings, sufficiency emphasises the potential of purposefully redistributing, leveraging and managing existing built spaces as a valuable resource, which has so far to a large extent remained untapped.

A growing body of literature demonstrates the potential systemic impact of sufficiency measures. Using the existing building stock effectively, such as by converting offices into residential homes, mobilising vacancies, addition of storeys and converting single family homes into two or more units, not only contribute to reducing material and energy demand, and hence emissions, but also to easing strain on land resources. Additionally, they help to achieve social goals such as alleviating housing shortages, prevent isolation and loneliness, and reducing infrastructure costs for municipalities. Sufficiency represents an integrated approach to sustainability, acknowledging and balancing the interplay of decarbonisation and equity.

The analysis of five case studies exploring different regions, sufficiency measures, and governance levels demonstrates that substantial amounts of floor space could be avoided through sufficiency measures. Estimates based on upscaling case studies to comparable regions and cities reveal a considerable potential for utilising vacant and underused building space, with estimates ranging from 19,220m^2 in Belgium to 20,197,763m^2 in France and 23,526,633m^2 in Germany.

Using vacant buildings, especially those vacant for extended periods, typically results in higher operational carbon emissions compared to new buildings constructed according to the latest energy efficiency standards. The performance gap is likely more pronounced in older vacant buildings with low energy efficiency. This underscores the importance of energy efficiency renovations, which nonetheless, as shown in the Irish case study, are expected to result in whole life carbon emissions that are 62% lower than those of a new building.

Several **opportunities** can be leveraged to promote the broader adoption of sufficiency actions:

- The diversity of approaches shows that incentivising the use of currently vacant building space can take many forms, which can be mutually reinforcing and combined.

[1] Ramboll, BPIE, KU Leuven (2023) Supporting the Development of a Roadmap for the Reduction of Whole Life Carbon of Buildings (here)

- Sufficiency considerations can be included in other instruments and policy objectives. Using existing but vacant or underused spaces is often driven by social, economic, and aesthetic objectives, which create co-benefits for reducing GHG emissions. Compared to constructing new buildings, adaptation projects are often less costly and quicker to complete. This offers policymakers the opportunity to combine policy goals and narratives, such as supporting affordable housing, preserving vibrant town centres, and responding quickly to housing shortages.
- Gaining a better understanding of the number of vacant buildings is possible with little extra investment and high potential benefits. So far, detailed understanding of vacancies has been limited by low data availability. However, examples from France and Poland illustrate that pooling and systematically using existing data sources is a promising approach to overcome this limitation.
- Sufficiency actions, particularly among private building owners, remain voluntary decisions in all examples found across Europe. These initiatives and policies rely on the leverage of information and awareness building. Such information campaigns can be relatively easily adapted to local priorities and existing platforms for instance in existing and planned information tools at the regional or municipal level, such as One-Stop-Shops.

Leveraging these opportunities also implies addressing remaining **challenges:**.

- Implementing sufficiency principles in the building sector requires capacity within public administrations, i.e. dedicated teams which can develop and manage the projects, whether they involve databases, advisory services, information dissemination, or financial support programs.
- Although economic factors may incentivise the more efficient use of un- or underused space, there are also counterincentives. Reviewing taxation regimes and tenancy regulations for unintended effects can make sufficiency thinking more attractive for property owners.
- While project costs are often lower than new construction, upfront costs pose another obstacle, especially for private building owners but also for public entities. These initial expenses can be a barrier and need to be considered and addressed.
- The application of sufficiency measures to individual buildings is very context dependent (owner type, size, location, etc.) and requires tailored approaches to be effective (generic tools combined with personalised advice).
- Finally, limitations regarding research, tools, and clear definitions are hindering larger-scale sufficiency efforts. Investing in research and demonstration projects will make it easier to implement effective sustainability policies.

Realising the potential of sufficiency initiatives in the building sector requires concerted efforts from all actors involved: policymakers, researchers, industry players and the wider public.

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1. Introduction: definition of sufficiency and overview of potential

1.1. Sufficiency in the building sector

This report aims to support the EU Roadmap for the Reduction of Whole Life Carbon Emissions, showcasing the benefits and potential of sufficiency measures in the built environment. These measures are designed to make the best use of the existing building stock as an alternative to building new. The main focus is on carbon reduction potential and public acceptance.

The technical study in support of the EU Roadmap for the Reduction of Whole Life Carbon Emissions[2] has unveiled the significance of new construction emerging as a second emission hotspot, alongside operational emissions. At the same time, many European cities grapple with a serious housing crisis, prompting them to set political targets for creating new housing units to address the pressing need for affordable living space. This creates a perceived trade-off between social objectives, which entail an increased need for new construction, and environmental concerns such as climate impacts. Consequently, there is a need to reconcile social and environmental goals through a strategy that optimises the use of existing built space**.**

Sufficiency has emerged as a policy strategy and goal that if implemented within the building sector, could effectively address the climate, environmental and housing crises all at once. **By prioritising the use of the existing building stock before constructing new buildings**, **sufficiency emphasizes the potential of purposefully leveraging and managing existing buildings as a valuable resource, which has so far to a large extent remained untapped**. Eurostat data from 2018 reveals that 38% of buildings in the EU are underoccupied, with rates exceeding 60% in four Member States and surpassing 50% in seven[3]. Recognising the significant potential for reducing the whole life carbon (WLC) emission of the building stock, along with important social, economic and wider environmental co-benefits, the concept of sufficiency was included in the building chapter of the 6th Assessment Report of Working Group III of the IPCC in 2022. Similarly, the Davos Baukultur has also integrated the sufficiency principle by prioritising resource-efficient designs and encouraging the use of minimal materials and space without compromising

[2] Ramboll, BPIE, KU Leuven (2023) Supporting the Development of a Roadmap for the Reduction of Whole Life Carbon of Buildings (here).

[3] Eurostat. Housing in Europe – 2023 interactive edition (here).

functionality[4]. Sufficiency now stands alongside efficiency and renewables as the three key principles of sustainable building practices.

The IPCC defines sufficiency policies as: "a set of measures and daily practices that avoid demand for energy, materials, land and water while delivering human well-being for all within planetary boundaries"[5]. This definition reflects the dual dimension of sufficiency[6]: as a minimum ensuring a decent living standard for all, and as a maximum to align consumption with planetary boundaries. **Thus, applying sufficiency principles to the building sector involves meeting occupants' real need for space, accessibility and affordability while considering ecological limits.** It makes sufficiency a strategic policy intervention for buildings, enabling the optimisation of existing living spaces to be flexible and equitable, tailored to needs of Member State, while aligning with overall EU climate and environmental targets. This is crucial as within the EU, housing needs and decarbonisation potential differ significantly among the national building stocks; buildings reflect the diverse European culture, history, and identity. The successful implementation of sufficiency principles in the building sector requires a nuanced and inclusive approach that acknowledges and respects these differences.

Sufficiency measures in the built environment can vary greatly. **This study focuses on three main areas**:

- **prioritising renovations over demolition and new construction;**
- **increasing average space use intensity; and**
- **designing buildings to be used more intensively throughout the day/week or future uses.**

These measures can contribute to a comprehensive decarbonisation effort by taking into account material and energy savings over the entire building life cycle while maintaining an attractive building stock. However, sufficiency measures in the building sector are also linked to other factors, such as the quality of the built environment, adaptability and flexibility of the living space, location, mobility options, and the length of commutes to work and utilities, necessary infrastructure, including for recreation. These factors can influence material and energy demand significantly. For example, with flexible floor plans, buildings can easily be modified to split a unit into two, following changing household sizes. Sufficiency principles can be applied at different levels: on a unit level, building level, or even neighbourhood level. This flexibility ensures that

[4] Swiss Federal Office of Culture (2021) Eight criteria for a high-quality Baukultur – the whole story. Available online here.

[5] IPCC (2022). Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Available online here, p.957.

[6] Spengler, L. (2016). Two types of 'enough': sufficiency as minimum and maximum. Available online here.

buildings can adapt to changing needs and circumstances while promoting sustainable and efficient use of space and resources.

1.2. Sufficiency potential

A growing body of literature demonstrates the potential systemic impact of sufficiency measures. These measures not only contribute to reducing material and energy demand, and hence emissions, but also to easing strain on land resources. Additionally, they help to achieve social goals such as alleviating housing shortages and reducing infrastructure costs for municipalities. Sufficiency represents an integrated approach to sustainability, acknowledging and balancing the interplay of decarbonisation and equity.

Using the existing building stock effectively, such as by converting offices into residential homes, mobilising vacancies, addition of storeys and converting single family homes into two or more units, can avoid new construction and the associated upfront emissions. This approach could theoretically save 9 million tonnes of CO_2 of embodied carbon per year in Germany[7], which amounts to a fifth of the required reduction set originally by the German Climate Protection Act for the industry sector[8]. Moreover, this approach could potentially save about 60% of materials compared to a scenario relying solely on new construction to meet housing demand, which stands at 400.000 units per year.

Unlocking currently under-occupied spaces within houses or flats, often referred to as 'invisible space', showcases a triple win: reducing GHG emission, improving quality of life and achieving financial savings[9]. Expanding and institutionalising existing initiatives like the "Living for Help" network[10] could potentially avoid the need for every 20th new construction in Germany. This could lead to potential

[7] BBSR (Ed.), (2023): Unterstützung von Suffizienzansätzen im Gebäudebereich *(EN: Support of sufficiency approaches in the building sector).* BBSR-Online-Publikation 09/2023, Bonn.

[8] The sector specific targets in the German Climate Protection Act have been altered in April 2024, shifting the focus towards an overarching national reduction goal. However, no sector will be able to "make-up" for the other sectors, so the sector-targets are still a valid orientation for the action needed (the industry sector was required to save 53 million tonnes of CO_2 by 2030 compared to 2020).

[9] Fuhrhop (2023): Der unsichtbare Wohnraum. Wohnsuffizienz als Antwort auf Wohnraummangel, Klimakrise und Einsamkeit (EN: *The invisible living space. Housing sufficiency as an answer to the housing shortage, climate crisis and loneliness*). transcript Verlag, Bielefeld.

[10] https://www.deutschland.de/en/topic/life/helping-instead-of-paying-rent

GHG emission savings of 1-2 million tonnes annually which accounts for the embodied carbon emissions associated with new build[11].

Furthermore, certain sufficiency measures can tackle loneliness, particularly among elderly people, encourage intergenerational exchange and provide affordable housing for students. Using 'invisible space' reduces living costs, and also eliminates the need to invest in infrastructure for developing new areas, thereby alleviating pressure on municipal budgets (e.g. new roads). The study on the potentials of using 'invisible space' highlights significant and tangible willingness among individuals to adjust their housing arrangements and embrace shared accommodations. Also, several German surveys have found that people, particularly those aged 55 and above, perceive their living space as 'too big'[12]. Many of the respondents would consider moving to a smaller place, provided certain conditions are met, such as relocating within the same neighbourhood or finding a place that is not more expensive than their current residence. Furthermore, respondents across studies indicated interest in shared housing concepts like multi-generational houses, shared flat with many indicating not wanting to live alone when older. This indicates significant potential for mobility which would reduce average living space per person.

In addition to climate mitigation contributions, sufficiency measures also directly support resource conservation. A study conducted by Zimmermann[13] modelled various sufficiency measures applied to the European building stock. **The sufficiency measures** – with reduction in living space being by far the most impactful one – **would not only lead to a significant 16% reduction of GHG emissions[14], but to a substantial 61% reduction in renewable resource demand[15] and a 9% decrease**

[11] The number of successful pairings (consisting of both individuals providing space and those seeking accommodation) is derived by assuming upscaling and formalisation of existing initiatives. This estimation is then converted into residential units (15,000) for which the associated avoidance costs are compared against the average embodied carbon per m^2 for standard living spaces (e.g. 35m^2 for students in Germany). Furthermore, the report includes savings associated with the avoided infrastructure related to the development of new settlements.

[12] Thomas, S. et al. (2019). Energy sufficiency policy for residential electricity use and per-capita dwelling size. Energy Efficiency, 12(5), 1123–1149; Brischke, L.-A., et al. (2016). Energiesuffizienz: Strategien und Instrumente für eine technische, systemische und kulturelle Transformation zur nachhaltigen Begrenzung des Energiebedarfs im Konsumfeld Bauen/Wohnen: Endbericht IFEU, Inst. für Energie- und Umweltforschung; Stadt Göttingen (2020). Quartiersanalyse zur Identifizierung von Flächenoptimierungspotenzialen in Göttingen: Bericht im Rahmen des Projektes OptiWohn (p. 50). Referat für nachhaltige Stadtentwicklung.

[13] Zimmermann, P. (2022). Transition pathways for the European building sector: Comparison of environmental saving from sufficiency, consistency, and efficiency measures. TATuP Journal for Technology Assessment in Theory and Practice, 31(2), 32-39.

[14] The author employs the past trends scenario from the EUCalc model, which extends historical trends within the EU into the future.

[15] Defined as wood demand for building materials and bioenergy.

in non-renewable resource demand[16]. These findings contrast sharply with scenarios focusing solely on efficiency or renewables measures to reach climate targets, only achieving a 1% reduction in renewable resource demand, and a 3% reduction in non-renewable resource demand.[17]

1.3. Public acceptance

As they are likely to reshape consumption patterns and normative expectations of living space, housing policies and business models will need to consider the public acceptability of sufficiency strategies.

In a recent study conducted by Lage et al., recommendations from citizens' assemblies in ten EU member states, as well as one at EU level, were compared with the National Energy and Climate Plans (NECP)[18]. Citizens' assemblies are tools for deliberative democracy, involving randomly selected citizens who discuss specific topics with the assistance of experts, and subsequently make recommendations to policymakers. **The findings suggest that informed citizens strongly favour a substantially higher number of sufficiency measures compared to what governments have planned**, with preferences ranging from three to six times higher (see Figure 1). Proposed sufficiency measures for the building sector include stricter planning regulations to prohibit development on greenfield sites, restrictions on building permissions if there are vacant buildings in the surroundings, and evaluation of the potential reversibility of buildings before any demolition or new construction occurs[19].

16 Defined as sand for cement and glass production, as well as iron for steel production used in buildings, infrastructure, and household appliances.

17 Efficiency measures included: 3% renovation rate, 16% district heating share in 2005, etc.; consistency measures included: fuel switch (electrification of heat, use of zero-carbon hydrogen, switch to sustainable biomass), material switch (substitution of carbon intensive materials with lightweight materials), fossil fuel phase-out for all fuels across Europe, massive increase in photovoltaic and solar power.

18 Included are those countries that conducted a Citizens Assembly on climate change mitigation up to the end of 2022 (Austria, Germany, Denmark, Spain, Finland, France, Ireland, Luxembourg, Scotland, the United Kingdom) and one Citizens Assembly at EU level.

19 See Database (XLSX file) with categorised policies from the citizens assemblies in Lage et al. 2023.

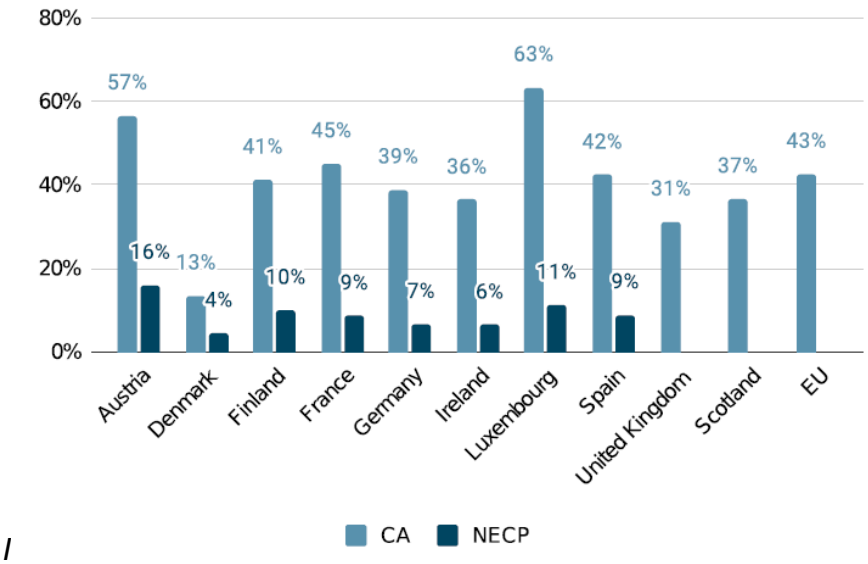


Figure 1: Share of sufficiency policies in total climate-mitigation policies by country (Citizens' Assemblies, CA, and NECP)[20].

The study also shows how, while sufficiency policies in the building sector appear to be less developed compared to other sectors (such as food and mobility), there is a clear demand and strong support for regulatory interventions for sufficiency. The authors attribute this "policy gap" in the building sector to the prevalence of private ownership, which is harder to address by policy interventions (compared e.g. to mobility, where infrastructure is mostly public). Also, prevailing cultural norms often regard housing as a private matter, leading to a perception that state intervention should be limited.

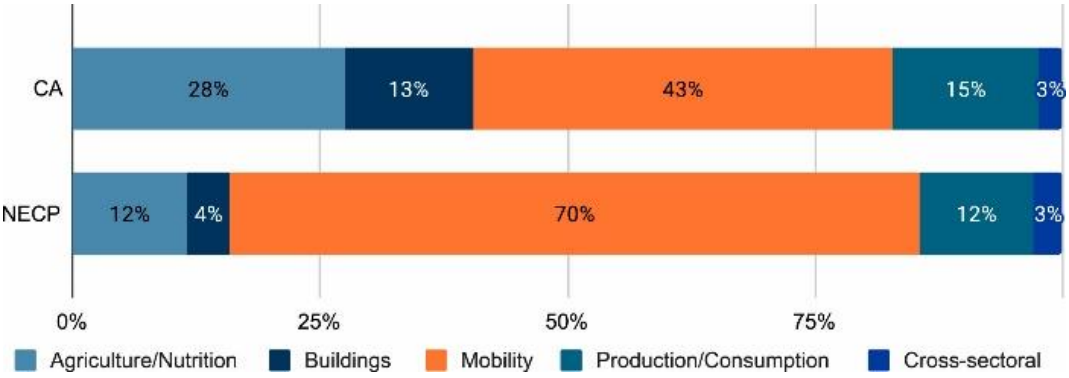


Figure 2: Sufficiency policies in the Citizens' Assemblies and NECPs by sector[21] (Lage et al. 2023).

[20] Lage, J. et al. (2023): Citizens call for sufficiency and regulation – A comparison of European citizens assemblies and National Energy and Climate Plans. Energy Research & Social Science 104. https://doi.org/10.1016/j.erss.2023.103254 (absolute number of climate policies vary between the countries, e.g. FR 59 policies, ES 47, LU 28; see Lage et al. 2023)

[21] Ibid.

Nevertheless, when distinguished by *types* of policy instrument, such as regulatory, fiscal, economic, voluntary agreements, awareness raising, and research and development, 'hard' regulation emerges as the most recommended instrument for sufficiency measures in the buildings sector (16 policy recommendations in the category "regulation", see **Figure 3**). These recommendations predominantly focus on regulations for new constructions[22]. **Thus, while fewer in number compared to other sectors analysed in the study, citizens are in favour of statutory regulation in the building sector to support sufficiency**.

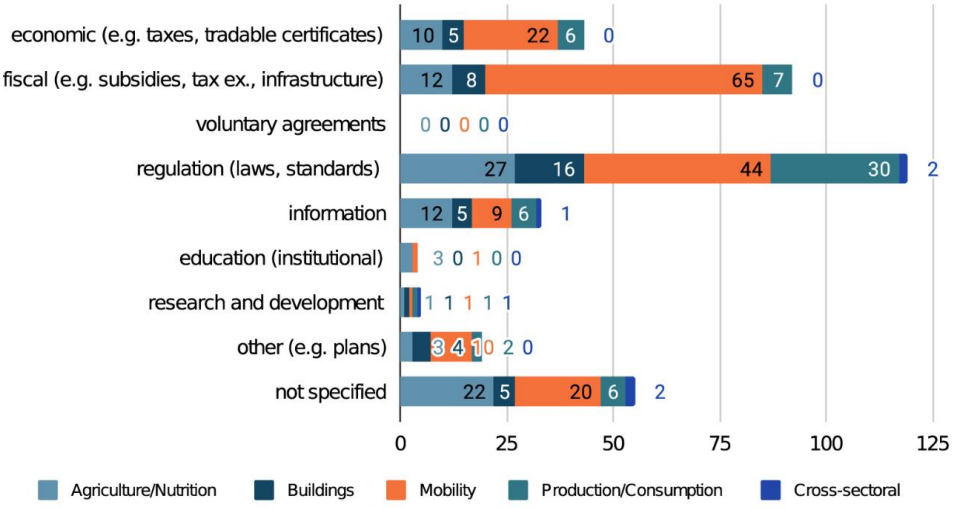


Figure 3: Sufficiency policies by instrument type (Lage et al. 2023).

1.4. Research needs for better informed policymaking

To enable evidence-based policymaking and fully harness the potential of sufficiency measures in the building sector, it is crucial to address data constrains, gain a better understanding of the impacts of existing measures, and facilitate exchange of ongoing initiatives.

The relative novelty of sufficiency policies in the context of buildings means that the impact assessment and quantification of multiple benefits is still in early stages**.** Standardised methodologies for evaluating the impact of actions such as using vacant

[22] Examples are (read as: policy recommendation by the Citizens´ Assembly (country, approval rate)): obligation to report vacant flats and pay a vacancy tax in the amount of the local rent (AT, 100%), permit and promote alternative housing (tiny houses, ecovillages, shared flats) by law (LU, 100%), ban on new constructions for public bodies, instead use of existing stock (AT, 100%), prohibit greenfield development as long as rehabilitation of commercial, craft or industrial wasteland is possible in the existing urban envelope (F, 99%; SCT, 95%).

building space, reducing under-occupancy, or promoting changes in user behaviour are still lacking.

Firstly, addressing data limitations is essential. For example, in Germany, only 50% of cities keep track of empty plots, 25% identify building vacancies, and only 8% identify infill potential[23]. Similarly, projects and policies in Poland and France have initiated surveys to determine the number of vacant buildings that could be converted into housing[24]. **Secondly, it is crucial to further develop assessment methods that can capture climate, environmental and social co-benefits.** This includes understanding how sufficiency measures designed with social objectives in mind, contribute to economic, climate and environmental benefits. Additionally, exploring how different measures can collectively and mutually reinforce each other is essential for a comprehensive evaluation of the success factors of sufficiency initiatives. **Thirdly, gaining a better understanding of the diversity of sufficiency approaches, the various contexts and the involved actors is necessary.** This understanding allows for the exchange of experiences between existing examples, enabling the identification, replication, and scaling up of successful initiatives.

Consequently, there is a pressing need for a thorough review of the practical applications of sufficiency strategies in order to better understand their collective impacts and contribute to shaping a future that is both environmentally sustainable and socially just.

[23] Blum, A.; Atci, M. M.; Roscher, J.; Henger, R.; Schuster, F., 2022: Building land and inner development potentials in German cities and municipalities. In: BBSR online publication. 11/2022. BBSR. Bonn.

[24] For example, Empty Space by Habitat for Humanity Poland: https://habitat.pl/files/HabitatPoland_IRMiR_Empty_Spaces_Report_(English%20Translation).pdf; French national Plan to combat vacant houses: https://www.ecologie.gouv.fr/plan-national-lutte-contre-logements-vacants

2. Samples of sufficiency initiatives from across Europe: estimated carbon reduction potential and key insights

2.1. Overview of case studies

Although sufficiency in the building sector has not yet been a primary focus of policies, several initiatives have recently been launched to optimise the use of existing building space and create enabling frameworks that meet housing needs while reducing energy and material consumption. These initiatives are being led by national government agencies, municipalities, and civil society organisations. Sufficiency measures often aim to achieve social and financial benefits, particularly in addressing housing shortages. Other common objectives include preserving the urban fabric and reducing land use. Importantly, although a limited number are explicitly designed with climate change mitigation goals in mind, these measures also have significant positive climate implications, as an important side effect. Only a minority of such initiatives actually monitor carbon savings, however.

This section analyses five initiatives in depth, showcasing various approaches to implementing sufficiency measures in the built environment. These case studies, selected through a literature review and a pre-screening, include both governmental and non-governmental efforts. They exemplify initiatives focused on the better use of existing buildings, as defined in Chapter 1.

Table 1 summarises the five examples (for more details on the case studies, see **Error! Reference source not found.**). These examples cover a diverse range of initiatives, including:

- various sufficiency approaches, such as unlocking vacant properties, intensifying use, and avoiding under-occupation
- a variety of policy instruments including financial and regulatory measures
- availability of in-depth background information, ideally in the form of evaluation reports
- representation across different EU regions.

The analysis of these case studies not only demonstrates the potential of sufficiency measures through robust and quantifiable evidence but also highlights qualitative findings from the evaluations of the cases investigated.

Table 1 Short summary of five example case studies on sufficiency instruments across Europe

Name	Location	Actor	Primary lever	Outcomes
1ROOF2AGES **(1TOIT2AGES)**	Belgium (Brussels and Wallonia)	ASBL 1Toit2Ages (Non-profit)	Sharing living space: Subletting unused space in homes occupied by seniors to students	• 604 matches created in 2023 • Total of 5 220 matches since 2009
Plan to Combat Vacant Housing **(Plan national de lutte contre les logements vacants)**	France	Ministry of Housing, Association “Act against vacant housing”	Using vacant buildings: Create a national overview and database of vacant buildings to help municipalities in bringing them back into use	• 1.1 Mio buildings identified as long-term vacancies across France (3.5% of the building stock) • Estimations that 300 000 units can be made available for housing in tight real-estate markets • 6 395 buildings have left the vacant status since the introduction of the database
Turn Old into 2 … or more **(Aus Alt Mach 2 … Oder Mehr)**	Germany (four pilot communities in Baden Wurttemberg)	Federal State Government & municipalities	Adapting existing buildings: Supporting owners of single-	• 77 interested building owners, 16 have initiated first steps

			family houses to understand the potential of separating a house into two or more units	
Parkwest Dublin 12 The Plaza	Ireland (Dublin)	Tuath Housing, Dublin City Council, Hartcourt Developers	Adapting existing buildings: Retrofitting a vacant office building into residential units	• 86 affordable housing units created with space for 200 habitants • Comparison of three lifecycle scenarios with a reduction of embodied emission by 82% and a reduction of whole life carbon emissions by 62% compared to a new built

Adaptation of empty spaces for affordable apartments
 	
(Adaptacja pustostanów na mieszkania dostępne)
	Poland	Habitat for Humanity Poland (Non-profit)	Using vacant buildings:
			
			Collecting data on vacant units across Poland and describing tools to bring them back into use
				• National database:
				  ○ 1.5 Mio vacant units in the residential stock (12%)
				  ○ 63 000 vacant publicly owned units
				• Mapping survey:
				  ○ 221 vacant buildings identified in public ownership
				  ○ 48% are adaptable, 52% are in a state beyond repair

- Municipal case studies:
  - 4 781 vacant units in three municipalities (including Warsaw)
  - 53% are adaptable, 47% not
  - 81% of adaptable units require renovation

2.2. Quantitative analysis of avoided WLC emissions

The quantitative analysis of avoided GHG emissions enabled by the case studies is a valuable step in providing more evidence on the potential of sufficiency policies in the building sector. This analysis is aimed at informing policymaking and the overall narrative, emphasizing the effectiveness of sufficiency measures.

2.2.1. Approach for estimation

The quantification of the WLC impacts of the case studies presented above is based on a series of assumptions and statistical average values. However, these estimates provide important insights to support policymaking and further research.

The estimations are based on national average floor space use per capita or per dwelling in the respective countries. These averages have been adjusted to account for the avoidance of floor area in multi-family houses, social housing, and student housing, respectively. Given the uncertainty regarding use intensity, a range of estimates from low to high was calculated. The high estimates are based on the expected number of transformations and a higher floor area per avoided unit. In contrast, the low estimates reflect a more conservative share of the expected potential or projects that have already taken steps for transformation, as well as a lower floor area per avoided unit.

As the local initiatives in Belgium and Germany are currently limited to parts of the building stock, upscaling calculations have been carried out to estimate the potential at the national level. This allows for a relative comparison with the national initiatives in France and Poland. To achieve this, the local potential is multiplied by a population factor representing the relationship between the local populations and the national population in comparable settlements (i.e., student cities in Belgium and semi-urban municipalities in Germany). As before, low and high estimates were calculated to indicate the level of uncertainty.

2.2.2. Avoided new built floor area

The reductions in WLC emissions achieved through sufficiency measures primarily stem from avoiding the need for new construction. In other words, sufficiency entails expanding useable floor area without building additional structures. This approach leads to savings in energy, material production, construction activities, and associated emissions. Consistent with this approach, each of the analysed case studies has either already avoided or is anticipated to avoid the demand for additional floor area. Table 2 estimates the avoidance for each case study.

Table 2 Estimation of avoided floor area in new construction

Initiative	Avoided floor area (m^2) (potential)		Comments
	Low estimate[25]	High estimate[26]	
Belgium	19,220	26,813	Based on yearly number of matches (2023), lower floor area avoidance, due to student housing Upscaled to all university cities in Belgium
France	10,772,140	20,197,763	Based on units expected to be made available for residential use
Germany	1,886,848	23,526,633	Based on interest in the initiative (high estimate) and started projects (low estimate) Upscaled with population living in non-urban municipalities (low estimate) and non-urban plus semi-urban municipalities (high estimate)
Poland	1,533,486	12,106,468	Based on adaptable share of units and those without need for major renovations.
Ireland	3,872	5,808	Based on actual number of units

The range of low to high estimates reflects significant variation depending on the number and type of dwellings ultimately created within existing buildings, thus avoiding new construction. In France and Poland, assessments have been made to narrow down the nationally available units. Out of the total reported number of vacant units, only a smaller share is deemed suitable for reintroduction into the housing supply. This share is estimated by the respective initiatives at 27% in France and 47% in Poland. These numbers can be considered optimistic values and inform the high estimate column in Table 2. For the low estimate column, further adjustments are made to adopt a more conservative perspective. In Poland, this adjustment is informed by findings suggesting 19% of vacant buildings to be useable without major renovation works.

As a result, the range is substantial in both relative and absolute terms. In Belgium and Germany, the avoided floor area is calculated through an upscaling of local initiatives. For

[25] Assuming an avoided floor area that is 50% below the national average per unit (to reflect social housing, divided homes, etc.) and reaching only the currently engaged users, or a conservative share of the full, self-declared potential.

[26] Assuming an avoided floor area that is 25% below the national average per unit (to reflect social housing, divided homes, etc.) and the full potential as described by the initiative.

this, the floor area avoided through the established number of projects[27] are multiplied by an upscaling factor. This factor is based on the population in the area of the initiative and the total suitable regions or cities within the country[28]. The Irish initiative was not included in this upscaling due to the small sample size (a single building) for making national estimations, but it is considered at the building level. However, key insights from this project will be discussed further below, including the value of repurposing office buildings in a time of changing office culture resulting in lower demand for space.

This estimation shows that substantial amounts of floor area could be avoided through sufficiency measures. Even with high degrees of uncertainty, the range highlights a strong potential from using vacant and underused building space.

The impact becomes even more notable when comparing the potential for avoided floor area to annual new construction of residential buildings in these countries. Table 3 shows these comparisons. Even the low estimate would mean that the residential construction volume of France could be avoided for one year. In the high range of the estimations, both the German and the French initiatives could avoid the equivalent of multiple years of new residential construction, if implemented across the country. In Poland, the high construction activity in recent years means that the percentage share is lower, but still considerable. In Belgium on the other hand, the share is much lower due to the more limited scale of the initiative.

[27] In Belgium the number of matches in one year was used as a basis, as the co-living situation is planned for one year. In Germany the number of projects started (low estimate) was used as a basis but complemented by a high estimate based on the number of expressions of interest in the initiative.

[28] In Belgium, the initiative is already active in the universities of Brussels and Namur with a population of 1,334,000. In total, university cities in Belgium have 2,961,000 inhabitants.

In Germany, the initiative has been launched in four rural municipalities with a total population of 12 000. Non-urban municipalities in Germany have a population of 33 Mio. inhabitants, while non-urban and semi-urban municipalities have a population of 57 Mio.

This resulted in upscaling factors of the local avoided floor area in Belgium of 2.22; and in Germany of 2 750 (low estimate) to 4 750 (high estimate).

Table 3 Estimated potential for avoided construction at national level

Initiative	Mechanism	New construction of residential floor area per year	Avoided share of annual construction	
			Low estimate	High estimate
Belgium	Share living space	2,490,000[29] (2022)	0.8%	1.1%
France	Using vacant buildings	11,710,000[30] (2023)	91%	172%
Germany	Adapt existing buildings	13,790,000[31] (2021)	28%	348%
Poland	Using vacant buildings	17,750,000[32] (2022)	8%	68%

These considerations reflect only the avoidance potential of individual initiatives. Yet, their design and impacts are not mutually exclusive and have a high potential for complementing each other. This could be used to create higher impacts from mobilising underused space in different building types and actor groups. This synergy could lead to greater impacts by mobilizing underused spaces across different building types and actor groups. Such additional effects have been discussed in a German study (see also Chapter 1.2, "Sufficiency Potential"), along with estimated numbers[33]. The authors predict that the annual target for new residential construction in Germany can – in the optimistic scenario – be offset through a combination of sufficiency mechanisms similar to the ones listed in Table 3. The most impactful contributions are expected from transforming vacant office spaces and splitting single-family houses. The local data from the case studies include approaches precisely targeting these outcomes. However, the impacts from these local initiatives do not allow for an EU-wide comparison against the total need for construction. Nevertheless, the potential to combine various measures such as intergenerational housing, adapting vacant or underused residential buildings, and repurposing office

[29] https://statbel.fgov.be/en/news/decrease-97-building-permits-2022

[30] https://fr.statista.com/statistiques/1039944/logements-immobilier-mis-en-construction-france/

[31] https://www.destatis.de/DE/Service/Statistik-Visualisiert/wohnungsbau.html

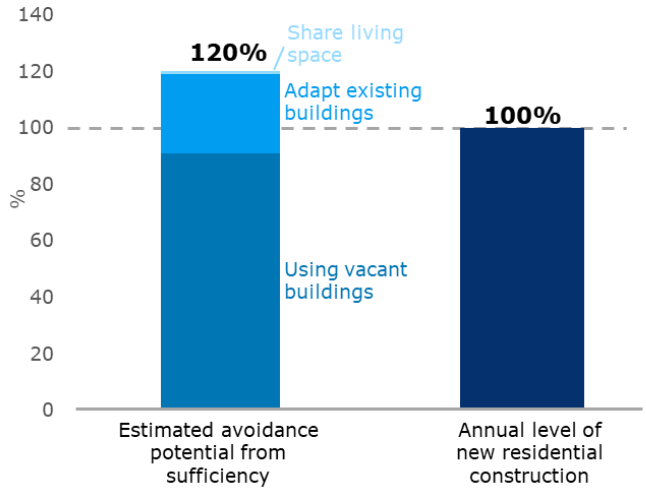
[32] https://stat.gov.pl/en/topics/industry-construction-fixed-assets/construction/residential-construction-in-the-period-of-january-february-2024,3,141.html

[33] BBSR – Bundesinstitut für Bau-, Stadt- und Raumforschung im Bundesamt für Bauwesen und Raumordnung (BBR) (Ed.), 2023: Unterstützung von Suffizienzansätzen im Gebäudebereich. BBSR-Online-Publikation 09/2023, Bonn. Available at: https://www.bbsr.bund.de/BBSR/DE/veroeffentlichungen/bbsr-online/2023/bbsr-online-09-2023.html

buildings underscores the significant role that sufficiency can play in reducing the need for new construction.

As Figure 4 shows, even the low estimates of the different initiatives, grouped by their design (using vacant buildings, adapt existing buildings, share living space), can avoid more floor area than is constructed in one year[34]. For this calculation, the national avoidance percentages have been aggregated. Therefore, this figure does not capture the full diversity between Member States in terms of building stock, demographics, urbanisation, etc. However, this illustration and comparison exemplify the importance of incorporating sufficiency thinking into policymaking at every applicable governance level.

Figure 4 Illustration of the combined potential of sufficiency initiatives and comparison with new construction levels. Estimations based on initiatives in different Member States, thus principles apply to the EU or other diverse building stocks.



The construction industry is a major consumer of raw materials such as concrete, steel, timber, and glass, whose extraction, processing, and transportation require resources and energy for production and result in environmental degradation. Efficient use of existing buildings reduces the demand for new materials and, hence, also offers benefits beyond GHG emission, including the preservation of natural habitats.

Sufficiency also reduces pressure on ecosystems and biodiversity by preventing urban sprawl and minimising the need for new land development. Urban sprawl involves converting agricultural land, forests, or wetlands around settlements into built-up areas,

[34] The relation to the construction in one year is relevant in this comparison, as vacant buildings from the initiatives re-enter the used building stock once, while the new construction rate or even targets relate to annual values. Compared to the German study mentioned in the paragraph above, which found that a broad range of sufficiency measures can offset the need for new construction for several years, the four initiatives looked at here include a smaller range of mechanisms (e.g. no office conversion).

resulting in the loss of green spaces. These green spaces provide essential benefits, such as habitats for wildlife, improved water and air quality, flood control, carbon sequestration, and recreational opportunities.

2.2.3. Avoided whole life carbon emissions

Avoiding the new construction of buildings results in lower embodied carbon emissions. Together with the operational carbon emissions from the use of the building, embodied carbon makes up the whole life carbon emissions of a building. It can therefore be expected that avoided construction also reduces whole life carbon. Yet, estimating the avoidance of emissions is linked to even higher uncertainties and assumptions. The floor area estimations with their uncertainties are the basis for quantifying emissions. In addition, two factors determine the whole life carbon impact.

Firstly, the adaptation of vacant or under-used dwellings generally requires replacements and refurbishments to make the units suitable homes. Among the case studies reviewed, only the Belgian example does not require renovation works for at least a majority of units. Research on building archetypes conducted in support of the EU WLC roadmap indicates that the embodied carbon emissions of energy-renovated buildings are about 85% lower than those of new constructions. In Poland, the organization leading the initiative has started adapting vacant buildings by replacing windows and installing new heating equipment[35]. While these elements are also linked to embodied carbon emissions, more carbon-intensive materials such as cement, steel, and bricks remain untouched. Even when considering structural renovations that include new internal walls and façades, literature suggests a reduction of around 50% or more in embodied carbon emissions compared to new buildings[36].

The Irish initiative involves transforming a single building, and lifecycle scenarios were calculated for this transformation. Compared to a new residential building, the retrofit of an office building resulted in 82% lower embodied carbon emissions. This demonstrates that even with investments in embodied emissions, the avoidance potential remains considerable.

Taking this into account, the avoided embodied carbon from each sufficiency initiatives can be roughly estimated as shown in Table 4. This data relies on the average embodied carbon values for renovation projects of multi-family houses (ca. 85 kgCO2e/m2) and

[35] Interview with Habitat for Humanity Poland.

[36] Ramboll, BPIE, KU Leuven, 2023, Supporting a Roadmap for the Reduction of Whole Life Carbon in Buildings. Technical background study. Available at: https://op.europa.eu/en/publication-detail/-/publication/923706b7-8f41-11ee-8aa6-01aa75ed71a1/language-en

those of new built multi-family houses (ca. 560 kgCO2e/m2) modelled in the technical support study for the development of the EU WLC roadmap.

Table 4 Estimation of avoided embodied carbon emissions from new construction[37]

Example	Mechanism	Avoided embodied carbon emissions In tCO2e	
		Low estimate	High estimate
Belgium	Share living space	10,763	15,015
France	Using vacant buildings	5,116,767	9,593,937
Germany	Adapt existing buildings	896,253	11,175,151
Ireland	Repurpose office buildings	1,839	2,759
Poland	Using vacant buildings	728,406	5,750,572

Secondly, using vacant buildings, especially those vacant for extended periods, typically results in higher operational carbon emissions compared to new buildings constructed according to the latest energy efficiency standards. This relationship is complex and challenging to generalise or estimate. This factor was also considered in the Irish lifecycle scenarios. Over a 50-year use phase, the retrofit is expected to have 62% lower whole life carbon emissions than a new building. However, the smaller savings compared to the embodied carbon comparison of 82% above indicate the superior energy performance of new buildings. This performance gap is likely more pronounced in older vacant buildings with low energy efficiency.

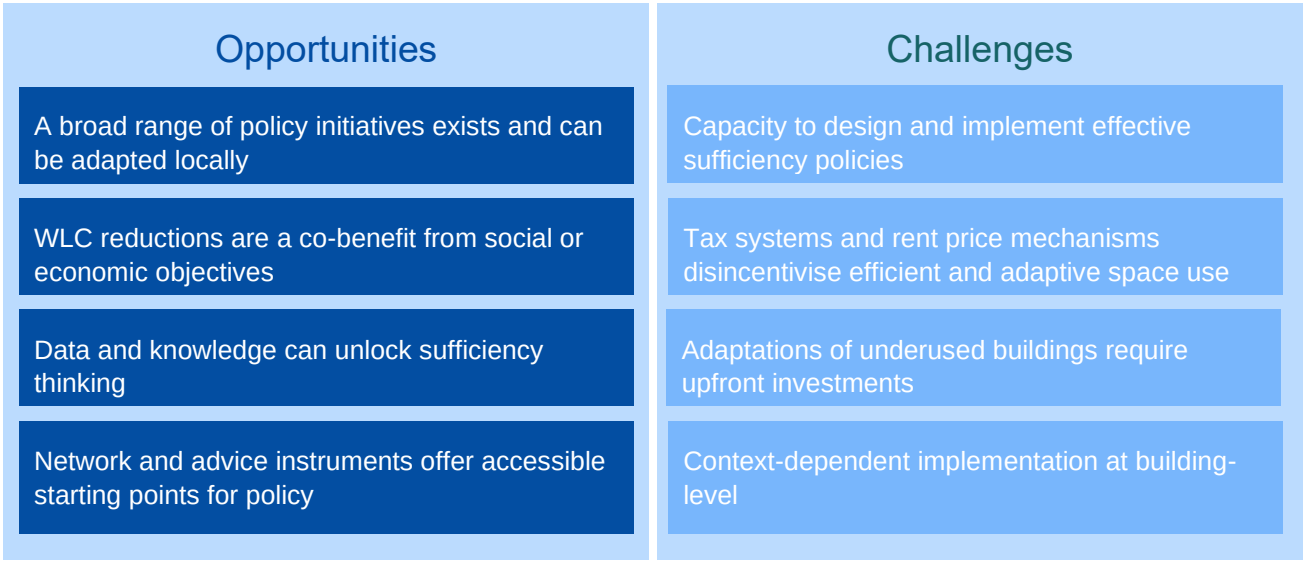
Nevertheless, as the adoption of renewable energy sources in buildings and the decarbonisation of electricity supply advance, operational emissions will be increasingly reduced over time. Given these considerations, it is challenging to create a general and robust estimation of whole life emission savings.

[37] The estimates are based on the avoided floor area presented in Table 2. Those values are multiplied by factors for building the same amount of floor area (560 kgCO2e/m2) while subtracting embodied emissions related to the refurbishment/repurposing process (85 kgCO2e/m2).

2.3. Discussion: impact and lessons learned beyond avoiding greenhouse gas emissions

The analysis of case studies reveals further insights on benefits beyond carbon reductions. These are summarised in Figure 5 and described below.

Figure 5 Opportunities and challenges of sufficiency policy initiatives in buildings



Several **opportunities** can be leveraged to increase the role of sufficiency in reducing the need for new building construction. This approach can avoid the associated embodied carbon emissions, resource use, and land use, while simultaneously providing much-needed housing. Furthermore, more intensive space use also reduces operational carbon emissions due to lower demand in building services.

The diversity of approaches show that supporting the use of currently vacant building space can take many forms, which can be mutually reinforcing and combined. This flexibility allows for the inclusion of sufficiency considerations in other instruments that may not be primarily aimed at reducing carbon emissions. Collecting information, raising awareness, and offering advice can be part of services provided to building owners, developers, and public institutions[38]. Targeted approaches can be defined according to building types, ownership structures and duration of the vacancy. This strategy not only tailors solutions to specific challenges but also identifies best practices that can be applied in various situations.

[38] For instance, integrating sufficiency elements in energy efficiency advice with specific support such as the consultancy bonus in the Turn Old into Two or More initiative in Germany.

In this context, the case studies and similar initiatives point to clear opportunities for synergies with other policy objectives. In fact, sufficiency measures are often initiated for reasons other than climate objectives. Using existing but vacant or underused spaces is driven by social, economic, and aesthetic narratives, which create co-benefits for reducing GHG emissions. For instance, in Poland, the intended use of vacant units as social housing increases the short-term availability of affordable housing. In Belgium and Germany, sharing or dividing unnecessarily large homes provides additional income for homeowners, whether from students or young families. The Belgian 1T2A initiative, which matches students with seniors who have unused space in their homes, notes that most contracts last 10 months (i.e., an academic year) and are set at lower rates than regular rent prices or student accommodation. In 2022, students saved approximately €1,758 per contract in Brussels and €1,261 in Wallonia.

In both the Belgian and German initiatives, motivations go beyond financial incentives and include addressing loneliness, providing help with everyday life, and fostering intergenerational exchange. This is illustrated in the German case: the project originated from the experiences and ideas of the senior citizens' representative of the municipality of Bodnegg, located in the Ravensburg district of southern Germany. During her visits to families with newborns, she identified a win-win situation: older people who found their large gardens burdensome and young families desperately seeking housing. Referred to as a "Denkanstoß" ("food for thought") by the state ministry, the consultancy bonus aims to bridge this gap by connecting those willing to provide space with those in need of it. The ministry emphasizes that converting a single-family home can foster intergenerational interaction and mutual support, such as having grown-up children or another young family move into the newly created space.

In France, the Plan to Combat Vacant Housing is driven by the goal of revitalizing town and city centres. The plan is embedded in and explicitly linked to various existing programs and policies, such as initiatives to upgrade city centers ("Action Cœur de Ville" and "Plan Petites Villes de Demain"), increase the provision of social housing ("Plan Logement d'Abord"), and accelerate renovation ("Programme Habiter Mieux" and "MaPrimeRénov" initiatives).

In all of these cases, climate benefits are realised as a ‘by-product’ of targeting other outcomes. Compared to constructing new buildings, the project costs for adaptations are often lower because new buildings require connections to infrastructure or demolition. This was highlighted as a key benefit by the municipal spokesperson in the German initiative offering consultancy advice for conversion: if living space is created in existing buildings, the municipality can save the associated costs of developing new infrastructure, such as roads, electricity, and sewage systems. Additionally, the implementation timelines can be much quicker when using existing stock. This offers policymakers the opportunity to combine the goals of existing policies, such as supporting affordable housing, preserving vibrant town centres, and responding quickly to housing shortages.

Gaining a better understanding of the number of vacant buildings — a research need emphasised in Chapter 1 — is possible with little extra investment and high potential benefits. So far, detailed understanding of vacancies has been limited by low data availability. However, examples from France and Poland illustrate that pooling and systematically using existing data sources is a promising approach to overcome this limitation.

In France, data collected by taxation authorities revealed unused buildings, while Polish national statistics rely on water consumption data to estimate the total number. The French case also demonstrates how collaboration between national and local levels and various stakeholders can enhance data availability. For the datasets and tools, a collaborative co-development process was chosen. In May 2021, pilot municipalities were initially granted access to the tools, and once tested, access was opened to all other voluntarily participating communities in December 2022. Moreover, a collaborative exchange platform has been established, open to stakeholders engaged in the issue, facilitating the sharing of experiences (600 members as of 2021). Beyond the vacancy figures, the plan has led to 64% of all municipalities in mainland France now addressing the issue of vacancies, gaining a better understanding of the complex factors contributing to it, and building capacities to solve it.

In Poland, the Habitat for Humanity initiative also conducted a survey among municipalities, the national building management authority, and real estate managers. This approach yielded local and specific data in addition to the national statistics. With comprehensive data, policymakers can then select the most appropriate building types and instruments to create co-benefits across policy goals. In France, the database is also used to contact owners of the worst-performing buildings to inform them about renovation measures and available support.

Sufficiency actions, particularly among private building owners, remain voluntary decisions in all examples found across Europe. These initiatives and policies rely on the leverage of information and awareness building. Services such as advice or financing initial consultations, as seen in Germany, or creating networks and matches between residents with extra space and students seeking accommodation, as observed in Belgium, stem from local initiatives that prioritise information over physical interventions in the buildings stock. Such information campaigns can be relatively easily adapted to local priorities and existing platforms. In their key principles, these examples follow policy measures that are accessible for policymakers in other locations to implement as starting points. It may be worth considering how to integrate this approach with existing and planned information tools at the regional or municipal level, such as One-Stop-Shops.

Lastly, vacant or underused public buildings create opportunities for innovative lighthouse projects. Adapting and revitalising public-owned buildings can showcase the co-benefits

between policy goals and the creation of multi-use facilities to benefit the local community and sustainability.

Leveraging these opportunities also implies addressing the remaining **challenges**. Well designed and implemented measures could significantly promote the broader adoption of sufficiency actions, as demonstrated by the cases studies reviewed in this report.

Implementing sufficiency principles in the building sector necessitates well-designed initiatives. These efforts require capacity within public administrations, i.e. dedicated teams which can develop and manage the projects, whether they involve databases, advisory services, information dissemination, or financial support programs. Additionally, adequate financial resources are needed to support the creation and implementation of these services. A major challenge is the lack of a common knowledge base or platforms for exchange, meaning each initiative often has to be developed from scratch. This gap highlights the need to establish repositories and collaborative networks to share best practices and innovations. Doing so would reduce the initial efforts for public administration and foster more effective and efficient policy implementation.

Although economic factors may incentivise the more efficient use of un- or underused space, there are also counterincentives. Primarily, these relate to taxation and housing costs. In many countries, taxes on inheritance, combined with property sales and stamp duties, result in significant transaction costs. These costs come into play when underused buildings could be sold by inheriting partners or relatives. Immediately after inheritance, a sale may be considered speculation and taxed at a higher rate[39]. General transaction costs, including property purchase taxes, also disincentivise adapting housing to new stages in life and corresponding change in space needs[40]. Thus, reviewing taxation regimes for such unintended consequences can make sufficiency thinking more attractive for property owners.

Similarly, tenants have economic incentives to remain in the same dwelling. Rent increases are more easily applied with a new contract, while existing long-term contracts may be substantially less costly, albeit tied to a housing situation that may no longer reflect current needs. Understanding these effects and finding ways to avoid higher rents from downsizing on living space can be further ways in which policymaking can support sufficiency principles.

[39] German tax law contains a provision for tax levied on property sales considered speculation. The speculation period for rented properties is generally 10 years during which the tax on sales profits has to be paid. In case a rented building is inherited within the first 10 years of purchase, the tax also applies to the new owner, even if selling the property could open it to more efficient use.

[40] In Belgium, every purchase of property (of an existing building) is taxed at 10-12.5% of the price.

While project costs are often lower than new construction, upfront costs pose another obstacle, especially for private building owners but also for public entities. These initial expenses can be a barrier to making buildings more sustainable. Knowledge, awareness, and tools for more efficient use of existing buildings are important first steps, but adapting and renovating buildings require investments. For example, in the German case of turning one house into two, changes to the building are usually necessary to enable two parties to share the same structure. Similarly, in the Polish example, insights into the scale of vacant buildings reveal a need for renovations and replacements to make dwellings liveable. These costs and potential uncertainties around financial viability need to be considered and addressed, potentially together with the various existing strategies designed to remove the upfront costs associated with building renovations.

Additionally, the application of sufficiency measures to individual buildings are very context dependent and require tailored approaches to be effective. Depending on the situation of the owner[41], the size, location and age of the building, as well as possible synergies with other policy priorities, specific interventions may be highly relevant while others may not be suitable. For example, renovating a vacant unit in a residential building differs significantly from adapting a former school for residential use. Similarly, splitting a single-family house into two units depends on the feasibility of creating multiple entrances. This underscores the importance of providing general tools combined with personalised advice to identify tailored interventions.

Finally, the limited research, tools, and clear definitions are hindering larger-scale sufficiency efforts. Defining vacant buildings, exploring business cases for multi-use facilities, and conducting other foundational work will help standardise terminology and reduce barriers to understanding the topic. Investing in research and demonstration projects will make it easier to implement effective sustainability policies.

[41] For instance, it makes a difference if the building is publicly or privately owned, if the current owner can be identified and if they have legally unambiguous ownership of the building.

3. Conclusions

This research points out that more needs to be done to realise the potential of sufficiency initiatives in the building sector. Using existing buildings for residential purposes, adapting buildings to different use models, and sharing living spaces are key strategies for using buildings more efficiently. One of the primary environmental benefits of sufficiency is the reduced need of new construction. The estimated potential for avoiding new floor area and, thereby, the embodied emissions associated with material production is substantial.

Beyond avoiding GHG emissions, sufficiency in the building sector offers benefits through reduced resource consumption and the preservation of green spaces around urban settlements. By avoiding new construction, sufficiency helps conserve raw materials and diminishes the environmental impact of their extraction, which includes activities like mining, quarrying, and logging, often associated with significant ecological disruption. Moreover, sufficiency initiatives help curb urban sprawl, which is linked to the conversion of agricultural land, forests, or wetlands into built-up areas, thus preserving habitats, maintaining air and water quality, controlling floods, and providing recreational spaces. Thus, the wider uptake of sufficiency measures can contribute to meeting the needs of European populations and evolving urban requirements without degrading undeveloped land.

Indeed, the benefits of sufficiency extend well beyond environmental considerations. Policy objectives aimed at rapid creation of affordable housing, the promotion of dense and vibrant town centres, and the fostering of community development have all led to the proliferation of sufficiency initiatives across the EU. These developments show that social and economic benefits for citizens as well as municipalities are strong arguments to pursue initiatives that make best use of existing building assets.

The five case studies highlighted in this report demonstrate the various types of support available to identify vacant buildings, collect information, raise awareness, foster understanding, and establish connections. They also exemplify a willingness to experiment with and implement sufficiency measures. However, these initial insights underscore the need for further action: additional research, pilot projects, and the exchange of best practices are essential to develop a comprehensive set of policy instruments for sufficiency measures and fully unleash their potential. Offering tangible support for initiatives and eliminating regulatory and fiscal barriers are pivotal. Achieving this requires concerted efforts from both researchers and policymakers.

The report also demonstrated the importance of recognising building sufficiency as a solution to multiple crises and policy objectives. Accordingly, it is crucial to position sufficiency interventions as a cross-cutting issue and to facilitate networking and dialogue between policymakers across different policy fields – including climate, resource protection,

housing and just transition. By doing so, we can fully reap the numerous benefits of sufficiency initiatives at every political level.

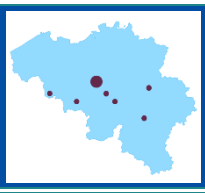
4. Annex – Case Studies

This annex presents five selected case studies that aim to illustrate various approaches to implementing sufficiency in the built environment. Based on a literature review and a screening process, these case studies - both governmental and non-governmental - demonstrate initiatives leading to better use of existing buildings. From a larger list, five cases were selected based on the following criteria:

- Range of sufficiency approaches such as unlocking vacant properties, intensifying use, and avoiding under-occupation.
- Diversity of policy instruments (e.g. financial and regulatory measures, etc.)
- Availability of in-depth background information (ideally evaluation report)
- Representation across EU regions.

1roof2ages

1Toit2Ages



Key features

Where?	Belgium	**Why?**	To combat loneliness among the elderly, and offer affordable, high-quality housing options for students
Who?	Non-profit organisation: ASBL 1Toit2Ages		
For whom?	Students and the elderly	**How?**	By offering professional home-sharing programmes

Description

1Toit2Ages (1T2A) is a non-profit organisation operating an inter-generational home-sharing programme, enabling seniors who have unused space in their homes to host students. This initiative tackles two pressing issues: the increasing number of elderly people experiencing loneliness and struggling to maintain independence in their own homes, and the affordability of housing for many students. The programme started in Brussels in 2009 and expanded to Wallonia in 2012. To date, it has facilitated 5,220 matches between seniors offering their homes and students in need of housing, with 604 matches occurring in 2023 alone.

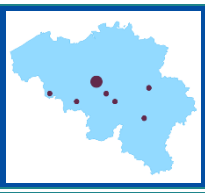
The initiative aims to improve the social aspects of intergenerational relationships, reduce loneliness, and increase affordable housing. 1T2A's mission is "breaking the loneliness of the elderly and facilitating access to housing for students". Overall, 1T2A has a double objective of:

- Combatting loneliness of the elderly and making it easier for them to live in their own homes with company,
- offering quality accommodation at lower costs to students.

Furthermore, the initiative indirectly contributes to reducing the immediate demand for new construction or building transformations to accommodate student housing and retirement homes. Although this outcome isn't the primary focus of the initiative or its communication efforts, it represents an additional benefit which is the main focus of this study.

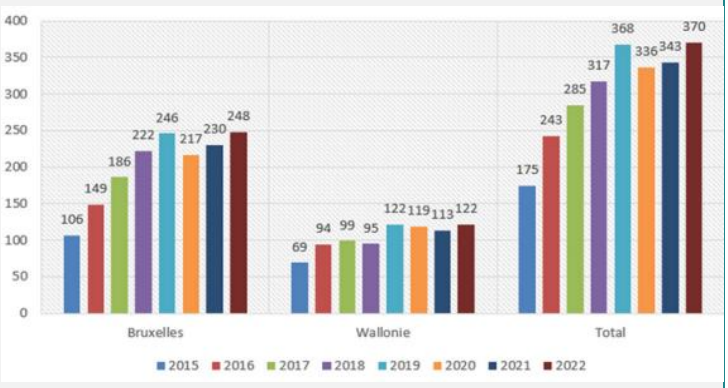
1roof2ages

1Toit2Ages



Context and background

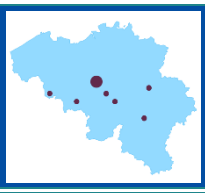
Most of the participating students are Belgian or French, but many are international as well (coming to Belgium for internships or Erasmus exchanges). More students are interested in the programs than seniors, for instance, 1T2A was only able to meet 37% of the student demand in 2023. The following graph displays the number of matches per year, from 2015 to 2022, in Brussels, Wallonia, and in total. The drop in 2020 was due to Covid-19.



1T2A has received local and national support since its beginnings, through public advertising and subsidies (by some municipalities and the Ministry of Housing), as it was seen as a great solution to crowded retirement homes and student housing shortages. Today, 1T2A has partnerships with many universities and its programmes are promoted by word of mouth, internet, and other communication channels.

Although 1T2A acknowledges the support it has received, it also notes several obstacles to its growth:

- not enough funds: 1T2A currently has 10 employees, and more employees would allow for the creation of more pairs and thus the development of the initiative, to be able to grow further, 1T2A would welcome receiving European funding.
- legal concern: seniors cannot domiciliate students; students must remain domiciliated at their parents' houses. It is a problem for foreign students (from outside of Europe). This is also why 1T2A cannot host young workers. 1T2A is trying to find solutions to this legal issue,
- houses must be situated near universities: many seniors wish to participate in the programme, but live in remote areas situated too far from universities,

1roof2ages 1Toit2Ages		

Results and impacts

Out of the 5.220 matches created since 2009, none have necessitated the building of new units, as the students mainly move into the seniors' homes. The homes include houses or apartments, as well as one intergenerational building and one retirement home. The majority of matches live in houses, followed by large flats.

Without 1T2A, the participating students would have been accommodated in difficult-to-find student housing, and the seniors would have been accommodated either in their own houses, alone, or in retirement homes. In both cases, alternative accommodations would have been more expensive and would have indirectly contributed to new construction. This section explores 1T2A's impacts.

Environmental impacts:

- 1T2A does not mention climate or emissions savings.
    - Still, 5.220 matches have been created since 2009, meaning that new construction was avoided, and that many of the seniors' houses now have less unused space.
- No study has so far been conducted on the GHG emissions savings of home sharing in Belgium[42]

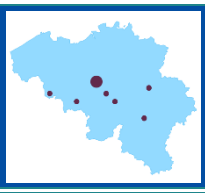
Financial impacts:

- Most of the contracts last 10 months (i.e., an academic year) and are set at a lower rate than regular rent prices or student accommodation. According to 1T2A, the students saved approximately 1.758€ in Brussels and 1.261€ in Wallonia in 2022 over a contract period compared to average student rents.

Social impacts:

- 1T2A notes that its programme generates many positive social impacts, but that these are difficult to measure. Still, as it has allowed 5.220 students and 5.220 seniors to share accommodation, it has helped rebuild intergenerational links, break down loneliness, develop innovative housing solutions, and reduce housing costs for families.

[42] Fuhrhop (2023) builds on the Belgian 1T2A example to estimate the theoretical GHG emissions savings for Germany, assuming the German initiatives would be as successful in matching students and seniors as in Belgium (see further details in D1).

1roof2ages 1Toit2Ages		

Replication and upscaling potential

The necessary conditions for implementing such an initiative in other places is the need for both generations to come together to form a sufficient pool for matchmaking. This can most likely be expected in other cities with universities but also a large population of all other ages.

Belgium's student life has some other particularities that may not necessarily be the same in other countries, and therefore impact transferability of the initiative. As a small country, it is common for students to return home over weekends, giving both sides space and time to follow their own routines. However, this will likely be the case at least in part for students in most cities.

As a network initiative, there are little investments needed. The main work relates to awareness raising, the matchmaking itself, and providing advice on legal and financial questions that may arise. The effectiveness of matchmaking improves with the professionalism of the network, particularly with the presence of full-time positions (see Fuhrhop 2023)[43]. Some of the existing home-sharing examples, such as in the UK, are sustained by fees.

Sources

- 1T2A website: https://www.1toit2ages.be/
- 2022 annual report: https://www.1toit2ages.be/rapport-annuel
- How flat sharing can halve your carbon footprint: https://www.thepropertydaily.co.uk/article/2021/11/25/new-property-market-research-how-flatsharing-can-halve-your-carbon-footprint
- Interview with Claire de Kerautem, director of 1T2A

[43] Fuhrhop (2023): Der unsichtbare Wohnraum. Wohnsuffizienz als Antwort auf Wohnraummangel, Klimakrise und Einsamkeit. transcript Verlag, Bielefeld *(EN: The invisible living space. Housing sufficiency as an answer to the housing shortage, climate crisis and loneliness).*

Adaptation of empty spaces for affordable apartments

Adaptacja pustostanów na mieszkania dostępne

Key features

Where?	Poland	**Why?**	Increase the volume of affordable and accessible social housing for people in need
Who?	Habitat for Humanity Poland		
For whom?	Civil society organisations working on social housing	**How?**	Centralised information sharing and capacity support

Description

The toolkit “Adaptation of empty spaces for affordable apartments” offers advice to help local community-based organisations and charities to convert vacant, commercial spaces into good quality social housing.

It has been developed by Habitat for Humanity Poland, in collaboration with the Institute of Urban and Regional Development, who published a study mapping the vacancy across Poland, as well as other Polish researchers, associations and religious charities. Local case studies focused on Warsaw, Kielce and Zawiercie to collect data on the ground.

The toolkit provides data on the number and type of vacant spaces in Poland, summarises the legal options and financial support mechanisms, and provides recommendations on how vacant spaces can be made available for residential purposes. The terms vacant and empty are used interchangeably and refer to buildings or units within a building which are unused for at least 12 months.

The goal of unlocking empty space is linked to opportunities to create affordable housing for disadvantaged groups which struggle to find adequate housing in many cities in Poland. The adaptation and possibly renovation of vacant buildings and dwellings is considered a faster and cheaper way to create affordable housing compared to new construction. However, the creation of social housing is also considered in a few extreme cases through demolition of existing buildings of poor quality and replacement with new buildings. Energy use, GHG emissions or embodied emissions in particular are not mentioned in the online documents.

Adaptation of empty spaces for affordable apartments

Adaptacja pustostanów na mieszkania dostępne

Context and background

Habitat for Humanity is a global non-profit organisation that advocates for safe and liveable housing to be available for low-income people. It also supports on-the-ground initiatives and actions to create such housing conditions and ensure affordability.

Two national Habitat for Humanity (HfH) offices in Europe have – in collaboration with other non-profits - developed pilot projects for toolkits for converting empty building space into homes. In 2022, HfH Poland published their toolkit which is the focus of this case study. In 2023, HfH UK published a similar toolkit. The topic has therefore been of relevance for some years but has increased in urgency in Poland as a result of many Ukrainian refugees fleeing after Russia's attack in early 2022 and the subsequent war.

The central challenge to a better use of empty space is the limited understanding of how many buildings and how much space is vacant. There is no systematic data on vacant spaces in Poland, at local or national level, even though housing and in particular social housing are not sufficiently available in cities. Empty spaces are available, even within the municipal building stock (e.g. education buildings, etc) but it is often not centrally known.

HfH not only calls for more transformation of vacancies but complements this with a toolbox that informs about the opportunities of adaptations and renovation and solutions to challenges. From legal particularities around ownership and tenant rights to financing opportunities and technical requirements, the toolkit provides information and recommendation on a series of items.

The toolkit and the vacancy mapping study primarily concentrate on buildings in public ownership. This emphasis is due to the relatively smaller ownership challenges associated with public properties compared to private ownership. Private owners are considerably more challenging to reach for information and awareness-raising efforts. Although additional insights into both publicly and privately owned spaces were gained through intensive efforts in three case studies of cities across Poland, including Warsaw, it's worth noting that there's no way to ascertain the completeness of the data gathered in this regard.

Recently, HfH also explored options to address the privately owned building stock (which makes up 80% of Polish buildings). Together with UNHCR a report of involving the private sector in the supply of affordable housing was published in 2023 in response to the high number of Ukrainian refugees coming to Poland.

Adaptation of empty spaces for affordable apartments

Adaptacja pustostanów na mieszkania dostępne

Results and impacts

The immediate result of the work undertaken by HfH and the Institute for Urban and Regional Development is a better understanding of the vacancy landscape in Poland and some of its major cities.

As the first component of the vacancy mapping study, a survey of municipalities and state-owned companies revealed 221 vacant buildings, 70% of which were commercial buildings and 30% used as residential buildings. Of the 221 buildings, 48% are considered suitable for adaptation into social housing, while the rest is in a state beyond repair.

Secondly, case studies of three cities and regions (Warsaw, Kielce, Zawiercie) with on-the-ground research found 4871 vacant spaces, all of them residential. 95% of these are in Warsaw. For the Warsaw vacancies, 47% are currently not adaptable, because of potential claims from previous owners (before or right after World War II). The remaining 53% could be used for housing, but 81% of these requires renovation before being an adequate dwelling.

In parallel, a national census data from 2022 revealed that 12% (more than 1.5 Mio) of all residential units in Poland are vacant, although questions about the methodology for this quantification exist. Among this, the municipal housing stock counts more than 63,000 vacant dwellings.

All this points to an important potential to cover an important share of housing demand from existing buildings. This potential exists against a landscape of boom of new construction, at least some of which could be avoided by a better use of the existing vacant dwellings. Across Poland, the Polish Development Bank has financed about 120 pilot projects of renovating appartements for the newly developed Social Rent Agency programme. Several of these have been implemented together with HfH. These cases show that changes of technical equipment and windows are usually necessary for an acceptable energy performance, but larger changes to the structure or walls can usually be avoided. Plans to also convert non-residential buildings into housing, such as an old public library have only just started and will deliver more insights in the future.

Replication and upscaling potential

Collecting vacancy data and removing knowledge barriers for adapting vacant space are certainly replicable work. This case study shows that efforts into merging and extending different data sources can provide insights into the potential that vacant buildings hold. A toolkit for adapting vacant use then needs to be adapted to its context of legal and financial instruments.

National characteristics of the building stock remain, but these do not pose substantial limits to the potential replication. Poland has a relatively high share of units in multi-apartment buildings compared to the EU average, a feature it shares with other Eastern European countries. Ownership is however more privatised than in neighbouring countries. This impacts the accessibility of data and determines key actors to convince for adaptations, but each bring some opportunities and challenges at the same time.

Adaptation of empty spaces for affordable apartments

Adaptacja pustostanów na mieszkania dostępne

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Turn OID Into 2 or more Aus Alt mach 2 … oder mehr		

Key features

Where?	Baden-Wurttemberg, Germany	**Why?**	Densification as an approach to combat housing shortage.
Who?	Federal State Government & municipalities		
For whom?	Owners of single family homes	**How?**	Financial incentive / consulting bonus

Description

In 2021, the pilot project "Turn Old into 2 … and more" was launched in the German Ravensburg region with four municipalities (Bodnegg, Schlier, Waldburg, Grünkraut). The participating municipalities offered a financial incentive (“consultancy bonus”) of 400 EUR for planning to convert and/or extend a single-family home into two or more separate housing units. Owing to its success, this pilot project was scaled up to a state-wide programme in Baden-Wurttemberg in April 2023.

The objective of both the pilot project and the state-wide consultancy bonus is to reduce the shortage of housing and promote the efficient use of existing space. The ‘consultancy bonus’ aims to incentivise owners of large single family buildings to convert them into 2 or more units. Through this the Federal state government of Baden-Wurttemberg wants to achieve densification, improved housing accessibility and the creation of living space in particular for young families.

In total, there was a budget for 80 consultations for the participating four communities of the pilot project to be funded as part of the “Turn Old into 2 and more” pilot project. For the consultation/site visit, which was scheduled for 4-5 hours, there was an agreement with three architects, who sent the invoice to the municipality afterwards. In the event of a deciding for a conversion, owners were free to choose the architect themselves. The financing of the consulting bonus was split between the Federal State Government (80%) and the participating municipalities (20%).

In the initial letter to the interested parties, it was emphasised that building plans should be kept at hand, and a questionnaire was enclosed for the interested parties (e.g. “What do I absolutely need for my well-being and what is no longer needed? How much do I want and can I limit myself in my current living situation? Do I need something, e.g. a barrier-free and accessible house in the future? Or are there things I don´t need anymore”).

The pilot project was advertised in the municipal gazette (weekly official bulletin of the municipality). In the advertisement, questions were asked like, “Do I need as much living space in the future as I do now, or can I imagine getting by with fewer rooms? Keeping the house in order is not a problem for me, or could cleaning and tidying up the house become a burden for me in the future? Is it perhaps already a burden (physically or financially)?”.

In the description of the now upscaled consulting bonus on the state ministry´s website highlights the mutually beneficial opportunities for both single-family homeowners and individuals seeking housing. It points out that single-family homes often feel oversized when children have moved out, while, simultaneously, there is high demand for apartments. Referred to as a “Denkanstoß” (“food for thought”) by the state ministry, the consultancy bonus aims to bridge this gap and bring those willing to provide and those looking for space together. Furthermore, it emphasizes that converting a single-family home can foster intergenerational interaction and mutual support, e.g. having the grown up kids or another young family move in the newly creates space. There is no explicit mention of the climate benefits associated with utilising existing space more efficiently, which can mitigate the climate and environmental impacts of new construction.

Turn OID Into 2 or more Aus Alt mach 2 … oder mehr		

Context and background

In 2017, under the Government of the Green Party and the Conservatives, the Federal State of Baden-Wurttemberg launched the so-called Housing Initiative (*Wohnraumoffensive*). It aims to support cities and municipalities to find new ways to increase affordable, socially mixed housing, enable active municipal land policy, and promote innovative planning and construction. There are several other elements included in this initiative, like e.g. the Competence Centre for Housing (*Landsiedlung Baden-Württemberg*), bundling information and programs and serving as contact point for municipalities, or the re-letting bonus, paid to the municipalities for re-activating vacant buildings.

The pilot project, initiated by the municipality of Bodnegg under the call for projects by the Housing Initiative, was funded for the period from mid-2021 to the end of 2023. Bodnegg invited– other neighbouring municipalities to join the pilot project, upon the request from the federal state government.

The project originated from the experiences and ideas of the senior citizens' representative of the municipality of Bodnegg, located in the Ravensburg district of southern Germany. When she began conducting visits to families with newborns, she identified a win-win situation: on one hand, the needs of older people (such as having a too large garden which often was perceived as "more burden than pleasure") and on the other hand, the young families who were desperately seeking housing. She confirmed that using the time window during which people contemplate their future living situation, particularly the moment when children leave the house, is crucial.

Results and impacts

On a qualitative level, the pilot project´s coordinator emphasises that the advisory bonus has prompted people to think about their future living situation and that she herself had been surprised by the level of interest and demand. The pilot project received significant media attention in the region at the start of the project (three newspaper articles, visit from the federal state minister). The fact that the idea of the advisory bonus was scaled up statewide as part of the *housing initiative ("Wohnraumoffensive")*, so municipalities can apply, also speaks to the success of the measure.

Additionally, the project's coordinator stresses the benefits for municipalities, stating that creating housing within existing structures rather than developing further exterior areas saves infrastructure costs (e.g. from additional roads)

The recipients of the advisory bonus were informed in the initial letter from the coordinator in Bodnegg that a follow-up assessment would take place in approximately six months to determine whether and, if so, how renovations were carried out. So far, an official final report of the pilot project is not yet available (expected in Summer 2024).

Data from the Ravensburg pilot project (1,5 years, 4 municipalities):

77 interested parties requested advice from the four municipalities.

- Out of which 16 owners have initiated first activities or are planning to convert soon.
- In 14 cases, where interest was shown, a conversion has been postponed for the time being due to increased construction or interest costs and a lack of availability of tradespeople.

The upscaled scheme is managed by the Competence Centre for Housing, however, quantified data on the number of municipalities applying for the consultancy bonus are not yet available. The municipality must demonstrate that it has taken active steps to receive the bonus.

Turn OID Into 2 or more Aus Alt mach 2 … oder mehr		

Replication and upscaling potential

The region where the pilot project originated is a sought-after rural residential area (“Bodensee hinterland”) with many large single-family houses. The consultancy bonus or comparable scheme can easily be replicable in other regions and countries with similar characteristics and potential for densification.

Taking the described example into account, funding programmes can be initiated by the regional or national government, requiring municipalities to actively apply for the funds, and also to demonstrate their engagement in initiating such strategic considerations.

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Parkwest dublin 12 the plaza

Key features

Where?	Dublin, Ireland	**Why?**	Revitalisation of the area and creation of social housing
Who?	Tuath Housing, Dublin City Council, Hartcourt Developers		
For whom?	Individuals in need for social housing	**How?**	Conversion of a vacant office building block into social housing

Description

Two long-vacant office blocks in Park West Business Park, Dublin 12, were transformed into 86 social housing units to provide homes for over 200 people. The project was facilitated by Hartcourt Developers who own the buildings and purchased and managed by Tuath Housing, a non-profit organisation which provides social housing in Ireland since 2000. Collaboration with Dublin City Council, which also contributed to the funding, was instrumental in the project's success.

The wider goal was to revitalise the area and adapt to the changing needs of businesses and consumers. Key features of the project include the conversion of vacant spaces into communal areas to encourage social interaction among residents. Tuath Housing, guided by the principles of 'community' and 'sustainability,' aimed to create affordable yet high-quality social housing. To achieve this, the four-story buildings were expanded to five stories, with the addition of a penthouse floor and modern heating and ventilation systems powered by photovoltaic solar panels. Furthermore, the development prioritised lower-impact housing by incorporating unique elements of the buildings' original structure, such as concrete columns, into the design.

In the public communication, both the social and environmental part are represented. The project is promoted as the Ireland's largest office conversion project to create living space. Emphasis is put on reclaiming of vacant space. Given the results from the WLC analysis below and the significant emission savings compared to new built, the positive environmental considerations have been a main part in the project's story of success.

Context and background

The Plaza at Park West in Dublin 12 is an office, retail and leisure complex in the heart of the Parkwest business campus 12 km outside Dublin that has laid vacant for around 20 years. Harcourt developed the Plaza Building's two blocks, known as 70 and 72 The Plaza in the Park West business and technology campus in the late '90s and early 2000s. After failing to attract commercial tenants they decided to repurpose them.

This project costed €26 million, about € 309.000 per apartment. In 2018, Hartcourt Developers had secured planning permission for the conversion of the two blocks and in 2020 Tuath Housing agreed to purchase and finance the project via funds from the Department of Housing and AIB's Social Investment Fund.

All 86 homes have been distributed to individuals on Dublin City Council's housing wait list.

Parkwest dublin 12 the plaza		

Results and impacts

Clearstream Solutions conducted an analysis of the WLC Total WLC footprint. They made some assumptions and considerations in their modelling, following Life Cycle Assessment (LCA) literature and the Environmental Protection Agency's (EPA) split percentage scenarios. For residential buildings, emissions were quantified by employing the carbon intensity of different Building Energy Rating (BER) scores, coupled with an adjustment for the anticipated decarbonisation of the power grid, as indicated by Sustainable Energy Authority of Ireland (SEAI) data. For logistics, the Irish Green Building Council (IGBC) WLC calculator guidelines were considered. Operational emissions from commercial buildings were estimated using the average electricity consumption per square meter, specific to office premises, and incorporating carbon factors projected by the SEAI.

They compared 3 scenarios, retrofitting, comparable new built, and demolition and new built. The results show 62% saved WLC emissions compared with a new building of similar type. They also highlight a 73% reduction of WLC emissions versus a demolition and re-build. Most significant savings are around concrete.

Recplication and upscaling potential

Tuath Housing's Strategic Plan 2021-2025 underscores the importance of retrofitting homes not only in reducing carbon footprint over the long term but also in stimulating the economy in the short term. As a result, they are replicating the Parkwest model in another office conversion project in Cork. This initiative aims to provide 35 homes for social tenants seeking to downsize.

Vacant office buildings are an issue across countries especially since structural changes to working place arrangements as a result of the Covid-19 crisis. Recent examples of converting office buildings into residential homes are also found in Finland, Italy, and Sweden. The latter just passed a planning stimulus to incentivise municipalities to change commercial mixed-use areas, allowing for conversion of office buildings.

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PLAN TO COMBAT VACANt housing Plan luttre contre logements vacants		

Key features

Where?	France	Why?	Revitalisation of the area and creation of social housing
Who?	Ministry of Housing, Association “Act against vacant housing” (formerly the National Network of local authorities mobilised against vacant housing, RNCLV)		
For whom?	Local authorities	**How?**	National strategy, including capacity building and co-development of tools

PLAN TO COMBAT VACANt housing Plan luttre contre logements vacants		

Description

In 2021 the French government launched the “Plan national de lutte contre les logements vacants” (National Plan to Combat Vacant Housing), aiming to reintegrate long-term vacant properties into the housing market. This plan targets the complex issue of vacant housing, which stems from various causes including the need for property renovation, the age of property owners, and local market conditions. The national strategy is designed to equip local stakeholders with detailed data and tools to accurately identify and address the issue within their jurisdiction, as well as disseminate successful methods for reintegrating these properties into the market.

The plan is structured around five complementary axes:

1. support communities in the identification, characterisation and monitoring of vacant housing (new data set introduced, tool to contact owners etc.)
2. promote and disseminate tools and best practices to combat housing vacancy (including creation of a collaborative exchange platform)
3. promote the mobilisation of other forms of housing and vacant premises (e.g. identify vacant office buildings for potential conversion; transitional urban planning solutions for social purposes)
4. ensure consistency with other existing policies
5. accelerate deployment of the Plan (68 pilot communities, testing the data set)

The main element is a platform containing a variety of building data, provided by the national ministry of housing. It enables local authorities (access limited to public authorities) to view each individual house within its jurisdiction with the owner's address, situation (vacant or occupied) and energy performance certificate. Additionally, the platform stores information regarding whether contact has already been established with the owner or not.

In terms of support to municipalities, the plan sets different objectives based on the conditions of the housing market (relaxed / tense housing market). For regions with a relaxed housing market, where 74% of long-term vacant private housing is found, the emphasis is primarily on the revitalisation of centres and enhancement of local heritage. Additionally, the measures anchored in the plan contribute to the goal of net-zero land use change by using existing structures, rather than building new on greenfield. In tense markets (approx. 300 000 long-term vacancies), the plan aims to contribute to affordable housing and contribute to social diversity. Nationwide, it promotes energy-efficient renovation of vacant properties. The platform of the National Plan can also be used to strategically prevent buildings to fall into vacancy (“vacancy prevention”). As the ratings of the Energy Performance Certificates (EPCs) are included in the platform of the National Plan to Combat Vacant Housing, the owners of the worst-performing buildings can be contacted and informed about available energy renovation support (the Climate and Resilience Law adopted in 2021 prohibits to rent out homes with the lowest energy performance rating, which in France is EPC level G).

PLAN TO COMBAT VACANt housing Plan luttre contre logements vacants		

Context and background

The National Network of local authorities mobilised against vacant housing (RNCLV), founded in 2016, has long endeavoured to bring the issue of vacancy into the political spotlight. In 2022, as an offshoot of this network, the association “Act against vacant housing”, was founded to speak out for the local authorities. Subsequently, the Ministry of Housing took up the topic and developed it through a collaborative process, together with the Association of municipalities.

The political context of this plan is connected to broader environmental and social objectives. It's part of a group of policies aimed at sustainable urban development and the ecological transition of French territories. The plan fits within a wider policy framework that includes the "EcoQuartier" approach and the "Ville durable" (Sustainable City) initiatives, aiming to reduce greenhouse gas emissions and enhance living conditions.

The plan is embedded in, and explicitly links to various existing programmes and policies, for example to upgrade city centres ("Action Cœur de Ville" and "Plan Petites Villes de demain"), to increase the provision of social housing (“Plan Logement d´abord”), and to accelerate renovation ("Programme Habiter Mieux" and "MaPrimeRénov" initiatives).

The French Ministry of Housing is working in collaboration with local governments, associations, and various stakeholders on this plan. For the datasets and tools, a collaborative co-development process was chosen. In May 2021, pilot municipalities were initially granted access to the tools, and only once tested, access was opened to all other voluntarily participating communities, in December 2022. Moreover, a collaborative exchange platform has been established, open to stakeholders engaged in the issue, facilitating the sharing of experiences (600 members as of 2021).

These efforts are supported by the economic recovery plan launched by the government on September 3, 2021, with a special focus on sustainable construction and development. The plan encourages the efficient use of already urbanised land, aligning with the government's "zero net artificialisation" priority and supporting municipalities with financial aid to develop public infrastructure and amenities needed for new residents.

Results and impacts

On the national level there are 1,1 Mio long-term vacancies (defined as “vacant for longer than 2 years”). This corresponds to 3,5 % of the building stock. It is estimated by the Frensh government that mobilising long-term vacancies can contribute to 300.000 social housing units in tight real estate markets; a number that can be compared with the 350.000 flats and houses built each year in France).

Moreover, there are 1,8 Mio short-term vacancies (defined as “vacant for less than 2 years”). This corresponds to 5,8 % of the total building stock. However, as this is considered to be necessary as transition period between occupants and for fluidity of the housing market, it is the above number on long-term vacancies that action is focused on.

The latest evaluation from December 2023 shows that 6.395 vacancies are reported to be “sortis de la vacance”, which means they have left the vacancy status, after action has been taken (i.e. local authority contacted owner with support of the database and the tools provided).

Beyond the vacancy figures, the plan has had the effect that 64% of all municipalities in mainland France are now addressing the issue of vacancies, and get a better understanding of the complex factors contributing to it, with growing capacities regarding how to solve it. Lastly, there is also the potential for evidence-based policy making in other connected policy areas, such as how the inclusion of EPC ratings in the database allows for targeted policy action and renovation advice.

PLAN TO COMBAT VACANt housing Plan luttre contre logements vacants		

Replication and upscaling potential

France, being a centrally governed state, may adopt a more straightforward approach to data consolidation, a method not easily replicated in states with a more federal structure. However, the practice of providing data and tools at the national level to empower municipalities in order to understand and address vacancy is replicable. While a national government can provide a platform, as used in this case, the actual data sourcing, presentation and access can remain at federal level. Furthermore, collaboratively developing the approach, as seen in the case of France, including a pilot phase with voluntary municipality participation, and then scaling up after testing and adaptation, is indeed a best practice and can be tailored to individual national contexts.

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