

# Let's build in concrete!

## The early history of Dywidag

Knut Stegmann  
**Das Bauunternehmen  
Dyckerhoff & Widmann: Zu den  
Anfängen des Betonbaus in Deutsch-  
land 1865–1918.** Diss. ETH Zürich  
2010. Tübingen, Wasmuth Verlag 2014.  
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The construction industry, broadly conceived, has always been an important part of architectural history. From the technological developments of masons on medieval cathedrals to the use of enslaved workers to build the earliest monumental structures of Washington D.C. to the access to building materials for Mies van der Rohe's most glamorous Weimar era houses, the history of construction as a stage between design and reception is a necessary component of research. Most recently, Marvin Trachtenberg has highlighted this point in his monumental work on early modern Italian architecture (*Building-in-Time: From Giotto to Alberti and Modern Oblivion*, New Haven 2010). For Trachtenberg, the construction phase is just as important as the reception phase or, for that matter, the restoration phase. Each moment of a building's history generates its own meaning. But even for Trach-

tenberg, as for the rest of the field, however important construction may be as a process, it is still a handmaiden to the most significant question, i. e. the analysis of a *particular* building or site. Construction per se is not isolated in this account as a separate historical problem.

### BROAD ARCHIVAL INFORMATION

Because of this historiographic context, Knut Stegmann's work on the first half century of the construction firm Dyckerhoff & Widmann is a welcome and important addition to art history. A focus on a construction firm makes for a substantially more diverse concept of architecture, including as it does not only "high-end" design like Max Berg's Jahrhunderthalle (1911/12; *fig. 1*) but also vernacular structures or functional buildings like infrastructure not usually included in standard accounts. Stegmann covers the whole range of Dywidag (as it was known) buildings, as well as its earlier roots in the production of compressed concrete and architectural ornaments. Hence the

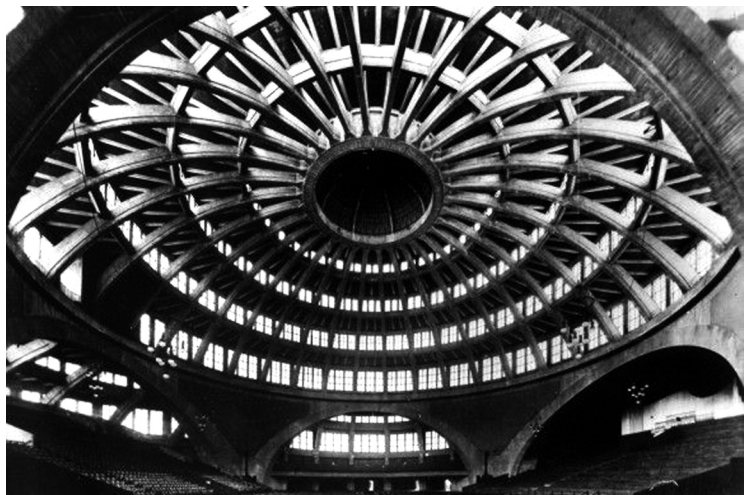


Fig. 1 Max Berg, Jahrhunderthalle, Breslau/Wrocław, 1911/12. Günther Trauer, Dyckerhoff & Widmann (Stegmann 2014, fig. 135)

history of Dywidag complements the analysis of the rise of important building technologies such as the steel frame as well as the eventual embrace of the aesthetic possibilities for cement by architects like Erich Mendelsohn and August Perret. As such, Stegmann's history is not only a crucial analysis of the firm but also contributes to essential topics in the history of modern architecture and the history of technology. It is impressive in its depth and provides a necessary antidote to an all-too-narrow focus on a small range of architectural monuments in art history.

As his subtitle indicates, the book's theme is the history of Dyckerhoff & Widmann from its earliest foundations in 1865 to its participation in building for the armaments industry and other clients in World War I. While the cut-off date seems somewhat arbitrary, in other ways the chronology makes perfect sense: Stegmann convinces us that the first half of this period involved the firm in creating a market for cement while the second emphasized the development and expansion of that market based on new building technologies and the industrial expansion of Wilhelmine Germany. By the end of the war Dywidag had long been one of the largest construction firms in Germany specializing particularly in concrete as a building material.

This general chronological structure is then filled in with an extraordinarily deep and satisfying level of archival information. Stegmann has mined an impressive variety of archives throughout Germany such as the Stadtarchiv Wiesbaden, the Bayerisches Wirtschaftsarchiv and the Deutsches Museum in Munich, to name but a few. The Deutsches Museum is particularly important since, as far as I am aware, Stegmann is the first to use the Dywidag papers deposited there when the successor firm went bankrupt. As an American, I occasionally found the density of archival evidence at times too much a distraction from what could be a more analytic focus – the trees can overwhelm the forest. Nevertheless, readers will be well rewarded with the depth of information Stegmann does provide as well as the convincing nature of his overall argument.



Fig. 2 Friedrich Moest, Galatea fountain at the original location in Karlsruhe, Sallenwäldchen, after 1871/72. Dyckerhoff & Widmann (Stegmann 2014, fig. 34)

### INNOVATIVE BUSINESS POLITICS

Stegmann's thesis concerns tracing how the concrete industry influenced building and architecture in Germany while arguing in particular how such firms could be themselves innovative in the use of "neue wirtschaftlich-strukturelle, technisch-konstruktive und ästhetische Konzepte im Betonbau" (14). While much of the literature assumes that building firms were technologically innovative, very few scholars have paid attention to the business strategies and aesthetic concerns of these firms in relation to the larger building economy. This approach makes Stegmann's book all the more interesting. After laying out his historiographical assessment and argument, he then turns to a series of chronologically arranged chapters.

The first substantive chapter focuses on the founding of the firm in Karlsruhe in 1865. In addition to giving us a brief overview of the cement industry, including the important development in early 19<sup>th</sup>-century England of the flexible and efficient Portland Cement, he lays out the initial establishment of the firm within a set of familial relations. Eugen Dyckerhoff married Adele Widmann in 1869, which led her father Gottlieb

Widmann to change the name of the firm; Widmann would ultimately control the Karlsruhe headquarters while Dyckerhoff managed the Biebrich affiliate. These sites which initially produced cement architectural ornaments as well as non-load bearing floor and wall plates, relied on the firm Dyckerhoff & Söhne in Amöneburg to supply them with cement. Eugen's older brother Gustav ran the business side of this firm founded by their father, while another brother Rudolf ran the technical aspects especially experimenting with the quality of the cement based on his background in chemistry at the University of Heidelberg. While Stegmann also emphasizes the dynamic transfer and exchange of building industry knowledge within Germany and internationally (especially in England and France), much of the story of the book hinges on the dialogue and sometimes conflict between Karlsruhe and Biebrich, as well as their reliance on the quality control and innovation of Amöneburg.

The next two chapters cover the establishment of the firm in the marketplace up to 1888 and then the rapid expansion of Dywidag from 1888 through World War I. Both of these are quite satisfying. The first emphasizes the business know-how of Dywidag in the initial decades. Stegmann convincingly shows that they did *not* succeed through some presumed emphasis on technology and modernity, but rather through the professionalization of the firm with the hiring of trained engineers, the use of research and development to convince clients of the advantages of cement construction (not a given in the period) and the ex-

pansion of other outlets to create a market for their goods and services. In the latter category this included an aggressive use of publications, articles in the press and participation in trade shows beginning with the 1880 Düsseldorf trade fair in which they showed the 4.5 meter high compressed concrete Galatea fountain (*fig. 2*).

In a revealing (and amusing) quotation, Stegmann makes his point about emphasizing marketing by noting, for example, that the architectural union stated in 1874 that its members cannot depend on "eine weitere und allgemeine Verbreitung des Zementkonkretes als Material für die Hochbauten grösserer Städte" (81). At the same time, Dywidag was producing more and more of Germany's pipes for the expansion of water and sewer systems in the rapidly growing metropolises and then, subsequently, other infrastructure like the water and gas storage tanks that became ever larger and more massive through the late 19<sup>th</sup> century. Stegmann's emphasis on business



**Fig. 3 Wilhelm Kreis, Pavilion for the Deutscher Beton-Verein at the Internationale Bau-fachausstellung, Leipzig, 1913. Rudolf Wolle, Kell & Löser, Leipzig (Hans Herzog [ed.], *Bericht über die Internationale Bau-fach-Ausstellung mit Sonderausstellungen Leipzig 1913*, Leipzig 1917, S. 195)**

practices, the expansion of their patrons through social connections and the interest in aesthetic expression in infrastructure are components of the book that are refreshing changes from too much of the architectural literature that relies on a more teleological and flat-footed account of the “triumph” of building technology.

### COMPETING TECHNOLOGIES

The following chapter especially takes up this point by laying out the evidence for the conflict between compressed and reinforced concrete. It was by no means a given, as it may appear in retrospect, that reinforced concrete was a naturally superior use of the material. (It certainly came as a surprise to me that the first demonstration of reinforced concrete in Germany was a doghouse [1884] by the firm Freytag!) Eugen Dyckerhoff in particular was suspicious of this new technology and its durability, and even as late as in 1901 Dyckerhoff could state: “wenn Sie ruhig schlafen wollen, lassen Sie das Eisen aus dem Cement heraus” (156). The firm held out from incorporating reinforced concrete into their building practices until 1902. Dywidag’s first big success with reinforced concrete was the Nonnenbrücke in Bamberg (1903/04), designed by Theodor Fischer. Stegmann makes a particularly compelling case in this chapter for our need to attend to such debates about materials which remind us that building technologies are not inevitable but come at particular moments for a complex constellation of reasons.

Even as Dywidag rapidly extended its expertise beyond infrastructure to a wide range of buildings – train stations, industrial facilities, religious structures, office buildings, exhibition pavilions, etc. – its leaders and the cement industry in general still felt a need to make a case, particularly for the aesthetic merits of the material. For example, Stegmann convincingly argues that Wilhelm Kreis’ 1913 Leipzig pavilion for the Deutscher Beton-Verein (*fig. 3*) was not merely a more traditional modified neoclassical structure that reflected the conservative values of its patron in comparison to Bruno Taut’s Stahlwerksverband pavilion at the same fair (*fig. 4*); it was also a savvy economic

attempt to expand market share by encouraging architects to use cement more often by showing its “noble” potential.

He makes the point more analytically in his last substantive chapter which covers the life of the firm as a now dominant building concern. In this assessment, he critiques architectural historians who focus on the innovative uses of cement by Modernists like Le Corbusier while ignoring the decades of development by construction firms. In this sense, the ultimate argument for a history of Dywidag is that it does not so much tell us about how architects pushed for new uses of materials but rather indicates that a major impulse for the expressive use of cement came from a building firm looking for clients: “Antrieb für die Entwicklung der innovativen Bauweisen war nicht [...] die Suche von Architekten oder Bauingenieuren nach einem Baustoff für eine Bauaufgabe, sondern die Suche der Portlandzementindustrie nach neuen Absatzmöglichkeiten.” (245)

### PROS AND CONS

In spite of the effectiveness of the argument, Stegmann’s book does have some limitations. In particular, his focus can be overly narrow at times. For example, World War I passes relatively quickly in this text, most often as a paragraph here or there summarizing broad historical events. This is ameliorated when he discusses Dywidag’s work constructing a munitions factory for Jakob Manz; this section of the book deals effectively with the war, but it is too little too late. In addition, when he does bring in a more complex historical context, such as a discussion of the Franco-Prussian War, Stegmann relies often on solid but generic overviews of German history rather than the most relevant scholarly literature. Complementary to this tendency, while the archival information is impressive, too often the author has the habit of pointing out the holes and lapses in the archival record. As a scholar, naturally this is essential, but as a reader it gets tiresome to be reminded so frequently of what we don’t know, particularly when it involves merely a side anecdote to the main history.

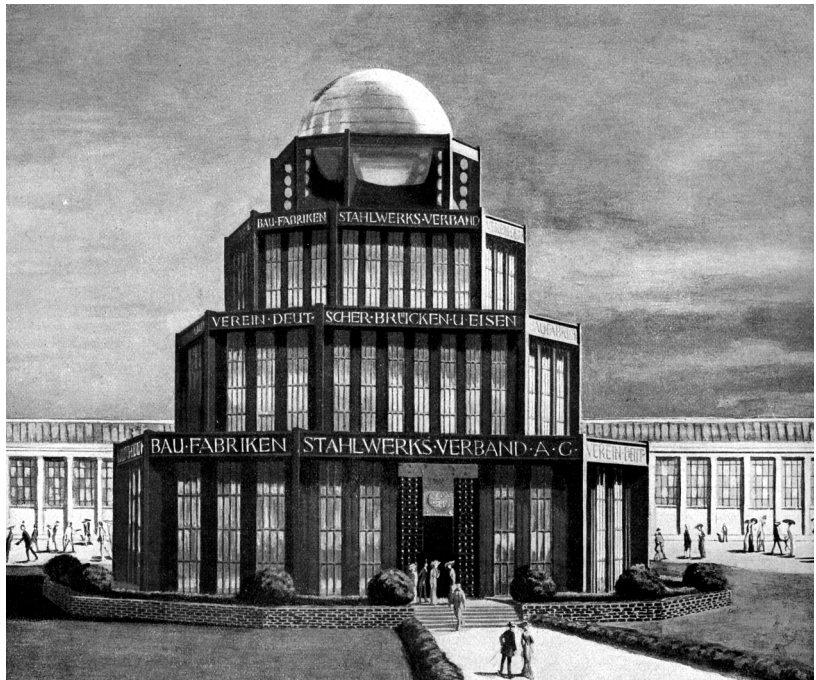


More importantly, this at times too-narrow focus affects the potential impact of the book on architectural history as a whole. While Stegmann quite rightly points to the scholarship on cement which privileges Modernist architects as the main agents of change, his use of concepts like knowledge transfer as well as arguments about the social and cultural debates that frame technological choices engage with a deep literature several decades old in specific subfields of architectural history as well as the history of technology. One needs only think of how the rise of the steel-frame Chicago skyscraper has been discussed in these kinds of complex terms. For readers unfamiliar with the historiography on building technologies of the period, especially the vast literature in English, the significance of Stegmann's book will be much less evident.

Nevertheless, these problems of style and historiographic reach should not diminish the importance of Stegmann's accomplishment. Dywidag's most famous projects like Berg's Jahrhunderthalle (1911/12) are given a crucial new inflection here, as Stegmann focuses not only on its technologically impressive 65 m span and stripped-down form. He also concentrates our attention on the business connections which may have helped the choice of Dywidag as the contractor in the first place as well as the structure's impact on the postwar advertising of the firm. In addition, he makes the innovative point that what was really new and significant for this building was not its structure but

rather the process of rationalization of labor and the use of materials on site. In complementary terms, when discussing the important and long-lasting connections to the industrial patrons of Zeiss and Opel, both of which began in 1906, Stegmann gives the reader a complex analysis that involves the main pillars of his thesis. That is to say, he discusses not only the business relationships between the industrial patrons and the building firm, but also the technological context of factory building in Germany and elsewhere as well as the aesthetic significance of factory forms. All in all, these sections highlight the strengths and importance of having a much more comprehensive account of the players in the construction process for a more comprehensive architectural history.

Stegmann's book models how rich such a history of construction could be. Naturally, not every major construction firm has the same accessible archives as Dyckerhoff & Widmann. Yet as he has shown in the broad range of research, there are also a wide



**Fig. 4** Bruno Taut and Franz Hoffmann, Pavilion for the Stahlwerksverband at the Internationale Baufachausstellung, Leipzig, 1913. Breest & Co., Berlin [Hans Herzog [ed.], *Bericht über die Internationale Baufach-Ausstellung, Leipzig 1917*, S. 188]

number of sources that architectural historians have not previously mined that are available for this historical subject. The trade catalogs, the various trade associations and even the prominent journals like the *Deutsche Bauzeitung* offer ample opportunities for scholars to make inroads on the topic. That we have avoided these sources results from an art historical field still much too dependent on canonical names and buildings, rather than one open to political-economic or other deep questions of social art history. Stegmann's impressive work

shows us what can be gained by making construction a more central subject within architectural analysis.

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PROF. DR. PAUL B. JASKOT

## Mit der Platte leben – ein ästhetisches und politisches Paradoxon?

Philipp Meuser  
**Die Ästhetik der Platte.**  
**Wohnungsbau in der Sowjetunion**  
**zwischen Stalin und Glasnost.**  
 Berlin, DOM publishers 2015.  
 728 S., über 1.400 Abb.  
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**S**eit den 1970er Jahren bis heute dominieren negativ konnotierte Bilder von Plattenbauten sowohl in den Medien als auch in der öffentlichen Wahrnehmung. Unter denkmalpflegerischen Aspekten wurden sie insbesondere in der Postwendezeit heftig diskutiert. Gestalterische und materielle Aspekte wie die Monotonie dieser Gebäude sowie deren schlechte Qualität und Bauqualität stehen dabei ebenso in der Kritik wie die oftmals mit „der Platte“ assoziierten gesellschaftlichen Probleme von Ghettoisierung, sozialer Ausgrenzung und häufigem Leerstand. Der Beitrag der Modernekritik ab den 1960er Jahren – wie Jane Jacobs' *A Death and Life of Great American Cities* von 1961 oder Alexander

Mitscherlichs *Die Unwirtlichkeit unserer Städte* von 1965, aber auch Filme wie Stanley Kubricks *A Clockwork Orange* (1971) oder *Christiane F. – Wir Kinder vom Bahnhof Zoo* (1981) von Uli Edel, der in Berlin-Gropiusstadt spielt – zur Rezeption von Plattenbauten „als Orte[n] von Verwahrlosung, Gewalt, Kriminalität und Drogen“ ist in der Forschung zwar bekannt, jedoch längst nicht hinreichend untersucht (Inge Podbrecky, *Wie aktuell ist Riegls Alterswert?* in: *Räume der Kunstgeschichte*, Wien 2015, 60–82, hier: 73).

Die hier zu besprechende Dissertation des Architekten (<http://www.meuser-architekten.de>) und Verlegers (<http://www.dom-publishers.com>) Philipp Meuser entspringt weder einer modernekritischen Position, noch werden Plattenbauten dort als negativ besetzte Orte im oben genannten Sinne beschrieben. Schon der Titel *Die Ästhetik der Platte* vermittelt ein konträres Bild des Plattenbaus als eines sinnlich wahrnehmbaren, potentiell schönen Objekts. Aber dieser Frage nach der Ästhetik von Plattenbauten folgt Meuser in seiner umfangreichen Forschungsarbeit nur partiell: Durch die Vielzahl der in die Arbeit integrierten, qualitativ hochwertigen und oftmals bisher unveröffentlichten, jedoch den Text nicht nur illustrie-