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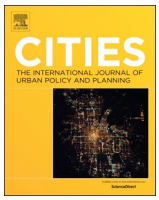

Building obsolescence in the evolving city. Reframing property vacancy and abandonment in the light of urban dynamics and complexity

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ABSTRACT

This conceptual article analyses how both policymakers and academics often discuss the state of buildings. Property vacancy and abandonment are generally approached statically, in an undifferentiated way and responded to with ad hoc public policies. However, there is great variety in the causes and effects of a building's state of affairs. This article adopts a more complex and dynamic view of building obsolescence to better understand the development of a building and the reasons behind its current (temporary) state. It basically shows that a different set of policy options come into the picture when viewing the city as a complex evolving system, rather than as a 'made order' or 'organisation'. Rather than policy rules and actions that are reactive and correct for undesired urban outcomes, these (framework) rules are anticipative as they facilitate and incentivize change *before* a building reaches a socially unwanted state. Those policy options are empirically illustrated.

1. Introduction

Many policymakers and academics consider structurally vacant and abandoned buildings as a serious and urgent public issue that requires immediate and direct public intervention. There are various problems related to this approach.

First, issues like vacancy and abandonment are considered in a rather *static* way by taking a final picture or a cross-section of a city (i.e., how many vacant/abandoned buildings there are in city A at time W, how many people are without a house, how much land is either free or occupied in the municipality, etc.). However, by doing this, we lose sight of more dynamic elements, such as the duration of the building's current state, its overall life cycle and the contextual factors that have led to its state. As we shall see, longitudinal analysis allows for that.

Second, various cases of vacancy and abandonment are often considered in an *undifferentiated* way, as if they were quite similar situations. For instance, it is very common to add up all the vacant square metres and to refer to the total or to express it as a percentage of the total stock, even across different use(r) types.[1] This implies that every unoccupied square metre is equal and causes the same negative consequences all the time. Instead, 1000 unoccupied retail square metres in an inner-city shopping street have a much larger knock-on effect on their surroundings (they have a negative effect on the image of the street and cause fewer people – i.e., potential customers – to pass by other shops) than the same number of square metres of office space in an out-of-town office park, or 1000 empty square metres of farm space. The issue of vacancy or abandonment is use and location-specific.

Third, policies dealing with vacancy or abandonment are generally ad hoc, in the sense that they are reactive to the buildings' state of affairs and directly focused on specific buildings and locations. In Amsterdam, for instance, the city government established an office transformation team (*de Kantorenloods*) to monitor office vacancy and

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[1] See, for instance, the vacancy monitor (*Leegstandsmonitor*) in the Netherlands: https://www.cbs.nl/nl-nl/corporate/2018/27/monitor-brengt-leegstand-nederland-in-beeld (accessed December 2019). Another example is a report by the Dutch research institute *Alterra*, which projects the vacancy of agricultural real estate (Alterra, 2014). It estimates that 15 million square metres of agricultural real estate will be vacant in the Netherlands in 2030, primarily due to farmers quitting without leaving a successor. To amplify people's awareness of the seriousness of the issue, they explain that the 15 million square metres are more than the sum of retail and office vacancies today, without differentiating between the causes, nature and consequences of the vacant square metres. A further example is the Eurostat Report (2015), which emphatically points out that almost one in six dwellings in the EU is unoccupied; but, according to this survey, dwellings are considered *unoccupied* 'if they are reserved for seasonal or secondary use (such as holiday homes) or if they are vacant (dwellings which may be for sale, for rent, for demolition, or simply lying empty and unused)' (Eurostat, 2015: 75).

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seek practical on site transformation solutions.[2] Soon after the financial crisis of 2008–2009, the office vacancy rate in Amsterdam was one of the highest in Europe (Buitelaar, 2017), and the local authority wanted to transform excess office space into other uses, particularly housing and hotels. However, ad hoc policies are inclined to miss the greater picture by failing to connect the dots. In Amsterdam, the transformation policy is partly responsible for a shortage of office space – in some parts of the city – and, according to many Amsterdammers, for an oversupply of hotels, leading the city council to issue a 'hotel stop' in 2016 (which was further narrowed in 2019).[3]

The widespread static image of the state of buildings, the undifferentiated judgement of their (negative) social impact and the ad hoc policies that are pursued in response can all be traced to a recurring view of the city.[4] Actually, many people tend to view the city as a rather simple order. This article suggests that considering a city as a complex, emerging and evolving order requires, among other things, looking at the dynamic *process* of building (or locational) *obsolescence*, rather than at a building's static (end)state.

We aim to do this by jointly considering the various factors that contribute to obsolescence. Thomsen et al. (2015: 210-211) aptly note that many studies on obsolescence only focus on one aspect of the phenomenon, namely physical, technical, behavioural, spatial or economic. But, they say we need a more comprehensive approach to obsolescence that attempts to take into account the various aspects.

This article is merely conceptual, yet it is empirically illustrated. Throughout the discussion, examples are mainly taken from Italy and the Netherlands (for reasons of familiarity). From a methodological point of view the work is based on an extensive literature review, on official reports and documents of Italian, Dutch and European public institutions and agencies, on newspaper articles and on websites. The core intent of the article is to provide a critical and conceptual view, rather than entirely new empirical data.

The first section defines various categories and cases of obsolescence, and discusses their causes and indicators. The second section examines desirable and possible policies in this regard, in the light of different ideas of the city. The third and final section concludes by highlighting the main achievements and open questions.

2. The state of a building: definitions, causes and indicators

2.1. First issue: definitions

The term 'building' is used here in a general sense, including residential buildings, commercial buildings, office buildings, etc. The fact that many buildings are in worse shape than fully 'functioning' is because they obsolesce, as does any good. It means that their performance and usefulness diminish (Golton, 1989: 272). Obsolescence may take various forms,[5] and this has hampered a concise and inclusive definition. 'These limitations have contributed to a general confusion, with many aspects of the phenomenon being under researched and poorly understood by decision-makers at strategic policy and tactical implementation levels' (Mansfield and Pinder, 2008: 192).

In our opinion, it is important to distinguish between two dimensions of obsolescence – *absolute* or *relative*, concerning *buildings* or their *location* – along the lines of which not only definitions differ, but also the causes and the strategies adopted to deal with it. When combined, these two dimensions lead to four different types of obsolescence (Table 1).

First, we distinguish between *absolute* and *relative* obsolescence (e.g., Korteweg, 2002: 22). 'Absolute obsolescence' refers to the state of the building itself, regardless of the state of other buildings or of user demands. In the case of 'relative obsolescence', a building becomes obsolete because it is outperformed by other (newer) buildings and/or because user demands have changed.

Unlike movable goods, a building may also lose its functional features because of the obsolescence of its *location*. A location may become less accessible, neighbourhood amenities such as shops and services may disappear or get outdated, surrounding buildings may deteriorate physically, or a region as a whole may decline due to demographic or economic shrinkage. All such locational factors add to obsolescence of individual buildings. Therefore, it is also important to distinguish between obsolescence that stems from features of the structure itself and obsolescence related to the building's location (Lichfield, 1988: 23; Baum, 1991: 57; Colwell and Trefzger, 1994; Bryson, 1997: 1446; Grover and Grover, 2015: 305–306; Hughes and Jackson, 2015).

2.2. Second issue: causes

The various types of obsolescence, as identified in Table 1, vary according to their causes. Type A, 'absolute building obsolescence', is the result of a building wearing out and not being adequately maintained to either stop the process or roll it back. It is, therefore, also referred to as 'physical deterioration' (Lichfield, 1988: 23; Baum, 1991: 57; Francke and Van de Minne, 2017: 415), 'physical obsolescence' (Fraser, 1984) or 'structural obsolescence' (Golton, 1989: 272; Korteweg, 2002: 23).

This process of physical deterioration may also apply to a building's surroundings, such as other buildings, the infrastructure or the location's amenities. This is type B, or 'absolute locational obsolescence'; at times it is also referred to as 'environmental obsolescence' (Lichfield, 1988: 23; Baum, 1991: 64; Mansfield & Pinder, 2008: 194).

'Relative building obsolescence' (type C) occurs when a building loses its marketability because other buildings are outperforming it and/or occupant preferences have changed. Some refer to this as 'functional obsolescence' (Golton, 1989: 277; Baum, 1991: 57; Dunse and Jones, 2005: 206–207; Mansfield & Pinder, 2008: 197). An example can be found in global office markets. With growing 'knowledge intensity' of office work and the rise of the use of ICT (and of time and place-independent office work as a result of that), many office users increasingly favour flexible office space, or activity-based workspaces, over conventional offices, making the latter (functionally) obsolete (e.g., Appel-Meulenbroek, Groenen and Janssen, 2011; Jones, 2009). Another form of 'relative building obsolescence' emerges when the present use is not the 'highest and best use' anymore. A building may still produce a positive cash flow, but there may be a (greater) loss of capital appreciation because there is an alternative higher value use (Golton, 1989: 275). Considering an operational industrial building surrounded by residential neighbourhoods in a city with peaking house prices, land use planning certainly plays a key role in determining whether the alternative is actually possible. Furthermore, the loss in marketability may be fuelled by specific orthodoxies of zoning regulations. For instance, according to many authors, mono-functional areas tend to favour physical and functional deterioration of buildings (Taylor et al., 1995).

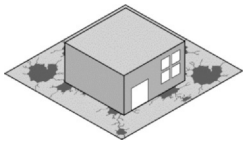
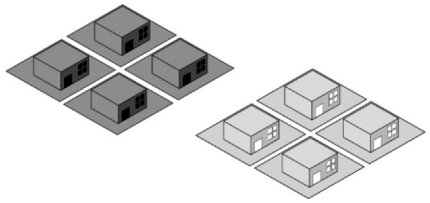
[2] See https://www.amsterdam.nl/ondernemen/investeren/kantoren/transformatie/ (accessed December 2019).

[3] See https://www.parool.nl/amsterdam/amsterdam-scherpt-hotelstop-aan~b67ade868/ (accessed December 2019).

[4] Recent studies on long-term urban analysis (e.g., 100 years) show that certain reactive policies rely on (and enforce) path-dependencies in time. Gibb, Meen and Nygaard (2019) note that direct area-based interventions (e.g., slum clearance programmes) typically respond to local problems that have accumulated through the years, without necessarily breaking those negative patterns of socio-material deprivations. Hurley, Wood and Groenhart (2018) observe how certain preservation regulations inevitably stiffen social and market mobility more than issues of property and tenure patterns.

[5] See on this Nutt and Sears (1972), Stone (1972), Williams (1986), Lichfield (1988), Baum (1991), Bryson (1997), Doratli, Hoskara and Fasli (2004), Doratli (2005), Butt, Camilleri, Paul and Jones (2015), Dunse and Jones (2005), Langston, Wong, Hui and Shen (2008), Mansfield and Pinder (2008), Thomsen and Van der Flier (2011), Rodi et al. (2015), Thomsen et al. (2015).

Table 1
Four types of building obsolescence based on the causes.

	Absolute	Relative
Building	A 	C 
Location	B 	D 

'Relative locational obsolescence' (type D) unfolds when a location performs worse, relatively speaking, in relation to other locations and/or given changing user preferences. The current high demand for urban locations among people and businesses in most parts of the world – as part of a 'triumph of the city' (Glaeser, 2011) – renders many more suburban and peripheral locations obsolete. The demise of old industrial areas (e.g., the Rustbelt) and the thriving of brain hubs (e.g., Greater Boston and the San Francisco Bay Area) is yet another example of how the relative importance of and preference for locations have shifted (Moretti, 2012).

The different relative forms of obsolescence (i.e., concerning both the building and the location) are sometimes also referred to as 'economic obsolescence'.[6] The adjective 'economic' is used because in the case of both relative building obsolescence and relative locational obsolescence the balance between supply and demand has changed for buildings and locations respectively (Lichfield, 1988; Bottum, 1988; Baum, 1991; Korteweg, 2002).

Observe how, in all cases, it is not age in itself that is *immediately* synonymous with obsolescence (Barras and Clark, 1996: 65; Kohler and Hassler, 2002: 232; Grover & Grover, 2015: 303; Thomsen et al., 2015: 213). In short, obsolescence is not directly and linearly linked with time (Rodi et al., 2015: 633). Obsolescence is rather always dependent on the change in human behaviour and in economic and social interactions (also on the absence of any action, as in the case of obsolescence due to lack of management).[7] To quote Jane Jacobs (1961: 574-575): 'Objects in cities – whether they are buildings, streets, parks, districts, landmarks, or anything else – can have radically differing effects, depending upon the circumstances and contexts in which they exist. […] For cities, processes are of the essence'.

Observe also that our four cases may take place separately or in combination and cumulatively (clearly, they are not mutually exclusive).

2.3. Third issue: indicators

Obsolescence is a process that can be detected through different kinds of indicators, for instance[8]: (i) financial indicators (i.e., price and rent), and (ii) physical indicators.[9]

First, we have *financial* indicators. In market economies, obsolescence is reflected by price development. Many buildings depreciate in their life cycle (e.g., Baum, 1991; Francke and Van de Minne, 2017). Depreciation can be defined as the 'loss in the real existing use value of property' (Baum, 1991: 59). However, the relationship between age and price, or value, is typically non-linear. Depreciation does not take place at the same rate all the time. It generally follows the shape of an S-curve (Golton, 1989: 274); initially a building tends to maintain much of its value with the passage of time, then it drops and, after a while, it tends to flatten. The tail of the curve may even turn up again and reflect *appreciation*. The appreciation that is associated with particular construction eras and building styles, and the fact that the supply of those buildings is fixed (i.e., they cannot be reproduced, in response to price increases), produce so-called positive 'vintage effects' to price development (e.g., Buitelaar and Schilder, 2017; Francke and Van de Minne, 2017). This underscores the importance of a longitudinal rather than a cross-sectional view of buildings (as anticipated in the Introduction). Not only the complex relations between age and price may be explored, but also the interaction between structural and locational features and time on the one hand, and price on the other, may shed light on the various forms and sources of obsolescence.

Second, we obviously have *physical* indicators. Obsolescence may also be observed visually through some of the building's physical features, such as a building's occupancy level. Especially in the case of investment properties obsolescence may be reflected by vacancy of either part of the building or of the entire complex. This does not mean that any form of partial or extensive use reflects obsolescence. Sometimes a user's turnover or wealth allows for non-intensive property use.

Commonly, vacancy types are distinguished by their duration. Vacancies of a year or less are a 'natural vacancy',[10] while three years or more is a 'structural vacancy' (e.g., Remøy, 2010; Sivitanides, 1997). This article primarily focuses on the latter, as it is a sign of obsolescence, while the former is not. Where vacancy is often primarily a sign of relative obsolescence of either the structure or the location, absolute obsolescence (or deterioration) becomes visible through the physical appearance, specifically the level of maintenance, of the exterior and, perhaps, also of the interior.[11] This may become visible

[6] Although some only consider locational obsolescence to be synonymous to economic obsolescence: see Baum (1991: 57); Mansfield and Pinder (2008: 197); Dunse and Jones (2005: 206-207).

[7] Brand (1995) observes how, in practice, the lifespan of buildings also results from social networks and interactions.

[8] The point here is not to extensively discuss any possible indicators, but simply to recall some of them.

[9] Observe how financial and physical indicators do not necessarily relate to specific time frames of non-usage (Wilson, Margulis and Ketchum, 1994).

[10] This may happen just after construction ('initial vacancy') or between two different tenancies ('frictional vacancy').

[11] For instance, in Milan, a recent mapping of abandoned buildings identified about 170 abandoned private buildings by combining detection of external conditions and of fiscal data. See the *Atlante dell'Abbandono*, a project managed

Table 2
Four archetypical building states.

		Maintenance	
		Yes	*No*
Occupation	*Yes*	Functioning	Deteriorated
	No	Vacant	Abandoned

through peeling of the woodwork, rusting metal and rotting concrete. Sometimes vacancy and poor maintenance coincide, which would then lead to *abandoned* buildings.

There can be a causal relation between occupation and maintenance, but it is not necessarily so. Tenants, for instance, may decide to move out of a building when it is not adequately maintained by the owner, or maintenance may suffer, if a building has no occupier. But one factor is neither necessary nor sufficient to support the other; vacant buildings may be perfectly maintained, and poorly maintained buildings may be fully occupied, as summarized in Table 2.

3. What policies for which state (of a building)?

3.1. The city as a complex evolving system

To be able to identify when the state of either a building or a group of buildings constitutes a societal problem, and to propose ways to deal with it, we need a theory of what the city is and what may be expected from it (Jacobs, 1961). We suggest considering the city as a 'complex evolving system' (De Roo, 2012; Rauws and De Roo, 2016; Yamu, de Roo and Frankhauser, 2016). In this sense the city is interpreted as a *cosmos* (i.e., a complex emerging adaptive order) rather than a *taxis* (i.e., a simple made order, an organisation) (Ikeda, 2007, 2010 and 2017; Andersson, 2012; Gordon, 2012; Holcombe, 2013; Callahan and Ikeda, 2014; Moroni, 2015; Cozzolino, 2018).[12]

As Sanford Ikeda (2007: 216) writes, 'A living city is not a man-made thing: it is not a 'machine for living' nor is it a 'work of art'. A living city is a spontaneous order. […] Taken as a whole, it is the result of human action, but not of human design. It is largely emergent'. See also Ikeda (2017: 79):

> 'A living city is a spontaneous order far too complex for the human mind to design or to direct in detail. Thinking of a city as a designed outcome and not as an emergent process, or trying to organize a city before appreciating what it is and how it works […], tends to stifle spontaneity and drain it of life and intelligence. Rather, a city is a place where people with diverse knowledge, skills, and tastes change space, make and break ties, and transform resources and ideas in innovative and controversial ways. It's an unpredictable, messy, […] but deeply creative process'.

This perspective has two important implications.

First, if we see the city as a complex evolving system, certain phenomena – obsolescence included – are neither unusual nor unexpected. Change is not an extraordinary situation in cities but their intrinsic feature. Buildings, locations, neighbourhoods, and so on, thrive and decline. Urban decline and obsolescence are as much an intrinsic part of the complex and dynamic urban system as their mirror image, that is, *gentrification* (with both positive and negative effects) (e.g., Freeman, 2006). In other words, change is 'the only constant' in our urban reality (De Roo, 2012).

In this perspective, 'obsolescence is an inherent part of the way in which market economies function as new competitors disrupt established business models' (Grover & Grover, 2015: 299). We may even say that 'obsolete parts of building stocks can act as reserves for current and future needs' (Huuhka, 2016: 816).

This is one of the reasons why *Cambridge Innovation Center* opened its first branch outside the US in Rotterdam (the Netherlands) in 2016. The high office vacancy rates downtown and relatively low office rents in Rotterdam would allow potential spin-offs to find accommodation easily and affordably.[13]

It is interesting to remember that Jane Jacobs (1961: 187-199) considered the existence of old buildings in a city more an opportunity – even a necessity – rather than a problem. As she wrote: 'Cities need old buildings so badly it is probably impossible for vigorous streets and districts to grow without them. By old buildings I mean […] a good lot of plain, ordinary, low-value old buildings, including some rundown old buildings' (Jacobs, 1961: 187). She was perfectly aware of the dynamic nature of certain phenomena, as clearly stressed in this other passage: 'Over the years there is […] constantly a mixture of buildings of many ages and types. This is, of course, a dynamic process, with what was once new in the mixture eventually becoming what is old in the mixture' (Jacobs, 1961: 189).[14]

Second, if we see the city as a complex evolving system, we have to recognize that public authorities cannot solve all problems – such as the state/vacancy of an individual building – *directly*, but can only create the *conditions* within which people (ordinary citizens, entrepreneurs, architects, etc.) can look for solutions and experiment with them (Moroni and Cozzolino, 2019). In other words, viewing the city as a *cosmos* rather than as a *taxis* has implications for the way policies are made. (We use the term 'policies' here in a wide sense, comprising all types of public rules and measures).

In particular, we may distinguish between long-term *framework-policies* and *reactive ad-hoc policies*.[15] In the first case, the city is recognized as a complex system, and policies are accepted mainly to grant viable background conditions in the long run (e.g., abstract and general, durable public rules), which could be credible and stable ingredients of citizens', developers' and investors' plans. In the second case, the city is rather interpreted as a simple system to the problems of which we can react on an ongoing, case-by-case basis.

In the first instance, policies are 'anticipative' (rather than 'reactive'). Note that there are, however, limits to prediction. Being anticipative does not mean that policies are – and must be – based on *predictions of details*, which is impossible for complex systems, but on *predictions of the principle* (Moroni, 2015). A prediction of the principle is a 'qualitative prediction'. It does not predict particular events, but peculiarly wide classes of events. A prediction of the principle can only indicate the 'kind' of expected event. In short, we can only predict certain very general features of a situation, which may be compatible with a large variety of particular circumstances (Moroni, 2015). For instance, we can predict that when a house is built either in or near the economic centre of a city, its value per square metre will be higher than when that same house is constructed somewhere in the rural periphery (e.g., Alonso, 1964), but we cannot predict the exact values, differences and development thereof. We also know that when house prices exceed the value of other uses and increase rapidly, it renders these other uses

(*footnote continued*)
by the *L'ABB* laboratory of the Università Statale of Milan, and by the *PIM* Study Centre (http://www.pim.mi.it/atlante-abbandono: accessed April 2019). See also the subsequent official mappings of the Municipality of Milan (http://www.comune.milano.it/wps/portal/ist/it/servizi/territorio/immobili_degradati: accessed April 2019).

[12] In the discussion on social systems, the old Greek terms '*taxis*' and '*cosmos*' were first rediscovered by Hayek (1978).

[13] See https://architectenweb.nl/magazine/default.aspx?ID=62 (accessed December 2019).

[14] On Jacobs' insights in this regard, see Powe, Mabry, Talen and Mahmoudi (2016).

[15] Discussing different issues, Landis (1992) considers a rather similar distinction.

Table 3
Ideas of order and kinds of policies.

Ideas of urban order	Simple, static, made (taxis)	Complex, dynamic, emergent (cosmos)
Type of rules according to level of intervention	Ad-hoc-policies	Framework policies
Timing in relation to the state of a building	Reactive	Anticipative
Expectations about the degree of prediction	Prediction of details	Prediction of the principle
Relation to action/actors	Volatility of rules interferes with urban actions (actors are continuously faced with rules and their introduction/revision)	Provide a long-term context/framework of rules for urban actions (actors can assume rules as stable conditions for actions)

(relatively) obsolete. But we cannot predict exactly what the value will be at a certain location, and precisely when that will happen.

Table 3 provides an overview of the connection between ideas of 'urban order' and the type of rules and policies.[16]

3.2. Viable framework policies in the various cases: regulative, fiscal and infrastructural

In this perspective (and apart from marginal situations in which public authorities can intervene directly by buying obsolete buildings and by recovering them in the light of certain desirable uses), here is what public authorities can do in the four cases considered in Section 2. The policies analyzed come from three different general types: *regulative*, *fiscal* and *infrastructural* policies.

In case A, that is, absolute building obsolescence (particularly in cases of serious abandonment, i.e., no maintenance), public authorities may set rules (e.g., in building codes) about the minimal maintenance level to ensure that buildings remain in a safe and secure state. Public authorities may then levy fines or even enjoin private owners to intervene in cases of non-compliance with such rules. This is already (partly) possible in Italy, in the Netherlands, and in other countries. However, enforcement does not always 'automatically' follow, for instance, in Italy. It can be observed that, in such cases, public action would not go against private property as a general, basic right, but rather favour it. Actually, the protection of the right to private property involves the duty of safeguarding situations in which no single property causes direct and tangible damage to other properties. Being an owner entails both rights and commitments (Shoked, 2014).

Moreover, both in regard to case A (absolute building obsolescence) and case C (relative building obsolescence), we may first eliminate certain non-essential constraints and standards as well as non-essential bureaucratic procedures related to the use of the building (Brophy and Vey, 2002; Goldstein, Jensen and Reiskin, 2001; Olivadese, Remøy, Berizzi and Hobma, 2017), precisely those which do not directly concern the fundamental issues of safety and security, or specific nuisances. Land use rules may be too stringent to allow for a profitable use of a building, similar to alternative buildings situated nearby. In addition, land use regulations could hamper a change of use and, therefore, give rise to obsolescence. Hence, regulatory and bureaucratic difficulties should be overcome, for example, concerning a change in the intended use of private spaces. The change of use is somewhat complicated in Italy due to regulatory constraints and bureaucratic procedures. Although a national law[17] recently attempted to facilitate the change in designated use – and some regions have introduced their own simplifications – the issue still involves considerable fees bound by rigid and often outdated categories of (land and building) uses.[18] In the UK and in the Netherlands, especially in times of economic uncertainty, local regulations have favoured the conversion of buildings and land uses from office to residential services even by relieving specific procedural and building standard requirements (Remøy and Street, 2018). As Barras and Clark (1996: 65) write: 'Buildings can be used to house more than one economic activity. Consequently, when a building becomes obsolete in one use it may still be profitable in another with lower operating costs'. Conventional exclusionary zoning, as many countries know it, generally reserves buildings and even entire areas for only one use, thus preventing a change in use and increasing chances of obsolescence. Allowing multiple uses in advance is likely to increase these chances and may incentivize adaptive and flexible building designs.

Secondly, we may revise and change taxes on land and buildings: for instance, by shifting taxes from *improvements* to *land value* (at least partially, i.e., through the so-called 'two-rate' or 'split-rate' system). This means reducing planning fees for building transformations and moving them to the land value as such. As well known, real estate is constituted by two types of assets, precisely land and improvements (buildings, etc.). Both are usually taxed. Certain (property) taxes on buildings can be avoided by refraining from making improvements to the building (Foldvary, 1998: 412). Observe how speculators are even encouraged to leave buildings vacant and abandoned in the hope of future development and higher future profit when 'property taxes impose relatively low burdens on land holding, but heavy burdens on land using' (Kraut, 1999: 1152). By contrast, lower taxes on building improvements and higher taxes on land value[19] incentivize a more intensive use of land and increase the cost of leaving buildings vacant and abandoned (Farris, 2015; see also Vincent, 2012; Foldvary and Minola, 2017; Moroni and Minola, 2019; Minola, Foldvary and Andersson, 2020). In other words, in this case the owner of a plot is encouraged to improve the building located on it without being penalized by high fiscal charges.

Thirdly, we may also introduce incentives to upgrade and modernize buildings (Glock and Häussermann, 2004; Mansfield, 2009). In Italy, several types of incentives for renovation and refurbishment of old buildings have been introduced at the national level over the last decade, specifically, incentives for building renovation works, for energy-efficiency improvements, for anti-seismic interventions, for the purchase of new furniture and of big domestic appliances, for the renovation of green spaces of relevance to private buildings, and for the restructuring process of façades.[20] This is generally desirable and has

[16] While at first sight ad-hoc policies seem rather different from traditional detailed land use plans, it has been evidenced (Moroni, 2007) that they share more than we usually recognize (and make similar mistakes).

[17] See Decree no. 133 of 2014, converted into Law no. 164 of 2014.

[18] The recent Milan land use plan (Comune di Milano, 2019) expressly accepted that change of use is always basically possible, but revised fees for such changes only for some minor situations; for instance, under a certain floor area threshold (250 m^2), the changeover from an industrial to a residential purpose does not involve charges. The recent Lombardy Regional Law no. 18 of 2019 seems to go a step further in this direction.

[19] Land value taxation is a 'tax charged on the annual rental value of land without improvements or in its unimproved state' (Minola et al., 2020: 7).

had some good effects,[21] but has been implemented in an excessively fragmented manner (i.e., with too many measures that are often too specific), with continuous reassessments (many measures are temporary and subject to eventual extension, which came with the revision of certain aspects, such as the percentage of the tax break or the maximum expense to which the incentives can be applied). The approach adopted by this article reveals the need to imagine rather stable forms of incentives that are not merely 'one-shot' and/or continuously subjected to mandatory confirmation/prorogation and slight adjustments. They have to be framed as stable and credible ingredients of long-term plans made by individuals for their land and buildings. Moreover, it is assuredly better if incentives are based more on *performance indicators* rather than on *pre-defined solutions* (e.g., technological solutions).

In case B (absolute locational obsolescence), public authorities may intervene to improve the conditions of public spaces and infrastructures in surrounding areas (Abe, Nakagawa, Matsunaka and Oba, 2014), by at least equipping these areas according to minimum standards. Observe how 'carrying structures' such as (public) infrastructures, if correctly designed and managed (i.e., in an anticipative and not merely reactive way: Holcombe, 2013), are crucial to support the formation of cities as complex evolving systems (Andersson and Andersson, 2019; Bertaud, 2018; Moroni, Rauws and Cozzolino, 2020). Public authorities could also provide private actors with measures to favour investment and management in certain areas, like the possibility of creating business improvement districts or other types of common interest developments (Briffault, 1999; Hoyt, 2004; Symes and Steel, 2003).

In case D (relative locational obsolescence) there is little public authorities can do other than provide room for adaption *within* the land use rules. What we do know from research on shrinking cities and regions is that there are several things public actors should *refrain* from doing. Based on 'boom-town hopes' (Couch, Karecha, Nuissl and Rink, 2005: 134), policies are often aimed at battling shrinkage rather than at accepting it and adjusting to it. Solutions are required to stimulate demand for housing and business accommodation in the city or region through marketing campaigns, creating demand by stimulating housing and property supply, and so on (Couch et al., 2005; Verwest, 2011). These actions are likely to have no adverse effects. In some cases, public authorities may provide private actors with the means to reorganise themselves in case of relative locational depreciation. Privately initiated land readjustment, backed by public or private law, is an example in this regard (Needham, 2007). For 'zero-profit areas', public parties may facilitate coverage of management costs for early investors also by means of small loans for entrepreneurs, while avoiding redundant and unnecessary intermediaries. (Lami, 2020).

4. Concluding remarks

This article defends anticipative *framework policies*, instead of *reactive ad-hoc policies*, in dealing with the issue of building obsolescence, especially concerning regulatory, fiscal and infrastructural policies. All the above in the light of an image of the city as a complex evolving system and of obsolescence as an unavoidable *urban* dynamic process.

As widely known, the idea that each building has its own dynamic life cycle has been increasing accepted in time. This paper expands the view to consider the city itself, as a whole, as a continuously evolving social-spatial system. Note how the dynamic perspective embraced is perfectly in line with certain ideas of 'circular urban economy' (Gravagnuolo, Angrisano and Fusco Girard, 2019). Actually, re-adapting obsolete urban assets (e.g., buildings, land, infrastructures) for new uses helps to minimize urban waste and maximize the value of finite resources (Lami, 2020).

Unfortunately, politicians are inclined to avoid anticipative framework policies in favour of reactive ad-hoc policies – in this case too – because they leave more room for political 'blame avoidance' and 'credit claiming' and for (giving off the impression of) firm and responsive action (Howlett and Kemmerling, 2017). Hence, scholars have to at least avoid paving the way for such policies. Indeed, this does not mean that, under specific circumstances, these reactive and corrective policies cannot be effective or legitimate. It merely indicates that relying on them as a default option is both undesirable and unfeasible.

Declaration of competing interest

The authors state that they have no conflict of interest.

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[20] See, among the many Italian measures in this regard, Legislative Decree no. 83 of 2012, Legislative Decree no. 63 of 2013, Law no. 145 of 2018, Legislative Decree no. 34 of 2019, and Law no. 160 of 2019.

[21] For an assessment of the effects of incentives for energy efficiency improvements of buildings in Italy, see the reports by the Italian *Agenzia Nazionale Efficienza Energetica* (e.g., ENEA, 2017, 2018, 2019). Around 1,700,000 interventions for energy efficiency improvement of buildings (corresponding to 17 billion euro paid out) were implemented in the period 2014–2018 (ENEA, 2019).

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