
RESEARCH ARTICLE

Housing Paul and Paula: Building Repair and Urban Renewal in the German Democratic Republic

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This article traces the re-emergence of historic forms in 20th-century architecture to approaches embedded within the modern project itself. As the history of modern architecture has focused on the production of the new, the resilience of the existing built environment and the implications of appropriating older structures for architectural development are often neglected. The article will look at formerly socialist East Germany, where the grand narrative of modernity was underpinned by a determinist worldview and an ideological urge to replace a doomed capitalist past with a promising socialist future. But despite the intentions of the socialist regime, the existing built environment in East Germany could not be immediately replaced. The old structures had to remain in continuous use.

As exemplified by the notable work of Bernhard Klemm, East German architects attempted to recover the built environment in the GDR. To manage the building stock within the constraints of a centrally planned economy, they applied principles of industrial organization and industrial building technologies. Although these primarily local approaches could not entirely prevent dilapidation, the rationalization and industrialization of building repair and urban renewal resulted in the scientific idea of reproducibility and in a reappropriation of historic forms.

Introduction: A Late Modern Shift in Perspective

The cult film *The Legend of Paul and Paula* (1973) by Heiner Carow and the accompanying novel *Die Legende vom Glück ohne Ende* (1979) by Ulrich Plenzdorf together highlight a crucial cultural shift in East Germany of the 1970s. The story starts in a typical Berlin tenement house from the late 19th century, where the two protagonists, Paul and Paula, find love and felicity in self-fulfilment. After Paula's death and the concurrent destruction of the historic residential area, Paul moves with Laura, his new, and more pragmatic, partner, into a recently erected mass housing complex, the socialist state's ideal of happiness. But while the new environment offers modern comfort and amenities, Paul literally remains a broken man, and finally evades a senseless life by driving over to West Berlin. Juxtaposing two concepts of happiness and questioning the promises of a well-organized, modern, prefabricated, and newly built socialist utopia, both film and novel hint at the possibility of an alternative life within the built environment at hand. In addition, they suggest that such an alternative option was the topic of private longing and public discussion.

The setting in *The Legend of Paul and Paula* reflects the ordinary living conditions in the former German Democratic Republic (GDR). Paul and Paula inhabit a socialist world dominated by 19th-century tenement

houses, Wilhelminian administration buildings, schools, hospitals, and repurposed villas that once belonged to industrialists (**Figure 1**). Their home, like those of most citizens of the GDR, was not within what came to be known as the modernist 'Plattenbau', a large tenement-like compound constructed of prefabricated concrete slabs. Contrary to widely held assumptions, post-war East Germany comprised mainly historic old towns and villages and the urban legacy of the 19th century. While these were largely unaffected by wartime destruction, they still needed repair and renovation. Compared to West Germany, new building production in East Germany was remarkably moderate. In the mid-1960s, approximately two-thirds of the existing dwellings still dated to before 1919 (Paulick et al. 1967: 71). Hence the problem of dilapidation and the possibility of recovering existing urban areas was a major topic of debate among professionals of the built environment (**Figure 2**). Attempts to repair this historic building stock during the time of the GDR have been mostly overlooked by architectural historians. Scholars have shown more interest in the new models and ideas of the functionalist architects, such as the trademark precast standardized apartment blocks (Durth, Düwel, and Gutschow 1998–99; Palutzki 2000). So far, urban renewal in the GDR has only been discussed as a by-product of the large-scale housing programme and the socio-economic policy of the 1970s and 1980s (Topfstedt 1988; Schubert 1998; Urban 2009).

This article will show how, from the late 1950s onwards, GDR architects and planners discussed the repair and renewal of historic urban structures from a late modern



Figure 1: A very common street view in the GDR, the crossing of Görlitzerstrasse and Luisenstrasse in Dresden in the 1980s (Büro des Stadtarchitekten 1983; photo by Christa Zocher).

perspective. Architectural periodicals and academic publications, doctoral theses, and conference transcripts of this period reveal a developing discourse on building repair that was debated beyond an intimate circle of interested conservationists. Amid these exchanges, Bernhard Klemm (1916–95) was probably the most prominent proponent of a sustainable approach to building stock management. His work highlights how GDR architects and planners sought effective solutions for restoration within the constraints of a centrally planned economy. Their response was to treat the extant building stock as a manageable asset, rather than as a mere burden of the past that had to be replaced. Their efforts resulted in processes of categorization of the historic stock, standardization of constructive repair, and reproducibility of historic forms.

The re-emergence of historic forms in East German architectural production became most obvious by the mid-1980s, with prominent historic reconstructions like Gottfried Semper's Opera House (known as the Semperoper) in Dresden or the Gendarmenmarkt in Berlin. Concurrently, historicizing elements were introduced on a large scale in prefabricated buildings. In Western Europe, from the 1970s onwards, similar developments were strongly connected to a critique of functionalist modern architecture and industrialized construction. In contrast, as will be shown in this article, the efforts to restore and recover historic architecture in the GDR were embedded within a genuinely late modern conceptual framework – based on categorization, standardization, and rationalization, and aimed at the predictability, calculability, and industrialization of building repair and renewal. Architectural production in East Germany developed in relation to the building stock at hand, and can

only insufficiently be explained with existing concepts of postmodernism.

'Sozialistische Umgestaltung' or '(komplexe) Rekonstruktion'

Studies of urban renewal in the former GDR commonly refer to socialist redesign or redevelopment as 'sozialistische Umgestaltung'. This denotes an ideal of large-scale redevelopment that aims to negate and overcome existing conditions (Schulz 1998; Schauer 2007; Keltsch 2012). The socialist redesign of urban structures followed the principles of post-war functionalist urban planning. Within this framework, new residential estates were built, with homogeneously distributed socio-cultural facilities and car-friendly installations. These residential areas, in which stand-alone homes were constructed in rows, were separated from industrial zones and situated within spacious, undeveloped green areas. Mostly unrealized, these utopian projects of socialist redesign were developed for nearly every city in the GDR (Meier et al. 2018).

The ideal of 'sozialistische Umgestaltung' was originally developed by architect and urban planner Peter Doehler (1924–2008), who directed the German academy's department of urban planning. It was first announced in October 1960 at the 25th plenary session of the Deutsche Bauakademie, the central architectural and urbanist think-tank in the GDR (Doehler 1960b). In his criticism of the sanitary and constructive defects that the decayed built environment had inherited from the previous 'capitalist' century, Doehler's perspective aligned with that of numerous modernist architects of his time. To cite just one example, Swiss urban theorist Hans Bernoulli (1876–1959) had long argued in favour of an 'organic' renewal of



Figure 2: A 'typical' derelict courtyard from late 19th century (Büro des Stadtarchitekten 1983; photo by Christa Zocher).

the urban fabric by periodic demolition (Bernoulli 1942). Disregarding the actual heterogeneous composition of the building stock, he envisioned a system of planned obsolescence (Abramson 2016). Within his scheme, urban quarters would be demolished and rebuilt after a pre-set period. In the GDR, approximately two decades later, Doehler aimed at a data-based model for such a continuous renewal of the urban environment (Doehler 1961), having deduced that the lifetime and obsolescence of buildings would lead to a better understanding of their

life cycle. This would in turn lead to a better integration of urban planning and building stock management within the socialist planned economy. Even more important, it would offer an ostensibly objective reason for the redesign of the built environment in line with the form of construction to which a socialist society aspired. The repair of buildings and the rehabilitation of run-down areas were deliberately excluded from this grand vision.

In September 1960, a month before Doehler presented his concept to the Bauakademie in East Berlin, he delivered

a concise version of the same speech at an academic colloquium on urban redevelopment in Weimar. There, he presented his ideas under the title 'Rekonstruktion der Stadtzentren' ('Reconstruction of City Centres') (Doehler 1960a). At first sight, the terms 'socialist redesign' and 'reconstruction' appear to be interchangeable. At the most basic level, reconstruction can mean anything from comprehensive demolition and redevelopment to historically accurate rebuilding (Urban 2009). Along with socialist redesign, reconstruction has also been used to describe the renewal of inner city areas with customized, prefabricated housing complexes. Characteristic examples include the Nikolaiviertel project in Berlin (Palutzki 2000: 382–96), the northern city centre of Erfurt, and the Am Domplatz area in Halle an der Saale (Angermann and Hilse 2013).

However, 'Rekonstruktion' actually denoted the opposite of 'sozialistische Umgestaltung'. It advocated the prolonged use of old structures. The notion of 'Rekonstruktion' in the GDR therefore needs to be clearly distinguished from both post-war reconstruction and historic reconstruction. Originally a technical term from socialist economics, 'Rekonstruktion' was introduced in 1959 as a political objective at the fifth meeting of the Central Committee of the Sozialistische Einheitspartei Deutschlands (SED), the governing socialist party. The SED's ruling committee defined socialist reconstruction as consisting of both rational organization of industrial production, based on the highest achievements of science and technology, and the utilization of the full potential of creative initiative of the working class (SED 1959: 18). Borrowed from Soviet economic literature, the term 'Rekonstruktion' incorporated economic industrialization, standardized fabrication, and increased labour productivity (Tranitz 1960; Nachtigall 1961). In the case of a shortage of funds for new investments, old plants and machines were to be improved through industrial reorganization and rationalization (Hartmann and Mothes 1982: 37).

In the building sector, 'Rekonstruktion' referred to a specific way to make use of the existing stock without comprehensive demolition and rebuilding. Calling for the intricate collaboration of specialist planners and building trades within complicated inner-city areas, 'Rekonstruktion' was typically addressed as 'komplex'. Such 'komplexe Rekonstruktion' was first discussed as a sensible alternative to large-scale urban renewal at the sixth conference of the SED in 1963. The conference resulted in the allocation of funds for the first state-wide building repair programme. As a result, maintenance and rehabilitation officially formed an integral part of the centrally planned economy (Ministerrat 1963). Experts on the subject discussed '(komplexe) Rekonstruktion' as comprising all construction work that aimed to increase the utility value of existing edifices through modernization and renovation (Klein and Töpfer 1976: 9). The term therefore denoted every attempt to eliminate and prevent obsolescence of function, construction, or form (Vysek 1974: 379). Following the 1955 decree to industrialize construction in the GDR (Palutzki 2000: 114), building repair also became a project of large industrial plants and specialized

construction companies. As a result, 'Rekonstruktion' in architecture and construction in turn shifted towards industrial means of maintenance and rehabilitation (cf. Klemm 1966: 497).

'Rekonstruktion' and Preservation of Old Towns

Although the term 'sozialistische Umgestaltung' was favoured in architectural theory and discourse (e.g., Schmidt et al. 1969), Doehler's concept of comprehensive demolition and redesign did not go unchallenged. Replacing the existing built environment was financially impossible, especially since the socialist state was both the proprietor and producer of real estate. In addition, limited building capacity and material resources rendered utopian any plans of total replacement of the built environment. On the other hand, the decades-long lack of maintenance and building repair resulted in increasing decay. The built environment of the GDR was eventually uninhabitable. Although the production of dwellings was accelerated by industrial means, it could not match the pace at which the existing stock was wearing out.

At the same colloquium in Weimar in September 1960, Doehler's concept of socialist redesign was questioned by the Dresden-based architect Bernhard Klemm (1915–95). Klemm stressed the need to rehabilitate and modernize the existing building stock. Developing the idea of 'Rekonstruktion', he presented his comprehensive research and restoration work at the Peterskirchviertel in the old town of Görlitz (Klemm 1960b). In contrast to Doehler, Klemm intended to apply the positive experience from his restoration work in this medium-sized historic town to a larger scale. He empirically proved that the repair and modernization of existing structures – 'Rekonstruktion' as he understood it – was a more cost-efficient practice than demolition and building anew (Heinze 1965). Klemm critiqued the concept of comprehensive urban redevelopment on the grounds of its false priorities – 'obviously one has to build the new dwellings first before starting to demolish the old' (Klemm 1966: 493) – and its insufficient assumptions (it did not include development costs).

Klemm is probably the most notable architect involved in the conceptualization of large-scale building repair in the GDR. A former student of Paul Schmitthenner (1884–1972) and Paul Bonatz (1877–1956) in Stuttgart from 1935 to 1937 – and thus regarded as an exponent of the traditionalist 'Stuttgarter Schule' – Klemm finished his studies in Dresden in 1941 (Escherich 2010). Engaged in post-war reconstruction in Dresden, Klemm rose to leading positions in prominent local architectural offices before establishing himself as an independent architect, an unusual position in the GDR. While Klemm is mostly remembered for his restoration projects, he also designed new buildings for his hometown. Among these, his design for a large, five-storey building complex at Grunaer Straße stands out. Completed in 1952, it is a typical example of traditionalist architecture, with references to local historic forms, a plastered facade, a stone-clad ground floor, and a pitched roof. Although Klemm was not a favoured architect of the socialist regime, his work for the preservation

of historic old towns was publicly appreciated. Repeatedly, his restoration projects in Görlitz were selected for the state's official architectural award (1973, 1975, and 1981). Most significantly, in 1983 he was presented with the Fritz-Schumacher-Preis der Stadt Hamburg, a rare honour for an East German architect at the time.

In 1957, the National Institute for the Protection and Conservation of Monuments in Dresden invited Klemm to participate in the preservation of the historic city centre of Görlitz, an old town almost unaffected by war-time destruction. Though restoration work had already begun in the late 1940s (Nadler et al. 1959), Klemm's involvement from 1958 to 1968 turned the city centre into an exemplary rehabilitation project. Working with his young assistants Ulrike Kierdorf, Werner Heinrich, Günther Herrmann, Wolfgang Hähle, and Jürgen Schieferdecker, and supported by the renowned structural engineer Wolfgang Preiß (1922–2004), Klemm's project was based on thorough historical analysis and extensive building surveys, which were produced by his undergraduate students (Klemm 1958; Klemm 1962b: 940; Hähle 2016). The existing building conditions were documented in survey drawings and the built structure was evaluated as an ensemble. Based on this groundwork, Klemm developed a coherent building plan for the building block of the central Peterskirchviertel (**Figure 3**). Its inner courtyard would be cleared, and vacant lots would be filled with customized, sensitive additions. The historic buildings would also be modernized to create a stylistically homogeneous historic experience, which would involve eliminating the visible inconsistencies of the 19th century (**Figures 4 and 5**).

Based on this preliminary work, Klemm realized several reconstruction and restoration projects in Görlitz in the following decade. Among the most prominent are the rebuilding of the collapsed house at Peterstraße 11/12 and the restoration of the house at Peterstraße 8.

Situated on a narrow site along a slightly curved street in the central part of the historic old town, the house at Peterstraße 11/12 replaced two derelict buildings that had been recently demolished. The construction was meant as a starting point for the complex renewal of the entire urban block. Twelve new apartments were distributed over four storeys. Their floor area ranged between 63 and 79 square metres, and the room heights ranged from 3.25 metres on the ground floor to 3 metres on the upper storeys. At the time, these dimensions exceeded those of common newly built apartments. The old foundations were reused, and the underground barrel vault of the cellar was replaced by a reinforced ceiling. The tight building site was not Klemm's only problem; owing to the complexities involved with working within the historic fabric, builders were paid 50% more than the standard rate (Heinze 1965: 195–97). The topic of building sensitive additions to extant building blocks recurred throughout Klemm's later work. At Peterstraße 11/12, construction was carried out in the traditional manner, which had allowed for a customized but costlier solution. Industrialization of construction work would render such design impossible in the years to come.

At Peterstraße 8, on the corner of the same block as Peterstraße 11/12, was a 16th-century building that was restored between 1963 and 1965. This residential building was transformed into a 550-square-metre children's library on the ground floor and three medium-sized apartments on the remaining upper storeys. Although fittings and alterations in the previous century had reduced the value of the historic building, the original wooden floors, a late-Gothic vault, and a Renaissance portal and window jambs had been preserved. Klemm removed the modern additions to the inner courtyard and replaced various walls in the interior. He also replaced some wooden floors with reinforced ribbed ceilings, additionally secured in

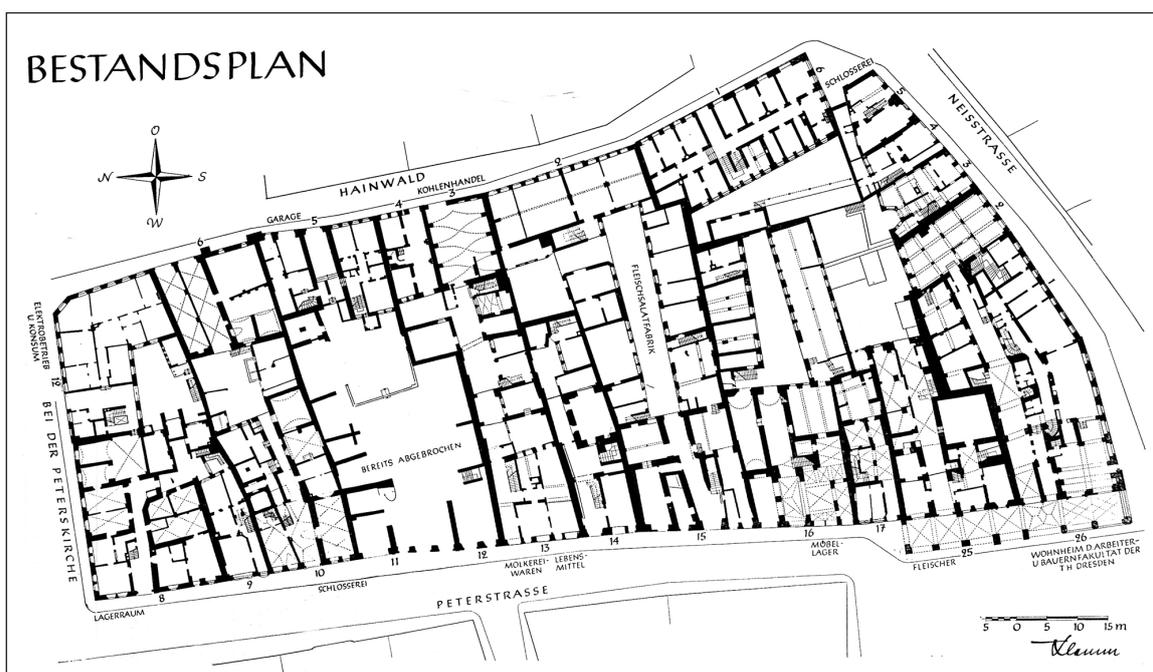


Figure 3: Comprehensive building survey of the Peterskirchviertel in the old town of Görlitz (Klemm 1958).

rehabilitation by architects engaged in building conservation. Among these, Martin Henze's work on Freiberg (1964) and Helmut Stelzer's Quedlinburg project (1978) stand out. Although both projects principally aimed to preserve the historic urban areas, they developed constructive solutions for new buildings adjusted to the historic context, while also following the latest advances in industrial building technology. Further developing Klemm's approach, they deal with the extant structures in a modernist way by analysing and standardizing formal attributes, and then replicating them in a reasonable and effective fashion.

Henze's doctoral thesis on the old town of Freiberg is remarkable for the meticulous recording of dimensions and constructive details of local roof trusses, floor plans, and window jambs (Figure 6). Again, his project was based on detailed building surveys and comprehensive analyses of the existing building conditions. Yet the statistical approach surpassed the Görlitz project. This accumulated and evaluated data resulted in a categorization of the building stock and a definition of the 'normal' historic building in the old town of Freiberg. Henze used this information to design new constructions for the future reproduction of the old town by industrial means (Figure 7).

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Figure 6: Statistical analysis of window jambs in Freiberg (Henze 1964).

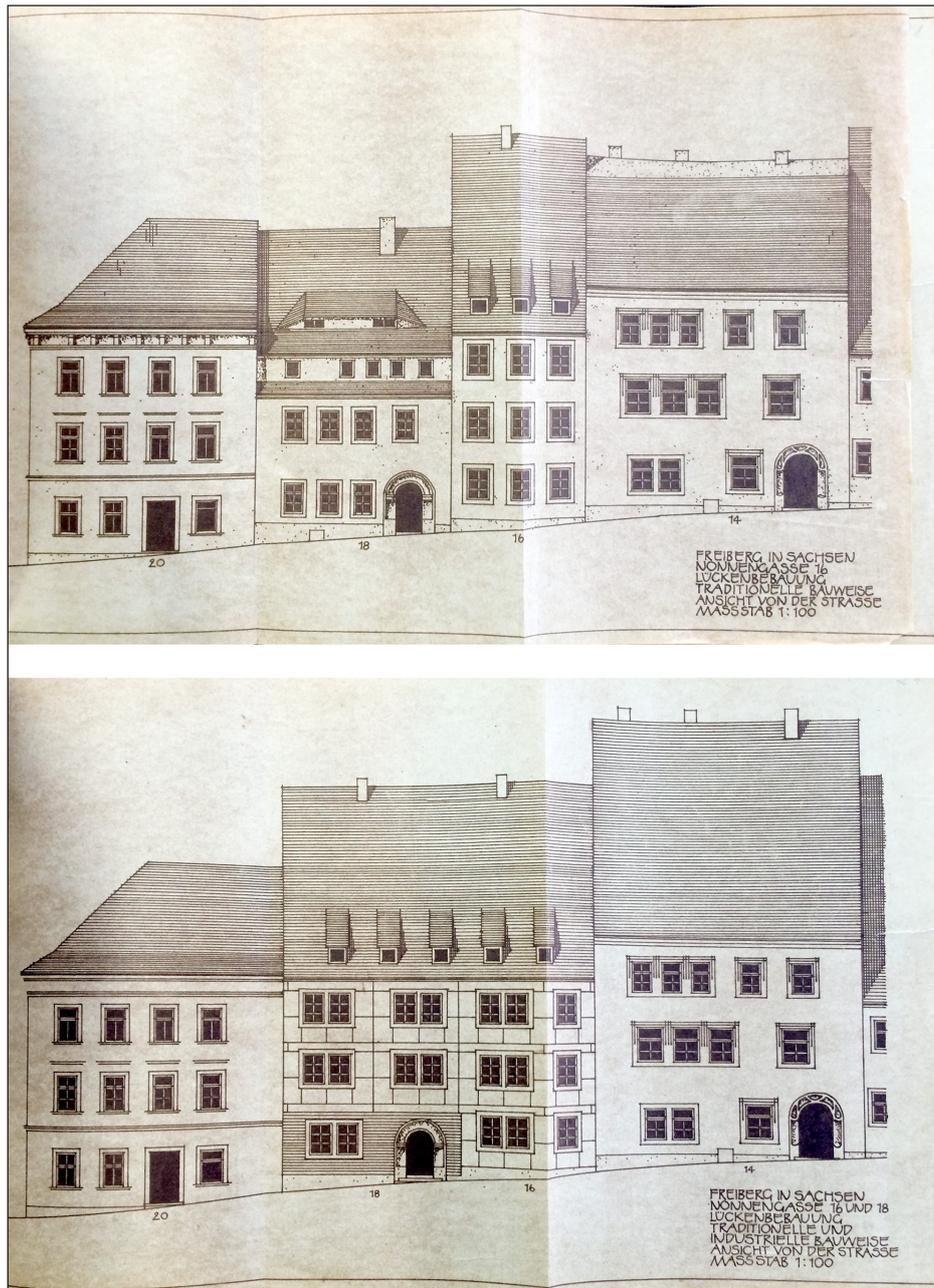


Figure 7: Suggestions for urban renewal in the old town of Freiberg, showing solutions for closing gaps in a row of houses using different construction technologies. The design at top is based on traditional building methods. The second design involves both traditional and industrialized methods (Henze 1964).

In his in-depth analysis of the old town of Quedlinburg in the 1970s, Stelzer followed a similar approach to deduct the local standard form of vernacular historic buildings. Through sophisticated cartographic methods, he identified specific areas of the old town in terms of the buildings' condition, construction, and age. Working again on detailed building surveys from the years 1959 to 1969, Stelzer aimed to modernize and recover the historic residential building stock of Quedlinburg (**Figure 8**).

Stelzer also analysed typical constructive elements and dimensions of the local timber frame constructions. As a reproduction of the historic timber structures was impossible, owing to the lack of building material and craftsmen in the GDR, Stelzer developed a building technology of his own. He combined various methods

of on-site concrete formwork with a licensed technology from the Swedish company AB Skanska Cementgjuteriet, the Allbeton site-casting method. This allowed for customized monolithic concrete buildings to be erected within the narrow plots, alongside new structural cores and additions (Stelzer 1978: 131) (**Figure 9**). The modular design of the facades followed the existing buildings and included spolia and fragments, like the original front doors. Stelzer's research and comprehensive planning included detailed instructions on production flow processes and the use of machines and cranes. This enabled him to realize his design in the mid-1980s (though less elaborate than originally planned) in the area of Schmale Straße in Quedlinburg (cf. Rietdorf 1989, Schauer 2016) (**Figure 10**).

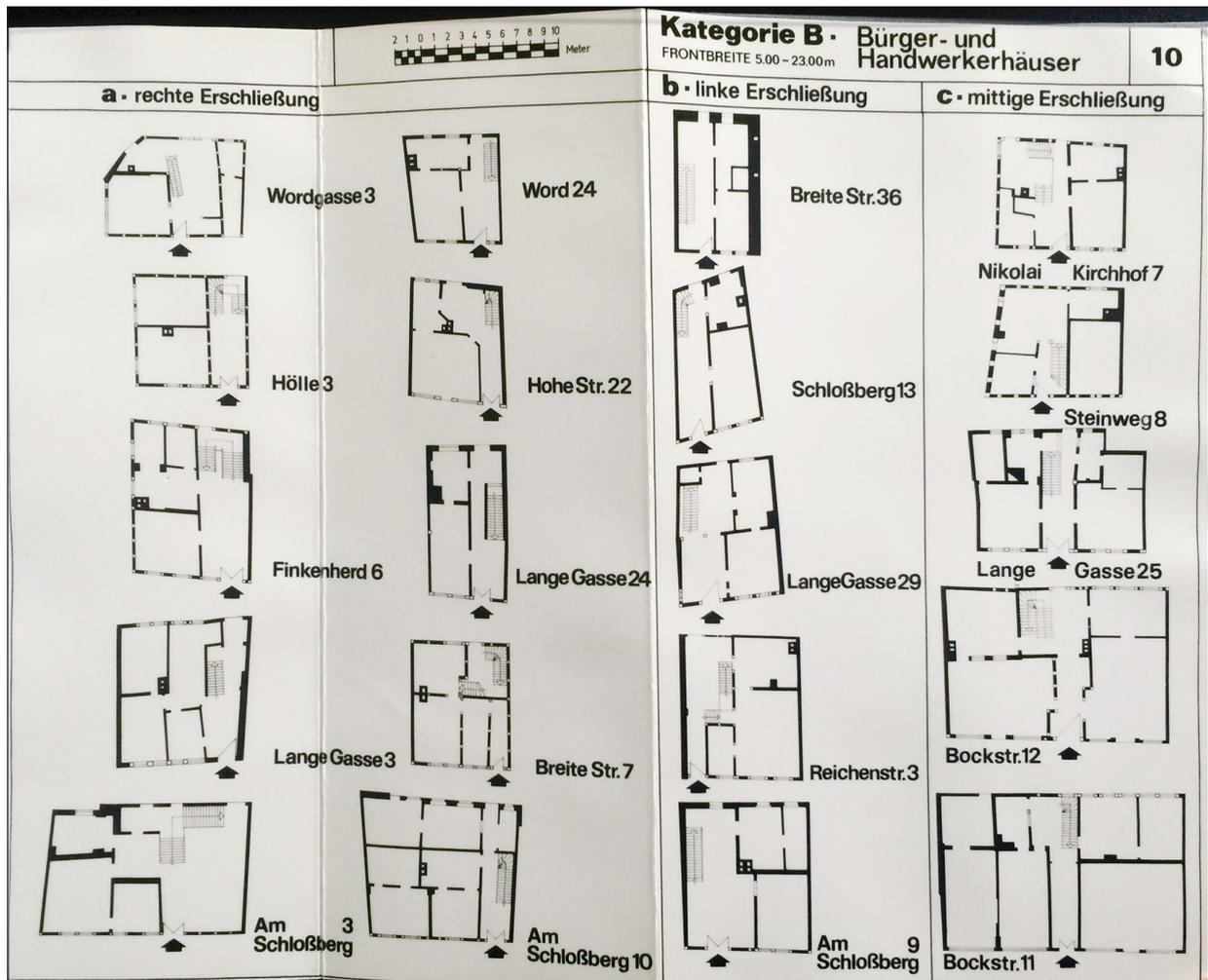


Figure 8: Building typology of civic architecture in Quedlinburg (Stelzer 1978: Figure 10).

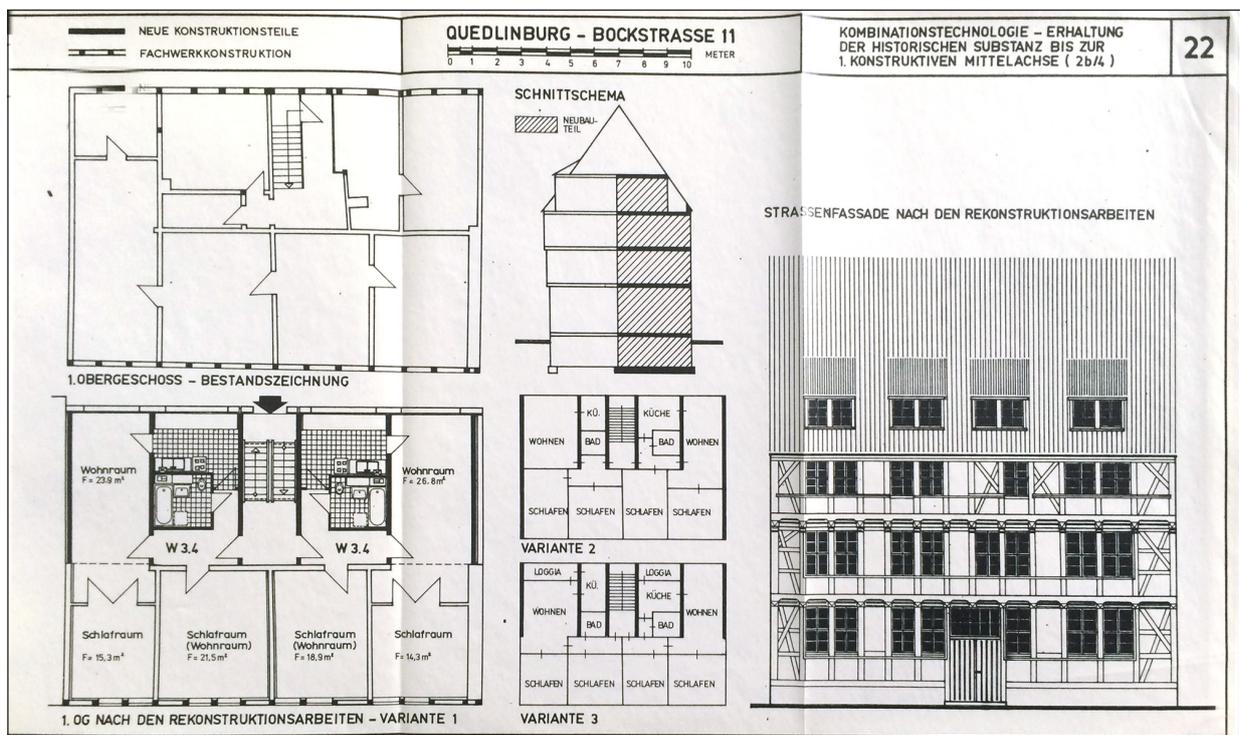


Figure 9: Design to replace a historic timber-frame structure with an in-situ concrete design behind the old front facade (Stelzer 1978: Figure 22).

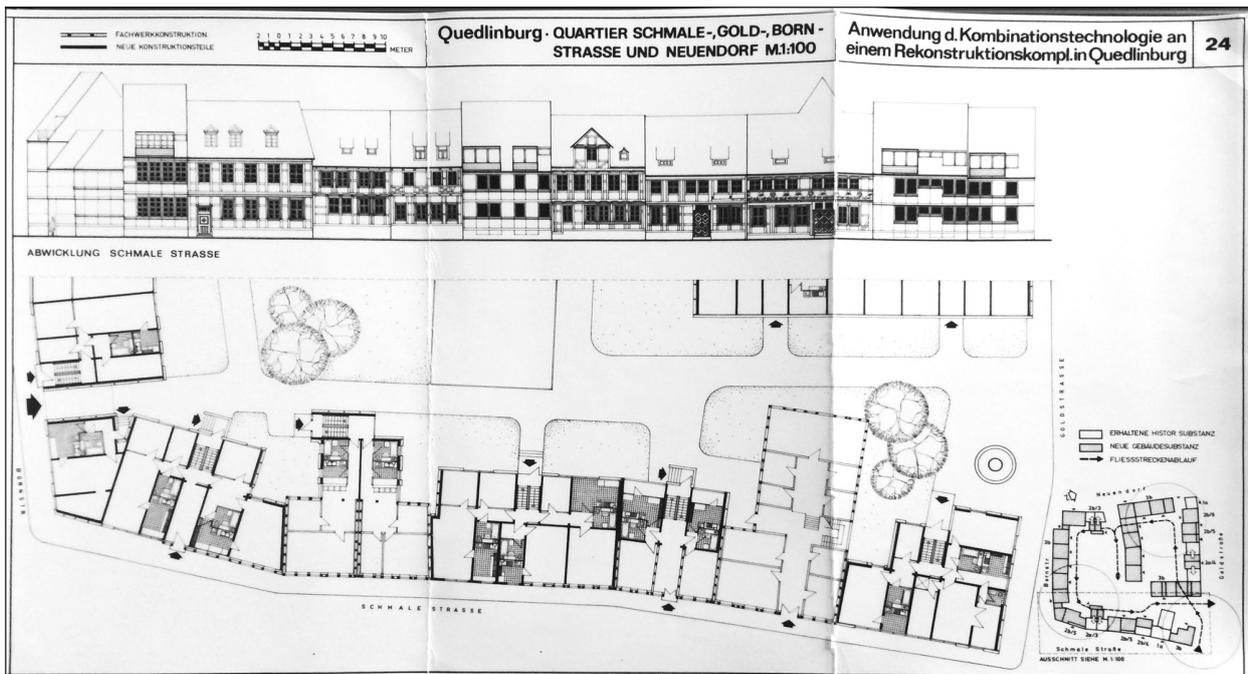


Figure 10: Industrial flow process to adapt the Allbeton construction system in the old town of Quedlinburg (Stelzer 1978: Figure 24).

Transferring Insights from Old Town Rehabilitation

The influence of Klemm's pioneering work in Görlitz went beyond old town rehabilitation, as Klemm transferred his concepts and practices from the historic old towns to 19th-century residential areas. The problem of the dilapidated building stock of late 19th-century tenement houses became increasingly crucial. In the mid-1960s, it was debated at workshops and expert conferences in Leipzig and Dresden (Arnold 1965; Löser 1966). Around the same time, the official trade journal *Bauzeitung* started to report new developments in building repair and maintenance. From 1966 onwards, it devoted a regular section to the topic.

In 1961, while still working on Görlitz, Klemm was commissioned to renew a historically heterogeneous area in the Innere Neustadt quarter in Dresden. This building block comprised dwellings from the late 18th to the early 20th century (Klemm 1966). Like in Görlitz, the study was based on a thorough building survey that led to a cautious modernization of the block. Dwellings were enhanced, while smaller commercial buildings in the inner yard were taken down to allow for more daylight (Figure 11).

Shortly afterwards, in 1965, Klemm was jointly commissioned by the Deutsche Bauakademie and the city council of Dresden to develop a masterplan for the renewal of the densely populated Äussere Neustadt quarter in Dresden. The site was a typical residential area dating to the turn of the century (Klemm 1969, 1973, 1989). Klemm's work turned it into the first comprehensive study on sensitive inner-city renewal of Germany's late 19th-century urban area. Again, based on an extensive survey and analysis of the existing urban fabric, Klemm proposed to restore the character of the quarter. This would involve closing existing gaps on street fronts, clearing interior yards of secondary structures, and repairing and modernizing old

dwellings. Planning for two opposite scenarios in detail, Klemm demonstrated the economic feasibility of this approach against common demolition and redevelopment. From 1968 to 1974 the rehabilitation of the building block between Förstereistraße, Jordanstraße, Alaunstraße and Timaeusstraße, with 32 tenement houses and 354 dwellings, served as a testing area for the recently established VEB Baureparatur Dresden (Hertzschuch 1967). Its successful 'Rekonstruktion' proved that repair and modernization of 19th-century residential urban areas was cost-efficient and technically feasible, and satisfied the needs of comfortable modern living (Klemm 1969: 106).

The interaction with the old fabric also resulted in the reassessment of historic values. The historic and artistic significance of 19th-century tenement houses was already acknowledged by East German conservationists. The practice of 'purifying' historical facades by tearing down ornamental stucco was also criticized (Deiters 1972: 47) (Figure 12). Shortly after rehabilitation and repair work had begun in the Äußere Neustadt according to Klemm's plans, the planning manager of the VEB Baureparatur Dresden summarized his early insights from the project:

After first disagreements within our company, the view ultimately prevailed that buildings should be restored to their original condition with justifiable economic expenses. We talk about architecturally valuable buildings, which are not necessarily listed and protected. ... As long as the exterior plaster can be repaired, the facades are restored and painted anew. Partially, we even restore smaller gildings. ... If the whole exterior plaster has to be removed, one has to be careful during knock-off to prevent ornaments from falling down and shattering. (Hertzschuch 1967: 197)

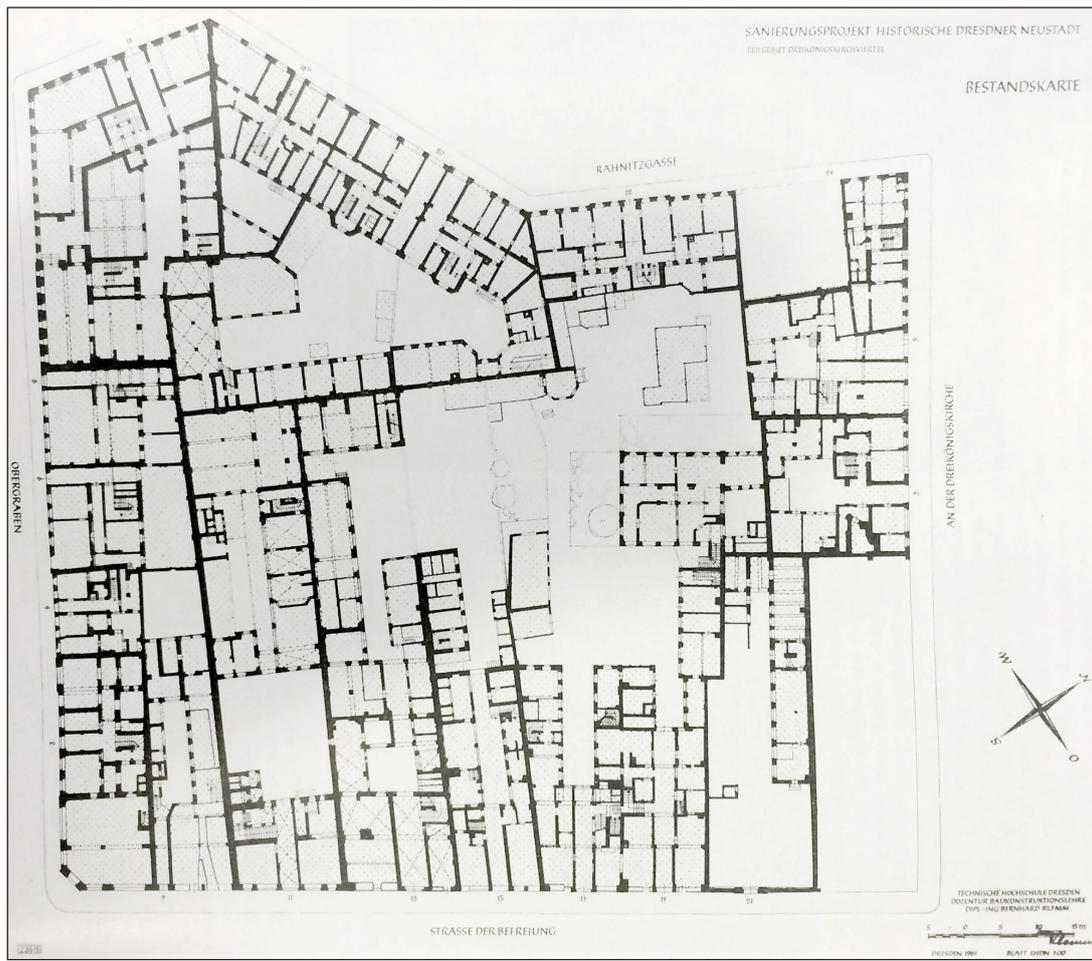


Figure 11: Existing structure of the rehabilitation area in Dresden Innere Neustadt, based on building surveys by Bernhard Klemm and students, before rehabilitation and clearance of the inner yard (Klemm 1966: 494).



Figure 12: Street view in Dresden Neustadt in the early 1980s (Büro des Stadtarchitekten 1983; photo by Christa Zocher).

Klemm's experience from the Görlitz and Dresden projects provided significant practical insights into his sophisticated views on the resilience of building stock and its life cycles. Within the prevailing functionalism of the 1960s, this was a remarkable achievement. Klemm concluded that a building is composed of components that wear differently and have different service lifespans. Since all are in constant need of care and maintenance, their intervals must be identified to plan for building repair (Klemm 1966: 497). In addition, Klemm highlighted the importance of considering future repair needs in planning new buildings.

From 1951 onward, Klemm had been appointed assistant and subsequently lecturer at the faculty of architecture at the Technical University in Dresden. His influence on the development of building repair and modernization in the GDR was especially notable after the 1960s. In 1968 the GDR's ministry of public works, the Ministerium für Bauwesen der DDR, established a post-graduate programme on the repair and modernization (Erhaltung und Rekonstruktion) of building construction at the architectural department in Dresden (Klemm 1978). Led by Klemm, the programme offered a special post-graduate qualification (Fachingenieur für Gebäudeerhaltung) on complex building processes in rehabilitation projects (repair, modernization, and maintenance). Through the programme, the concept of a building's life cycle was further developed, while detailed research in the building stock was also encouraged. By the mid-1980s, over 900 civil engineers, architects, and real estate economists of the GDR had successfully completed the programme (Buchberger and Kaul 1984). In addition, Klemm was a leading figure in the central council responsible for the standardization of building repair and the modernization of the GDR's ministry of public works (Eichelkraut 1978). Through this role, he was involved in the conceptualization and distribution of training material and manuals on building repair work to the rest of the state.

Towards a Standardized Recovery of the Late 19th-Century Building Stock

In the old town rehabilitation projects, construction and restoration was based on building surveys and analyses of the historic building stock typologies. But commonly available information on 19th-century building stock was not based on on-site observation, but rather on such readily available data as archival records. Index cards became a widely used device to record building conditions, especially for late 19th-century tenement houses (Dunkel and Küster 1965). Standardized, machine-readable registration sheets simplified documentation. A general classification of the built environment was considered a necessary point of departure. This would facilitate the involved parties' decisions – about appropriate methods, scope, and urgency of renewal – and the preparation of general building plans. The sophisticated tools for recording and observation also served as a means of control and regulation. The need to integrate a complex building stock into the bureaucratic apparatus of a planned economy led to the early adoption of information technology. At the

Bauakademie in 1967, Erika Lorenz developed an algorithmic method to assess the quality and quantity of building and urban resources in GDR. She classified them according to maintenance and construction timeframes (Lorenz 1967). As a computational process, this assessment was conditioned by the capacity of available computer technology and memory. This meant that only homogeneous blocks, and not single buildings, could be included (Figure 13).

Although more detailed evaluations were developed around 1970 (Mucke and Weigel 1975), thorough research on tenement houses built between 1870 and 1918 was only presented in the early 1980s. It was based on the typological approach developed by a research group around architect Grete Becker. The group analysed and assessed schematic floor plans and elevations of 175 typical residential buildings in 42 cities in the GDR (Becker et al. 1983) (Figure 14). Such typological research reinforced the common understanding of Wilhelminan tenement houses as readily convertible by standardized industrial means. The schematic understanding of this building stock was further enhanced by such publications as Rudolf Ahnert and Karl-Heinz Krause's *Typische Baukonstruktionen von 1860 bis 1960* (Ahnert and Krause 1985–88). These rendered individual building surveys and consideration of specific constructive solutions seemingly unnecessary.

Based on typologies and classifications, industrialized building repair brought about a thorough transformation of planning. The preliminary work at the planning departments had to become more time- and cost-efficient so that the output of applicable standardized solutions could be increased sufficiently. For the repair and restoration of facades, the practice of photo retouching was widely adapted in the early 1960s (Figure 15). In the so-called Fotoprojektierung, orthophotographs of building facades, to a scale of 1:100, typically 21 to 28 centimetres wide, were adjusted and corrected by photochemical means. Photographic retouching allowed for a direct comparison and assessment of a structure's actual condition and its desired appearance after the reconstruction. Processed anew, the pictures were further used in the detailed planning of the intervention (Böttke 1965). This practice effectively reduced the need for building surveys and measurements on site. Combined with techniques of photomontage, it also allowed for the repetitive use of photographic sets of standardized floor plans and constructive details in the planning process. This in turn reduced the amount of time needed for preliminary work and discussion for each individual case (Hertschuch 1966: 196) (Figure 16).

In the early 1960s, locally independent 'VEB Baureparatur', state-controlled specialized enterprises for building repair, were established across the GDR. This was in line with the socio-economic policy of the Socialist Unity Party's general secretary Walter Ulbricht (1893–1971), the so-called Neue Ökonomische System der Planung und Leitung (Ministerrat 1963; SED 1963). Prior to this, it was mostly small and medium-sized private construction companies and craftsmen that were engaged in the daily needs of building repair and maintenance. By

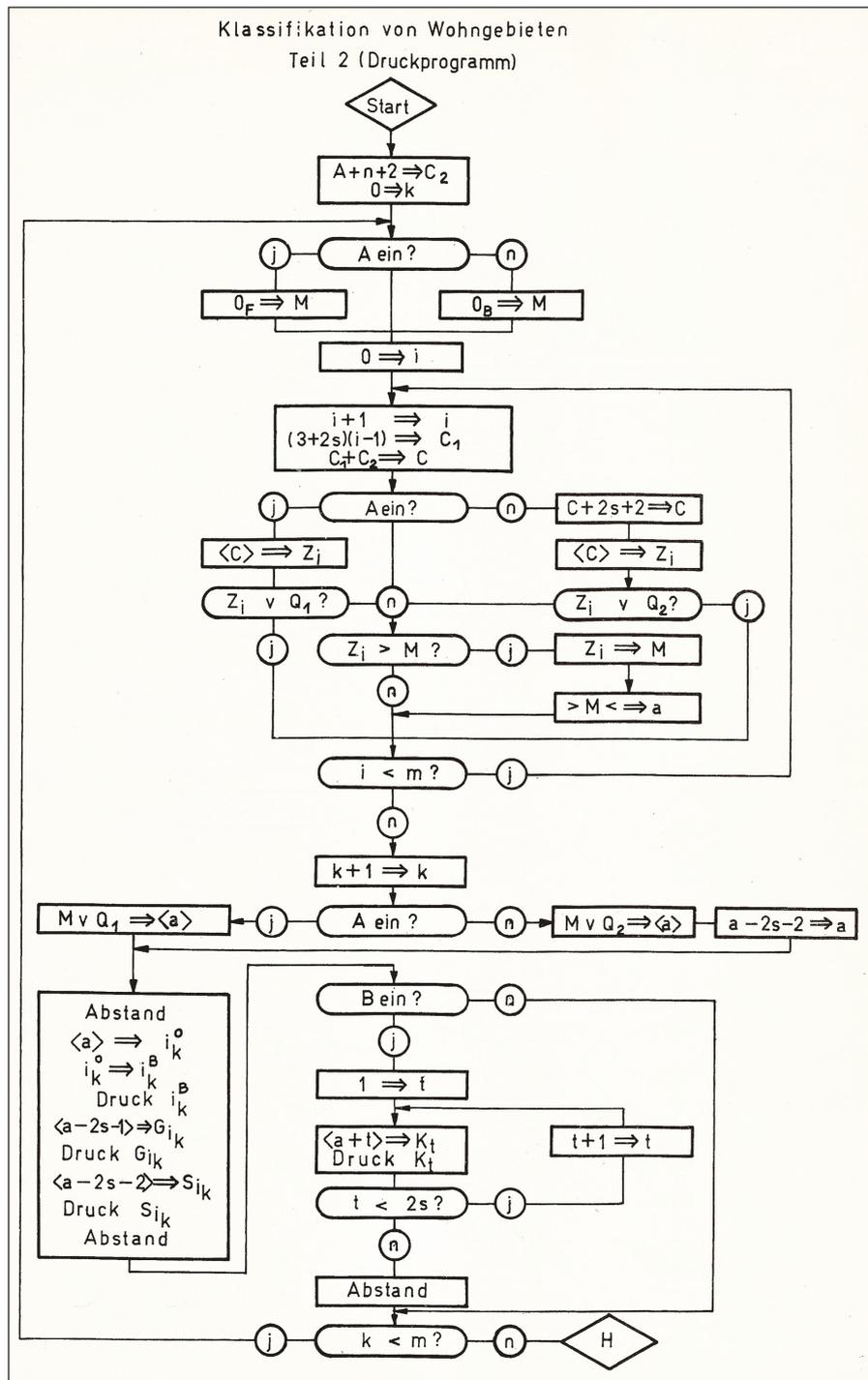


Figure 13: Algorithm for the classification and assessment of residential areas (Lorenz 1967: 54).

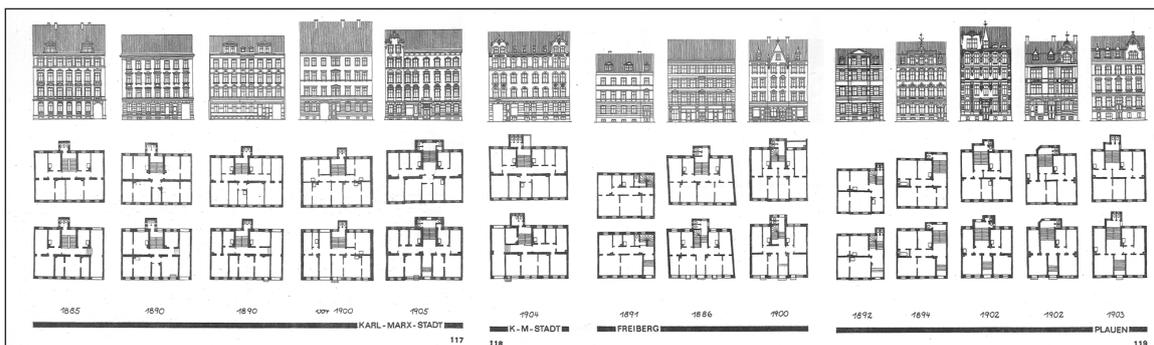


Figure 14: Building typology of 19th-century tenement houses in western Saxony (Becker, Kohlhepp, and Lage 1983: 117–19).

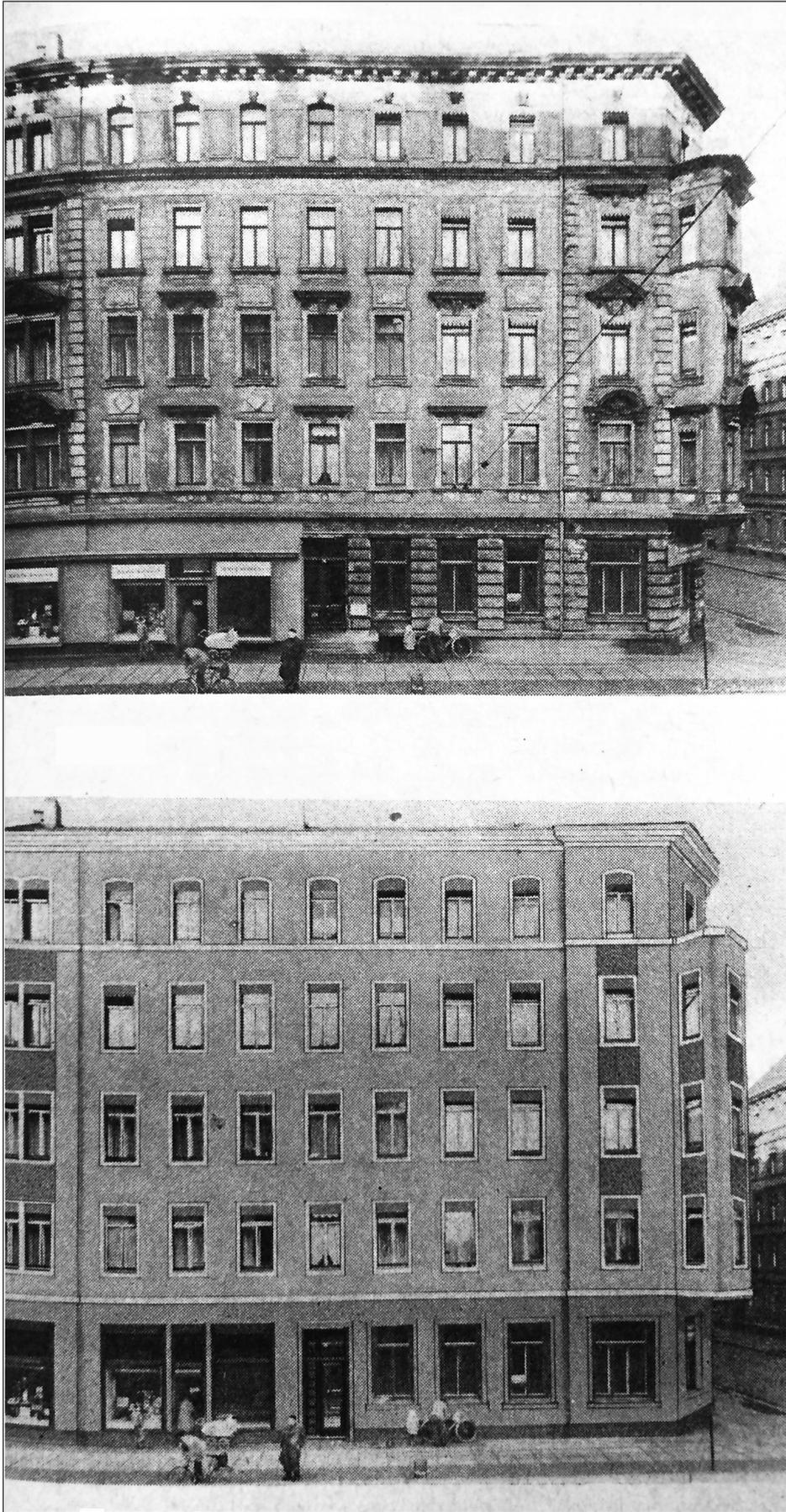


Figure 15: Original and retouched photography, used for the planning of repair and restoration work (Böttke 1965: 479).

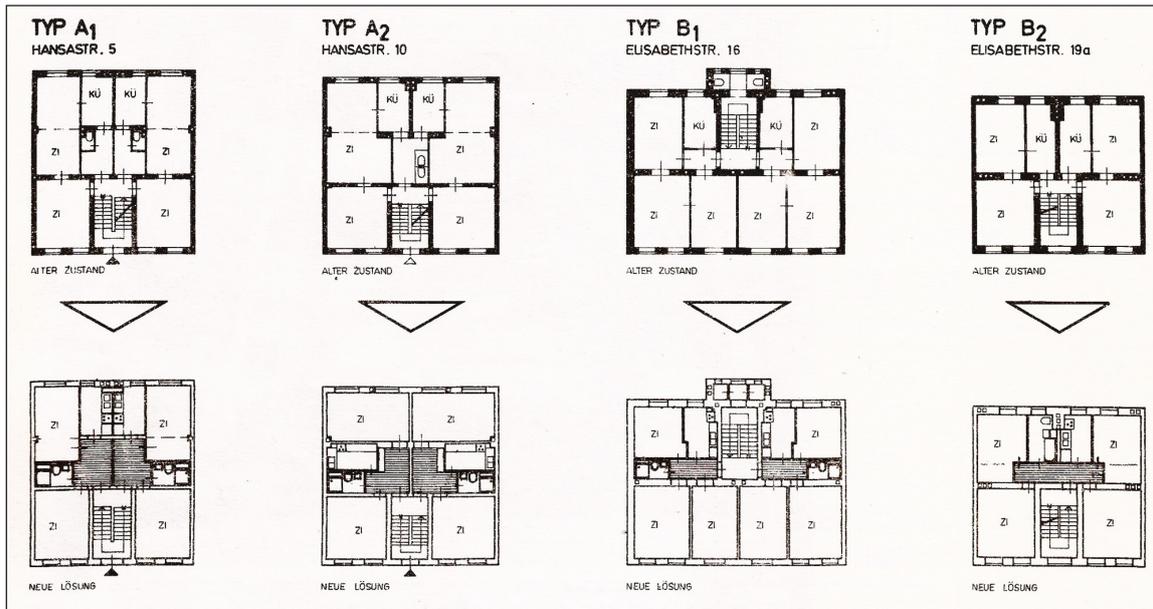


Figure 16: Examples of typologies for the restructuring of floor plans in 19th-century tenement houses (Lasch 1972: 64).

the late 1960s, their business, equipment, and workforce had been taken over by the new collective entities. Finally, almost all private companies were nationalized in 1972 in accordance with the new socio-economic doctrine of Ulbricht's successor, Erich Honecker (1912–94).

The activities of the increasingly large and centrally organized industrial conglomerates for building repair, which employed thousands of workers, were focused on extensive and formally coherent structures. Only with such construction could planning horizons develop that would adequately apply a continuous production flow and utilize the available technology. The renovation of tenement houses, for example, followed an organized process, by which specific tasks were distributed according to distinct building components (rooftop, facades, flats and staircase, basement) and allocated to separate specialized work brigades in different shifts (Dunkel and Deutschmann 1967: 479). Work flow and timetables were optimized through technologies of critical path analysis (Habranek and Otto 1970).

Such optimized, synchronized processes in building repair were first applied by the local VEB Baureparatur in the rehabilitation of Karl-Liebkecht-Straße in Leipzig from 1960 to 1961. The same collective was responsible for the 1962 renovation of the facades of Katharinenstraße, in the city's central marketplace. But it was not until 1972 that the company realized its first large-scale rehabilitation project in Leipzig's Ostheimstraße, completed in 1974. Here, 339 units within a series of 19 Wilhelminian tenement houses were modernized in the course of the two-year reconstruction campaign (Glienicke 1989). Since the project's inception, the company worked with electronic data processing to organize and control the work flow of its more than 1,500 employees.

More important was that the various VEB Baureparatur demanded standardized technological solutions and

prefabricated elements for building repair and modernization. This could result in inadequate and questionable modern materials for interior fittings. Sheets of asbestos cement were widely used for exterior cladding, especially of firewalls (Meier-Rouden 1975) (Figure 17). For more effective ways to repair and modernize buildings, several structural elements, including chimneys and balconies, were standardized and prefabricated (Figure 18).

Other building elements of the late 19th century, including precast stucco details, naturally lent themselves to prefabrication. Used for the repair of ornamental facades, such elements were developed anew by the VEB Baukombinat Modernisierung Berlin. This organization's catalogue of stucco elements provided a user-friendly scheme for renewal efforts. On a photographic survey or line drawing, the existing facade would be reduced to window openings and cubature. Then, the stucco elements from the catalogue would be applied (VEB Baukombinat Modernisierung Berlin 1980: 2.4–2.8). The example used in the catalogue, Pistoriusstrasse 27 in Berlin-Weißensee, can still be inspected in the purified state achieved during the times of the GDR (Figures 19 and 20). The standardized, limited list of elements featured within the VEB catalogue can be observed on many facades of 19th-century tenement houses in East Germany, all featuring not the original ornamental stucco but its 20th-century replacement.

The concepts, technologies, and experiences in industrialized building repair developed in the 1960s by architects like Bernhard Klemm and the site managers and engineers of the various VEB Baureparatur laid the groundwork for the large-scale urban rehabilitation projects of the 1970s. These included the celebrated projects in Berlin for Arkonaplatz from 1970 to 1976 (Pusch 1971; cf. Topfstedt 1988: n95) and Arnimplatz from 1973 onwards (Urban 2010: 136) (Figure 21). Economically, these projects were only feasible after the introduction



Figure 17: Asbestos cement panels for exterior cladding (Meier-Rouden [1975]: 27).

in 1973 of the large-scale housing programme called 'Wohnungsbauprogramm 1976–1990'. While this initiative aimed to develop new and cheap modular housing, it also offered funding for the modernization and repair of old buildings.

Conclusion

In the GDR, the restoration and recovery of the historic building stock was only considered effective and economically viable if implemented as part of an industrial production process. This facilitated the application of standard-

ized repair methods and substitute building components instead of traditional craftsmanship. The latest developments in data processing and information technology were used for the management and control of the building stock. The high number of building surveys, statistical recordings, and thorough building typologies must also be understood in the context of the needs of a planned, centralized economy. Based on experience in the rehabilitation of old towns like Görlitz, Klemm and others developed post-graduate curricula to qualify planners capable of managing the complexity of recovering the historic

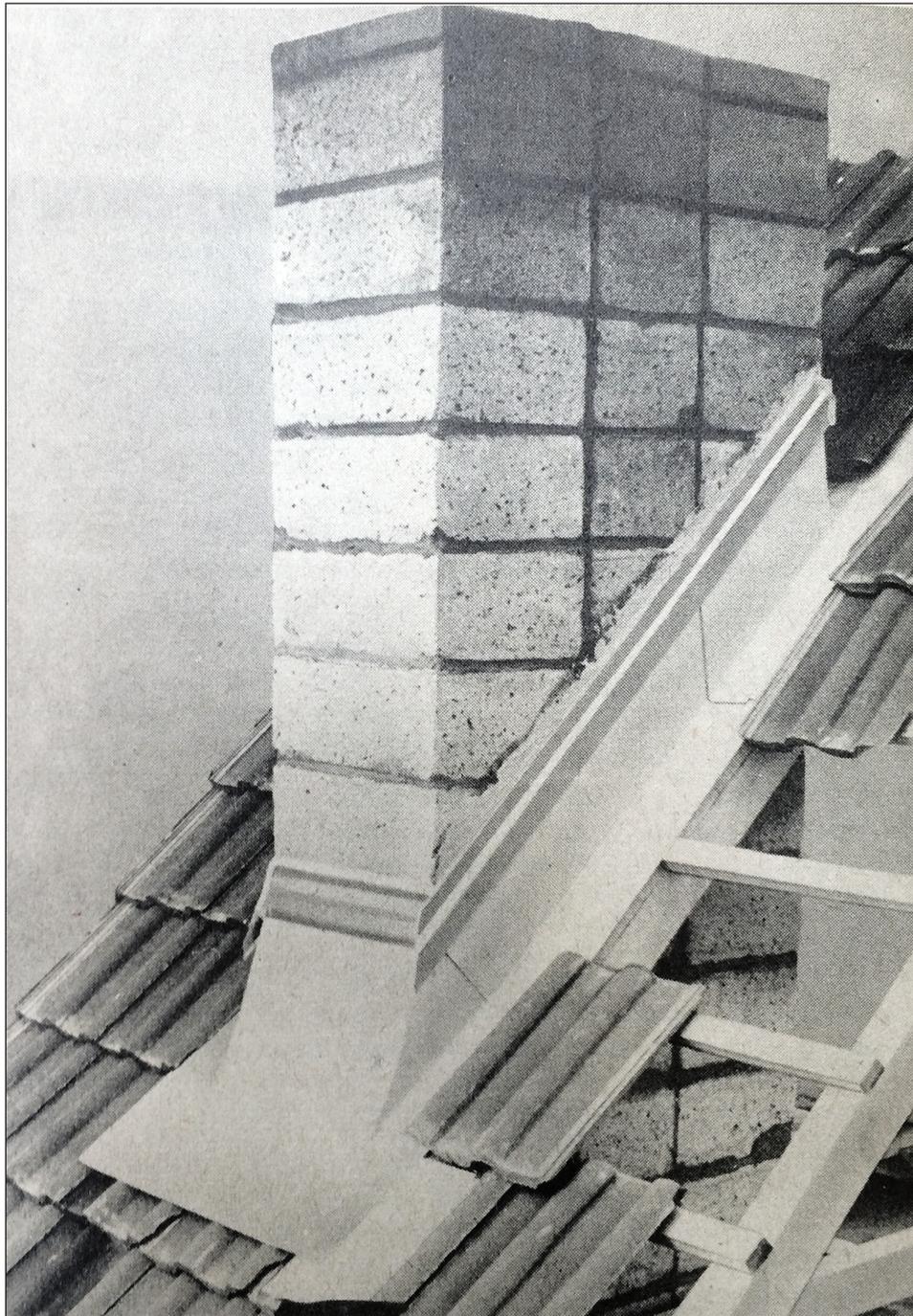


Figure 18: Prefabricated chimneys for 19th-century tenement houses with coal-burning stoves (Dunkel 1976: 16).

built environment by industrial means. Thus, restoration, conservation, and urban renewal became the way to modernize planning processes and the building sector in general. But these sophisticated technological options were only partially appropriate for dealing with the historic building stock. Eliminating small- and medium-sized construction companies effectively concentrated resources and capacities for building maintenance and repair within a monopolist collective. In practice, this limited flexibility and performance. Central planning, scientific analysis, research, and development resulted in technological innovation in the field of building repair and restoration, but at the same time, the innovations in dealing with the historic building stock were hampered because the diversity

of empirical, first-hand know-how and intergenerational experience of craftsmen became restricted. The imposed industrialization of the socialist planned economy challenged the resilience of the built environment in East Germany. The annual increments of the large-scale housing programme were eventually reduced by 50%, owing to the insufficient maintenance and increasing uninhabitability of the old accommodations (Schulz 1998). Although the approaches to recover the built environment could not prevent dilapidation, the rationalization and industrialization of building repair and urban renewal resulted in a reappropriation of historic forms. Historicizing elements in newly erected prefabricated buildings in inner city areas aimed to conceal the actual losses of his-

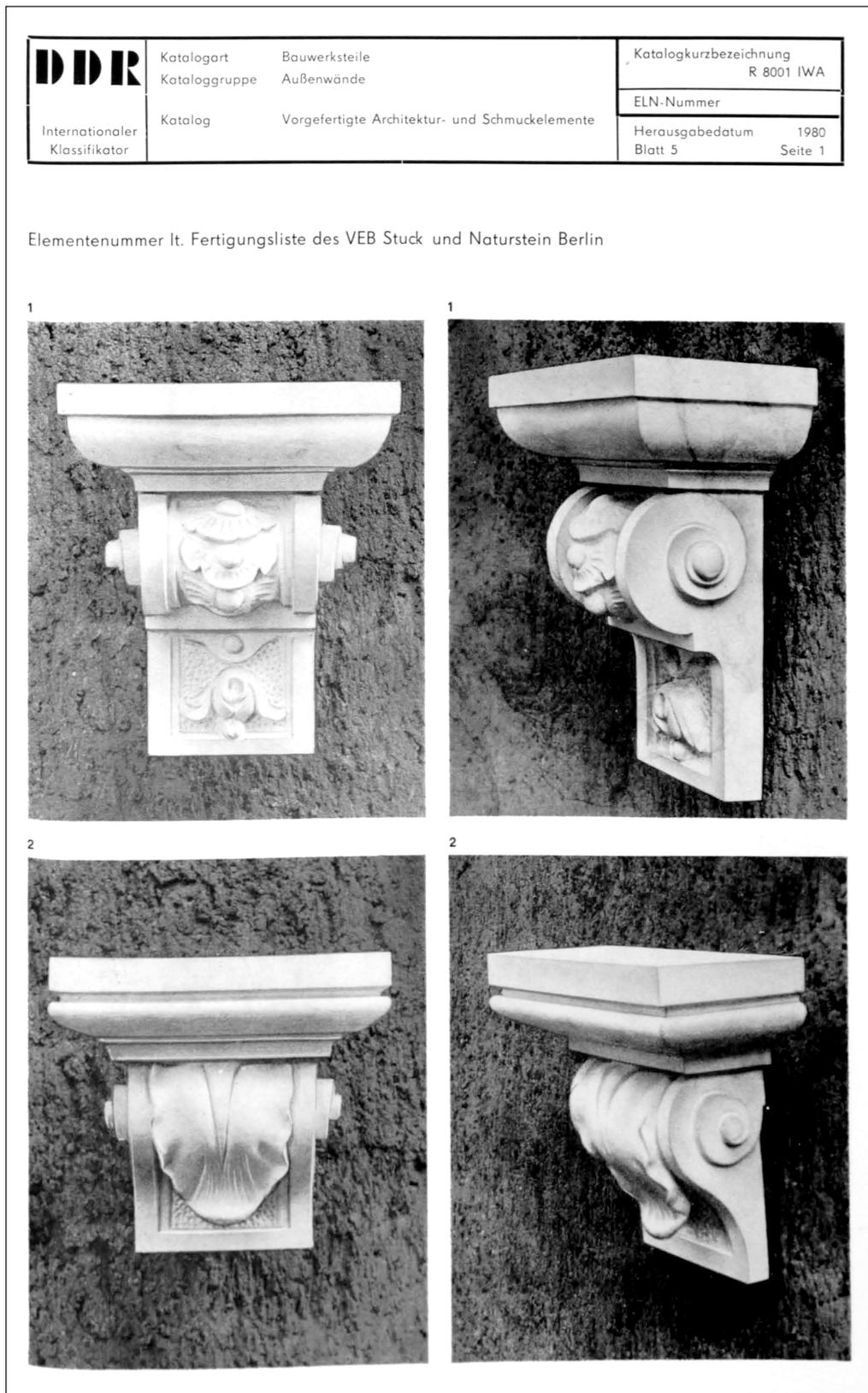


Figure 19: Precast stucco elements produced in the late GDR (VEB Baukombinat Modernisierung Berlin 1980: 5.1).

torical substance. With the unsolved challenges to maintain the extant built environment, high profile historic monuments, like the Semperoper in Dresden, became welcomed surrogates to publicly demonstrate the state's efforts. 'Rekonstruktion', introduced to the East German discourse as a proxy for modernization, has become actual historic reconstruction.

The international transition from a predominantly functionalist idea of modernism to a plurality of approaches in architecture – such as historical quotation, re-use of past remnants, or stylistic pastiche – in the 1960s and 1970s has widely been discussed in architectural history. But the common understanding of this change does not adequately explain the renewed engagement with

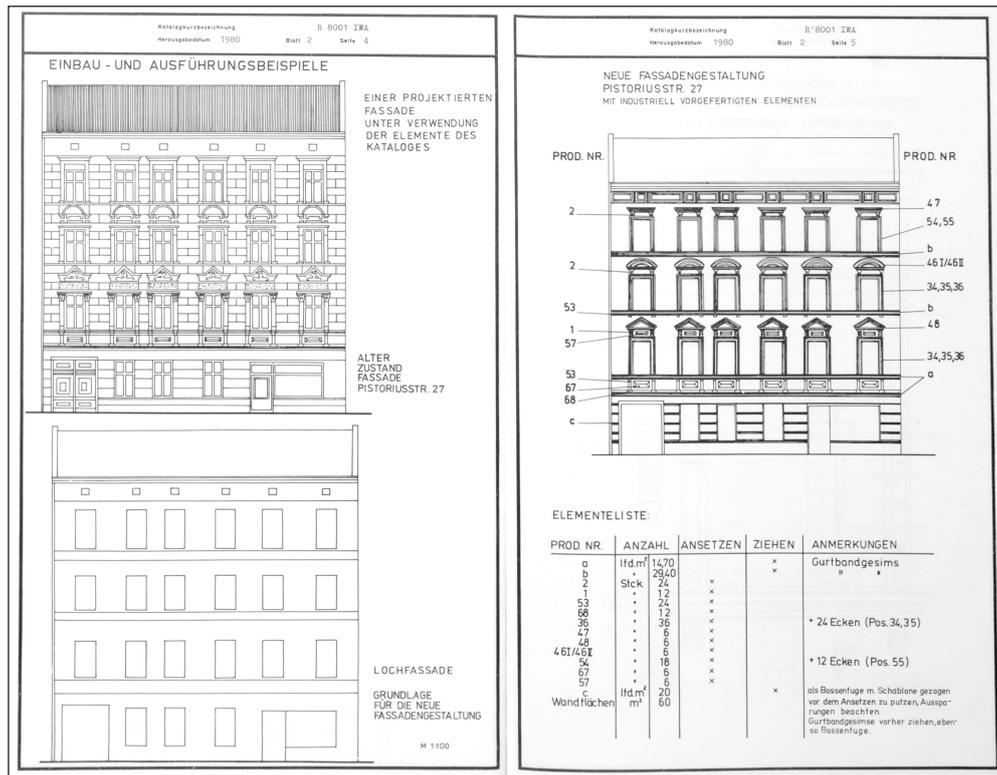


Figure 20: Instruction for a reduced 'reconstruction' of ornamental facades. Like many similar examples, the house at Pistoriusstrasse 27 in Berlin-Weißensee still today displays the stucco facade attached in the 1970s (VEB Baukombinat Modernisierung Berlin 1980: 2.4–5).

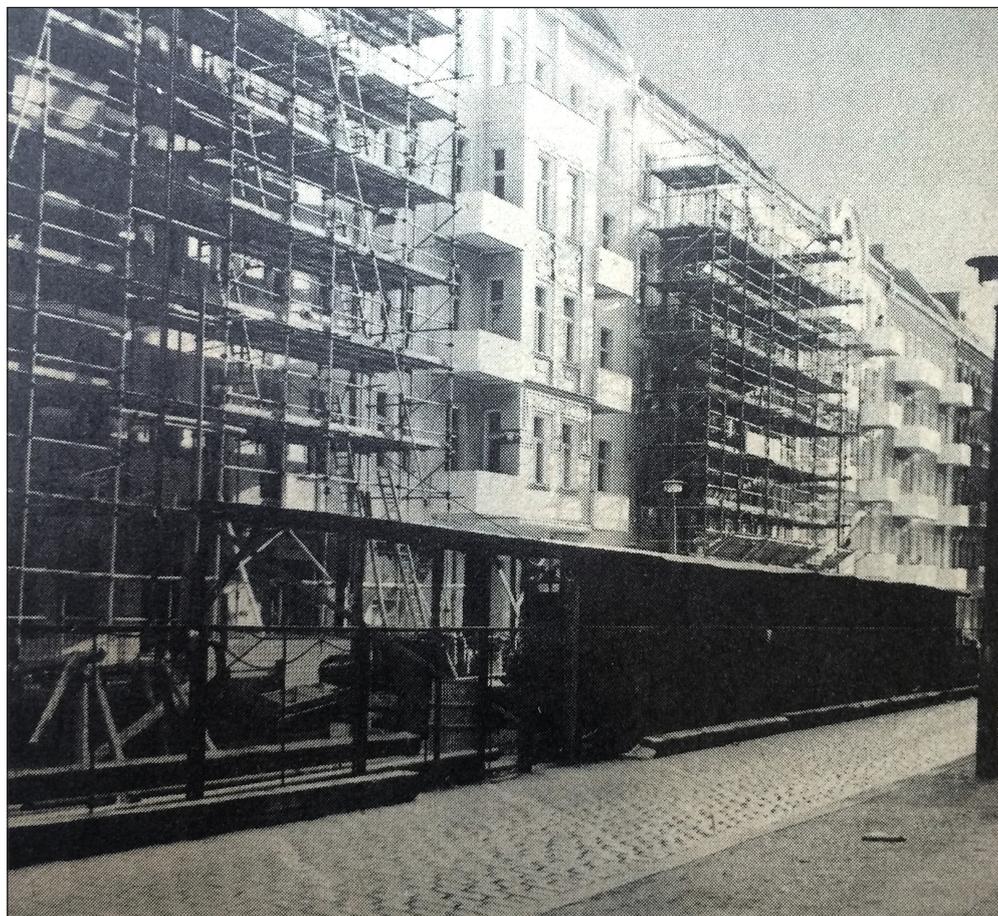


Figure 21: Large-scale building repair and modernization as continuous flow production at Arnimplatz in Berlin Prenzlauer Berg (Dunkel 1976: 8).

architectural heritage and the built environment, especially within former socialist Eastern Europe. Socialist countries were certainly not unaffected by the global economic transformations caused by the end of the Bretton-Woods system in 1971 and the oil shocks in 1973 and 1979. Emerging multinational corporations spread the globalized cultural logic of late capitalism (cf. Jameson 1991) to socialist Eastern Europe as well, of which the delicate exchanges between East Germany and Japan in the 1980s are a fine example (Hirsh 2017). But the immanent contradictions of capitalism, fundamental for David Harvey's reflection on the postmodern condition (Harvey 1989), only applied to the West. Because the concept of postmodern architecture developed within the cultural context of Western literary theory and philosophy (Jencks 1977), it cannot be readily expanded to include the cultural discourses in socialist Eastern Europe. The rise of 'neo-historical' architectural tendencies in this part of the hemisphere did not simply mirror the parallel development in the West (cf. Urban 2009). And it should not be reduced to an invention of a 'faux past' either. In the socialist states, the re-emergence of history had a specific significance in the 1960s and '70s. It indicated not only a change in the conceptualization of architecture, but also a questioning of the socialist doctrine of historic progress, a sign of the end of the grand narrative (see Lyotard 1979). From the well-organized, newly built, and prefabricated socialist utopia, the perspective turned to a customized, reflective appropriation of authentic objects at hand.

Plentzdorf's novel *The Legend of Paul and Paula* not only foreshadows the end of the socialist regime a decade later. It also reflects the broader transformation of an industrial society. In the novel, the run-down historic tenement houses are clearly indicated as places which allow for a degree of self-fulfilment and intimacy that transgresses social norms. The story is also critical of the social and economic policy in the GDR after 1970 and the large-scale housing program of 1973. While modern mass-produced accommodation was provided, the novel suggests that the state was inept at responding to the true desires of a younger generation. Ultimately, the logic of industrialization proved inappropriate for a resilient built environment. It could be argued that the forced industrialization of the building sector was not a solution to the desolate condition, but possibly its cause. The unsustainability of the socialist industrial state became increasingly evident in large-scale environmental disasters and the dilapidated building stock and built infrastructure.

Competing Interests

The author has no competing interests to declare.

Author's Note

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