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RESEARCH ARTICLE

Marginalization and invasion of architects' role on house projects: Institutional intervention inadequacy and super wicked problems

Samuel Frimpong[a,*], Ayirebi Dansoh[b]

[a]Department of Building Technology, Kumasi Technical University, P.O.Box UP 41, KNUST, Kumasi, Ghana
[b]Department of Building Technology, Kwame Nkrumah University of Science and Technology, Private Mail Bag, Kumasi, Ghana

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Abstract
The design and construction of houses normally require an architect's input. However, architects are increasingly being marginalized in these projects, and their roles are constantly being invaded by others. Despite repeated institutional interventions toward remedying this phenomenon, signs are not abating. This article examines the complexity of this phenomenon to explain the inadequacy of institutional interventions to address the problem. This article conceptualizes the phenomenon of marginalization and role invasion as a super wicked problem with six key features. First, the problem has a difficult definition. Second, the solution involves a large structural and economic burden. Third, time is of the essence. Fourth, multiple stakeholders attempting to solve the problem are part of the cause. Fifth, institutional interventions addressing the issue are weak or ill-equipped. Sixth, institutional interventions discount the future irrationally. The implications of this conceptualization for institutional intervention and research are discussed.
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1. Introduction

The successful design and construction of houses require complex interactions between clients and professional service providers, such as architects, engineers, planners, and contractors (Lapidus, 1967; Siva and London, 2012). Despite the importance of each of these project actors,

*Corresponding author.
E-mail address: sfrimpong88@gmail.com (S. Frimpong).
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the architect has, for decades, traditionally played the role of master builder and head of the design team and is responsible for managing the project and the activities of different actors (Cuff, 1991; London et al., 2005). Essentially, the architect has been perceived as the "spiritual leader" of the project (Royal Institute of British Architects [RIBA], 2015a).

In the modern construction industry, however, this role is no longer "the exclusive domain of architects. Other disciplines have gradually encroached on the architect's core activities" (van Gulijk, 2009, p. 10). The Royal Institute of British Architects (RIBA) (2011) reported that architects, especially "small general practices" and individual architects "working for private clients with local builders" are facing an invasion of their traditional role from "non-architect[s]" such as contractors and draftsmen. Evidence suggests that clients are unwilling to fully employ architects on projects where they may not be mandatory (Frimpong and Dansoh, 2016; The Guardian, 2017). In response to this trend, architects have repeatedly attempted to remedy this situation at the institutional level. However, research (e.g., Oluwatayo, 2013; Oluwatayo et al., 2014a, 2014b; RIBA, 2005, 2011, 2015a, 2016a) reports different conditions that suggest that architects' institutional interventions have not been effective in dealing with the marginalization of architects and the invasion of their roles. The Architects' Journal [AJ] (2017a), for instance, reports that although the profession's authority has been in decline for a while, it "appears recently to have come to a head."

Against this backdrop, the current work explores the complexity of the problem by asking whether such is a "super wicked problem" (Levin et al., 2012).

Studies exploring architectural management challenges from complexity perspectives, such as wicked and ill-structured problems, are relatively old, beginning with Simon (1973) and Darke (1979). Since then, the momentum of such studies has slowed down (for a summary of such works, see Siva and London, 2012). Thus, contemporary studies are needed to offer a fresh perspective and deepen our understanding of the nature of problems in architectural management, which would enhance the validity and effectiveness of approaches toward managing the phenomenon of marginalization and role invasion. This study therefore extends the frontiers of existing studies on wicked problems in architectural management and supplements the literature on this topic.

By addressing the issue of marginalization and role invasion, this article contributes to the debate on a key issue, that is, "the diminishing role of architects" (AJ, 2017a), which affects architectural practice. Focusing on house projects, this work explores an issue affecting a large sector of the industry (RIBA, 2011; Siva and London, 2012).

The conceptual framework proposed in this study can be used to investigate the interactions of other project actors (e.g., contractor, engineer, and product developer) with clients as they may introduce diverse situations and challenges into the management of project actor relationships (Siva and London, 2012).

In this theoretical study, we first present a brief review of the phenomenon of marginalization and invasion of the architect's role in house projects with a historical perspective of the institutional interventions made toward understanding and resolving marginalization and role invasion. Then, the theoretical framework underpinning this study is presented, after which we propose our conceptual framework. Next, we examine a priori whether the phenomenon of marginalization and invasion of architects' role in house projects fits our definition of a super wicked problem. We do so by discussing examples from the broad literature and the literature specific to the client–architect relationship in house projects (predominantly those from the RIBA) to determine how they fit into each of the propositions of our conceptual framework. We end by presenting the implications of our conceptualization for research and practice.

2. Marginalization of architects and invasion of their role in house projects

Powell (1997) summarized the antecedents of the phenomenon of architects' marginalization and role invasion as follows:

> "During postwar reconstruction … about 1973, architects gave enhanced prominence to the [end-user client], relative to the [developer-client], a move associated with greater professional social responsibility at a time of redistribution of national wealth. In the period which followed to the present day, architects faced demand from [developer clients] who were increasingly concerned with the management of time, value and risk and who were also becoming skeptical of professionalism. In addition to these changes affecting demand for architects' services, competition from within and without the profession intensified."

Even before 1973, the increasing trend in marginalization and invasion of architects' role had become apparent (Allinson, 1993) because as far back as 1962, RIBA hinted of the potential for architects to lose their status in the construction market. Subsequent RIBA studies (1992 and 1993) revealed that the phenomenon of marginalization and role invasion was steadily gaining ground. Thus, while architects working in the housing sector formed the majority of the profession, "in terms of the value of construction they are in decline" (RIBA, 2011). The situation is not only limited to the UK but also prevalent in other European countries. In the Netherlands for instance, the Royal Institute of Dutch Architects argues that the professional relevance of architects is declining as they have now become one of the many professionals providing services to clients (van Gulijk, 2009, p. 10). A similar situation exists in France, prompting the Architects' Order to remind French Architects to "seriously think about the future and strengthen their profession" (van Gulijk, 2009, p. 10). Studies conducted in countries such as the USA (Gutman, 1988), Sweden (Gustafsson, 2007), Australia (Siva and London, 2012), and Ghana (Dansoh and Frimpong, 2016) confirm that this situation is rather pervasive. Currently, the phenomenon has reached a point in which non-architects in one-stop-shop service providers are taking over the traditional architects' market and their role (Dansoh and Frimpong, 2016; RIBA, 2011).

The literature review indicates that the phenomenon of marginalization and role invasion is the side effect of a number of factors that we group into three main categories, namely, architectural culture and education (AJ, 2017a; Cuff, 1991), the nature of the client-architect relationship (Cuff, 1991; Emmitt, 1999; RIBA, 1962, 1992; Siva and London, 2012), and changing economic and industrial conditions (AJ, 2017a; RIBA, 2015a).

2.1. Architectural education and culture

Over the years, the education given architects and the culture of professional practice have paved the way for a virtual disconnect between architects and their clients. With regard to education, the literature (e.g., AJ, 2017a; Cuff, 1991), reveals that the "formal academic training" given to architects makes them think that they "know best" and it is their ultimate responsibility to defend their professional values irrespective of the cost. This context may be the reason why clients have developed the perception that architects are arrogant, inaccessible, and unapproachable (Dansoh and Frimpong, 2016). The overall effect is that an architect's service has become a "devalued currency, seen as something willfully and expensively 'bestowed' on the ignorant masses" (AJ, 2017a).

Architectural culture or professional ethics generally prohibits architects from adopting regular forms of advertising used by other professions. Generally, this situation has led to an atmosphere in which clients have difficulty obtaining knowledge of the scope of architects' services and have a narrow range of options when deciding to employ architects on projects (Kolleeny and Linn, 2002; Oluwatayo et al., 2014b).

Another downside of architectural culture is that it places qualities such as the ability to "create arresting images and have compelling ideas, far above" everything else (AJ, 2017a). Thus, qualities such as the ability to "organise, manage, lead, collaborate, cost, master detail and adhere to evidence" are often downplayed (AJ, 2017a). The effect is that architects, too, in an attempt to fit in, pay excessive attention to the ability to design above everything else. Thus, in the area of costing and budgeting for instance, the profession has suffered a reputation for having insufficient regard for clients' budgets (AJ, 2017a), with a number of clients considering architects' pricing strategies as worrisome (Frimpong and Dansoh, 2016).

2.2. Nature of client-architect relationship

The nature of client-architect relationship, especially in house projects, has been described as "uncertain," "turbulent," and "difficult" (Chen, 2008; Emmitt, 2007; London and Chen, 2004; Sebastian, 2007; Siva and London, 2012).

Eriksson et al. (2008) suggested that although clients may see a cooperative and collaborative partnership with architects as a requirement for achieving project success, they are known to make project decisions that contradict this viewpoint. Extant literature (e.g., Bresnen et al., 2005; Fernie and Thorpe, 2007) suggests that clients often do not have the desire to share their power and control with others on the project. Additionally, they tend to have short-term outlook on projects (Vennström and Eriksson, 2010), making them develop the habit of frequently changing professional service providers (Eriksson et al., 2008).

Past investigations (e.g. Cuff, 1991; Emmitt, 1999; Emmitt and Gorse, 2007; RIBA, 1962, 1992; Macmillan et al., 2002) into the client-architect relationship in house projects have highlighted deep problems, with several reporting different levels of client dissatisfaction occurring over the course of a project, resulting in clients developing negative perceptions of architects. Oluwatayo et al. (2014a) suggested that architects work under the notion that clients place a high value on the technical aspects of service delivery, and thus, they (architects) tend to focus too much on this notion to the detriment of other aspects of the project relationship. Consequently, architects fail to meet client expectations, especially in relationship management, which leads to clients harboring animosity toward architects (Cuff, 1991; Winter, 2002).

A phenomenological study of private house clients by Frimpong and Dansoh (2016) revealed that clients view architects as "inaccessible, inconvenient, expensive and, a second resort." This view sometimes results in a situation in which clients are even unwilling to pay architects for their non-traditional services (RIBA, 2005).

The potential for a poor client-architect relationship to exacerbate marginalization and role invasion is seen in the housing market, whereby the success of the practice is typically "driven by clients' repeat business and word of mouth recommendations" (RIBA, 2011). This situation makes architects heavily dependent on clients for the realization of their aspirations. Essentially, clients have a big say in the success or failure of the architecture profession. This view is highlighted by a RIBA (2005)-commissioned report that identifies the "rise of consumer power and expectations" as one of the future drivers for change within the practice of the architectural profession. The inability of architects to provide effective solutions to relationship problems with clients has caused them to lose gradually their position in the market (Boyd and Kerr, 1998; Cuff, 1991; RIBA, 1993, 2011) given that they are unable to satisfy their clients.

2.3. Changing economic and industrial conditions

Changing economic and industrial conditions contributes to the phenomenon of marginalization and role invasion in terms of increased risk of doing business, advancement in construction technology, and introduction of new forms of contract and project documentation.

The increasing risk of doing business in the modern construction economy has necessitated the quest for effective risk management. This situation has resulted in a "gradual residualisation of the architect in favour of a subcontractor who" is expected take on even more responsibility for "design work" over the next decade as architects increasingly look to "reduce their liability" (RIBA, 2011). Thus, intricate design details, such as roofing systems, cladding, partitioning, roof structures, etc., which would in the past have been carried out by architects, are now done by specialist suppliers and subcontractors (RIBA, 2011). Overall, the effect is that architects are increasingly being sidelined, reducing their overall "design influence and weakening their relationship with the client and end user" (RIBA, 2011).

"Disruptive technology and processes (Building Information Modelling [BIM], modern methods of construction, one-stop-shop contractors, specialization, standardisation, whole-life costing, resilience planning)" have given rise to "the growing influence of BIM, globalised practices, and a shift in the balance of power and influence within the industry" (RIBA, 2015a, p. 20). The enormous economic challenges and the availability of increasingly complex knowledge has added difficulty for "one person or even one practice" to possess all the knowledge required for the successful execution of a project (RIBA, 2011). In fact, technological advancement (especially the Internet) has made it possible for professional knowledge, which was hitherto confined to only certain persons, to be available to the public (AJ, 2017a).

This situation has given rise to consultancies that employ "interdisciplinary staff, offering a more cost effective, business savvy package than a purely architectural practice working with a temporary project specific team" (RIBA, 2011). In this interdisciplinary setting, each professional is expected to take control of an area of competence while collaborating positively with other members of the team to achieve a common objective. All parties are required to be transparent in disclosing skills and competencies, communicating openly, and committing to a culture of teamwork (RIBA, 2011). This setup represents a major shift from "design-led practice (where design is exclusively done by architects) towards process-driven consultancies," which often have engineers as leaders (RIBA, 2011).

Changing conditions in the construction industry have resulted in the development of new market models (e.g., Design and Build, Novation, and Private Finance Initiative) that are unfriendly to the traditional master builder role of architects. These models deviate from the traditional notion that an architect's responsibility is to design a structure and thereafter supervise a building contractor to carry out its construction (van Gulijk, 2009, p. 10). Coupled with the effect of technological advancement, several of these forms of procurement have reduced buildings to "product assemblies or packages to be bought rather than designed" (AJ, 2017a) and constructed. In the Design and Build format for example, the building can be delivered as a "package content" whose nature can be decided upon by interactions between the client and the contractor alone without any real recourse to the architect. Other instances have little or no need for an architect's drawings, and architects are offered limited site responsibilities (AJ, 2017a). This procurement model also offers a "single point of responsibility contracting," thus shifting project risks and decision-making responsibility from architects onto contractors (AJ, 2017a) and making the contractor the boss. In such a procurement environment, the architect becomes just a part of a supply chain (Royal Institute of British Architects [RIBA], 2015a, p. 23) that involves commercial and investment banks, realtors, etc.

3. Institutional interventions against marginalization and role invasion

The term, *institutional interventions,* as used in this article, refers to the specific actions that architects' professional institutions take to address problems that they identify as having the potential to impede the successful practice of the profession. From this definition, *inadequacy* means that the interventions adopted are unable to shield the profession from the undesirable effects of the identified problem.

For the sake of simplicity and space, we limit this section of our review to interventions predominantly from RIBA. We categorize institutional interventions under three main headings of research, education, and marketing.

3.1. Research interventions

Over the years, RIBA has commissioned several studies to gain a comprehensive understanding of the phenomenon of marginalization and role invasion. These studies are mainly on client–architect relationships, practice, and design management.

Early studies approached the problem from the perspective of dissatisfied clients and failed relationships (Siva and London, 2012) because patterns of longstanding relationship had been called into question (Powell, 1997). Noteworthy is a series of strategic studies of the architectural profession itself, the first of which was commissioned in 1962 (i.e., *The Architect and His Office*). Subsequent studies carried out between 1992 and 1995 revealed that architects' lack of *management skills* was the cause of significant problems in the client–architect relationship (RIBA, 1992, p. 20). While many clients touted the design capabilities of architects, "they viewed many architects' level of management competence as insufficient for dealing with the complexities of modern projects" (Powell, 1997).

In 1993, RIBA (1993, p. 11) identified five challenge areas in the client–architect relationship that needed attention. These areas included gaps in (1) understanding, (2) satisfaction, (3) service definition, (4) delivery, and (5) perception. The studies generally revealed that clients hold adverse perceptions of their relationship with architects. The perception gap in particular focused on the discrepancy between the perceptions of architects and clients on the importance of the former's services. Client's perceived architects as possessing poor listening skills, domineering instead of collaborating with clients to develop solutions, and being unexciting, egotistical, and overly sensitive (RIBA, 1993, p. 90). Powell (1997) contended that these perceived flaws in architects' character led to their being substituted by other professionals.

Between 2011 and 2016, RIBA's client liaison group published additional reports, with the latest one (2016) themed, "What clients think of Architects: Feedback from "Working with Architects", Clients Survey 2016."

3.2. Educational interventions

Educational interventions have been made over the years to correct a key source of marginalization, which is the discrepancy between client demand for architectural services and an architect's willingness and ability to supply those services (Powell, 1997).

Powell (1997) argued that this discrepancy was the result of architects' lack of "skills and knowledge" required to meet effectively the "changing demand[s]" of the industry.

Thus, the Oxford Conference in 1958 made it mandatory for anyone who wanted to become an architect to pursue a five-year university degree (Saxon, 2006). Although this move was a sharp departure from the common practice of training architects in offices, the program carried the benefits of exposing students to clients and promoting a "research-based teaching environment" as the teachers of the profession are also practitioners (Saxon, 2006).

Subjects such as building science and construction were taught together with history (Saxon, 2006). Additionally, the focus of architecture education was extended to cover "urban design and space planning," although on a modest scale in comparison with the "bulk of the work carried out by the bulk of the profession" (Powell, 1997). All studio projects were also required to be realistic and buildable.

Although students who were being churned out by this system were highly creative, they lacked the skills required to make them fit in an industry context dominated by multidisciplinary collaboration and an ability to spot business opportunities (RIBA, 1992, 2015a,2016a).

In the light of this outcome, RIBA has, for over a decade now, been attempting to "swing the pendulum back to an education based on combined academic and practice based activity" (Saxon, 2006). As part of this effort, the RIBA Education Review group made up of representatives from both academia and industry was commissioned in 2013 "to catalyse relevant new models for architectural education, to be taken forward and established by schools of architecture and other course providers" (RIBA, 2017). After a review of "the current structure and sustainability of architectural education in the UK," the review group at the RIBA Education Forum forwarded the following key recommendations for consideration (RIBA, 2017):

1) R1 - a requirement for a minimum of two years of assessed professional practical experience (PPE) within a minimum seven-year period
2) R2 - a seven-year integrated award (with the facility for universities to still award a first degree in architecture)
3) R3 - academic credits available for one year of work-based learning, with the option for students to study within a framework of a four-year full-time study + three years of PPE
4) R4 - a 300 European Credit Transfer and Accumulation System credit program compliant with the requirements of the Bologna agreement
5) R5 - access to the register of architects and title of "Architect" upon successful completion of the integrated course

RIBA anticipates that by September 2019, all UK educational institutions running RIBA-accredited courses will offer at least one "integrated" "7 year pathway" [where an "integrated award" is typically an integration of "academic study" with a non-credit-bearing "professional practical experience (PPE) that upon graduation leads to a final award of a level 7 Master's degree, as defined by the Quality Assurance Agency." The term "integrated award," however, is not a single straight seven-year academic degree] (RIBA, 2016b).

3.3. Marketing interventions

The 1960s witnessed an "almost global disillusionment with the professions" (Allinson, 1993), which resulted in increasing "public skepticism about professions in general" together with increased "government concern with the malign effects of restrictive practices on the national economy" (Powell, 1997). In light of these conditions, coupled with the apparent marginalization of architects owing to changes in building demand and client dissatisfaction (RIBA, 1962), the intervention from the 1980s was targeted at project fees, architects' salaries, and advertising. There was an "institutional relaxation of professional fee scales and rules controlling advertising" (Powell, 1997), and to be specific, "the death of the scale fee and the ban on promotion" (Saxon, 2006).

Initially, this measure engendered a mild form of intra-professional competition greater than what existed before its implementation (Powell, 1997). However, this situation seemed to "remain less of a threat than that arising from outside the profession" (Powell, 1997).

Restriction on architects' freedom to explicitly market their profession meant that they had been silenced at a time when powerful external forces had begun eroding their status in the industry. As Powell (1997) puts it:

> "One of the forms which this took was Design and build contracting firms assuming some responsibilities formerly belonging to architects. Other external competition came from allied professions, particularly quantity surveyors, who increasingly replaced architects as lead consultants with direct influence on promoters, and the appointment of other consultants. Competition also came from project managers who began to take responsibilities formerly assumed by architects, on medium-sized and larger projects."

Overall, these conditions have inculcated in architects the habit of "accepting incredibly low fee bids and getting in competition with each other to see who can outbid each other to do the work" (AJ, 2017b). The result of this habit is that architects' "financial standing has collapsed by comparison with other professions" (HTA Design LLP, 2016). With many practices struggling financially, the AJ (2017b) recently reported that "architecture salaries are in the doldrums and students and women architects" are given paltry sums as salaries. A recent market survey suggests that stakeholders consider the remuneration problem as "part of the far bigger issue of architect marginalization" (AJ, 2017b).

RIBA has intervened through its Chartered Practice scheme (AJ, 2017b). As part of this scheme, RIBA Chartered Practices are required to pay fair wages to all employees and "at least the national minimum wage to students of architecture working with the practice." Chartered practices are required to provide equal opportunities for female architects and those with disabilities.

While touting RIBA's "zero-tolerance approach to wages" as a notable step, stakeholders argue that RIBA's interventions are not producing the desired results (AJ, 2017b). Currently, the argument is that the profession needs a "new business model" (AJ, 2017b).

4. Theoretical framework

4.1. Wicked problems

The theoretical framework for this study is based on the concept of "wicked problems" originally developed by Rittel and Webber (1973). This concept classifies social policy and planning problems into two main categories, namely, tame and wicked. "Wicked" does not connote "evil" but rather seeks to paint a picture of the level of resistance that these problems pose to resolutions (Bowden and Green, 2014). This definition is in contrast to "tame," which connotes something being "manageable and readily solvable" (Bowden and Green, 2014). Tame problems are ordinary problems with relatively simple definitions that require routine solutions "with almost guaranteed success" (Raisio, 2009). These problems do not often require solutions that call for a paradigm shift in the approaches required to deal with them. Wicked problems, by contrast, are extremely complex and are widely perceived to defy solutions. A wicked problem does not have a well-defined solution, and it is usually difficult to understand and define.

Rittel and Webber (1973) spelled out 10 key characteristics of wicked problems: "there is no definitive formulation of a wicked problem," "wicked problems have no stopping rule," "solutions to wicked problems are not true-or-false, but good-or-bad," "there is no immediate and no ultimate test of a solution to a wicked problem," "every solution to a wicked problem is a 'one-shot operation' because there is no opportunity to learn by trial-and-error, every attempt counts significantly," "wicked problems have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well described set of permissible operations that may be incorporated into the plan," "every wicked problem is essentially unique," "every wicked problem can be considered to be a symptom of another problem," "the existence of a discrepancy representing a wicked problem can be explained in numerous ways," "the choice of explanation determines the nature of the problem's resolution," and "the planner has no right to be wrong."

Several researchers (e.g., Levin et al., 2012; Parkhurst, 2016) argued that despite its uniqueness, the concept of wicked problems describes every sort of policy issue that has become old and is need of further advancement.

4.2. Super wicked problems

In response to the need for advancement in the concept of wicked problems, Levin et al. (2012) introduced the term "super wicked" to describe the problem of global climate change and advanced a "new epistemological and theoretical orientation to policy and planning" for wicked problems. The conceptualization of super wicked problems, in addition to possessing all the characteristics of wicked problems, exhibits the following four features: "time is running out; those who cause the problem also seek to provide a solution; the central authority needed to address it is weak or non-existent; and, policy responses discount the future irrationally" (Levin et al., 2012).

4.2.1. Time is running out

"Much of what is considered appropriate policy" intervention in the general construction industry is determined by the government or by regulatory bodies of various professional groups. According to Levin et al. (2012), the process of developing and implementing policies is often characterized by different stakeholders with varied interests coming together and trying to "influence each other's policy preferences." Policy makers then respond (or fail to do so) with "some kind of policy intervention." If stakeholders do not get what they want, they "tend to regroup, build more support for their ideas" and then try repeatedly to influence the policy direction until all involved reaches a "compromise." This same is, however, not the case with those attempting to solve the super wicked problems emanating from the turbulent client–architect relationship. They do not have the luxury of an infinite number of retries aimed at persuading policy makers and causing other stakeholders to compromise because efforts at providing solutions to super wicked problems are time bound.

4.2.2. Those who cause the problem also seek to provide a solution

As Levin et al. (2012) claimed, "unlike other problems with discrete antagonists and protagonists," super wicked problems are the results of "individual and collective activities at multiple levels, as well as marketplace activities." Ironically, entities seeking to solve the problem exhibit the least motivation "to act within that necessary shorter timeframe" (Lazarus, 2010).

4.2.3. The central authority needed to address it is weak or non-existent

As pointed out by Levin et al. (2012), policy makers do not have power over and cannot determine all the choices required to solve super wicked problems. This situation may somewhat be driven by Rittel and Webber's (1973) proposition that "solutions to wicked problems are not true-or-false, but good-or-bad, right or wrong," and this notion compounds the common problem of "cooperation under anarchy" that typifies problems requiring a collective effort on a global scale to deal with. The fact that many different stakeholders have interests in the problem, with none having the sole ability and authority to determine correct solutions with universal effectiveness, introduces a high level of subjectivity, rendering the situation too complex (Stacey, 2003).

4.2.4. Policy responses discount the future irrationally

According to Levin et al. (2012), partly due to the aforementioned characteristics of super wicked problems, a condition is created in which policy makers, even in the face of compelling evidence of the significant risks associated with or even the catastrophic impacts of their action or inaction, make decisions that disregard such potential risks, thus betraying a short outlook of problems.

A combined effect of these four characteristics results in a policy "tragedy" in which policy makers usually do not respond even when something ought to be done (Levin et al., 2012). Even when policy makers respond, they formulate short-term

policies, thereby ignoring the tragic long-term consequences of their actions (Levin et al., 2012).

While the characteristics of a wicked problem are defined in association with the problem itself, especially at the individual level, attributes that characterize a super wicked problem are associated with the attitude of the problem solver and the time constraints affecting the creation and implementation of effective solutions usually at a systemic level.

4.3. A comprehensive contemporary wicked problem framework

To develop a comprehensive and effective contemporary wicked problem framework, we reviewed different versions of the concept. Ultimately, six contemporary versions were selected. These versions are from Durant and Legge (2006), Hill (2016), Jacobs and Cuganesan (2014), Kolko (2012), Lazarus (2010), and Levin et al. (2012). Table 1 provides an overview of the selected concepts.

In developing our conceptual framework, the propositions of the selected concepts were integrated and condensed into a single concept. This consolidation was achieved by combining similar propositions into one and adding the concept to peculiar ideas in individual versions. This integration increased the analytical utility (Parkhurst, 2016) of the concept of wicked problems. Each of the six final propositions describes a specific feature of the phenomenon of marginalization and role invasion. The term "super wicked problems" was used to refer to the final concept. Table 2 provides an overview of the conceptual framework.

5. Phenomenon of marginalization and role invasion as a super wicked problem

We argue that the phenomenon of marginalization and the invasion of architects' role in house projects still persists because the predicaments confronting architects in the housing sector are too complex and no straightforward and correct solutions are available. Even if seemingly correct solutions were to be found now, they would be suitable only for the specific circumstance and timeframe within which they were found, and they would have to be frequently altered. Additionally, attempts at dealing with this phenomenon have been characterized by the chronic

Table 1 Different concepts of wicked problems.

Concept	Source	Propositions
Wicked problems	Durant and Legge (2006)	• Wicked problems stem from multiple sources. • Problems are interdependent. • The nature of the problem changes with time. • Problems have many different stakeholders who exhibit competing and conflicting values.
	Hill (2016)	• The varied viewpoints held by many different stakeholders of wicked problems result in a wide range of proposed solutions, with these possible solutions being neither "correct nor incorrect." • Each proposition has "the potential to achieve a successful or unsuccessful outcome."
	Jacobs and Cuganesan (2014)	• "Completely defining the problem" is difficult. • Knowing when a problem is solved is difficult. • "Choosing interventions is a matter of judgement and carries with it potential for significant consequences that cannot be easily undone." • Problems have "relative uniqueness or specificity." • Problems have "multiple causes." • A complex web of stakeholders exists
	Kolko (2012)	• Knowledge about a problem is incomplete or contradictory. • The number of people and opinions involved is large. • Solving the problem presents a large economic burden. • Wicked problems are interconnected with other problems.
Super wicked problems	Lazarus (2010)	• "Time is not costless, so the longer it takes to address the problem, the harder it will be to do so." • "Those who are in the best position to address the problem are not only those who caused it, but also those with the least immediate incentive to act within that necessary shorter timeframe." • "The absence of an existing institutional framework of government with the ability to develop, implement, and maintain the laws necessary to address a problem of climate change's tremendous spatial and temporal scope."
	Levin et al. (2012)	• "Time is running out." • "Those who cause the problem also seek to provide a solution." • "The central authority needed to address it is weak or non-existent." • "Policy responses discount the future irrationally."

Table 2 Conceptual framework.*Source*: Adapted from Durant and Legge (2006), Hill (2016), Jacobs and Cuganesan (2014), Kolko (2012), Lazarus (2010), and Levin et al. (2012).

Concept	Proposition
Super wicked problems	• The phenomenon is a problem with a difficult definition. • The multiple stakeholders attempting to solve the problem are part of the cause. • Finding a solution involves a large structural and economic burden. • Time is of the essence. • Institutional interventions toward addressing the problem are weak or ill-equipped. • Institutional interventions discount the future irrationally.

inadequacy of institutional interventions (see § 3). Thus, the challenge to be resolved fits the definition of a super wicked problem rather than a tame problem.

5.1. The phenomenon is a problem with a difficult definition

According to Jacobs and Cuganesan (2014), one key feature of wicked problems is the associated difficulties in "completely defining [and understanding] the problem." Although the general nature of the problem may be clear, the many root causes of the problem will mean that "considerable time and effort are usually spent in order to clarify what is the problem really is (Rowe, 1991).

A debate is ongoing as to whether the phenomenon of marginalization and role invasion can even be considered as a problem. Several RIBA reports (RIBA, 2011; , 2015a) seem to suggest that marginalization is not really a problem but rather a natural result of changing economic markets in the construction industry.

However, RIBA (2011) and other stakeholders of the architecture profession (e.g., AJ, 2017a, 2017b; Saxon, 2006), for instance, see the phenomenon of marginalization and role invasion as a serious problem that indicates a decline in the influence of architects, even having the potential to decimate certain aspects of the profession.

A recent news item in The Guardian (2017) reported that RIBA President Ben Derbyshire said,

> "Architects must reclaim leadership of housebuilding after decades of being sidelined through complex contracts such as the one used on Grenfell Tower."

The difficulty involved in understanding the nature of the phenomenon is seen in the fact that for decades, RIBA and other researchers have been investing many resources in trying to understand the problem (see § 3.1).

5.2. The multiple stakeholders attempting to solve the problem are part of the cause

Multiple stakeholders attempt to find solutions to the phenomenon of invasion and role marginalization. These stakeholders include professional architectural institutions, individual architects, academics, clients, etc. From the literature, these actors who are actively seeking to provide a solution to the problem of marginalization and role invasion are also deemed as causes of the problem.

Past interventions of architects' professional institutions have given impetus to marginalization and role invasion. Additionally, a section of stakeholders holds the view that several current institutional interventions have the potential to exacerbate the phenomenon of marginalization and role invasion (see § 3, 5.5, and 5.6 for specific examples).

On the part of architects themselves, several studies (e.g., Cuff, 1991; Siva and London, 2012) have hinted that the high level of client dissatisfaction leading to architects' marginalization has a direct link to architects' tendency to alienate clients from the work process, with several architects even finding difficulty to yield to reasonable client demands. Cuff (1991) attributed this culture of the architectural profession to the "formal academic training" given to architects by academics in educational institutions, describing the culture as one that engenders in them a condescending view of others who do not belong to the architecture profession (Cuff, 1991).

A RIBA (2015a) report themed *Client and Architect: Developing the Essential Relationship*, indicated that clients have a strong desire to see architects become the leaders of the building process. However, this same report indicates that "the biggest problem for architects is clients." Clients who were part of roundtable discussions in the study admitted "they do not always serve architects well." Clients' thoughts and actions are often affected by "loss aversion (fearing loss much more than cherishing equal potential gain)." Thus, in their dealings with architects, clients often focus too much on how much resources they are committing to architects and too little on the benefits they (clients) are getting in return. This imbalance invariably dampens architects' morale, sometimes prompting architects to not exert their best effort (Kilpady, 2005).

5.3. Finding a solution involves a large structural and economic burden

The third point revolves around the proposition that architects' institutions will have to make profound structural changes to aspects of the profession. Hence, changes will place an economic burden on architects, institutions, and the economy at large.

An example of the structural changes required for architects to regain their lost position involves making a paradigm shift from being profession-centered to being client-centered. Powell (1997) describes this strategy as "a shift of emphasis," that is, providing the preferred and chosen services toward the provision of services demanded by increasingly well-informed clients. According to Powell

(1997), marginalization has increased partly because industry demands have changed while architects' "response to that demand has lagged." This required change is profound in the sense that such presents a "professional dilemma" that can potentially be hindered by "architects' culture" and attitude (Cuff, 1991; Powell, 1997).

One major way that RIBA intends to tackle this structural change is through a restructuring of architecture education (see § 3.2). However, this strategy will present an economic burden in at least two cases. First, the proposed seven-year program would, by default, require students (and by extension some parents) pay more tuition fees (Royal Institute of British Architects [RIBA], 2015b). However, for financial reasons, students may opt to do a first degree for three years and then join a practice for the rest of their training (Saxon, 2006). However, this method will transfer the economic burden to architectural firms because under the new RIBA Chartered Practice scheme, these firms are required to pay "at least the national minimum wage" to students who join them as part of their education program (AJ, 2017b).

5.4. Time is of the essence

Despite being marginalized for decades, architecture as a profession has been able to survive by adapting and taking on other roles and responsibilities. This adaption leads to the question of whether the profession will continue to survive for more decades should this trend persist.

If architects want to reclaim their traditional master builder role and be seen as leaders of the building construction process as revealed in the literature (see § 3 and 5.1), then time is running out.

The temporal nature of architects' status in the industry is understood by the fact that anytime institutions try to intervene and are unsuccessful, time closes in on them and matters are only worsened given that "the problem will, at some point, be too acute, have had too much impact, or be too late to stop or reverse" (Levin et al., 2012). This assertion is supported by RIBA's current position that if architects working in housing sectors fail to adapt quickly their services, the "market share" and "opportunities" available to them will continue to shrink, hitting a rock bottom by 2025 (RIBA, 2011, p. 26).

In the last 30 years, the number of architects employed by the public sector in the UK has dropped from 50% to 9% (RIBA, 2011). Currently, more than 50% of the workload of architects in the UK has been taken over by "contractor clients" who have begun introducing an approach where "in-house teams" collaborate with "design directors or external subcontractors" to handle the design and construction aspects of projects (RIBA, 2011).

Recently, the committee that was set up by the UK government to handle issues related to the Grenfell Tower fire disaster did not include any architect (AJ, 2017a). This non-inclusion has stoked the fire in the ongoing debate on the profession's declining influence, thus reinforcing stakeholders' perception that the profession is not just being marginalized but is being "wiped out" (AJ, 2017a).

Changes that would have been difficult to imagine 20 years ago are now occurring in the role and position of architects (RIBA, 2011). With each passing year, significant adverse impacts are occurring, thus increasing the risk of harm to the business of a significant group of architects (London and Chen, 2004).

In another breath, Rittel and Webber's (1973) propositions that because "every solution to a wicked problem is a 'one-shot operation,' [architects' 'institutions] have no right to be wrong" in their formulation of interventions. Although time is running out, architectural institutions will still have to take their time to craft interventions given that agreements borne out of sheer compromise or a trial-and-error manner have the potential to deal a blow to the profession in complex, unimaginable ways (see § 3). Ultimately, the construction market, and not architects, will be "the final arbiter of whether policy responses are appropriate" (Levin et al., 2012).

5.5. Institutional interventions toward addressing the problem are weak or ill-equipped

In taking on the role of intervener, RIBA must always attempt to influence the numerous stakeholders (e.g., architects, clients, allied professional institutions, educational institutions, employers, government departments, and academics). However, these stakeholders will come to the table with varying views and interests, and RIBA by itself will not have the absolute ability and authority to formulate the best policy solution to the problem (Levin et al., 2012). Interferences from other stakeholders will always at some point push matters out of the control of the intervening institution (in this case, RIBA). This condition is what often makes institutional interventions weak or ill-equipped to tackle the target problem.

This condition is aptly illustrated by the outcomes of RIBA's educational interventions (see § 3.2). As part of its education interventions, RIBA, for instance, decided to support a mandatory five-year degree program in architecture when only "two and a half percent" of the youth pursued higher education. According to Saxon (2006), this move was "a powerful play for the high ground by an idealistic discipline."

Initially, this program had a number of benefits, but they were short lived (Saxon, 2006). The new arrangement had potential to restrict severely the number of people who could enter the profession. By the 1970s, architectural practice was booming, thus making it increasingly difficult for teachers (who were required to be practitioners) to handle effectively their classroom responsibilities. The prevailing conditions meant that the teacher architects had to make a choice to either teach or practice. Those who decided to teach developed a form of dislike for the practice, thus infecting several students with this attitude. Architectural education was thus reduced to a theoretical academic program that placed more emphasis on art than anything else.

Such education could not be defined as training given that the program did not last long and could not open the mind, thereby resulting in a profession whose subculture is introverted and dysfunctional (Saxon, 2006). Even at a time when educational arrangement was broadening the fields of practice available to architects, the area could not respond

"confidently or quickly enough" but rather fumbled (RIBA, 1992; Powell, 1997), leaving the architectural field to be taken over by allied professions (Saxon, 2006).

Currently, RIBA is pushing ahead with a new model that will help architects to reposition themselves in the industry through a broadening of their "education" (RIBA, 2016b; RIBA, 2011, p. 29). In responding to the question of how the new model will "make studying architecture more affordable," Royal Institute of British Architects [RIBA] (2015b) views that

> "…while the recommendations do not necessarily reduce the number of years which a student will be required to pay tuition fees, the RIBA hopes that by providing a route to enable access to the register sooner, that graduates will be able to move onto higher salaries quicker."

The follow-up questions that ought to be asked are as follows: What if architects have not regained their position by the time students complete their education? What if the remuneration crisis (see § 3.3) currently affecting the profession is not resolved by the time students complete their education?

From the foregoing, even RIBA's best attempts, partly due to its shortcomings and the influence of the other stakeholders, may put the outcome of its interventions out of its control, thereby potentially exposing architects to further marginalization and role invasion.

5.6. Institutional interventions discount the future irrationally

One key feature of super wicked problems is that when dealing with these issues, institutions tend to make decisions that give great weight to their immediate interests and to delay necessary "behavioral changes" required for long-term success (Levin et al., 2012).

This situation aptly describes how architect institutions have dealt with marginalization and role invasion. Despite undeniable evidence that the trend was increasing, very few steps were taken at the "professional institutional level (or elsewhere), either to confirm or deny its existence or to seek remedies" (Powell, 1997). According to Powell (1997), in contrast to other allied professions who "sought and found new outlets for [their] services," "the architectural profession appeared content to remain more nearly within the confines of its established role".

Powell's (1997) assertion is supported by institutional patterns of response to RIBA's research findings. RIBA's (1962) study discovered that one weakness in the profession was that its members lacked *management skills*, and thus, effectively responding to changing client demands is difficult. However, the same study revealed that architects did not want to have anything to do with management, as they viewed persons in management practice as not belonging to the profession, thus engendering in them "strong feelings of hostility and disdain" (Powell, 1997). To pursue management would be to allow economic priorities to overtake design priorities (Cuff, 1991). A later RIBA (1992) study confirmed that architects' contempt for management was still strong as they viewed the very idea of being a manager as tantamount to being a non-professional architect.

However, the changes in the industry meant that architects were faced with options to choose management to respond appropriately to changes in clients' demands or to maintain their "professional culture" and preserve their "professional core design skills by avoiding their dilution with newly-acquired skills" (Powell, 1997). This idea meant that on the one hand, ignoring management skills would severely reduce the demand for "architects" services and thereby limit their influence. On the other hand, responding to changes in clients' demands would require architects to make changes to their "professional culture," thus affecting their ability to protect their core profession (Powell, 1997).

Architects were not ready to subject themselves to opinions and criticisms of laymen and to take on "new professional risks arising from provision of new, untried or extended services" (Powell, 1997). This attitude, already grounded in architects' professional culture, further reinforced the urging of *Strategic Study of the Profession* (RIBA, 1992) for architects to "consolidate their central role as designers" and "strengthen their ability to deliver design services."

By isolating itself from the "interaction with the broader, and particularly the business, world" (Powell, 1997), architects willfully chose to apply a "declining social discount rate to the possibility of a future dominated by those on the outside, while giving greater weight" (Levin et al., 2012) to their professional culture.

Unfortunately, the current rise of the client and the modern management-oriented approaches to the delivery of buildings means that "the profession finds itself in the uncomfortable position" of depending on people whose practices it does not regard for work (Powell, 1997). Due to their "I'm in charge" mentality emanating from their professional culture, architects often see the idea of close collaboration with clients and other professionals as a close shave with the enemy (RIBA, 2015a, p. 20). Thus, many architects have not been able to attain the "cultural shift to adjust to flat management structures" (RIBA, 2015a, p. 23) that have become typical of modern projects and have in a way contributed to the marginalization and invasion of their roles.

The irrational behavior of architects was beneficial to their professional culture in the short term, but it has been an obstacle to the progress of their profession in the long term.

6. Conclusions and implications for research and practice

This study attempted to explore the complexity of the phenomenon of marginalization and invasion of architects' roles in house projects and to explain why institutional interventions are not adequately addressing the problem. Through in-depth examination of the literature guided by a conceptual framework, the phenomenon of marginalization and role invasion is deemed a super wicked problem. This conceptualization shows that the combined effect of the six propositions in our conceptual framework (the phenomenon is a problem with a difficult definition, the multiple stakeholders attempting to solve the problem are part of the cause, finding a solution involves a large structural and economic burden, time is of the essence, institutional interventions toward addressing the problem are weak or ill-equipped, and

institutional interventions discount the future irrationally) account for the inability of architects to solve the problem of marginalization and role invasion. Although architects, at the professional institutional level, recognize the need to act on marginalization and role invasion, they are sometimes reluctant to act. In cases in which they have acted, their motives, coupled with the complex nature of the problem, have rendered their interventions counterproductive. Consequently, these actions have exacerbated the problem of marginalization and role invasion.

The value of framing the phenomenon of marginalization and role invasion as a super wicked problem is seen in at least four distinct ways. As opposed to the dominant focus on the sources of marginalization outside the profession, our framework shifts the analytic lens to how architects at the institutional level are contributing to marginalization and role invasion. This shift in focus has revealed that for the greater part, architects' institutions have inadvertently worked against the interests of the profession.

Primarily, our conceptualization has uncovered that alleviating the problem of marginalization requires not a return to power of the architectural profession but rather a paradigm shift in the orientation and values of the profession.

Our conceptualization reveals that professional institutions, when making interventions, are motivated by the logic of insulation, short-termism, and exclusion and are often underpinned by a long-held irrational professional culture. Additionally, our conceptualization has revealed that in current industrial and market conditions, other actors, and not just those belonging to the architecture profession, have an influence on the success or failure of institutional interventions.

The realizations in this work have implications for the way forward in terms of research and practice. To alleviate the phenomenon of marginalization and role invasion, architectural institutions need to approach the formulation of institutional policies with the right motives, which should be to formulate policies that can stick and garner support over time. This strategy can be achieved by the profession to shift focus from developing interventions that explicitly seek to regain its lost power to developing pragmatic approaches that will nurture in the profession the culture of cooperation and collaboration with industry and market forces. This step will enable the profession to establish stronger links with other actors, especially those outside the profession, such as the client, who invariably now has participation in the success or failure of the profession. In light of current industry conditions, the profession must make significant medium- to long-term investments toward enabling members to adjust and fit in the already changing market and industry environment. Although these changes would in the short-term affect the professions' culture, even having the potential to challenge the very reason for the profession's existence carries the prospect of enabling architects to embrace rather than insulate themselves from the external forces of change. Such a move will potentially consolidate the profession's position in the industry in the long term.

This theoretical study is simply a first step in the quest for a detailed understanding of the phenomenon of marginalization and role invasion from a complex perspective. Finding pragmatic responses to the super wicked problem of marginalization and role invasion arguably requires empirical studies to validate and build on the conceptual framework and the conclusions of this study. Additionally, a comprehensive review of different institutional interventions and their effects on the profession is needed as the literature on this area is scarce.

Future studies can focus on ways in which professional architect institutions and policy makers (both governments and private authorities) can develop institutional interventions underpinned by the right policy logic.

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