

Project Architects as Key In-between Actors
Bridging between Design and Construction during the
Making of Global Architecture

Venetsiya Dimitrova

Dissertation

Field of Study: Urban Planning

Supervisors:

Prof. Dr. Monika Grubbauer (HafenCity Universität Hamburg)

Dr. habil. Joachim Thiel (HafenCity Universität Hamburg)

Prof. Dr. Silke Steets (Friedrich-Alexander-Universität Erlangen-Nürnberg)

Hamburg, September 2024

Imprint

HafenCity University Hamburg
Henning-Voscherau-Platz 1
20457 Hamburg
© 2024, Venetsiya Dimitrova

DOI: 10.34712/142.55

Acknowledgements

I have been eagerly waiting for the moment to write my acknowledgements. Writing these means, on the one hand, that my research project is almost (with stress on almost) completed. On the other hand, writing my acknowledgements is the perfect opportunity to reflect upon the last 6 years. Doing a PhD means embarking on a journey that challenges and (after severe struggle and many desperate moments) enriches one – not only professionally and intellectually, but also personally. While writing these last (or rather first) lines, I realise how much I have learned and grown over the last years. Even though this journey has often be a lonely one (especially in its final phase), it would not have been possible to reach the finishing line without my mentors, peers, family, and friends. I would like to take a moment and thank all those who have accompanied and supported me during this time.

First and foremost, I would like to thank my supervisors Monika Grubbauer und Joachim Thiel for their comprehensive academic, personal, and moral support, as well as for remarkable patience over the last years. It was Monika, who introduced me to intriguing and intellectually stimulating academic debates from urban studies literature and from a rich interdisciplinary scholarship on architectural practice (which gave me the opportunity to reflect upon and make peace with my own academic socialisation as an architect). Together with Joachim, they have supported my work continuously with outstanding academic guidance, invaluable advice, constructive critique, and *countless* feedback rounds. Their supervision and mentorship have been indispensable to my work – a privilege that I well know to appreciate, as it is definitely not a matter of course. I am also thankful to Silke Steets for her support and feedback.

My gratitude further goes out to my colleagues from the interdisciplinary research project “Large-scale Projects as Innovation Drivers in the Construction Industry” and at the Chair of History and Theory of the City for the productive collaboration, for many (professional and personal) conversations, fruitful feedback, and moral support. I particularly want to thank Johanna Ruge, with whom we have conducted a remarkable amount of interviews, spent numerous hours on the train, wrote, revised, and published two papers (which are part of this dissertation), co-edited a book, and much more. She has been an esteemed sparing partner during this journey – the collaboration and the academic and professional exchange with her have contributed significantly to my research work. I would also like to thank Alessandra Manganelli for proof-reading my work during different revision processes, as well as Erwin van Tuijl for drawing my attention to the concept of ‘intermediaries’ and for being enthusiastic about my research topic from the very beginning.

I also strongly appreciate the comments, feedback, and suggestions received by the anonymous reviewers of my published work. Long and more than often frustrating, these peer-review processes have yet been extremely productive and have undoubtedly strengthened the quality of my papers and thus of the final product. Also, I want to thank sincerely the numerous interview partners, who shared their time, knowledge, and stories with me. Without their perspective and insights this work would have not been possible.

It goes without saying that this dissertation would have not taken place without the HafenCity University, the Landesforschungsförderung Hamburg, and Pro Exzellenzia plus, who secured the perfect conditions for conducting my research work.

Last but certainly not least, I want to thank my parents, Tsvetanka and Aleksandar, and my cousin Yanislava for always being there, when I need them. I also want to express my deepest gratitude to my partner Julian – for his tremendous encouragement, for his infinite patience and support, for ‘having my back’ in any possible way, on countless occasions, as if it is a matter of course, and for never ceasing to believe in me. Thank you for everything. And finally, I want to thank my daughter Alma, for being the way she is.

Abstract

The main aim of this cumulative dissertation is two-fold. For one, to unpack the figure of the so-called 'global architect', by moving the focus away from the brand-name architect. More specifically, the conceptual and empirical emphasis is set on the figure of 'project architects', namely those less visible and often unacknowledged architects, employed in global firms. The figure of the project architect refers to architects, who possess sufficient experience and professional expertise to assume demanding tasks in complex projects, contributing hereby significantly to the design and implementation of architectural ideas and the transnational circulation of knowledge connected to the making of the built and urban environment. For another, to unravel processes that have equally remained less explored and conceptualised. In particular, I am interested in the material 'becoming' of global architecture. To address these two lacunas in academic debates, the dissertation explores and conceptualises the *on-the-ground practices* project architects enact in the course of construction, on different sites of production and materialisation. Hereby, building on the work of architectural geographers, the dissertation moves beyond a focus on aesthetic features and symbolic meanings, to unravel the active and embodied practices through which the built environment is produced and shaped.

Conceptually the work draws on practice theory, critical geography of architecture, as well as on the interdisciplinary field of urban studies, more specifically on geographical scholarship on the global architect and on knowledge mobilities. Building on this rich literature body, the dissertation conceptualises project architects as *key in-between actors*, who operate between different locations, disciplines, and formal jurisdictions. Hereby, they negotiate between differing tasks and responsibilities, to bridge between design and construction. Empirically, the dissertation adopts qualitative research methods. More specifically, qualitative interviews have been conducted with architects as well as with a range of built environment professionals, applying hereby a cross-sectorial perspective that often lacks in urban studies literature. The results of this work are synthesised in five publications and revolve around the intimate relation between design and construction. First, project architects' practices are set at the interface between artistic and manual, creative knowledge and physical expertise. Project architects' practices are thus defined by the tension between *protecting* (e.g., design-driven aspects, archetypical roles) and *giving in* (e.g., to project restrictions, local specificities, demands posed by the construction industry). Second, project architects' on-the-ground practices facilitate the disciplinary rapprochement between built environment professionals, overcoming hereby a deep-rooted division between creative design expertise and technical or manual one. In this

course, project architects overcome existing routines, negotiate formal boundaries, and (re-)construct their professional roles and agency. Third, connected to previous, project architects' active and embodied practices facilitate the transgression of jurisdictional boundaries and rigid allocation, bidding, and commissioning processes that impede collaboration and interactions between built environment professionals. Last but not least, the lens of project architects' practices allows us to perceive construction as a complex, non-linear process that is anything but mundane. Rather, construction is inherently connected to design and opens up space for inventiveness and creative action.

Conceptually, the dissertation contributes to a rich scholarship on architectural practice, by enabling a more differentiated understanding of the figure of the architect, beyond often unproductive dialectics, including design vs. construction, autonomy vs. heteronomy. In particular, following the work of architectural geographers, the dissertation re-positions the architect within a wider professional field, not as a superior but as an equal project partner, who needs to share both risks and rewards. Furthermore, by unpacking the figure of the global architect, the dissertation adds more in-depth to the understanding how global architecture is produced on-the-ground. By moving beyond a focus on symbolic and aesthetic features, this work explores the supposedly less glamorous side of global architecture. Yet, an understanding of what happens on global construction sites is invaluable for the understanding of how processes (e.g., knowledge mobility) that are at the heart of urban development take place. As a result, the dissertation also delivers a more holistic understanding of construction processes, contributing to the dissolving of a disembodied Cartesian view of architecture. On a more professional practice oriented level, this dissertation provides impetus to critically re-think current practices of academic socialisation of architects as well as the existing forms of adversarial contractual arrangements and procurement processes.

Kurzfassung

Diese Dissertation hat zwei Hauptziele: Zum einen soll die Figur des sogenannten *global architect* entschlüsselt werden, indem der Fokus von namenhaften ArchitektInnen wegbewegt wird. Genauer gesagt liegt der konzeptionelle und empirische Schwerpunkt auf der Figur der ProjektarchitektInnen, d. h. auf den weniger sichtbaren und oft nicht anerkannten ArchitektInnen, die in globalen Architekturfirmen tätig sind. Die Figur der ProjektarchitektInnen bezieht sich auf diejenigen, die über ausreichend Erfahrung und Fachwissen verfügen, um anspruchsvolle Aufgaben und Verantwortung in komplexen Projekten zu übernehmen. Damit tragen sie wesentlich zum Entwurf und zur Umsetzung architektonischer Ideen bei, sowie zu dem Prozess des globalen Wissenstransfers im Bereich der Architektur- und Stadtplanung. Zum anderen geht es darum, Prozesse zu entschlüsseln, die ebenfalls noch wenig erforscht und konzeptualisiert sind. Ich interessiere mich insbesondere für das materielle „Werden“ (*becoming*) der globalen Architektur. Um diese beiden Lücken in den akademischen Debatten zu schließen, untersucht und konzeptualisiert die Dissertation die Praktiken, die ProjektarchitektInnen im Laufe der Ausführung an verschiedenen Produktionsstandorten anwenden. Aufbauend auf der Arbeit von ArchitekturgeographInnen geht die Dissertation dabei über den Fokus auf ästhetische Merkmale und symbolische Bedeutungen hinaus und entschlüsselt die Praktiken, durch die die gebaute Umwelt produziert und beeinflusst wird.

Konzeptionell baut die Arbeit auf Praxistheorie, auf *critical geography of architecture*, sowie auf das interdisziplinäre Feld der *urban studies* auf, insbesondere auf die Geographieforschung zu globalen ArchitektInnen und zu Wissensmobilität. Aufbauend auf dieser reichhaltigen Literatur konzeptualisiert die Dissertation ProjektarchitektInnen als wichtige VermittlerInnen (*in-between actors*), die zwischen verschiedenen Orten und Disziplinen agieren und zwischen unterschiedlichen Aufgaben und Verantwortlichkeiten verhandeln, um dabei eine Brücke zwischen Entwurf und Ausführung zu schlagen. Empirisch wendet die Dissertation qualitative Forschungsmethoden an. Insbesondere wurden qualitative Interviews mit ArchitektInnen sowie mit zahlreichen Bauschaffenden unterschiedlicher Disziplinen geführt, wodurch eine *cross-sectorial* Perspektive eingenommen wurde, die in *urban studies* häufig noch fehlt. Die Ergebnisse dieser Arbeit werden in fünf verschiedenen Publikationen zusammengefasst und drehen sich um die enge Verbindung zwischen Entwurf und Ausführung. Erstens sind die Praktiken von ProjektarchitektInnen an der Schnittstelle zwischen künstlerischem und handwerklichem, kreativem Wissen und physischem Fachwissen angesiedelt. Die Praktiken von ProjektarchitektInnen vor Ort sind somit durch die Spannung zwischen *Beschützen* (z. B.

gestalterische Aspekte, archetypische Rollen) und *Nachgeben* (z. B. gegenüber Projekteinschränkungen, lokalen Besonderheiten, Anforderungen der Bauindustrie) gekennzeichnet. Zweitens ermöglichen die Praktiken der Projektarchitekten die disziplinäre Annäherung zwischen Bauschaffenden unterschiedlicher Disziplinen und überwinden dabei eine tief verwurzelte Trennung zwischen kreativem Design-Know-how und handwerklichem oder technischem Fachwissen. In diesem Zuge überwinden Projektarchitekten bestehende Routinen, verhandeln formale Grenzen und (re)konstruieren ihre berufliche Rolle und Handlungsfähigkeit. Drittens ermöglichen die Praktiken von ProjektarchitektInnen die Überwindung von Zuständigkeitsgrenzen und starren Vergabe-, Ausschreibungs- und Auftragsverfahren, die die Zusammenarbeit und Interaktion zwischen Bauschaffenden behindern. Nicht zuletzt erlaubt uns der Blickwinkel der Praktiken von ProjektarchitektInnen, das Bauen als einen komplexen, nicht-linearen Prozess wahrzunehmen, der alles andere als trivial ist. Vielmehr ist das Bauen von Natur aus mit dem Entwerfen eng verbunden und eröffnet Raum für Erfindungsreichtum und kreatives Handeln.

In konzeptioneller Hinsicht trägt die Dissertation zu einer reichhaltigen Debatte über die architektonische Berufspraxis bei, indem sie ein differenzierteres Verständnis der Figur der ArchitektInnen ermöglicht, jenseits der oft unproduktiven Dialektik von Entwurf vs. Ausführung, Autonomie vs. Heteronomie. Insbesondere, in Anlehnung an die Arbeit von ArchitekturgeographInnen, positioniert die Dissertation die ArchitektInnen im weiteren Berufsfeld nicht als überlegene, sondern als gleichberechtigte ProjektpartnerInnen, die sowohl Risiken als auch Gewinne und Anerkennung teilen müssen. Darüber hinaus trägt die Dissertation durch die Entschlüsselung der Figur des *global architect* zu einem tieferen Verständnis dafür bei, wie globale Architektur vor Ort produziert wird. Die Arbeit konzentriert sich nicht nur auf symbolische und ästhetische Merkmale, sondern erforscht auch die vermeintlich weniger glamouröse Seite der globalen Architektur. Das Verständnis dessen, was auf globalen Baustellen geschieht, ist jedoch unabdingbar für das Verständnis der Prozesse (z. B. Wissensmobilität), die im Mittelpunkt der Stadtentwicklung stehen. Infolgedessen liefert die Dissertation auch ein ganzheitlicheres Verständnis von Bauprozessen und trägt dazu bei, die kartesische Sichtweise der Architektur zu überwinden. Auf einer eher praxisbezogenen Ebene liefert diese Dissertation Impulse, die derzeitigen Praktiken der akademischen Sozialisierung von ArchitektInnen sowie die bestehenden Formen gegnerischen Vertragsvereinbarungen und Vergabeverfahren kritisch zu überdenken.

Table of Contents

Acknowledgements.....	3
Abstract.....	5
Kurzfassung.....	7
1 Introduction.....	13
2 State of the art.....	17
2.1 Unpacking the figure of the architect.....	17
2.1.1 The ‘assemblage of architectural workers’.....	17
2.1.2 The myth of autonomy.....	19
2.1.3 The myth of creativity.....	22
2.1.4 Outlining the research gap.....	26
2.2 The transformation of contemporary architectural practice.....	27
2.2.1 The ‘new’ urban agent.....	27
2.2.2 Organisation and working practices of global architectural firms.....	28
2.2.3 Exchange of design ideas and embedding global architecture.....	31
2.2.4 Outlining the research gap.....	32
3 Theoretical framework and key concepts.....	34
3.1 Materiality: The making of the built object.....	34
3.2 A practice lens: Acting on-the-ground.....	36
3.3 Intermediaries: Key <i>in-between</i> actors.....	38
4 Methodology and acquiring the data.....	41
4.1 Entry point <i>Firms</i> : Setting the focus on architects’ international practice.....	42
4.2 Entry point <i>Projects</i> : InnoBau research project and the initial set of data.....	46
5 Published Work.....	50
5.1 Overview of the publications.....	50
5.2 Contents, contributions, and analytical connections.....	51
6 Conclusion.....	56
6.1 Discussion of the main findings.....	56
6.1.1 The intimate relationship between design and construction activities: dealing with the materiality of artistic visions.....	56
6.1.2 The intimate relationship between design and construction professional fields: collaborating across disciplinary boundaries.....	57
6.2 Key contributions to theory and practice.....	58
6.3 Research design restrictions and future research trajectories.....	61
References.....	63

1 Introduction

One can be said for sure – the *architect* has been a beloved research subject for scholars across disciplines, from sociology, over cultural and economic geography, to construction management and urban studies. No wonder – torn between practice and theory, art and technology, autonomy and heteronomy (see Grubbauer & Steets, 2014) – the figure of the architect does represent a fascinating phenomenon. Recently, the figure of architect has re-gained increasing attention, both in public and academic debates, due to the on-going restructuring processes that are lastingly transforming the system of architectural production (ibid.; Cuff, 2014; Cayer, 2019). For one, the field of building and urban development is being reconfigured in terms of economic rationalities, commodity chains, and political priorities. For another, connected to previous, the professional field of architecture is being transformed through the emergence of large firms, which transgress the disciplinary boundaries of planning, engineering, and construction, and their increasing dominance due to size and global reach (Cuff, 2014; Olds, 2001; Yap, 2013). Furthermore, climate change puts pressure not only on states but also on built environment professionals to take action; the construction industry, in broader terms, is challenged to consider ethical aspects and its responsibility for human and nature. Last but not least, the architect is increasingly marginalised from decision making processes concerning the production of the built environment, and thus from a once privileged position as a client’s consultant (e.g., Sage, 2013; Samuel, 2018).

Taking into account these current challenges, this dissertation draws once again the attention to the figure of the *architect*, posing questions concerning their role and responsibility within the wider professional field. To do so, I draw upon the concept of the ‘global architect’¹ as a symbol of the on-going restructuring processes (see Grubbauer & Steets, 2014). Due to their reputation and expertise, global architects have often been sought out by governments and private investors for prestigious

1 Term is coined by McNeill (2005; 2009). Global architects can refer to ‘boutique’ (large) firms, centred around (a) ‘signature’ designer/s (e.g., Norman Foster; Rem Koolhaas; Renzo Piano, David Chipperfield, etc.), or a ‘mega-practices’ operating globally, such as SOM. For the purposes of this dissertation, I focus mainly on those global architectural practices built around the figure of (a) renowned, brand-name design principal/s.

commissions, gaining significant influence in design and planning processes worldwide over the last couple of decades (Charney, 2007; Faulconbridge & Grubbauer, 2015; Horne, 2011). In academic studies their influence has been associated with the transnational circulation of best practices, policies, and regulatory frameworks (Harris & Moore, 2013; Rapoport, 2015). Considering their global reach, the global architect “has become a particularly important trope in urban studies debates [...] [w]henver urban scholars argue for the interconnected nature of urbanism today” (Grubbauer, 2019, p. 474). In the complex and “fundamentally social process” (McCann, 2011, p. 111) of knowledge circulation and policy mobilities, global architects are often considered “transfer agents” (McCann & Ward, 2012, p. 46) and “knowledge actors” (Jacobs, 2012, p. 414), who translate design and planning concepts into new spatial and institutional contexts, impacting significantly the global production of architecture.

In academic studies the figure of the global architect is often associated with the renowned design principal and thus stands for a rather homogenous group of actors (for a critique see Faulconbridge, 2010; Grubbauer, 2015a). Yet, in order to understand the restructuring processes that the field of architecture is undergoing, it is crucial to unpack this homogenous group. The analytical and empirical focus of this dissertation is therefore set on the less prominent architects, who work in global firms and contribute largely to the conception, implementation, and dissemination of designs across the globe. In particular, I am interested in the figure of *employed project architects* with different professional status and sufficient experience to assume demanding tasks (see Cuff, 1991, pp. 137–143). As these actors have often remained neglected, their skills, strategies, and expertise are still understudied and under-theorised in geographic studies, representing hereby a significant gap with relevance beyond the discipline of architecture. By defining project architects as key actors in the field of built und urban development, the dissertation argues that these actors enact practices “on-the-ground” (Peck & Theodore, 2010, p. 172), essential for “anchoring [...] globalization” (Rankin, 2003, p. 709).

Shifting the focus away from the individual celebrity architect to rather unlikely and invisible actors, allows exploring processes that have remained equally neglected in

academic debates. This refers more specifically to the *material* production of (global) architecture. Due to the preoccupation with brand-name architects, the discussion around the production of (global) architecture has often revolved around the production of aesthetic features and symbolic meanings. Especially in the field of knowledge mobility, the transnational flow of ideas has often been reduced to the travels of images (but see the work of Grubbauer, 2015a). Processes of architecture's material production have thus enjoyed far less attention in urban studies literature, especially compared to design processes (ibid.; Sage, 2013). At the same time, on a more pragmatic level, architects have traditionally sought to distance their professional domain from the actual execution of their designs (Sage & Vitry, 2018).

Recently, scholars (particularly geographers of architecture) have scrutinised this conceptual and actual division between design and construction as problematic both for the making of the built environment as well as for the future of the professional field of the architect (e.g., Sage, 2013; Moran et al. 2016; Samuel, 2018; Vriesema & Kloosterman, 2022). Building on this research work, I explore and seek to conceptualise architects' role during the materialisation of global architecture. In particular, this dissertation defines project architects as key in-between actors who have the capacity to bridge between design and construction. The dissertation hereby poses the following research question:

What practices project architects enact on-the-ground in the course of the material becoming of global architecture?

This question is further disentangled into the following sub-questions:

SQ 1: How are these practices constituted and enacted?

SQ 2: How do project architects' practices impact the actual production of the built environment?

SQ 3: What role do these practices play for the restructuring of the professional field of architects?

To grasp the *practices* project architects enact *on-the-ground* on a daily basis, the dissertation draws on theory of social practices (Reckwitz, 2003, 2008a; Schatzki, 2006) and on scholarship from organisational studies (Ewenstein & Whyte, 2009, 2007; Knorr Cetina, 1997, 2001). Here, practices are understood as “what people do in their everyday interactions with each other” and refer to their engagement “with material objects and non-human artefacts” (Imrie & Street, 2014, p. 9). Practices are thus characterised by repetition, collectivity, and socio-materiality (Grubbauer, 2015b). The specific focus of this dissertations is set on the “apparently mundane practices” (Larner, 2003, p. 511), evoked to face the challenges and irregularities of professional and project-based work. More specifically, the dissertation explores how project architects approach both artistic design tasks and less creative ones, e.g. budget concerns, dealing with partners, and problems on-site (Cohen et al., 2005; Ahuja et al., 2017). Furthermore, the dissertation regards the specific collaborative context of building processes (Harty, 2005) that presuppose “a comprehensive dialogue with materials and shapes” (Yaneva, 2005, p. 867). This responds to the call for studies on the “active and embodied practices” (Lees, 2001, p. 56) through which the built environment is produced and shaped (Jacobs & Merriman, 2011; Sage, 2013).

By addressing the above research questions, the dissertation seeks to contribute to the wider interdisciplinary field of urban studies, particularity to scholarship on the global architect phenomenon and to knowledge mobility studies. Moreover, by shifting the focus away from the individual celebrity architect, the dissertation explores “how human and non-human actors, from gas pipes to Le Corbusier, assemble the form and meaning of buildings” (Sage & Vitry 2018, p. 25), seeking to add to the field of critical geography of architecture. The wider relevance of the chosen research focus is to be seen against the current challenges in dealing with the transformation of the built environment, as well as with the restructuring the architectural profession is undergoing. Considering these, architects are more than ever challenged to question and re-negotiate their role and position within the wider professional field, in order to (re-)assume influential roles and assert their authority within these major transformations.

2 State of the art

This dissertation is built on two main conceptual pillars. The first one refers to the figure of the ‘architect’, seeking to open up ‘the black box’ of the autonomous creative genius, in order to gain more in-depth insights into the role and tasks of architects. Hereby, I draw on different bodies of social science scholarship, more specifically on sociology of profession and of architecture, as well as on cultural geography (more specifically on critical geography of architecture). The second conceptual pillar refers to the circulation of knowledge relating to architectural design and building processes. Hereby, I consider the key role architects play in the processes of transnational learning and their impact on the making and development of the built environment. More specifically, I draw on academic scholarship dealing with the ‘global architect’ phenomenon, as well as on studies on the making of large-scale building projects. The literature I draw upon is from the interdisciplinary field of urban studies (e.g., from the field of knowledge mobility studies) and economic geography.

2.1 Unpacking the figure of the architect

2.1.1 The ‘assemblage of architectural workers’

In her inspiring work “Architecture and Labor” (Deamer, 2020), Peggy Deamer deals critically with the concepts of *work* (and *labour* respectively) in the architectural practice. In this and previous work, Deamer explores the ongoing labour crisis of the profession that has its origins in the very genesis of the profession. It is widely acknowledged in the academic discourse that architectural practice, despite its prestigious character, is also a precarious one. Ever since the 1980ies, scholars across disciplines have researched and documented the challenges that the field faces, challenges that have shaped the professional development of past generations and continue to define the career of future architects (e.g., Cuff, 1991; Gutman, 1988; Larson, 1993; Stevens, 1998). Among other scholars and practitioners, Deamer has called for a paradigmatic change within the profession’s own institutions and culture of

practice, as an answer to labour exploitation², significant labour restructuring following the emergence of new technologies and market development³, and to some of the profession's inherent tensions, due to restrictive contractual relations and outdated socialisation and training practices. This labour crisis has impacted not only the working conditions of architects but also the making and development process of the built and urban environment.

With her work, Deamer seeks to contribute to a new paradigm of research but also to reframe the understanding of the profession – moving away from a mere abstraction in order to set the focus on the ‘assemblage of architectural workers’. Deamer moves away from the outdated cult of the ‘starchitect’, of the autonomous architect-hero, whose practice is usually associated with the making of buildings’ aesthetic and symbolic features. Rather, she draws the attention to the on-the-ground work, everyday responsibilities, and contributions of the broad collective of architectural professionals. This conceptualisation of the ‘assemblage of architectural workers’ has been highly fruitful for my research work, as it has allowed grasping the large and heterogenous group of those working as project architects in firms, both generalists and specialists, with different levels of experience, who have often remained invisible and unacknowledged in the public discourse, and under-researched in academia, leaving their role and practices under-theorised.

In this subsection, I discuss more in-depth two main reasons for the significant neglect of this broad group of professionals. The first one refers to the still dominant *myth of autonomy*: The focus of public debates as well as of academic research has seldom been on architects as a collective but rather on the renowned (usually white, male) individual. The second reason refers to the prevailing *myth of the creative artist*: For the wider

2 Architects’ professional practice is notorious for long working hours with no real overtime compensation and the dependence on unpaid or underpaid internships that have become an unquestioned standard. A former colleague of mine used to joke, saying that “you are being paid with experience”.

3 Referring to the infamous “jobloss from Computer-Aided Design (CAD) automation or outsourcing of routine design operations—drafting, rendering, and modeling—to cheaper contractors” (Deamer, 2020, ix, Forward by Andrew Ross).

public architects' work is often associated with the production of symbolic and aesthetic value and thus reduced to a restricted and simplified understanding of design work and of architects' tasks and responsibilities. Thus myth that has often been reproduced by academic and professional institutions. These two myths are, of course, inherently connected and certainly not as easily separable as presented here for analytical reasons.

2.1.2 The myth of autonomy

That architecture is a heteronomous profession (Larson, 1993) is more than obvious and has been widely explored by scholars across disciplines. In social sciences there is a rich body of scholarship that has testified to the intrinsic dependence of architects on the skills and expertise of other professionals (ibid.; Lipstadt, 2003; Stevens, 1998; Till, 2013). As Robert Gutman points out in his seminal study on architectural practice, "it is through [sic. the construction] industry that architects' ideas of buildings are realized" (Gutman, 1988, p. 43). Similarly, Larson (1993) argues that the building can never be an example of architects' autonomous execution of talent and knowledge. Rather, in the contemporary field of design work, the figure of the autonomous, controlling architect-designer has dissolved to reveal the profession's inherent dependency on all those professionals involved in the making of the built environment (see Till, 2013). In terms of iconic, "supra-designed architecture", Jacobs and Merriman argue that it "is not simply in the hands of the architect. It is also produced by a dissipated, more modest and many-handed effort" (2011, pp. 216–217). Moreover, the autonomy of architects is further constrained by the demands imposed by clients, consultants, and authorities, which differ from the symbolic and aesthetic ones imposed by the professional discourse (Stevens, 1998).

Similarly, scholars have emphasised the specific working and organisational context, over which architects (or any built environment professionals) rarely have sole control. Due to their complexity and inherently interdisciplinary nature, building processes are collaborative, communication-based, and inter-organisational, presupposing collective actions, negotiations, and compromises (Harty, 2005; Yaneva, 2005). What is more, the growing complexity of construction projects, requiring a higher degree of specialisation and shaped by increasing processes of technological and regulatory change, has led to

the fragmentation of work tasks, the growing dependence of architects on other specialists and the growing influence of other professionals, including quantity surveyors, building contractors, project managers, construction and management process consultants, energy and environmental consultants (Fischer & Guy, 2009; Vriesema & Kloosterman, 2022). Nevertheless, the “romance of the architect as a sole practitioner” (Whyte, 2015, p. 265) has been successfully propagated and is further reproduced by the practices and mechanisms of academic education. Till today, architectural students are increasingly socialised in a strong mono-disciplinary fashion, usually with little input from other building specialists or potential clients and users (Cuff, 1991; Grubbauer, 2019).

Over the last two decades, there has been a growing scholarship from the field of cultural geography (more specifically from the field of critical geography of architecture) that seeks to de-mystify the architect as an independent professional working with relative autonomy. This scholarship has sought to shed light on the wide range of human and non-human actors involved in the making of the built environment (considering hereby the heterogeneity of this group) – ranging from professionals across different disciplines, over public administration and clients, to users and inhabitants (see Lees, 2001; Jacobs & Merriman, 2011). In this course, scholars have sought to de-centre the agency of the architect in the production of the built and urban environment, challenging the common perception that architects alone occupy an autonomous, controlling, and potentially superior position within the hierarchical chain of the building industry (Lorne, 2017). This scholarship testifies that individual actions are embedded in a larger network of relations and into a broader social environment. This is a central aspect considering the ongoing transformation of the building industry, in which collective actions and responsibility are gaining ever more significance, due to the processes of digitalisation (that re-shape the interactions between different professionals, e.g., Lobo & Whyte, 2017) and the growing emergence of climate crisis (that brings new challenges for traditional professionals, see Fischer & Guy, 2009).

Nevertheless, there has been some critique from scholars who have pointed out that the de-centring of the architect is “neither necessary nor helpful” (Moran et al., 2016, p.

416, see also Gottschling, 2018; Sage, 2013). As Lorne (2017, p. 278) argues “geographers should not assume that this de-centring will necessarily lead to more democratic or utopian architectural inhabitations”. Following Sage (2013), Moran et al. (2016) show in their work that the figure of the architect has already been marginalised and potentially at risk to be reduced to merely technical tasks within tight regulatory constraints (e.g. assembling Lego Blocks of BIM)⁴. Furthermore, I would argue that the de-centring of the architect as an autonomous individual has not necessarily led to a more differentiated understanding of the profession and its practice. If anything, it has further contributed to the ‘black-boxing’ of the architect, leaving the figure of the architect as relatively stable and homogenous.

Another, more productive approach to the de-mystification of the figure of the architect as autonomous, is the conceptual lens of relational autonomy. In particular, Imrie and Street apply this lens to uncover the “co-constructed and conjoined nature of design practice” and to move away from the “individualistic, under-socialised accounts of architects and their practice” (2014, p. 753). By doing so, Imrie and Street use the term ‘design-in-practice’ and thus specify “the ordinariness of designing, the multiplicity of those involved in it and the crafting of the architects’ autonomy, or sense of self, as part of a dynamic of situated and contingent practice” (2014, p. 727). Their approach is highly fruitful, as it does not build on the traditional juxtaposition between autonomy versus heteronomy that has been prevailing in scholarship of architectural studies (Jones, 2009, 2011; Lipstadt, 2003; Stevens, 1998). Rather, this notion describes what is often considered autonomous actions as “fundamentally and irreducibly relational” (Christman, 2004, p. 144). This conceptual lens allows grasping dependence not as a threat and restriction but rather as a productive potential that could open new creative spaces (see also Till, 2013). Additionally, this approach helps contextualising architectural practice in relation to the everyday actions of other built environment

4 By drawing on the empirical example of the role of selection procedures and how these define the relationships between and obligations among project participant within a construction project, the authors show that the figure of the architect does not need counterbalancing, rather that it is exposed at significant risk. To the matter of the risks that the profession faces I will return back in the next section (2.1.3.) on the *myth of creativity*.

professionals and to their work and interaction with material artefacts (see Imrie & Street, 2014).

By drawing on the field of critical geography of architecture and through the lens of relational autonomy, this dissertation seeks to *re-position* rather than to de-centre the figure of the autonomous architect-hero. In this course, there is a need to take into account the “intimate nexus between design intention and construction” (Deamer, 2020, p. 4). I explore the on-the-ground practices of architects in relation to other partners from the construction industry, to gain a more differentiated understanding of the profession and a more holistic view of architects’ everyday activities, tasks, and responsibilities. This, I argue, is crucial, in order to grasp the *architect* as a larger collective of *architectural workers*, overcoming the myth of the autonomous individual not merely in a projects’ context but also within the profession itself.

2.1.3 The myth of creativity

As already pointed out, the myth of creativity is inherently connected to the deep-rooted perception of the architect as the heroic artist-architect (as indicated by Cuff, 1991), alone responsible for the aesthetic and symbolic qualities of building structures. The myth of creativity is still perceived as self-evident by many (future) architects, as well as by the wider public. This matter can be partially attributed to the mechanisms of architectural education and socialisation that, even today, continue to follow the “Beaux-Arts tradition that privileges studios, charrettes, competition, design virtuosity, heroic programs, precedents, and honoring past masters” (Deamer & Ng, 2019, p. 139). Despite recent tries of educators to reform education by suggesting more process-oriented and less aesthetics-focused approaches, a broad revision of the curricular still has not taken place (Awan et al., 2011; Grubbauer, 2019). Furthermore, through the strong focus on design(ing) and on developing creative practice, technical expertise still plays a rather subordinate role (see Cohen et al., 2005). Architects (especially prospective ones) instead associate their practice with the “prime value of creativity” (Blau, 1984, p. 58) and see their tasks and responsibilities within design work.

In the context of architects' academic socialisation there has been a strong division between design practices and technical ones, and more specifically, those technical practices associated with the actual construction of building structures. Such a distinction has been pervasive ever since Vitruvius's *De Architectura* (Sage, 2013). Vitruvius, as argued by Imrie (2003) and Pont (2005), appears to have categorised craftwork and bodily efforts as rather inferior compared to the presumably more reflective and sophisticated activity of design (or engineering) (see Sage & Vitry, 2018, p. 9). Subsequently, there has been a clear division between manual labour that is considered to constitute the construction process, and the "cerebral, creative effort" that emerges from the "philosophical, artistic and mathematical knowledge" (Sage, 2013, p. 171). This distinction has played a pivotal role for the professionalisation of the architectural practice, when in the 15th century architects sought to distinguish themselves from other workers through what soon become to be considered superior expertise and specialised knowledge of design. Thus, architects moved beyond the mere master builder, to become professional figures (Villa, 2015).

This Cartesian dichotomy of mind versus body has remained largely pervasive both in architectural and construction theory, impacting academic and professional practice (Sage, 2013). This has potentially inspired a certain self-aggrandisement of architecture as a "noble intellectualized, socially meaningful, profession", distancing it from the manual labour of construction, considered as merely instrumental (Sage & Vitry, 2018, p. 11). It has also led to a distinct separation between the academic education of architects and of those responsible for the implementation of their designs, and thus to a classed division of labour between professionals engaging in design processes and those in construction ones (ibid.). While seeking to secure intellectual superiority over those involved in construction (ibid.), architects' professional jurisdictions have been reduced mainly to the tasks and responsibilities relating to the aesthetics of the design (Blau, 1984; Gutman, 1988; Pinnington & Morris, 2002). As a result, design expertise and creativity have become the legitimate core of architecture as discipline and as a profession, making the discourse around building's symbolic and aesthetic value central in architects' struggle for legitimacy (see Grubbauer & Steets, 2014).

Yet, although design and creativity have provided architects with strong technical and cultural elements of professional status, this division has significantly weakened the profession (see Pinnington & Morris, 2002). For one, “design is [...] the most mysterious of the architect’s knowledge” (Cuff, 1991, p. 66) and thus difficult to codify as a distinct form of scientific knowledge (ibid.). As intuition and intuitive thinking are considered to be key components of design and ‘aesthetic’ knowledge, architects’ work remains hard to explicate (Ewenstein & Whyte, 2007). For another, as testified by different authors (Lipstadt, 2003; Stevens, 1998), architects often consider architecture to be not only a profession but also *art*. Moreover, design as conceptual work, or design-as-art has proven to be a commodity difficult to sell in the contemporary pragmatic marketplace (Cuff, 1991). Contrary to other professionals, architects have failed to make their services and expertise indispensable, which are more readily challenged compared to the services and expertise of lawyers and doctors (or also of structural engineers) (e.g., Cuff, 1991). Subsequently, by setting the focus exclusively on design activities, architects have opened their professional field of action to competition from other built environment professionals, including engineers, urban designers, landscape planners (Blau, 1984; Gutman, 1988), and more recently energy and environmental consultants (Fischer & Guy, 2009).

The myth of creativity has, thus, significantly impacted the architectural profession in a two-fold way. The first one is on a more pragmatic level, related to professionals practices, referring to the diminishing of the role, responsibilities, and power of architects over the last couple of decades. Through the emergence of new forms of construction contracts and procurement methods, architects’ authority has weakened progressively in relation to clients and contractors (Cohen et al., 2005; Pinnington & Morris, 2002; Sage, 2013). Whereas managing finances and contracts has once been the task of architects, these roles have been fragmented and assumed by other specialists, including project managers and quantity surveyors, responsible for managing risks and costs (Lorne, 2017). Furthermore, in line with the Cartesian dichotomy, a clear contractual division between the design and construction stage has been established. For instance, the communication between architects and their partners from the construction industry while developing working drawings is inhibited, and architects have relatively

little control over choosing who to work with during bidding and allocation processes (see Deamer, 2020). This has further facilitated the exclusion of architects from the construction site and the building activities (Lorne, 2017; Moran et al., 2016; Sage, 2013). Both scholars and practitioners have criticised this distance to the actual ‘making’ of the built environment, as one of the reasons for design problems, quality deficiency of the final building, as well as the notoriously adversarial relationship between architects and sub/contractors (Sage, 2013).

The second issue emerging from the myth of creativity is on a more cultural level and refers to *how* (architectural) design work is perceived by professionals and the wider public. As pointed out previously, architects often assume that their work is also art. Architects thus have an ambivalent understanding of their own work and responsibilities – on the one hand, design activity is considered the legitimate core of their profession and students are socialised to assume the responsibility for it (e.g., Cuff, 1991); on the other hand, design activity is considered to be art and not work, meaning that students perceive of architecture not as a career but as a *calling* (Deamer, 2020). Deamer argues that this unwillingness to grasp architecture as work that is part of the capitalist system has led to architects ‘putting up’ with low-paying jobs or no-paying internships, as well as with a notorious poor work-life balance (see Deamer, 2020; Deamer & Ng, 2019). Additionally, the severe distinction between design as (creative and conceptual) *art*, and construction as (manual and mundane) *labour* has kept architects from achieving social relevance and personal satisfaction, as Deamer (2020, p. 22) points out. Finally, the myth of creativity has contributed to a rather restricted, simplified, and often misleading understanding of what architects *actually* do. Design ideas do not just happen to a creative genius, design is *work* that incorporates, among others:

Staring at a computer. Learning the ins and outs of BIM. Phoning consultants. Negotiating with owners. Dealing with environmental inputs and constraints. Researching products. Moving from one software to another and digesting the interface. Scripting in every sense of the word, from planning spatial divisions to optimizing building performance. Aestheticizing elevations. Dreaming. Collaborating. Managing teams, finances, and brands.

(Deamer & Ng, 2019, p. 138)

Building on the outlined body of work, the dissertation argues that this explicit focus on creativity, glorifying design as art or as superior, has often left everyday tasks less visible, devaluing them as trivial. Professionals themselves often consider these daily routine tasks as an antipode to creative design work and thus as a burden (Ahuja et al., 2017). Considering the significant on-going restructuring of the professional practice, it is central to re-frame how design is perceived and thus according to what criteria architectural work is valued. By setting the analytical focus on the on-the-ground practices of the ‘assemblage of architectural workers’, this work seeks to provide more in-depth to the understanding of everyday architectural work, beyond its artistic and symbolic components.

2.1.4 Outlining the research gap

In the interdisciplinary field of social sciences the architectural profession has been widely explored and analysed. The seminal work of numerous scholars including most prominently Cuff (1991), Gutman (1988), and Stevens (1998) provides invaluable and in-depth insights into the everyday reality of architectural professionals. Nevertheless, the understanding of the figure of the architect and their tasks and responsibilities often tends to be captured between two extremes – either the autonomous, ingenious, and controlling architect-designer, or the marginalised unknown architect, dealing on a daily basis with less creative and more trivial tasks. Moreover, contemporary academic scholarship seldom applies a cross-sectorial perspective (e.g, Grubbauer, 2015a; Sage, 2013), meaning that the figure of the architect have not been sufficiently explored and conceptualised in relation to other built environment professionals.

Considering this, it appears that contemporary research still lacks a more differentiated perspective on the role of architects, failing to position them at the interface between creative and supposedly mundane and in relation to other professionals – not as superior or yet, powerless, due to various restrictions and dependencies, but as equal partners. Building on the outlined rich body of work, the dissertation sets the analytical focus on the everyday tasks and responsibilities of architectural workers, by taking into account how they operate beyond the realm of design work and how they work together with their project partners. These insight, I argue, can enable a more in-depth grasp of

architects' contribution to the making of the built and urban environment, which is crucial considering the contemporary challenges the profession is facing (see Section 1). What is more, this perspective enables in-depth insights into the actual making of architecture, into how building projects are made on-the-ground, at the juxtaposition between the artistic and the manual.

2.2 The transformation of contemporary architectural practice

2.2.1 The 'new' urban agent

As it has been already argued in the previous section, the architectural profession has been exposed to a significant transformation, mostly prominently connected to the de-centring of the figure of the architect. For one, there has been a re-distribution of tasks, responsibilities, and influence in decision-making processes that has led to the marginalisation of the architect (Samuel, 2018). For another, architects have been increasingly separated from the actual construction of their designs, which has lastingly re-shaped their formerly close and direct relationship with clients and the construction industry (e.g., Vriesema & Kloosterman, 2022). At the same time, the professional field has been largely transformed through the processes of growing internationalisation and more specifically through the emergence and growing dominance of the celebrity, brand-name architects, also 'starchitects' or 'global architects' (Cuff, 2014; Faulconbridge & Grubbauer, 2015; McNeill, 2009; Yap, 2013). These urban actors are part of a global elite of designers, also described as the 'global intelligence corps' (Olds, 1997; Rapoport, 2015) and the nature of their networks, fame, and fortunes has raised the attention of scholars across the disciplines.

It could be well argued that global architects embody the contemporary version of the autonomous architect-hero (Grubbauer & Steets, 2014), as they represent the minor fraction of the professional community that enjoys strong relations with wealthy and powerful clients and the privilege to work within the restricted "natural market" for "great seminal, monumental buildings" (Gutman, 1992, p. 40). Although their portfolio comprises almost any type of buildings, the focus is on *iconic*, cutting-edge designs

with outstanding aesthetic and symbolic qualities (Jencks, 2006; Faulconbridge, 2009; Jones, 2011). Public and private clients are eager to commission global architects for the development of prestigious projects, often for the purposes of culture, sports, and leisure (Kaika, 2010; Fuerst et al., 2011; Jones, 2011). Due to their prominence and international expertise, these professionals are expected to reduce economic risks (Horne, 2011), smooth out political debates, and subsequently legitimate controversial projects (Charney, 2007), easing in this course planning and development processes. Thus, these ‘new’ agents on the urban stage enjoy significant level of authority and dominance in decision-making processes concerning the production of the built environment (see Grubbauer, 2015a).

Considering this disruption of the architectural field, it is not surprising that these urban agents have raised the attention of scholars across disciplines (urban studies, economic and cultural geography, just to name a few). The following two subsections outline key research foci in a rich academic scholarship on global architects, namely, how these agents organise their work across space and their role for the transnational circulation of design ideas that has lastingly impacted the urban development on a global and local scale.

2.2.2 Organisation and working practices of global architectural firms

The lens of the ‘global architect’ has allowed scholars to study how the architectural professional practice has been restructured in the course of growing globalization. Contrary to other industries from the knowledge-intensive business service sector (e.g., advertising, accountancy, banking, and law), architecture has proved slower to go global, mainly due to the locally-bound character of its products (Knox & Taylor, 2005; Grubbauer, 2015a). Yet, taking advantage of digital and telecommunications technologies, architectural firms have been able to build significant networks of multiple offices on several continents, in order to meet the needs of their often transnational clients. In this course, these professionals have secured the global scope of their operations and expansion into new markets, they have diversified their portfolio, and expanded their professional expertise, securing a competitive advantage (Knox &

Taylor, 2005; Faulconbridge, 2009). By ensuring that their brand and reputation are associated with prestigious commissions for mega-projects and / or flagship building structures world-wide, global architects aim for global commercial recognition, to help build a unique firm's identity (McNeill, 2005; Faulconbridge, 2009).

Compared to other global service firms, global architects have developed different strategies for service delivery (Faulconbridge, 2009). Building projects, unlike projects in other knowledge-based industries, are of a significant scale, their making takes place over many years, they are haptic, and most importantly they are unique, being built at a specific location at a designated point in time (Cuff, 1999; Thiel et al., 2021). Considering the small number of prestigious commissions realised in a given city, establishing international branch offices is not always feasible (Knox & Taylor, 2005). Rather, global architects are notorious for their ability to work and design 'at a distance' (Faulconbridge, 2009), as well as for their frequent corporeal travels across the globe, creating the illusion of a "seemingly limitless corporeal reach" (McNeill, 2005, p. 501). This 'hypermobility' can be explained with a certain "compulsion to proximity" (Urry, 2004, p. 29), as global architects still have obligations to specific locations, such as the building site or the client's boardroom (McNeill, 2005; 2009). Hereby, mobility is a pre-requisite not least due to the 'immobile' character of architects' final product (Butzin & Rehfeld, 2013). Moreover, as design principals of global firms are ascribed particular authority, their presence during important negotiations, hearings, or key appointments is essential, to support the process personally. Although it has been assumed that the technological innovations that have facilitated a time-space compression will make need for travels obsolete, *being there* and *being present* is still fundamental to enhancing bonding in the specific cultural context and to convincing clients (McNeill, 2005; 2009). This for instance contradicts some literature suggesting that during later phases of innovation generation physical proximity can be potentially substituted by organised proximity (e.g., Tanner, 2018).

Considering this, the global status of global architects is not necessarily built upon a world-wide office network but rather on the geographical scope of their portfolio (Faulconbridge, 2009). While these firms often establish a temporary site office, the

main focus is still placed on the physical space of the design studio. Global firms are run primarily from this (often) one location, where work of guaranteed quality and distinction is produced, communicating hereby a symbolic aura to the clients (McNeill, 2009). Conducting complex design issues remotely has been mainly facilitated by outsourcing more routine parts of the design and production process to low-wage and yet skilled professionals (e.g., in the Global South) (ibid.). This distinction between ‘symbolic analysis’ and ‘routine production’ (Tombesi et al., 2003) is also clearly seen in global architects’ interactions with their local partners. Being licensed professionals, global architects exceed the legal jurisdictions of their professional field⁵ and are required for legal reasons to build partnerships with local architects (e.g., Cuff, 1999; Faulconbridge, 2009). As global architects lack knowledge of the site-specific regulatory frameworks, their local partners are liable for the delivery of construction documents (Burr & Jones, 2010). Building up partnerships with local architectural firms is hence crucial for reducing cost and legal risks. In this course, global architects have the privilege to outsource time and effort-consuming tasks and to focus mainly on the artistic and creative aspects of their work, leaving often the work and contribution of less prominent local firms less visible and acknowledged.

Building on these studies the dissertation sets the analytical focus on how these firms handle projects on-the-ground. The dissertation explores the interactions and relationships with the manifold project partners scattered across the globe, especially during construction processes, in order to provide a more holistic and differentiated understanding of how global architectural firms operate. Furthermore, I am interested less in the extreme form of global architects’ mobility taking place in crucial or critical moments, but rather in what form of mobility is required on a daily (or regular) basis for the project development and realisation. Such insights, I argue, could deepen the understanding of the restructuring process of the architectural profession and the long-term impact of this transformation on the everyday work and practices of architectural workers.

5 Professional jurisdictions are usually restricted to the national boundaries of the respective country responsible for the licensure (e.g., Abbott, 1988)

2.2.3 Exchange of design ideas and embedding global architecture

The phenomena of the travelling architect, whose reach and networks exceed national boundaries is anything but new. Historical studies show that architects (among other planning professionals) have played a crucial role for the transnational exchange of ideas and models (e.g., the globalisation of the skyscraper) and the export of planning principles (e.g., garden cities, Western Modernism, BIDs) (King, 2004; Tait & Jensen, 2007; Guggenheim & Söderström, 2010; Healey & Upton, 2010). Architects have been ascribed a key role in the processes of transnational learning and comparison and the dissemination of best practices, policies, and regulatory frameworks (Harris & Moore, 2013; Rapoport, 2015). Scholar from mobility studies have conceptualised these actors as “transfer agents” (McCann & Ward, 2012, p. 46), “knowledge actors” (Jacobs, 2012, p. 414), and “urban policy entrepreneurs” (Hoyt, 2006, p. 223). This role of architects for the transnational circulation of design and planning ideas has long been associated with processes of increasing homogenisation of urban spaces (Sklair, 2006; 2010; Ren, 2008; Kaika, 2011; Ponzini, 2011). Ever since Le Corbusier, Mies, and Gropius, prominent architects have been associated with “seductive ‘signature’ buildings” (Moran et al., 2016, p. 416) that re-produce the ‘brand’, the distinguishable style of a so-called creative genius (e.g., McNeill, 2005). Recently, the “supra-designed building” (Jacobs & Merriman, 2011, p. 215) has become an almost ubiquitous place-marketing strategy in city and regional re-designing processes of branding (ibid.), considered to generate “[t]ransnational social spaces [...] that could literally be almost anywhere in the world” (Sklair, 2010, p. 139).

Yet, a growing amount of academic studies has pointed out that travelling ideas are inevitably exposed to hybridisation and adaption (King, 2004; Tait & Jensen, 2007; Faulconbridge, 2009). Scholars have shown that building regulations through standards, norms, and codes (Imrie & Street, 2009), locally specific social, cultural, and economic features (Ren, 2008), and the individual perceptions and routines of future users (Faulconbridge, 2009) impact the development and realisation of global architecture. Furthermore, the execution of global architecture depends crucially on the translation of designs into drawings, and later, on the type of construction work conducted on the local site (Grubbauer, 2015a). This body of scholarly work thus sheds light on the

complexity of the role of the architect as a designer, who is embedded in a “regime of complexity” (Koolhaas & Mau 1995, p. 501, cited in Jacobs & Merriman, 2011, p. 215). Moreover, this interdisciplinary literature allows us to perceive global architecture beyond the mere focus on appearances and forms, the significance of which is often accessible mainly through discursive and symbolic analysis (Lees, 2001; Sage, 2013). Finally, connected to this, these studies reveal that the transnational knowledge exchange does not take place merely through the travels of images but also through the process of architecture’s material production on the local site (Grubbauer, 2015a).

Building on this interdisciplinary scholarship, the dissertation is interested in the conceptual and empirical exploration of the *materiality* behind the “complex processes of translation, interpretation and adaption” (Healey, 2010, p. 5), namely how these processes take place on the presumably ‘dirty’ construction sites (see Sage, 2013). The dissertation therefore sets an analytical focus on the construction process of signature architecture, seeking to conceptualise what happens *while* a building takes its physical form and *how* the conceived design is actually executed.

2.2.4 Outlining the research gap

The above discussed studies have added significant in-depth to the understanding of the figure of the global architects, of how they operate across distance and organise their work, as well as of their impact on the transnational transfer of design ideas and concepts that shape the built and urban environment. Nevertheless what has remained little explored is the precise role and specific on-the-ground practices of global architects *at the interface between design and construction* – how precisely global architects shape, define, and impact the embedding of their design ideas in the specific local context. One main reason for this conceptual gaps is the fact that the figures of key ‘transfer agents’ and ‘knowledge actors’ have still remained relatively homogenous, often associated with brand-name designers. Scholarly interest has been mainly set on renowned starchitects, leaving the large group of employed architects responsible for the design development and delivery of architectural projects less visible and still little explored.

To grasp how global architecture is *made*, as well as to contribute to a more differentiated understanding of the *architect*, I narrow down the analytical focus from the broad ‘assemblage of architectural workers’ to the more specific group of architects *working for* the global architect. Although they have often remained invisible in public and professional discourses, a short look at the ‘list of contributors’ published on the home pages of architectural firms testifies to the large number of architects who take part in the conception, development, and realisation of global architectural projects. In particular, I am interested in the group of mid-career professionals, whose work is often characterised by “less supervision [...] self-determination and responsibility [...] more interesting work [...] more control over larger pieces of the architectural project [...]” (Cuff, 1991, p. 139). This group of professionals is, of course, heterogeneous, with no clear profile. Yet, what defines the middle years of an architect’s professional development is “a transformation from gathering experience, to displaying competence, to gathering responsibility and autonomy” (ibid.). It is this transformation that makes mid-career architects an interesting cultural phenomenon (ibid).

I further refer to this group of professionals as *project architects* and explore conceptually and empirically their practices enacted on-the-ground beyond the space of the design studio, namely in the context of the supposedly more mundane execution of designs.

3 Theoretical framework and key concepts

In order to explore the everyday practices of those less renowned architectural workers, employed by global starchitects, I mobilise concepts from the field of geographies of architecture and practice theory, as elaborated more detail in the following section. Furthermore, I conceptualise the figure of these actors as key in-between actors, in order to better grasp their role and contribution in the course of the making of global architecture.

3.1 Materiality: The making of the built object

Scholars from the field of geographies of architecture have contributed significantly to the moving beyond the disembodied Cartesian view of architecture. A growing number of studies has encouraged to perceive buildings not as static and solid objects but rather as “ongoing processes of more-or-less human, more-or-less formal and more-or-less welcome actors that produce, inhabit, maintain and destroy architecture in different ways” (Lorne, 2017, p. 269). This has allowed scholars to conceptualise the built environment not as a given but as something that is made and un-made, something that is produced, while various materials are held together in specific assemblages by work of various kinds (Rose et al., 2010). By challenging the perception of buildings as mere artefacts, building structures have been increasingly conceptualised as performances (ibid.), as ongoing processes (see Lorne, 2017), or as “a multiplicity of actors and processes” (Gottschling, 2018, p. 630). Most prominently, Jacobs (2006) has conceptualised the built environment as ‘building events’, suggesting that the materiality of the built environment is incorporated into a range of human activities and other practices (see also Rose et al., 2010).

The conceptual emphasis of these studies has been less on what precisely buildings are but rather on the process of their making, of holding together, of how they become and remain, or how they are potentially demolished (Gottschling, 2018). This approach has enabled insights into the complexity and the wider network of relationships required for the making of the built environment, taking into account both human and non-human

actors, professionals, as well as inhabitants, users, and visitors (e.g., Rose et al., 2010). Hereby, various processes, such as discourses, everyday routines, and conversations play an equal role (ibid., Jacobs et al., 2007), revealing buildings (and architecture more broadly) as relationally constituted process (Sage & Vitry, 2018). Furthermore, in line with scholarship from Actor-Network Theory and Science and Technology Studies, buildings have been conceptualised as heterogenous accomplishments that “cannot, *a priori*, be categorised as technological or social” (Jacobs et al., 2007, p. 613, emphasis in original). This suggests that buildings are equally the effect of human mattering as well as of material agency (Jacobs & Merriman, 2011).

This shift of focus has opened up new avenues for exploring “the ways in which architectural forms come to be, in certain spaces” (Jacobs, 2006, p. 3). However, the focus of critical geographers has been predominately on the occupation and experience of already constructed buildings (a notable exception is the work by Strebel, 2011). Geographical studies on the *act of building* are thus still scarce, leaving the process of materialisation very much conceptually unpacked (see Samuel, 2018; Vriesema & Kloosterman, 2022). As argued by Moran et al. (2016), manifold aspects of the ‘becoming’ of the building and of *the processes taking place between design and construction* are still under-researched. A growing amount of research (e.g., in the field of construction management) has recently testified to the fact that built forms cannot be reduced to “a stock of inert, passive and non-dynamic resources” (Styhre, 2017, p. 36), raising once again the scholarly interest in the processes behind the construction of buildings and architecture.

Building on this body of research, the dissertation seeks to open up the ‘black box’ of construction of, particularly, global spectacular architecture. I argue that the conceptual lens provided by geographers of architecture can enable a more differentiated understanding of global architecture, beyond its symbolic and aesthetic features. Furthermore, this lens can help to grasp better the materiality behind the processes of hybridisation and adaptation that are inherent to the production of international building projects. Last but not least, by applying this conceptual lens, the dissertation can explore in-depth the role of architects during the actual production of building projects and as a

part of wider network of various actors. Hereby, I argue that architects working for global firms are crucial agents on the construction sites of global architecture.

3.2 A practice lens: Acting on-the-ground

The conceptualisation of buildings as socio-material assemblages (Guggenheim, 2009; 2013) is in line with Loretta Lees' call to move "beyond the symbolic", in order to "explore the ways that the built environment is shaped and given meaning through the active and embodied practices through which it is produced, appropriated and inhabited" (2001, p. 56). A growing number of human and cultural geographers (e.g., Jacobs, 2006; Jacobs et al., 2007; Rose et al., 2010; Strebel, 2011) has set their focus on "the practical and effective or "non-representational" import of architecture" (Lees, 2001, p. 51). In this course, scholars have employed practice approaches to architecture, which resonates with a broader turn to practice theory in social and organisational studies (Knorr Cetina, 2001; Schatzki, 2001; Reckwitz, 2008b). The so-called practice-turn has enabled scholars to set the analytical focus on "activity, action, embodiment, as well as shared practical reason" (Jacobs & Merriman, 2011, p. 212). Furthermore, by employing a practice lens, scholars have shown how "activity is embodied and that nexuses of practices are mediated by artefacts, hybrids, and natural objects" (Schatzki, 2001, p. 2). This concept allows grasping practices in relation to what people do in their daily interactions with others, with material objects, and non-human artefacts (Imrie & Street, 2014).

In the field of cultural geography there has been an overuse of the concept of 'practices' which has prohibited a differentiated understanding of what precisely are the 'active and embodied practices' that constitute the social world – as Grubbauer (2015b) points out, almost everything that people do can be qualified as a practice. There is a need to differentiate and define what precise is meant with practice, and to do so, I draw on the work of Schatzki (2001), Reckwitz (2002), and Nicolini (2012). In social sciences and organisational studies, scholars are increasingly mobilising a 'practice lens' or a 'practice-based approach', as these perspectives allow seeing and understanding the world as "an ongoing routinized and recurrent accomplishment" (Nicolini, 2012, p. 3),

as something that is continuously made, re-made, and un-made through the use of (material) tools, discourses, and the body (ibid.). In terms of Reckwitz, practices are “the smallest entity of the social in a routinised “nexus of doings and sayings” (Schatzki) [...] held together by implicit understandings” (2003, p. 290, quote translated). These are yet more than mere repetition, as they always require the adjustment to new requirements and contexts, suggesting that there is space left for creativity, initiative, and individual performance (Nicolini, 2012).

A practice lens reveals the social world as a vast assemblage of performances, as a “nexus, or confederation of practices” (Nicolini, 2012, p. 3), putting the focus on activity, interaction, and work (ibid, p. 2). Hereby, one of the main appeals is the analytical capacity to represent the complexity of the contemporary social world, in which the boundaries between different social entities are largely overlapping, meaning that the world is inherently interconnected. According to practice theory, this interconnection is made possible through the body and material things, revealing hereby their fundamental role in social life and affairs. Practices are always “the routinized activity of the body” (Nicolini, 2012, p. 4), and they are interconnected and made durable across time and space through material artefacts. Orlikowski (2007) argues that practice-based approaches allow a new perspective on organising processes by foregrounding that “materiality is integral to organizing, positing that the social and the material are constitutively entangled in everyday life” (p. 1437). Hereby, as suggested by Schatzki (2001) and Reckwitz (2002) amongst other authors, one of the main contributions of practice theory is dissolving some of the pertinent dichotomies used to describe the social reality, such as social versus material, or mind versus body.

In terms of practice theory, it could be concluded that *practice* is the institutionalised way of doing something, embedded in a social system of relations. Agency in this context is however equally distributed between individuals and artefacts (see Gluch, 2009 who follows the work of Nicolini, 2012 and Gherardi, 2009). Practice is understood as the emergent and collective actions of “knowing how to align humans and artefacts within a socio-technical ensemble and therefore knowing how to construct and maintain an action-net, which is interwoven and deployed so that every element has

a place and a sense in the interaction” (Gherardi, 2009, p. 117). Although practice theory sets the emphasise on *practices* as the main analytical access to understanding social and organisational phenomena, this conceptual lens reveals that behind every practice there is the work and efforts of someone to be uncovered (Nicolini, 2012). Hereby, the conceptual lens of practices allows studying and understanding how interactions between actors and artefacts can shape, impact, and transform (professional) identities and roles in a specific social and organisational context (see also Gluch, 2009).

The practice lens has proven highly fruitful for my dissertation project for three main reasons. First, a practice lens reveals how the social and material are entangled, allowing to conceptualise practices of project architects as situated and embodied, interwoven with the materiality of building processes, as well as at the interface between routine and creativity. Second, connected to this, practice theory contributes to the dissolving of the Cartesian understanding of architecture and is thus productive when exploring the material making of the built environment. Finally, applying this lens has enabled me to understand architects’ roles and identities not as something stable and pre-defined, but as something that is maintained, re-constructed, and negotiated through everyday interactions, through talk and action, and thus inherently interwoven in social processes (Gluch, 2009).

3.3 Intermediaries: Key *in-between* actors

The concept of intermediaries is also known under other names, including third parties, bridgers, brokers, middlemen, or superstructure organisations (Howells, 2006, p. 715, cited in Fischer & Guy, 2009). The concept is not new and there is no common conceptual understanding or an agreed definition of what intermediaries actually are (Moss et al., 2009; Grandclément et al., 2015). One of the most often used definitions describes intermediaries as actors (or organisations) who “work in-between, make connections, and enable a relationship between different persons or things” (Moss et al., 2010, p. 5). In the field of economic geography, the concept of intermediaries could refer to actors who assume the role of ‘brokering’ between different parties, of

‘bridging’ interests and locations (Rantisi, 2014; Wood & Phelps, 2018). Other scholars mobilise the work of Callon, who suggests that “an intermediary is anything passing between actors which defines the relationship between them” (1997, p. 134 cited in Medd & Marvin, 2008). Across the different disciplines, intermediaries can refer to individual actors, organisations, network, institutions, etc., and might assume different forms (Moss et al., 2009). Thus, for instance, in scholarship on the built environment a wider group of actors could assume the roles of intermediaries – planners and design team members, installers, regulators, and building managers among others (Grandclément et al., 2015). Considering the heterogeneity of this group of actors, it is more crucial to define not who they are but *what* they do (ibid.), meaning that the character of work that an actor performs is what constitutes them as intermediaries (Moss et al., 2009).

According to Beveridge & Guy (2009) the task of intermediaries is to translate between actors in settings, characterised by unstable relationships and difficult decision-making processes. In this course, intermediaries seek to translate in a way, so that interactions are more effectively co-ordinated, controlled, or articulated (Kaghan & Bowker, 2001). Their work is hereby never neutral, or arbitrary, rather it actively shapes relationships (Medd & Marvin, 2008; Moss, 2009). At the same time, the work of intermediaries is often considered to be hidden and invisible, and as such, intermediation tends to blur the boundaries between clear-cut responsibilities (Grandclément et al., 2015). This further emphasises the *in-betweenness* that defines the arenas of intermediaries’ actions. Yet, as argued by Medd and Marvin (2006), grasping intermediaries merely as in-between agents is insufficient, as almost everything is somehow in-between. According to Marvin and Medd the work of intermediaries is characterised by the *intentionality* behind it, as intermediaries are “deliberately positioned to act in between by bringing together and mediating between different interests” (2004, p. 84). In sum, what defines the work of intermediaries is not only the articulation but the pursuit and deliberate actions towards achieving particular goals and objectives (Fischer & Guy, 2009).

By drawing on the concept of intermediaries, the dissertation seeks to conceptualise the particular role architects assume in design and construction processes. Traditionally,

architects acquire the role of translators and mediators between clients and contractors (Samuel, 2018), as well as of coordinators in the wider value chain behind a specific project. Furthermore, in the context of international projects, architects often need to bridge between project partners worldwide and thus across different places. At the same time, the role and responsibilities of architects are continuously shaped by the pursuit and deliberate actions towards competing goals and values, and contradicting professional identities (Bos-de Vos et al., 2016; Ahuja et al., 2017). For one, architects consider themselves safeguards of artistic value (Styhre & Gluch, 2009). For another, they assume the responsibility for more mundane project tasks, such as meeting cost, quality, and time targets (Cohen et al., 2005; Sage & Dainty, 2012).

This state of *in-betweenness* can be well explored during the middle years of architects' professional development that are characterised by high levels of ambiguity (see Cuff, 1991), not least due to their transitional position at the interface between artistic and bureaucratic and/or technical tasks. By conceptualising project architects as intermediaries, I seek to grasp their role on-the-ground and more specifically how they negotiate between various, potentially differing tasks and responsibilities, and how they operate between different locations and disciplines. Hereby, I argue that project architects, employed in renowned, global architectural firms have the capacity to assume the key roles of *in-between* agents in the material making and becoming of design-ambitious building projects.

4 Methodology and acquiring the data

The main research question for this dissertation has emerged out of the interdisciplinary research project “Large-scale Projects as Innovation Drivers in the Construction Industry” (further referred to as InnoBau project), funded by the City of Hamburg over a period of 3,5 years (duration: 2017–2020). Yet, the dissertation has its own clear research and thematic focus. For one, as outlined in the previous section, the dissertation is interested in the routines, creativity, initiative, and individual performance behind project architects’ everyday professional activities. For another, the dissertation explores how project architects are embedded in the wider *network of relationships and interactions* with other professionals and material objects, networks, which are required for the materialisation of the built environment. By doing so, the dissertation seeks to elucidate the on-the-ground practices of project architects and thus the often hidden work and invisible efforts behind the becoming of (global) architecture.

As outlined in the previous section, practices are complex and dynamic, being inherently interconnected. Considering this, it would be hard to reduce them to standardised data, meaning that quantitative methods would not be sufficient to research and grasp the practices project architects enact on-the-ground, how these are constituted and embedded in different socio-material settings. Conversely, qualitative methods allow researchers to re-construct complex social activities, situations, and processes, in order to grasp them in-depth. A qualitative approach opens up space for interpretation, in order to take into account and analyse different perspectives, as well as to integrate one’s own reflections (Gläser & Laudel, 2009). In order to gain an understanding of how project architects’ operate on-the-ground on a daily basis and to what end, I have chosen as a main research method qualitative interviews, more specifically, semi-structured interviews with narrative character. In particular, this type of interviews allows the researcher to confront interview partners with complex questions, as well as provide space for interviewees to respond with detailed story-telling (ibid.), which is indispensable for the research goal.

The dissertation draws on two different, interrelated sets of empirical material. The main set of data (see 4.1) has been gathered independently from the research framework of the InnoBau project. Hereby the explicit focus is set on project architects operating in an international context. Their on-the-ground practices are explored and analysed not in the context of specific projects but in the context of two global architectural firms. The secondary set of data (see 4.2) has been acquired and analysed as part of the InnoBau project, with a specific focus on the practices enacted by architects in the context of four large-scale construction projects.

In the following sub-sections, I will elaborate in more detail how the different sets of data have been acquired, analysed, and made productive for the aims of the dissertation.

4.1 Entry point *Firms*: Setting the focus on architects' international practice

The main focus of the dissertation is set on the practices of the wide and heterogenous group of *project architects*, employed in global architectural firms. As previously outlined, project architects are defined as mid-career professionals who despite their potentially different professional status, have gained sufficient experience, skills, and expertise beyond the design stage. This group includes mainly generalists, overseeing a project from draft to execution, which refers to architects' usual professional development, but also specialists with “esoteric knowledge [...] outside an architect's traditional training” (Blau, 1984, pp. 36–37). For pragmatic reasons, I have concentrated on a group of professionals with at least 5 years of professional experience.

The access to this group of professionals has been enabled by approaching two different architectural firms. Exploring architectural offices allowed looking closely at architects' “habitual, customary, or routine” practices (Cuff, 1991, p. 4), namely at the variety of professional activities performed on a daily basis. It is within the architectural firm that the ‘culture of practice’ (Cuff, 1991) is further formed and the socialisation of professionals continued. Within the firm architects internalise shared meanings, routines, and values, skills and understandings, which eventually become embodied

practices in sense of self-evident modes of activity (ibid., see also Grubbauer & Steets, 2014). Exploring project architects' routinised behaviour through the lens of the *firm* allowed grasping in-depth how their practices are constituted, enacted, and further developed on-the-ground. Moreover, by setting the focus on the firm allows exploring how project architects operate in the context of a wide range of building projects that vary in their type, purpose, and location.

For the purposes of the dissertation the focus has been set on two global architectural firms, involved in building projects worldwide and led by so-called 'global architects' (in line with Don McNeil's definition). For pragmatic reasons, the chosen firms are both based in the German-speaking region, yet they also have (permanent) branch offices located in key global cities in the United States and in Asia. Following Coxe et al.'s (1987) systematisation of architectural firms (according to how these are organised), one of the firms is more easily categorised as a 'strong-idea' firm, whereas the other one can be considered as a 'strong-service' firm. Thus, for instance, the chosen 'strong-idea' firm is often celebrated and awarded for innovative, custom-made, and cutting-edge designs. The 'strong-service' firm has established itself as experienced and reliable partner in specific, complex assignments, e.g., stadiums, airports, being able to provide comprehensive services⁶.

The chosen firms share three main characteristics, which were important selection criteria. *First*, both firms enjoy high levels of public and peer recognition (in the form of architectural awards and numerous articles in established architectural journals). The firms are visible and influential in the architectural professional discourse, not least due to the fact that their work is often part of architectural curricula and the design principals of both firms are/were holders of teaching positions in renowned architectural schools. *Second*, both firms are significant in their scale – with ca. 420 and more than 500 employees respectively. Thus, the firms represent the significant transformation of

6 This categorisation emerges from the field of management studies and refers mainly to organisation according to firm structure. Conversely, Cuff (1999, p. 80) argues that most architectural firms are rather organised around the projects at hand. For instance, firms can equally engage in the making of less ambitious projects, namely the 'bread-and-butter' work paying the rent, as well as in prestigious commissions.

the architectural practice, namely its consolidation into large firms that have expanded their dominance, by undertaking the majority of international projects (see Cuff, 2014). This shift becomes even more interesting, considering that traditionally firms renowned for innovative and cutting-edge design have been associated with smaller offices, whereas larger ones were considered bureaucratic, which limits the creative capacity of their employees (Blau, 1984). *Last but not least*, both firms are successful in obtaining commissions for ‘iconic’ projects – producing architecture with aesthetic and symbolic value is set as a main professional goal. As a result, the portfolio of both firms is characterised by a significant number of ‘supra-designed’ building projects realised across the globe, often for the purposes of culture, sport, and leisure (including football stadiums, museums, operas, etc.).

Considering their celebrity status, close connections to powerful private clients as well as city administration, and thus the access to prestigious projects, the two firms represent an exception in the architectural field (Till, 2013). The firms have been chosen as ‘extreme case studies’ (Flyvbjerg, 2006) of architectural professional practice that allow gaining “exemplary knowledge” (Thomas, 2011, p. 515) of project architects’ explicit routines and codified strategies, their implicit know-hows and unarticulated assumptions and views. Furthermore, extreme case studies enable in-depth insights into project architects’ intentional and habitual behaviour, into their non-routine actions, into how they cope with the irregularities and challenges of professional firm activities, and how they interact with project partners during different phases. This approach “offers a rich explanatory narrative” and “a close-up view of the complexities and contradictions in [...] situations as they unfold in practice” (Ahuja et al., 2017, p. 5).

Following a snowball principle, 18 interviews were conducted⁷ with project architects, occupying different professional status, testifying to the heterogeneity of this group – the titles included ‘senior architect’, ‘chief architect’, ‘project director’, or ‘associate’ (for an overview of the interview partners see **Paper 1**, Table 1, p. 8). Different drafts of the interview questions guide were discussed with the supervisors and colleagues at the

7 All interviews but one have been recorded and transcribed verbatim.

Chair of History and Theory before its finalisation. The analysis of the conducted interviews followed a qualitative content analysis method (Gläser & Laudel, 2009). Hereby, the gained data was analysed through an iterative process, with multiple rounds of interpretation informed by concepts gained through the literature review. In this course, a set of 44 codes was developed partly inductively, partly theoretically, after an initial literature review and a preliminary data analysis, followed by multiple steps of re-coding with new inductively developed codes. The extensive data provided the background for the two out of the five published texts (see **Paper 1** and **Paper 5**). The specific methodological approach has been explained more in-detail in the respective texts.

Interim results in the process of analysis and interpretation were validated through (1) peer debriefing, including exchange and discussion with both supervisors and other colleagues during internal meetings and during the Forschungskolloquium (an in-house colloquium for peer exchange at the HafenCity University), and through (2) expert validation in the form of presentations at international conferences⁸ and an extensive double-blind peer-review process. Hereby, it is crucial to mention that the constructive feedback and comments by the respective journal editors and the anonymous reviewers were highly fruitful and contributed significantly to the final, published version of the papers. Finally, my personal disciplinary background as an architect (with professional experience in an architectural firm) and the fact that I myself have been socialised with similar values and in the specific architectural professional culture, enabled an informed insight into the interview material and an in-depth and differentiated understanding of the interviewees' statement.

8 Interim results of the research process were presented over the years at different international conferences, including the Conference of the Society for the Advancement of Socio-Economics (SASE) in 2020 (Session on “Professions and Professionals in a Globalizing World”), the 14th Conference of the European Sociological Association (ESA) in 2019 (Session on “Sociology of Professions”), the Association of American Geographers Annual Meeting (AAG) in 2019, and the Workshop “Inkorporierte Anforderung, intrinsische Motivation oder externer Zwang? Praktiken des Umgangs mit Mobilitätsanforderungen in der Arbeitswelt” in 2018, at the University of Bremen.

4.2 Entry point *Projects*: InnoBau research project and the initial set of data

The specific organisational and working context of construction projects has been pivotal to the understanding how project architects operate on a daily basis and what practices are enacted in this course. The InnoBau research project enabled in-depth insights into the planning and execution of six different large-scale construction projects. These projects were approached with the well-known and often employed qualitative method of in-depth case study research, applying hereby a multiple-case design. The sampling was based on their location (all in Germany) and on the point of their completion (all projects were completed over the last 17 years). These criteria were chosen due to the pragmatic concern of the comparability between the cases. All characterised by outstanding features, the six projects were categorised in three sub-groups (each consisting of two projects) that referred to a specific innovation theme:

- (1) ‘iconic structures’ (two high-rise buildings characterised by exceptional design);
- (2) ‘technical structures’ (two bridges characterised by their award-winning structural engineering design and concept);
- (3) ‘complex structures’ (railway station and metro line, combining both architectural and technical characteristics and thus showcasing a significant degree of system complexity).

For the purposes of this dissertation, four out of the six cases proved relevant (Group 1 and 3), as those referred to projects, in the course of which architectural firms were involved. In the context of the InnoBau project, the data was mainly acquired through semi-structured interviews with narrative elements. The interview partners were identified through analysis of newspaper and professional architectural and engineering magazine articles, desktop research, and telephone inquiries. The access to further interviewees was made possible through the principle of snowballing. In total, 86

interviews⁹ were conducted with a broad range of professionals and key project actors across different disciplines, including architects¹⁰, engineers¹¹, project managers consultants, and client representatives. Although the focus of the interviews was set on how innovation takes place, a broad range of insights were enabled, for instance, into how the projects were organised, what challenges were encountered and overcome, and what the learning processes were. Moreover, a large number of the interviews provided an in-depth account of the professional practices and working approaches of project architects, of how they operated on-the-ground, what knowledge, expertise, and skills they mobilised, as well as how they collaborated with project partners from different disciplines and firms.

To address the research questions, a total of 41 interviews with 52 professionals has been selected from the initial set (32 of these were individual interviews, nine were with two or three interview partners). The research project enabled the contact to a heterogeneous group of architects, occupying different positions within the project and the respective firm (from design principals to senior partners and junior architects), with different professional profile (both generalist and specialists), and working in different project stages. Interviews with this broad group of professionals provided in-depth insights into the working practices of project architects either at first hand or as a reflection.

Additionally, in order to gain a more differentiated and holistic grasp of architects' practices, the focus was not reduced merely to the architect as an interview partner.

9 With the exception of one, all interviews were recorded and transcribed verbatim. The majority of the interviews were conducted face-to-face, a handful as telephone interviews.

10 Responsible both for design and execution stage, the large majority of architects were generalists, yet, a few have also chosen to specialise in a certain field, e.g., parametric design, façade planning.

11 Similar to the architects, the interviewed engineers assumed the responsibility for both the planning and execution stage. Thus, the engineers commissioned already in the design phase were often in the role of structural engineers, whereas engineers commissioned in execution phase assumed the tasks and responsibilities of the (general) contractor and the different sub-contractors.

Interviews with architects’ direct project partners (including structural engineers, representatives of the general contractor, various subcontractors, construction managers, as well as one artist) were regarded as almost equally relevant for the dissertations’ aims. By exploring a heterogeneous group of professionals, the focus was set on individuals from multiple ‘communities of practices’ (Wenger, 1999). This allowed employing a cross-sectorial perspective on professional practices within the planning and building industry that still represents a significant lacuna (Sage, 2013; Grubbauer, 2015a). Furthermore, this cross-sectorial perspective combined with the multiple case approach served as a quality control measure, allowing for the triangulation of the rich empirical data base and more specifically of the statements of the project architects, when referring to their working approaches and the set of skills, knowledge, and expertise they enact in the specific context (Flick, 2016).

Table 1. Overview of the interview partners as distributed across the case-studies.

Projects	Architects	Engineers
‘iconic structure’ 1	8	14
‘iconic structure’ 2	3	5
‘complex structure’ 1	2	9
‘complex structure’ 2	2	6

Table 2. Overview of specific professional information of the interview partners.

Profession	Generalists	Specialists	Design stage	Execution stage	Both project stages
Architects	12	3	1	2	11
Engineers	15	19	1	18	15

The analysis of the acquired data for the purposes of this dissertation follows Gläser and Laudel’s qualitative content analysis method (2009). An extensive set of 70 codes has been previously developed, partly inductively, partly theoretically, in the context of the

InnoBau project, followed by an initial coding of the whole material using MaxQDA. The development of the code set as well as the coding process were conducted collaboratively in the interdisciplinary team of the responsible research scholars¹². The **Chapter** on professional cultures, **Paper 3**, and **Paper 4** are developed and written based on the data from the InnoBau project. The data for these texts was analysed through an iterative process, with multiple rounds of interpretation, informed by concepts gained through the literature review, as well as multiple steps of re-coding with new inductively developed codes. The specific methodological approach has been explained more in-detail in the respective texts.

Crucial for the analysis was the frequent exchange with my co-authors and regular discussion of interim results. The texts were furthermore subjected to expert validation either at an international conference or through an extensive double-blind, peer-review process. Thus, for instance, an initial draft of **Paper 4** was presented at the 35th Colloquium of the European Group for Organizational Studies (EGOS) in 2019. The productive suggestions and comments we received were taken into account while developing a draft of the paper that was later submitted to the *Archnet-IJAR Journal*. The constructive double-blind peer-review process contributed to the final, published version of the paper. Similarly, a first draft of the chapter on professional cultures was subjected to an internal peer-review process. As a result, the text was revised and largely re-written, working out in this process more clearly the main theoretical contributions of the chapter and clarifying the research focus. Beforehand, first conceptualisations and a potential structure have been discussed elaborately within the research group of InnoBau.

¹² Besides architecture, the other three disciplines included structural engineering, economic geography, urban planning, and innovation management.

5 Published Work

The five publications following represent four research papers and a chapter in an edited volume¹³ that have been developed and published over the course of five years (2018 – 2023), building up the core of this paper-based dissertation. The main challenge of a paper-based dissertation is to write standalone papers that on the one hand, are autonomous in their content and contribution and on the other hand, build up together a coherent whole and a finished narrative. Considering that the papers draw on the same conceptual framework, follow the same methodological approach, and are based on a restricted set of interview data, some repetition of key theoretical concepts and empirical evidences throughout the five texts has been inevitable.

5.1 Overview of the publications

The **first paper**, titled “*Construction as a ‘building event’: exploring the role of project architects and their practices of intermediation during the construction of global architecture*”, is a single-authored work, published in the peer-reviewed journal *Social & Cultural Geography*.

The **second text**, titled “*Large-scale projects as ‘arenas’ for interaction: negotiating professional cultures of architects and engineers*”, is a book chapter published in “*Constructing innovation: How large-scale projects drive novelty in the construction industry*”, an edited volume of the series ‘Perspectives in Metropolitan Research’, published by Jovis. This text is a collaboration with my supervisor Prof. Dr. Monika Grubbauer and our colleagues from the Structural Engineering Department Johanna Ruge and Prof. Dr.-Ing. Annette Bögle and has been developed in an editor- and a peer-review process.

The **third paper**, “*Models, mock-ups and materials: artefacts of collaboration in the planning of large-scale construction projects*”, has been published in the peer-reviewed

¹³ All four papers have been subjected to double-blind peer-review process, the chapter has undergone an editor-review process.

journal *Building Research & Information*. My colleague Johanna Ruge and I share the first authorship. The paper is also co-authored by Prof. Dr. Monika Grubbauer and Prof. Dr.-Ing. Annette Bögle.

The **fourth paper**, entitled “*The Icon as a Collaborative Performance: Non-Standard Solutions, Invisible Work and Networks of Trust in the Construction of the Elbe Philharmonic Hall, Hamburg*” has been developed and written in a collaboration with my supervisor Prof. Dr. Monika Grubbauer. The paper is published in the peer-reviewed journal *Archnet-IJAR: International Journal of Architectural Research*.

The **fifth** and final paper, entitled “*Internationalization of the architectural practice: Mobilizing dependence to secure and enhance (relational) autonomy on the construction site*” is single-authored work, published in the peer-reviewed sociological journal *socio.hu* in the special issue on “The sociology of architecture: Theory, methods and subjects”¹⁴.

5.2 Contents, contributions, and analytical connections

Paper 1 introduces the concept of *intermediaries*, revealing project architects as key in-between actors, who have the capacity to bridge between the processes of making up and making real. The main contribution of the paper is the conceptualisation of the active and embodied practices, namely the practices of *persuasion*, *tuning in*, and *supervision*, that project architects enact in the course of construction. By introducing the conceptual lens of practices of intermediation, the paper explores how (global) architecture takes its physical form, suggesting that not only architecture (see Jacobs, 2006) but as well construction is a *building event* and an embodied, dynamic *performance*. Hereby, the paper builds on existing research from the field of critical geography of architecture and adds to “the practical and effective or “non-

14 The paper refers on multiple occasions to the work of Imrie and Street (2014), “Autonomy and the socialisation of architects”, published in the *The Journal of Architecture*. Yet, the version that I have used and cited in my paper is not the journal version (as cited in the reference list) but the accepted version of the paper by Imrie and Street, which is to be accessed under: <https://centaur.reading.ac.uk/37904/1/Autonomy%20August%20pre-journal%20format%20accepted.pdf>

representational” import of architecture” (Lees, 2001, p. 51). The paper reveals how practices of intermediation are enacted and constituted by engaging actively with the materiality of design ideas and by shortening the distance to the processes, sites, and different actors of materialisation, while undertaking numerous small-scale travels. Through the lens of practices of intermediation global architecture and its making become tangible on a micro-geographical level, beyond mere symbolic and aesthetic features. In particular, the construction of global architecture is revealed as the *situated process* of the continuous negotiation between design-driven aspects, the allegedly mundane project reality (due to time schedules and cost targets), and the specific contingencies of the local site. Furthermore, the paper shows how during construction project architects, in their role as intermediaries, can partially overcome the cognitive dissonance between design knowledge and execution expertise, and formal boundaries, defined by contracts, regulatory framework, and organizational hierarchies, negotiating and (re-)constructing hereby their role and agency. The chosen *firm* lens thus enables insights into project architects’ both intentional behaviour and non-routine actions, into how they cope with everyday challenges, and into how they interact with execution partners.

The book chapter provides a more broad overview of the on-the-ground practices of project architects. By building upon the seminal work from the field of sociology of professions (e.g., Larson, 1979; Abbott, 1988; Grey, 1994; Evetts, 2003), the chapter explores the different values, beliefs, motives, and meanings professionals internalise throughout their education and how these shape and define their on-the-ground practices and future collaborations with other built environment professionals. More specifically, the chapter is interested in architects’ collaborations and everyday interactions with engineers, who are often perceived as the eternal antipode of the ‘creative’ and ‘autonomous’ architect-hero, due to a contradictory socialisation tradition. To secure an in-depth and differentiated analysis of architect’s practices, the chapter employs a cross-sectorial perspective, by setting the focus on individuals from different ‘communities of practices’ (Wenger, 1999), exploring architects and engineers as equal partners that contribute alike to a project’s success. Furthermore, by employing a *project* perspective, the chapter sets a specific focus on projects as social settings, as ‘arenas’ for the

interactions between different parties, which sheds light on how professionals' practices develop and evolve. Thus, the practices of project architects are at all time explored *in relation* to the practices of their partnered engineers. This enables a differentiated and holistic view of how the practices of project architects are *constituted* and *enacted* on a daily basis through the continuous negotiation of conflicting professional cultures. More specifically, the paper reveals how professionals continuously and coincidentally oscillate between *maintaining and dissolving their professional cultures*. The chapter hereby analyses how architects actively and consciously expand their scope of skills and knowledge, challenge embodied approaches and internalised working dynamics, and question pre-set division of roles, tasks, and responsibilities.

Paper 3 builds on the main focus of the **Book Chapter**, by dealing further with interdisciplinary collaborations, yet, from a different point of view. In particular, the paper explores the collaboration between architects and engineers based on their work with various artefacts across different project stages. Building on the existing notions of boundary and epistemic objects (see Knorr Cetina, 2001; Ewenstein & Whyte, 2009; 2007; Nicolini et al., 2012), the paper introduces the concept of 'artefacts of collaboration', namely *specialised, communication, and shared artefacts*. Hereby, the paper follows the notion that in the social system of relations, agency is equally distributed between individuals and artefacts (Gherardi, 2009; Gluch, 2009). Hereby, the focus is not on singular practices but on how practices are embedded, made durable, and interconnected through the work with artefacts. Empirically, the paper adopts a cross-sectorial perspective, conceptually it applies a 'becoming' ontology (Chia & Holt, 2006) that enables the authors to explore the emergent nature of collaborations and how these unfold across disciplines and project stages. For one, the paper sheds light on the roles project architects and their engineering partners assume over the project course, while overcoming the cognitive dissonance between their differing disciplines. For another, the research findings reveal how professionals can circumvent contractual frameworks or the boundaries of a single project, to secure their partnership. In this course, through their active and intense interaction with different artefacts, project partners can overcome the design-construction divide that impedes collaboration in construction projects. These findings suggest that the deep-rooted division between

design and construction disciplines as well as between design and construction project stages is not rigid but dynamic and needs to be negotiated and questioned over the project course.

Paper 4 explores in-depth how project architects' practices are constituted and enacted on a daily basis and how these shape the production of the built environment by setting an explicit focus on a single project, namely Hamburg's most recent icon, the Elbe Philharmonic Hall. Theoretically, the paper is informed by the scholarship of critical geography of architecture, which is fruitful for two main reasons. First, this approach helps to contextualise the figure of the architect in a complex network of different contributors, de-mystifying the architect as an independent individual with pronounced professional autonomy. Similarly to the **Book Chapter** and **Paper 3**, this work applies a cross-sectorial perspective on the everyday practices, exploring how architects operate on-the-ground by looking into their collaborations and interactions with partners from the construction industry. More specifically, the paper explores how project architects, often through their practices of mobility, seek to build and sustain strong and trusting networks and partnerships with different sub/contractors and specialised execution firms. Second, through the lens of critical geography of architecture, the paper analyses the iconic project by moving the "beyond the symbolic" (Lees, 2001, p. 56), "to explore the ways that the built environment is shaped and given meaning through the *active and embodied practices* by which it is produced, appropriated and inhabited" (ibid., emphasis added). As a result, the research focus has been shifted from the building as 'already made', as a stable and homogenous artefact, to the building 'in the making'. Hereby, architects' practices are explored beyond the space of the design studio, but rather on the construction site and various manufacturing plants, while actively engaging in the materialisation process. The materialisation process is thus revealed as a creative and collaborative act. This is crucial for overcoming the prevailing Cartesian dichotomy between artistic design activities and presumably mundane construction exertion, and adds analytical depth to the understanding of architects' role and figure, beyond the myth of the autonomous and creative individual.

Paper 5 further explores architects' practices at the "intimate nexus between design intention and construction" (Deamer, 2020, p. 4). Similarly to the previous work, the article explores architects' activities beyond the design stage, without setting the focus on a specific project. Practices enacted during execution processes are seldom associated with the autonomous and creative capacity of architects, rather they are perceived as constrained, due to the dependence on the expertise and capabilities of builders and sub-contractors. By applying the conceptual lens of 'relational autonomy' (Imrie & Street, 2014), the paper reveals how architects can mobilise their inherent dependence on other disciplines and professionals in a creative manner, to unpack its productive capacity. The paper explores in-detail how project architects 'take care' of and nurture their partnerships with partners from the construction industry, in order to enhance their opportunities for a creative engagement and secure their involvement in processes that potentially exceed their professional jurisdictions. Additionally, the paper reveals how by embracing their dependence and the inevitable restrictions posed during the construction process, project architects can open up their practice, can exceed the boundaries of their professional field, to acquire new skills, expertise, and knowledge. Hereby, restrictions and contingencies can push architects to become inventive and creative beyond the design stage. The paper reveals that by embracing restrictions and contingencies during the construction process, project architects can secure a balance between their inherent pursuit of perfection and "the inescapable reality of the world" (Till, 2013, p. 2), to ensure the successful execution of complex and design-ambitious edifices in an international context. This paper has been an important milestone for developing the conceptual framework for **Paper 1** that by building on this work eventually conceptualises the three practices of intermediation.

6 Conclusion

The final section summarises and discusses the main findings and outlines key conclusions that have been reached throughout the five publications. Furthermore, the section reflects on the restrictions of the chosen research design, outlining potential trajectories for future research.

6.1 Discussion of the main findings

6.1.1 The intimate relationship between design and construction activities: dealing with the materiality of artistic visions

By conceptualising project architects as *key in-between actors* this dissertation has explored the enacted and embodied practices that are required for the making of design-ambitious global architectural projects. The published papers have illustrated and conceptualised how project architects operate during the *act of building*. Unlike global architects, who are dominant in design processes and negotiations with clients (McNeill, 2009), project architects participate actively in important decision-making processes concerning the construction of the design. Through their practices, project architects oscillate between the artistic guidelines of global architects and locally specific contingencies, balancing and negotiating between design aesthetics and what is feasible. Hereby, project architects engage in the processes of hybridisation and adaptation that are inherent to the making of global architecture (e.g., Faulconbridge, 2009; King, 2004; Tait & Jensen, 2007), actively co-shaping processes beyond the realm of design work.

By conceptualising project architects' role on-the-ground, the dissertation reveals the micro practices and the often invisible materiality behind knowledge mobility processes (see also Grubbauer, 2015a). As shown, project architects' practices are often constituted through the engagement with the haptic side of architecture, including the work with models, materials, and real-size mock ups. The enacted practices are characterised by the use of the body and in particular by being physically present in crucial moments of production. The corporeal involvement in construction processes requires *mobility* on behalf of the project architects in the form of travels between

temporary site offices, manufacturing plants of various execution partners, and construction sites. In particular, their on-the-ground practices are enacted by *going back and forth* between different locations, connecting hereby the material production with more conceptual work.

Through their practices project architects willingly cross the boundaries between what is considered conceptual work and the allegedly mundane construction work. Project architects could hereby develop more holistic profiles (Ahuja et al., 2017), as well as open up new spaces for individual performance, inventiveness, and initiative, allowing them to operate with high levels of sovereignty and creativity (Imrie & Street, 2014). In particular, by exceeding the boundaries of the design space, project architects could explore new informal opportunities for agency. By applying the conceptual lens of the *firm* (see 4.1.) the dissertation sheds light on the socialisation process taking place within the office of the global architect, revealing how through their embodied practices project architects overcome existing routines, negotiate formal boundaries, and (re-)construct their professional role and agency.

6.1.2 The intimate relationship between design and construction professional fields: collaborating across disciplinary boundaries

By adopting a cross-sectorial perspective (Sage, 2013; Grubbauer, 2015a), the dissertation has conceptualised the role of project architects in relation to other built environment professionals. This perspective reveals how project architects and their partners from engineering and construction firms often negotiate between contradicting values and aims. In this course, project architects often oscillate between maintaining and dissolving their professional culture. For one, they enact archetypical practices, to persuade their partners of their artistic visions. For another, project architects question their established routines, trying to see the project through the lens of their partners. Thus, by negotiating between aesthetic and technical project-specific objectives, project architects facilitate the rapprochement between design and construction disciplines, between the “cerebral, creative effort of architecture” and “the physical, monotonous, exertion of building” (Sage, 2013, p. 171).

The dissertation shows how project architects exceed established disciplinary boundaries and their domain of specific tasks and responsibilities. Hereby, project architects could gain a profound understanding of the challenges and restrictions other professionals face on a daily basis, an understanding that contributes significantly to the overcoming of the boundaries between these presumably opposing disciplinary fields. What is more, project architects could gain appreciation for the role and contributions of sub-contractors and builders who have remained less unacknowledged (see Lahdenpera, 2012). By gaining in-depth insights into the engineering and construction field, project architects could also strengthen their position vis-à-vis project partners (see Ahuja et al., 2017), facilitating smooth relationships between different parties. As a result, by operating across disciplinary boundaries, project architects could “take advantage of collective intelligence, and [...] share the risks and reward of co-authorship” (Deamer, 2020, p. 68).

While transgressing disciplinary boundaries through their embodied and enacted practices, project architects oscillate between formal and informal modes of project collaborations. The chosen *project* lens (see 4.2.) thus sheds light on the unfolding nature of collaborations, on how interactions and relations between parties emerge and develop over time and space (see Cicmil & Marshall, 2005), and more specifically over different project stages. For instance, project architects participate in processes from which they are officially excluded or commence partnerships with professionals from the construction industry before official procurement and commissioning processes. Hereby, project architects circumvent common contractual relations that rigidly separate design and construction phases (e.g., Deamer, 2020). By exploring new informal spaces for interaction and communication, project architects are actively co-shaping collaborations on-the-go, so that these could meet the specific project’s needs.

6.2 Key contributions to theory and practice

Based on the finding in the five publications, project architects’ practices can be conceptualised in two categories: *practices of protecting* (e.g., design-driven aspects, archetypical roles) and *practices of giving in* (e.g., to project restrictions, local

specificities, demands posed by the construction industry). Both types of practices are set at the interface between design and construction, artistic and manual, between creative knowledge and physical expertise. The described practices are not easily separable from one another and usually take place at the same time, meaning that over the course of construction project architects need to *oscillate* between protecting and giving in. This negotiation process is a productive one, as it allows project architects to remain flexible and inventive beyond the design phase, to open up their professional practice to new knowledge, perspectives, and stimuli, and at the same time to make sure that artistic guidelines and visions are understood by project partners, particularly from the construction industry.

This conceptualisation of project architects' practices reveals that the making of (global) architecture is not a linear processes. The dissertation allows to grasp architectural projects through a becoming rather than a being ontology (Chia & Holt, 2006), namely not as ready products but as always in the making. Considering this, there are three main conclusions that can be drawn: For one, just as “the separation of [...] mental and manual [...] is not always sharply drawn” (Lyon, 2013, p. 31), so are design and construction processes not easily separable from one another (see also Sage & Vitry, 2018). For another, connected to previous, construction is anything but mundane, rather it is a complex, many-layered process that evolves and transforms over the project course and equally requires a creative capacity. Finally, the different places of materialisation are arenas for the interactions and collaborations between design and execution professionals, where project partners can overcome disciplinary and jurisdictional boundaries and can (re-)construct their professional roles.

By shedding light on the supposedly more mundane side of architecture and the supposedly less glamorous aspects of architects' work, the dissertation moves beyond the “longstanding representationalist focus on the symbolism of buildings as sites of meaning” (Moran et al., 2016, p. 417). Hereby, the research contributes to a more holistic understanding of architectural and building practices and of their interconnectedness and thus to the field of critical geography of architecture. Moreover, by exploring and conceptualising architecture beyond the realm of the symbolic, the

dissertation re-positions the architect not as a superior but as an equal project partner in the wider context of human and non-human actors that actively shape the making of the built and urban environment. As a result, the dissertation opens up the black box of the figure of the global architect, adding more in-depth to geographical research on the internationalisation of architects' professional field. Last but not least, by combining debates from practice theory and knowledge mobility studies, the dissertation testifies that the transnational knowledge exchange connected to the making of the built and urban environment is not a *placeless* process but ever embedded in a locally specific, socio-material project context (see also Grubbauer, 2015a). Thus, the circulation and exchange of design and building knowledge is more than often facilitated and shaped by the overcoming of disciplinary and jurisdictional boundaries.

An in-depth understanding of project architects' on-the-ground practices sheds light on how (project) architects can impact, (re-)shape, and potentially steer the on-going transformation of their professional field. In particular, they can circumvent, in a rather informal manner, jurisdictional boundaries and contractual agreements. Considering this, it is crucial to critically question and reconsider the often antagonistic contractual relations and existing allocating and bidding regulations that challenge collaboration between designers and execution firms. More research is needed into the design of contracts that enable the involvement of design professionals in construction processes and vice versa, the involvement of construction firms in early design stages, while allowing professionals to have a say who to work with (see also Deamer, 2020). This matter becomes ever more pertinent due to the rise of software-based working methods and of requirements for the making of the built environment (e.g., sustainability criteria), which bring new challenges to the relationship between professionals across firms and project phases.

Furthermore, through their on-the-ground practices project architects could adopt more holistic professional profiles that facilitate the making of long-lasting interdisciplinary collaborations. There is need to rethink existing practices of academic socialisation and for more research into new forms of educational and vocational training that prepare architectural students more adequately for the challenges of their future professional

life. In particular, the focus needs to be set on more real collaborative project work that for instance brings together architectural students with craftspeople. It is moreover crucial to revise existing criteria for valuation and established mechanisms of professional recognition that celebrate merely the supposedly creative genius of few individuals (see Stevens, 1998). The acknowledgement and celebration of the interconnectedness between design and construction practice is key to the transformation within the academic sphere.

6.3 Research design restrictions and future research trajectories

Last but not least I would like to reflect on some research design restrictions that are inevitably part of one's research work and on how understanding these could open up new trajectories for future research.

First, it is crucial to broaden the chosen cross-sectorial perspective, beyond the focus on the interface between architects and other professionals, more often engineers. In particular, scholarly focus should be set on the collaboration with builders and construction workers, whose role and contribution have remained largely unacknowledged and less explored (e.g., Lahdenpera, 2012). Conducting interviews with these actors could be highly interesting considering their inherently different socialisation and working practices (e.g., Sage & Vitry, 2018). Such research focus could further illustrate and elaborate on the inherent interconnection between architectural design, craftsmanship, and construction work (e.g., Djabarouti & O'Flaherty, 2020) and how this interconnection largely impacts the built and urban environment.

Second, there is a need for more in-depth insights into the collaboration between global and local architects in the context of international projects (see Faulconbridge, 2009). As the conducted interviews show, local architects carry significant financial and legal responsibility being the licensed architects. At the same time global architects gain the public and professional recognition, while local architects remain invisible. Not

surprisingly, local architectural firms are growing reluctant in partnering with global architects due to high risk and low incentive of such collaborations. Further research could shed light on how the dominant presence of global architects on international markets impacts the local landscape of architectural firms and local architects' professional practice.

Furthermore, in terms of methodology, future research in the field should move beyond the common approach of conducting interviews, by adopting ethnographic methods, including participatory observations. Hereby, scholars could gain more profound understanding of construction activities and inform theoretically the understanding of the sector, its working practices, and problems, that have still remained under-theorised (Pink et al., 2013).

Last but not least, there is a need for a more differentiated perspective on the *mobility* of global architects. The concept of mobility has been important for the conceptualisation of project architects' practices, yet, the matter has not been explored sufficiently in this dissertation. Besides the hypermobility of starchitects that has been discussed and conceptualised in existing scholarship (McNeill 2005; 2009; Faulconbridge, 2009), there is a number of small-scale, less glamorous travels that are just as crucial for the making of global architecture. For instance, the interviews have shown that some projects architects are based mainly abroad and are responsible for the supervision of numerous projects in a specific country and thus travel between different construction sites. Conversely, other project architects are based merely at the global design studio and thus barely visit the local site. These different types of mobility have potentially different impact on the professional practice as well as on the processes of transnational knowledge exchange in the field of planning and construction, and are therefore worth further exploring and conceptualising.

References

- Abbott, A. (1988). *The system of professions: An essay on the division of expert labor*. University of Chicago Press.
- Ahuja, S., Nikolova, N., & Clegg, S. (2017). Paradoxical identity: The changing nature of architectural work and its relation to architects' identity. *Journal of Professions and Organization*, 4(1), 2–19.
- Amin, A., & Cohendet, P. (2004). *Architectures of knowledge: Firms, capabilities, and communities*. Oxford University Press.
- Awan, N., Schneider, T., & Till, J. (2011). Spatial Agency. Other Ways of Doing Architecture. In *Spatial Agency: Other Ways of Doing Architecture*. Routledge.
- Beveridge, R., & Guy, S. (2009). Governing Through Translations: Intermediaries and the Mediation of the EU's Urban Waste Water Directive. *Journal of Environmental Policy & Planning*, 11(2), 69–85.
- Blau, J. (1984). *Architects and Firms: A Sociological Perspective on Architectural Practice*. MIT Press.
- Bos-de Vos, M., Wamelink, J. W. F. H., & Volker, L. (2016). Trade-offs in the value capture of architectural firms: The significance of professional value. *Construction Management and Economics*, 34(1), 21–34.
- Burr, K.L. & Jones, C.B. (2010). The role of the architect: changes of the past, practices of the present, and indications of the future. *International Journal of Construction Education and Research*. 6 (2), 122-138.
- Butzin, A., & Rehfeld, D. (2013). The balance of change and continuity in the German construction sector's development path. *Zeitschrift Für Wirtschaftsgeographie*, 57(1–2), 15–26.
- Bygballer, & C. Harty (Eds.), *The Connectivity of Innovation in the Construction Industry* (pp. 52-67). Routledge.

- Cayer, A. (2019). Shaping an Urban Practice. *Journal of Architectural Education*, 73(2), 178–192.
- Charney, I. (2007). Intra-metropolitan preferences of property developers in greater Toronto's office market. *Geoforum*, 38(6), 1179–1189.
- Chia, R., & Holt, R. (2006). Strategy as Practical Coping: A Heideggerian Perspective. *Organization Studies*, 27(5), 635–655.
- Christman, J. (2004). Relational Autonomy, Liberal Individualism, and the Social Constitution of Selves. *Philosophical Studies*, 117, 143–164.
- Cicmil, S., & Marshall, D. (2005). Insights into collaboration at the project level: Complexity, social interaction and procurement mechanisms. *Building Research & Information*, 33(6), 523–535.
- Cohen, L., Wilkinson, A., Arnold, J., & Finn, R. (2005). 'Remember I'm the bloody architect!': Architects, organizations and discourses of profession. *Work, Employment and Society*, 19(4), 775–796.
- Coxe, W., Hartung, N., Hochberg, H., Lewis, B., Maister, D., Mattox, R., & Piven, P. (1987). Charting your course. In *Success strategies for design professionals: Superpositioning for architecture and engineering firms* (pp. 52–58). McGraw-Hill.
- Cuff, D. (1991). *Architecture: The story of practice*. MIT Press.
- Cuff, D. (1999). The political paradoxes of practice: Political economy of local and global architecture. *Architectural Research Quarterly*, 3(1), 77–88. Cambridge Core.
- Cuff, D. (2014). Architecture's undisciplined urban desire. *Architectural Theory Review*, 19(1), 92–97.
- Deamer, P. (2020). *Architecture and Labor* (1st Edition). Routledge.
- Deamer, P., & Ng, T. Y. (2019). Work. *Journal of Architectural Education*, 73(2), 138–140.

- Djabarouti, J., & O'Flaherty, C. (2020). Architect and craftsperson: Project perceptions, relationships and craft. *Archnet-IJAR: International Journal of Architectural Research*, 14(3), 423–438.
- Evetts, J. (2003). The Sociological Analysis of Professionalism: Occupational Change in the Modern World. *International Sociology*, 18(2), 395–415.
- Ewenstein, B., & Whyte, J. (2009). Knowledge Practices in Design: The Role of Visual Representations as 'Epistemic Objects'. *Organization Studies*, 30(1), 07–30.
- Ewenstein, B., & Whyte, J. K. (2007). Visual representations as 'artefacts of knowing'. *Building Research & Information*, 35(1), 81–89.
- Faulconbridge, J. (2009). The regulation of design in global architecture firms: Embedding and emplacing buildings. *Urban Studies*, 46(12), 2537–2554.
- Faulconbridge, J. (2010). Global architects: Learning and innovation through communities and constellations of practice. *Environment and Planning A*, 42(12), 2842–2858.
- Faulconbridge, J., & Grubbauer, M. (2015). Transnational building practices: Knowledge mobility and the inescapable market. *Global Networks*, 15(3), 275–287.
- Fischer, J., & Guy, S. (2009). Re-interpreting Regulations: Architects as Intermediaries for Low-carbon Buildings. *Urban Studies*, 46(12), 2577–2594. JSTOR.
- Flick, U. (2016). *Qualitative Sozialforschung. Eine Einführung*. Rowohlt Taschenbuch Verlag.
- Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, 12(2), 219–245.
- Fuerst, F., McAllister, P., & Murray, C. (2011). Designer buildings: Estimating the economic value of 'signature' architecture. *Environment And Planning A*, 43(1), 166–184.

- Gherardi, S. (2009). Introduction: The Critical Power of the 'Practice Lens'.
Management Learning, 40(2), 115–128.
- Gläser, J., & Laudel, G. (2009). *Experteninterviews und qualitative Inhaltsanalyse*. VS Verlag für Sozialwissenschaften.
- Gluch, P. (2009). Unfolding roles and identities of professionals in construction projects: Exploring the informality of practices. *Construction Management and Economics*, 27(10), 959–968.
- Gottschling, P. (2018). Architectural scripts: Construction procurement within the user worlds of building events. *Social & Cultural Geography*, 19(5), 626–646.
- Grandclément, C., Karvonen, A., & Guy, S. (2015). Negotiating comfort in low energy housing: The politics of intermediation. *Energy Policy*, 84, 213–222.
- Grey, C. (1994). Career as a project of the self and labour process discipline. *Sociology*, 28(2), 479–497.
- Grubbauer, M. (2015a). Circulating knowledge, marketization and norm-making: International developers and construction firms in Eastern Europe since 2000. *Global Networks*, 15(3), 288–306.
- Grubbauer, M. (2015b). Not everything is new in DIY: Home remodelling by amateurs as urban practice. *Ephemera: Theory & Politics and Organization*.
- Grubbauer, M. (2019). Postcolonial urbanism across disciplinary boundaries: Modes of (dis)engagement between urban theory and professional practice. *The Journal of Architecture*, 24(4), 469–486.
- Grubbauer, M., & Steets, S. (2014). The making of architects: Knowledge production and legitimation in education and professional practice. *Architectural Theory Review*, 19(1), 4–9.
- Guggenheim, M. (2013). Unifying and Decomposing Building Types: How to Analyze the Change of Use of Sacred Buildings. *Qualitative Sociology*, 36(4), 445–464.

- Guggenheim, M., & Söderström, O. (Eds.). (2010). *Re-shaping cities: How global mobility transforms architecture and urban form*. Routledge.
- Gutman, R. (1988). *Architectural practice: A critical view*. Princeton Architectural Press.
- Gutman, R. (1992). Architects and power: The natural market for architecture. *Progressive Architecture*, 73(12), 39–41.
- Harris, A., & Moore, S. (2013). Planning histories and practices of circulating urban knowledge. *International Journal of Urban and Regional Research*, 37(5), 1499–1509.
- Harty, C. (2005). Innovation in construction: A sociology of technology approach. *Building Research & Information*, 33(6), 512–522.
- Healey, P. (2010). Introduction: The transnational flow of knowledge and expertise in the planning field. In *Crossing borders: International exchange and planning practices* (pp. 1–28). Routledge.
- Healey, P., & Upton, R. (2010). *Crossing borders: International exchange and planning practices*. Routledge.
- Horne, J. (2011). Architects, stadia and sport spectacles: Notes on the role of architects in the building of sport stadia and making of world-class cities. *International Review for the Sociology of Sport*, 46(2), 205–227.
- Howells, J. (2006). Intermediation and the role of intermediaries in innovation. *Research Policy*, 35(5), 715–728.
- Hoyt, L. (2006). Importing Ideas: The Transnational Transfer of Urban Revitalization Policy. *International Journal of Public Administration*, 29(1–3), 221–243.
- Hughes, W., & Stehn, L. (2019). Entrepreneurial innovation in the construction sector: overcoming process discontinuities in projects. In M. I. Havenvid, Å. Linné, L. E.

- Imrie, R. (2003). Architects' Conceptions of the Human Body. *Environment and Planning D: Society and Space*, 21(1), 47–65.
- Imrie, R., & Street, E. (2009). Regulating design: The practices of architecture, governance and control. *Urban Studies*, 46(12), 2507–2518.
- Imrie, R., & Street, E. (2014). Autonomy and the socialisation of architects. *The Journal of Architecture*, 19(5), 723–739.
- Jacobs, J. M. (2006). A geography of big things. *Cultural Geographies*, 13(1), 1–27.
- Jacobs, J. M. (2012). Urban geographies I. *Progress in Human Geography*, 36(3), 412–422.
- Jacobs, J. M., Cairns, S., & Strebel, I. (2007). 'A Tall Storey ... But, a Fact Just the Same': The Red Road High-rise as a Black Box. *Urban Studies*, 44(3), 609–629.
- Jacobs, J. M., & Merriman, P. (2011). Practising architectures. *Social & Cultural Geography*, 12(3), 211–222.
- Jencks, C. (2006). The iconic building is here to stay. *City*, 10(1), 3–20.
- Jones, P. (2009). Putting architecture in its social place: A cultural political economy of architecture. *Urban Studies*, 46(12), 2519–2536.
- Jones, P. (2011). *The sociology of architecture: Constructing identities*. University Press.
- Kaghan, W. N., & Bowker, G. C. (2001). Out of machine age?: Complexity, sociotechnical systems and actor network theory. *Journal of Engineering and Technology Management*, 18(3), 253–269.
- Kaika, M. (2010). Architecture and crisis: Re-inventing the icon, re-imag(in)ing London and re-branding the city. *Transactions of the Institute of British Geographers*, 35(4), 453–474.
- Kaika, M. (2011). Autistic architecture: The fall of the icon and the rise of the serial object in architecture. *Environment and Planning D*, 29(6), 968–992.
- King, A. (2004). *Spaces of global cultures: Architecture, urbanism, identity*. Routledge.

- Knorr Cetina, K. (1997). Sociality with Objects. *Social Relations in Postsocial Knowledge Societies. Theory, Culture and Society*, 14(4), 1–43.
- Knorr Cetina, K. (2001). Objectual Practice. In T. R. Schatzki, K. Knorr Cetina, & E. von Savigny (Eds.), *The Practice Turn in Contemporary Theory* (pp. 184–197). Routledge.
- Knox, P. L., & Taylor, P. (2005). Toward a geography of the globalization of architecture office networks. *Journal of Architectural Education*, 58(3), 23–32.
- Lahdenpera, P. (2012). Making sense of the multi-party contractual arrangements of project partnering, project alliancing and integrated project delivery. *Construction Management and Economics*, 30(1), 57–79.
- Larner, W. (2003). Neoliberalism? *Environment and Planning D: Society and Space*, 21(5), 509–512.
- Larner, W., & Laurie, N. (2010). Travelling technocrats, embodied knowledges: Globalising privatisation in telecoms and water. *Geoforum*, 41(2), 218–226.
- Larson, M. S. (1979). *The rise of professionalism a sociological analysis*. Univ. of California Press.
- Larson, M. S. (1993). *Behind the postmodern facade: Architectural change in late twentieth-century America*. University of California Press.
- Lees, L. (2001). Towards a critical geography of architecture: The case of an Ersatz Colosseum. *Ecumene*, 8(1), 51–86.
- Lipstadt, H. (2003). Can ‘art professions’ Be Bourdieuan fields of cultural production? The case of the architecture competition. *Cultural Studies*, 17(3–4), 390–419.
- Lobo, S., & Whyte, J. (2017). Aligning and reconciling: Building project capabilities for digital delivery. *Research Policy*, 46(1), 93–107.
- Lorne, C. (2017). Spatial agency and practising architecture beyond buildings. *Social & Cultural Geography*, 18(2), 268–287.

- Lyon, D. (2013). Ethnographic Research in the Construction Industry. In *The labour of refurbishment. The building and the body in space and time* (pp. 23–40). Routledge.
- Marvin, S., & Medd, W. (2004). Sustainable infrastructures by proxy? Intermediation beyond the production-consumption nexus. In *Sustainable Consumption: The Implications of Changing Infrastructures of Provision* (pp. 81–96). Edward Elgar.
- McCann, E. (2011). Urban policy mobilities and global circuits of knowledge: Toward a research agenda. *Annals of the Association of American Geographers*, 101(1), 107–130.
- McCann, E., & Ward, K. (2010). Relationality/territoriality: Toward a conceptualization of cities in the world. *Geoforum*, 41(2), 175–184.
- McCann, E., & Ward, K. (2012). Assembling urbanism: Following policies and ‘studying through’ the sites and situations of policy making. *Environment and Planning A*, 44(1), 42–51.
- McNeill, D. (2005). In search of the global architect: The case of Norman Foster (and partners). *International Journal of Urban and Regional Research*, 29(3), 501–515.
- McNeill, D. (2009). *The Global Architect: Firms, Fame and Urban Form*. Routledge.
- Medd, W., & Marvin, S. (2006). Ecology of intermediation. In K. Green and S. Randles (Eds) *Industrial Ecology and Spaces of Innovation* (pp. 238–251). Edward Elgar.
- Medd, W., & Marvin, S. (2008). Making Water Work: Intermediating between Regional Strategy and Local Practice. *Environment and Planning D: Society and Space*, 26(2), 280–299.

- Moran, D., Turner, J., & Jewkes, Y. (2016). Becoming big things: Building events and the architectural geographies of incarceration in England and Wales. *Transactions of the Institute of British Geographers*, 41(4), 416–428.
- Moss, T. (2009). Intermediaries and the Governance of Sociotechnical Networks in Transition. *Environment and Planning A: Economy and Space*, 41(6), 1480–1495.
- Moss, T., Guy, S., Marvin, S., & Medd, W. (2010). Intermediaries and the reconfiguration of urban infrastructures: An introduction. In *Shaping Urban Infrastructures: Intermediaries and the Governance of Socio-technical Networks* (pp. 1–13). Earthscan.
- Moss, T., Medd, W., Guy, S., & Marvin, S. (2009). Organising water: The hidden role of intermediary work. *Water Alternatives*, 2(1), 16–33.
- Nicolini, D. (2012). *Practice Theory, Work, and Organization. An Introduction*. Oxford University Press.
- Nicolini, D., Mengis, J., & Swan, J. (2012). Understanding the Role of Objects in Cross-Disciplinary Collaboration. *Organization Science*, 23(3), 612–629.
- Olds, K. (1997). Globalizing Shanghai: The ‘global intelligence corps’ and the building of Pudong. *Cities*, 14(2), 109–123.
- Olds, K. (2001). *Globalization and urban change: Capital, culture, and Pacific Rim mega-projects*. Oxford University Press.
- OMA, Koolhaas, R., & Mau, B. (1995). *SMLXL*. 010 Publishers.
- Orlikowski, W. J. (2007). Sociomaterial Practices: Exploring Technology at Work. *Organization Studies*, 28(9), 1435–1448.
- Peck, J., & Theodore, N. (2010). Mobilizing policy: Models, methods, and mutations. *Geoforum*, 41(2), 169–174.
- Pink, S., Tutt, D., & Dainty, A. R. J. (2013). *Ethnographic research in the construction industry*. Routledge.

- Pinnington, A., & Morris, T. (2002). Transforming the architect: Ownership form and archetype change. *Organization Studies*, 23(2), 189–210.
- Pont, G. (2005). The Education of the Classical Architect from Plato to Vitruvius. *Nexus Network Journal*, 7(1), 76–85.
- Ponzini, D. (2011). Large scale development projects and star architecture in the absence of democratic politics: The case of Abu Dhabi, UAE. *Cities*, 28(3), 251–259.
- Rankin, K. (2003). Anthropologies and geographies of globalization. *Progress in Human Geography*, 27(6), 708–734.
- Rantisi, N. M. (2014). Exploring the role of industry intermediaries in the construction of ‘Local Pipelines’: The case of the Montreal Fur Garment Cluster and the rise of Fur–Fashion connections. *Journal of Economic Geography*, 14, 955–971.
- Rapoport, E. (2015). Sustainable urbanism in the age of Photoshop: Images, experiences and the role of learning through inhabiting the international travels of a planning model. *Global Networks*, 15(3), 307–324.
- Reckwitz, A. (2002). Toward a theory of social practices: A development in culturalist theorizing. *European Journal of Social Theory*, 5(2), 243–263.
- Reckwitz, A. (2003). Grundelemente einer Theorie sozialer Praktiken. Eine sozialtheoretische Perspektive. *Zeitschrift für Soziologie*, 32(4), 282–301.
- Reckwitz, A. (2008a). Grundelemente einer Theorie sozialer Praktiken. In A. Reckwitz (Ed.), *Unscharfe Grenzen: Perspektiven der Kulturosoziologie* (pp. 97–130). Transcript.
- Reckwitz, A. (Ed.). (2008b). *Unscharfe Grenzen: Perspektiven der Kulturosoziologie*. Transcript.
- Ren, X. (2008). Architecture and national building in the age of globalization: Construction of the national stadium of Beijing for the 2008 Olympics. *Journal of Urban Affairs*, 30(2), 175–190.

- Rose, G., Degen, M., & Basdas, B. (2010). More on 'big things': Building events and feelings. *Transactions of the Institute of British Geographers*, 35(3), 334–349. JSTOR.
- Sage, D. (2013). 'Danger building site-keep out!': A critical agenda for geographical engagement with contemporary construction industries. *Social & Cultural Geography*, 14(2), 168–191.
- Sage, D., & Dainty, A. (2012). Understanding power within project work: The neglected role of material and embodied registers. *Engineering Project Organization Journal*, 2(4), 202–215.
- Sage, D., & Vitry, C. (Eds.). (2018). *Societies under Construction Geographies, Sociologies and Histories of Building*. Cham : Springer International Publishing : Imprint: Palgrave Macmillan.
- Samuel, F. (2018). *Why Architects Matter: Evidencing and Communicating the Value of Architects*. Routledge.
- Schatzki, T. R. (2001). Introduction: Practice theory. In T. R. Schatzki, K. Knorr Cetina, & E. von Savigny (Eds.), *The practice turn in contemporary theory* (pp. 1–14). Routledge.
- Schatzki, T. R. (2006). On organizations as they happen. *Organization Studies*, 27(12), 1863–1873.
- Sklair, L. (2006). Iconic architecture and capitalist globalization. *City*, 10(1), 21–47.
- Sklair, L. (2010). Iconic architecture and the culture-ideology of consumerism. *Theory, Culture & Society*, 27(5), 135–159.
- Stevens, G. (1998). *The favored circle: The social foundations of architectural distinction*. Cambridge, Mass.: MIT Press.
- Strebel, I. (2011). The living building: Towards a geography of maintenance work. *Social & Cultural Geography*, 12(3), 243–262.

- Styhre, A. (2017). Thinking about materiality: The value of a construction management and engineering view. *Construction Management and Economics*, 35(1–2), 35–44.
- Styhre, A., & Gluch, P. (2009). Creativity and Its Discontents: Professional Ideology and Creativity in Architect Work. *Creativity and Innovation Management*, 18.
- Tait, M., & Jensen, O. (2007). Travelling ideas, power and place: The cases of urban villages and business improvement districts. *International Planning Studies*, 12(2), 107–128.
- Tanner, A. N. (2018). Changing locus of innovation: A micro-process approach on the dynamics of proximity. *European Planning Studies*, 26(12), 2304–2322.
- Thiel, J., Dimitrova, V., & Ruge, J. (2021). *Constructing innovation how large-scale projects drive novelty in the construction industry*. Jovis.
- Thomas, G. (2011). A Typology for the Case Study in Social Science Following a Review of Definition, Discourse, and Structure. *Qualitative Inquiry*, 17(6), 511–521.
- Till, J. (2013). *Architecture depends*. MIT Press.
- Tombesi, P., Dave, B., & Scriver, P. (2003). Routine production or symbolic analysis? India and the globalisation of architectural services. *The Journal of Architecture*, 8(1), 63–94.
- Urry, J. (2004). Connections. *Environment and Planning D: Society and Space*, 22(1), 27–37.
- Villa, R. M. (2015). *Peggy Deamer, The Architect as Worker. Immaterial Labor, the Creative Class, and the Politics of Design*. Ardeth.
- Vriesema, M. A., & Kloosterman, R. C. (2022). Recapturing creative space in architectural design unravelling the production network of a young, innovative architectural practice in Rotterdam. *Creative Industries Journal*, 1–18.

- Wenger, E. (1999). *Communities of practice: Learning, meaning, and identity*.
Cambridge: Cambridge University Press.
- Whyte, J. (2015). Towards a new craft of architecture. *Building Research & Information*, 43(2), 263–265.
- Wood, A., & Phelps, N. (2018). Towards a geography of intermediaries. *Environment and Planning A*, 50(6), 1290–1294.
- Yaneva, A. (2005). Scaling up and down: Extraction trials in architectural design. *Social Studies of Science*, 35(6), 867–894.
- Yap, E. X. Y. (2013). The transnational assembling of Marina Bay, Singapore. *Singapore Journal of Tropical Geography*, 34(3), 390–406.

Published Work

Paper 1

Dimitrova, V. (2023). Construction as a ‘building event’: exploring the role of project architects and their practices of intermediation during the construction of global architecture. *Social & Cultural Geography*, 1–21. <https://doi.org/10.1080/14649365.2023.2253786>

Book Chapter

Dimitrova, V., Grubbauer, M., Ruge, J., & Bögle, A. (2021). Large-scale projects as ‘arenas’ for interaction: Negotiating professional cultures of architects and engineers. In J. Thiel, V. Dimitrova, & J. Ruge (Eds.), *Constructing innovation: How large-scale projects drive novelty in the construction industry* (pp. 176–193). Jovis.

Paper 3

Ruge, J., Dimitrova, V., Grubbauer, M., & Bögle, A. (2022). Models, mock-ups and materials: artefacts of collaboration in the planning of large-scale construction projects. *Building Research & Information*, 50(8), 881–893. <https://doi.org/10.1080/09613218.2022.2070451>

Paper 4

Dimitrova, V., & Grubbauer, M. (2022). The icon as a collaborative performance: non-standard solutions, invisible work and networks of trust in the construction of the Elbe Philharmonic Hall, Hamburg. *Archnet-IJAR*, 16(2), 434-450. <https://doi.org/10.1108/ARCH-03-2021-0058>

Paper 5

Dimitrova, V. (2021). The internationalization of architectural practice: Mobilizing dependence to secure and enhance (relational) autonomy on the construction site. *Socio.Hu Társadalomtudományi Szemle*, 10(SI8), 108–117. <https://doi.org/10.18030/socio.hu.2020en.108>