NO NET LAND TAKE BY 2050
SOLVING THE UNSOLVABLE
10 solutions for an improved management of European land

January 2022
Build Europe is the umbrella organisation for European Union Member States’ national federations of developers and house builders, representing more than 30,000 developers and house builders affiliated to the federations of 14 European countries.

Build Europe’s main objective is above all to meet the social and environmental aspirations of European citizens. Build Europe works with its Members to promote practical deliverable policy approaches to build more, with better quality and at an affordable price.
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Editorial by the President

Through these proposals, Build Europe hopes that the measures put forward will correspond as closely as possible to the dual aspirations of the citizen to have a pleasant living environment close to amenities, and of the community to reduce urban sprawl. However, the European executive must above all bear in mind that the price of housing in relation to the income of European households is already too high.

It is therefore clear that the objective of ‘No net land take by 2050’ cannot be achieved at the expense of the least well-off households. The challenge is to implement a policy that combines land efficiency and accessibility to housing for all.

Marc Pigeon, Build Europe President
Introduction

The Council and the European Parliament defined the 2050 no net land take (NNLT) target in a 2013 decision, and the European Commission has set targets aimed at bringing the progression rate of land take into line with the NNLT target by 2050. There is therefore a clear desire from the European institutions to stop net land take in Europe in less than 30 years. This extremely ambitious objective is in line with the environmental policy of the European authorities.

At the international level, the member states of the United Nations declared at the Rio de Janeiro conference on sustainable development in 2012 that they would "strive to achieve a world that is neutral in terms of land degradation". Many countries have already adopted several measures to counteract soil artificialisation, as we shall see later.

Build Europe is intervening in this policy debate as it determines the conditions of regional and urban planning, and the housing possibilities of our fellow citizens. Land is the raw material of these economic activities, and it defines the framework and living conditions of citizens. Therefore, any related regulation must be considered in the light of all the impacts it may produce.

In a constructive approach that considers environmental issues and international political orientations, we propose to provide a concise examination of the current situation, to analyse the proposed framework for the policy of no net land take and, finally, to put forward the most efficient proposals to meet the set objective.
STATE OF PLAY

Land take in the EU

a. Definition

The European Environmental Agency (EEA) defines land take as “the covering of space by urban buildings and infrastructure as well as urban green areas and sports and leisure facilities”¹. The EEA specifies that the measurement of the evolution of land take includes uncovered spaces such as green spaces in cities. Thus, the fragmented urban fabric is taken as a whole.

Comment: this definition implies that natural spaces embedded in cities or housing are not taken into account. These green spaces play an essential role in maintaining biodiversity, the water cycle, and absorbing carbon. Natural solutions such as gardens, hedges or rows of trees lose de facto their relevance in the eyes of the authorities, despite their practical utility.

In the guidelines drawn up by the European Commission there are three objectives:

Restricting, mitigating and compensating

In “Land take and Urban Sprawl” (2015), Massimiliano Bencardino states that “encouraging the re-use of already built-up areas, to improve the quality of life in large urban centers, strengthening public transport infrastructures, protecting the quality of urban and peri-urban agricultural zones”² are some of the solutions put forward by the Commission³. Where mitigation is not feasible, mitigation measures to reduce the impact of land take should be encouraged.

Moreover, the same Commission guidelines recommend “urban containment”! That is to say, the creation of green belts around large metropolitan areas to prevent the merging of cities and to advance urban regeneration. Following the principle of subsidiarity, the implementation of this policy falls under the responsibility of the different Member States.

Comment: this vision favours the reuse of urban and industrial wastelands, a vision shared by Build Europe, but would also further densify large cities. One of the major consequences of the pandemic has been to increase the appetite of European citizens for housing with gardens. The vision of an urban Europe of high-density housing is completely opposed to the desire for more larger homes as explained below. This represents a clear gap between policy orientation and the demands of citizens.

¹European Environmental Agency, Indicators. Land take in Europe
²Land take and urban sprawl: drivers e contrasting policies, Bencardino (2015).
³Sustainable Urbanisation and land-use Practices in European Regions, European Spatial Planning Observation Network
b. Observation

According to the European Spatial Planning Observation Network (ESPON), about 0.6% of the EU’s geographical space changed use between 2000 and 2018\(^4\). Less than half of this area was converted to urban use, with a very large majority (78%) in agricultural use. This first glance shows that the need for housing cannot be held responsible for the use of natural areas, which is largely linked to the agricultural sector. In France, for example, the forest is expanding faster than urbanisation, due to agricultural abandonment. In Europe, this represents about 613 million cubic metres of forest growth per year.

\(^4\text{idem}\)
State of play for land and housing

c. Land take statistics

According to ESPON’s Urbanisation and Sustainable Land Use Guide, “almost half of this is conversion to urban land. […] Most of this urbanisation has been at the expense of agricultural land (78%)”\(^5\). Industrial and commercial units are thus responsible for a large part of the land use.

\(^5\)Idem
\(^6\)Sustainable Urbanisation and land-use Practices in European Regions, European Spatial Planning Observation Network
d. Regional differences

According to the same report, “urbanisation did not happen equally in all countries and periods. Far less land was converted to a new use in the years following the financial and economic crisis, especially in Spain and Ireland”\(^7\).

**Comment**

*Following the 2020 recession, it is crucial to understand whether usage change will continue at the same rate before implementing restrictive measures.*

e. Housing statistics

**Less than 3% of land in the EU is used for residential purposes**

In 2015 “almost 75% of land in the EU was used for agriculture and forestry, while only 2.9% was used for residential housing”\(^8\).

The Housing in Europe report also demonstrates that “this figure hides substantial differences between EU regions. The largest share of land used for residential areas in the EU was in the Brussels region in Belgium (55% of land is used is for residential areas). Yet in 19 regions, this share was less than 1% […]”\(^9\).

*These statistics imply that caution should be exercised before establishing the same rule for all.*

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\(^7\) Idem  
\(^8\) Idem  
\(^9\) Housing in Europe (2020 edition), European Commission  
\(^10\) Residential areas, 2015, Eurostat (GISCO)
Permits for residential buildings decreased between 2010 and 2019

According to that same report “the highest number of building permits granted for residential buildings was observed in 2010. Overall, between 2010 and 2019, there was a decrease of 3 %” with “the largest decreases observed in Greece (-69 %), Italy (-54 %), Cyprus (-33 %) and Slovenia (-32 %)”\(^{11}\).

**Comment**

*There is a lack of housing supply in Europe. The sector is in a difficult situation with building permits becoming less and less accessible.*

Construction costs up by 15%

Authors also point out that ‘the cost for constructing new residences in the EU has also increased during the period 2010 to 2019, especially since 2016. The increase during the whole period was 15 %. Among the Member States, the largest rises were observed in Hungary (+47 %), Romania (+48 %), Latvia and Lithuania (both +38 %). Greece was the only Member State to record a decrease (-7 %)”\(^{12}\).

**Comment**

*The Fit for 55 package, that aims to tax raw materials such as steel, aluminium or cement, and includes an increase in construction constraints is likely to further exacerbate this increase, which will be directly passed on to European households.*

\[^{11}\]Housing in Europe (2020 edition), European Commission

\[^{12}\]Idem

\[^{13}\]Idem
House prices and rents on the rise

The Housing in Europe report and Eurostat also notes:

1) a 34% increase in house prices since 2010, "with a 19% increase in house prices recorded between 2010 and 2019 [...] with the highest increases in Estonia (+96%), Hungary (+82%), Latvia (+75%), Luxembourg and Austria (both +65%) [...]."\(^{14,15}\)

2) a steady increase in rents in the EU between 2010 and 2019 — "a total of 13% over the whole period."\(^{16}\)

For example, a 16% increase in housing prices has been observed for the year 2020 in Luxembourg alone. Luxembourgers, especially young households, are wondering how and where they can live in Luxembourg in the future.

\(^{14}\)Idem
\(^{15}\)Eurostat, Eurostat news, Rents up by 16%, house prices by 34% since 2010 (7/10/2021)
\(^{16}\)Idem
\(^{17}\)Housing in Europe (2020 edition), European Commission
Average transaction price of a new home in selected cities

In the Property Index Overview of European Residential Markets, Deloitte also provides a schematic overview of the transaction price of a new home in selected EU cities in 2019.

<table>
<thead>
<tr>
<th>City</th>
<th>Average Price (EUR/sqm)</th>
<th>Annual Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vienna</td>
<td>4,868</td>
<td>3.4%</td>
</tr>
<tr>
<td>Graz</td>
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<td>Lienz</td>
<td>3,092</td>
<td>0.2%</td>
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<td>Brussels</td>
<td>3,350</td>
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<td>Antwerp</td>
<td>3,375</td>
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<td>Ghent</td>
<td>2,475</td>
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<td>Sofia</td>
<td>1,088</td>
<td>-0.2%</td>
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<tr>
<td>Varna</td>
<td>827</td>
<td>0.7%</td>
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<tr>
<td>Burgas</td>
<td>843</td>
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<tr>
<td>Zagreb</td>
<td>1,731</td>
<td>0.7%</td>
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<tr>
<td>Prague</td>
<td>3,395</td>
<td>10.2%</td>
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<td>Brno</td>
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<td>Ostrava</td>
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<td>Copenhagen</td>
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<td>Amstelveen</td>
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<td>Odense</td>
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<td>Paris</td>
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<td>Marseille</td>
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<td>Munich</td>
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<td>Frankfurt</td>
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<td>Bratislava</td>
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<td>Baranya Systrica</td>
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<td>Kőrös</td>
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<td>Madrid</td>
<td>4,394</td>
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<td>Barcelona</td>
<td>5,763</td>
<td>5.7%</td>
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<tr>
<td>Alicante</td>
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<td>-9.3%</td>
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<td>Milan</td>
<td>3,729</td>
<td>2.5%</td>
</tr>
<tr>
<td>Rome</td>
<td>3,259</td>
<td>-1.8%</td>
</tr>
<tr>
<td>Turin</td>
<td>1,547</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Riga</td>
<td>3,999</td>
<td>-3.3%</td>
</tr>
<tr>
<td>Jūrmala</td>
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<td>Luxembourg City</td>
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<tr>
<td>Esch-sur-Alzette</td>
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<td>Differdange</td>
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<td>Amsterdam</td>
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<td>Rotterdam</td>
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<td>The Hague</td>
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<td>Warsaw</td>
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<tr>
<td>Krakow</td>
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<td>11.5%</td>
</tr>
</tbody>
</table>

Property Index – Overview of European Residential Markets, July 2020, Deloitte, Miroslaw Linhart, Petr Hána, Igor Zsebik and David Marek
The European Central Bank recently sounded the alarm about the risks associated with the uncontrolled rise in the housing market, where prices are increasing at their fastest rate in the last sixteen years.18

La BCE s’inquiète de la flambée des prix immobiliers

Dans sa revue de stabilité financière, la Banque centrale européenne pointe les risques liés à l’exubérance de certains marchés, notamment immobiliers.

Romain Gomgougou

Jusqu’ici tout va mieux sur le front économique. La Banque centrale européenne (BCE) s’en réjouit. « La reprise en zone euro a permis de relancer l’activité des entreprises et stimulé par conséquent leur moindre conjoncture et le risque crédit », a indiqué ce mercredi le vice-président de l’institution, Luis de Guindos. Mais de nouvelles menaces apparaissent, qui pourraient fragiliser à terme le secteur financier.

C’est le cas notamment de l’exubérance des prix immobiliers, observée depuis plusieurs années. « Les signes d’inflation s’accompagnent d’une exagération des prix immobiliers dans les pays où la récession a été la plus profonde », avertit Le superviseur dans sa revue de stabilité financière.

Les prix n’avaient pas augmenté aussi vite depuis 2005, souligne le rapport de la BCE.

Au deuxième trimestre, les prix de l’immobilier ont bondi de 7,3 % dans la zone euro, soit le plus fort depuis 2005. Dans un contexte d’assouplissement des conditions de crédit, rappelle la BCE dans son rapport, la « dynamique de l’immobilier s’est renforcée en 2020 ». Les prix ont même décollé en septembre. « Les tensions de marché ont ainsi progressé, en partie due à des attentes croissantes de la demande, notamment en France et dans les pays de la zone euro », souligne la BCE.

Les signes d’exubérance sont visibles dans plusieurs pays. « Les prix immobiliers ont baissé de 6,2 % en septembre, à un taux moyen de 1,8 %, » précise le rapport de la BCE. Les tensions de marché ont ainsi progressé, en partie due à des attentes croissantes de la demande, notamment en France et dans les pays de la zone euro.

Les défis demeurent pour les banques

Outre l’immobilier, la BCE pointe aussi les risques liés aux récents records atteints par les marchés financiers, alors que des « pressions d’assouplissement de crédit » s’atténuent. « Les tensions de marché ont ainsi progressé, en partie due à des attentes croissantes de la demande, notamment en France et dans les pays de la zone euro. »

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Faced with the inevitable rise in property prices, as explained hereafter, the tightening of credit conditions will further penalise middle-income households who want to access property.

18 La BCE s’inquiète de la flambée des prix immobiliers, 17 novembre 2021, Les Échos

19 Idem
A Necessary Balance

In light of these elements, we can see that property prices are already very or too high for European citizens. Moreover, the political orientations will lead to several consequences:

a. A growing shortage of affordable housing

The demand for housing is already strong and unmet, but this will certainly worsen as the supply of developable and buildable land reduces further, as a consequence of NNLT, with the resulting mismatch in supply and demand leading to a de facto increase in land prices. Furthermore, the reclamation of derelict land and commercial areas will lead to additional development costs, either to finance the clean-up, demolition or compensation normally requested by operators in commercial areas.

As for construction costs, it is widely recognised that reconstruction in urban areas is more expensive. If we add to this the forthcoming regulations concerning energy savings, carbon emissions, the reuse of deconstruction materials, waste management, etc., construction costs are likely to soar.

The taxes of the various local authorities will increase to finance public equipment and facilities that are essential to reducing transports by car. Rebuilding the city means undertaking urban development operations to redesign neighbourhoods and provide facilities in areas that are more populated than before.

Thus, all the components of the price of real estate, such as land, construction costs and taxes, are expected to increase in a way that is totally inconsistent with household income.

Ultimately, new housing will become increasingly unaffordable.

Existing housing, which some people present as THE solution, is not always well-adapted to modern living conditions (accessibility for the disabled, soundproofing, partitioning, etc.). This existing infrastructure would require deconstruction and rebuilding in order to bring it in line with modern housing expectations – a costly solution. Acquisition and renovation will always represent a higher cost than new construction. We have noted the political ideology concerning the renovation of existing housing, but the global reflection requires that the quality of life be mentioned in parallel. Not all old buildings are Haussmann-style residences, far from it.

In this political context oriented towards no net land take and the European Green Deal, the question is no longer to know HOW we could stop the rise in property prices but HOW we will try to control it.

Housing will remain a basic commodity that is becoming less and less accessible, making households that do not have access to social housing more vulnerable, thus hindering the residential pathway to which they aspire.
b. A societal divide

The policy orientation of no net land take risks widening the divide:

1) **Between families:** The most affluent will be able to purchase a home, or even of a house, which will become a luxury product after being a product available to the working classes, while the most deprived will be a little more excluded from society and forced to live in areas of greater density.

2) **Between metropolises,** on the one hand, and medium-sized towns and villages on the other. It is easy for the big cities to courageously decide to enforce no net land take, even though they are already developed. This does not require any sacrifice because they have large stocks including big commercial areas on their outskirts. It is estimated that the wastelands identified in Île-de-France represent the equivalent of 40% of the Paris surface area.20

On the other hand, for other territories, where land availability may be one of the only comparative advantages, NNLT may prevent territorial development strategies: difficulty in setting up businesses, difficulty in installing new infrastructures or services. There is therefore a threat to social and territorial cohesion. This does not mean that urban sprawl is a good thing to pursue, but that NNLT can have perverse effects if it is not differentiated between different regions.

Of course, Build Europe shares the ethical conviction to be more economical with land use, as expressed in the EU objective. However, there is a risk that Member States will implement this principle too strictly and too literally.

**IT’S ALL ABOUT BALANCE!**

c. A gap between political orientations and citizens’ expectations

Urban sprawl has also developed in response to the new lifestyles of citizens who wanted to live close to the city in order to benefit from schools and other infrastructures, but also desire more space and a better quality of life for less money. The Covid pandemic has only amplified this trend.

On the other hand, the policy is to restrict land and preserve everything outside the urbanised area. We will therefore need to make the city more desirable: the density and the renovation of the existing building stock is unlikely to meet to the expectations of our fellow citizens. Especially since density is not desired by citizens who are already housed, as reflected by the pressure they exert on elected officials to reduce it and by the increasing number of appeals against building projects. It is also not desired by the elected representatives who listen to the concerns of their constituents.

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20 Les friches recensées en Île de France représentent l’équivalent de 40% de la surface de Paris, 28 octobre 2021, BFM IMMO
Build Europe's perspective

Preliminary observation

The European institutions have stated a clear desire to stop net land take in Europe in less than 30 years.

This extremely ambitious objective comes up against several difficulties. The first concern is the very definition of land take and therefore the ability to measure this phenomenon.

**IT IS IMPORTANT TO KNOW WHAT WE ARE TALKING ABOUT!**

The French government report “Objectif « zéro artificialisation nette » : quels leviers pour protéger les sols ?” highlights the lack of precision of land take measurements at both European (CORINE Land Cover) and national (Teruti-Lucas in France) levels. The measurement of the rate of artificialisation can vary from 5 to 9%, which has extremely different implications in terms of policies and social and economic impacts at national and local levels.

The second difficulty stems from an overly uniform vision of the NNLT initiative coupled with a desire for harmonisation at the European level. Beyond the direction taken at the European level, there is a considerable number of laws and regulations already implemented at national and local levels in each member state. This single policy on land reclamation thus risks overlapping with measures already taken at national and local levels.

Finally, this objective does not take into account the specific reality of each region and the economic, social and land context of each territory as explained above. Many regions need space to grow their economic activity, attract investors and meet the needs of their population. This is also true at the level of each country: population density is three times higher in Belgium (374 inhabitants/square kilometre) than in France (120 inhabitants/square kilometre). The issue of artificialisation does not therefore arise in the same terms. France does not lack space or farmland, but it does lack the farmers to cultivate it. And the phenomenon is likely to increase in the years to come. The risk of the NNLT objective in 2050 is therefore based on the imprecision of the definition of artificialisation, the contradiction with existing legislative measures, and the difficulty of taking into account the diversity of regional situations.

Instead of the NNLT principle, whose framework is imprecise and excessively uniform, we prefer the notion of "economical use of space" aimed at protecting natural resources and biodiversity. This economical use must be balanced and adapted to the economic and social conditions of each region so that ‘No net land take’ does not become ‘No net housing’ for European citizens. This is the idea of "land sobriety" towards which we must strive. NNLT is a slogan that encourages virtue, but it must not become an intangible planning rule applied indiscriminately to all regions and at all scales.
We cannot impose this dogmatic rule on a small or medium-sized town that needs to accommodate a company as well as new road infrastructure and new housing for the employees. For this town, this would mean giving up all activity and all possibility of post-Covid economic recovery.

We reiterate that the vision of NNLT initiative in 2050 must necessarily be adapted to local situations. The guiding principle of our reflection (already expressed in our Manifesto "Housing: A European Challenge - New Strategy") must be based on spatial planning, i.e. a public policy aiming at a balanced and harmonious distribution of populations, economic activities and infrastructures on the European territory.
PROPOSITIONS FOR AN ECONOMICAL MANAGEMENT OF LAND

We believe that we must remain very cautious and avoid unfairly criticising past attitudes in terms of land take. What seems obvious to us today will perhaps be contradicted in the next 30 or 40 years. There was a time, not so long ago, when modernity meant expanding, in a context where agriculture was becoming more productive, where there was less need for land and where the political dynamic was to ensure growth, consumption and the well-being of our fellow citizens. Cars represented a considerable technological advance, and collective mobility facilities, such as tramways were dismantled.

Today, climate change forces us to adopt different policies. We must try to do the best we can, as our predecessors did, while bearing in mind that today's truth may not be tomorrow's.

Today, to be consistent with the political will and the new climate and environmental state of play, Build Europe supports the idea of a policy of land frugality that is not too burdensome for our fellow citizens, particularly for the first item of expenditure in their budget, which is HOUSING.

A rational and balanced policy requires both REGIONALISATION - that is, organisation at the regional level - and an IN-DEPTH rethinking of land, building and tax policies to enable an economical management of land.

Regionalisation

a. Choosing the appropriate scale

The right scale seems to be the regional scale. A scale that is too narrow, such as the local level would be a case of every man for himself and would prevent any global reflection. It would also run the risk of creating counterproductive competition between cities in the use of space. The reflection on land take cannot be limited to the exit signs of each village. The smaller the scale, the more rigid the system, the more constraints are intensified, and the less successful arbitration can be.

b. Looking at the big picture

In order to analyse the current state of affairs in terms of land take, it is essential to develop a regional land observatory tool. If we look at the overall situation, we can see that, in France, for instance, the land consumption rate has been decreasing since 2009, but it varies greatly from one region to another. Digitalisation, mapping, and research and development are needed to understand the mechanisms behind land take.
If we want to turn a scientific concept, land take, into a legal and planning objective, it must be precisely defined and understood. This is true of artificialisation, but it is even truer of land take reduction, which will be an essential breath of fresh air in the system. What does it mean to bring a piece of land back to nature, what is the initial state to which we must return? On what time scale can this be assessed?

c. Adapting to local situations

This adaptation must naturally be based on the data gathered by the regional land observatory and the expectations of citizens in these regions. It would be interesting to look into the relationship between the rate of land consumption and the rate of population growth or decline. This "SDG-11" land consumption indicator, adopted by the United Nations Assembly in 2017, could constitute a basis for reflection on urban policies that the EU should impose.

Thus, the proportion or disproportion between population dynamics and land consumption could be assessed. It would be important to link this land consumption to current and future housing needs in order to avoid shortages. Furthermore, the European Semester should establish recommendations specific to each country and region. This cannot be done without mapping, demographic and zoning tools. Without such tools, there cannot be a carefully considered no net land take policy.

d. Monitoring

An assessment could be carried out on a regular basis, for example every five years, in order to take stock of the first measures taken and to amend measures if necessary. Indeed, one should not forget to prevent the consequences of an overly rigid no net land take policy that would penalise further a demand for affordable housing that is already unmet.
BEST PRACTICE - UNITED KINGDOM

The National Planning Policy Framework (NPPF) requires local planning authorities to identify a 5-year supply of housing land to meet their housing needs. A 5-year land supply is defined as a supply of specific deliverable sites sufficient to provide 5 years' worth of housing against a housing need set out in adopted strategic policies, or against a local housing need figure.

Public authorities aim to promote the use of brownfield sites for residential development, and greenfield sites can also be developed. The NPPF does not introduce no net land take and it is even possible, in exceptional circumstances, to allocate 'green belt' land for residential development where other land supply options are not available.
Economical land management

Land, building and tax policies must be rethought at all levels in order to use space sparingly and preserve biodiversity without undermining regional dynamism and reducing access to housing.

Build Europe would like to propose several ways to safeguard affordable access to housing for European citizens.

a. Land-based solutions

Solution 1 - Increased density

The issue of density is central to use land efficiently. Density is not only about multi-storey buildings or dwellings within high rise buildings, but also about dense organisation. No net land take defines what should no longer be done: urban sprawl. But it does not say anything about what should be done instead: density.

There is therefore a risk that governments and residents (the ‘insiders’, those who are already there and who are satisfied with the status quo) will support the idea of individual housing, but at the same time reject new buildings next door (especially if they are denser and higher). The EU needs to be coherent, and to state clearly that the reduction in land take must be accompanied by an increase in density in urban areas.

This means rethinking the way cities are structured. Strategies for qualitative urban development must be encouraged through a shared dialogue between operators and communities. All solutions that increase density must be explored. One concrete example would be the construction of an extra floor.

IMPORTANT: Urban densification measures, such as building on gardens within the urban space, should be excluded from the definition of land consumption and land take in the context of the land use policy we advocate for.

Solution 2 - Create a right to ‘land take’ and compensation systems

The problem of land take is not the same for regions in decline and regions with a high migratory influx. It is therefore necessary to estimate a “land take right” that would depend on demographic forecasts and the potential for construction. Build Europe proposes to establish a sort of “right to use land” and but also to trade and compensate. This approach requires to define compensation ratios.

For example, a local council that wished to rewild industrial wastelands in the urban centre to create a natural environment in the heart of the city would benefit from a “land take right”. This right to compensation could be used in its own area or traded with another council. This strategy would make the city more desirable in response to our observations on the existing gap between citizens’ expectations and new political orientations.
BEST PRACTICE - GERMANY

In Germany, there is a system of exchange of "surface certificates" between municipalities. Each municipality is allocated a certain amount of building land as a surface certificate. If the quota is not used, it can sell all or part of it to other municipalities. With this income, the latter can use it to develop new spaces necessary for its attractiveness. These area certificates are linked to demographic movements.

The "Planspiel Flächenhandel" project on the exchange of land certificates carried out between 2013 and 2017 "confirmed the practicality of the exchange of certificates and its effectiveness in achieving the German government's reduction target"\textsuperscript{21}.

The simulation, in which 87 German municipalities participated, showed that a trading system could reduce the consumption of new land in the area around cities "by almost 50%" and in the city almost all planned projects were realised. According to the same report, "the results of the field experiment show that municipalities with a growing population have to buy additional certificates, while regions with high emigration can sell certificates"\textsuperscript{22}.

Solution 3 - Urban planning

Planning implies favouring construction in areas that have already been developed: reconstruction of the city on itself, re-use of commercial and economic areas, etc. Fortunately, commercial areas are important sources of urban development and densification and do not require additional land take.

Planning must be tested for reversibility. Until now, we have usually defined "areas" for business, others for housing, for industries, etc. Today, we must find a balance between the two. We must support a functional mix like for the built environment. We can no longer have offices located on one side of the city and housing on the other side, as was done in the past.

Urban planning must also, depending on local situations and following a preliminary analysis, allow the development of lightly built-up areas that are indispensable for the development of the city and respect the overall spirit of scarce land use.

The principle of 'contractualised urbanisation', put forward with local representatives, operators and citizens' organisations, must be established. It is also necessary to achieve a sustainable approach to development, by favouring virtuous projects and by embedding urbanisation within overall projects.

Rather than restrictive regulations, could we not imagine an incentive-based policy?

\textsuperscript{21}Progress Report 2020 - Reducing Greenfield Use and Sealing, LABO (Federal/Regional Working Group on Soil Protection)
\textsuperscript{22}\textit{idem}
Solution 4 - Protect soils within the project rather than prohibiting

The objective of NNL is to protect soils for the 4 functions or services they provide: economic potential, climate regulation, carbon and water storage and finally a support for biodiversity. It is therefore necessary to carry out urban planning operations that can both satisfy the needs for housing or activities and facilities and that allow new techniques to safeguard the functions of the soil. Thus, as soon as the project includes a certain percentage of open land, one can imagine an urban farm using aquaponics or hydroponics techniques, which would produce as much agricultural value as a monoculture field, supplemented by tree or hedge plantations, gardens around vegetated residences, bringing together climate resilience, biodiversity, and enhanced water and carbon storage.

These new neighbourhoods or projects would also have a more positive impact on the lifestyle and health of residents than the policy of systematising density alone in urban centres. NNL must be engaged not only in relation to planning regulations (which deal with the consumption of space) but also in relation to the functions of the land that can be safeguarded.

Or a more pragmatic policy?

We will inevitably be faced with land take needs. This is the case for utilities required for new inhabitants, such as waste disposal centres, wastewater treatment facilities, bus depots, etc. These facilities cannot be installed in urban centres, even if we imagine removing housing units to do so. In fact, we believe that no net land take, as such, is impossible to achieve.

b. Technical solutions

However, to act within the framework of land take reduction, many technical solutions can be imagined.

Solution 5 - Increase building reversibility

Reversibility concerns the transformation of housing into offices or vice versa. But that’s not all. Housing and other needs can evolve, and it is necessary to build, while thinking about the future. The design of future buildings should imperatively integrate the principle of modularity to preserve future needs and uses. This is a criticism that can be made in relation to the recent past. We believed we were doing the right thing, responded to a demand, or even a political orientation. The result is that housing is no longer adapted to current expectations. This is the case in France, where there was a willingness to allow most people to go on holiday on the seaside or in the mountains, and to make these holidays more affordable by building housing that is now too small to meet new expectations in terms of leisure.

Modular constructions have two main benefits: they are quicker to put together and allow for a very high energy efficiency. As the reduction of GHG emissions lies at the heart of the European Green Deal, this solution allows us to address both excessive land take and climate change.
Solution 6 - Building on stilts

To reduce land use and, in particular, sealing, which is defined as "the constant covering of an area of land and its soil with impermeable materials, such as cement or asphalt", one possibility would be to promote construction on stilts, which would prevent soil sealing without significantly increasing production costs. This solution would help to mitigate the impact of land take.

Thus, rather than talking about the consumption of space, it would be preferable to measure impervious surfaces in order to integrate renaturalization efforts or, as we have seen before, to introduce the notion of soil protection for the functions it performs.

c. Fiscal solutions

This policy of land frugality, which seeks to build on already built-up areas as well as recycling urban wasteland, will entail costs that will be difficult to bear for our fellow Europeans, who are already facing a glaring lack of affordable housing. It is therefore essential to support this transition fiscally through the following solutions.

Solution 7 - Develop aid for the reconversion of urban wasteland

The reduction of land take requires the creation of specific funds to support the reconversion of brownfields or adapted tax measures such as the reduction of VAT in certain areas.
BEST PRACTICE - FRANCE

As part of the sustainable construction recovery plan established in the autumn of 2020, the French government set up a "brownfield fund" with an initial budget of 300 million euros, which was increased to 650 million euros after this fund was made permanent. This fund can be used by project developers to provide financial support for private or public brownfield redevelopment operations, i.e. land that has already been developed, including polluted sites, with a view to reducing land use. It has a national and a local component. Regions that organise the calls for projects define the criteria for eligible projects, often in a very broad manner.

Solution 8 - Bonus to demolish or convert offices into housing

In its Manifesto, Build Europe stressed that taxation should be better adapted to the production of affordable housing. A satisfactory solution, in line with the objective of the Green Deal, would be to apply a reduced VAT rate on deconstruction and renovation operations, or even reconstruction in urban centres for residential use.

Indeed, except in certain specific cases, housing patterns have evolved to such an extent that renovation will not be able to meet current aspirations in terms of space distribution and to satisfy environmental and energy requirements. Reconstruction operations should therefore be encouraged to build the conditions for urban renewal.
BEST PRACTICE - BELGIUM

Belgium has put forward fiscal measures aimed to incentivise demolition and reconstruction projects. As explained by the law cabinet Eubelex, "since January 2021, the demolition and reconstruction of a residential building can benefit from a 6% VAT rate (instead of 21 %)."23 Moreover, the sale of the building "can also benefit from a reduced VAT rate" and also concerns "the accompanying plot of land, unless sold separately by a land company."24

Solution 9 - Support the transition to circular construction

Developers have integrated the concept of circular economy and have already taken steps on the ground, particularly in terms of design, recycling, procurement, etc.

However, the ambition to move towards a circular economy as a whole will have a negative effect on housing prices (new materials, higher insurance costs, etc.) as well as on deadlines. It is therefore of the utmost importance to assess the impact on housing affordability at each stage of the transition, and to provide sufficient funding for the whole sector, especially during the time of this industrial revolution.

Solution 10 - Strengthen integrated territorial investments

The objectives set by the European executive will require major efforts in spatial planning and urban development. This large-scale work will require support from public authorities, but it is already possible to build on existing measures. EU Regulation 1303/2013 states that "where an urban development strategy, other strategy or territorial pact requires an integrated approach (…), actions may be carried out in the form of an integrated territorial investment". Build Europe recommends strengthening the support available through these territorial investments in order to ensure the affordability of the territorial approach.

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23 Sale of demolished and rebuilt buildings: VAT rate reduced to 6%, Cabinet Eubelex, 3 February 2021
24 ibid

Propositions For An Economical Management Of Land
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