

Codes and conventions for future Zurich:

A Propositional Planning Approach to Qualitative Densification

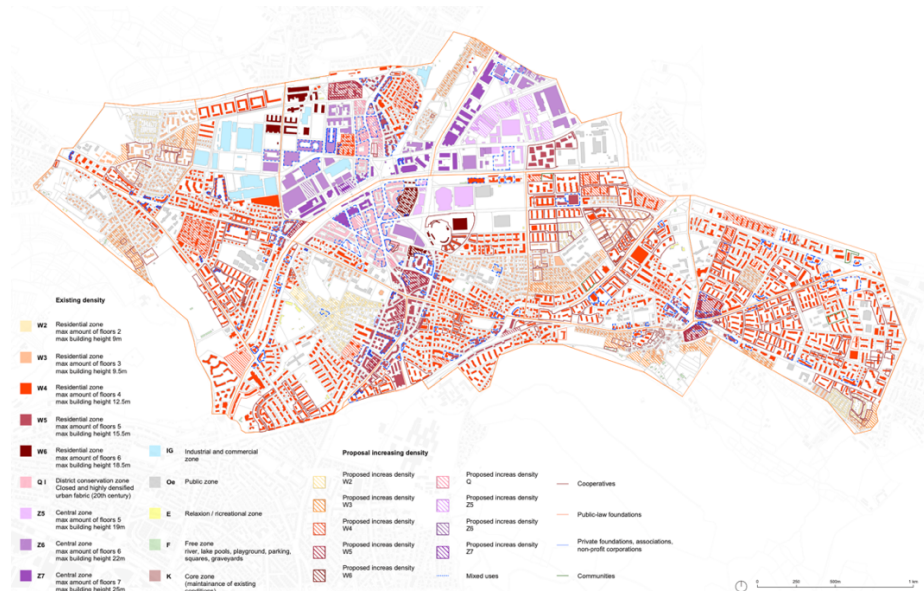
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Research Plan Overview

SNSF Research Project Proposal

October 1st, 2020



Figs. 1–3: Tools and outputs in *A Plan for Zurich*, AAM Studio Sergison, 2017–2020.

Fig. 1 Perspective: Winzerstrasse housing project seen from the Limmat. Area 5: Unterstrass, Wipkingen, Höngg. Autumn Semester 2019.

Fig. 2 Collective model of Zurich, 1:1000: Detail Area 2: Sihlfeld, Wiedikon, Werd, Friensenberg, Enge. Spring Semester 2018.

Fig. 3 Housing density strategy. Detail Area 6: Oerlikon, Milchbuck and Schwamendingen. Spring Semester 2020.

1. Summary of the research plan

Background and rationale. In the next decades, the city of Zurich anticipates a population increase of 25% over current numbers. Finding the means of housing, collective services, public facilities, recreational spaces etc. to accommodate the growing population is only one of the city's challenges, besides engaging with changing dwelling patterns, altering mobility practices and mitigating climate change, which all require a new integrated perspective on urban development. The Spatial Planning Law that came into force in 2014 prioritises densification over expansion, but how can Zurich's densification be realized without a loss of urban quality?

Hypothesis. The main hypothesis of this research proposal is that predicted growth can be absorbed within Zurich's territorial limits within **pre-developed urban scenarios for qualitative densification**. We hold that the investigation of such scenarios requires: a) a refined understanding of the relation between 'urban codes' and 'urban tissues' and b) should proceed through an architectural methodology which addresses the concrete spatial characteristics of the urban tissue as the expression of social, environmental, economic and mobility concerns.

Focus. Taking as point of departure the current Zurich *Richtplan* (Stadt Zürich 2018a), the central focus of this project will be on the relation between urban tissues and urban codes. We understand 'urban codes' as the various building regulations, plans and policies generated at several levels of urban governance (state, canton, city). We hold that these urban codes not only determine the formal characteristics of the urban tissue, but also implicitly define a project for the city: in the various definitions of the urban codes a large set of assumptions are embedded that 'speak' of specific cultural ideals of living, environment, recreation, working and mobility. Hence, though these urban codes are very often extremely technical in character, their implications reach far beyond.

This project has **two goals**. Firstly, we aim to reveal the hidden project for the city that is embedded in urban codes. We aim to understand how the different assumptions (social, environmental, economic, concerning mobility) implied in the urban codes have affected Zürich's urban fabric since the 19th century to today, i.e. the reciprocal relation between the form of the current city and the definition of the urban codes. Second, we aim to explore – through design-led research – innovative models of qualitative densification, and identify the revisions to urban codes necessary to obtain this qualitative densification.

Method. The project will examine the relation between urban codes and urban tissue both from a retrospective vantage point and from a future-oriented perspective, through the unique combination of historical (ETH) and designerly (AAM) research. What we coin respectively 'retroactive analysis' (RA) and 'propositional planning' (PP) are interrelated through a set of common research foci. The ETH team will undertake the RA of Zurich's urban tissue, starting from the current condition to understand the generating logics of its codes. At AAM, PP will be developed through urban design projects related to the critical analysis of urban codes. RA focuses on how cultural patterns have influenced the definition of urban codes, while PP explores the limits of the existing urban codes and the urban tissues they might lead to.

Outcomes. In addition to the envisaged two doctoral theses and combined six scientific articles, the ETH and AAM teams will each produce a substantial synthetic outcome, respectively the historical *Zurich Retroactive Atlas* and the prospective *Propositional Planning Primer*, both addressing policy makers, planning experts and architectural practitioners, as well as stakeholders and the wider public.

2. Research plan

2.1 Current state of research in the field

This study is positioned within an existing field of debate and research on changing urban densities in Switzerland, particularly Zurich, as well as within scientific debates on building regulations and their impact on urban quality. It relies on the combination of three fields of scholarship: 1. studies on urban transformation in Zurich, 2. general research on urban codes and their relation to urban form, and 3. architectural methods for urban analysis and planning. These are followed below by a review of current research projects and conclusions regarding their outreach and limitations.

2.1.1 Studies on urban transformation in Zurich

The connection between building codes, typologies and urban quality has been flagged up in numerous historical, theoretical and projective urban studies. Zurich's urgent demand for strategies of urban development and densification can be glimpsed from a surge of recent publications (Maurer et al. 2012, Hengartner and Schindler 2014, Angélil et. al 2016, Domschky et al. 2018, Kofler 2018, Juppieri and Zemp 2019) which aim to contribute to a comprehensive planning policy for Zurich. However, their scope is truncated into discrete area of expertise, limited zones, and disjointed urban and architectural scales. To counteract this, the proposed research aims to formulate a comprehensive framework for future development and strategies for densification in all of metropolitan Zurich.

Planning history. A substantial amount of literature on Zurich's modern planning and housing histories is either historical (Zürich Hochbaudepartement 2002–2013, Kurz 2008, Durban 2007, Claus and Zurfluh 2017, Boudet 2017 etc.), or programmatic (proposals and manuals for future development: Glaus 1968, Keller 1973, Schilling 1982, Maurer et al. 2012, Roesler et al. 2012, Hengartner and Schindler 2014, Herzog and ETH Studio Basel 2016, Domschky et al. 2018, Kofler 2018, Kurz et al. 2018). Both fields oscillate between catalogues of de-situated architectural typologies (Hoskin 2011, 2015, Wirz et al., 2017, Desax 2016, Meyer and Kleilein 2017, Hönig and Nasshed 2015) and studies of zoning analyses or plans at the territorial scale of urban planning (Aisiger and Reuther 2012, Wälty 2018). Studio Basel's 2006 study of Switzerland's urban potential viewed Zurich as a metropolitan region, at a scale both too large and too abstract to test individual urban interventions (Diener et al., 2006, Studio Basel, 2016). The collective study *Urban Qualities* focused on urban mix of functions, only covered two areas, central and north Zurich (Angélil et. al 2016).

The proposed research oscillates between urban and building scales, zooming in from a strategic overview of city planning structures to the detailed analysis of urban plots. This scrutiny is possible thanks to the corpus of research systematically collected between 2017-2020 in the framework of Studio Sergison at AAM.

Planning visions. Swiss urban manifestos are an established polemical genre (Burkhardt et al., 1955, Burkhardt et al., 1956, Glaus 1968, Föhn 1970, Keller 1973, Schilling 1982, Studio Basel, 2016). With regards to Zurich, numerous studies have been produced by professional bodies such as BSA (Maurer et al. 2012), teaching and research studios (Diener 2006, ETH Studio Basel 2016, Domschky et al. 2018) and architectural collectives (Roesler 2012, Boltshauser 2013). The International Network for Urban Research and Action (INURA) has analysed Zurich's transition to global status from an anti-speculative, sustainable and socially inclusive perspective (Hitz et al. 1986, Hitz 1995, Wolff 1998, Paloscia 2004, Angst et al. 2010, Klaus 2013). This polemical literature is complemented at municipal level by regular and substantial

reports of development strategies from the Stadtentwicklung and Städtebau departments (I 1965, Stadt Zürich 2012, 2013, 2015, Stadtentwicklung Zürich 2015, *Stadtblick* journal, Eisinger and Reuther, 2007, Hengartner and Schindler 2014, Zürich Stadtplanung 2011), including the prospective *Richtplan* (Stadt Zürich 2018a). The report *Strategies Zürich 2035*, whose general vision for a future Zurich asks “how do we maintain our quality of life?” (Stadtentwicklung Zürich 2015), argues for “high quality densification” understood as being “approached in a socially responsible and ecologically compatible way” (Stadtentwicklung Zürich 2015, 19). The report *Zurich 2040. A Spatial Concept for a Growing City* on how densification can be reached within the existing limits of the city of Zurich, advocating a ‘differentiated construction densification’ with improved urban mobility and ‘urban nature’ (Stadt Zürich 2018b). Despite this abundance of in-depth sources, Zurich planning research presents a clear disjunction between utopian polemics and municipal publications, which, produced within politically predetermined norms, are limited in their experimental and innovative potential. The proposed research bridged this fractured field by historically analysing the existing codes, articulating scenarios of possible development, and testing propositional interfaces with Zurich’s *Richtplan*. Its innovative combination of historical and designerly research connects the polemical and political, aiming at Zurich’s qualitative densification.

2.1.2 General research on urban codes and urban quality

Legal frameworks for urban form. A recent survey of regulatory literature in urban planning pointed to the general lack of theoretical frameworks in building regulations studies (van der Heijden and de Jong 2013). While building regulations and urban policies are debated in socio-legal studies (Ayres Braithwaite 1992), business studies (Doyle 1997) and planning law, including environmental protection (Gunningham and Grabosky 1998, Sullivan 2008), these have little outreach among architects. Consequently, in the architectural discourse, building regulations are far less covered, although their presence is increasingly stated. Their impact is most extensively covered in historical analyses of urban developments, such as in Berlin (Stimmann and Kieren 2005) or Amsterdam (Komossa 2005 and 2010), or more explicitly, in wide-ranging historical surveys of the relation between building regulation and development of urban form (Slater and Pinto 2018), and the spatial thematization in urban planning (Lampugnani and Schützeichel 2017). A more polemical subfield focuses on the limitations and shortcomings of building regulations, calling for their review in accordance to innovative architectural and environmental criteria (Knight and Williams 2008, Brandhuber et al. 2016, Petersen and Grämiger 2018, Grämiger 2018). Even though focused on building regulations, the interface between policy and architecture is however superficially probed.

Critiques and specialised agendas. Instead, much new literature is focused on sustainable urban development defined by environmentalism, social inclusion, citizen participation, and collective authorship (Heinen et al. 2006, Moulaert et al. 2010, Tonkiss 2013, Ermacora and Bullivant 2016, Krusche 2017, Bandiks and Degros 2019 etc.). The issue of density is increasingly central to world cities (Rinaldi and Tan 2019) and Swiss (Kaufmann 2019) urban development. Additional relevant works focus on traffic and transport infrastructure (Stimmann 1985, Anne Vernez-Moudon 1987, Braum et al 2013, Bandiks and Degros 2019, Hieslmair and Zinganel 2019); housing and other typologies worldwide (Stimmann 2011, Desax et al. 2016, Fröhlich et al. 2019, Christ and Gantenbein 2012, 2015), urban climate (Roesler and Kobi 2018), and heritage (Lampugnani and Domhardt 2016).

By approaching Zurich’s development, both past and planned, through the lens of codes and conventions, the proposed study will both build up on current scholarship and offer an innovative methodology for directly engaging with the spatial and morphological impact of regulations upon the urban fabric. The proposal’s historical index will render explicit the

multiple relations between codes and societal needs, whereas the designerly one will address the nexus of environmental policy, mobility and public transport, urban mix etc.

2.1.3 Architectural methods for urban analysis and planning

Research methods for urban analysis and planning. The third field of scholarship for the present proposal combines historical and design expertise. Recent studies of European cities have been conducted through **historical analyses** element by constitutive element, eg. in Berlin (Stimmann and Kieren 2005), Amsterdam (Komossa 2005 and 2010) etc. Conversely, **morphological approaches** to urban analysis have been developed in handbooks of urban design practice, starting with Saverio Muratori's ground-breaking *Civiltà e territorio* (Muratori 1967 and 1978) and his followers (Caniggia 1976, Malfroy and Caniggia 2019, Balsani and Marzot 2010 etc.). These methodologies are combined in interdisciplinary urban analyses, positioned at the junction of urbanism, urban sociology, and geography (Panerai, Depaule and Demorgon 1999); or focused on the notion of 'projet urbain' at intermediary scales of study (such as urban fabric, parcellation, urban block) bridging between territorial and architectural analyses (Mangin and Panerai, 1999).

The proposal builds upon these methodologies by focusing on the relationship between urban policies (codes) and urban fabric at the overlap of two fields of expertise, historical (retroactive analysis) and designerly (propositional planning).

Design-led research on urban planning. The current proposal is inscribed in a tradition of research by design at territorial and urban scales, conducted in higher education institutions in Switzerland and abroad. Architectural teaching has proven a fruitful arena for knowledge transfers between general and specific conditions of the urban realm (Avermaete Tsukamoto 2016, Rieniets 2014). Zurich is a traditional *topos* of ETH research (Rossi et al. 1980, Ruchat-Roncati 1996, Angélil 2005, Diener 2006, Gugger 2014, Christiaanse 2013, 2015, 2017). As demonstrated by resulting publications, however, this design-led research is limited by specific constraints. Firstly, such projects in urban planning operate at a **territorial and zoning scale**, which is too large to test the application of individual buildings on specific plots (Diener 2006, Gugger 2014, Angélil et al. 2016). Secondly, the time constraints of semester-long studio lead to the study of city areas in isolation, leading to a **fragmented knowledge** (Ruchat-Roncati 1996, Angélil 2005, Angélil et al. 2016, Christiaanse 2013, 2015, 2017). Solutions found by studio projects have never, until now, been systematically reinserted in the broader debate or politically-determined strategies for city. **By testing the results of an existing, extensive project that has systematically covered the entire area of Zurich, the proposal offers a realistic framework for the city's current development plans.**

2.1.4 Recent and ongoing research on Zurich and other Swiss cities

Studies on Zurich and Swiss city planning have been conducted across the disciplinary boundaries: geography (H. Mayer, GI Bern), sociology and urban ecology (Schmid, ETHZ), visual communication (Renner, FHNW), engineering sciences (Cajot, EPFL), social urban sciences (Vigano, EPFL; Christiaanse, Angélil, Eberle at ETHZ). Both the Renner and Cajot projects address public participatory and visual communication processes in city planning, which highlights a real need for concrete tools in the interface between Zurich municipality and its citizens - aspects that complement the proposed research and open possibilities for future collaborations. Vigano and Mayer look, from different disciplinary perspectives, at the areas in-between and complementary to Zurich's urban territories, namely the interface with rural land (Vigano) and the networks of smaller cities around (Mayer). Several projects conducted within ETHZ address various aspects and city zones in the framework of a putative Zurich planning (Schmidt, Angélil, Eberle and Christiaanse). The qualitative

dimension of this proposal differs radically from the legislative and quantitative basis of Eberle and ETH Wohnforum's current project on sustainable land-use planning. Finally, our proposal's engagement with a variety of large, intermediate and small scales complements the zoning approach of the Angélil and Christiaanse projects and offers analytical tools in the form of drawing and spatial model outputs. **Our goal of providing a coordinated strategy for Zurich densification, across a variety of scales and disciplines, complements the knowledge produced by these projects.**

2.1.5 Flaws and gaps in existing knowledge

In summary, the current state of research illustrates a dynamic and expanding field, beset by systemic limitations:

- Segmented: disconnection between application-oriented research and historical reflection;
- Inconclusive: data collected is inadequately conceptualised and cannot be efficiently implemented;
- Rigid: Acting within a fixed political framework, data collection by the city administration is operational, lacking the level of experimentation necessary to revise the existing codes;
- Exclusively Plan-based: In architectural studies, the dominance of plan-based, typological analyses leads to excessive rationalization, at the expense of qualitative and spatial understandings of urbanity.

As shown above, the proposed research corrects this general set of limitations by:

- Defining intermediate scales of examination, between zoning and discrete architectural interventions;
- Tailoring its architectural and planning perspective to Zurich's specific cultural and economic conditions;
- Testing concrete proposals to assist various scenarios of implementation in the current statutory framework; offering a reflecting medium and producing scientific knowledge through design-led research;
- Providing a varied visual material (including perspective views) to better communicate urban qualities.

2.2 Current state of applicants' own research

The two co-PI are internationally established, highly respected specialists in their fields. The synergy of their extensive and complementary expertise is a guarantor of the project's achievability. Building upon the six-semester teaching programme 'A plan for Zurich' conducted by Prof. Sergison at AAM (2017-2020), the PIs undertook a collaborative two-year preparatory stage consulting with a wide range of specialists to develop a realistic and highly effective proposal.

2.2.1 Prof. Jonathan Sergison

Prof. Sergison is Professor of Design and Construction at AAM (since 2008) and Director of the new Institute of Urban and Landscape Studies at AAM. He is also founding partner of Sergison Bates architects (SBa, since 1996), a multiple award-winning architecture studio with offices in London, Zurich and Brussels (<https://sergisonbates.com/en>), listed by prestigious professional journal *Domus* as one of the 100 top global practices in recognition of its significant contributions to affordable housing and urban architectures (Mariotti 2019). The SBa approach is grounded in reflective practice, which assigns a conceptual basis to all formal and technical decisions. Every project involves a form of research, correlating all details within an overall strategy, rigorously questioning the most fitting forms of construction. Alongside their body of built works, this approach has resulted in an impressive body of publications and exhibitions, including collections of critical essays by Jonathan Sergison by himself and in tandem with studio partner Stephen Bates (Bates and Sergison 2007, 2012, 2014, 2016; Sergison 2016, 2017). Prof. Sergison's pedagogical activities are informed by reciprocity with practice (Biechteler 2017), a position he has articulated in the exhibition and publication *Teaching / Practice* at the 16th

Architecture Biennale in Venice and upcoming publication *Swiss Conversations* (Sergison 2018 and 2021). He teaches and lectures widely, having held positions at the Architectural Association in London, GSD Harvard, ETH Zurich and EPFL in Lausanne amongst others. At AAM, Studio Sergison focuses on the design of housing, mostly in urban settings. The visiting professorship at Harvard resulted in a study of high-rise, high-density housing in a US context (Bates and Sergison 2014). The studio's work is driven by the need to understand the events that have created urban landscapes in terms of political, geographic, social and economic circumstances, as well as the atmosphere and emotional qualities of places. The ambitious six-semester study *A Plan for Zurich* (2017–2020, <http://www.sergison.arc.usi.ch/?q=brief>) explored realistic proposals for the city's changing housing needs. Over three years, six parts of the city were subjected to in-depth analyses and propositional interventions, based on the survey of existing conditions and inventory of significant or typical buildings in the area. The students' propositional projects have revealed the need to attend, systematically and in synergy with other disciplines, to the task of creating a design-led urban plan for Zurich. In addition to studio teaching, as Director of the new Institute of Urban and Landscape Studies, Prof. Sergison seeks to establish a new facility for teaching and research, focused on projects at regional, national and European scales. The Institute is developing a common framework that brings together the various laboratories within the school and structures their research activities related to the city and territory. The current proposal intends to build upon the preliminary work undertaken in *A Plan for Zurich*, thus initiating the Institute's research activities.

2.2.2 Prof. Dr. Tom Avermaete

This project is situated within Prof. Avermaete's long-standing research trajectory exploring the relation between the public realm, architecture and urban design. The results have been published in books such as *Positions: Architecture, Modernity and the Public Sphere* (Avermaete, Havik and Teerds 2009), *Casablanca-Chandigarh: A Report on Modernization* (Avermaete and Casciato, 2015), *The New Urban Condition* (Medrano, Recaman, Avermaete, Routledge in print 2020) and several themes issues of journals such as 'Urban Formation and Collective Spaces' *OASE Architectural Journal* (Avermaete et al., 2006) and 'Codes and Continuities' *OASE Architectural Journal* (Avermaete et al., 2014). Within this wider research programme, Avermaete has in the past years explored the relation between the architecture of the city and urban codes. His research explores how the definition of urban codes – in official texts, building regulations and city plans but also in the choice for particular typologies or construction modes – entails a specific conception of urbanity. Avermaete has explored the theoretical premises of these common codes and their importance for the built environment with the occasion of the international conference 'Constructing the Commons', Delft University of Technology (2016) of which he was the main convener (Avermaete et al., 2016). In this conference, Avermaete initiated dialogues with prominent thinkers and scholars, amongst others from the fields of urban sociology (Richard Sennett, LSE) and urban design (Margaret Crawford, UC Berkeley). Next to these theoretical investigations, Avermaete has further explored the more concrete architectural and urban dimensions of common codes, in international seminars and research studios, with the occasion of visiting professorships at Tokyo Tech (2016), University of Ljubljana (2018) and of his Endowed Visiting Professorship for Visionary Cities at the Institute of Art and Architecture, Vienna Academy of Fine Arts (2016–2017). Results of this research have been published as *Constructing Tokyo Commons* (Avermaete and Tsukamoto 2016) and *Living Lab: Constructing the Commons* (Avermaete et al., 2018). Avermaete is often invited as keynote speaker on the architecture of the city and its common codes, having presented at the University of Sao Paulo (2018), Leibniz Universität Hannover (2017), Copenhagen University (2016) and Coimbra University (2015). In addition, he has also illustrated the importance of his ongoing research for rewriting the canonical histories of architecture, amongst others in his book

chapter 'The Place of Commonplace: The ordinary as Alternative Architectural Lens in Western Europe' in *A Critical History of Contemporary Architecture 1960-2010* (Avermaete 2015). An important milestone was the organization of the International Colloquium 'Urban Commons: Exploring the Collective Architectural Resources of the City' (Zurich, 2019) at the occasion of his inaugural lecture at ETH Zürich. In this colloquium Avermaete explored, together with international scholars such as Hilde Heynen, Hannah Leroux and Adrian Forty and design practitioners such as Adam Caruso and An Fonteyne, the importance of urban codes in defining historical and new conceptions of the city. Within the context of this colloquium, urban codes emerged as fundamental to the way in which we deal with resources in our cities and to the resulting urbanity. Avermaete has identified the relation between common codes and the architecture of the city as one of the main research foci for his new Chair for the History and Theory of Urban Design at ETH Zürich.

2.3 Detailed research plan

2.3.1 Background and rationale

In Switzerland, the 'Spatial Planning Law' that came into effect in 2014 limits the expansion of urban areas and prioritises densification over the loss of agricultural land. Zurich's population is expected to grow by 25% in the next two decades - an additional ca. 100,000 inhabitants. Albeit the largest Swiss city in terms of population and land area, with a density of 4,500 inhabitants / km², Zurich is nowhere near the densest. Basel, with a density of 7,200 inhabitants / km² and Geneva at 12,800 inhabitants / km², provide fine examples of qualitative urbanity. The proposal's entry point is Zurich's anticipated densification in the next decades, and its impact upon the city's 'urban qualities' (Angélil et al. 2016). While preparing the urban scenarios (housing, collective services, public and leisure facilities etc.) to accommodate all expected newcomers is a significant challenge, this is only one of Zurich's urgent tasks. The city's densification must consider additional societal and environmental challenges, including changing dwelling patterns, the effects of climate change, and emerging patterns of mobility (Stadtentwicklung Zürich 2015 and Stadt Zürich Amt für Städtebau 2018). These have recently been compounded by the COVID crisis, whose far-reaching effects will take some time to unravel. All these uncertainties require a flexible approach to urban development, which the city planners, encumbered by time and procedural constraints, lack the resources to explore. The proposed project aims to develop alternative scenarios of qualitative densification within the frame of the current *Richtplan* (Stadt Zürich 2018a) and test them at intermediate scales, between territorial zoning scales and individual building scales. By doing so, it can propose effective adjustments to existing urban codes in order to assist planning processes, while ensuring Zurich's qualitative densification.

2.3.2 Hypothesis

This research proposal relies upon a theoretical, thematic and methodological hypothesis:

Theoretical: the need to define qualitative densification. The main hypothesis is that the predicted population growth and the related challenges can be absorbed within Zurich's territorial limits, subject to new urban scenarios for qualitative densification. We hold that qualitative densification relies upon the complementarity of housing (high quality construction, quality of living spaces and communal amenities, mixed ownership and users, affordability) with an attention to ecology, as articulated in the green and shadowed spaces of the urban tissue, to the social realm, as emerging from qualitative public spaces, and to economic issues, related to the nexus of construction costs, market value and ownership.

Thematic: the relation between urban codes and urban tissue. In order to investigate qualitative densification, we need to understand and make explicit the implicit reciprocity between urban tissue and urban codes. Hence, the central focus of this project will be on the relation between urban tissues and urban codes. We understand ‘urban codes’ as the various building codes, plans and policies generated at all levels of urban governance (state, canton, city). We hold that these urban codes not only determine the formal characteristics of the urban tissue, but also implicitly define a project for the city: in the various definitions of the urban codes a large set of assumptions are embedded that ‘speak’ of specific cultural ideals of living, environment, recreation, working and mobility. Hence, though these urban codes are very often extremely technical in character, their implications reach far beyond.

Methodological: an architectural epistemology of the city. The definition of new urban scenarios should proceed through an architectural methodology that investigates the spatial characteristics of the urban tissue as the expression of social, environmental, economic and mobility concerns. In other words, we hold that social, environmental and economic processes can be read in the built fabric and in its transformations over time. This required a special way of reading and making explicit the implicit impact of urban codes on existing city fabric.

2.3.3 Research Goals

This research project has two main objectives:

- **Investigate the reciprocal relation between the form of the current city and the definition of the urban codes.** The project aims to reveal the urban agendas embedded in the city’s urban codes, and through the investigation of the different assumptions (social, environmental, economic, concerning mobility) that are implied in the urban codes. We aim to comprehend how these have affected the urban tissues as we know them nowadays in the city of Zürich.
- **Provide innovative models of qualitative densification through revised urban codes, tested in design.** Propositional planning will offer an architectural investigation of the future densification of Zürich, which not only points to innovative solutions for qualitative dense urban environments but also explores the capacity of the existing urban codes to enable their creation. The project aims to identify and test the revisions of urban codes necessary to obtain Zurich’s qualitative densification.

2.3.4 Project structure and organization

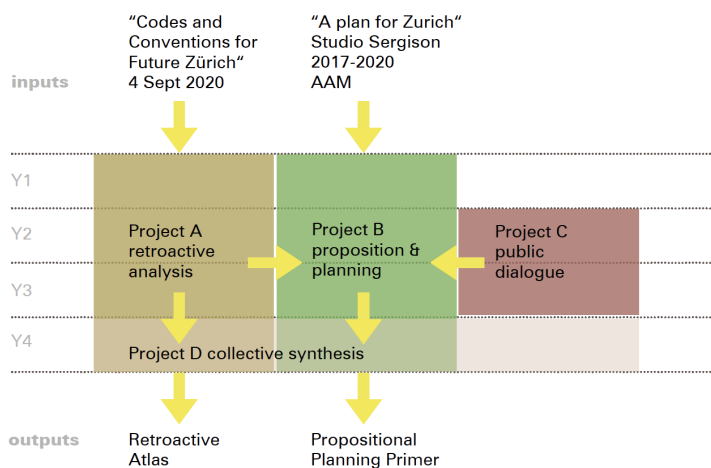


Fig. 4 General structure of project showing components and data inputs

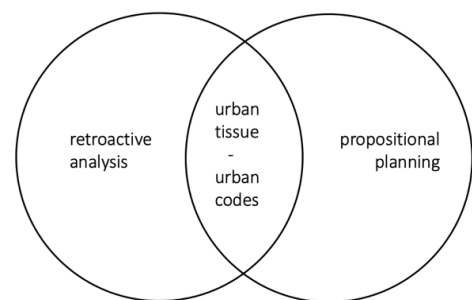
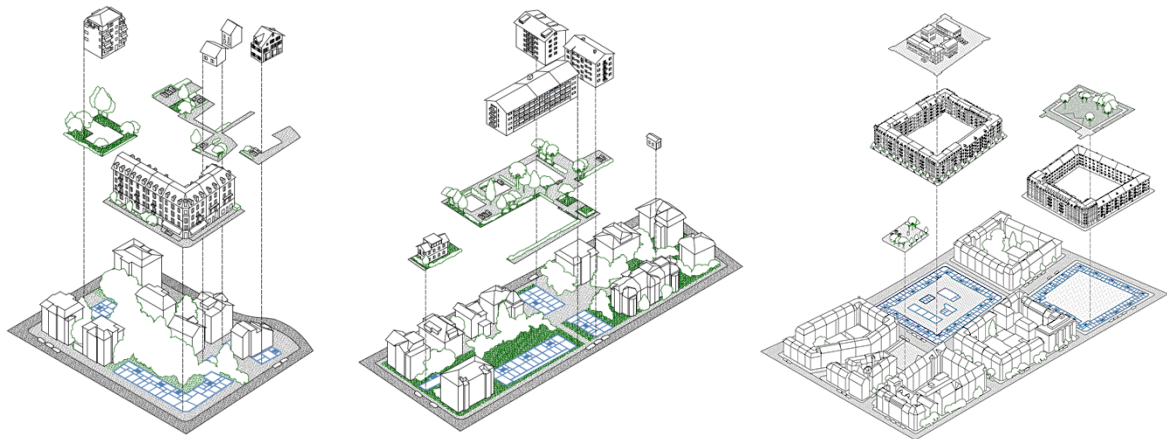


Fig. 5 Research layout: RA and PP explore the relation between urban tissue-urban codes

Project A: Retroactive Analysis (48 Months, years 1-4). Supervisor: Prof. Dr. Tom Avermaete, ETHZ

Project A provides the project's historical research component. The ETH team will undertake the **retroactive analysis (RA)** of Zurich's urban tissue from the 1830s to today, working back from current conditions to understand the generating logics of its codes. It examines how cultural, economic and social patterns have influenced the definition of urban codes, and how in turn these codes have dictated the typical and characteristic configurations of Zurich's current fabric. Project A analyses the patterns of urban development in relation to urban codes since the 1830s, when most of Zurich's fortifications were demolished, and is restricted to the city's current administrative borders. The analysis is based on predetermined entities of investigation (see table in Fig.9).



Figs. 6, 7, 8. Mixed (Metropolitan Village, Modern Village) and homogeneous (Perimeter Block) urban tissues as examples of Retroactive Analysis

Project B: Propositional Planning (48 Months, years 1-4). Supervisor: Prof. Jonathan Sergison, AAM

Project B provides the research-by-design component. Through the innovative method of **propositional planning (PP)** it will test the urban consequences of urban codes, proposing precise adjustments to these codes in order to allow for Zurich's qualitative densification. This critical review of urban codes will ascertain whether population growth can be absorbed within Zurich's territorial limits. The impact of the densification targets upon the quality of urban space will be tested through a designerly approach, which in turn will inform the creation of new urban codes. The PP will be developed through urban design projects related to the critical analysis of urban codes, exploring the limits of the existing urban codes and the urban tissues they might lead to.

Project C: Public Dialogues (24 months, years 2 and 3)

Project C ensures the participatory component of the research. Through visual material such as drawings, renderings and diagrams from Projects A and B, it will provide an accessible starting point for public consultations in the six areas of investigation, comprising concise exhibitions organised locally, and feedback meetings with the local stakeholders. The findings will feed back into adjustments to the Project B proposals, implemented during the synthetic phase (Project D).

Project D : Collective Synthesis and dissemination (12 months, year 4)

Projects A's and B's synthetic phases overlap with Project D and incorporate the results of Project C, testing how changes in the existing codes impact on morphologies, typologies and economical mechanisms in the production of the city. Coordinated by the postdoc, Project D will control the final outputs and involve the PIs, project partner and PhDs.

2.3.5 Methodology: Retroactive Analysis and Propositional Planning

This project relies on the interrelation of historical research (ETH) and designerly research (AAM). It interrelates these two modes of research, coined respectively ‘retroactive analysis’ (RA) and ‘propositional planning’ (PP), by focusing on parallel research foci. **This project examines the relation between urban codes and urban tissue both from an historical and from a future-oriented perspective.**

2.3.5.1 Interfaces between Project A Retroactive Analysis and Project B Propositional Planning

The RA undertaken at ETHZ will study the current condition of the urban tissue of Zurich in order to understand the generating logics and codes, looking in particular to the period from the 1830s to today. The AAM team will develop the PP component, based on the data amassed under the project *A Plan for Zurich*. With the retroactive analysis as a background, exploratory urban design projects will be developed and subsequently related to ideas about urban codes. Within the research project, a productive dialogue will be established between RA and PP by using similar entities to investigate ‘urban tissues’ and ‘urban codes’ (see table Fig. 9 below). The two main projects will pursue parallel entities of investigation, respectively in historical analysis and propositional design: RA will provide a better insight into how cultural patterns have influenced the definition of urban codes and how these have led to the current urban tissues, while PP will explore the limits of the existing urban codes, identifying the revisions necessary for scenarios of qualitative densification.

Project A. Retroactive analysis	Project B. Propositional Planning
A1. Entities of investigation (Urban tissue analysis): <u>1.1 Public realm and movement</u> 1.1.1 Public open areas (squares, parks, piazzas etc.) 1.1.2 Pedestrian domains (pavements, walkways etc.) 1.1.3 Vehicular domains (roads, streets, public transport infrastructure) <u>1.2 Allotment and ground economy</u> 1.2.1 Ownership 1.2.2 Function (ascribed) and use (actual) 1.2.3 Ground Economy (how land value resulted from re-parcelling, function- and ownership changes) <u>1.3 Buildings</u> 1.3.1 Typology - Housing (70% of total building stock) -Workplace -Public building (education, recreation, cultural, institutions) 1.3.2 Morphology (detached, terrace, perimeter block) <u>1.4 (*) Landscape (natural and man-made)</u> 1.4.1 Topography 1.4.2 Trees and planting 1.4.3 Materiality, shade and impact on comfort 1.4.4 Water, waterways 1.4.5 Transport infrastructures <u>1.5 Heritage (record of protected or protectable)</u> 1.5.1 Monuments 1.5.2 Buildings with historical value 1.5.3 Symbolic axes (estates, urban ensembles, streets) A2. Urban Codes (retrospective) <u>2.1 Policy</u> 2.1.1 Historical and current Housing Policies 2.1.2 Historical and current Environmental Policies <u>2.2 Codes</u> 2.2.1 Historical and current Planning Codes 2.2.2 Historical and current Building Codes <u>2.3 Policy hierarchies / entanglements</u> 1.3.1 Municipal - Stadt Zürich 1.3.2 Cantonal (Kanton ZH) 1.3.3 Federal	B1. Entities of projection (Urban tissue strategies): <u>1.5 Public realm and movement</u> 1.5.1 Public open areas 1.5.2 Pedestrian domains (pavements, walkways etc.) 1.5.3 Vehicular domains (roads, streets, public transport infrastructure) <u>1.6 Allotment and ground economy</u> 1.6.1 Ownership 1.6.2 Function 1.6.3 Ground Economy (Testing density on sites) <u>1.7 Buildings</u> 1.7.1 Typology - Housing (70% of total building stock) -Workplace -Public building (education, recreation, cultural, institutions) 1.7.2 Morphology (detached, terrace, perimeter block) <u>1.8 (*) Public amenity (integrated in strategies)</u> 1.8.1 Views 1.8.2 Access to clean air and green leisure spaces 1.8.3 Environmental sustainability and comfort 1.8.4 Sports and recreation / emergency subsistence 1.8.5 Efficiency and time economy <u>1.9 Protected Buildings strategy (conservation proposals)</u> 2.2.3 Monuments 2.2.4 Buildings with historical value 2.2.5 Symbolic axes B2. Urban Codes (projective) <u>2.4 Policy</u> 2.1.1 Projected densities / Capacity studies 2.1.2 Proposed Environmental Policies <u>2.5 Codes</u> 2.2.1 Proposed Planning Codes 2.2.1 Proposed Building Codes <u>2.6 Policy hierarchies / entanglements</u> 2.2.2 Municipal - Stadt Zürich 2.2.3 Cantonal (Kanton ZH) 2.2.4 Federal

Fig. 9 Table outlining parallel entities of analysis in Retroactive Analysis and Propositional Planning (Projects A and B)

2.3.5.2 An architectural and cross-scalar approach: the urban tissue as heuristic device

The urban challenges in Zurich can be investigated from a wide variety of perspectives, as we have illustrated in the literature review (section 2.1). This research takes a very specific point of departure: the relation between urban challenges and urban codes in Zurich, investigated from an architectural, cross-scalar, and integrative approach. Contrary to many existing research projects which focus exclusively on the large scale of the urban territory of Zurich (Studio Basel 2006, Angélil 2005, Angélil et. al 2016) or on the small scale of the city block (see Wälty 2018) this research project pays particular attention to the relation between the different urban scales that are affected when a city is changing, from the small scale of the room to the large scale of buildings ensembles. In other words, when historical and future scenarios for the city are explored, they are investigated as the complex interaction between these different scales. Such a cross-scalar approach has the advantage that it does not look upon urban issues as isolated matters, but rather confronts a hypothesis at one scale level (for instance the combination of rooms for working and dwelling) with the implications at another scale level (the changing form and accessibility of the urban block). Another way in which it advances knowledge from previous research is in its assessment of urban conditions beyond the urban plot boundary, considering the relation between plots and the public realm (streets, plazas, other plots). It thus initiates an integrative planning approach that allows for the development of coordinated planning strategies at the level of urban ensembles and city districts, whose need in the Zurich context was recently highlighted (Kurz 2018).

Finally, the project pays special attention to the architectonic dimension of the city. While many of the existing research projects engage with the urban challenges of Zurich through general strategic plans or zoning plans which remain highly abstract, this research proposes a very concrete architectural investigation of the urban challenges of Zurich. This means that instead of using zoning plans, figure-ground plans or general visualizations, this research will investigate urban scenarios through concrete architectural projects, exploring the formal, material, technical and atmospheric characteristics of the proposed scenarios, while relating them to social, environmental and economic concerns. The architectural project will explore existing conditions within the city in great detail (for instance the conditions of owners as well as future urban scenarios and atmospheres).

As such, this research project places itself in a tradition of so-called 'design-led' research (Schön, Cross, Cuff, Avermaete, Sergison). In this tradition architectural projects are seen as 'heuristic devices' that generate knowledge about a certain phenomenon or an urban condition. Out of this perspective architectural projects can on the one hand be investigated retrospectively by historians, who can analyse buildings, ensembles and neighbourhoods as the expression of particular economic, social and cultural factors. On the other hand, architectural projects can be used by designers to prospectively investigate particular conditions. As architectural theorist Donald Schön has pointed out, by designing a project the architect "reflects on the phenomenon before him, and on the prior understandings which have been implicit (...) He carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation" (Schön, 1983, 68). In this project we propose an in-depth investigation of concrete urban tissues for specific locations in the city, both retrospectively and prospectively, to better understand the relation between urban challenges and urban codes.

2.3.5.3 Methodology for Project A: Retroactive analysis (ETHZ)

Analytical stage (24 months). Project A takes as starting point Zurich's predominant urban tissues (perimeter block, detached multi-family house, modernist tower and slab, urban villa), as well as a selection of atypical urban tissues

(metropolitan-village, modern-village) and their relation to historical building codes (focus on period 19th century until today). The analysis will produce:

- An in-depth study of the qualities of the existing conventional urban tissues (Blockrand, modernist tower and slab, urban villa) as well as of atypical urban tissues (metropolitan-village, modern-village) in the city of Zürich in drawings and texts (see drawings in Figs. 6, 7, 8).
- An understanding of the building codes that allowed these urban tissues to emerge and to proliferate;
- An understanding of the underlying social, political, cultural and economic drivers for urban development, as well as areas of overlap. By political drivers, we mean the relevant statutes, political constituencies and legislature through popular votes. Cultural drivers include collectivist mindset, expectation of individual and collective responsibility. Issues like ground ownership, predominance of rental versus home ownership are considered important economic drivers. As social drivers we understand the impact of social groups by ethnic origin and occupation, demographic changes, popular and grassroots movements etc.
- An innovative narrative of the 'hidden project for the city' that is embedded in the urban codes. This will reveal how the urban codes indirectly express a model for the city that is based upon the social, environmental, political, cultural and economic assumptions mentioned above.

Projective stage (12 months). This stage of Project A will derive from the historical research, and aided by the observation of / coordination with the parallel Project B. It will provide:

- A reflection upon the limits and potentialities of Zurich's residential typologies
- Projective revision of existing codes to fulfil current and future societal challenges (as set out in the analytical stage).

Synthetic stage (12 months). In a third stage the analytical and propositional knowledge concerning the existing urban codes of Zurich will be corroborated with the proposals of project B. This synthetic stage will explore how the (revised) existing urban codes (project B) will co-exist with the newly proposed urban codes in project B.

Interfaces with Projects C and D. The intermediate outcomes of the retroactive analysis will be tested within public consultation events, organized within the framework of Project C, Public Dialogue. At this stage, representatives of local stakeholders in the different areas will offer a 'real-life' view on the qualities and flaws of the urban tissues in the various areas (1 to 6). Following this feedback, the refined retroactive analysis will become an important part of the synthetic future urban scenarios that will be developed in Project D.

2.3.5.4 Methodology for Project B: Propositional Planning PP (AAM)

Project B aims to demonstrate how Zurich's anticipated population increase can be accommodated through realistic scenarios that ensure a qualitative densification, i.e. without significant loss of amenity. Housing agendas will be connected to other scenarios for future development: employment uses, public building provision (medical, religious, administrative, library, recreational, retail, hospitality), infrastructure (public and private transport, cycling, water, electrical, telecommunication), public realm (open spaces) and conservation (adjustments to the heritage register).

Project B (PP) aims to achieve the following:

- Analyse ground conditions (built density, ownership, active regulations, added value through heritage, topography etc.), identify potential zones of development and densification, and identify conservation zones and objects of heritage interest.
- Investigate / articulate the challenges that Zurich faces with respect to its qualitative densification;

- Formulate a set of criteria for planned revisions.

Analytical stage (12 months). Project B takes as a point of entry the City of Zurich's current *Richtplan* (2018) whose projected densities it will consider in six coordinated areas: Area 1 Albisrieden Altstetten; Area 2 Sihlfeld, Wiedikon, Werd, Friensenberg, Enge; Area 3 Riesbach, Altstadt, Seefeld, Hirslanden, Hottingen, Fluntern; Area 4 *Gewerbeschule*, Industriequartier, Escher Wyss, Hardhof; Area 5 Unterstrass, Wipkingen, Höngg; Area 6 Milchbuck, Oerlikon, Seebach, Schwamendingen. These six areas are understood holistically, across administrative boundaries, to ensure a qualitative spatial and urban experience. For each of these, the current and potential/planned density will be checked against issues of ownership (affecting development potential), heritage and current building codes, new and upcoming building developments. Their analysis will lead to the revision of current strategies in a holistic and systematic manner, coordinating entities of projection with the urban codes. The entities of investigation are outlined in table XX.

Propositional stage (24 months). Taking into consideration the propositional codes developed in the first year, the PhD will test through design different models of development. The optimal results will then be applied to the revision of existing typologies and, as necessary, the articulation of new ones, that can meet the new challenges more efficiently and sustainably (Fig. 10 below). The revised and innovative typologies (for example, clustered apartments in cooperative housing, live-work, collective living) will be then tested in projects located in concrete locations in the six areas. The revisions will be considered both in depth (in terms of the connectivity between these different levels) and extensively (considering connections with adjacent neighborhoods and the wider territory). This work will result in concrete recommendations for revisions to the existing actual codes. It will run in parallel to and feed into the programme of public consultation (Project C), providing the data and visual material for the public exhibitions and consultations. Proposals will be communicated through adjustments to the 1:1000 model, as well as the visual renderings of proposals, accurately set within representations of the real context.

Synthetic stage (12 months). Having been tested in dialogue with the agents representing the city, stakeholders (developers, cooperatives, housing associations, landowners etc.) and local representatives, the proposals will be revised accordingly and collated in the *Propositional Planning Primer* (PPP). This manual, conceived as an exemplar of holistic urban planning, will contain:

- A Zurich-wide survey of landownership and land densities
- A cataloguing of qualitative examples of housing, public space etc.
- The identification of key areas where housing can be built or further densified (large and small projects)
- A set of informed recommendations for revisions to the existing actual codes.



Fig. 10 Morphological study of new urban villas in Höngg. Area 5: Unterstrass, Wipkingen, Höngg. Autumn Semester 2019.

Interfaces with Projects C and D. The revised strategies for each area will be tested within public consultation events, organized within the framework of Project C, Public Dialogue. In the second part of Project C (Year 3), the proposals developed in Project B in years 1 and 2 will be publicly exhibited and subjected to critical appraisal. Following the public consultation input, they will be and further revised during the synthetic co-ordination stage of Project D.

2.3.5.5 Methodology for Project C: Public Dialogues (ETHZ and AAM)

An important aspect of this research project are the public dialogues that will take place in years 2 and 3 under the direction of the postdoc. These public dialogues are not so much an outcome of the research, but rather a methodology geared to generate knowledge on intermediate results in dialogue with Zurich citizens through a three-track process:

a) An exhibition of intermediate results

In this exhibition intermediate results of the Retroactive Analysis and the Propositional Planning will be presented in the form of drawings, perspectives and models. This material offers a basis to reflect upon the existing qualities, as well as the future needs (more schools, shopping venues, etc.) and desired urban qualities (better green spaces, more qualitative collective spaces, etc.).

b) A discussion with representatives of local stakeholders and civic society

Based on the above-mentioned exhibition, a discussion will be organized with local stakeholders (representatives of housing cooperatives, neighbourhood groups, local politicians) in the particular district of Zürich. The PI's, PhDs and postdoc will enter into a dialogue (in the form of a debate/workshop) about the already present qualities in the urban neighbourhoods of the district and the proposed new scenarios. The central question will be: what are the provisions and qualities (more green, better mobility solutions, larger collective spaces) that the district needs in the decades to come, and how does this relate to the existing amenities and qualities?

c) A report of current needs and desired qualities

The postdoc researcher will report on these dialogues and produce a synthetic document that highlights the reactions to existing proposals, as well as the current needs and desired qualities for the district. This report will function as a critical background for the fine tuning of the propositional planning. Public dialogues will be held in the various areas of Zürich that are central in the Retroactive Analysis and the Propositional Planning (as defined in para 2.3.5.4).

2.3.5.6 Methodology for Project D: Collective Synthesis (ETHZ and AAM)

In the last year of the research project, the results of projects A and B, in combination with the feedback from project C, will be synthesised and disseminated. While project A and project B will have been in constant dialogue and exchange, in the last year the PIs and research partner will generate a more synthetic reflection, drawn from the confrontation of the retroactive analysis and the propositional planning. The PIs, together with the research partner, will develop so-called future scenarios for the city of Zürich, composed of a selection of images (the drawings from the retroactive analysis, the perspectives and plans of the propositional planning), models (generated during the propositional planning) and texts (analysis of existing urban codes during the retroactive analysis, newly formulated texts), all coordinated by the postdoc. These scenarios will make claims about the relationship between the existing urban codes and the future urban codes, in order to obtain certain qualities in the urban tissue of Zürich. They will make concrete proposals for the adaptation and revision of urban codes, within the context of the challenges that Zürich is facing in its *Richtplan*. The future scenarios will be published as an integral part of the Propositional Planning Primer (see Outcomes, para 2.3.9).

2.3.6. Identified risks and alternative strategies

Given the public availability of input data and its highly organised structure, the proposal is conceived as a low-risk, high-gain enterprise. Three possible risks have been identified:

- 1. Reliance upon students' work that may be uneven in quality.** The research material does not rely on students' individual proposals. Rather, these are treated as a raw resource, subject to critical appraisal and adjustment. The material used by Project B is obtained from collective research, such as the 1:1000 model (which is adjustable) and thematic study maps collated from data in the public realm (transport strategies, densities, heritage listings etc.).
- 2. Possible changes in city strategies can affect the effectiveness of Project B's output.** This risk is mitigated by the regular contact established with planners from the City of Zurich, including the Head of City Development Anna Schindler. In addition to the yearly meetings, the Advisory Board stays in regular contact with the team and is available for one-on-one meetings as the need arises.
- 3. The components of the research progress differently and become misaligned.** To counteract it, the progress of doctoral candidates and postdoc will be monitored in monthly meetings with the PI supervisors, effectively allowing the team to identify, prevent and mitigate progress misalignments.

2.3.7 Team members and roles

2.3.7.1 Co-principal investigators Prof. Sergison and Prof. Avermaete will jointly supervise the ongoing research and contextualise its findings in a broader professional and scientific context. Their synthetic role will identify patterns of continuity and margin conditions in the final synthetic publication and exhibition contexts. Their responsibilities will include doctoral supervision and overseeing the running of the team. According to their complementary expertise, Sergison will take the lead on the design-led research (project B) while Avermaete will focus on the historical and analytical component (project A).

Prof. Avermaete: The co-PI responsible for the RA component, he will supervise the PhD B, contextualise the findings in a wider scholarly field and help coordinate the scientific dissemination of findings. Together with the postdoc, he will be responsible for the scientific justification of the synthetic scenarios concluding the research.

Prof. Sergison: The co-PI responsible for the PP component, he will supervise the PhD B, stay in close dialogue with municipality actors, and help coordinate the public and professional dissemination of findings. Together with the postdoc, he will help articulate the design aspects of the synthetic scenarios concluding the research.

2.3.7.2. Project Partner. Dr. Irina Davidovici (Privat Dozent, gta Institute) will provide the housing expertise on the project and co-supervise PhD A. Housing being a central concern (two-thirds of Zurich's urban fabric is housing), this in-house specialist will work closely with the PIs and doctoral students, liaise with the postdoc, as well as produce thematic contributions on Zurich housing to the *Atlas* and *Primer* publications (see Outcomes, 2.3.9).

2.3.7.3. Postdoctoral researcher (3 years 80%). The postdoc will be in charge of Project C (Public Dialogues) and will coordinate Project D (Collective Synthesis), as well as organise the yearly workshops with the Advisory Board. As curators of the public exhibitions and consultations, they will work particularly closely with Prof. Sergison and PhD B. Proven expertise in public consultations will be a prerequisite for their appointment.

2.3.7.4 1 PhD RA (4 years 100%). The historian PhD candidate will be in charge of Project A (See Para 2.3.4 A).

2.3.7.5 1 PhD PP (4 years 100%). The designer PhD candidate will be in charge of Project B (See Para 2.3.4 B).

2.3.7.6 Advisory Committee. For areas where external and interdisciplinary expertise is necessary, the team has compiled an exceptional team of experts from various disciplines, whose regular input is crucial for the holistic approach proposed. The Advisory Board consists of architect and city planner Patrick Gmür (Zurich *Stadtbaumeister* 2009–2016), Regula Lüscher (Director of Berlin City Planning); urbanist Prof. Dr. Paola Vigano (EPFL Lausanne); architect and critic Martin Steinmann, expert in urban economy and policy Prof. Dr. Marja Elsinga (Housing Institutions, TU Delft), Anna Schindler (Head of Zurich City Development), Zurich Canton Baumeister David Vogt, Sociologist and urban geographer Prof. Christian Schmidt (ETHZ), Landscape specialist Prof. Gunther Vogt (ETHZ), and urban climatologist Prof Sascha Roesler (AAM) have confirmed their participation in the project. Most of them have provided feedback on the current proposal in the framework of the workshop ‘Codes and Conventions for Zurich’, held on 4 September 2020 in the City Model Room at the *Hochbaudepartement* of the City of Zurich. Following the pattern of this workshop, the Advisory Board will work closely with the team to provide expert advice, and will engage in regular scientific and methodological exchanges i.e.:

- Preliminary workshop September 2020 (completed): feedback on research proposal
- Project: Initial meeting – in order to assure the project outline is sufficiently related to current concern and urban design practice, review of proposed methods;
- Yearly meetings for in-depth interdisciplinary exchanges, monitoring progress, placing research within a broader international frame, advice on specific issues such as policy, economic aspects etc.
- Additional workshop in Year 4 for final adjustments to the final draft report and publications.

2.3.8 Schedule and milestones

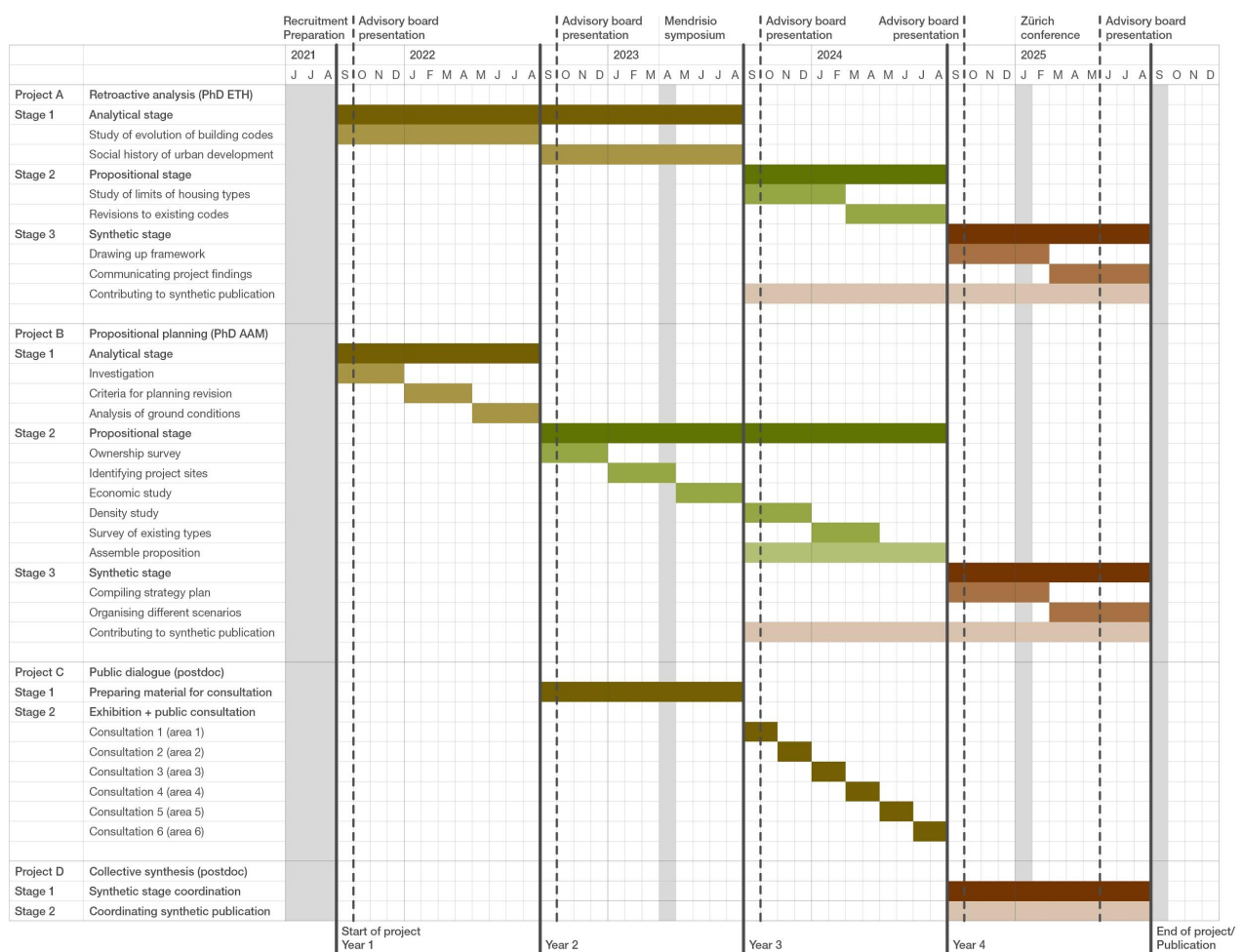
Pre-project / Preparation phase. The research proposal builds upon the six-semester project A Plan for Zurich (Studio Sergison, AAM) and the exchanges with Prof. Avermaete (ETHZ) and the members of the Advisory Board (Para 2.3.6.5). The workshop Codes and Conventions for Zurich (4 Sept. 2020) with the Advisory Board and the Zurich Kantonsbaumeister, provided valuable feedback that was incorporated into the current proposal.

Project. The research will last 48 months (Sept. 1, 2021 - August 31, 2025), and its programme is shown in the attached table (Fig 11). The project envisages the production of two doctoral theses and six peer-reviewed, Open Access articles, as well as the dissemination of preliminary research findings through active participation in international conferences and symposia (annual SAH and AHRA, biannual EAHN). It will conclude with a public conference and exhibition (January 2025) and the synthetic publications *Retroactive Atlas* (Project A) and *Propositional Planning Primer* (Project B).

Year 1: Appointments of doctoral students will be confirmed by July 31, 2021. First advisory board meeting will discuss the research hypotheses and agree on the project schedule, as well as points of quarterly contact between PhDs and advisors. Postdoc is appointed. The first year corresponds to the analytical stages of Projects A and B.

Year 2: Advisory board workshop will pre-assess the students’ research plans, and international symposium at AAM will present early results. Doctoral candidates will present a detailed research plan. The postdoctoral researcher collates material for and organises the public consultations (Project C).

Year 3: Project C is completed with the close run of six public consultations. Third advisory board presentation will discuss their feedback. At the end of Year 3, the PhDs will have finished the coordinated propositional studies and moved towards the synthetic stage. PhD A and B, postdoc and project partner submit articles to peer-reviewed journals, and PIs submit book proposal to scientific publishers and secure publication contract.



2.3.9 Outcomes

2.3.9.1 Retroactive Atlas of Zurich Urban Codes. Next to the PhD thesis, the main outcome of project A is the Retroactive Atlas of Zurich Urban Codes. This publication will be composed of a series of case study analyses of conventional and nonconventional urban tissues in the city of Zurich and their relation to urban codes, as they have evolved through time.

The Retroactive Atlas of Zurich Urban Codes will unveil the ‘hidden project’ for the city that has been embedded in various iterations of the urban codes and has resulted in the qualitative built environment of Zürich as we know it today. The case study analysis will be composed of drawings (exploded perspectives that focus on the different characteristics of the urban tissue) and texts that will explain the drawings and discuss the relation with the various urban codes that have influenced the current form of the urban tissue. The Retroactive Atlas will offer for the first time a more comprehensive overview of the relationship between the generative logics (urban codes) and the qualities of the built environment (urban tissue). It will offer an important knowledge base to (a) practitioners in the field of architectural and urban heritage to assess the existing built environment and to restore it, (b) to architects, urban designers and developers that need to intervene in the city, and (c) as well as to policymakers who will need to develop plans about the future of Zürich and eventually revise urban codes. The Retroactive Atlas will also offer important documentation to the citizens of Zürich, that will allow them to better understand their city and its underlying rationales. The methodology of The Retroactive Atlas might inspire the study of other European cities that want to acquire a better understanding of the relation between urban codes and urban tissues.

2.3.9.2 Propositional Planning Primer. In addition to the writing of a PhD thesis, the main task associated with Project B is the production of the Propositional Planning Primer. This should be seen as a manual for the future building of Zurich. It is a development plan supplemented by realistic and tangible projects for sites where densification can be achieved in the near future. The Primer will be informed by the study undertaken in Project A regarding the evolution of the existing codes, and refined following the structured series of public consultation events in Project C. It aims to achieve a profound questioning of the urban rules, and to propose revisions and adjustments to Zurich’s densification targets. One of the Primer’s key tools is the 1:1,000 model, which will tangibly indicate all of the proposed projects at the scale of the whole city. The model will be continuously modified and adjusted through the life of the project and will form the basis of plans published in the Primer. In addition to this, the manual will contain numerous plan drawings and diagrams illustrating strategies, at the scale of the whole city and also smaller neighbourhoods. Significantly, more detailed representations of projects will be developed such as perspectives, to illustrate real places with an atmospheric form of representation. These can be seen as a form of test planning for the whole city, offering precise and concrete proposals that urban planning typically fails to detail. It will thus suggest revisions to densities and precise projects, developing through design a sense of what is fitting and appropriate. The Primer will support the activities of the agents of change in the city in the future, the people working in the different statutory departments, developers, and other stakeholders. It is anticipated that its exemplary character will lend to those addressing similar processes of change and urban densification in other cities in Switzerland and in Europe more widely.

The printing cost for the Propositional Planning Primer will be partly covered by the City of Zurich, which has pledged funds towards its publications. For both books, an OA publication (Green Road) is envisaged after an embargo period of two years.

2.3.9.3 Academic outcomes

As mentioned in Schedule and Milestones (para 2.3.8), the Atlas and Primer will be complemented by the interim production of several academic outcomes: six peer-reviewed, open-access articles authored by the PIs, the project partner, the postdoc and the two PhDs; a symposium at AAM, a final conference and exhibition at ETHZ.

2.4 Relevance and impact

2.4.1 Scientific relevance

The relevance of this project can be situated both on a methodological and on an applied level. For the first time, the project will contribute a **new method of propositional planning** which combines two previously separate registers of research, designerly and historical. This new method offers the possibility to assess in a more nuanced way future scenarios of increasing urban density. The method is defined in this project for the city of Zurich, but can be further developed and adapted in the densification studies of other metropolitan regions in Switzerland and abroad. A second point of scientific relevance resides in the fact that this study is **complementing existing studies and debates on the densification of the City of Zurich in a systematic and integrative way**. It will assist in a unique manner (focusing on qualitative issues such as urban atmospheres, building presence and impact) the implementation of strategies set out in the Zurich 2040 plan, made public in November 2018 (Stadt Zurich 2018).

2.4.2 Broader impact

The research is use-inspired. Its testing of urban conditions aims at pointing out the limits of current regulations and the potential of their revision, in the light of current challenges (unencumbered by lengthy and uncertain political processes). In this way, it can become an **effective tool in the adoption of policies for a better urban environment**, which is expected to serve as a methodological model for other cities in Europe. Its impact on planning policy and administration will consist of a set of recommendations and an explicit demonstration of their implementation which, following due political process, have the potential to **serve as planning guidance**. This research project will not only reach a specialised public, but is also aimed at a broader audience. The survey of the intricate historical relation between urban codes, ground positions and urban typologies will provide a firm knowledge base for future planning policy and urban debates. The Primer will assist **academics, professionals and policy makers** in developing new codes and inform new urban typologies and morphologies. A scale model of Zürich showing the innovative residential typologies and morphologies on location will give stakeholders, developers and the broader public clear insights into the future development of the city.

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