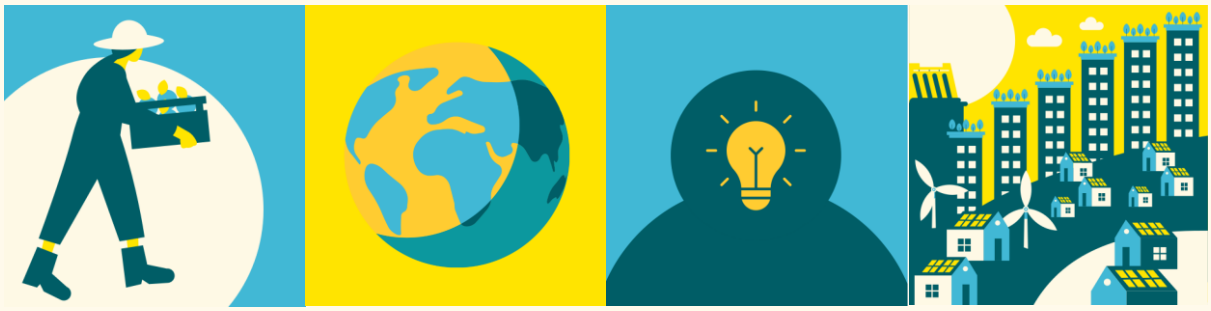
SUFFICIENCY
IN THE BUILT ENVIRONMENT
A FACTSHEET

EEB European Environmental Bureau

At a glance

Sufficiency policies for the built environment hold the keys to unlocking many of European and global challenges. If done right, they can pave the way to:

Ensure Decent Housing for All	Respect Planetary Boundaries	Encourage Innovation	Decarbonise the Built Environment



We need to rethink buildings

The building sector is facing multiple major challenges simultaneously: there is an urgent need for decent and affordable housing as well as to reduce the sector's large environmental impact regarding energy, material and land use. The complexity of these challenges highlights that they cannot be addressed separately, as that might lead to counterproductive actions.

A vicious circle between the need for housing and the climate crisis can be observed. Buildings' environmental impact exacerbates the climate crisis and worsens housing conditions due to excessive heat and cold, rising insurance costs, etc. On the other hand, measures to decarbonise buildings, if inattentive to social safeguards, might only worsen the current housing crisis. For example, a study suggests that while modest eco-friendly renovations provide financial relief for tenants, larger-scale projects often shift the financial burden onto renters, and especially to low-income tenants.[1] **In 2021, more than one in ten people in**

cities spent over 40% of their disposable income on housing.[2]

Conversely, addressing the housing crisis only by building new homes without considering carbon budgets and climate objectives is untenable. Respecting the EU's carbon budget means only a limited number of new buildings can be built, which needs to be reconciled with the growing demand for housing.

While the challenges might seem at odds with one another, one type of policies might be able to provide a solution - sufficiency.

> **Sufficiency is "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"**
>
> *– IPCC, 2022* [3]

This translates to policies that incentivise the repurposing of existing spaces so they can serve the community, including on **how to use existing built environment and the estimated 38 million homes lie empty in Europe** [4]. Sufficiency measures therefore are the keys to provide decent and healthy housing for everyone, as well as achieve a carbon neutral and sustainable building stock by 2050.

Providing decent and healthy housing for all

Housing is more than four walls and a roof: it is an essential enabler of decent living conditions for humanity. In addition to the tremendous potential in terms of energy savings and emissions reductions, sufficiency is also a condition for a just and fair transition, as it aims at reducing production where it exceeds planetary boundaries, while taking into account all citizens' basic needs.

Poor housing conditions, housing shortages and energy poverty are common problems in the EU and can be a major barrier preventing people from achieving acceptable standards of living. In 2021, 17% of the EU population lived in overcrowded households, and over 41 million EU citizens were unable to keep their homes adequately warm.[4] In Europe, 8.3% of the population is overburdened by housing cost, which is highlighted by the bloc's housing cost overburden rate, indicating the share of a population

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dedicating 40% or more of their disposable income to housing cost. On average, house prices went up by 37%, rents by 16% between 2010 and 2021 and an average inflation of 17% was observed.[6]

Furthermore, COVID-19 and the rise of cost of living has also sparked a youth homelessness crisis, with the number of young citizens experiencing homelessness skyrocketing in cities across Europe: in Madrid, youth homelessness rates have shot up 10% since 2021, and in Dublin that figure has increased by 50% in the past year alone.[7]

However, this does not only reflect an insufficient number of buildings. In fact, most countries have a substantial number of vacant buildings. On average, **16% of European dwellings were not occupied in 2011 and 35% were underoccupied**. [8] This represents 30 million empty dwellings, and yet 15 million new ones were built between 2011 and 2020. The problems of housing shortage and rising prices, and under-occupation and vacancies mutually represent a solution to one another and could be tackled through sufficiency policies.

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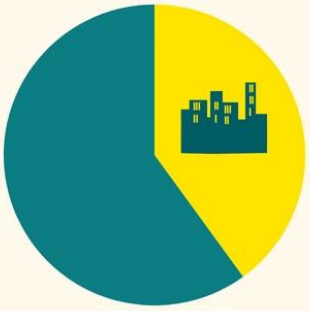
Providing decent housing conditions for everyone would also have strong positive repercussions on global health. **The access to secure housing environment is a fundamental pillar to reduce the exposure to hazards, ensure access to clean water and energy, and promote mental well-being as well as social inclusion.** The link between housing quality and health emphasises the fundamental role of housing towards overall human well-being, which is a central objective of sufficiency policy measures.

Achieving a carbon neutral and sustainable building stock by 2050

In the Europe Union, the built environment accounts for 40% of total greenhouse gas (GHG) emissions. Over the period of 1990-2018, efficiency improvements and the increased penetration of renewables have reduced CO2 emissions in the use phase from residential buildings by 29%, which cuts the overall energy demand per m^2.

However, because new construction has led to an increase in the living space per person (especially in the wealthiest countries), the energy demand per capita has remained rather stable.[9] This 'rebound effect' clearly underlines that **the EU cannot reach its objective of a climate neutral building stock without considering the implementation of sufficiency policies**, which should act as complementary measures to efficiency improvements and the uptake of renewable energy.

Further, while there have been important improvements in the energy efficiency of buildings, the impact related to the material consumption necessary for the construction and renovation of buildings remains large: the building industry is a major consumer of emissions-intensive materials (50% of abiotic materials) and responsible for a 33% of Europe's waste. Next to material-related GHG emissions, this has devastating effects on biodiversity.[10] This highlights the need for sufficiency approaches aimed at reducing the overall demand for construction materials. **While growing interest in circular economy strategies such as recycling or reuse of building components is a crucial step in the right direction, research indicates that these approaches are not enough to achieve the needed reduction in resource use and that they need to be accompanied by sufficiency measures**.[11]



In Europe, buildings account for 40% of total greenhouse gas emissions.

From a broader perspective, sufficiency measures are necessary to respect the carbon budget set and agreed upon by Member States (MSs) during the Paris agreement. Extrapolating these numbers to the building sector shows that only a limited number of new buildings can be built if the budget is to be respected. For example, in Germany, the new construction targets proposed to meet urgent housing need is 400,000 houses per year, while what could be built within the available carbon budget for the whole of Europe is 176,000.[12] However, this number is not high enough to meet the

current and expected future demand for housing. It is therefore of critical importance to adapt our current housing development policies and consider the existing building structures that could be used.

Sufficiency measures would also mitigate the impact of current housing development on biodiversity loss, especially urban sprawl. Urban sprawl, the spreading of urban development to undeveloped land nearby cities, is characterised by low-density residential housing and an increased reliance on private automobiles. In 2021, 50-80% of the EU population lived in urban areas, depending on the MS, a number that had largely increased over the past centuries and that is foreseen to grow even further[13]. Urban sprawl is responsible for the destruction of wildlife habitat, such as forests or humid areas and contribution to the reduction and extinction of whole species. Furthermore, the multiplication of impermeable surfaces resulting from expanding cities often replaces water-absorbing vegetations and soil, driving the risk of floods and natural hazards. Limiting the need for new buildings and the expansion of urban areas would counter this trend and is achievable through sufficiency measures.

The three prongs: Sufficiency, Efficiency, Renewables

With the focus on reducing our overconsumption of resources, sufficiency and efficiency are two sides of the same coin. However, while efficiency helps to optimise resource use, only the concept of sufficiency focuses on ensuring the needs of society, communities, and individuals are met by a sustainable level of resource use. While EU policies have prioritised energy efficiency policies to reduce energy demand and renewable energy policies to decarbonise the supply, sufficiency remains a blind spot and a largely missed opportunity in European climate and energy policies. The CLEVER scenario estimates that, in countries such as France, Germany or the UK, sufficiency could reduce final energy consumption by 20-30% by 2050.[14]

Sufficiency policies can be applied in a range of contexts beyond the clean energy transition, including to the built environment itself, as a vast resource of space in which we live, work, and play. In

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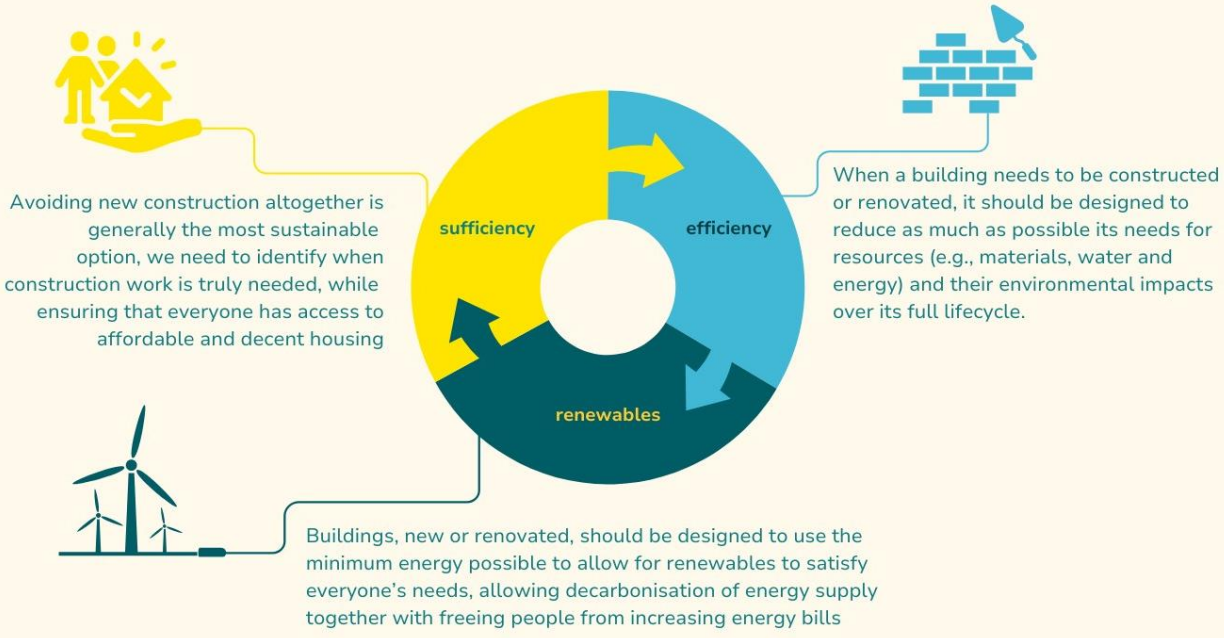
this context, sufficiency raises the question: do we have enough of what is needed in a certain geographical and social situation? One attempt to define the implementation of sufficiency in buildings has been formulated as, "*the adequate space thoughtfully constructed and sufficiently equipped for reasonable use*".[15] It encompasses **the need to offer decent and affordable housing to everyone, while rethinking how buildings can be used in a way that reduces unused or underused spaces,** thereby increasing well-being while enabling a relative or absolute reduction of resource use.

This can be achieved through multiple strategies, all with attention to adequate space for everyone and guaranteeing privacy, functionality and comfort at decent levels: optimising the use of buildings with co-working, co-living; multi-purpose spaces; reducing vacancy rates; decreasing the amount of secondary and tertiary residences; prioritising multi-family buildings over single-family homes; and adjusting the size of dwellings to the needs of households and ensure flexibility when they change over time.

The objective of sufficiency strategies in the built environment is to address both its social and environmental challenges by using building in a more efficient and socially just way. Thereby, the needs for decent housing can be met while staying within planetary boundaries.

While other circular economy approaches such as reuse or alternative building materials focus on 'building better', **sufficiency is about rethinking our space use and asking whether we need to build in the first place.** Sufficiency, efficiency and the uptake of renewables must go hand-in-hand to respond to the social and environmental crises. However, so far, sufficiency has been neglected in policy making, despite it being the most effective lever we have.



Examples of sufficiency policies

The implementation of sufficiency policies at the planning, design, or construction stage that specify criteria related to floor space, mixed uses, or adaptability to enable better use of existing space or better design of new space are still far from being the norm. However, there are an increasing number of inspiring examples from around Europe. They are characterised by quantified floor space limits and other qualitative criteria linked to permitting, as well as fiscal or economic incentives which policymakers should integrate into their strategies for a sustainable built environment.

Sufficiency policy measures are not about imposing additional obligations and requirements on citizens about where and how they should live, but rather about introducing systemic changes in the way policymakers and industry players develop housing that meets the population's need for appropriate housing and overall decent living conditions, without trespassing on planetary boundaries. Studies have identified various categories of sufficiency policy instruments: regulatory, economic, nudging, cooperation and information.[16]

An analysis of existing and proposed sufficiency policy measures in the built environment shows that they address a multitude of issues, which can be divided in four objectives:

1. **Reducing vacancies:** identifying vacant buildings and facilitating their use to ensure *all* buildings are used.
2. **Increasing space use intensity:** facilitating and incentivising right-sized spaces and space sharing to ensure that buildings are used *efficiently.*
3. **Prioritising primary housing:** restricting the possibilities to use space for other purposes than primary housing to ensure space is used *for the most urgent purpose.*
4. **Directly addressing urban sprawl/inner-city densification:** mitigating the impact of housing development on biodiversity loss and climate change adaptation.

1. Reducing vacancies

With 16% of EU dwelling currently unoccupied[17], **vacancy** is a key characteristic of the way the existing building stock is being used. In order to give these spaces new life, several measures should be considered:

- **Monitoring the use of the existing building stock** would be an efficient first step in fighting vacancies. Closing the current gap of data of vacancies in EU Member States would allow policy makers to gain a deeper understanding of the state of play of EU building stock and apply appropriate policy responses, for example by designing tools to facilitate connection between owners of vacant spaces and potential renters. If the initiative is led by an

independent institution, close collaboration with public authorities is crucial.

France has a national policy against vacancy, including a tool, called LOVAC, crossing data from different national and local databases (e.g. data collected from taxes), for municipalities to access and get better understanding of what types and how much vacant homes are in their territory.

The NGO FREE RIGA is working closely with the municipality to identify the vacant buildings in the city and provide a **service of intermediary between owners and prospective users of the spaces**.

- **Fiscal measures** such as the taxation of vacant housing based on the potential rental income is also a possibility to fight vacancy.

In France, **vacancy taxes** have been successfully implemented and encourage owners to reintroduce empty dwellings to the housing market in areas where there is unmet demand for municipalities with over 50,000 inhabitants, and enters into force after one year of vacancy. It is proportional to potential rental income and starts at 17% in the first year, increasing to 34% in the following years if the property is still vacant.

Vacancy in the building stock also arises from changing needs for building types, such as office, industrial, or residential buildings:

- **Promoting the adaptive reuse of buildings** by adapting building regulations, taxation, and public procurement guidelines [18] allows for a continued use of vacant buildings for a different purpose. For instance, vacant industrial or office buildings due to a shift of economic activities in cities (e.g., away from industrial activity or using less office space due to increased telework) might be transformed into residential buildings.[19]

The Plaza in Parkwest, Dublin, was a former vacant office bloc in a neighborhood with strong housing needs. The 7. 500 square meters office space was converted to 86 one or two bedrooms apartments and allowed to reopen many shops which had to close due to vacancy.

The city of Vienna is one of the largest property managers in Europe and has put together rules for flats exchange (for municipal/community/rental apartments), where one of the main criteria to be fulfilled is that both apartments meet the reasonable housing needs of the future tenant.

2. Increasing space use intensity

Economic incentives such as bonus payments for living in small spaces, or **regulations** allowing two tenants of the same house to exchange flats without a rise in rents, are possibilities to fight both vacancies and housing related poverty.

In the same manner, **low intensity** of space use contributes to the lack of adequate housing opportunities in urban areas.

- **Informational campaigns and one-stop shops** providing owners with advice regarding building regulations for switching usage or adapting houses are a key component of a smooth transition and should support regulation and taxation policies.

Likewise, a clear issue of **wrongly sized living or working spaces** can be observed in the EU. This is closely related to changing family constellations: young and growing families find themselves searching for bigger flats, while elderly people are often overwhelmed with living spaces that surpass their needs (for instance, 10% to 15% of the German population already consider a move into smaller living spaces[20]). On top of that, with the growing popularity of (partial) home office, office spaces are freed up or become underused.

- **Right-sizing the existing space in buildings** represents an opportunity to reduce the need for new construction and therefore for material consumption and provide citizens with living spaces corresponding to their needs.

The Cohaus Kloster Schehdorf in Germany represents a best-case example for **smart repurposing of wrongly sized space**, to create high quality living space. The ancient monastery was renovated and transformed into a residential building with shared spaces, giving the building a new life.

- **Financial incentives for moving** to smaller flats or houses or for the creation of **co-living** initiatives can be used to encourage the right-sizing of living space. Conversely, property taxation schemes could be designed in a way to discourage dwellings above a certain maximum standard of floor area per person.[21]

The German state-owned investment and development bank KfW supports co-living projects through reduced interest rates.

Overall, private initiatives such as the French Cohabilis supporting intergenerational co-living should be used as best-case examples, as they do not only **tackle issues of housing shortage for young people and wrongly sized flats for elderly people but also a problem of loneliness of old age**.

- **Selection criteria in land allocation tenders as well as public procurement** can be a useful tool for municipalities to prioritise building projects that promote efficient space use through e.g., right-sized, shared and/or multi-purpose spaces.[22]

3. Prioritising primary housing

In areas where housing is scarce and expensive due to **strong competition with other building usages** such as commercial purposes, tourist accommodation, or secondary residences, restricting these usages and prioritising primary housing is needed to ensure the availability of affordable housing.

  - Intensifying the **prohibition** on misusing living space for commercial purposes or tourist accommodations, as well as on the demolition of functioning buildings. The retrieved space can be repurposed and put on the market as housing.

The German federal state laws allow municipalities to prohibit these kinds of misuse. One strategy, as applied in Hamburg, is the allocation of permitting for sublets, specifically with the intention to **better monitor tourist sublets and restrict in case of housing shortage**. This involves the allocation of "housing protection numbers" to only occasional short-leasing and permits for long-term subleasing.

- **Limiting secondary residences** can help to ensure affordable housing for local residents, reduce the number of underused buildings and prevent sprawl.[23]

In Switzerland, since 2016, the federal law on second homes has required all municipalities in Switzerland to draw up an annual inventory of housing, and in principle **prohibits the authorisation of any new second homes in municipalities that have exceeded the 20% quota**.

4. Directly addressing urban sprawl and inner-city densification

Current building development plans also have impacts on **unbuilt land**, and with negative repercussions on, but not limited to, biodiversity, inner-city air quality and adaptation to climate change. These impacts can also be prevented or mitigated through sufficiency policy measures. Because if sufficiency measures for the built environment aim for a better and intensified use of the existing space, this needs to be balanced against preserving good living conditions for people, including for example good air quality and healthy ecosystem able to mitigate and adapt to climate change.

Inner city densification can for instance be mitigated to avoid abuse through establishing protected areas in city centres, such as greenbelts:

- In order to protect these open spaces, they could be designated as **protected areas, subject to a ban on building and sealing**. Inner city densification is also closely related to the construction of a large amount of car parking spaces.

We Are Nature.Brussels association has been set up by citizens to launch a legal action and make the regional government **stop issuing building permits on natural areas in Brussels**. The case is currently underway.

The Lombardy Region and the Municipality of Milan are promoting a special status incentivising the refurbishment of abandoned buildings while **increasing taxes for new buildings in green fields is increased by 20-50%.**

- **Abolishing obligations for car parking spaces** in front of buildings or underground has the potential to free up space in overcrowded cities. To ensure that people are still able to move freely in the cities, these measures should work hand in hand with the development of greener means of transport, such as public transportation, creation of bike lanes, and carpooling systems.

Higher quality city centres would also reduce **urban sprawl** as existing urban space can better accommodate existing demands, the second key issue of unbuilt land:

- Urbans sprawl can also be fought through **fiscal and economic measures**, such as the taxation on space consumption or the building on green fields, but also stopping financial incentives for newly built single-family houses;
- Permitting can also play a major role in fighting urban sprawl by designating protected areas against new developments.
- Incentivising redevelopment of urban brownfield, especially around small and medium cities, presents with the huge opportunity to avoid urban sprawling and alleviate pressure on the housing market.

Switzerland's Spatial Planning Law for instance, **divides the unbuilt land in building and non-building land, on which new construction is prohibited in order to protect the environment.** Exception can only be made for the necessary buildings, such as hospitals or schools, and after consultation with public authorities.

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