Horelli, Liisa; Wallin, Sirkku

The Renewal of the Finnish Planning Legislation as a Strategy of Urban Planning and Development

Article

The Renewal of the Finnish Planning Legislation as a Strategy of Urban Planning and Development

Liisa Horelli *[ID] and Sirkku Wallin

Department of the Built Environment, Aalto University, P.O. Box 14100, 02150 Aalto, Finland; sirkku.wallin@aalto.fi
* Correspondence: liisa.horelli@aalto.fi; Tel.: +358-509178927

Abstract: Due to global eco-social and technological challenges, a new strategy of planning adopted as the Land Use and Building Act in Finland (2000) will be renewed after 23 years of implementation. Will the forthcoming law recognise the complex relationships and consequences of self-organised processes, the digital empowerment of citizens, and the eco-social content of planning and development? This article examines and discusses the renewal of the Finnish Land Use and Building Act and the forthcoming planning system from an ontological perspective. Methodologically it is based on an assessment of the draft of and comments on the new Act, as well as on a comparative analysis of two case studies that illustrate the potential consequences of the renewal in the Finnish context. The results reveal that the planning system will become more complex. Despite the adoption of a new digital methodology, the Act ignores civil society's self-organisation and digital empowerment; also, the definition of the eco-social substance is vague. However, the Finnish reform serves as an example of the difficulties that planning systems encounter in the current context of complex problems concerning sustainability transitions all over the world.

1. Introduction

The current neo-liberal approach to planning and urban development has been met with dissatisfaction by citizens, raising sharp criticism from both users and environmental specialists. This is not the case only in Finland, but also a well-recognised issue in several European countries [1,2]. The inability of the current planning system to recognise and manage unexpected, emerging patterns of urban development has been revealed, especially from three directions: by theorists interested in urban complexity issues and ontology, the digital empowerment of civil society, and the eco-social movement.

The ontological turn in planning, especially among complexity researchers, has disclosed the importance of diverse ontological engagements for the comprehension of planning and its implications for urban development [3]. For example, Boelens [4] has named this turn as flat ontology, in which the planning system is detached from hierarchies. Based on empirical case studies on self-organising urban development, we have acknowledged the same necessity for a critical pluralist realism that expands urban planning from statutory processes and public participation into more inclusive approaches to the design and development of urban space [5,6]. We have suggested an approach that is called expanded urban planning (EP), as it increases the extent and scope of urban planning by introducing a spatial planning process that also covers community development and hybrid governance, including self-organisation [7][1].

The digital turn in planning, starting from the 1990s, and the development of city information modeling (CIM) are gradually transforming the practice of planning with various consequences for building and the environment. However, the CIM solutions are

still at a transition stage and are mostly developed not from the perspective of citizens but from that of experts [9–11]. However, there is a growing interest in urban data, not only in urban planning and development but in the emerging applications of artificial intelligence (AI); for example, in service provision (traffic, commercial, and retail services). Thus, technological development is paradoxically both an opportunity and a risk depending on the extent to which a variety of stakeholders and citizens can participate in its development. The role of users and civil society is crucial in digitalisation. Especially in urban planning, the data are not only gathered by experts but also by local activists and communities of practice.

Last but not least, the eco-social turn is the most critical one demanding rapid action concerning both urban structures and their content, as climate change adaptation and mitigation require the support of blue and green infrastructure. In addition, ecofeminists stress the democratic and qualitative aspects of the environment [12].

The use and development of all land and built property are governed by the planning system, which consists of planning policy and practice defined by the legislation and interpreted by authorities. As the current Land Use and Building Act in Finland, dating from the year 2000 [13], is undergoing renewal, our research problem concerns whether the forthcoming legislation and its consequences for the planning system recognise the ontological turn in urban planning and development, including the complex relationships and consequences of self-organised processes, the digital empowerment of citizens, and the eco-social content of planning and development.

The Finnish planning system is quite prescriptive and hierarchical, comprising several planning levels. It is situated among the regulatory end of national planning systems in which the British one represents the most discretionary one [14]. The goal of the Finnish renewal was and still is to make the planning system more adaptive to manage sustainability transformations. The main objective of the reform is to provide a strategy that enables the creation of a carbon-neutral society, to strengthen biodiversity, to improve the quality of construction, and to advance digitalisation. The legislation also aims to continue with deliberation in planning, which began in the current Land Use and Building Act [13].

This article examines the renewal of the Finnish planning legislation and practice from an ontological perspective. It also aims to illustrate the potential consequences of the renewal in the Finnish context through two case studies in which the legislative requirements could be applied. Methodologically, the article is based on the draft of and comments on the new Act, which introduces the application of 3D planning and building information model (BIM)-based building requirements. These requirements and their application in practice are studied in the article because technology contains political and social consequences, even systemic change that might transform the way we comprehend urban planning [15–17].

We will first describe our theoretical framework and the methodology of the study. We will then proceed to the results and discuss the research questions from the ontological perspective and in light of European planning systems in general. The conclusions are followed by recommendations.

2. Flat Ontology and Expanded Urban Planning as a Theoretical Framework

The connection between ontological engagement and empirics is not direct, but cognitively and epistemologically mediated. Thus, ontological engagement affects premises, which have consequences for one's aspirations regarding urban planning and development. In a recent article, we examined [6] the core features of flat ontology for expanded urban planning. We concluded that flat ontology should be called fat, as it makes the conceptualisation of planning manifold and deliberative instead of linear and hierarchical [6]. Thus, flat ontology, which rejects transcendence that privileges any sort of reasons above others, provides opportunities to reconceptualise both urban planning and development, not from prefixed ideas, but from outside-in; i.e., from the context [4].

Thus, a wider epistemic development of planning is desirable. Therefore, 'pluralist realism without borders' is a suitable starting point for expanded urban planning, as it increases the extent and scope of urban planning. This was corroborated by the Nordic case studies in Wallin et al. [6], as they showed a variety of foci—from spatial planning to community development and hybrid governance, including different phases and varieties of self-organising—depending on the purpose and context.

Expanded urban planning (EP)[2] is an adaptive approach to urban planning that may bring about an architecture of opportunities [7]. This means the building of a supportive infrastructure of everyday life [20] that encourages citizens to participate not only in formal decision-making but also in the co-design and co-production of their local environment, based on daily and future activities. Thus, EP expands to community development and hybrid governance with a multitude of new actors, also from many policy areas.

EP implies the recognition of the temporal dynamism in urban development in the form of emergence, self-organisation, and becoming of urban processes. EP extends from participatory strategic planning, via statutory planning and implementation, to the co-production of space, as well as to the monitoring and evaluation of spatial and socio-cultural appropriation [7]. Therefore, participation and processes of self-organisation can take place in all stages and dynamically change depending on the context and situation. This also includes the recognition of temporary urbanism [21]. Thus, EP has a dialectic relationship with flat ontology as the rhizomatic[3] features of EP mix with the arborescent characteristics of planning [4].

As flat ontology implies an application of a relational and dynamic epistemology, EP has adopted an eco-system of digital and non-digital tools for empowerment and analysis [23]. The methodology comprises a variety of enabling methods, as well as future-oriented research tools, including community informatics and city information modelling [9,23,24]. However, we adopt a careful approach to, for example, the digitalisation of planning, as technology evolves fast (AI; 6G networks) with unknown consequences for human behaviour, mindset, and the environment [25].

Methodological variety [26] enables EP to enhance the linking of glocal agents—whether public, private, people-partnerships—to co-create new forms of hybrid governance and production, not only in public participatory events but especially in the case of self-organised initiatives for adaptive neighbourhoods [27]. Thus, the new kinds of groupings and dynamic, ever-changing networks (assemblages) in context become the focus of planning.

Finally, the spatial/material infrastructure and its content play an active role in shaping the quality of everyday life experiences [28]. Therefore, EP also includes a few ecofeminist criteria, which acknowledge the quality of the substance of planning[4].

3. Materials and Methods

We focused the research on the following three questions: How will the new legislation deal with the complexity of self-organised urban development processes? How will it deal with the digital empowerment of various stakeholders? How will it deal with the eco-social substance of planning?

As the renewal of the legislation is still partly ongoing and yet partly implemented, the methodology comprises an interpretative framework with a variety of research methods, such as:

- Building of the theoretical framework for the analyses, based on flat ontology and its application expanded urban planning, which assisted in the interpretation of the semi-grounded theory in the content analysis (cf. Section 2; [29]);
- A literature review focusing on the complex relationships of self-organised processes and digital empowerment in urban planning and development (cf. literature references in the article), and an analysis of the proposal for the legislative renewal and its comments (data available on request due to restrictions);

- Interviews with the Ministry of the Environment, whose representatives were responsible for writing the proposal for the Land Use and Building Act, and with the Finnish Environment Institute, which oversees the implementation of RYTJ (The Act on Information System for the Built Environment);
- A comparative case study on Tapiola Garden City, and its neighbour Otaniemi, in Espoo, in which both urban planning and development initiatives applied digital tools in practice (cf. data available in a publicly accessible repository that does not issue DOIs). The thematic content analysis of the material is based on documents and personal observation of the planning processes in the case studies[5], aided by the questions of critical systems heuristics [30], and interpreted by using the framework in Section 2.

4. Results

This section will first deal with the renewal of the legislation and then with its potential consequences in the Finnish context.

4.1. The Renewal of the Land Use and Building Act

During the renewal process, the legislation was assessed by several stakeholders and experts, who severely criticised the proposed changes. The Ministry of the Environment received 550 comments, most of which did not support the suggested amendments. Municipalities, which have the sovereign planning authority in Finland, were worried about the increasing responsibilities and administrative costs brought forth by digitalisation and new levels of urban planning, as well as the rigid inspection of buildings and construction.

Planning academics and professionals claimed that the proposal did not support the goals, since the proposed five different planning levels would not provide a supportive structure for an adaptive planning system [31]. The latter was considered to become too rigid, especially in the capital region, which needs faster planning processes. The suggested renewal was also regarded as inappropriate for the steering of sustainability and digitalisation, which should have been defined and specified in detail before proceeding into the law-making.

The critical feedback made the Ministry of the Environment separate the proposed legislation into three related Acts (Figure 1): 1. The Building Act [32] in which the design of the building process is introduced; 2. The Act on the Built Environment Information System (Rakennetun ympäristön tietojärjestelmä, RYTJ, in Finnish; [33], which seeks to become a steering and evaluation mechanism, not merely a container of urban and real estate data. RYTJ also defines the digital implementation of the third act; 3. The Land Use Act (not yet drafted). The new Acts will comprise novel contents, which will need a legislative process of their own, although the current Land Use and Building Act has integrated all the phases of planning and building.
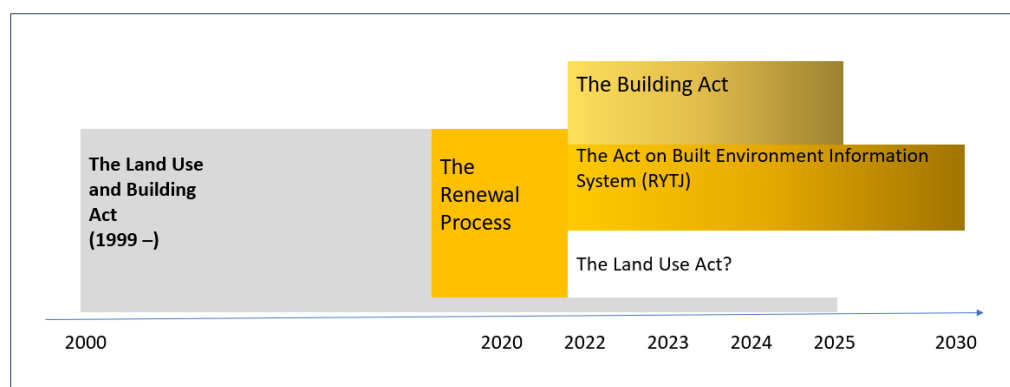

Figure 1. The renewal process of the legislation in which the current Land Use and Building Act has been separated into three different acts.

The renewal process began in 2019. The first part of the planning legislation, the Building Act, was passed in Parliament in February 2022[6]. The Building Act introduced new mandatory contents to the planning system, such as carbon neutrality and resource wisdom. The legislation ensures that the life-cycle model of the building will be evaluated at the beginning of the planning process. The new Building Act also requires applying building information models (BIMs) in the planning process. It is mandatory to design buildings by using a certain digital application and to produce and maintain the designed plan in a certain digital mode. In addition to planners and designers, property owners are also obliged to apply BIM-based planning and design when they are involved in real-estate maintenance and renovation.

The second part of the legislation, the Act on the Built Environment Information System (RYTJ), was passed by the Parliament in May 2023.

The goal of RYTJ is to unify information on the built environment and to steer the planning and permission processes with a specified technology. RYTJ defines the institutional organisation of the data system, and the national digital information system, which is also called RYTJ. The regulation of BIM content, both technical and substantive, has been defined in the legislation process. The numeral data of building permits and real estate data will be gathered in the national RYTJ information system, but not the actual BIM models, nor the designs of the houses or dwellings. In order to unify the gathered data, specific software has been developed to support the systematic evaluation of the plans. The implementation of RYTJ will not be completed until 2029 as the actual national digital information system has not yet been coded.

Drastic changes will take place in municipalities and in urban planning practices. There were only a few municipalities at the beginning of the renewal process that had professionals who were able to use BIMs. The application of digital planning tools is mundane in the private planning sector, but not in the administrative one. So far, only the largest cities have been able to use BIMs, which also contribute to the CIM (cf. the case studies).

However, the third part of the legislation, the renewal of the Act on Land Use Planning, is not yet completed. There are still unresolved questions concerning the implementation of the spatial planning system. How many levels of plans can there be, and what are their specific legal limits?

In the Finnish planning system, regional plans have legal consequences, but not NUTS III[7] plans. The Finnish planning system has comprised general plans and detailed plans on the municipal level. The municipalities are a sovereign planning authority in Finland, and they wish to have this mandate even in the future. However, the Ministry of the Environment has suggested that the municipality-level plans could be enough, and the NUTS III plans should become statutory as the EU embraces the latter. In the worst case, there might be five different levels of plans which should work in tune.

4.2. Unresolved Issues with the Renewal

The analysis of the comments on the proposal and the interviews with the legislative authorities disclose that there are several unresolved issues in the renewal of the Land Use and Building Act.

First, the separation of the new act into three different legislative collections will make the steering of the planning system even more complicated than before. This separation was an administrative solution in a situation in which politicians could not compromise, how the Land Use and Building Act should proceed. This manoeuvre enhanced the law-making process from the political and administrative perspective. It made it possible to ratify two parts of the legislation. However, the implementation of the Acts, especially the steering mechanisms and outcomes, will become challenging, to say the least. A single planning process that proceeds from the strategy level to the actual implementation in the built environment will face numerous legal requirements from different Acts. The planning system will require to follow three different Acts at the same time. This will have several

juridic consequences that we do not analyse in this article, but there will be a heated debate (and quite likely it will burden the planning authorities and the system), in the future.

In addition to the complexity of the planning system, the renewal of legislation raises questions about digitalisation and eco-social objectives. How can one ensure that the objectives of the land use processes will be transformed into digital planning and building knowledge? For example, the compulsory environmental assessments in the urban planning process are not directly translatable in the building permit process.

One of the shortcomings is that RYTJ, which steers BIMs and CIMs, does not have spatially related objectives as such. It only contains technical qualifications for the data and a mandate for the institutions to support or deliver the data. In addition, the laws do not recognise other stakeholders besides the municipalities and the state-driven environmental research institute SYKE, although numerous actors and experts would like to participate (cf. the case studies). The Building Act does refer to real estate owners, who should maintain the BIMs in good condition, but it does not regulate how and by which tools this should take place in practice.

Surprisingly, RYTJ disregards all other stakeholders who might be interested in urban data. Should enterprises and other market-led initiatives have access to publicly collected data, when creating privately owned digital artefacts? And if so, what are their legal boundaries?

Last, but not least, the way we comprehend the substance of planning, in terms of sustainability, will change. Sustainability becomes defined in detail and calculated in multiple ways. However, sustainable living environments are rarely achieved by constructing new buildings or producing artificial environments. Issues such as sense-making or place-making have not been recognised in these calculations. On the contrary, the ecology of a certain place is something that is suggested to be compensated for or otherwise supported, but in a reduced way. In addition, the qualitative environmental criteria, especially those concerning eco-social issues, are missing, although one of the main objectives is sustainability.

4.3. Opportunities and Constraints for Carrying out the Legislative Reform—Case Studies on Tapiola and Otaniemi

We will illustrate the opportunities and constraints that the Finnish planning context provides to carry out the legislative reform from the perspective of flat ontology. The chosen context is two neighbourhoods—Tapiola (Figure 2) and Otaniemi (Figure 3)—which represent technologically the most advanced urban planning in the capital region of Finland (pop. 5,531,000). In the analysis, we will focus on the participatory and self-organised processes, digital empowerment, and the eco-social substance of planning. The thematic content analysis has been aided by the questions of critical systems heuristics [30], and interpreted by the framework in Section 2.

Figure 2. The cultural centre of Tapiola (CC-BY-SA-3.0-migrated, https://commons.wikimedia.org/wiki/File:Tapiola3.jpg (accessed on 10 October 2023)).

Figure 3. Otaniemi neighbourhood (CC-BY-SA-3.0-migrated, https://commons.wikimedia.org/wiki/File:Otaniemi_from_air.jpg (accessed on 10 October 2023)).

4.3.1. Technology-Assisted Urban Development with and without Self-Organisation

Both Tapiola (pop. 4323) and Otaniemi (4353) are located in the City of Espoo (297, 132) [34], which is the second largest city in Finland and a neighbour of Helsinki, the capital (650,000). The neighbourhoods are connected, not only spatially, but also in terms of having followed the same pattern of urbanisation, although with different steering mechanisms, and therefore different outcomes (Table 1).

Table 1. A summary of the comparative analysis of Tapiola and Otaniemi, based on the methodology in Section 2 (cf. also the data availability statement).

Categories of Analysis	Tapiola	Otaniemi
The purpose of urban development (motivation)	Urban regeneration, from the Garden City to the urban centre of Keilaniemi and Otaniemi.	Campus development at Aalto University turning into a national innovation hub.
Main actors and stakeholders (sources of control; relations between assemblages)	Real estate investors and shopping centre entrepreneurs together with Espoo City and local housing estates.	Aalto University as the main landowner and developer, followed by R&D enterprises and start-ups. Espoo City as an enabler of public spaces.
Steering mechanisms	Urban densification through in-fill and traditional real estate development processes, assisted by the infra-initiatives of the municipality (metro) and large investors.	Urban densification through in-fill and innovation initiatives produced by entrepreneurs, assisted by Aalto University and Espoo City, which have jointly developed public transportation and the renewal.
The role of technology and digitalisation	CIM as a tool for communication between real estate investors and Espoo City. BIM used in the implementation of development initiatives.	CIM as a tool for strategic sense-making and BIM for the implementation of development initiatives. New AI applications.
Relevant sources of knowledge and expertise	Professional knowledge creation in urban planning and real-estate development.	Professional knowledge creation not only in urban planning and real-estate development but also in R&D-related experiments.
Interest groups without a voice	Local inhabitants have been involved in statutory urban planning but not in development initiatives. No recognisable self-organisation.	Students and faculty members have had limited access to statutory urban planning processes, but a larger representation in the campus development. Some have been stakeholders in the R&D- experimentations.
Outcomes of planning and development	A massive new scale, housing initiatives and a shopping centre, supported by a new bus- and metro station.	A multitude of new affiliations, office buildings, laboratories, but also restaurants, services and workplaces (R&D, education). A new tramline and metro station.

Tapiola has undergone a massive change of infrastructure by the City of Espoo, in the past 20 years. Espoo has constructed a metro and a new bus station together with novel initiatives, such as roads, parks, and public service infrastructure. At the same time, the commercial stakeholders have developed a new shopping centre and housing blocks. The massive high-rise morphology of the reformed Tapiola is conspicuous. The garden city idea has vanished as the fields and open greenery have disappeared under urban-scale housing initiatives. At the same time, the deteriorating and severely inadequate infrastructure of the garden city centre has been renewed.

Local inhabitants have had a legitimate interest in the statutory urban planning process and many private real estate companies have taken part in the development process by initiating renovation and housing projects of their own. Considering the eco-social perspective, the gardens south of Itätuulenkuja were renovated by the real estate owners at the same time as Espoo City was making a grand scale development of public space on the north side of the street. However, the locals have had limited access to the definition of the aims and measures of the urban development initiatives in statutory urban planning.

The real estate developers and corporate funding agencies, on the other hand, have had the main role in the project. Planning as such has been enhanced by using state-of-the-art planning tools, including BIMs, which are embedded in the Espoo CIM. However, the digital twin[8] of Espoo has not been widely known by the public, nor by the entrepreneurs who have been interested in urban data.

Otaniemi is located next to Tapiola. The origin of Otaniemi is quite different, as it has been a separate campus area with a distinctive landscape of open green spaces, university laboratories, and industrial warehouses. Like in Tapiola, the metro line and lately also a tramline have intensified the need for urban development. The same pattern of urban densification is present in Otaniemi as in Tapiola, but the mechanism has been different. After a decade of urban initiatives, Otaniemi has remained a university campus with ambitious urban design initiatives. Some of them have taken place by intense collaboration between public, private, academic and people partnerships. Part of the success in Otaniemi is due to the intense self-organisation by various start-ups which has also provided a multitude of knowledge sources. With the assistance and appeal of Aalto University, there are numerous meshworks and self-organised initiatives of R&D enterprises, from start-ups to SMEs and large global corporations. Together, they have built new headquarters, and the municipality has renewed the cityscape. The planning of large-scale housing units for students has also begun. However, the campus idea remains intact. In addition to new infrastructure and buildings, Aalto University has also renovated old buildings. Laboratories and industrial halls have become new co-working spaces for education. In addition, Espoo City has supported glocal stakeholders by providing space for experimentation.

The development processes began in both neighbourhoods for the same reason. The overall pattern of urban development has also been the same: traffic infrastructure-driven densification. However, the actors and mechanisms, which were part of the interaction process with the city and its planning, have instigated different outcomes. In Tapiola, public participation has been scant. However, Otaniemi, due to extensive knowledge resources and expertise, has experienced lively self-organisation among start-ups and SMEs.

4.3.2. The Future Is Already Here

The role of technology has been similar in both cases. Espoo City had launched CIM already a decade ago. In the beginning, the city model was only based on a GIS model with aerial photographs and laser scaling. As BIM technology became available, developers and construction companies have been able to present their initiatives through CIM. The CIM data are also used in the designing of new housing initiatives. Therefore, the main user of urban data has been the city itself. The urban planning and building-permit processes have used data and visualisation, but otherwise, the use of CIM has been modest.

Nevertheless, interest in urban data is growing outside the statutory planning processes. There are new mobility applications and services which are using location-based data. Public transportation has used and developed location-based data for routing since the 1990s. AI and robotics are extending the use of location-based data by introducing visualisations of CIM and BIM, not just to navigate, but to identify and deliver goods and orders to the receivers. In Otaniemi, there has been experimentation with delivery robots. Small vehicles use pavements and footpaths instead of streets and driveways (Figure 4). Thus, shopping that normally is done by people in local shops has turned into a delivery service. This kind of service is expected to assist the elderly and people with walking difficulties. E-shopping might likely change the commercial infrastructure even in small city centres.

Figure 4. The Starships delivery robots in Otaniemi, summer 2022.

The development and use of AI and robotics in urban space and everyday living are self-organised. The knowledge and applications are brought along by private entrepreneurs, but unlike other businesses, they do not only need to know a certain location but information about all locations, as well as real-time visualisations of urban space. The CIM in Espoo comprises open-source data that can be freely explored. The data packaging and delivery cost a small fee, but the overall data are available for a very small price. On top of these data, entrepreneurs with technology initiatives build up new data gathering routes, visualisations of streets and buildings, as well as of users and their consumption patterns. CIM and BIM could be used as platforms for new real-time data on urban life itself.

However, the question remains, how will these data be utilised in third-party development initiatives? And if the Land Use and Building Act provides a frame for the application of public urban data, will it also provide a legitimate role for new kinds of data-gathering by self-organised stakeholders?

In sum, opportunities for adaptive urban planning have been created by the large assemblage of actors and resources that have been mobilised for urban development. The availability of modern technology has also been an opportunity. Relevant sources of knowledge, in the case of Otaniemi, seem to be an opportunity, as they enhance self-organisation among enterprises and create new social infrastructure (assemblages). This also shows that the Finnish planning system can be adaptive if there are strong stakeholders. The constraints comprise in both cases an inadequate recognition of participatory processes in general, and digital empowerment, especially in Tapiola.

5. Discussion

We will start by discussing the increasing complexity of the Finnish planning system, also in light of planning systems in general, and then proceed to the inadequacy of digital empowerment, reorganisation of planning expertise, and lack of design criteria for the substance of the environment.

5.1. Complexity and Adaptiveness of the Finnish Planning System

As described previously, the renewal of the Land Use and Building Act aimed at a more adaptive planning system that could respond in a more relevant way to sustainability transitions. However, the analyses disclosed that instead of making the planning system easier to manage, it will become more complex.

First, the Land Use and Building Act, which used to be a single, coherent collection of legislation, has been divided into three related Acts. This means that there is no common thread of land use in a shared act at this stage, as there is an act on digital planning and building, but not yet a law on land use. Previously, the process of steering extended

from land use to building in which the course of planning could be seen both from the paragraphs as well as from the memos with a clear rationale. In addition, the steering of planning also required compliance with other relevant legislation, especially with the Environment Act.

Nadin et al. [14] conducted a major study on the changes taking place in the adaptiveness of spatial planning systems in 32 countries across Europe (see also [36]). The authors asked the respondents to assess changes in the degree of adaptiveness on a five-point scale from none to strong, where institutions systematically monitor societal changes and the impact of policies, learn from experience, and revise the form, content, or process of planning. The results showed that there is a general tendency towards adaptiveness in spatial planning in Europe. There were a few countries with a long history of planning institutions that reported strong adaptation in planning. Finland was one of them.

However, from the flat ontology perspective, the definition of adaptiveness in the study was insufficient, as it only examined institutions and did not expand adaptiveness to the dynamism of situational networks and emergent processes. Nor did the survey deal with questions on citizen engagement and self-organisation. Thus, the study did not reveal whether there are European planning systems in which arborescent and rhizomatic features are in dialogue leaving space for situational and relational adaptiveness. However, at least the Dutch planning system enhances interesting experiments on adaptive planning, which focus both on the co-creation of conditions for development that increase environmental fit and on the strengthening of the adaptive capacity of local stakeholders [19,27,37]. This kind of experimentation has not been included in the spirit of the Finnish renewal.

5.2. Inadequate Digital Empowerment

The role of citizens and their participation, not to mention self-organisation, are not dealt with in RYTJ, nor in the Building Act, which means that self-organisation should become more prominent in the Land Use Act. Participation has been an important value in the current Act, although its steering and impact have not been successful, according to both decision-makers and activists. This could also be seen in the case studies. Problems of public participation will continue unless the revision of the Land Use Act finds new ways to incorporate citizens' planning knowledge in the digital data produced by professional planners.

The cases of Tapiola and Otaniemi also showed that the digital empowerment of local stakeholders, citizens, and enterprises was not prominent, although the application of CIM made it possible to visualise more realistic planning solutions. The commercial delivery robotics in Otaniemi actively used planning knowledge. However, RYTJ does not recognise the use of digital urban data that are produced by non-public actors. Nevertheless, there is ongoing research on digital twins that does recognise civil engagement in data production [35]. The definition of digital planning material and immaterial rights will probably have to be specified later in RYTJ from the perspective of third parties or commercial use.

Digitalisation has been embedded in all layers of society. Access to social media and other internet-mediated tools has created communities of practice interested in urban development and planning [26]. People are used to sophisticated citizen science with instruments to analyse urban change, to plan and to implement their actions in certain contexts in practice (co-housing, tactical urbanism, etc.) These have a profound effect on the local realm both in the form of agreed reality (self-governance) and in that of unintentional actions, which produce urban space with consequences for urban development [19].

In addition, most local realms are embedded in glocal networks [6]. Local realms are not containers, but a space for and of varying interest groups and actions, where self-organised endeavours are changing in time and place. However, the proposed Building Act in Finland implies the use of 3D planning, and CIM- and BIM-based building requirements without explicit reference to the digital empowerment of civil society. Recently, some of the experiments on digital twins have disclosed that without the adoption of a flat ontology

perspective, digital empowerment deepens only the public participation of activists but not self-organisation [35].

5.3. Reorganisation of Planning Expertise

The Act on the Built Environment Information System (RYTJ) is the most significant part of the renovation, as there has not been such legislation before in Finland. The legal basis for the digitalisation of urban planning and urban data has been established via the European Union INSPIRE Directive[9], but the national approaches are still in progress (see, for example, [38]).

In Finland, the renewal will harmonise the planning techniques. Although the law does not exclude potential other technology, it clearly defines BIM modelling as the tool for planning and construction. Therefore, BIM modelling defines how building parts should be modelled and how structures, materials, and the building mode should be presented. The building instructions that used to be planning guidelines will be directly translated into machine-readable data, which will be used through special programs, such as Solibri.

Thus, the renovation defines a new way to design buildings and plan land use on the plot. Due to the modelling requirements, there is a separate architecture model (so-called ARK model in Finnish), a structural engineering model (RAK in Finnish), and a model for technical utilities, such as electricity and plumbing which is called a TEK model. Especially, the ARK models are expected to be integrated into city modelling with appropriate coordination. However, there is no steering concerning the design of the courtyard. The relationship between the BIM and the surrounding landscape is not defined. Nor are the qualitative aspects of the building models described.

It seems that the aim of the renewal has been, in the first place, to enhance the examination for the building permit. BIMs have been used for years by engineers to examine engineering plans, but in this renovation, the examinations of the plan can be reduced into a report that can be machine-read. However, the examination report does not disclose whether an object has been designed in a beautiful or relevant way. It only states which statutory parts have or have not been drawn. The machine-readable examination report certainly is an effective way to go through dozens of planning parts on different levels.

From the perspective of the planning profession, RYTJ and its requirement to apply machine reading bring forth a new dimension to urban development. Previously, urban planning and building have been the core tasks of architects. Some architects have specialised in zoning, and some in buildings that fit the environment. Architects have also been specialists in the interpretation of whether the building design fulfils the aims of the master plan. They could identify the details, as well as the big picture comprising several planning levels for which they were responsible. In the future, architects will still be responsible for the planning, and they will steer decision-making concerning building. However, a great deal will change with RYTJ and its machine reading, based on modelling.

Thus, modelling and inspection, based on machine-reading, have raised criticism from architects, as the change is considered to deteriorate architecture [39,40]. The renewal also requires new education for architects. Consequently, the question remains to what extent it is possible to assess the quality of planning and its environmental fit based on mechanistic models. How will models express beauty [41], as there is no need to design, for example, window frames, nor roof angles with precision?

5.4. Lack of Qualitative Criteria for the Substance of Planning

The current eco-social crisis is demanding rapid action to build an adequate infrastructure. Ecofeminists and other environmental activists keep stressing the democratic and qualitative aspects of the environment [12], which were partly recognised in the case studies, but not in the legislation.

The Building Act contains several measurable objectives related to ecological sustainability, such as carbon neutrality, zero emissions, and preservation of nature. Climate change prevention and mitigation are important aims that can also be found, for example,

in the current legislation on nature preservation, but the statutes for a human-friendly urban environment have not yet been clearly defined in the new legislation.

The proposal does not have structural nor functional qualitative criteria for planning substance. Thus, none of the laws steers the preconditions for a well-functioning environment from the perspective of everyday life, such as how to deal with the balancing of work and care (production and reproduction), how to move around with public transportation, how to balance private and public spheres, not to mention accessibility, safety, image, and beauty.

6. Conclusions and Recommendations

The aim of the article was to examine the renewal of the Finnish planning legislation from the perspective of flat ontology and to illustrate its potential consequences. The conclusions and recommendations are the following.

6.1. Conclusion1: A Long Way to an Adaptive Planning System

It is evident from the results of our study that the ontological turn has so far[10] been disregarded in the Finnish legislative renovation as the planning hierarchies might be added and the emerging and changing relationships between various groupings have not been recognised, increasing the inertia of the planning system. In addition, the current proposal does not distinguish the situational nature of planning, nor the rhizomatic features of expanded urban planning, such as self-organisation and different networks of human and non-human elements at hand [4].

Recommendation 1:

The wish to make the planning system more adaptive would require the deconstruction of the hierarchical, multi-level system, by decreasing planning levels as well as by identifying the roles of different actors, including different types of zoning partnerships. There is also great pressure on the forthcoming Land Use Act in Finland to increase its adaptive potential by supporting the participation of diverse stakeholders and recognising the importance of self-organisation. Adaptability would also require a new sensibility of institutional praxis, as self-organised actions transform, besides the planning methodology, also the planning system and the planners. The latter will become integrated parts of the motion of being and becoming itself [4].

6.2. Conclusion 2: The Need for New Methodological Openings in Urban Planning and Development

The renewal of the Land Use and Building Act did not seek to introduce new planning technologies but ended up doing so. The use of BIM and CIM with certain contents defines not only the current software but also the future appropriation of planning tool development in Finland. Even though the legislative renewal emphasises participatory planning and imposes mandatory digital planning tools, it ignores the digital empowerment of citizens. However, the renewal expressed genuine interest in improving the planning and design of living environments, but it failed to introduce concrete measures to preserve and care for both urban and natural environments.

Recommendation 2:

There is a need for new ontological lenses that embrace not only expertise but also local knowledge that produces both numerical and experiential data. Instead of defining specific technological applications, which might soon become late, the legislation should embrace an ecosystem of tools, digital and non-digital [23]. These should be embedded in an approach that expands the focus to and anticipates [42] the emergence of new openings in urban and eco-social development. Thus, the Finnish legislative renewal as a strategy for urban development still requires fine tuning.

Notes

[1] Self-organisation takes place in many physical, biological, cognitive, and robotic systems. In this article, self-organisation refers to the human interaction in urban development, especially in the spatial and behavioural patterns which accelerate urban actions and planning [3,8,9].

[2] Expanded urban planning (EP), based on post-structural planning theories [18], including the theory of complex coevolving adaptive systems [8], has been developed in the context of case studies in Finland and Italy [6,7]. With adaptive planning, we refer to the capacity to respond to and anticipate both expected and unexpected transformations by creating conditions via participatory practices and meaningful content [14,19].

[3] A rhizome is a post-structuralist concept describing nonlinear networks that establish connections between organisations of power, relative to arts and social struggles with no apparent order or coherency [22]. Rhizomes are not arborescent (tree-like or hierarchical).

[4] They cover a set of planning issues, such as the interplay of production and reproduction; private and public spheres; mobility and communication systems; a variety of housing solutions, as well as natural and climate-responsive environments, including a network of green and blue infrastructure. Indicators are provided, when these issues cross with criteria, such as diversity and flexibility; accessibility; safety and security; image, scale, and representation, as well as hybrid governance with certain institutional rules [28] (pp. 163–164); see also [27].

[5] Personal observation refers to one of the author's involvement in the planning processes of Tapiola and Otaniemi neighbourhoods, where she implemented detailed plans and steered, as well as monitored the building permit processes and street plans.

[6] The implementation of the Building Act has been delayed until 2025.

[7] NUTS III is the nomenclature of territorial units for statistics in small regions for specific diagnoses, cf. https://ec.europa.eu/eurostat/web/nuts/background (accessed on 23 March 2023).

[8] There are a variety of CIMs, some of which can be regarded as a digital twin. The latter is more advanced than CIM, as it contains semantic information about its focus, as well as online information. It can also serve as a platform for simulations [35].

[9] EU-INSPIRE Directive (2007/2), accessed on 15 September 2023, https://inspire.ec.europa.eu/documents/directive-20072ec-european-parliament-and-council-14-march-2007-establishing have been followed by the EU Data Act (accessed on 23 February 2022) https://www.eu-data-act.com/ and the EU Data Governance Act (accessed on 6 May 2022) https://www.european-data-governance-act.com/.

[10] The Land Use Act of the tripartite renewal has not yet been completed.

References

1. Boelens, L.; de Roo, G. Planning of undefined becoming: First encounters of planners beyond the plan. *Plan. Theory* **2016**, *15*, 42–67. [CrossRef]
2. Rantanen, A.; Rajaniemi, J. Urban planning in the post-zoning era: From hierarchy to self-organisation in the reform of the Finnish Land Use and Building Act. *EPB Urban Anal. City Sci.* **2020**, *47*, 321–335. [CrossRef]
3. Boonstra, B.; Rauws, W. Ontological diversity in urban self-organization: Complexity, critical realism and post-structuralism. *Plan. Theory* **2021**, *20*, 303–324. [CrossRef]

4. Boelens, L. A Flat Ontology in Spatial Planning. *disP Plan. Rev.* **2021**, *57*, 4–15. [CrossRef]
5. Wallin, S. Managing Urban Complexity—Participatory Planning, Self-Organization and Coproduction of Urban Space. Ph.D. Thesis, Aalto University, Espoo, Finland, 2019. Available online: https://aaltodoc.aalto.fi/handle/123456789/40200 (accessed on 31 July 2023).
6. Wallin, S.; Jarenko, K.; Horelli, L. Features and Consequences of Flat Ontology in Expanded Urban Planning. *disP Plan. Rev.* **2021**, *57*, 46–59. [CrossRef]
7. Horelli, L. (Ed.) *New Approaches to Urban Planning, Insights from Participatory Communities*; Aalto University: Helsinki, Finland, 2013; ISBN 978-952-60-5191-8.
8. Boonstra, B.; Boelens, L. Self-organization in urban development: Towards a new perspective on spatial planning. *Urban Res. Pract.* **2011**, *4*, 99–122. [CrossRef]
9. Stojanovski, T.; Partanen, J.; Samuels, I.; Sanders, P.; Peters, C. Viewpoint: City Information Modelling (CIM) and Digitizing Urban Design Practices. *Built Environ.* **2020**, *46*, 637–646. [CrossRef]
10. Kitchin, R.; Young, G.W.; Dawkins, O. Planning and 3D Spatial Media: Progress, Prospects, and the Knowledge and Experiences of Local Government Planners in Ireland. *Plan. Theory Pract.* **2021**, *22*, 349–367. [CrossRef]
11. Pereira, A.P.; Propopiuck, M. A Socio-technical perspective on the future of city information modelling. *Theor. Empir. Res. Urban Manag.* **2022**, *17*, 66–88.
12. Harcourt, W.; Nelson, I.L. (Eds.) *Practising Feminist Political Ecologies: Moving beyond the Green Economy*; Zed Books: London, UK, 2015.
13. Finlex. Land Use and BuildingAct. 5.2.1999/132. 1999. Available online: https://www.finlex.fi/fi/laki/ajantasa/1999/19990132 (accessed on 3 April 2023).
14. Nadin, V.; Stead, D.; Dąbrowski, M.; Fernandez-Maldonado, A. Integrated, adaptive and participatory spatial planning: Trends across Europe. *Reg. Stud.* **2021**, *55*, 791–803. [CrossRef]
15. Winner, L. Do Artefacts Have Politics? *Daelus* **1980**, *109*, 121–136.
16. Latour, B. 'Where are the missing masses? The sociology of a few mundane artifacts'. In *Shaping Technology/Building Society: Studies in Sociotechnical Change*; Bijker, W.E., Law, J., Eds.; MIT Press: Cambridge, MA, USA, 1992; pp. 225–258.
17. Joerges, B. Do Politics Have Artefacts? *Soc. Stud. Sci.* **1999**, *29*, 411–431. [CrossRef]
18. Hillier, J. Strategic navigation across multiple planes: Towards a Deleuzean-inspired methodology for strategic spatial planning. *Town Plan. Rev.* **2011**, *82*, 503–527. [CrossRef]
19. Rauws, W.; De Roo, G. Adaptive planning: Generating conditions for urban adaptability. Lessons from Dutch organic development strategies. *Environ. Plan. B Plan. Des.* **2016**, *43*, 1052–1074. [CrossRef]
20. Gilroy, R.; Booth, C. Building an infrastructure for everyday life. *Eur. Plan. Stud.* **1999**, *7*, 307–324. [CrossRef]
21. Bishop, P.; Williams, L. *The Temporary City*; Routledge: New York, NY, USA, 2012.
22. Deleuze, G.; Guattari, F. *Mille Plateaux. Capitalisme et Schizophrénie*; Editions de Minuit: Paris, France, 1981.
23. Wallin, S.; Horelli, L.; Saad-Sulonen, J. (Eds.) *Digital Tools in Participatory Planning*; Series C27; Aalto University, Centre for Urban and Regional Studies: Espoo, Finland, 2010.
24. Horelli, L. A Methodology of participatory planning. In *Handbook of Environmental Psychology*; Bechtel, R., Churchman, A., Eds.; John Wiley: New York, NY, USA, 2002; pp. 607–628.
25. Thrift, N. Lifeworld Inc—And what to do about it. *Environ. Plan. D Soc. Space* **2011**, *29*, 5–26. [CrossRef]
26. Saad-Sulonen, J. Combining Participations. Expanding the Locus of Participatory E-Planning by Combining Participatory Approaches in the Design of Digital Technology and Urban Planning. Ph.D. Thesis, Aalto University, Espoo, Finland, November 2014. Available online: https://aaltodoc.aalto.fi/handle/123456789/13352 (accessed on 20 June 2023).
27. Cozzolino, S. The (anti) adaptive neighbourhoods. Embracing complexity and distribution of design control in the ordinary built environment. *Environ. Plan. B* **2020**, *47*, 203–219. [CrossRef]
28. Horelli, L.; Damyanovic, D. Evaluation of spatial development from the gender+ perspective. In *Gendered Approaches to Spatial Development in Europe—Perspectives, Similarities, Differences*; Zibell, B., Damyanovic, D., Sturm, U., Eds.; Routledge: London, UK, 2019; pp. 157–180.
29. Strauss, A.; Corbin, J. *Basics of Qualitative Research. Grounded Theory Procedures and Techniques*; Sage: London, UK, 1990.
30. Raynolds, M. Equity-focused developmental evaluation using critical systems thinking. *Eval. Int. J. Theory Res. Pract.* **2014**, *20*, 75–95. [CrossRef]
31. Ekroos, A.; Katajamäki, H.; Kinnunen, H.; Lehtovuori, P.; Staffans, A. *Maankäytön ja Rakentamisen Ohjauksen Uudistaminen. (Renewal of the Management of Land Use and Building)*; Publication nr. 7; Ministry of the Environment: Tokyo, Japan, 2018.
32. Edilex. Building Act. Rakentamislaki (voimassa 1.1.2025 alkaen) 751/2023. 2023. Available online: https://www.edilex.fi/smur/20230751 (accessed on 20 August 2023).
33. Finlex. The Act on Built Environment Information System. 23.3.2023/431. 2023. Available online: https://www.finlex.fi/fi/laki/ajantasa/2023/20230431 (accessed on 20 June 2023).
34. Espoo City. Tietoisku—Espoon Asukasluku Vuodenvaihteessa 2021–2022. 2022. Available online: https://static.espoo.fi/cdn/ff/EzdJIx2qM-VMv-grij119fEu8TDZQWGiFIA1iVTPDI0/1650539784/public/2022-04/V%C3%A4kiluku%20vuodenvaihteessa%202021_2022_1.3.pdf (accessed on 20 June 2023).
35. Nummi, P.; Prilenska, V.; Grišakov, K.; Fabritius, H.; Ilves, L.; Kangassalo, P.; Staffans, A.; Xunran, T. Narrowing the Implementation Gap: User-Centred Design of New E-Plannig Tools. *J. Urban E Plan. Res.* **2022**, *11*, 1–22. [CrossRef]

36. Reimer, M.; Getimis, P.; Blotevogel, H. *Spatial Planning Systems and Practices in Europe: A Comparative Perspective on Continuity and Changes*; Routledge: London, UK, 2014.

37. Rauws, W. Embracing Uncertainty Without Abandoning Planning: Exploring an Adaptive Planning Approach for Guiding Urban Transformations. *disP Plan. Rev.* **2017**, *53*, 32–45. [CrossRef]

38. Scottish Government. Transforming Places Together: Scotland's Digital Strategy for Planning. 2020. Available online: https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/11/transforming-places-together-scotlands-digital-strategy-planning/documents/transforming-places-together-scotlands-digital-strategy-planning/transforming-places-together-scotlands-digital-strategy-planning/govscot%3Adocument/transforming-places-together-scotlands-digital-strategy-planning.pdf (accessed on 20 August 2023).

39. Helander, H. The Building Law—The Keynote Speech 18.10.2022, The President of the Finnish Association of Architects, SAFA. 2022. Available online: https://www.safa.fi/wp-content/uploads/2022/10/Rakentamislaki-eduskunta_ymparistoVK_18102022_H.Helander.pdf (accessed on 31 July 2023).

40. Kytösmaa, I. The Preparation of the Building Law has been Insufficient. Helsingin Sanomat, 13.11.2022. 2022. Available online: https://www.hs.fi/mielipide/art-2000009190351.html (accessed on 31 July 2023).

41. Cozzolino, S. On the spontaneous beauty of cities: Neither design nor chaos. *Urban Des. Int.* **2022**, *27*, 43–52. [CrossRef]

42. Fabritius, H.; Kupper, K.; Mrosla, L.; Nummi, P.; Prilenska, V.; Yao, C. Varying Data on Urban Trees Complicates Meeting User Needs for Digital Twins of Urban Green Infrastructure. In Proceedings of the 18th International Conference on Computational Urban Planning and Urban Management, Montreal, QC, Canada, 20–23 June 2023.